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SC271	Additional indicating unit in the cargo control room in accordance with amended FSS Code Chapter 9.2.5.1.3	Jan 2015
SC272	Inert gass supply to double-hull spaces (SOLAS II-2/4.5.5.1)	Rev.1 Jul 2016
SC273	Inclusion of mediums of the fire-fighting systems in lightweight (SOLAS II-1/2.21, SOLAS II-2/3.28) and lightship condition (IS Code 2008 Paragraph 2.23)	Rev.1 May 2016
SC274	Hazardous area classification in respect of selection of electrical equipment, cables and wiring and positioning of openings and air intakes	Rev.1 Feb 2021
SC275	Suitable number of spare air cylinders to be provided in connection with drills	Rev.1 Sep 2016
SC276	Escape from machinery spaces on passenger ships	Rev.1 May 2024
SC277	Escape from machinery spaces on cargo ships	Rev.1 May 2024
SC278	Escape from accommodation spaces, service spaces and control stations on cargo ships	Jan 2016
SC279	Annual testing of VDR, S-VDR, AIS and EPIRB	June 2016
SC280	Angle of down-flooding (ϕf) / Angle at which an opening incapable of being closed weathertight (θv)	Rev.1 June 2022
SC281	Single fall and hook system used for launching a lifeboat or rescue boat - Interpretation of the LSA Code as amended by MSC.320(89) and MSC.81(70) as amended by MSC.321(89)	Withdrawn June 2017
SC282	Application of materials other than steel on engine, turbine and gearbox installations	Dec 2016

SC283	Fire detection and alarms for boilers in unattended machinery spaces	Withdrawn Oct 2017
SC284	Automatic shutdown of the inert gas system and its components parts	June 2018
SC285	Operational status of valves to cargo tanks	June 2018
SC286	Operational status of the inert gas system	June 2018
SC287	Low pressure audible alarm system	June 2018
SC288	Carriage of Dangerous Goods – Required Air Changes	Dec 2018
SC289	Separation arrangements between inert gas piping and cargo tanks	Withdrawn July 2019
SC290	Emergency source of electrical power on Gas Carriers and Chemical Tankers	Dec 2018
SC291	Safe Type requirements for two-way portable radiotelephone apparatus for fire-fighter's communication	Jan 2020
SC292	Ships intended to operate in low air temperature in Polar waters - Survival craft and rescue boat communications capabilities	Feb 2020
SC293	Lifebuoy Arrangements for Means of Embarkation/ Disembarkation (SOLAS Reg. II-1/3-9 and III/7)	Feb 2020
SC294	Fire integrity of the division between engine room and urea or sodium hydroxide solution tank installation spaces	Feb 2020
SC295	Interpretation of Performance Standards for Float-free Emergency Position-indicating radio beacons (EPIRBs) Operating on 406 MHz (resolution MSC.471(101))	July 2021
SC296	Noise level limit in workshops onboard ships	May 2022

SC297	Amendment to stability/loading information in conjunction with the alterations of lightweight	Aug 2022
SC298	Interpretations of various Performance Standards related to GMDSS radio installations	Corr.1 Nov 2023
SC299	Watertight testing after fire testing of penetrations in watertight divisions in passenger ships	July 2023
SC300	Containment of fire: details of fire insulation of duct penetrations	Aug 2023
SC301	SOLAS Regulations II-2/9.7.2 and 9.7.5.1 – Separation of ducts from spaces	May 2024
SC302	Interpretation of SOLAS regulation II-2/11.4.1 pertaining to crowns of machinery spaces of category A	May 2024
SC303	Harmonization of Industrial Personnel Safety Certificate with SOLAS Safety Certificates	July 2024
SC304	MSC.337(91) Code on noise levels onboard ships - calibration of sound instruments	Oct 2024
SC305	Single essential propulsion components and their reliability	Oct 2024
SC306	Valve piercing ship’s collision bulkhead	Nov 2024
SC307	Hydrocarbon Gas Detection and Bilge High Level Alarms in Cargo Pump-Rooms	Nov 2024

SC1 Main source of electrical power

(1974)
(Rev.1 Jun 2002)
(Rev.2 Feb 2021)

Interpretation of Regulation 41.1.3 of SOLAS Chapter II-1 as amended by IMO resolutions up to MSC.436(99)

SOLAS regulation II-1/41.1.3 reads as follows:

The arrangements of the ship's main source of electrical power shall be such that the services referred to in Regulation 40.1.1 can be maintained regardless of the speed and direction of the propulsion machinery or shafting.

Interpretation

Generators and generator systems, having the ship's main propulsion machinery as their prime mover, may be accepted as part of the ship's main source of electrical power, provided:

1. They are to be capable of operating under all weather conditions during sailing and during manoeuvring, also when the vessel is stopped, within the specified limits for the voltage variation in IEC 60092-301:1980 and the frequency variation in UR E5.

2. Their rated capacity is safeguarded during all operations given under 1, and is such that in the event of any other one of the generators failing, the services given under Regulation 41.1.2 of SOLAS Chapter II-1 as amended by IMO resolutions up to MSC.436(99) can be maintained.

3. The short circuit current of the generator/generator system is sufficient to trip the generator/generator system circuit-breaker taking into account the selectivity of the protective devices for the distribution system.

   Protection is to be arranged in order to safeguard the generator/generator system in case of a short circuit in the main bus bar. The generator/generator system is to be suitable for further use after fault clearance.

4. Standby sets are started in compliance with the paragraph 2.2 of SC 157.

Note:

1. Changes introduced in Rev.1 are to be uniformly implemented by IACS Members and Associates from 1 January 2003.

2. Rev.2 of this UI is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2022.

3. The 'contracted for construction' date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of 'contract for construction', refer to Procedural Requirement (PR) No. 29.

End of Document

SC2 Main source of electrical power

(1974)
(Rev.1
June 2002)

Deleted in 2003

◄◄

SC3 Emergency source of electrical power

(1985)
(Rev.1
May 1999)

(Chapter II-1, Regulation 42.1.4 & 43.1.4)

SOLAS Regulation II-1/42.1.4 and 43.1.4 read:

Provided that suitable measures are taken for safeguarding independent emergency operation under all circumstances, the emergency generator may be used exceptionally, and for short periods, to supply non-emergency circuits.

Interpretations

Exceptionally, whilst the vessel is at sea, is understood to mean conditions such as

1. blackout situation
2. dead-ship situation
3. routine use for testing
4. short-term parallel operation with the main source of electrical power for the purpose of load transfer

Unless instructed otherwise by the Administration, the emergency generator may be used during lay time in port for the supply of the ship mains, provided the requirements of UI SC 152 are complied with.

Note: Rev.1 of UI SC 3 is to be uniformly implemented by IACS Members and Associates from 1 January 2000

◄◄

SC4 Emergency source of electrical power

(1985)
(Del
Nov 2024) Deleted in November 2024.

SC5 Emergency source of electrical power in passenger ships

(1985)
(Del
Nov 2024)

Deleted in November 2024.

SC6 Emergency source of electrical power on Gas Carriers and Chemical Tankers

(1985)
(Rev.1
Mar 2019)

Interpretation of Chapter II-1, Regulation 43.6 of the International Convention for the Safety of Life at Sea, 1974 (SOLAS 1974) as amended by Resolution MSC.1(XLV)

Regulation 43.6 reads as follows:

"6 The emergency generator and its prime mover and any emergency accumulator battery shall be so designed and arranged as to ensure that they will function at full rated power when the ship is upright and when inclined at any angle of list up to 22.5° or when inclined up to 10° either in the fore or aft direction, or is in any combination of angles within those limits."

Interpretation

The following additional requirements are to be taken into account:

1. IMO International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (Res.MSC.5(48) as amended by resolutions MSC.17(58), MSC.30(61), MSC.32(63), MSC.59(67), MSC.103(73), MSC.177(79) and MSC.220(82), clause 2.9.2.2.

2. IMO International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, clause 2.9.3.2.

Note:

1. Rev.1 of this Unified Interpretation is to be uniformly implemented by IACS Societies on ships constructed on or after 1 July 1986 but before 1 July 2016.

End of Document

SC7 Precautions against shock, fire and other hazards of electrical origin

(Chapter II-1, Regulation 45.2)

Text:
"Exposed live parts having voltages to earth exceeding a voltage to be specified by the Administration"

Interpretation:
Voltage values as stated in Regulation 45.1.1.1.

◄◄

SC8 Precautions against shock, fire and other hazards of electrical origin

(Chapter II-1, Regulation 45.3.3)

Text:
<<and special precautions shall be taken to the satisfaction of the Administration>>.

Interpretation:
1. All final sub-circuits should consist of two insulated wires, the hull return being achieved by connecting to the hull one of the busbars of the distribution board from which they originate.
2. Earth wires should be in accessible locations to permit their ready examination and to enable their disconnection for testing of insulation.

◄◄

SC9 Precautions against shock, fire and other hazards of electrical origin

(Chapter II-1, Regulation 45.4.2)

Text:
<<Insulation level monitoring devices>>.

Interpretation:
A device or devices to continuously monitor the values of electrical insulation to earth and to give an audible or visual indication in case of abnormally low insulation values.

◄◄

SC10 Precautions against shock, fire and other hazards of electrical origin

(1985) (Rev 1 1997) (Rev.2 May 2001) (Rev.3 Feb 2021)

Interpretation of Regulation 45.5.2 of SOLAS Chapter II-1 as amended by IMO resolutions up to MSC.436(99)

The first sentence of SOLAS regulation II-1/45.5.2 reads as follows.

(…) *shall be at least of a flame-retardant type.*(…)

Interpretation

This may be achieved by cables which have been tested in accordance with IEC 60332-1-2:2004+AMD1:2015 or a test procedure equivalent thereto.

The first sentence of SOLAS regulation II-1/45.5.2 reads as follows:

(…) *shall be so installed as not to impair their original flame-retarding properties.*

Interpretation

This may be achieved by:

Method 1

Cables which have been tested in accordance with IEC 60332-3-22:2018 Category A or a test procedure for cables installed in bunches equivalent thereto.

Note:

1. Changes introduced in Rev.2 are to be implemented by IACS Members and Associates from 1 July 2001.

2. Rev.3 of this UI is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2022.

3. The ‘contracted for construction’ date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of ‘contract for construction’, refer to Procedural Requirement (PR) No. 29.

SC10
(cont)

Method 2 (See Figures 1-4)

2.1 Fire stops having at least B-0 penetrations fitted as follows:

1 cable entries at the main and emergency switchboard,

2 where cables enter engine control rooms,

3 cable entries at centralized control panels for propulsion machinery and essential auxiliaries,

4 at each end of totally enclosed cable trunks; and

2.2 In enclosed and semi-enclosed spaces, cable runs are to comply with the following:

1 to have fire protection coating applied:

- to at least 1 metre in every 14 metres

- to entire length of vertical runs, or

2 fitted with fire stops having at least B-0 penetrations every second deck or approximately 6 metres for vertical runs and at every 14 metres for horizontal runs.

The cable penetrations are to be installed in steel plates of at least 3 mm thickness extending all around to twice the largest dimension of the cable run for vertical runs and once for horizontal runs, but need not extend through ceilings, decks, bulkheads or solid sides of trunk. In cargo area, fire stops need only be fitted at the boundaries of the spaces.

SC10
(cont)

FIRE STOPS (STEEL PLATE AT LEAST 3mm THICKNESS)
TOTALLY ENCLOSED TRUNKS

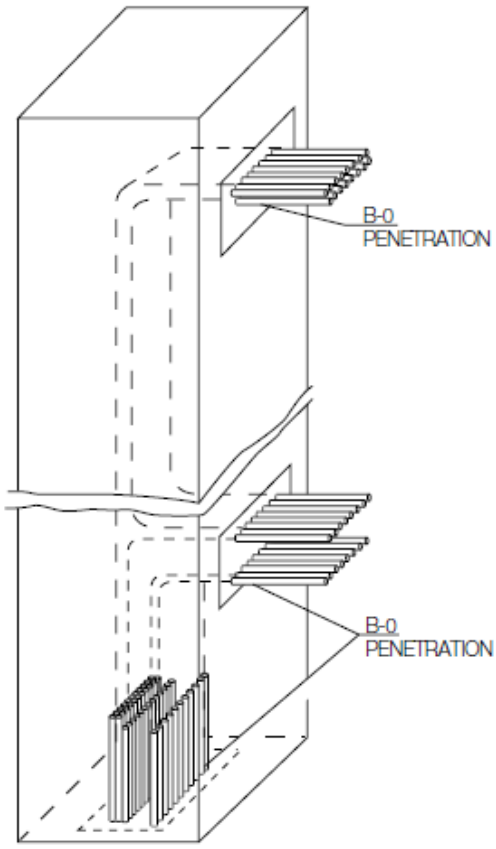


Fig. 1

FIRE STOPS (STEEL PLATE AT LEAST 3mm THICKNESS)
NON TOTALLY ENCLOSED TRUNKS

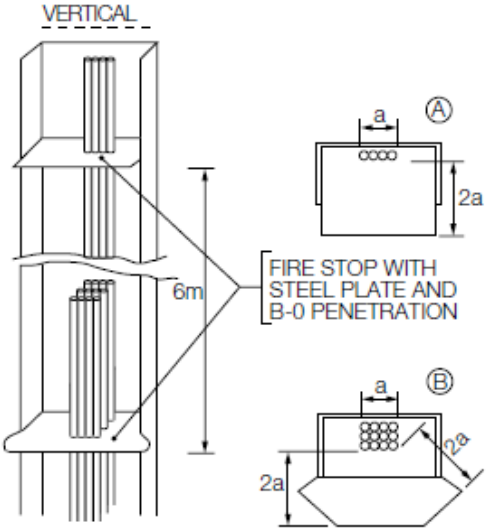
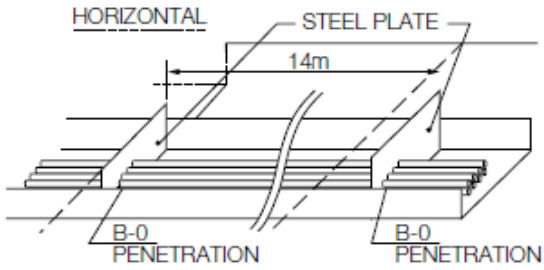
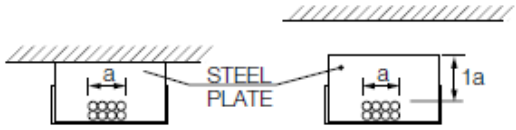


Fig. 2

FIRE STOPS (STEEL PLATE AT LEAST 3mm THICKNESS)
NON TOTALLY ENCLOSED TRUNKS





REMARK:
THE LENGTH (a) OF THE FIRE STOPS FOR HORIZONTAL CABLE RUNS SHOULD BE AT LEAST ONCE OF THE LARGEST DIMENSION OF THE CABLE BUNCH OR UP TO THE DECK

Fig. 3

FIRE STOPS (STEEL PLATE AT LEAST 3mm THICKNESS)
OPEN CABLE RUNS

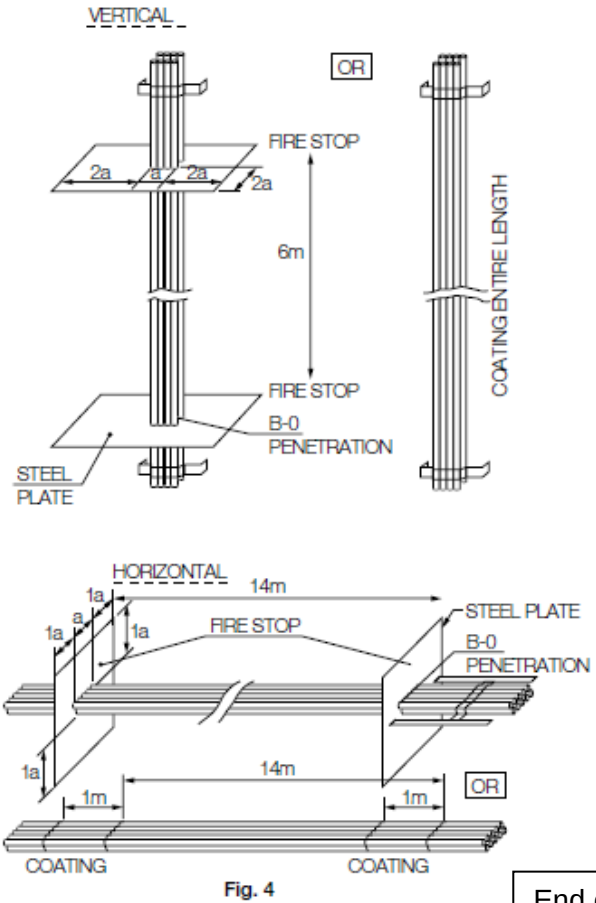


Fig. 4

End of Document

SC11 Precautions against shock, fire and other hazards of electrical origin

(1985) (Rev.1 Feb 2021) (Rev.2 Nov 2024)

Interpretation of Regulation 45.5.3 of SOLAS Chapter II-1 as amended by IMO resolutions up to MSC.436(99)

SOLAS regulation 45.5.3 of SOLAS Chapter II-1 reads as follows.

Cables and wiring serving essential or emergency power, lighting, internal communications or signals shall so far as practicable be routed clear of galleys, laundries, machinery spaces of category A and their casings and other high fire risk areas. (…)

Interpretation

The following spaces are to be as a minimum considered as “other high fire risk areas”:

.1 cargo spaces except cargo tanks for liquids with flashpoint above 60°C and except cargo spaces exempted in accordance with SOLAS regulations II-2/10.7.1.2 or II-2/10.7.1.4;

.2 vehicle, ro-ro and special category spaces;

.3 spaces containing flammable liquids; and

.4 pantries containing cooking appliances.

Note:

1. Rev.1 of this UI is to be uniformly implemented by IACS Societies on ships contracted for construction on and after 1 July 2022.

2. Rev.2 of this UI is to be uniformly implemented by IACS Societies on ships contracted for construction on and after 1 January 2026.

3. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC12 Precautions against shock, fire and other hazards of electrical origin

(Chapter II-1, Regulation 45.5.4)

Special precautions should be as follows:
1. Cables to be appropriately sheathed according to intended environment.
2. Cables to be suitably protected against mechanical damage.
3. Electrical and mechanical segregation of intrinsically safe circuits from other circuits.
4. Effective earthing of metal coverings of cables.

◄◄

SC13 Precautions against shock, fire and other hazards of electrical origin

(Chapter II-1, Regulation 45.6.1)

Text:
"overload.....or where the Administration may exceptionally otherwise permit".

Interpretation:
1. When it is impracticable, for example engine starting battery circuit.
2. When by design the circuit is incapable of developing overload, for example control transformers.
3. For essential motors which are duplicated and thruster motors, the overload protection may be replaced by an overload alarm.

◄◄

SC14 Special requirements for machinery, boilers and electrical installations

(Chapter II-1, Regulation 53.3)

This regulation is applicable to stand-by machines required by the Rules of the individual Societies for:
1. oil engines for propulsion purposes,
2. steam turbines for propulsion purposes,
3. gas turbines for propulsion purposes,
4. controllable pitch propellers.

◄◄

SC15 Definitions

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC16 Definitions

(Rev.1 June 2005) (Rev.2 Aug 2006)

(Reg. II-2/3.34)

Oil fuel unit includes any equipment used for the preparation and delivery of oil fuel, heated or not, to boilers (including inert gas generators) and engines (including gas turbines) at a pressure of more than 0.18 N/mm^2. Oil fuel transfer pumps are not considered as oil fuel units.
(MSC.1/Circ.1203)

Note:
1. Rev.1 is to be uniformly implemented by IACS Members and Associates on ships the keels of which are laid from 1 January 2006.
2. Rev.2 of this UI is editorially amended to refer to MSC.1/Circ.1203.

◄◄

SC18 Fire pumps, fire mains, hydrants and hoses

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC17 Definitions - Control Stations (SOLAS Reg. II-2/3.18)

(1985) (Rev.1 2001) (Rev.2 Nov 2005) (Rev.3 Nov 2020)

1. Main navigational equipment includes, in particular, the steering stand and the compass, radar and direction-finding equipment.

2. Steering gear rooms containing an emergency steering position are not considered to be control stations.

3. Where in the regulations of chapter II-2 relevant to fixed fire-extinguishing systems there are no specific requirements for the centralization within a control station of major components of a system, such major components may be placed in spaces which are not considered to be a control station.

4. Spaces containing, for instance, the following battery sources shall be regarded as control stations regardless of battery capacity:

.1 emergency batteries in separate battery room for power supply from black-out till start of emergency generator,
.2 emergency batteries in separate battery room as reserve source of energy to radiotelegraph installation,
.3 batteries for start of emergency generator,
.4 and, in general, all emergency batteries required in pursuance of Reg. II-1/42 or Reg. II-1/43.

(MSC/Circ. 1120)

End of Document

SC19 Fire pumps, fire mains, hydrants and hoses

(Rev 1 1996) (Corr.1 2001)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC20 Fire pumps, fire mains, hydrants and hoses

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC21 Fire pumps, fire mains, hydrants and hoses

(Rev 1 1996)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC22 Fire pumps, fire mains, hydrants and hoses

(Rev.1 2001)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC23 Fire pumps, fire mains, hydrants and hoses

(1985)
(Rev.1
2001)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC24 Fire pumps, fire mains, hydrants and hoses

(1985)
(Rev.1
2001)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC25 Fixed gas fire-extinguishing systems

(1985)
(Rev.1
June 2000)
(Add.1
2001)
(Rev.2
Nov 2005)

(FSS Code, Ch. 5, 2.1.3.2)

Text:

Means shall be provided for automatically giving audible warning of the release of fire-extinguishing medium into any ro-ro spaces and other in which personnel normally work or to which they have access.

Interpretation:

Ordinary cargo holds need not comply with this requirement. However, ro/ro spaces, cargo holds in container ships equipped for integrated reefer containers and other spaces where personnel can be expected to enter and where the access is therefore facilitated by doors and or manway hatches shall comply with this requirement.
(MSC/Circ. 1120)

Note:
1. Changes introduced in Rev.1 are to be uniformly implemented by IACS Members and Associates from 1 January 2001.

◄◄

SC26 Deleted

◄◄

SC27 Deleted

◄◄

SC28 Deleted

◄◄

SC29 Deleted

◄◄

SC30 Fire-extinguishing arrangements in machinery spaces

(May 1998)
(Rev.1 June 2000)
(Rev.2 Nov. 2005)
(Rev.3 Mar 2023)

Interpretation of SOLAS Chapter II-2, Regulation 10.5.1 and 10.5.2

SOLAS Regulation II-2/10.5.1 reads as follows:

5.1 Machinery spaces containing oil-fired boilers or oil fuel units

5.1.1 Fixed fire-extinguishing systems

Machinery spaces of category A containing oil-fired boilers or oil fuel units shall be provided with any one of the fixed fire-extinguishing systems in paragraph 4.1. In each case, if the engine and boiler rooms are not entirely separate, or if fuel oil can drain from the boiler room into the engine-room, the combined engine and boiler rooms shall be considered as one compartment.

*5.1.2 Additional fire-extinguishing arrangements **

5.1.2.1 There shall be in each boiler room or at an entrance outside of the boiler room at least one portable foam applicator unit complying with the provisions of the Fire Safety Systems Code.

5.1.2.2 There shall be at least two portable foam extinguishers or equivalent in each firing space in each boiler room and in each space in which a part of the oil fuel installation is situated. There shall be not less than one approved foam-type extinguisher of at least 135 L capacity or equivalent in each boiler room. These extinguishers shall be provided with hoses on reels suitable for reaching any part of the boiler room. In the case of domestic boilers of less than 175 kW, or boilers protected by fixed water-based local application fire-extinguishing systems as required by paragraph 5.6, an approved foam-type extinguisher of at least 135 L capacity is not required.

5.1.2.3 In each firing space there shall be a receptacle containing at least 0.1 m³ sand, sawdust impregnated with soda, or other approved dry material, along with a suitable shovel for spreading the material. An approved portable extinguisher may be substituted as an alternative.

*** Refer to Unified interpretation of SOLAS chapter II-2 on the number and arrangement of portable fire extinguishers on board ships (MSC.1/Circ.1275 and Corr.1).*

Note:

1. Changes introduced in Rev.1 are to be implemented by IACS Members and Associates from 1 January 2001.

2. Rev.3 is updated to include the text of SOLAS Regulation II-2/10.5.1.2.2 as adopted by MSC.409(97), which entered into force on 1 January 2020.

SC 30 (cont)

SOLAS Chapter II-2, Regulation 10.5.2 reads as follows:

5.2 Machinery spaces of category A containing internal combustion machinery

5.2.1 Fixed fire-extinguishing systems

Machinery spaces of category A containing internal combustion machinery shall be provided with one of the fixed fire-extinguishing systems in paragraph 4.1.

*5.2.2 Additional fire-extinguishing arrangements **

5.2.2.1 There shall be at least one portable foam applicator unit complying with the provisions of the Fire Safety Systems Code.

5.2.2.2 There shall be in each such space approved foam-type fire extinguishers, each of at least 45 L capacity or equivalent, sufficient in number to enable foam or its equivalent to be directed onto any part of the fuel and lubricating oil pressure systems, gearing and other fire hazards. In addition, there shall be provided a sufficient number of portable foam extinguishers or equivalent which shall be so located that no point in the space is more than 10 m walking distance from an extinguisher and that there are at least two such extinguishers in each such space. For smaller spaces of cargo ships the Administration may consider relaxing this requirement.

** Refer to Unified interpretation of SOLAS chapter II-2 on the number and arrangement of portable fire extinguishers on board ships (MSC.1/Circ.1275 and Corr.1).*

SC 30 (cont)

Interpretation

Number of systems, appliances and extinguishers

Systems, appliances & extinguishers Category A machinery spaces	Fixed fire-extin guish-ing system	Portable foam applica tor*1	Portable foam extin guishers	Add'l portable foam extin guishers	135 / foam extin-guisher	45 / foam extinguis-hers*2	Sand boxes*3
SOLAS paragraph	*10.5.1.1 10.5.2.1*	*10.5.1.2.1 10.5.2.2.1*	*10.5.1.2.2*	*10.5.2.2.2*	*10.5.1.2.2*	*10.5.2.2.2*	*10.5.1.2.3*
Boiler room containing:							
Oil-fired boilers	1	1	2N	NA	1*4	-	N
Oil-fired boilers and oil fuel units	1	1	2N + 2	NA	1*4	-	N
Engine room containing:							
Oil fuel units only	1	-	2	NA	-	-	-
Internal combustion machinery	1	1	x		-	y	-
Internal combustion machinery and oil fuel units	1	1	x		-	y	-
Combined engine/boiler room containing:							
Internal combustion machinery, oil fired boilers and oil fuel units	1	1	(2N + 2) or x whichever is greater		1*4	y*5	N

N = number of firing spaces.
"2N" means that two extinguishers are to be located in each firing space.
x = sufficient number, minimum two in each space, so located that there are at least one portable fire extinguisher within 10 m walking distance from any point.
y = sufficient number to enable foam to be directed onto any part of the fuel and lubricating oil pressure systems, gearing and other fire hazards.

Notes:

*1 May be located at outside of the entrance to the room.
*2 May be arranged outside of the space concerned for smaller spaces of cargo ships.
*3 The amount of sand is to be at least 0.1 m^3. A shovel is to be provided. Sand boxes may be substituted by approved portable fire extinguishers.
*4 Not required for such spaces in cargo ships wherein all boilers contained therein are for domestic services and are less than 175 kW, or boilers are protected by fixed water-based local application fire-extinguishing systems as required by Reg. II-2/10.5.6.
*5 In case of machinery spaces containing both boilers and internal combustion engines (case not explicitly considered in Reg. 10.5) Reg. 10.5.1 and 10.5.2 apply, with the exception that one of the foam fire-extinguishers of at least 45 *L* capacity or equivalent (required by Reg. 10.5.2.2.2) may be omitted on the condition that the 135 *L* extinguisher (required by Reg. 10.5.1.2.2) can protect efficiently and readily the area covered by the 45 *L* extinguisher.
*6 Oil fired machinery other than boilers such as fired inert gas generators, incinerators and waste disposal units are to be considered the same as boilers insofar as the required number and type of fire fighting appliances are concerned.

End of Document

SC31 Fixed high expansion foam fire-extinguishing System

(1985)
(Del
Nov 2005)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

End of Document

SC32 Fixed high expansion foam fire-extinguishing System

(1985) (Rev.1 2001) (Rev.2 Nov 2005) (Del Nov 2022)

Deleted in Nov 2022 because of FSS Code amendments introduced by resolution MSC.327(90) of 25 May 2012.

End of Document

SC33 Special arrangements in machinery spaces

(1985)
(Del
Nov 2005)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

End of Document

SC34 Automatic sprinkler, fire detection and fire alarm system

(1985)
(Rev.1
Nov 2005)

Deleted in Dec 2020

End of Document

SC35 Fixed Fire Detection and Fire Alarm System

(1985) (Rev.1 Nov 2005) (Rev.2 Sept 2009) (Rev.3 July 2013)

FSS Code, Ch. 9, 2.5 System Control Requirements
FSS Code, Ch. 9, 2.5.1 Visual and Audible Fire Signals

2.5.1.1 The activation of any detector or manually operated call point shall initiate a visual and audible fire detection alarm signal at the control panel and indicating units. If the signals have not been acknowledged within 2 min, an audible fire alarm shall be automatically sounded throughout the crew accommodation and service spaces, control stations and machinery spaces of category A. This alarm sounder system need not be an integral part of the detection system.

Interpretation

Power supply to the alarm sounder system when not an integral part of the detection system

1 The alarm sounder system utilised by the Fixed Fire Detection and Fire Alarm System shall be powered from no less than two sources of power, one of which shall be an emergency source of power.

2 In vessels required by SOLAS regulation II-1/42 or 43 to be provided with a transitional source of emergency electrical power the alarm sounder system shall also be powered from this power source.

Note:

1. This UI is to be uniformly implemented by IACS Members and Associates for systems approved on or after 1 July 2010.

2. Revision 3 of UI SC35 is to be implemented for ships contracted for construction on or after 1 January 2014.

3. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC36 Arrangements for oil fuel, lubricating oil and other flammable oils

(1985)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

End of Document

SC37 Arrangements for oil fuel, lubricating oil and other flammable oils

(1985)
(Corr.1
2001)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

End of Document

SC38 Arrangements for oil fuel, lubricating oil and other flammable oils

(Rev.1 2001)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC39 Ventilation systems in ships other than passenger ships carrying more than 36 passengers

(Rev.1 2001) (Rev.2 Nov 2005)

(Reg. II-2/8.2)

Equally effective local closing arrangements means that in case of ventilators these are to be fitted with fire dampers or smoke dampers which could be closed easily within the control station in order to maintain the absence of smoke in the event of fire.
(MSC/Circ. 1120)

◄◄

SC40 Means of escape

(Rev.1 2001)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC41 Means of Escape

(Rev.1 2001) (Rev.2 Nov 2005)

(Reg. II-2/13.4.1.3)

Text:

Reg. II-2/13.4.1.3: " ...In a ship of 1,000 gross tonnage and above, the Administration may dispense with one means of escape from any such space, including a normally unattended auxiliary machinery space, so long as either a door or a steel ladder provides a safe escape route to the embarkation deck, due regard being paid to the nature and location of the space and whether persons are normally employed in that space."

Interpretation:

The above requirement applies only to auxiliary machinery spaces where persons are not normally employed.

End of Document

SC42 Precaution against ignition of explosive petrol and air mixture in closed vehicle spaces, closed ro-ro spaces and special category spaces

(1985) (Rev.1 Nov 2005) (Rev.2 Dec 2007) (Rev.3 Feb 2021)

Interpretation of Regulation 20.3.2.2 of SOLAS Chapter II-2 as amended by IMO resolutions up to MSC.421(98)

SOLAS regulation II-2/20.3.2.2 reads as follows:

(...) *electrical equipment of a type so enclosed and protected as to prevent the escape of sparks* (...)

Interpretation

This is realized by requiring an enclosure of at least IP55, or apparatus suitable for use in Zone 2 areas as defined in IEC 60079-10-1:2015. Refer to IEC 60079-14:2013 for types of protection suitable for use in Zone 2 areas.

Note:

1. Rev.1 of this UI is to be uniformly implemented by IACS Societies from 1 July 2006.

2. Rev.2 of this UI is to be uniformly implemented by IACS Societies from 1 July 2008.

3. Rev.3 of this UI is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2022.

4. The ‘contracted for construction’ date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of ‘contract for construction’, refer to Procedural Requirement (PR) No. 29.

End of Document

SC43 Precaution against ignition of explosive petrol and air mixture in closed vehicle spaces, closed ro-ro spaces and special category spaces

(1985) (Rev.1 Nov 2005) (Rev.2 Dec 2007) (Rev. 3 Feb 2021)

Interpretation of Regulations 20.3.2.1 and 20.3.3 of SOLAS Chapter II-2 as amended by IMO resolutions up to MSC.421(98)

SOLAS regulations II-2/20.3.2.1 and 20.3.3 read as follows:

"(...) *shall be of a type suitable for use in explosive petrol and air mixtures* (...)"*
"(...) *shall be of a type approved for use in explosive petrol and air mixtures* (…)"

** Refer to the recommendations of the international Electrotechnical Commission, in particular publication 60079.*

Interpretation

This is realized by requiring certified safe equipment suitable for use in Zone 1 areas as defined in IEC 60079-10-1:2015 (Gas Group IIA and Temperature Class T3). Refer to IEC 60079-14:2013 for types of protection suitable for use in Zone 1 areas.

Note:

1. Rev.1 of this UI is to be uniformly implemented by IACS Societies from 1 July 2006.

2. Rev.2 of this UI is to be uniformly implemented by IACS Societies from 1 July 2008.

3. Rev.3 of this UI is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2022.

4. The 'contracted for construction' date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of 'contract for construction', refer to Procedural Requirement (PR) No. 29.

End of Document

SC44 Bulkheads within accommodation and service spaces

(1974)
(Rev.1
2001)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC45 Fire integrity of bulkheads and decks

(Rev.1
Nov 2005)

(Reg. II-2/9.2.3 and 9.2.4)

The following spaces are considered to belong to the categories of spaces dealt with by Reg. II-2/9.2.3 and 9.2.4, for the purpose of this regulation, as follows :

- Navigation equipment room (radar transmitter) and battery rooms (1): Control Stations

Note 1: Provision chambers are to be treated as store rooms.

Note 2: Refrigerated provision chambers are to be Category 9 service spaces if thermally insulated with combustible materials, or Category 5 service spaces if thermally insulated with non-combustible materials.

◄◄

SC46 Protection of stairways and lift trunks in accommodation spaces, service spaces and control stations

(Rev.1
Dec 2005)

(Reg. II-2/9.2.3.4.1)

Dumb-waiters are to be regarded as lifts.

(MSC/Circ. 1120)

◄◄

SC47 Restricted use of combustible materials

(Rev.1 2001) Deleted in Nov 2005 because of SOLAS 2000 Amendments.

End of Document

SC48 Fire protection arrangements in cargo spaces

(Rev.1
Nov 2005)

(Reg. II-2/1.6.4 and Reg. II-2/10.7.1.3)

Ships of less than 2000 tons gross tonnage carrying petroleum products having a flash point exceeding 60°C (c.c. test) are not required to be fitted with a fixed fire extinguishing system.

End of
Document

SC49 Fire protection arrangements in cargo spaces

(1985) (Rev.1 Nov 2005) (Rev.2 Feb 2010) (Corr.1 Mar 2010) (Rev.3 May 2021)

SOLAS Reg. II-2/10.7.2 reads as follows:

"7.2 Fixed gas fire-extinguishing systems for dangerous goods

A ship engaged in the carriage of dangerous goods in any cargo spaces shall be provided with a fixed carbon dioxide or inert gas fire-extinguishing system complying with the provisions of the Fire Safety Systems Code or with a fire-extinguishing system which, in the opinion of the Administration, gives equivalent protection for the cargoes carried."

Interpretation

1. Fixed fire-extinguishing systems for cargo spaces specified in Regulation II-2/10.7.2 (Regulation II-2/53.1.3 for ships constructed before 1 July 2002) are required for the following ships engaged in the carriage of dangerous goods:

1.1 Passenger ships constructed on or after 1 September 1984; and

1.2 Cargo ships of 500 gross tonnage and upwards constructed on or after 1 September 1984.

2. Cargo ships of less than 500 gross tonnage are not subject to Regulation II-2/10.7.2 (ex. Regulation II-2/53.1.3) even when such ships are engaged in the carriage of dangerous goods and documents of compliance are issued to such ships according to Regulation II-2/19.4 (ex. Regulation II-2/54.3).

Note:

1. Paragraph 2 of the Rev.2 of this Unified Interpretation is to be uniformly implemented by Members from 1 July 2010.

2. Rev.3 of this UI is to be uniformly implemented by IACS Societies from 1 July 2022.

End of Document

SC50 Special requirements for ships carrying dangerous goods

(Rev.1 2001)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

End of Document

SC51 Special requirements for ships carrying dangerous goods

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC52 Special requirements for ships carrying dangerous goods

(Rev.1 Nov 2005)

(Reg. II-2/19.3.4.2)

1 Exhaust fans are to be of non-sparking type in accordance with IACS Requirement F 29, as revised.
2 The purpose of "suitable wire mesh guards" is to prevent foreign objects from entering into the fan casing. The standard wire mesh guards are to have a size of 13 mm x 13 mm.
(MSC/Circ. 1120)

Note:
Rev.1 of this UI is to be uniformly implemented by IACS Societies from 1 July 2006.

◄◄

SC53 Special requirements for ships carrying dangerous goods

(Chapter II-2, Regulation 54.2.5)

(Cancelled at C27, 1993)

◄◄

SC54 Location and separation of spaces

(Rev 1 1997) (Rev 2 2001) (Rev.3 Nov 2005)

(Reg. II-2/4.5.1)

The expression “cofferdam” means, for the purpose of this regulation, an isolating space between two adjacent steel bulkhead or decks. The minimum distance between the two bulkheads or decks is to be sufficient for safe access and inspection. In order to meet the single failure principle, in the particular case when a corner-to-corner situation occurs, this principle may be met by welding a diagonal plate across the corner. No cargo, wastes or other goods are to be contained in cofferdams.
(MSC/Circ. 1120)

◄◄

SC55 Location and separation of spaces

(Rev 1 2001) (Rev.2 Nov 2005)

(Reg. II-2/4.5.2.2)

1. An access to a deck foam system room (including the foam tank and the control station) can be permitted within the limits mentioned in Reg. II-2/4.5.2.1, provided that the conditions listed in Reg. II-2/4.5.2.2 are satisfied and that the door is located flush with the bulkhead.

2. The navigation bridge external doors and windows which are located within the limits of regulation 4.5.2.1 are to be tested for gastightness. If a water hose test is applied, the following may be taken as a guide:
- nozzle diameter: minimum 12 mm;
- water pressure just before the nozzle: not less than 0.2 N/mm^2; and
- distance between the nozzle and the doors or windows: maximum 1.5 m.
(MSC/Circ. 1120)

◄◄

SC56 Venting, purging, gas freeing and ventilation

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC58 Venting, purging, gas freeing and ventilation

(Rev 1 2001) (Rev.2 Nov 2005)

(Reg. II-2/4.5.6.3)

1. The outlets mentioned in Reg. II-2/4.5.6.3 are to be located in compliance with Reg. II-2/4.5.3.4.1.3 as far as the horizontal distance is concerned.

2. Reference is made to MSC/Circ.677 - Revised standards for the design, testing and locating of devices to prevent the passage of flame into cargo tanks in oil tankers, and MSC/Circ.450/Rev.1 - Revised factors to be taken into consideration when designing cargo tank venting and gas-freeing arrangements.
(MSC/Circ. 1120)

◄◄

SC57 Venting, purging, gas freeing and ventilation

(1985)
(Rev.1
Nov 2005)
(Rev.2
Feb 2021)

Interpretation of Regulations 4.5.3.4.1.3 and 4.5.3.4.1.4 of SOLAS Chapter II-2 as amended by IMO resolutions up to MSC.421(98)

SOLAS regulations II-2/4.5.3.4.1.3 and II-2/4.5.3.4.1.4 read as follows.

(...) to enclosed spaces containing a source of ignition and from deck machinery, which may include anchor windlass and chain locker openings, and equipment which may constitute an ignition hazard.

Interpretation

Electrical equipment fitted in compliance with IEC 60092-502:1999 is not considered a source of ignition or ignition hazard.
(MSC.Circ.1120 amended by MSC.1/Circ.1436 and MSC.1/Circ.1510)

Note:

1. Rev.2 of this UI is to be uniformly implemented by IACS Societies on ships contracted for construction on and after 1 July 2022.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC59 Cargo tank protection

(1985)
(Del
Nov 2005)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

End of Document

SC60 Fixed deck foam systems

(1985)
(Corr.1 2001)
(Rev.1 Nov 2005)
(Del Nov 2022)

Deleted in Nov 2022 because of FSS Code amendments introduced by resolution MSC.339(91) of 30 November 2012.

End of Document

SC61 Fixed deck foam systems

(1985)
(Rev.1 1994)
(Rev.2 Nov 2005)

(FSS code, Ch. 14, 2.1.3)

Deleted in March 2021 because this content has been consolidated into FSS Code, Ch 14/2.1.3, as amended by Res. MSC.339(91).

SC62 Inert gas systems

(1985)
(Rev.1 Nov 2005)
(Rev.2 Dec 2020)

Interpretation of the paragraphs 2.2.3.2.7 and 2.2.3.2.8 of Chapter 15 of the IMO International Code for Fire Safety Systems (Fire Safety Systems Code) (Resolution MSC.98(73) as amended by IMO Resolutions up to MSC.410(97))

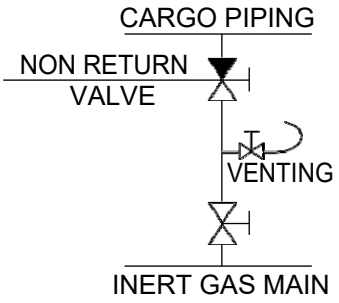
The Fire Safety Systems Code Chapter 15, 2.2.3.2.7 and 2.2.3.2.8 read as follows.

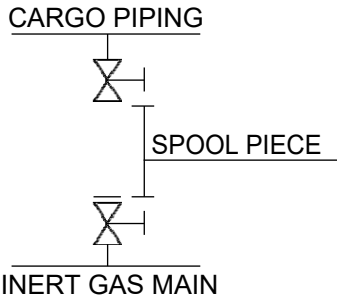
2.2.3.2.7 If a connection is fitted between the inert gas main and the cargo piping system, arrangements shall be made to ensure an effective isolation having regard to the large pressure difference which may exist between the systems. This shall consist of two shutoff valves with an arrangement to vent the space between the valves in a safe manner or an arrangement consisting of a spool-piece with associated blanks.

2.2.3.2.8 The valve separating the inert gas main from the cargo main and which is on the cargo main side shall be a non-return valve with a positive means of closure.

Interpretation

As a guide, the effective isolation required by this regulation may be achieved by the two arrangements shown in the following sketches.





Note:

1. Rev.2 of this Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on and after 1 January 2022.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC63 Pre-discharge alarm of fixed gas fire extinguishing systems

(1985)
(Rev.1 2001)
(Rev.2 Nov 2005)

Deleted in January 2021

End of Document

SC64
(1985)
(Rev.1
Nov 2005)
(Rev.2
June 2021)

Fire dampers in ventilation ducts

Interpretation of SOLAS regulation II-2/9.7.3.1 as amended by resolution MSC.365(93)

SOLAS regulation II-2/9.7.3.1 reads as follows

9.7.3.1 Ducts passing through "A" class divisions shall meet the following requirements:

.1 where a thin plated duct with a free cross sectional area equal to, or less than, 0.02 m^2 passes through "A" class divisions, the opening shall be fitted with a steel sheet sleeve having a thickness of at least 3 mm and a length of at least 200 mm, divided preferably into 100 mm on each side of a bulkhead or, in the case of a deck, wholly laid on the lower side of the decks penetrated;

.2 where ventilation ducts with a free cross-sectional area exceeding 0.02 m^2, but not more than 0.075 m^2, pass through "A" class divisions, the openings shall be lined with steel sheet sleeves. The ducts and sleeves shall have a thickness of at least 3 mm and a length of at least 900 mm. When passing through bulkheads, this length shall be divided preferably into 450 mm on each side of the bulkhead. These ducts, or sleeves lining such ducts, shall be provided with fire insulation. The insulation shall have at least the same fire integrity as the division through which the duct passes; and

.3 automatic fire dampers shall be fitted in all ducts with a free cross-sectional area exceeding 0.075 m^2 that pass through "A" class divisions. Each damper shall be fitted close to the division penetrated and the duct between the damper and the division penetrated shall be constructed of steel in accordance with paragraphs 7.2.4.1.1 and 7.2.4.1.2. The fire damper shall operate automatically, but shall also be capable of being closed manually from both sides of the division. The damper shall be fitted with a visible indicator which shows the operating position of the damper. Fire dampers are not required, however, where ducts pass through spaces surrounded by "A" class divisions, without serving those spaces, provided those ducts have the same fire integrity as the divisions which they penetrate. A duct of cross-sectional area exceeding 0.075 m^2 shall not be divided into smaller ducts at the penetration of an "A" class division and then recombined into the original duct once through the division to avoid installing the damper required by this provision.

Interpretation

Ducts or pipes with free sectional area of 0.075 m^2 or less need to be fitted with fire damper at their passage through Class "A" divisions in those cases indicated in Regulations 9.7.2.2 and 9.7.2.3. The fire damper can be omitted if the duct is arranged in compliance with the requirements of 9.7.2.4.2.1 and 9.7.2.4.2.2.

Note:

1. This UI is to be uniformly implemented by IACS Societies for ventilation ducts fitted on or after 1 July 2022.

End of Document

SC65 Ventilation ducts for galley

(Rev.1 2001)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

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SC66 Integrity of emergency generator space

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC67 (Rev.1 2001) Doors in fire-resisting corridor bulkheads of cargo ships

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC68 Cofferdams adjacent to slop tanks of combination carriers

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC69 Arrangement for pumping of slops in combination carriers in dry cargo mode

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC70 Cargo tank vent systems and selection of electrical equipment

(1985)
(Rev.1 May 2001)
(Rev.2 Nov 2005)
(Rev.3 Oct 2010)
(Rev.4 Feb 2021)
(Corr.1 Apr 2023)

Interpretation of SOLAS II-2/11.6.2.2 and SOLAS II-2/4.5.4.3.1

SOLAS regulation II-2/11.6.2 reads as follows.

6.2 Openings for small flow by thermal variations

Openings for pressure release required by paragraph 6.1.1 shall:

.1 have as great a height as is practicable above the cargo tank deck to obtain maximum dispersal of flammable vapours, but in no case less than 2 m above the cargo tank deck; and

.2 Be arranged at the furthest distance practicable but not less than 5 m from the nearest air intakes and openings to enclosed spaces containing a source of ignition and from deck machinery and equipment which may constitute an ignition hazard. Anchor windlass and chain locker openings constitute an ignition hazard.

For tankers constructed on or after 1 January 2017, the openings shall be arranged in accordance with regulation 4.5.3.4.1.

Note:

1. Changes introduced in Rev.1 are to be implemented by IACS Members and Associates from 1 July 2001.

2. Rev.3 of this UI is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2012.

3. Rev.4 of this UI is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2022.

4. The ‘contracted for construction’ date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of ‘contract for construction’, refer to Procedural Requirement (PR) No. 29.

SC70 (cont)

Interpretation:

Area Classification is to be carried out in accordance with the principles laid down in IEC 60092-502:1999.

A1 Areas on open deck, or semi-enclosed spaces on open deck, within 3m of cargo tank ventilation outlets which permit the flow of small volumes of vapour or gas mixtures caused by thermal variation are defined as Zone 1 as specified by IEC 60092-502:1999 para 4.2.2.7.

A2 Areas within 2m beyond the zone specified in A1 above are to be considered Zone 2 (as opposed to 1.5m as specified by IEC 60092-502:1999 para 4.2.3.1).

A3 Electrical equipment or cables shall not normally be installed in hazardous areas. Where essential for operational purposes, electrical equipment may be installed in accordance with IEC 60092-502:1999.

SOLAS regulation II-2/4.5.3.4.1 reads as follows.

.3 Not less than 10 m measured horizontally from the nearest air intakes and openings to enclosed spaces containing a source of ignition and from deck machinery and equipment which may constitute an ignition hazard.

Interpretation:

Area Classification is to be carried out in accordance with the principles laid down in IEC 60092-502:1999.

B1 Areas on open deck, or semi-enclosed spaces on open deck, within a vertical cylinder of unlimited height and 6m radius centred upon the centre of the outlet, and within a hemisphere of 6m radius below the outlet which permit the flow of large volumes of vapour, or gas mixtures during loading/discharging/ballasting are defined as Zone 1 as specified by IEC 60092-502:1999 para 4.2.2.8.

B2 Areas within 4m beyond the zone specified in B1 above are defined as Zone 2 as specified by IEC 60092-502:1999 para 4.2.3.2.

B3 Electrical equipment or cables shall not normally be installed in hazardous areas. Where essential for operational purposes, electrical equipment may be installed in accordance with IEC 60092-502:1999.

End of Document

SC71 Tank level gauging systems

(1985)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC72 In a ship engaged regularly in voyages of short duration

(1985)
(Rev.1 Nov 2005)

(Chapter II-1, Regulation 42.2.7, 43.2.6.2 [1981])

Dispensation to the reduced period of availability of the emergency source of power can be given to:

1 Vessels with a class notation "Coastal Service"

2 Vessels engaged in voyages where the route is no greater than 20 nautical miles offshore.

◄◄

SC73 Fire protection of weather decks

(1985)
(Rev.1 May, 2001)
(Rev.2 Nov 2005)

Reg. II-2/20.4 and 20.6)

The requirements for a fixed fire extinguishing system, fire detection, foam applicators and portable extinguishers need not apply to weather decks used for the carriage of vehicle with fuel in their tanks.

Note:
Rev.2 of this UI is to be uniformly implemented by IACS Societies from 1 July 2006.

◄◄

SC74 Fire protection arrangements in cargo spaces including special category spaces

(Rev.1 2001)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC75 Fire protection arrangements in cargo spaces

(Add.1 2001)
(Rev.1 Nov 2005)

(Reg. II-2/20.3.1.3)

The requirements to indicate any loss of ventilation capacity is considered complied with by an alarm on the bridge, initiated by fall-out of starter relay of fan motor.
(MSC/Circ. 1120)

◄◄

SC76 Engine bearing temperature monitors

(Chapter II-1, Regulation 47.2 [1981])

The wording "or engine bearing temperature monitors" is understood to include all bearings i.e. journal and connecting rod bearings.

◄◄

SC77 Cargo tanks overflow control system use of spill valves

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC78 Fire safety measures for tankers

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

End of Document

SC79 Certified Safe Type Electrical Equipment for Ships Carrying Dangerous Goods

(1993)
(Rev.1 May 2004)
(Rev.2 Sept 2005)
(Rev.3 Aug 2006)
(Rev.4 Oct 2015)
(Rev.5 Feb 2021)

Interpretation of Regulation 19.3.2 of SOLAS Chapter II-2 as amended by IMO resolutions up to MSC.421(98)

SOLAS Regulation II-2/19.3.2 reads as follows.

3.2 Sources of ignition

Electrical equipment and wiring shall not be fitted in enclosed cargo spaces or vehicle spaces unless it is essential for operational purposes in the opinion of the Administration. However, if electrical equipment is fitted in such spaces, it shall be of a certified safe type for use in the dangerous environments to which it may be exposed unless it is possible to completely isolate the electrical system (e.g. by removal of links in the system, other than fuses). Cable penetrations of the decks and bulkheads shall be sealed against the passage of gas or vapour. Through runs of cables and cables within the cargo spaces shall be protected against damage from impact. Any other equipment which may constitute a source of ignition of flammable vapour shall not be permitted.*

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* *Refer to the recommendations of the International Electrotechnical Commission, in particular, publication IEC 60092 on Electrical installations in ships.*

Note:

1. Refer to IMO MSC/Circ.1120, Unified Interpretations of SOLAS CH.II-2, The FSS Code, The FTP Code and related Fire Test Procedures, page 16.

2. Rev.1 of UI SC79 is to be uniformly implemented by IACS Members and Associates from 1 January 2005.

3. Rev.2 of UI SC79 is to be uniformly implemented by IACS Members and Associates from 1 April 2006.

4. Rev.3 of UI SC79 is editorially amended to refer to MSC.1/Circ.1203.

5. Rev.4 of UI SC79 is to be uniformly implemented by IACS Societies from 1 January 2017.

6. Rev.5 of UI SC79 is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2022.

7. The ‘contracted for construction’ date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of ‘contract for construction’, refer to Procedural Requirement (PR) No. 29.

SC79
(cont)

Interpretation

1. Reference is to be made to IEC 60092-506:2003.

2. For pipes having open ends (e.g. ventilation and bilge pipes, etc.) in a hazardous area, the pipe itself is to be classified as hazardous area. See IEC 60092-506:2003 table B1, item B.

3. When carrying flammable liquids having flashpoints less than 23°C as Class 3, 6.1 or 8 in cargo spaces, the bilge pipes with flanges, valves, pumps, etc. constitute a source of release and the enclosing spaces (e.g. pipe tunnels, bilge pump rooms, etc.) are to be classified as an extended hazardous area (comparable with Zone 2) unless these spaces are continuously mechanically ventilated with a capacity for at least six air changes per hour. Except where the space is protected with redundant mechanical ventilation capable of starting automatically, equipment not certified for Zone 2 are to be automatically disconnected following loss of ventilation while essential systems such as bilge and ballast systems are to be certified for Zone 2.

   Where redundant mechanical ventilation is employed, equipment and essential systems not certified for Zone 2 shall be interlocked so as to prevent inadvertent operation if the ventilation is not operational. Audible and visible alarms shall be provided at a manned station if failure occurs.

End of Document

SC80 Fire-Extinguishing Arrangement for Paint Lockers

(Rev.1 2001)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

SC81 Drainage of enclosed spaces situated on the bulkhead deck

(1993)
(Rev.1
Feb 2010)

(Chapter II-1, Regulation 35-1.2.6.1, Res. MSC.194(80))

SOLAS Regulation II-1/35-1.2.6.1 (Res. MSC.194(80)) reads:

Where the freeboard to the bulkhead deck or the freeboard deck, respectively, is such that the deck edge is immersed when the ship heels more than 5°, the drainage shall be by means of a sufficient number of scuppers of suitable size discharging directly overboard, fitted in accordance with the requirements of regulation 15 in the case of a passenger ship and the requirements for scuppers, inlets and discharges of the International Convention on Load Lines in force in the case of a cargo ship.

Interpretation

The drainage of such enclosed spaces to suitable spaces below deck is also permitted provided such drainage is arranged in accordance with the provisions of the Regulation 22(2), ICLL 1966 (1988 Protocol).

Note:

1. This Unified Interpretation is to be applied by all Members and Associates on ships contracted for construction on or after 1 July 2010.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC82 Protection against noise

(1993)

(Chapter II-1, Regulation 36)

Deleted 1 July 2014.

End of Document

SC83 Continuity of the Supply when Transformers Constitutes an Essential Part of the Electrical Supply System

(Chapter II-1, Regulation 41.1.5)

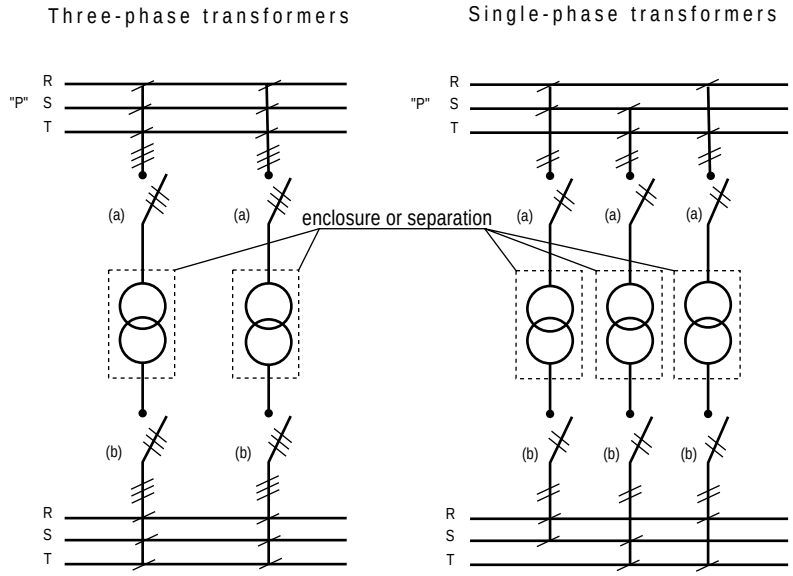
The number, capacity and arrangement of power transformers supplying auxiliary electrical systems are to be such that with any one transformer not in operation, the remaining transformer(s) is (are) sufficient to ensure the safe operation of those services necessary to provide normal operational conditions of propulsion, safety and minimum comfortable conditions of habitability are also to be ensured, which include at least adequate services for cooking, heating domestic refrigeration, mechanical ventilation, sanitary and fresh water.

Each transformer required is to be located as a separate unit with separate enclosure of equivalent, and is to be served by separate circuits on the primary and secondary sides. Each primary circuit is to be be provided with switch-gear and protection devices in each phase.

Each of the secondary circuits is to be provided with a multipole isolating switch.

Transformers supplying bow thruster are excluded.

EXAMPLES:



(a) switchgear and protection devices
(b) multipole isolating switch

SC84 Purpose Built Container Space

(Rev.1 2001) (Rev.2 Nov 2005)

(Reg. II-2/19.2.2.2)

A purpose built container space is a cargo space fitted with cell guides for stowage securing of containers.
(MSC/Circ. 1120)

◄ ◄

SC85 Ro-Ro Space

(1993)
(Rev.1
Nov 2005)
(Rev.2
May 2021)

(SOLAS Reg. II-2/19.2.2)

SOLAS regulation II-2/19.2.2. reads:

"2.2 The following ship types and cargo spaces shall govern the application of tables 19.1 and 19.2:

.1 ships and cargo spaces not specifically designed for the carriage of freight containers, but intended for the carriage of dangerous goods in packaged form including goods in freight containers and portable tanks;

.2 purpose-built container ships and cargo spaces intended for the carriage of dangerous goods in freight containers and portable tanks;

.3 ro-ro ships and ro-ro spaces intended for the carriage of dangerous goods;

.4 ships and cargo spaces intended for the carriage of solid dangerous goods in bulk; and

.5 ships and cargo spaces intended for carriage of dangerous goods other than liquids and gases in bulk in shipborne barges."

Interpretation

Ro-ro spaces include special category spaces (Reg.3.46) and vehicle spaces (3.49).

Note:

1. Rev.2 of this UI is to be uniformly implemented by IACS Societies from 1 July 2022.

End of Document

SC86 Weather Decks

(1993)
(Rev.1
Nov 2005)

Deleted in Nov 2020 because “Weather Decks” has been now defined in SOLAS Reg.II-2/3.50.

End of Document

SC87 Certification of Carriage of Solid Dangerous Bulk Cargoes

(1993)
(Rev.1 Nov 2005)
(Rev.2 Mar 2021)

SOLAS Regulation II-2/19.3 and 19.4

Certification for carriage of solid dangerous bulk cargoes covers only those cargoes listed in Group B in the IMSBC Code except cargoes classified solely as MHB. Other solid dangerous bulk cargoes may only be permitted subject to acceptance by the Administrations involved.
(MSC/Circ. 1120)

Note:

1. Rev.2 of the UI is editorially amended to refer to the IMSBC Code.

End of Document

SC 88 (Rev.1 2001) Fire Water Supply Capacity

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

End of Document

SC 89
(Rev.1 1996)
(Rev.2 Nov 2005)
(Rev.3 Feb 2011)
(Rev.4 June 2018)
(Rev.5 May 2024)

Ventilation of Cargo Spaces

SOLAS Reg. II-2/19.3.4

3.4 Ventilation arrangement

3.4.1 Adequate power ventilation shall be provided in enclosed cargo spaces. The arrangement shall be such as to provide for at least six air changes per hour in the cargo space based on an empty cargo space and for removal of vapours from the upper or lower parts of the cargo space, as appropriate.

3.4.2 The fans shall be such as to avoid the possibility of ignition of flammable gas air mixtures. Suitable wire mesh guards shall be fitted over inlet and outlet ventilation openings.

3.4.3 Natural ventilation shall be provided in enclosed cargo spaces intended for the carriage of solid dangerous goods in bulk, where there is no provision for mechanical ventilation.

IMSBC Code, Section 1 General provisions

1.7 Definitions

Ventilation means exchange of air from outside to inside a cargo space.

*.1 Continuous Ventilation means ventilation that is operating at all times.**

IMSBC Code, Section 3 Safety of personnel and ship

3.5 Ventilation

3.5.4 Ventilation openings shall be provided in holds intended for the carriage of cargoes that require continuous ventilation. Such openings shall comply with the requirements of the Load Line Convention as amended for openings not fitted with means of closure.*

Footnote:

** The IMSBC Code requires continuous ventilation for the following cargoes:*

ALUMINIUM FERROSILICON POWDER UN 1395
ALUMINIUM SILICON POWDER, UNCOATED UN 1398
ALUMINIUM SMELTING / REMELTING BY- PRODUCTS, PROCESSED
ALUMINIUM SMELTING BY-PRODUCTS or ALUMINIUM REMELTING BY-PRODUCTS UN 3170
FERROPHOSPHORUS (including BRIQUETTES)
FERROSILICON (25% ≤ Silicon < 30% or ≥ 90% Silicon)
FERROSILICON UN 1408 (30% ≤ Silicon < 90%)
ZINC ASHES UN 1435

Note:

1. Rev.3 of this UI shall be uniformly implemented by IACS Societies on or after 1 January 2012.
2. Rev.4 of this UI shall be uniformly implemented by IACS Societies on or after 1 January 2019.

SC 89 (cont)

3. Rev.5 of this UI shall be uniformly implemented by IACS Societies on or after 1 January 2025.

IMSBC Code, Appendix 1, Individual schedules of solid bulk cargoes

DIRECT REDUCED IRON (D) (By-product fines with moisture content of at least 2%)

Ventilation

During the voyage, mechanical surface ventilation shall be provided in each cargo hold carrying this cargo, in order to keep the hydrogen concentration less than 1% by volume (25% LEL).

Mechanical surface ventilation shall be available at all times, either by compliance with the Load Line Convention, Annex 1, Regulation 19(3), or by adopting measures to avoid a situation whereby the cargo hold mechanical ventilation system could not be used due to rough seas, such measures to be in keeping with good seamanlike practice as for similar cargoes emitting intermittent combustible gases and advice from weather routing service providers.

Interpretation

If adjacent spaces are not separated from cargo spaces by gastight bulkheads or decks then they are considered as part of the enclosed cargo space and the ventilation requirements shall apply to the adjacent space as for the enclosed cargo space itself.

Where the IMSBC Code requires:

- 2 fans per hold, a common ventilation system with 2 fans connected is acceptable.

- continuous ventilation or ventilation at all times, this does not prohibit ventilators from being fitted with a means of closure as required for fire protection purposes under SOLAS II-2/5.2.1.1 provided the minimum height to the ventilator opening is to be in accordance with ICLL/19.3 (4.5 m for Position 1 and 2.3 m for Position 2).

End of Document

SC90 Bilge Drainage

(Rev.1
Nov 2005)

(Reg. II-2/19.3.5)

a) Cargo spaces intended for carriage of flammable liquids with flash point less than 23 degrees C or toxic liquids shall be fitted with a fixed bilge drainage system independent or separated from the bilge system in machinery space and located outside of the machinery space.

If a single bilge drainage system completely independent of the machinery space is provided, the system is to comply with the Rule requirement to redundancy based on the size of the space or spaces which it services.

b) Electrical equipment in the space containing bilge pumps serving cargo spaces intended for carriage of flammable or toxic liquids is to be according to unified interpretation SC79.

◄◄

SC91 Personal Protection - Protective Clothing (SOLAS Reg. II-2/19.3.6.1)

(1993)
(Rev.1
Dec 2005)
(Corr.1
Nov 2020)

a) The required protective clothing is for emergency purposes.

b) For solid bulk cargoes the protective clothing is to satisfy the equipment requirements specified in Appendix 1 of the IMSBC Code for the individual substances. For packaged goods the protective clothing is to satisfy the equipment requirements specified in emergency procedures (EmS) of the Supplement to IMDG Code for the individual substances.

(MSC/Circ.1120)

End of Document

SC92 Personal Protection - Self-Contained Breathing Apparatus

(Rev.1 Nov 2005)

(Reg. II-2/19.3.6.2)

For each of the breathing apparatuses, two complete sets of air bottles are required. These spare bottles are to be in addition to the spare bottles required for fireman's outfit.

SC93 Enclosure of stern tubes on cargo ships

(1994)
(Rev.1 Feb 2010)
(Rev.2 Feb 2021)

(Chapter II-1, Regulation 12.11)

Text:

"In all cases, stern tubes shall be enclosed in watertight spaces of moderate volume. In passenger ships the stern gland shall be situated in a watertight shaft tunnel or other watertight space separate from the stern tube compartment and of such volume that, if flooded by leakage through the stern gland, the bulkhead deck will not be immersed. In cargo ships, other measures to minimize the danger of water penetrating into the ship in case of damage to stern tube arrangements may be taken at the discretion of the Administration".

Interpretation:

In cargo ships a stern tube enclosed in a watertight space of moderate volume, such as an afterpeak tank, where the inboard end of the stern tube extends through the afterpeak/engine room watertight bulkhead into the engine room is considered to be an acceptable solution satisfying the requirement of Chapter II-1, Regulation 12.11 of SOLAS 1974, as amended, provided the inboard end of the stern tube is effectively sealed at the afterpeak/engine room bulkhead by means of an approved watertight/oiltight gland system.

Note:

1. Rev.1 of this UI is to be uniformly implemented by IACS Members and Associates for ships the keels of which are laid or which are at a similar stage of construction on or after 1 July 2010.

2. Rev.2 is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2021 or the delivery of which is on or after 1 January 2024.

3. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC94 Mechanical, hydraulic and electrical independency of steering gear control systems

(1994)
(Rev.1 Feb 2010)
(Rev.2 June 2016)
(Corr.1 Jan 2018)

(Chapter II-1, Regulation 29)

1. Scope

The interpretation applies to steering gear control systems, as defined in SOLAS regulation II-1, 3/1, for the main and auxiliary steering gear, operable from the navigation bridge, for which SOLAS stipulates two steering gear control systems independent of each other (SOLAS II-1, Reg. 29/6.1, 29/7.2, 29/7.3, Reg. 29/15 and Reg. 29/16).

SOLAS II-1, Reg. 29/6.1 reads:

"Where the main steering gear comprises two or more identical power units, an auxiliary steering gear need not be fitted, provided that:

.1 in a passenger ship, the main steering gear is capable of operating the rudder as required by paragraph 3.2 while any one of the power units is out of operation;

.2 in a cargo ship, the main steering gear is capable of operating the rudder as required by paragraph 3.2 while operating with all power units;

.3 the main steering gear is so arranged that after a single failure in its piping system or in one of the power units the defect can be isolated so that steering capability can be maintained or speedily regained."

SOLAS II-1, Regs. 29/7.2 and 7.3 read:

"7 Steering gear control shall be provided:

.2 where the main steering gear is arranged in accordance with paragraph 6, by two independent control systems, both operable from the navigation bridge. This does not require duplication of the steering wheel or steering lever. Where the control system consists of a hydraulic telemotor, a second independent system need not be fitted, except in a tanker, chemical tanker or gas carrier of 10,000 gross tonnage and upwards;

Note:

1. Amendments introduced in Rev.1 are to be uniformly implemented by IACS Societies for ships contracted for construction on or after 1 July 2011.

2. Rev.2 of this UI is to be uniformly implemented by IACS Societies for ships contracted for construction on or after 1 July 2017.

3. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

SC94
(cont)

.3 for the auxiliary steering gear, in the steering gear compartment and, if power-operated, it shall also be operable from the navigation bridge and shall be independent of the control system for the main steering gear."

SOLAS II-1, Regs. 29/15 and 16 read:

"15 In every tanker, chemical tanker or gas carrier of 10,000 gross tonnage and upwards and in every other ship of 70,000 gross tonnage and upwards, the main steering gear shall comprise two or more identical power units complying with the provisions of paragraph 6.

16 Every tanker, chemical tanker or gas carrier of 10,000 gross tonnage and upwards shall, subject to paragraph 17, comply with the following:

.1 the main steering gear shall be so arranged that in the event of loss of steering capability due to a single failure in any part of one of the power actuating systems of the main steering gear, excluding the tiller, quadrant or components serving the same purpose, or seizure of the rudder actuators, steering capability shall be regained in not more than 45 s after the loss of one power actuating system;

.2 the main steering gear shall comprise either:

.2.1 two independent and separate power actuating systems, each capable of meeting the requirements of paragraph 3.2; or

.2.2 at least two identical power actuating systems which, acting simultaneously in normal operation, shall be capable of meeting the requirements of paragraph 3.2. Where necessary to comply with this requirement, interconnection of hydraulic power actuating systems shall be provided. Loss of hydraulic fluid from one system shall be capable of being detected and the defective system automatically isolated so that the other actuating system or systems shall remain fully operational;

.3 steering gears other than of the hydraulic type shall achieve equivalent standards."

Following requirements of:

- SOLAS Chap. II-1, Reg. 3/1, 3/3, 3/13 and Reg. 29

have been considered, as far as containing requirements for the independency of the control systems.

2. Basic Requirements

Two independent steering gear control systems shall be provided and shall be so arranged that a mechanical or electrical failure in one of them will not render the other one inoperative.

The term *"Steering gear control system"* as defined in SOLAS Part A, Regulation 3/1 (UR M42 Appendix item 1) shall be understood to cover "the equipment required to control the steering gear *power actuating system*".

SC94 (cont)

3. Separation of Control Systems and Components

3.1 General

Wires, terminals and the components for duplicated steering gear control systems installed in units, control boxes, switchboards or bridge consoles shall be separated as far as practicable. Where physical separation is not practicable, separation may be achieved by means of a fire retardant plate.

3.2 Steering wheel or steering lever

All electric components of the steering gear control systems shall be duplicated. This does not require duplication of the steering wheel or steering lever.

3.3 Steering mode selector switch

If a joint steering mode selector switch (uniaxial switch) is employed for both steering gear control systems, the connections for the circuits of the control systems shall be divided accordingly and separated from each other by an isolating plate or by air gap.

3.4 Follow-up amplifier

In the case of double follow-up control (see Annex, example 2), the amplifiers shall be designed and fed so as to be electrically and mechanically separated. In the case of non-follow-up control and follow-up control, it shall be ensured that the follow-up amplifiers are protected selectively (see Annex, example 3).

3.5 Additional control systems

Control circuits for additional control systems, e.g. steering lever or autopilot shall be designed for all - pole disconnection (see Annex, examples 1, 2 and 3).

3.6 Feed-back units and limit switches

The feed-back units and limit switches, if any, for the steering gear control systems shall be separated electrically and mechanically connected to the rudder stock or actuator separately.

3.7 Hydraulic control components

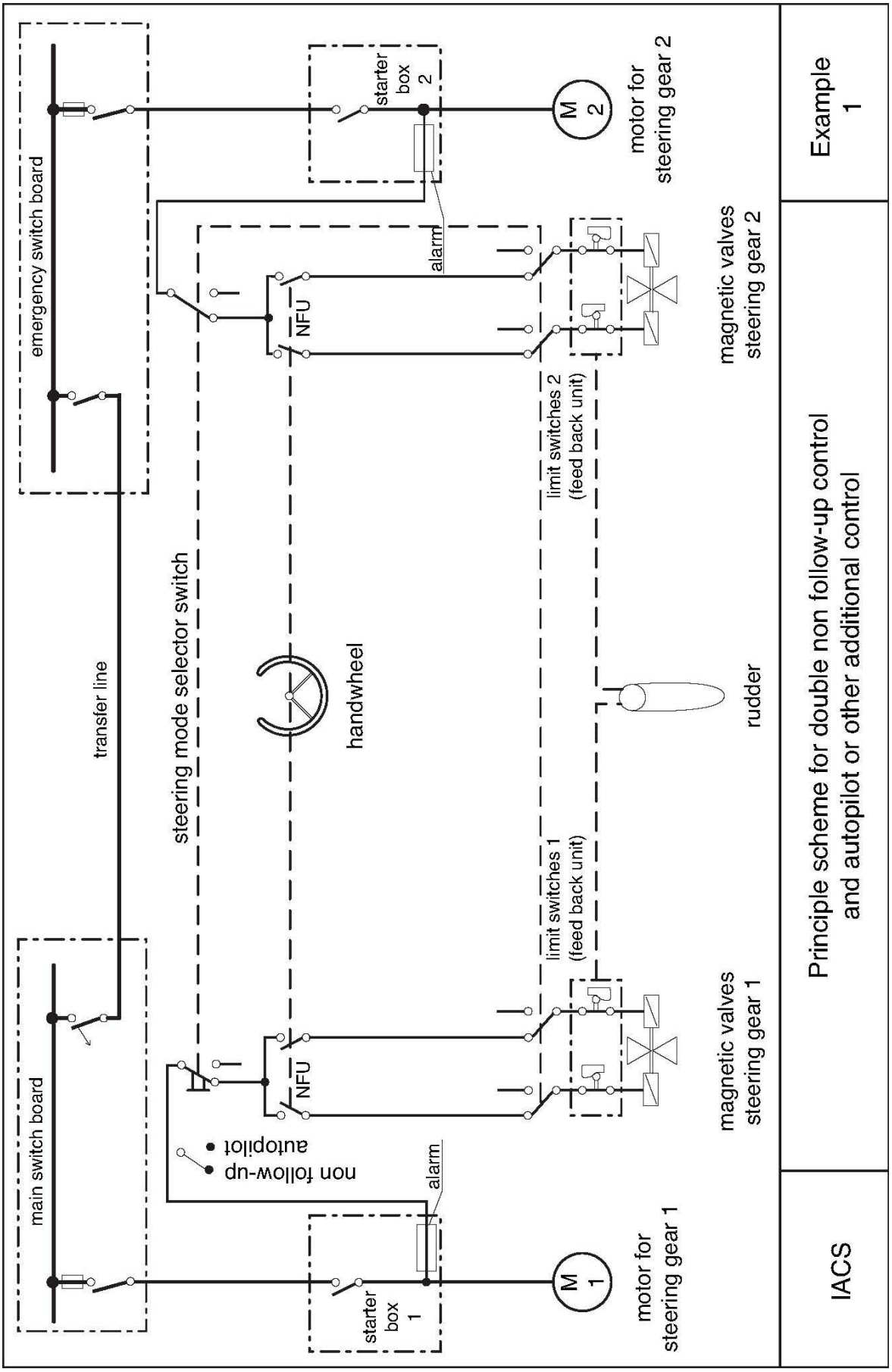
Hydraulic system components in the power actuating or hydraulic servo systems controlling the power systems of the steering gear (e.g. solenoid valves, magnetic valves) are to be considered as part of the steering gear control system and shall be duplicated and separated.

Hydraulic system components in the steering gear control system that are part of a power unit may be regarded as being duplicated and separated when there are two or more separate power units provided and the piping to each power unit can be isolated.

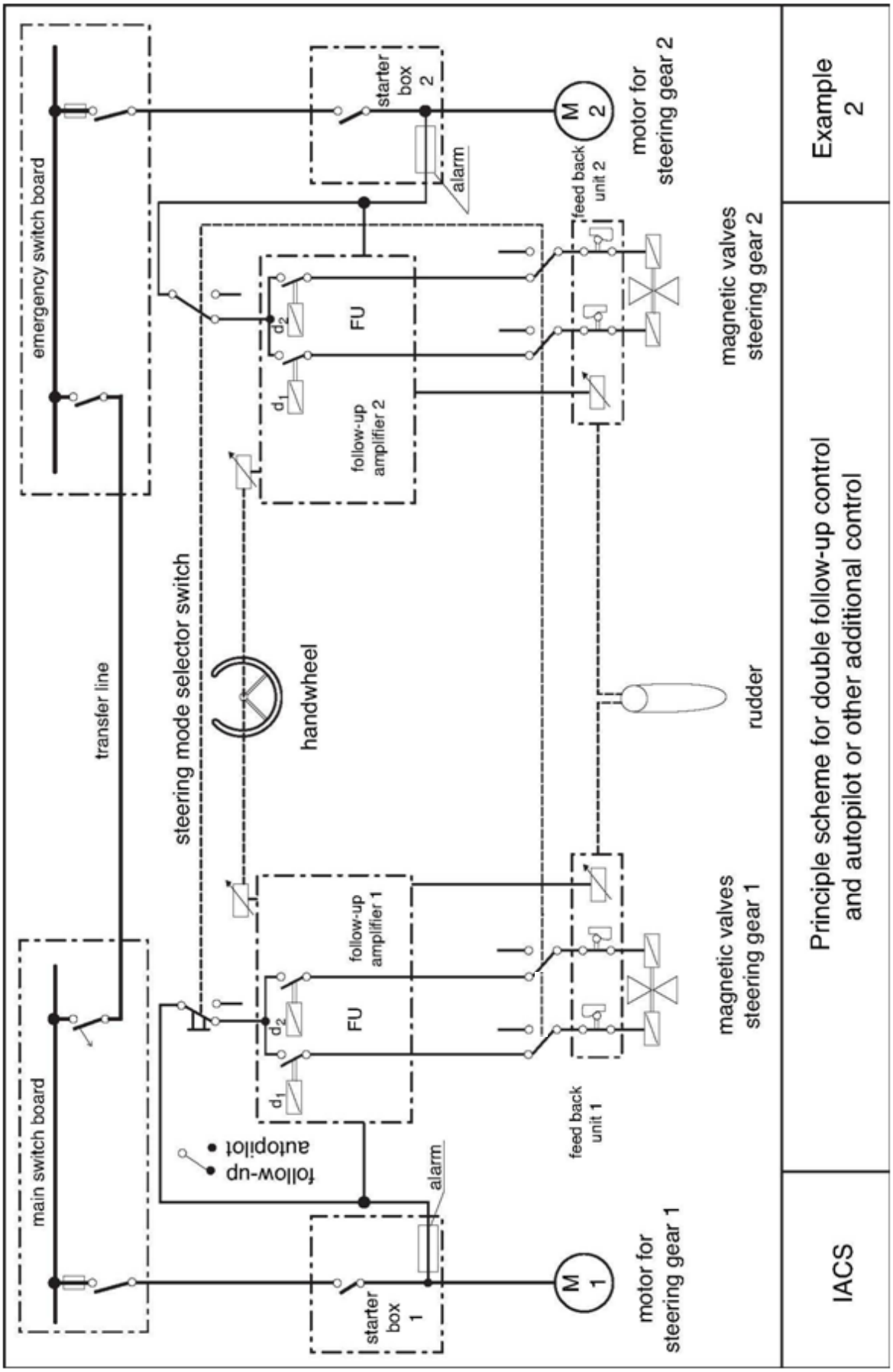
4. Annex

Reference should be made to examples 1, 2 and 3, which can be regarded as basic design.

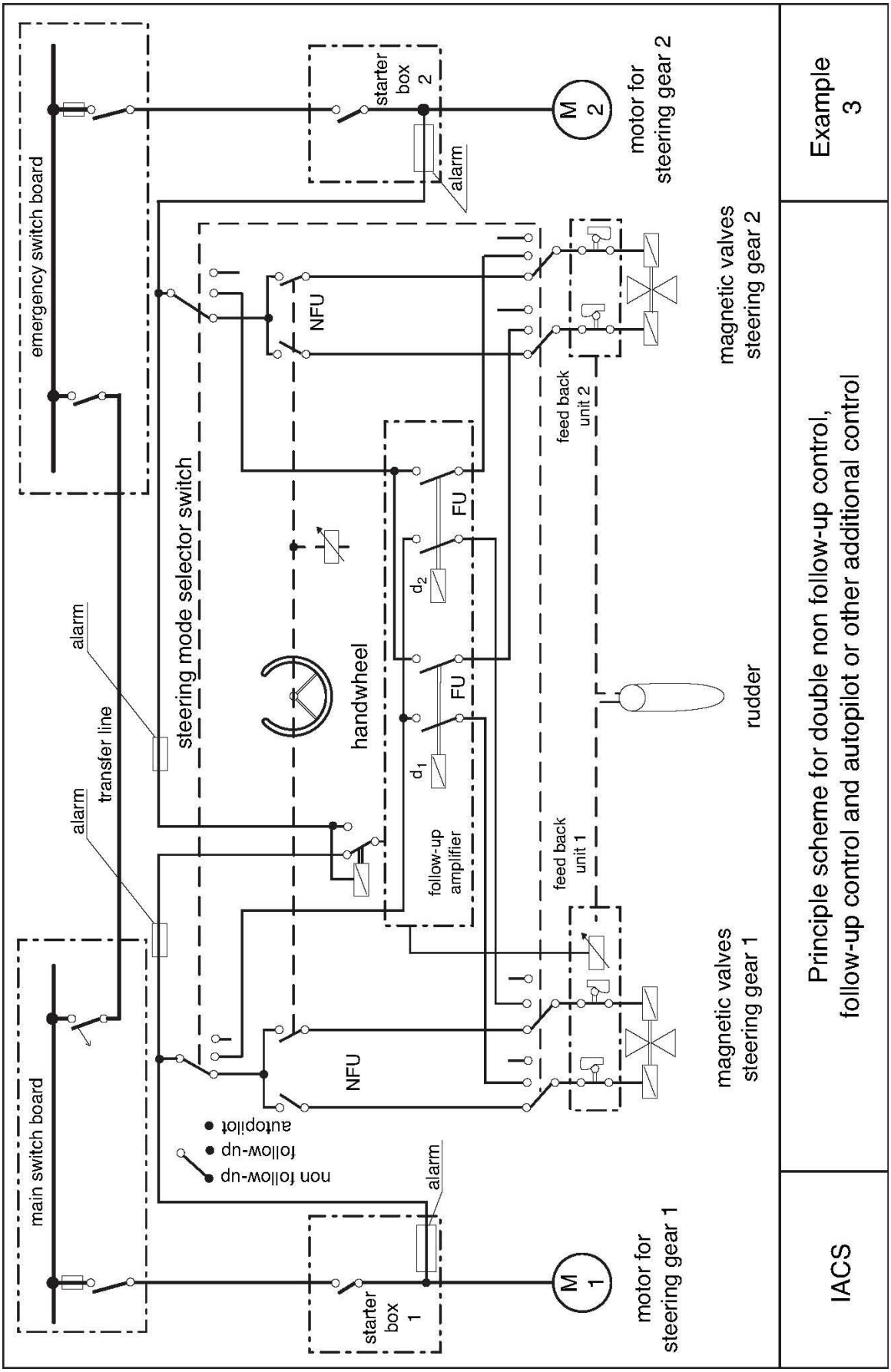
SC94
(cont)


emergency switch board
transfer line
main switch board
steering mode selector switch
handwheel
rudder
NFU
NFU
alarm
alarm
starter box 2
starter box 1
M 2
M 1
motor for steering gear 2
motor for steering gear 1
magnetic valves steering gear 2
magnetic valves steering gear 1
limit switches 2 (feed back unit)
limit switches 1 (feed back unit)
non follow-up
autopilot
Principle scheme for double non follow-up control and autopilot or other additional control
Example 1
IACS

SC94
(cont)


emergency switch board
transfer line
main switch board
starter box 2
alarm
M 2
motor for steering gear 2
feed back unit 2
FU
follow-up amplifier 2
d2
d1
magnetic valves steering gear 2
steering mode selector switch
handwheel
rudder
follow-up amplifier 1
FU
d2
d1
magnetic valves steering gear 1
feed back unit 1
follow-up
autopilot
alarm
starter box 1
M 1
motor for steering gear 1
Example 2
Principle scheme for double follow-up control and autopilot or other additional control
IACS

SC94
(cont)



End of Document

SC95 Communication between Navigating Bridge and Machinery Space

(1994)

(Chapter II-1, Reg. 37)

SOLAS Reg. II-1/37 requires that at least two independent means be provided for communicating orders from the navigating bridge to the position in the machinery space or in the control room from which the engines are normally controlled: one of these shall be an engine-room telegraph which provides visual indication of the orders and responses both in the machinery space and on the navigating bridge.

Appropriate means of communication shall be provided to any other positions from which the engines may be controlled.

The interpretation is that the telegraph is required in any case, even if the remote control of the engine is foreseen, irrespective of the fact that the engine room is attended or not.

◄◄

SC96 Capacity of an emergency fire pump

(1994)
(Rev.1 2001)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC97 Connection of a pump to fire main

(1994)
(Rev. 1 June 2002)
(Rev.2 Nov 2005)

(Reg. II-2/10.2.2.3.3)

This paragraph does not force designers to choose pumps with capacity and pressure characteristics other than that being optimal for the service intended, just to make their connection to the fire main possible, provided the required number and capacity of fire pumps are already fitted.

(MSC/Circ. 1120)

Note: 1. Changes introduced in Rev.1 are to be uniformly implemented by IACS Members and Associates from 1 January 2003.

◄◄

SC98 Fire hose nozzles of a plastic type material

(1994)
(Rev.1 Nov 2005)

(Reg. II-2/10.2.3.3)

Fire hose nozzles made of plastic type material, e.g. polycarbonate, are considered acceptable provided capacity and serviceability are documented and the nozzles are found suitable for the marine environment.

◄◄

SC99 Flexible bellows of combustible materials

(1994) (Rev.1 Nov 2005) (Rev.2 Aug 2014) (Corr.1 Sep 2024)

(SOLAS Reg. II-2/9.7.1.1)

7.1.1 Ventilation ducts shall be of steel or equivalent material. However, short ducts, not generally exceeding 2 m in length and with a free cross-sectional area not exceeding 0.02 m^2, need not be steel or equivalent, subject to the following conditions:*

** The term "free cross-sectional area" means, even in the case of a pre-insulated duct, the area calculated on the basis of the inner diameter of the duct.*

.1 subject to paragraph 7.1.1.2 the ducts are made of any material which has low flamespread characteristics;

*.2 on ships constructed on or after 1 July 2010, the ducts shall be made of heat resisting non-combustible material, which may be faced internally and externally with membranes having low flame-spread characteristics and, in each case, a calorific value** not exceeding 45 MJ/m2 of their surface area for the thickness used;*

*** Refer to the recommendations published by the International Organization for Standardization, in particular publication ISO 1716:2002, Determination of calorific potential.*

.3 the ducts are only used at the end of the ventilation device; and

.4 the ducts are not situated less than 600 mm, measured along the duct, from an opening in an "A" or "B" class division including continuous "B" class ceiling.

Interpretation

A short length, not exceeding 600 mm, of flexible bellows constructed of combustible material may be used for connecting fans to the ducting in air conditioning rooms.

Note:

1. Rev.2 of this UI shall be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2015 and constructed before 1 January 2016.

2. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 100

(1994) (Rev.1 2001) (Rev.2 Nov 2005) (Corr.1 Aug 2014)

Closing appliances of ventilation inlets and outlets

(Reg. II-2/5.2.1.1)

Ventilation inlets and outlets located at outside boundaries are to be fitted with closing appliances as required by Reg. II-2/5.2.1.1 and need not comply with Reg. II-2/9.7.3.1.

End of Document

SC 101
(1994)
(Rev.1
Nov 2005)

Main vertical zones

(Reg. II-2/9.2.2.1)

If a stairway serves two main vertical zones, the maximum length of one main vertical zone is to be measured from the far side of the main vertical zone stairway enclosure. In this case, all boundaries of the stairway enclosure are to be insulated as main vertical zone bulkheads and access doors leading into the stairway are to be provided from the zones (see Figures 1 to 4 for regulation 9.2.2.1). However, the stairway is not to be included in calculating the size of the main vertical zone if it is treated as its own main vertical zone.
(MSC/Circ. 1120)

The number of MVZ of 48m length is not limited as long as they comply with all the requirements.

Note:

Rev.1 of this UI is to be uniformly implemented by IACS Societies from 1 July 2006.

SC 101 (cont)

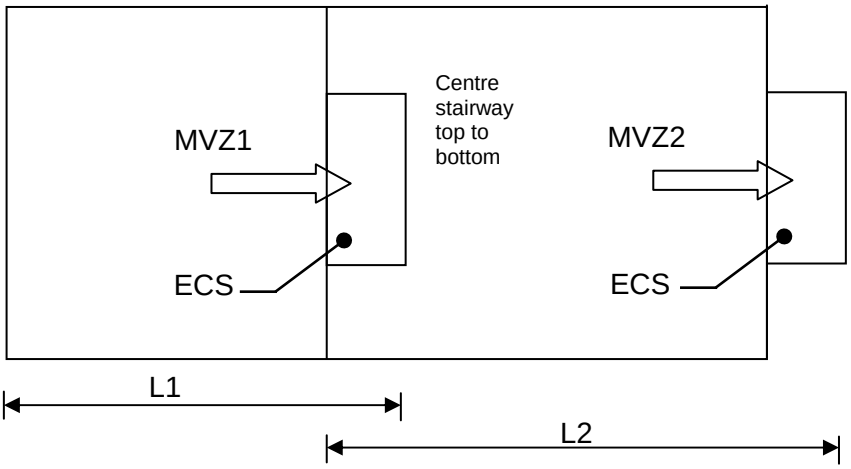
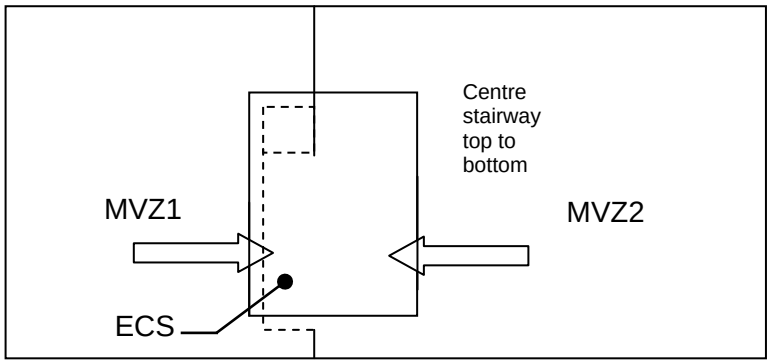
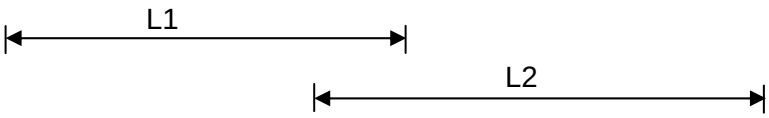


Figure 1: ECS serves one MVZ



-------- Option to reverse boundaries

Option 1: ECS belongs to MVZ1.



Option 1: ECS belongs to MVZ2.



Notes:
*MVZ: Main vertical zone
ECS: ESCAPE stairway
⇨ : Direction of escape

Figure 2: ECS serves two MVZ's

SC 101 (cont)

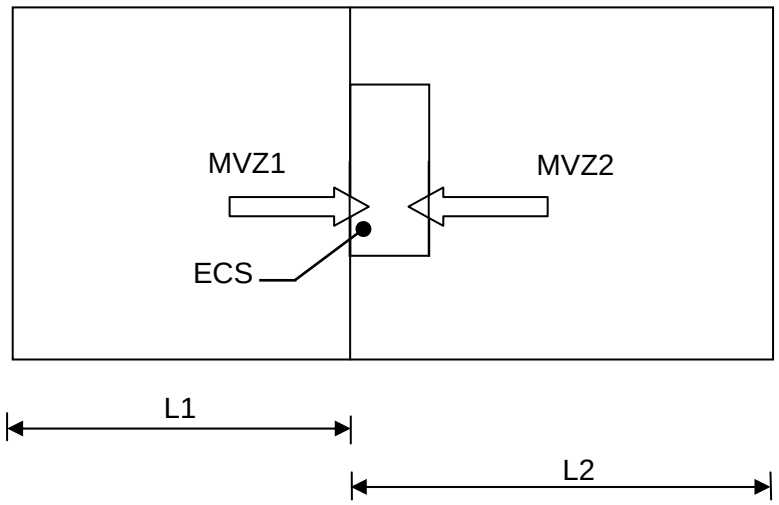


Figure 3: ECS serves two MVZ's (ECS belongs to MVZ2)

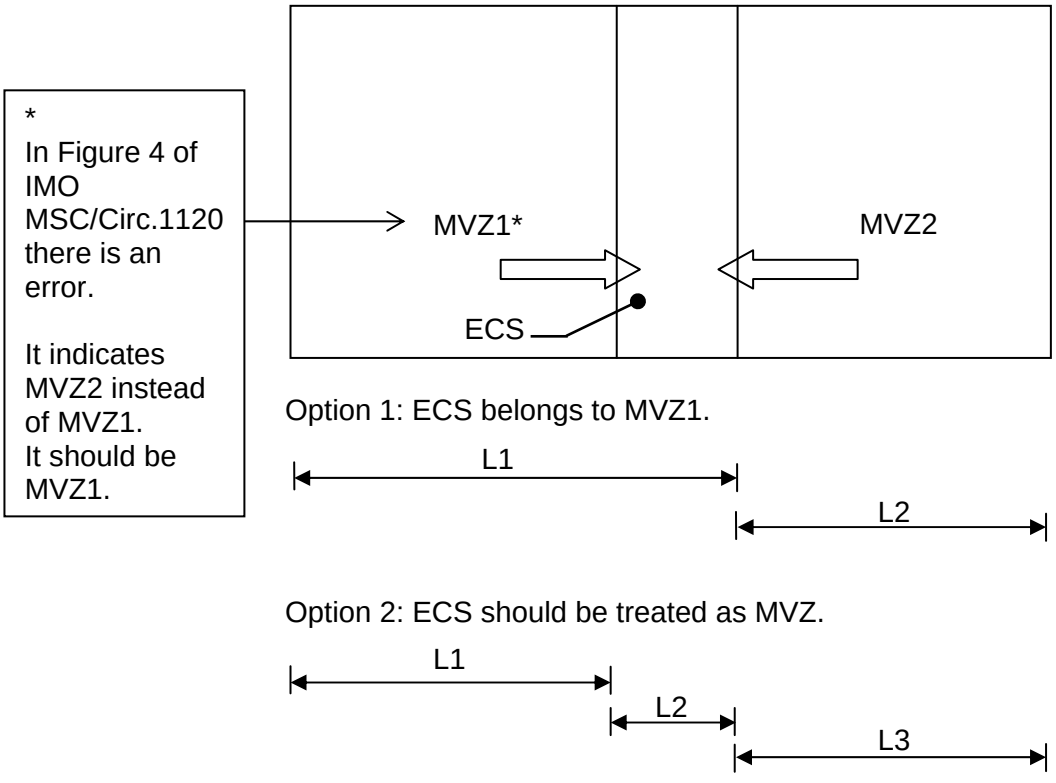


Figure 4: ECS serves two MVZ's

End of Document

SC102 Cold Service

(1994) (Reg. II-2/5.3.1.1)
(Rev.1
Nov 2005) Cold service is understood to mean refrigeration systems and chilled water piping for air-conditoning systems.
(MSC/Circ. 1120)

SC103 Insulation of machinery space boundaries

(1994)
(Rev.1
Nov 2005)

(Reg. II-2/19.3.8)

In the case that a closed or semi-closed cargo space is located partly above a machinery space and the deck above the machinery space is not insulated, dangerous goods are prohibited in the whole of that cargo space. If the uninsulated deck above the machinery space is a weather deck, dangerous goods are prohibited only for the portion of the deck located above the machinery space.

SC104 Quick closing valve for emergency generator fuel tank

(1995)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC105 Relief valve in oil filling lines and safe positions for discharge of air and overflow pipes

(1995)
(Rev.1 2001)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄◄

SC106 Galley exhaust duct

(1995)
(Rev.1 Nov 2005)

(Reg. II-2/9.7.5.2.1)

Grease trap, fire damper, fan shut-off and fixed fire extinguishing are only required when a galley exhaust duct passes through accommodation spaces or spaces containing combustible materials. The term "spaces containing combustible materials" will normally apply to all spaces in accommodation.

◄◄

SC107 Continuous ceiling

(1995)
(Rev.1 Nov 2005)

(Reg. II-2/9.2.2.2.3)

If an air gap between cabins results in an opening in the continuous class B-15 ceiling, the bulkheads on both sides of the air gap are to be of class B-15.

◄◄

SC108 Galley exhaust duct

(1995)
(Rev.1 Nov 2005)

(Reg. II-2/9.7.5.1)

The requirements to exhaust ducts from galley ranges in which grease or fat is likely to accumulate will apply to all exhaust ducts from galley ranges.

◄◄

SC109 Open Top Container Holds - Water Supplies

(1995)
(Rev.1 Nov 2005)

(Reg. II-2/19.3.1)

1 The water spray system required in paragraphs 9.2, 9.3 and 9.4 of MSC/Circ.608/Rev.1 - Interim guidelines for open-top container ships - will also satisfy the requirement for dangerous goods.

2 The amount of water required for fire-fighting purposes in the largest hold is to allow simultaneous use of the water spray system plus four jets of water from hose nozzles.
(MSC/Circ. 1120)

◄◄

Note: Unified Interpretations SC104 through SC109 are to be applied by IACS Member Societies from 1 January 1996.

SC110 Open Top Container Holds - Ventilation

(1995) (Rev.1 Nov 2005)

(Reg. II-2/19.3.4)

(This UI is to be applied by IACS Member Societies from 1 January 1996.)

Power ventilation is interpreted to be required only for the lower part of the cargo hold for which purpose ducting is required. The ventilation capacity is to be at least 2 air changes per hour based on the empty hold volume below weather deck.
(MSC/Circ. 1120)

◄◄

SC111 Open Top Container Holds - Bilge Pumping

(1995) (Rev.1 Nov 2005)

(Reg. II-2/19.3.5)

(This UI is to be applied by IACS Member Societies from 1 January 1996.)

Bilge systems for cargo holds should be independent of the machinery space bilge system and be located outside of the machinery space.

◄◄

SC112 Pilot Transfer Arrangements

Deleted in January 2002.

◄◄

SC113 (1996) Emergency Towing Arrangements on Tankers - Prototype Test

(Resolution MSC . 35 (63), 2.10)

(This UI is to be applied by IACS Member Societies from 1 January 1996.)

Text:

"Designs of emergency towing arrangements in accordance with these Guidelines should be prototype tested to the satisfaction of the Administration."

Interpretation:

Towing arrangements may be (1) a packaged self contained unit, or (2) a unit comprised of individually tested components assembled onboard the vessel.
Both arrangements should meet the specified strength requirements and undergo a deployment test onboard the vessel as required by MSC.35 (63).
Fixed gear such as strong points, fairleads, foundations and associated vessel supporting structure are to be demonstrated as adequate for the loads imposed by means of a submitted engineering analysis or calculations. If the structural configuration is of a particularly complex or novel nature, such that its load bearing adequacy cannot be satisfactorily determined by engineering analysis, suitable proof test will be required.
Articles of loose gear such as chains, towing pennants and associated end fittings, and shackles or other connecting links should be tested to the requirements of the Classification Society concerned.
Where a manufacturer requests a certificate of type approval for a complete self contained arrangement, one assembled unit is additionally to undergo a test to 2 x SWL.

Note: "Survey Guidelines - Emergency Towing Arrangements" is located in Recommendation No. 40 (1995).

◄◄

SC114 Emergency Fire Pump Access

(1996)
(Rev.1
Nov 2005)

(Reg. II-2/10.2.2.3.2.1)

When a single access to the emergency fire pump room is through another space adjoining a machinery space of category A or the spaces containing the main fire pumps, class A-60 boundary is required between that other space and the machinery space of category A or the spaces containing the main fire pumps.

◄◄

SC 115 Fire detection system with remotely and individually identifiable detectors

(1996)
(Rev.1
Nov 2005)

(FSS Code, Ch. 9, 2.4.1.1 and 2.5.1.1)

Deleted Oct 2015.

End of Document

SC116 Fire detection system with remotely and individually identifiable detectors

(1996)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

◄

IACS Int. 1996

SC 117 Fire detection system with remotely and individually identifiable detectors

(1996)
(Rev.1 2001)
(Rev.2
Nov 2005)

Deleted in September 2020

End of Document

SC 118 Exhaust duct from galley ranges

(1996) (Rev.1 Nov 2005) (Rev.2 July 2015)

(Reg. II-2/9.7.5.1.1 and 9.7.5.2.1)

Fire dampers required by Reg. II-2/9.7.5.1.1 and 9.7.5.2.1 do not need to pass the fire test in either Res. A 754(18) or Appendix 2 of Part 3, of Annex 1 of the 2010 FTP Code, but should be of steel and capable of stopping the draught. The requirements to “A” class applies only to the part of the duct outside of the galley.

Note:

1. This UI is to be uniformly implemented by IACS Members on ships constructed before 1 January 2016.

End of Document

SC119 Balancing ducts

(1996)
(Rev.1
Nov 2005)

(Reg. II-2/9.4.1.2 and Reg. II-2/9.4.2)

Balancing openings or ducts between two enclosed spaces are prohibited except for openings as permitted by Reg. II-2/9.4.1.2 and Reg. II-2/9.4.2.

◄◄

SC 120

(1996) (Rev.1 Nov 2005) (Rev.2 Aug 2006) (Corr.1 Jan 2023) (Corr.2 Oct 2023)

Access to forecastle spaces on tankers

Interpretation of SOLAS regulations II-2/4.5.2.1 and 4.5.2.2, IBC Code paragraph 3.2.3 and 1983 IGC Code paragraph 3.2.4 (Resolution MSC.5(48) as amended by resolution MSC.30(61))

Restriction on boundary openings

SOLAS regulations II-2/4.5.2.1 and 4.5.2.2 read

"5.2.1 Except as permitted in paragraph 5.2.2, access doors, air inlets and openings to accommodation spaces, service spaces, control stations and machinery spaces shall not face the cargo area. They shall be located on the transverse bulkhead not facing the cargo area or on the outboard side of the superstructure or deckhouse at a distance of at least 4% of the length of the ship, but not less than 3 m from the end of the superstructure or deckhouse facing the cargo area. This distance need not exceed 5 m."

"5.2.2 The Administration may permit access doors in boundary bulkheads facing the cargo area or within the 5 m limits specified in paragraph 5.2.1, to main cargo control stations and to such service spaces used as provision rooms, store-rooms and lockers, provided they do not give access directly or indirectly to any other space containing or providing for accommodation, control stations or service spaces such as galleys, pantries or workshops, or similar spaces containing sources of vapour ignition. The boundary of such a space shall be insulated to "A-60" standard, with the exception of the boundary facing the cargo area. Bolted plates for the removal of machinery…"

Paragraph 3.2.3 of the IBC Code reads

"*3.2.3 Entrances, air inlets and openings to accommodation, service and machinery spaces and control stations shall not face the cargo area. They shall be located on the end bulkhead not facing the cargo area and/or on the outboard side of the superstructure or deckhouse at a distance of at least 4% of the length (L) of the ship but not less than 3 m from the end of the superstructure or deck-house facing the cargo area. This distance, however, need not exceed 5 m. No doors shall be permitted within the limits mentioned above, except that doors to those spaces not having access to accommodation and service spaces and control stations, such as cargo control stations and store-rooms, may be fitted. Where such doors are fitted, the boundaries of the space shall be insulated to "A-60" standard. Bolted plates for removal of machinery may be fitted within the limits specified above. Wheelhouse doors and wheelhouse windows may be located within the limits specified above so long as they are so designed that a rapid and efficient gas- and vapour-tightening of the wheelhouse can be ensured. Windows and sidescuttles facing the cargo area and on the sides of the superstructures and deck-houses within the limits specified above shall be of the fixed (non-opening) type. Such sidescuttles in the first tier on the main deck shall be fitted with inside covers of steel or equivalent material.*"

Note:

1. Rev. 2 of this UI is to be uniformly implemented by IACS Members and Associates by 1 January 2007.

2. For the application of the IGC Code, this UI is only applicable to ships constructed on or after 1 July 1986 but before 1 July 2016.

SC 120 (cont)

Paragraph 3.2.4 of the 1983 IGC Code reads

"*3.2.4 Entrances, air inlets and openings to accommodation spaces, service spaces, machinery spaces and control stations should not face the cargo area. They should be located on the end bulkhead not facing the cargo area or on the outboard side of the superstructure or deck-house or on both at a distance of at least 4% of the length (L) of the ship but not less than 3 m from the end of the superstructure or deck-house facing the cargo area. This distance, however, need not exceed 5 m. Windows and sidescuttles facing the cargo area and on the sides of the superstructures or deck-houses within the distance mentioned above should be of the fixed (non-opening) type. Wheelhouse windows may be non-fixed and wheelhouse doors may be located within the above limits so long as they are so designed that a rapid and efficient gas and vapour tightening of the wheelhouse can be ensured. For ships dedicated to the carriage of cargoes which have neither flammable nor toxic hazards, the Administration may approve relaxations from the above requirements*."

Interpretation

Access to forecastle spaces containing sources of ignition may be permitted through doors facing cargo area provided the doors are located outside hazardous areas as defined in IEC Publication 60092-502:1999.

End of Document

SC 121

(1997)
(Rev.1 Nov 2005)
(Rev.2 Jan 2023)
(Corr.1 Apr 2023)

Fire Pump Isolation Requirements

Interpretation of SOLAS II-2 Regulation 10.2.1.4.1

SOLAS II-2 Regulation 10.2.1.4.1 reads as follows:

Isolating valves to separate the section of the fire main within the machinery space containing the main fire pump or pumps from the rest of the fire main shall be fitted in an easily accessible and tenable position outside the machinery spaces. The fire main shall be so arranged that when the isolating valves are shut all the hydrants on the ship, except those in the machinery space referred to above, can be supplied with water by another fire pump or an emergency fire pump. The emergency fire pump, its seawater inlet, and suction and delivery pipes and isolating valves shall be located outside the machinery space. If this arrangement cannot be made, the sea-chest may be fitted in the machinery space if the valve is remotely controlled from a position in the same compartment as the emergency fire pump and the suction pipe is as short as practicable. Short lengths of suction or discharge piping may penetrate the machinery space, provided they are enclosed in a substantial steel casing, or are insulated to "A-60" class standards. The pipes shall have substantial wall thickness, but in no case less than 11 mm, and shall be welded except for the flanged connection to the sea inlet valve.

Interpretation

Any part of the fire main routed through a category A machinery space, except for short lengths of suction or discharge piping complying with SOLAS II-2/10.2.1.4.1, must be fitted with isolating valves outside of the space. The arrangements of the fire mains must allow for fire water from the fire pumps or emergency fire pump to reach all hydrants outside of the isolated space. Isolation requirements of SOLAS Reg. II-2/10.2.1.4.1 are not applicable to the piping from fire pumps located in spaces other than category A machinery spaces.

Note:

1. Rev.2 of this Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2023.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC122 Corrosion Prevention in Seawater Ballast Tanks

(1998)
(v0.1, April 1998)
(Rev.1 Aug 2008)
(Corr.1 Oct 2008)

(Chapter II-1, Regulation 3-2)

The scheme for the selection, application and maintenance of the coating system should follow the requirements of IMO Resolution A.798(19) and contain, as a minimum, the following documentation:

- Owner's, coating manufacturer's and shipyard's explicit agreement to the scheme for coating selection, application and maintenance.
- List of seawater ballast tanks identifying the coating system for each tank, including coating colour and whether coating system is a hard coating.
- Details of anodes, if used.
- Manufacturer's technical product data sheet for each product.
- Manufacturer's evidence of product quality and ability to meet owners requirements.
- Evidence of shipyard's and/or its subcontractor's experience in coating application.
- Surface preparation procedures and standards, including inspection points and methods.
- Application procedures and standards, including inspection points and methods.
- Format for inspection reports on surface preparation and coating application.
- Manufacturer's product safety data sheets for each product and owner's, coating manufacturer's and shipyard's explicit agreement to take all precautions to reduce health and other safety risks which are required by the authorities.
- Maintenance requirements for the coating system.

Coating of any colour may be accepted, unless otherwise instructed by the Flag Administration. "Light colour" coating is preferable, and includes colours which facilitate inspection or are easily distinguishable from rust.

Note:

1. This UI should be uniformly implemented by all Members and Associates not later than 1 July 1998.

2. This UI applies to ships constructed on or after 1 July 1998 but for which: either the building contract is placed before 1 July 2008; or, in the absence of a building contract, the keels of which are laid or which are at a similar stage of construction before 1 January 2009; or, the delivery of which is before 1 July 2012; and interprets SOLAS II-1/3-2.2 adopted by Resolution MSC.47(66), which is referred to in the amended SOLAS II-1/3-2.3 as adopted by Resolution MSC.216(82).

End of Document

SC 123

(1998)
(Rev.1 Apr 1998)
(Rev.2 June 2002)
(Rev.3 Dec 2005)
(Rev.4 Nov 2018 Withdrawn and Rev.3 reinstated Nov 2019)
(Corr.1 Feb 2022)
(Rev.5 July 2023)

Machinery Installations - Service Tank Arrangements

Reg. II-1/26.11

SOLAS Regulation II-1/26.11 states:

*Two fuel oil service tanks for each **type of fuel** used on board necessary for propulsion and vital systems or **equivalent arrangements** shall be provided on each new ship, with a capacity of at least 8 h at maximum continuous rating of the propulsion plant and normal operating load at sea of the generator plant.*

Interpretation

Arrangements complying with this regulation and acceptable “equivalent arrangements”, for the most commonly utilised fuel systems, are shown below.

A service tank is a fuel oil tank which contains only fuel of a quality ready for use i.e. fuel of a grade and quality that meet the specification required by the equipment manufacturer. A service tank is to be declared as such and not to be used for any other purpose.

Use of a setting tank with or without purifiers, or purifiers alone, and one service tank is not acceptable as an “equivalent arrangement” to two service tanks.

Notes:

1. This Unified Interpretation is to be applied by IACS Members and Associates to all ships subject to the relevant SOLAS Regulation.

2. Changes introduced in Rev.2 are to be uniformly implemented by IACS Members and Associates from 1 January 2003.

3. Changes introduced in Rev.3 are to be uniformly implemented by IACS Members and Associate from 1 July 2006.

4. Rev.4 of this UI is withdrawn prior to coming into force on 1 January 2020 and Rev.3 of this UI is reinstated on Nov 2019.

5. Rev.5 of this UI is to be uniformly implemented by IACS Members on ships contracted for construction on or after 1 July 2024.

6. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

SC 123 (cont)

1. Example 1

1.1 Requirement according to SOLAS - Main and Auxiliary Engines and Boiler(s) operating with Heavy Fuel Oil (HFO) (one fuel ship)

HFO Serv. TK Capacity for at least 8 h Main Eng. + Aux. Boiler + Aux. Eng.	HFO Serv. TK Capacity for at least 8 h Main Eng. + Aux. Boiler + Aux. Eng.	MDO TK For initial cold starting or repair work of Engines/ Boiler

1.2 Equivalent arrangement [1]

HFO Serv. TK Capacity for at least 8 h Main Eng. + Aux. Boiler + Aux. Eng.	MDO Serv. TK Capacity for at least 8 h Main Eng. + Aux. Boiler + Aux. Eng.

This arrangement only applies where main and auxiliary engines can operate with heavy fuel oil under all load conditions and, in the case of main engines, during manoeuvring.

For pilot burners of Auxiliary Boilers if provided, an additional MDO tank for 8 hours may be necessary.

[1] Any fuel oil which requires post service tank heating to achieve the required injection viscosity is not regarded in this context as MDO.

SC 123 (cont)

2. Example 2

2.1 Requirement according to SOLAS - Main Engine(s) and Auxiliary Boiler(s) operating with HFO and Auxiliary Engine operating with Marine Diesel Oil (MDO)

HFO Serv. TK Capacity for at least 8 h Main Eng.+ Aux. Boiler	HFO Serv. TK Capacity for at least 8 h Main Eng.+ Aux. Boiler	MDO Serv. TK Capacity for at least 8 h Aux. Eng.	MDO Serv. TK Capacity for at least 8 h Aux. Eng.

2.2 Equivalent arrangement [(2)]

HFO Serv. TK Capacity for at least 8 h Main Eng.+ Aux. Boiler	MDO Serv. TK Capacity for at least the highest of: 4 h Main Eng. +Aux. Eng. +Aux. Boiler or 8 h Aux. Eng. + Aux. Boiler	MDO Serv. TK Capacity for at least the highest of: 4 h Main Eng. +Aux. Eng. + Aux. Boiler or 8 h Aux. Eng. + Aux. Boiler

3. The arrangements in 1.2 and 2.2 apply, provided the propulsion and vital systems which use two types of fuel support rapid fuel changeover and are capable of operating in all normal operating conditions at sea with both types of fuel (MDO and HFO).

End of Document

[(2)] See footnote 1.

SC124 Emergency Source of Power in Passenger and Cargo Ships

(May 1999)
(Rev.1 June 2002)
(Corr.1 Oct 2007)

Reg. II-1/42.3.4 and II-1/43.3.4

SOLAS Regulations II-1/42 and II-1/43 address emergency source of electrical power in passenger ships and cargo ships respectively. Regulations II-1/42.3.4 and II-1/43.3.4 read as follows:

For ships constructed on or after 1 July 1998, where electrical power is necessary to restore propulsion, the capacity shall be sufficient to restore propulsion to the ship in conjunction with other machinery, as appropriate, from a dead ship condition within 30 mins after blackout.

Interpretation:

"Blackout" as used in Regulation II-1/42.3.4 and II-1/43.3.4 is to be understood to mean a "deadship" condition.

"Deadship" condition, for the purpose of Regulation II-1/42.3.4 and II-1/43.3.4, is to be understood to mean a condition under which the main propulsion plant, boilers and auxiliaries are not in operation and in restoring the propulsion, no stored energy for starting the propulsion plant, the main source of electrical power and other essential auxilaries is to be assumed available. It is assumed that means are available to start the emergency generator at all times.

The emergency generator and other means needed to restore the propulsion are to have a capacity such that the necessary propulsion starting energy is available within 30 minutes of blackout/dead ship condition as defined above. Emergency generator stored starting energy is not to be directly used for starting the propulsion plant, the main source of electrical power and/or other essential auxiliaries (emergency generator excluded).

For steam ships, the 30 minute time limit given in SOLAS can be interpreted as time from blackout/dead ship condition defined above to light-off of the first boiler.

Note:

1. This UI SC 124 is to be uniformly implemented by IACS Members and Associates for ships contracted for construction on or after 1 September 1999.

2. Changes introduced in Rev.1 are to be uniformly implemented by IACS Members and Associates from 1 January 2003.

3. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 125 B and C Class Divisions

(May 1998) (Rev.1 July 2004) (Rev.2 Nov 2005) (Corr.1 Jan 2010) (Rev.3 Dec 2020)

(Reg. II-2/3.4 and Reg. II-2/3.10)

A division consisting of a non-combustible core and combustible veneers may be accepted as a B or C class division, provided:

(1) that the non-combustible core is tested in accordance with the FTP Code, Annex 1, part 1,

(2) that the B class division is tested in accordance with the FTP Code, Annex 1, part 3, and

(3) that the veneers are tested in accordance with the FTP Code, Annex 1, part 5 and part 2, if applicable.

Note:

1. This Unified Interpretation is to be applied by all Members and Associates on ships contracted for construction on or after 1 January 1999.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 126 Fire Protection Materials for Cargo Ships

(SOLAS regulations II-2/4.4.4, 5.3, 6.2.1 and 6.3.1)

(May 1998) (Rev.1 June 2000) (Rev.2 Nov 2005) (Corr.1 Aug 2021)

For the application of SOLAS regulations II-2/4.4.4, 5.3, 6.2.1 and 6.3.1, reference is to be made to the attached Figure 1 and associated Tables 1 and 2.

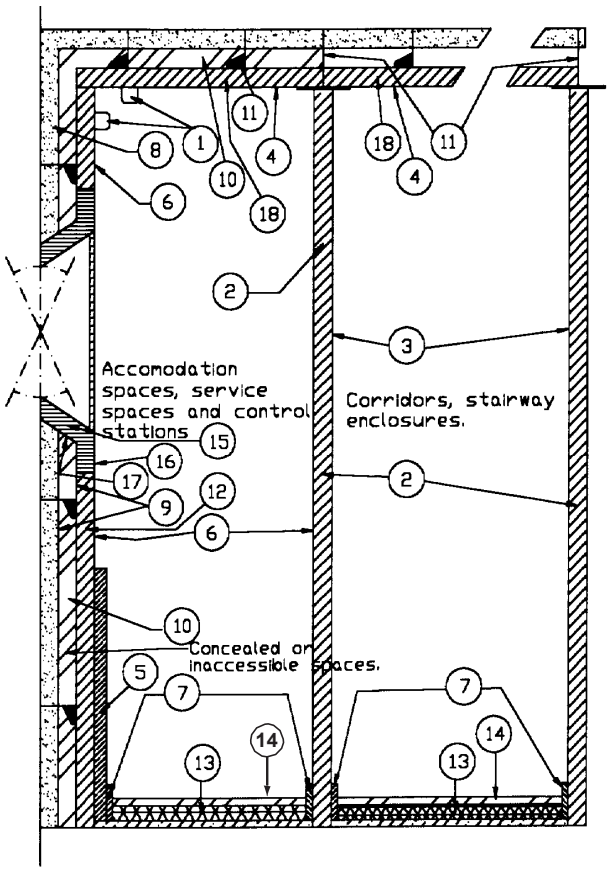


Figure 1: Constructural elements in accommodation spaces

Note:

1. This Unified Interpretation is to be applied by all Members and Associates on ships contracted for construction on or after 1 January 2006.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29."

SC 126 (cont)

Table 1: Method IC

		Requirements for components						
		A Non Combustible Material Reg. II-2/5.3.1.2.2.1	B Non Combustible Material Reg. II-2/5.3.1.1	C Low Flame Spread Reg. II-2/5.3.2.4.2	D Equivalent Volume Reg. II-2/5.3.2.3.1	E Calorific Value Reg. II-2/5.3.2.2	F Smoke Production Reg. II-2/6	G Not readily ignite Reg. II-2/4.4.4
1	Moulding				X			
2	Panel	X						
3	Painted surfaces or Veneer or Fabric or Foils			X	X	X	X (2)	
4	Painted surfaces or Veneer or Fabric or Foils			X	X	X	X (2)	
5	Decoration				X		X	
6	Painted surfaces or Veneer or Fabric or Foils				X	X	X (2)	
7	Skirting board				X			
8	Insulation		X (1)					
9	Surfaces and paints in concealed or inaccessible spaces			X				
10	Draught stops	X						
11	Grounds and supports	X		X				
12	Lining	X						
13	Primary deck covering 1st layer						X (4)	X
14	Floor finishing			X (3)			X	
15	Window box	X						
16	Window box surface			X	X	X	X	
17	Window box surface in concealed or inaccessible spaces			X				
18	Ceiling panel	X						

(1) Vapour barriers used on pipes for cold systems (see UI SC 102) may be of combustible materials providing that their surface has low flame spread characteristics (Reg. II-2/5.3.1.1)
(2) Applicable to paints, varnishes and other finishes (Reg. II-2/6.2.1)
(3) Only in corridors and stairway enclosures.
(4) Only in accommodation and service spaces and control stations (Reg. II-2/6.3.1).
- Regulation II-2/6.2 only applies to accommodation spaces, service spaces and control stations as well as stairway enclosures (UI SC 127)
- As far as window boxes construction is concerned, reference is also to be made to MSC/Circ.917 and MSC/Circ. 917 Add. 1

SC 126 (cont)

Table 2: Methods IIC and IIIC

		Requirements for components						
		A Non Combustible Material Reg. II-2/5.3.1.2.2.2	B Non Combustible Material Reg. II-2/5.3.1.1	C Low Flame Spread Reg. II-2/5.3.2.4.2	D Equivalent Volume Reg. II-2/5.3.2.3.1	E Calorific Value Reg. II-2/5.3.2.2	F Smoke Production Reg. II-2/6	G Not readily ignite Reg. II-2/4.4.4
1	Moulding				X (3)			
2	Panel	X (4)						
3	Painted surfaces or Veneer or Fabric or Foils			X	X	X	X (5)	
4	Painted surfaces or Veneer or Fabric or Foils			X	X (3)	X (2)	X (5)	
5	Decoration				X (3)		X	
6	Painted surfaces or Veneer or Fabric or Foils				X (3)	X (2)	X (5)	
7	Skirting board				X (3)			
8	Insulation		X (1)					
9	Surfaces and paints in concealed or inaccessible spaces			X				
10	Draught stops	X (4)						
11	Grounds and supports	X (4)		X				
12	Lining	X (4)						
13	Primary deck covering 1st layer						X (7)	X
14	Floor finishing			X (6)			X	
15	Window box	X (4)						
16	Window box surface			X (3)	X (3)	X (2)	X	
17	Window box surface in concealed or inaccessible spaces			X				
18	Ceiling panel	X (4)						

(1) Vapour barriers used on pipes for cold systems (see UI SC 102) may be of combustible materials providing that their surface has low flame spread characteristics (Reg. II-2/5.3.1.1)
(2) Where fire material is fitted on non combustible bulkheads, ceiling and lining in accommodation and service spaces (Reg. II-2/5.3.2.2)
(3) To be applied to those accommodation and service spaces bounded by non combustible bulkheads, ceiling and lining (Reg. II-2/ 5.3.2.3.1)
(4) Only in corridor and stairway enclosures serving accommodation and service spaces and control stations (Reg. II-2/5.3.1.2.2.2).
(5) Applicable to paints, varnishes and other finishes (Reg. II-2/6.2.1)
(6) Only in corridors and stairway enclosures.
(7) Only in accommodation and service spaces and control stations (Reg. II-2/6.3.1)

- Regulation II-2/6.2 only applies to accommodation spaces, service spaces and control stations as well as stairway enclosures (UI SC 127)
- As far as window boxes construction is concerned, reference is also to be made to MSC/Circ.917 and MSC/Circ. 917 Add. 1

End of Document

SC127 Paints, varnishes and other finishes

(May, 1998)
(Rev.1 July 2004)
(Rev.2 Nov 2005)
(Corr.1 Jan 2023)

Interpretation of SOLAS Chapter II-2, Regulation 6.2.1

SOLAS Chapter II-2, Regulation 6.2.1 reads as follows:

2.1 Paints, varnishes and other finishes

Paints, varnishes and other finishes used on exposed interior surfaces shall not be capable of producing excessive quantities of smoke and toxic products, this being determined in accordance with the Fire Test Procedures Code.

Interpretation

This regulation only applies to accommodation spaces, service spaces and control stations as well as stairway enclosures.

Note:

1. This Unified Interpretation is to be applied by all Members and Associates on ships contracted for construction on or after 1 January, 2006.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29."

End of Document

SC128 CO2 Discharge Time

(May 1998)
(Rev.1 July 2004)
(Rev.2 Nov 2005)

(FSS Code, Ch. 5, 2.2.1.2, 2.2.1.6, 2.2.1.7)

Deleted in April 2021.

SC129 Fire Detection in Unmanned Machinery Spaces

(May, 1998)
(Rev.1
July 2004)
(Rev.2
Nov 2005)

(Reg. II-2/7.4)

This requirement applies to machinery spaces of category A.

Note:

1. This Unified Interpretation is to be applied by all Members and Associates on ships contracted for construction on or after 1 January, 1999.

2. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

END

SC130 Fire Detection and Sprinkler Systems in Refrigerated Chambers and Similar Spaces

(May, 1998)
(Rev.1
July 2004)
(Rev.2
Nov 2005)

(Reg. II-2/7.5.2 and Reg. II-2/10.6.1.1)
(Reg. II-2/41-2.5 as contained in MSC24(60), FSS Code, Ch. 8, 2.1.1)

Heat detectors are acceptable in refrigerated chambers and in other spaces where steam and fumes are produced such as saunas and laundries. Refrigerated chambers may be fitted with dry pipe sprinkler systems.

Note:

1. This Unified Interpretation is to be applied by all Members and Associates on ships contracted for construction on or after 1 January, 1999.

2. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

END

SC131 Liquid Cargoes for which regular foam is not effective for Fire Fighting

(May, 1998)
(Corr.1 June 1999)
(Rev.1 July 2004)

Deleted in Nov 2005 because of SOLAS 2000 Amendments.

END

SC 132
(May 1998)
(Rev.1 July 2004)
(Rev.2 Nov 2005)
(Rev.3 May 2010)
(Corr.1 Sept 2010)
(Corr.2 Dec 2011)
(Rev.4 Nov 2013)

Release Operation of the CO_2 System

FSS Code, Ch 5, 2.1.3.2 (as amended by MSC.339(91))

2.1.3.2 Means shall be provided for automatically giving audible and visual warning of the release of fire-extinguishing medium into any ro-ro spaces, container holds equipped with integral reefer containers, spaces accessible by doors or hatches, and other spaces in which personnel normally work or to which they have access. The audible alarms shall be located so as to be audible throughout the protected space with all machinery operating, and the alarms should be distinguished from other audible alarms by adjustment of sound pressure or sound patterns. The pre-discharge alarm shall be automatically activated (e.g. by opening of the release cabinet door). The alarm shall operate for the length of time needed to evacuate the space, but in no case less than 20 s before the medium is released. Conventional cargo spaces and small spaces (such as compressor rooms, paint lockers, etc.) with only a local release need not be provided with such an alarm.

Note:

1. This Unified Interpretation is to be applied by all Members and Associates on ships contracted for construction on or after 1 January 1999.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

3. Rev.3 of this UI shall be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2010.

4. Rev.4 of this UI shall be uniformly implemented by IACS Societies on ships constructed on or after 1 July 2014.

SC 132 (cont)

FSS Code, Ch 5, 2.2.2 (as amended by MSC.339(91))

Carbon dioxide systems for the protection of ro-ro spaces, container holds equipped with integral reefer containers, spaces accessible by doors or hatches, and other spaces in which personnel normally work or to which they have access shall comply with the following requirements:

.1 two separate controls shall be provided for releasing carbon dioxide into a protected space and to ensure the activation of the alarm. One control shall be used for opening the valve of the piping which conveys the gas into the protected space and a second control shall be used to discharge the gas from its storage containers. Positive means shall be provided so they can only be operated in that order; and

.2 the two controls shall be located inside a release box clearly identified for the particular space. If the box containing the controls is to be locked, a key to the box shall be in a break-glass-type enclosure conspicuously located adjacent to the box.

Interpretation

Conventional cargo spaces means cargo spaces other than ro-ro spaces or container holds equipped with integral reefer containers, and they need not be provided with means for automatically giving audible and visual warning of the release.

The requirements of FSS Code, Ch 5, 2.2.2 apply to the spaces identified in Ch 5, 2.1.3.2 of FSS Code.

End of Document

SC133 Oil Mist Detector on High Speed Engines - "equivalent device"

(May, 1998)

(Chapter II-1, Regulation 47.2)

"An equivalent device could be interpreted as measures applied to high speed engines where specific design features to preclude the risk of crankcase explosions are incorporated".

Note: The UI should be uniformly implemented by all Members and Associates not later than 1st January 1999.

◄◄

SC134 (June 2002) Essential Services and Arrangements of Sources of Power, Supply, Control and Monitoring to the different Catergories of Essential Services (SOLAS Regulations II-1/40 & 41)

1. Classification of electrical services

1.1 Essential Services are those services essential for propulsion and steering, and safety of the ship, which are made up of "Primary Essential Services" and "Secondary Essential Services".
Definitions and examples of such services are given in 2 and 3 below.

1.2 Services to ensure minimum comfortable conditions of habitability are those services such as defined in 4 below.

2. Primary Essential Services
Primary Essential Services are those services which need to be in continuous operation to maintain propulsion and steering. Examples of equipment for primary essential services are as follows:

- Steering gears
- Pumps for controllable pitch propellers
- Scavenging air blower, fuel oil supply pumps, fuel valve cooling pumps, lubricating oil pumps and cooling water pumps for main and auxiliary engines and turbines necessary for propulsion
- Forced draught fans, feed water pumps, water circulating pumps, vacuum pumps and condensate pumps for steam plants on steam turbine ships, and also for auxiliary boilers on ships where steam is used for equipment supplying primary essential services
- Oil burning installations for steam plants on steam turbine ships and for auxiliary boilers where steam is used for equipment supplying primary essential services
- Azimuth thrusters which are the sole means for propulsion/steering with lubricating oil pumps, cooling water pumps
- Electrical equipment for electric propulsion plant with lubricating oil pumps and cooling water pumps
- Electric generators and associated power sources supplying the above equipment
- Hydraulic pumps supplying the above equipment
- Viscosity control equipment for heavy fuel oil
- Control, monitoring and safety devices/systems for equipment to primary essential services.

3. Secondary Essential Services
Secondary Essential Services are those services which need not necessarily be in continuous operation to maintain propulsion and steering but which are necessary for maintaining the vessel's safety. Examples of equipment for secondary essential services are as follows:

- Windlass
- Fuel oil transfer pumps and fuel oil treatment equipment
- Lubrication oil transfer pumps and lubrication oil treatment equipment
- Pre-heaters for heavy fuel oil
- Starting air and control air compressors
- Bilge, ballast and heeling pumps
- Fire pumps and other fire extinguishing medium pumps
- Ventilating fans for engine and boiler rooms

Note: 1.This UI SC 134 is to be uniformly implemented by IACS Members and Associates from 1 January 2003.

IACS Int. 2002

SC134
(cont'd)

- Services considered necessary to maintain dangerous spaces in a safe condition
- Navigation lights, aids and signals
- Internal safety communication equipment
- Fire detection and alarm system
- Lighting system
- Electrical Equipment for watertight closing appliances
- Electric generators and associated power sources supplying the above equipment
- Hydraulic pumps supplying the above equipment
- Control, monitoring and safety systems for cargo containment systems
- Control, monitoring and safety devices/systems for equipment to secondary essential services.

4. Services for habitability
Services for habitability are those services which need to be in operation for maintaining the vessel's minimum comfort conditions for the crew and passengers. Examples of equipment for maintaining conditions of habitability are as follows:

- Cooking
- Heating
- Domestic refrigeration
- Mechanical ventilation
- Sanitary and fresh water
- Electric generators and associated power sources supplying the above equipment

5. Regulation II-1/40.1.1 and Regulation II-1/41.1.1 – For the purposes of these regulations, the services as included in paragraphs 2 to 4 are to be considered.

6. Regulation II-1/40.1.2 – For the purposes of this regulation, the services as included in paragraphs 2 and 3 and the services in the Regulation II-1/42 or II-1/43, as applicable, are to be considered.

7. Regulation II-1/41.1.2 – For the purposes of this regulation, the services as included in paragraphs 2 to 4, except for those also listed in UI SC2, are to be considered.

8. Regulation II-1/41.1.5 – For the purposes of this regulation, the services as included in paragraphs 2, 3 and 4 are to be considered. See also UI SC83.

9. (void)

10. Regulation II-1/41.5.1.2 - For the purposes of this regulation, the following interpretations are applicable.

10.1 Services in paragraph 2 are not to be included in any load shedding or other equivalent arrangements.

10.2 Services in paragraph 3 may be included in the automatic load shedding or other equivalent arrangement provided disconnection will not:

(a) cause immediate disruption of systems required for safety, e.g.:
- Lighting systems,
- Navigation lights, aids and signals,
- Internal safety communication equipment.

(b) Prevent services required for safety being immediately available when the power supply is restored to normal operating conditions, e.g.:
- Fire pumps, and other extinguishing medium pumps,
- Bilge pumps,
- Ventilating fans for engine and boiler rooms.

SC134
(cont'd)

Examples of equipment in the paragraph 3, for which the automatic load shedding or other equivalent arrangement is normally allowed, includes:

- Fuel oil transfer pumps and fuel oil treatment equipment
- Lubrication oil transfer pumps and lubrication oil treatment equipment
- Pre-heaters for heavy fuel oil
- Starting air and control air compressors (except for control air compressors for propulsion control and its safety systems)
- Services listed in UI SC2

10.3 Services for habitability in the paragraph 4 may be included in the automatic load shedding or other equivalent arrangement.

◄◄

SC135 Escape Route or Low Location Lighting (LLL)

(May, 1998)
(Rev.1 June 1999)
(Del May 2004)

(Chapter II-2, Regulation 28.1.10)

Deleted in May 2004

◄◄

SC136 Connecting means by which the main bus bars of the main source of electrical power are normally connected

(May, 1998) (Corr. May, 2000) (Rev.1 July 2003) (Corr.1 Jan 2004) (Rev.2 July 2004) (Rev.3 Nov 2005)

(Chapter II-1, Regulation 41.5.1.3)

Regulation

Where the main source of electrical power is necessary for propulsion of the ship, the main busbar shall be subdivided into at least two parts which shall normally be connected by circuit breakers or other approved means; so far as is practicable, the connection of generating sets and other duplicated equipment shall be equally divided between the parts; and

Interpretation

Other approved means can be achieved by:

- circuit breaker without tripping mechanism; or
- disconnecting link or
- switch

by which bus bars can be split easily and safely.

Bolted links, for example bolted bus bar sections, are not to be accepted.

Note:

1. This UI is to be implemented by all Members and Associates not later than on ships contracted for construction on or after 1 January 1999.

2. Changes introduced in Rev.1 are to be uniformly implemented by IACS Members and Associates from 1 January 2004.

3. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

4. Rev.3 is to introduce a reference to IMO MSC/Circ. 1176 with no change of technical substance. Two typographical errors are considered to exist in the Annex to MSC/Circ.1176: (Paragraph 5.3) the text should indicate “*circuit breaker without tripping mechanism* ***or*** *[not “and”] disconnecting link or switch by which bus bars can be switched easily and safely”*; and (Paragraph 5.4) the correct reference should be to SOLAS II-1/41.5.1.3 (not 41.4).

END

SC 137
(Apr 1998)
(Rev.1
Nov 2020)

Definition of High-Speed Craft

(Chapter IX, Reg.1.8)

For the purpose of application of the ISM (International Safety Management) Code not later than 1 July 1998, a High-Speed Craft is a craft as defined in SOLAS regulation X/1.3 which complies with the requirements of the High-Speed Craft Code in its entirety and has been surveyed as given in regulation X/3.1.

High speed craft meeting the requirements given in the regulation X/1.3 but complying with requirements of chapters I to IV and regulation V/12 in lieu of the High-Speed Craft Code are not required to comply with the ISM Code by 1 July 1998, but must comply by 1 July 2002.

End of Document

SC 138 Safe Access to Tanker Bows

(May 1998) (Corr.1 (Feb 2023)

Interpretation of SOLAS Chapter II-1, Regulation 3-3.2

SOLAS Chapter II-1, Regulation 3-3.2 reads as follows:

"Every tanker shall be provided with the means to enable the crew to gain safe access to the bow even in severe weather conditions. Such means of access shall be approved by the Administration based on the guidelines developed by the Organization."

Interpretation:

Interpretation of SOLAS II-1/3-3.2, Safe Access to Tanker Bows, for all vessels subject to that regulation, is provided in IACS UI LL50.

Note:

IACS Societies are to apply UI LL50, in so far as SOLAS II-1/3-3.2 is concerned, to all ships subject to that regulation.

End of Document

SC 139

(May, 1998) (Rev.1 Dec 2003)

Navigation bridge visibility

(Chapter V, Regulation 22)

Deleted Dec 2011

(Added to UI SC235 (Corr.1, Dec 2011). Reference: 11060bIGd)

End of Document

SC 140

(Oct 1998) (Rev.1 June 1999) (Rev.2 Nov 2005) (Rev.3 Jan 2011)

Secondary Means of Venting Cargo Tanks

Reg. II-2/4.5.3.2.2

Where the arrangements are combined with other cargo tanks, either stop valves or other acceptable means shall be provided to isolate each cargo tank. Where stop valves are fitted, they shall be provided with locking arrangements which shall be under the control of the responsible ship's officer. There shall be a clear visual indication of the operational status of the valves or other acceptable means. Where tanks have been isolated, it shall be ensured that relevant isolating valves are opened before cargo loading or ballasting or discharging of those tanks is commenced. Any isolation must continue to permit the flow caused by thermal variations in a cargo tank in accordance with regulation 11.6.1.1.

Reg. II-2/11.6.3.2 Secondary means for pressure/vacuum relief

A secondary means of allowing full flow relief of vapour, air or inert gas mixtures to prevent over-pressure or under-pressure in the event of failure of the arrangements in paragraph 6.1.2. Alternatively, pressure sensors may be fitted in each tank protected by the arrangement required in paragraph 6.1.2, with a monitoring system in the ship's cargo control room or the position from which cargo operations are normally carried out. Such monitoring equipment shall also provide an alarm facility which is activated by detection of over-pressure or under-pressure conditions within a tank.

Interpretation

1. A P/V breaker fitted on the IG main may be utilised as the required secondary means of venting where the cargo is homogenous or for multiple cargoes where the vapours are compatible and do not require isolation.

2. The height requirements of Reg. II-2/4.5.3.4.1 and 11.6.2 and the requirements for devices to prevent the passage of flame of Reg. II-2/4.5.3.3 are not applicable to the P/V breaker provided the settings are above those of the venting arrangements required by Reg. II-2/11.6.1.

3. Where the venting arrangements are of the free flow type and the masthead isolation valve is closed for the unloading condition, the IG systems will serve as the primary under-pressure protection with the P/V breaker serving as the secondary means.

Notes:

1. This UI is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2013.

2. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

SC 140 (cont)

4. Inadvertent closure or mechanical failure of the isolation valves required by SOLAS Reg. II-2/4.5.3.2.2 and the FSS Code, Ch. 15, 2.3.2.2 need not be considered in establishing the secondary means where the cargo is homogenous or for multiple cargoes where the vapours are compatible and do not require isolation since:

a) The valves are operated under the control of the responsible ship's officer and a clear visual indication of the operational status of the valves is required by SOLAS Reg. II-2/4.5.3.2.2, as amended, and

b) The possibility of mechanical failure of the valves is remote due to their simplicity.

5. For ships that apply pressure sensors in each tank as an alternative secondary means of venting as per SOLAS Reg. II-2/11.6.3.2, the setting of the over-pressure alarm shall be above the pressure setting of the P/V-valve and the setting of the under-pressure alarm shall be below the vacuum setting of the P/V-valve. The alarm settings are to be within the design pressures of the cargo tanks. The settings are to be fixed and not arranged for blocking or adjustment in operation*.

* An exception is permitted for ships that carry different types of cargo and use P/V-valves with different settings, one setting for each type of cargo. The settings may be adjusted to account for the different types of cargo.

End of Document

SC141 (1999) Information on compliance with requirements for bulk carriers - "triangle" to be marked on a bulk carrier

(Chapter XII, Regulation 8.3)

Deleted in July 1999.

UI SC 141 (1999), with some changes, was adopted by IMO/MSC 71 in 1999 as MSC Res.89(71).

SC142 Embarkation Ladders & Survival Craft Launching Falls

(Chapter III, Regulations 11.7 & 16.6)

Deleted in January 2000.

SC 143 Stowage of Marine Evacuation Systems

(1999)
(Rev.1 Feb 2010)

SOLAS Regulation III/15.1

"The ship's side shall not have any openings between the embarkation station of the marine evacuation system and the waterline in the lightest seagoing condition and means shall be provided to protect the system from any projections."

Interpretation

III/15.1 requires that the ship's side shall not have any openings between the embarkation station of the marine evacuation station and the sea level in the lightest seagoing condition. This means no openings, be they permanent openings, recessed promenades or temporary openings such as shell doors, windows or ports, are allowed in this particular area.

On passenger ships, windows and side scuttles of the non-opening type are allowed in this area if complying with Reg.II-2/9.4.1.3.3. On cargo ships, the windows and side scuttles in the area in way of a marine evacuation system, if installed, shall only be of the non-opening type.

Note:

1. This Unified Interpretation is to be uniformly implemented by all Members and Associates from 1 July 1999, unless otherwise instructed by a flag state.

2. Changes introduced in Rev.1 are to be uniformly applied by IACS Societies for ships contracted for construction on or after 1 July 2010.

3. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 144
(1999)
(Rev,1 Nov.1999)
(Rev.2 Sept 2012)
(Rev.3 Oct 2017)

Maintenance, Thorough Examination, Operational Testing, Overhaul and Repair of Lifeboats, Rescue Boats and Fast Rescue Boats, Launching Appliances and Release Gear

SOLAS Regulation III/20.11 reads:

11.1. Launching appliances shall be:

.2 upon completion of the examination referred to in paragraph 11.1.1, subjected to a dynamic test of the winch brake at maximum lowering speed. The load to be applied shall be the mass of the survival craft or rescue boat without persons on board, except that, at intervals of at least once every five years, the test shall be carried out with a proof load equal to 1.1 times the weight of the survival craft or rescue boat and its full complement of persons and equipment.

11.2. Lifeboat and rescue boat release gear, including fast rescue boat release gear and free-fall lifeboat release systems, shall be:

.2 in case of on-load release gear, operationally tested under a load of 1.1 times the total mass of the boat when loaded with its full complement of persons and equipment whenever the release gear is overhauled. Such overhauling and operational test shall be carried out at least once every five years.

.3 notwithstanding paragraph 11.2.2, the operational testing of free-fall lifeboat release systems shall be performed either by free fall launch with only the operating crew on board or by a test without launching the lifeboat carried out based on requirements for maintenance, thorough examination, operational testing, overhaul and repair.

11.3. Davit-launched liferaft automatic release hooks shall be:

.2 operationally tested under a load of 1.1 times the total mass of the liferaft when loaded with its full complement of persons and equipment whenever the automatic release hook is overhauled. Such overhauling and operational test shall be carried out at least once every five years.

Interpretation

The thorough examinations/overhauls and operational tests, carried out at intervals of at least once every five years, shall be done in the presence of a surveyor.

Note:

1. This Unified Interpretation is to be uniformly implemented by all Members and associates from 1 July 1999, unless otherwise instructed by a Flag State.

2. Changes introduced in Rev.1 are to be applied from 1 July 1999.

3. Changes introduced in Rev.2 are to be applied from 1 January 2013.

4. Changes introduced in Rev.3 are to be applied from 1 January 2020.

End of Document

SC145 Public Address System
(1998)

(LSA Code, para. 7.2.2)

1. With respect to spaces where a public address system is/may not be required in 7.2.2.1, these may be spaces such as under deck passage way, bosun's locker, hospital, pump room.

2. With respect to cabin/state rooms, the sound pressure levels as stated in 7.2.2.2.1 shall be attained as required inside the cabin/state room, during sea trials.

3. Where an individual loudspeaker has a device for local silencing, an over-ride arrangement from the control station(s), including the navigating bridge, shall be in place.

Note: This Unified Interpretation is to be uniformly implemented by all Members and Associates from 1 April 1999, unless otherwise instructed by a Flag State.

◄◄

SC 146 Fire hose couplings and nozzles

(May 1999) (Rev.1 Nov 2005) (Rev.2 June 2021)

Interpretation of SOLAS chapter II-2 regulation 10.2.3

SOLAS regulation II-2/10.2.3 reads as follows:

2.3 Fire hoses and nozzles

2.3.1 General specifications

2.3.1.1 Fire hoses shall be of non-perishable material approved by the Administration and shall be sufficient in length to project a jet of water to any of the spaces in which they may be required to be used. Each hose shall be provided with a nozzle and the necessary couplings. Hoses specified in this chapter as "fire hoses" shall, together with any necessary fittings and tools, be kept ready for use in conspicuous positions near the water service hydrants or connections. Additionally, in interior locations in passenger ships carrying more than 36 passengers fire hoses shall be connected to the hydrants at all times. Fire hoses shall have a length of at least 10 m, but not more than:

.1 15 m in machinery spaces;

.2 20 m in other spaces and open decks; and

.3 25 m for open decks on ships with a maximum breadth in excess of 30 m.

2.3.1.2 Unless one hose and nozzle is provided for each hydrant in the ship, there shall be complete interchangeability of hose couplings and nozzles.

2.3.2 Number and diameter of fire hoses

2.3.2.1 Ships shall be provided with fire hoses the number and diameter of which shall be to the satisfaction of the Administration.

2.3.2.2 In passenger ships, there shall be at least one fire hose for each of the hydrants required by paragraph 2.1.5 and these hoses shall be used only for the purposes of extinguishing fires or testing the fire-extinguishing apparatus at fire drills and surveys.

Note:

1. This UI SC146 is to be uniformly implemented by IACS Members and Associates from January 2000.

2. Rev.1 has no new implementation date.

3. Rev.2 is to be uniformly implemented by IACS Members from 1 July 2022.

SC 146 (cont)

2.3.2.3 In cargo ships:

.1 of 1,000 gross tonnage and upwards, the number of fire hoses to be provided shall be one for each 30 m length of the ship and one spare but in no case less than five in all. This number does not include any hoses required in any engine or boiler room. The Administration may increase the number of hoses required so as to ensure that hoses in sufficient number are available and accessible at all times, having regard to the type of ship and the nature of trade in which the ship is employed. Ships carrying dangerous goods in accordance with regulation 19 shall be provided with 3 hoses and nozzles, in addition to those required above; and

.2 of less than 1,000 gross tonnage, the number of fire hoses to be provided shall be calculated in accordance with the provisions of paragraph 2.3.2.3.1. However, the number of hoses shall in no case be less than three.

2.3.3 Size and types of nozzles

2.3.3.1 For the purposes of this chapter, standard nozzle sizes shall be 12 mm, 16 mm and 19 mm or as near thereto as possible. Larger diameter nozzles may be permitted at the discretion of the Administration.

2.3.3.2 For accommodation and service spaces, a nozzle size greater than 12 mm need not be used.

2.3.3.3 For machinery spaces and exterior locations, the nozzle size shall be such as to obtain the maximum discharge possible from two jets at the pressure mentioned in paragraph 2.1.6 from the smallest pump, provided that a nozzle size greater than 19 mm need not be used.

2.3.3.4 Nozzles shall be of an approved dual-purpose type (i.e., spray/jet type) incorporating a shutoff.

Interpretation

Aluminium alloys may be used for fire hose couplings and nozzles, except in open deck areas of oil tankers and chemical tankers.

End of Document

SC 147 Watertight door closure

(May 1999) (Rev.1 Nov 2005) (Rev.2 Feb 2021)

FSS Code, Ch. 9, 2.1.2.4

the system may be arranged with output signals to other fire safety systems including:

[…]

.3 Fire doors

[…]

Interpretation

Watertight doors complying with Reg.II-1/16 which also serve as fire doors are not to close automatically in case of fire detection.

Note:

1. This UI SC 147 is to be uniformly implemented by IACS Members and Associates from 1 January 2000.

2. The “contract for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No.29.

End of Document

SC148 Ventilation by fan coil units and internal circulation fans

(May 1999) (Rev.1 Nov 2005) (Rev.2 Sept 2015)

(Reg.II-2/5.2.1.2, II-2/5.2.1.3 and Reg.II-2/7.9.3)

SOLAS Regulations Chapter II-2/5.2.1.2 reads:

Power ventilation of accommodation spaces, service spaces, cargo spaces, control stations and machinery spaces shall be capable of being stopped from an easily accessible position outside the space being served. This position shall not be readily cut off in the event of a fire in the spaces served.

SOLAS Regulations Chapter II-2/5.2.1.3 reads:

In passenger ships carrying more than 36 passengers, power ventilation, except machinery space and cargo space ventilation and any alternative system which may be required under regulation 8.2, shall be fitted with controls so grouped that all fans may be stopped from either of two separate positions which shall be situated as far apart as practicable. Fans serving power ventilation systems to cargo spaces shall be capable of being stopped from a safe position outside such spaces.

SOLAS Regulations Chapter II-2/7.9.3 reads:

Passenger ships carrying more than 36 passengers shall have the fire detection alarms for the systems required by paragraph 5.2 centralized in a continuously manned central control station. In addition, controls for remote closing of the fire doors and shutting down the ventilation fans shall be centralized in the same location. The ventilation fans shall be capable of reactivation by the crew at the continuously manned control station. The control panels in the central control station shall be capable of indicating open or closed positions of fire doors and closed or off status of the detectors, alarms and fans. The control panel shall be continuously powered and shall have an automatic change-over to standby power supply in case of loss of normal power supply. The control panel shall be powered from the main source of electrical power and the emergency source of electrical power defined by regulation II-1/42 unless other arrangements are permitted by the regulations, as applicable.

Note:

1. This UI SC 148 is to be uniformly implemented by IACS Members and Associates from 1 January 2000.

2. Revision 2 of UI SC148 is to be uniformly implemented by IACS Societies from 1 July 2016.

SC148
(cont)

Interpretations

The fan in a HVAC temperature control unit, or a circulation fan inside a cabinet/switchboard, is not considered to be a ventilation fan as addressed in Reg.II-2/5.2.1.2, Reg.II-2/5.2.1.3 and Reg.II-2/7.9.3, if it is not capable of supplying outside air to the space when the power ventilation is shut down (e.g., small units intended for re-circulation of air within a cabin).

Therefore, such fans need not be capable of being stopped from an easily accessible position (or a safe position) outside the space being served when applying SOLAS Reg.II-2/5.2.1.2 or Reg.II-2/5.2.1.3, and need not be capable of being controlled from a continuously manned central control station for passenger ships carrying more than 36 passengers when applying SOLAS Reg.II-2/7.9.3.

End of Document

SC 149 Gas Measurement and Detection - Portable instruments

(May 1999) (Rev.1 Nov 2005) (Rev.2 Feb 2012)

(SOLAS Reg. II-2/4.5.7.1)

SOLAS Reg. II-2/4.5.7.1 reads:

Tankers shall be equipped with at least one portable instrument for measuring oxygen and one for measuring flammable vapour concentrations, together with a sufficient set of spares. Suitable means shall be provided for the calibration of such instruments.

Interpretation

The requirement of Reg. II-2/4.5.7.1 for one portable instrument for measuring oxygen and one for measuring flammable vapour concentrations, and spares for both, is considered as being satisfied when a minimum of two instruments, each capable of measuring both oxygen and flammable vapour concentrations are provided onboard. Alternatively two portable instruments for measuring oxygen and two portable instruments for measuring flammable vapour concentrations could be provided onboard.

Notes:

1. This Unified Interpretation is to be uniformly implemented by IACS Members and Associates from 1 January 2000.

2. Rev.2 of this UI is to be uniformly implemented by IACS Societies from 1 January 2013.

End of Document

SC150 Location of the foam system equipment

(May 1999) (Rev.1 Nov 2005)

(FSS Code, Ch. 14, 2.1.2 and 2.3.1)

FSS Code, Ch. 14, 2.1.2 and 2.3.1 reads:

The deck foam system shall be capable of simple and rapid operation. The main control station for the system shall be suitably located outside the cargo area, adjacent to the accommodation spaces and readily accessible and operable in the event of fire in the areas protected.

Interpretation

The major equipment such as the foam concentrate tank and the pumps may be located in the engine room. The controls of the system are to be located in accordance with FSS Code, Ch. 14, 2.3.1.

Note: This UI SC 150 is to be uniformly implemented by IACS Members and Associates from 1 January 2000.

◀◀

SC151 Location of the main generating station with respect to the main switchboard and associated section boards

(May 1999)

(Chapter II-1, Reg. 41.3)

SOLAS Regulation Chapter II-1/41.3 reads:

The main switchboard shall be so placed relative to one main generating station that, as far as is practicable, the integrity of the normal electrical supply may be affected only by a fire or other casualty in one space. An environmental enclosure for the main switchboard, such as may be provided by a machinery control room situated within the main boundaries of the space, is not to be considered as separating the switchboards from the penetrators.

Definitions

Main generating station is the space where the main source of electrical power is situated.

Main source of electrical power is a source intended to supply electrical power to the main switchboard for distribution to all services necessary for maintaining the ship in normal operational and habitable condition.

Main switchboard is a switchboard which is directly supplied by the main source of electrical power and is intended to distribute electrical energy to the ship's services.

Machinery space, for the purpose of this UI, is to be taken as extending from the moulded base line to the margin line and between the extreme main transverse watertight bulkheads, bounding the spaces containing the main and auxiliary propulsion machinery, boilers serving the needs of propulsion, and all permanent coal bunkers. In the case of unusual arrangements, the Administration may define the limits of the machinery space.

Interpretations

The main generating station is to be situated within the machinery space, i.e. within the extreme main transverse watertight bulkheads.

Any bulkhead between the extreme main transverse watertight bulkheads is not regarded as separating the equipment in the main generating station provided that there is access between the spaces.

The main switchboard is to be located as close as practicable to the main generating station, within the same machinery space and the same vertical and horizontal A60 fire boundaries.

Where essential services for steering and propulsion are supplied from section boards these and any transformers, converters and similar appliances constituting an essential part of electrical supply system are also to satisfy the foregoing.

Note: This UI SC 151 is to be uniformly implemented by IACS Members and Associates from 1 January 2000.

SC152 Use of emergency generator in port

(May 1999)

(Chapter II-1, Regulations 42.1.4 and 43.1.4)

SOLAS Regulations II-1/42.1.4 and 43.1.4 read:

Provided that suitable measures are taken for safeguarding independent emergency operation under all circumstances, the emergency generator may be used exceptionally, and for short periods, to supply non-emergency circuits.

Interpretations

1. General

Unless instructed otherwise by the Administration the emergency generator may be used during lay time in port for the supply of the ship mains, provided the requirements as per items 2 and 3 below are complied with.

2. Requirements

2.1 To prevent the generator or its prime mover from becoming overloaded when used in port, arrangements are to be provided to shed sufficient non-emergency loads to ensure its continued safe operation.

2.2 The prime mover is to be arranged with fuel oil filters and lubrication oil filters, monitoring equipment and protection devices as required for the prime mover for main power generation and for unattended operation.

2.3 The fuel oil supply tank to the prime mover is to be provided with a low level alarm, arranged at a level ensuring sufficient fuel oil capacity for the emergency services for the period of time as required by SOLAS.

2.4 The prime mover is to be designed and built for continuous operation and should be subjected to a planned maintenance scheme ensuring that it is always available and capable of fulfilling its role in the event of an emergency at sea.

2.5 Fire detectors are to be installed in the location where the emergency generator set and emergency switchboard are installed.

2.6 Means are to be provided to readily change over to emergency operation.

2.7 Control, monitoring and supply circuits, for the purpose of the use of the emergency generator in port are to be so arranged and protected that any electrical fault will not influence the operation of the main and emergency services.

When necessary for safe operation, the emergency switchboard is to be fitted with switches to isolate the circuits.

3. Operation

Instructions* are to be provided on board to ensure that when the vessel is under way all control devices (e.g. valves, switches) are in a correct position for the independent emergency operation of the emergency generator set and emergency switchboard.

* These instructions are also to contain information on required fuel oil tank level, position of harbour/sea mode switch if fitted, ventilation openings etc.

Note: This UI SC 152 is to be uniformly implemented by IACS Members and Associates from 1 January 2000.

◄◄

SC 153 Rudder Stock Diameter

(Feb 2000)
(Corr.1 Dec 2019)

Reg.II-1/29.3.3 of SOLAS reads as follows:

"The main steering gear and rudder stock shall be:

operated by power where necessary to meet the requirements of paragraph 3.2 and in any case when the Administration requires a rudder stock of over 120 mm diameter in way of the tiller, excluding strengthening for navigation in ice;"

Reg.II-1/29.4.3 of SOLAS reads as follows:

"The auxiliary steering gear shall be:

operated by power where necessary to meet the requirements of paragraph 4.2 and in any case when the Administration requires a rudder stock of over 230 mm diameter in way of tiller, excluding strengthening for navigation in ice."

Reg.II-1/29.14 of SOLAS reads as follows:

"Where the rudder stock is required to be over 230 mm diameter in way of the tiller, excluding strengthening for navigation in ice, an alternate power supply, sufficient at least to supply the steering gear power unit which complies with the requirements of paragraph 4.2 and also its associated control system and the rudder angle indicator, shall be provided automatically, within 45 s, either from the emergency source of power or from an independent source of power located in the steering gear compartment"

Interpretation

1. When calculating the diameter of the rudder stock, cognizance must be taken of SOLAS II-1/29.3.3 and 29.4.3.

2. In this regard, the diameters mentioned in SOLAS II-1/29.3.3, 29.4.3 and 29.14 should be taken as having been calculated for rudder stock of mild steel with a yield stress of 235 N/mm^2. (i.e. with a material factor k=1)

Note:

1. This UI SC 153 is to be uniformly implemented by IACS Members and Associates from 1 January 2001.

End of Document

SC154 Provision of Detailed Information on Specific Cargo Hold Flooding Scenarios (SOLAS XII/9.3)

(Mar 2000)
(Corr.1 Sep 2021)

Interpretation of regulation 9.3 of SOLAS chapter XII

SOLAS XII/9 reads as follows:

Requirements for bulk carriers not being capable of complying with regulation 4.3 due to the design configuration of their cargo holds

For bulk carriers constructed before 1 July 1999 being within the application limits of regulation 4.3, which have been constructed with an insufficient number of transverse watertight bulkheads to satisfy that regulation, the Administration may allow relaxation from the application of regulations 4.3 and 6 on condition that they shall comply with the following requirements:

.1 for the foremost cargo hold, the inspections prescribed for the annual survey in the enhanced programme of inspections during surveys required by regulation XI-1/2 shall be replaced by the inspections prescribed therein for the intermediate survey of cargo holds;

.2 are provided with bilge well high water level alarms in all cargo holds, or in cargo conveyor tunnels, as appropriate, giving an audible and visual alarm on the navigation bridge, as approved by the Administration or an organization recognized by it in accordance with the provisions of regulation XI-1/1; and

.3 are provided with detailed information on specific cargo hold flooding scenarios. This information shall be accompanied by detailed instructions on evacuation preparedness under the provisions of section 8 of the International Safety Management (ISM) Code and be used as the basis for crew training and drills.

Interpretation

Application

This Unified Interpretation is applicable only to bulk carriers which are constructed before 1 July 1999 but not capable of complying with SOLAS XII/4.3.

Where bulk carriers are shown to be not capable of complying with SOLAS XII/4.3 due to the design configuration of their cargo holds, SOLAS XII/9 permits relaxation from the application of regulations 4.3 and 6 on the basis of compliance with certain other requirements, including provision of detailed information on specific cargo hold flooding scenarios.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies from 1 January 2001

SC154 (cont)

1. General - The information should comprise at least the following:

1.1 Specific cargo hold flooding scenarios.
1.2 Instructions for evacuation preparedness.
1.3 Details of the ship's means for leakage detection

2. Specific cargo hold flooding scenarios

2.1 Flooding assumptions:

2.1.1 The flooding of the foremost cargo hold is to be used as the starting point for any respective flooding scenario. Subsequent flooding of other spaces can only occur due to progressive flooding.

2.1.2 The permeability of a loaded hold shall be assumed as 0.9 and the permeability of an empty hold shall be assumed as 0.95, unless a permeability relevant to a particular cargo is assumed for the volume of a flooded hold occupied by cargo and a permeability of 0.95 is assumed for the remaining empty volume of the hold. The permeability of a hold loaded with packaged cargo shall be assumed as 0.7.

2.2 Loading conditions to be considered:

2.2.1 Flooding scenarios should be developed for loading conditions loaded down to the summer load line even if not in compliance with the requirements of Regulation 4.3. The scope to be covered should include at least the following:

- A homogenous and, if applicable, an alternate hold loading condition are to be considered.
- In case one or more loading conditions meet the requirements of regulation 4.3, this should be noted.
- A packaged cargo condition, if applicable.

2.2.2 In case the vessel is able to withstand flooding of the foremost hold at a lower draught, guidance in the form of limiting KG/GM curves, based on the flooding assumptions in 2.1, should be provided. Curves should indicate the assumed trim and whether the foremost hold is homogeneously loaded, loaded with high density cargo (alternate hold loading), loaded with packaged cargo or empty.

2.3 Presentation of results

The results should clearly indicate the reasons for non-compliance with the survival criteria given in Reg.XII/4.4 and explain the implications regarding the need to abandon ship. e.g. immersion of a weathertight closing appliance if the stability characteristics are otherwise satisfactory may indicate that there is no immediate danger of foundering, provided the bulkhead strength is adequate, particularly if the weather conditions are favourable and bilge pumping can cope with any progressive flooding.

SC154 (cont)

3. Guidance for evacuation

The following guidance in this IACS Interpretation with regard to preparation for evacuation is in the most general terms. Responsibility for the preparation of detailed information rests with the operator of the ship.

3.1 In any case of detection of severe flooding (made in accordance with UI SC180), preparations for abandoning the vessel shall be envisaged in accordance with the applicable rules and procedures, such as SOLAS III, STCW and the ISM Code.

3.2 In the context of severe weather conditions the weather itself may have substantial influence on the development of the flooding and consequently the time remaining to execute the abandoning of the ship could be much shorter than estimated in any pre-assessed flooding scenario.

End of Document

SC 155

Lightweight check in lieu of inclining test

(June 2000) (Rev.1 Feb 2008) (Rev.2 Feb 2010) (Del Aug 2022)

UI SC155 text was incorporated into UI SC297. This UI was deleted on 01 January 2023 when UI SC297 came into force.

End of Document

SC 156
(June 2002)
(Rev.1 Oct 2018)
(Rev.2 Jan 2021)
(Rev.3 July 2024)

Doors in watertight bulkheads of cargo ships and passenger ships

Application

This unified interpretation pertains to doors located in way of the internal watertight subdivision boundaries and the external watertight boundaries necessary to ensure compliance with the relevant subdivision and damage stability regulations.

This unified interpretation does not apply to doors located in external boundaries above equilibrium or intermediate waterplanes.

The design and testing requirements for watertight doors vary according to their location relative to the 1) equilibrium waterplane or intermediate waterplane at any stage of assumed flooding and or 2) bulkhead deck or freeboard deck.

This UI applies to ships subject to certification under SOLAS, MARPOL, ICLL, the IBC Code and the IGC Code in accordance with SOLAS II-1/Reg. 4.1 and Reg.4.2 as amended by resolution MSC 474 (102).

Small cargo vessels not subject to damage stability requirements are not required to comply with the full scheme[1].

Footnote:

[1] Doors in watertight bulkheads of small cargo ships, not subject to any statutory subdivision and damage stability requirements, may be hinged single action doors arranged to open out of the major space protected. They shall be constructed in accordance with the requirements of the classing society and have notices affixed to each side stating, "To be kept closed at sea".

Note:

1. This UI SC 156 is to be uniformly implemented by IACS Members and Associates from 1 January 2003.

2. Rev.1 of this Unified Interpretation is to be applied by Members on ships contracted for construction on or after 1 January 2020 (in the absence of a building contract, the keel of which is laid or which are at a similar stage of construction on or after 1 July 2020) or delivered on or after 1 January 2024.

3. The “contracted for construction” means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

4. Rev.2 of this Unified Interpretation is to be applied by Members on ships contracted for construction on or after 1 July 2021 (in the absence of a building contract, the keel of which is laid or which are at a similar stage of construction on or after 1 January 2022) or delivered on or after 1 July 2024.

5. Rev. 3 of this Unified Interpretation is to be applied by Members on ships contracted for construction on or after 1 July 2025 (in the absence of a building contract, the keel of which is laid or which are at a similar stage of construction on or after 1 July 2025) or delivered on or after 1 January 2028.

SC 156 (cont)

1. Definitions

For the purpose of this UI the following definitions apply:

Watertight: Capable of preventing the passage of water in any direction under a design head. The design head for any part of a structure shall be determined by reference to its location relative to the bulkhead deck or freeboard deck, as applicable, or to the most unfavourable equilibrium/intermediate waterplane, in accordance with the applicable subdivision and damage stability regulations, whichever is the greater. A watertight door is thus one that will maintain the watertight integrity of the subdivision bulkhead in which it is located.

Equilibrium Waterplane: The waterplane in still water when, taking account of flooding due to an assumed damage, the weight and buoyancy forces acting on a vessel are in balance. This relates to the final condition when no further flooding takes place or after cross flooding is completed.

Intermediate Waterplane: The waterplane in still water, which represents the instantaneous floating position of a vessel at some intermediate stage between commencement and completion of flooding when, taking account of the assumed instantaneous state of flooding, the weight and buoyancy forces acting on a vessel are in balance.

Sliding Door or Rolling Door: A door having a horizontal or vertical motion generally parallel to the plane of the door.

Hinged Door: A door having a pivoting motion about one vertical or horizontal edge.

2. Structural Design

Doors shall be of approved design and substantial construction in accordance with the requirements of the classing society and shall be of a strength equivalent to that of the subdivision bulkheads in which they are fitted.

3. Operation Mode, Location and Outfitting

Doors shall be fitted in accordance with all requirements regarding their operation mode, location and outfitting, i.e. provision of controls, means of indication, etc., as shown in Table 1 below. This table is to be read in conjunction with the following general notes: For passenger ships the watertight doors and their controls are to be located in compliance with SOLAS II- 1/13.5.3 and II-1/13.7.1.2.2.

3.1 Frequency of Use whilst at sea

Normally Closed
Kept closed at sea but may be used if authorised by the Master. To be closed again after use.

Permanently Closed
Such doors shall remain closed at sea. The time of opening such doors in port and of closing them before the ship leaves port shall be authorised by the Master and entered in the log-book. Should such doors be accessible during the voyage, they shall be fitted with a device to prevent unauthorised opening.

SC 156 (cont)

Used
Kept closed at sea, but may be opened during navigation to permit the passage of passengers or crew, or when work in the immediate vicinity of the door necessitates it being opened as per SOLAS II-1/22.3. The door shall be immediately closed after use.

3.2 Category of watertight doors for passenger ships

Category B

A watertight door that may be opened during navigation when work in the immediate vicinity of the door necessitates it being opened, according to SOLAS regulation II-1/22.3. The door must be immediately closed when the task which necessitated it being open is finished.

Category C

A watertight door that may be opened during navigation to permit the passage of passengers or crew, according to SOLAS regulation II-1/22.3. The door must be immediately closed when transit through the door is complete.

Category D

A watertight door that shall be closed before the voyage commences and shall be kept closed during navigation.

1. A watertight door of a width of more than 1.2 m in machinery spaces as permitted by SOLAS regulation II-1/13.9. The door shall remain closed during navigation except in case of urgent necessity at the discretion of the master according to SOLAS regulation II-1/22.4.

2. Additionally, watertight doors fitted in watertight bulkheads dividing cargo between deck spaces in accordance with SOLAS regulation II-1/13.8.1 or dividing cargo spaces in accordance with SOLAS regulation II-1/14.2, shall be closed before the voyage commences and shall be closed during navigation according to SOLAS regulation II-1/22.5.

3.3 Type

Power operated, sliding or rolling[2]	POS
Power operated, hinged	POH
Sliding or Rolling	S
Hinged	H

3.4 Control

3.4.1 Local

All doors, except those which are to be permanently closed at sea, are to be capable of being opened and closed by hand (and by power, where applicable[3]) locally from both sides of the doors, with the ship listed to either side.

For passenger ships, the angle of list at which operation by hand is to be possible is 15 degrees.

For cargo ships, the angle of list at which operation by hand is to be possible is 30 degrees.

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3.4.2 Remote

Where indicated in Table 1, doors are to be capable of being remotely closed by power from the bridge[4] for all ships, and by hand also from a position above the bulkhead deck for passenger ships as required by SOLAS II-1/13.7.1.4 13.6.1.4. Where it is necessary to start the power unit for operation of the watertight door, means to start the power unit is also to be provided at remote control stations. The operation of such remote control is to be in accordance with SOLAS II-1/ 13.7.1 to 13.7.4. For tankers, where there is a permanent access from a pipe tunnel to the main pump room, in accordance with regulation II-2/4.5.2.4 the watertight door shall be capable of being manually closed from outside the main pump room entrance in addition to the requirements above.

3.5 Indication[5]

3.5.1 Where shown in Table 1, position indicators are to be provided at all remote operating positions for all ships and provided locally on both sides of the internal doors for cargo ships, to show whether the doors are open or closed and, if applicable, with all dogs/cleats fully and properly engaged.

3.5.2 The door position indicating system is to be of self-monitoring type and the means for testing of the indicating system are to be provided at the position where the indicators are fitted.

Footnotes:

[2] Rolling doors are technically identical to sliding doors.

[3] Arrangements for passenger ships shall be in accordance with SOLAS II-I/ 13.6.1.4 and 13.6.1.5and regulation II-1/13-1.2 for cargo ships

[4] Arrangements shall be in accordance with SOLAS II-1/ 13.6.1.5 for passenger ships and 13-1.2 for cargo ships

[5] Refer to SOLAS II-I/Reg.13, 13-1, 15-1 and 17-1, IEC 60092-504, IMO International Code on Alarms and Indicators 2009)

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3.5.3 A diagram showing the location of the door and an indication to show its position shall be provided at the central operating console located at the navigating bridge. A red light shall indicate the door is in the open position and a green light shall indicate the door is in the closed position. When the door is closed from this remote position, the red light shall flash when the door is in an intermediate position. This applies to passenger ships and cargo ships.

3.5.4 Signboard/instructions should be placed in way of the door advising how to act when the door is in "doors closed" mode.

3.6 Alarms[6]

3.6.1 For passenger ships, failure of the normal power supply of the required alarms shall be indicated by an audible and visual alarm at the central operating console at the navigation bridge. For cargo ships, failure of the normal power supply of the required alarms shall be indicated by an audible and visual alarm at the navigation bridge.

3.6.2 All door types, including power-operated sliding watertight doors which are to be capable of being remotely closed are to be provided with an audible alarm, distinct from any other alarm in the area, which will sound whenever such a door is remotely closed.
For passenger ships the alarm shall sound for at least 5 s but not more than 10 s before the door begins to move and shall continue sounding until the door is completely closed. In the case of remote closure by hand operation, an alarm is required to sound only while the door is actually moving. In passenger areas and areas of high ambient noise, the audible alarms are to be supplemented by visual signals at both sides of the doors.

3.6.3 All watertight doors, including sliding doors, operated by hydraulic door actuators, either a central hydraulic unit or an independent hydraulic unit for each door is to be provided with a low fluid level alarm or low gas pressure alarm, as applicable or some other means of monitoring loss of stored energy in the hydraulic accumulators. For passenger ships this alarm is to be both audible and visible and shall be located on the central operating console at the navigation bridge. For cargo ships, this alarm shall be both audible and visible and should be located at the navigation bridge.

3.7 Notices

As shown in Table 1, doors which are normally closed at sea but not provided with means of remote closure, are to have notices fixed to both sides of the doors stating, “To be kept closed at sea”. Doors which are to be permanently closed at sea are to have notices fixed to both sides stating, “Not to be opened at sea”.

3.8 Location

For passenger ships the watertight doors and their controls shall be located in compliance with regulations II-1/13.5.3 and II-1/ 13.6.1.2.2.

Footnotes:

[6] Refer to SOLAS II-I/Reg.13, 13-1, 15-1 and 17-1, IEC 60092-504, IMO International Code on Alarms and Indicators 2009)

SC 156 (cont)

4. Fire Doors

Watertight doors may also serve as fire doors but need not be fire-tested if fitted on cargo ships or if fitted below the bulkhead deck on passenger ships. However, such doors fitted above the bulkhead deck on passenger ships shall be tested to the FTP Code in accordance with the fire rating of the division they are fitted in. If it is not practicable to ensure self-closing, means of indication on the bridge showing whether these doors are open or closed and a notice stating 'To be kept closed at sea' can be alternative of the self-closing.
Where a watertight door is located adjacent to a fire door, both doors shall be capable of independent operation, remotely if required by SOLAS II-1/ 13.7.1 to 13.7.3 and from both sides of each door.

5. Testing

Doors which become immersed by an equilibrium or intermediate waterplane, are to be subjected to a hydrostatic pressure test.

For large doors intended for use in the watertight subdivision boundaries of cargo spaces, structural analysis may be accepted in lieu of pressure testing. Where such doors utilise gasket seals, a prototype pressure test to confirm that the compression of the gasket material is capable of accommodating any deflection, revealed by the structural analysis, is to be carried out.

Doors above freeboard or bulkhead deck, which are not immersed by an equilibrium or intermediate waterplane but become intermittently immersed at angles of heel in the required range of positive stability beyond the equilibrium position are to be hose tested.

5.1 Pressure Testing

5.1.1 The head of water used for the pressure test shall correspond at least to the head measured from the lower edge of the door opening, at the location in which the door is to be fitted in the vessel, to the bulkhead deck or freeboard deck, as applicable, or to the most unfavourable damage waterplane, if that be greater. Testing may be carried out at the factory or other shore based testing facility prior to installation in the ship.

5.1.2 Leakage Criteria

5.1.2.1The following acceptable leakage criteria should apply

Doors with gaskets	No leakage
Doors with metallic sealing	Max leakage 1 litre/min.

5.1.2.2 Limited leakage may be accepted for pressure tests on large doors located in cargo spaces employing gasket seals or guillotine doors located in conveyor tunnels, in accordance with the following[7]

$$\text{Leakage rate(litre/min)} = \frac{(P + 4.572) \bullet h^3}{6568}$$

where: P = perimeter of door opening (metres)
h = test head of water (metres)

5.1.2.3 However, in the case of doors where the water head taken for the determination of the scantling does not exceed 6.10 m, the leakage rate may be taken equal to 0.375 litre/min if this value is greater than that calculated by the above-mentioned formula.

Footnotes:

[7] Published in the ATM F 1196, Standard Specification for Sliding Watertight Door Assemblies and referenced in the Title 46 US Code of Federal Regulations 170.270 Door design, operation installation and testing

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5.1.3 For doors on passenger ships which are used at sea or which become submerged by the equilibrium or intermediate waterplane, a prototype test shall be conducted, on each side of the door, to check the satisfactory closing of the door against a force equivalent to a water height of at least 1 m above the sill on the centre line of the door[8].

5.2 Hose Testing

5.2.1 All watertight doors shall be subject to a hose test in accordance with UR S14.2.3 after installation in a ship. Hose testing is to be carried out from each side of a door unless, for a specific application, exposure to floodwater is anticipated only from one side. Where a hose test is not practicable because of possible damage to machinery, electrical equipment insulation or outfitting items, it may be replaced by means such as an ultrasonic leak test or an equivalent test.

Footnote:

[8] Arrangements for passenger ships shall be in accordance with SOLAS Reg. II-1/13.5.2

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(cont)

Table 1: Doors in Internal Watertight Bulkheads and External Watertight Boundaries in Cargo Ships and Passenger Ships

A. Door in Internal Watertight Bulkhead

I. Passenger Ships

Position	1.	2.	3.	4.	5.	6.	7.	8.
	Regulation	**Category**	**Type**	**Remote Closure**	**Remote Indication**	**Audible /Visual Closing Alarm**	**Notice**	**Comments**
(1) Below Bulkhead Deck	SOLAS II-1/10, 13.4, 13.5.1, 13.5.2, 13.6.1 to 13.6.8, 13.7.1, 13.7.3, 13.7.4, 16.2, 22.1 and 22.3	B, C	POS	Yes	Yes	Yes (local)	No	For guidance regarding watertight doors on passenger ships which may be opened during navigation, see IMO MSC.1/Circ.1564.
	SOLAS II-1/10, 13.8.1, 13.8.2, 16.2, 22.2, 22.5 and 22.13	D	S, H	No	No	No	Yes	
	SOLAS II-1/10, 13.9, 22.2 and 22.4	D	POS	Yes	Yes	Yes (local)	No	
	SOLAS II-1/10 and14.2	D	S, H	No	Yes	No	Yes	

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(cont)

(2) At or above bulkhead deck and below the worst intermediate or final equilibrium waterline	SOLAS II-1/10, 16.2, 17.2, 22.1, and 22.3	B, C	POS	Yes	Yes	Yes (local)	No	For guidance regarding watertight doors on passenger ships which may be opened during navigation, see IMO MSC.1/Circ.1564. See Explanatory Note to Regulation 17.2 of Res.MSC.429(98)/Rev.2.
(3) At or above bulkhead deck, and above the worst intermediate and final equilibrium waterlines, but immersed in the required range of positive stability.	SOLAS II-1/17.3	N/A	POS, POH	Yes	Yes	Yes (local)	No	May remain open, but shall always be ready to be immediately closed. See Explanatory Note to Regulation 17.3 of Res.MSC.429(98)/Rev.2.
	SOLAS II-1/17.3	N/A	S, H	No	Yes	No	Yes	Normally closed. If hinged, this door shall be of single action type. See Explanatory Note to Regulation 17.3 of Res.MSC.429(98)/Rev.2.
(4) At or above bulkhead deck on ro-ro passenger ships.	SOLAS II-1/17-1.1.1 to 17-1.1.3, 22.8, 23.3 to 23.9	N/A	S, H	No	Yes	Yes (remote /local)	Yes	Permanently closed. The Administration may permit some accesses to be opened in accordance with Reg. II-1/23.6 and 23.8.

SC156
(cont)

II. Cargo Ships

Position relative to freeboard deck	1.	2.	3.	4.	5.	6.	7.	8.
	Regulation	**Frequency of Use while at sea**	**Type**	**Remote Closure**	**Remote Indication**	**Audible / Visual Closing Alarm**	**Notice**	**Comments**
(1) Below	SOLAS II-1/10, 13-1.2, 16.2 and 22.1, 22.3, MARPOL I/28.3, ICLL66+A.320 1988 Protocol to ICLL66, IBC and IGC	Used	POS	Yes	Yes	Yes (local)	No	
	SOLAS II-1/10, 13-1.3,16.2 and 24.4, MARPOL I/28.3, ICLL66+A.3201988 Protocol to ICLL66, IBC and IGC	Norm. Closed	S, H	No	Yes	No	Yes	If hinged, this door shall be of single action type. Under ICLL66, hinged doors separating a main machinery space from a steering gear compartment must have the lower sill above the Summer Load Line.
	SOLAS II-1/10, 13-1.4, 13-1.5, 16.2, 22.2, 22.13, 24.3, and 24.4, MARPOL I/28.3, ICLL66+A.3201988 Protocol to ICLL66, IBC and IGC	Perm. Closed	S, H	No	No	No	Yes	

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(cont)

	SOLAS II-1/10, 13-1.2,16.2, and 22.1, 22.3, MARPOL I/28.3, ICLL66+A.320 1988 Protocol to ICLL66, IBC and IGC	Used	POS	Yes	Yes	Yes (local)	No	
(2) At or above	SOLAS II-1/10, 13- 1.3, 16.2 and 24.4, MARPOL I/28.3, ICLL66+A.3201988 Protocol to ICLL66, IBC and IGC	Norm. Closed	S, H	No	Yes	No	Yes	If hinged, this door shall be of single action type. Under ICLL66, hinged doors separating a main machinery space from a steering gear compartment must have the lower sill above the Summer Load Line. Under MARPOL I/28.4.3, hinged watertight doors may be acceptable in watertight bulkhead in the superstructure.
	SOLAS II-1/10, 13-1.4, 13-1.5, 16.2, 22.8, 24.3 and 24.4, MARPOL I/28.3, ICLL66+A.3201988 Protocol to ICLL66, IBC and IGC	Perm. Closed	S, H	No	No	No	Yes	

SC156
(cont)

B. Doors in External watertight Boundaries below equilibrium or intermediate waterplane

Position relative to bulkhead deck or freeboard deck	1. Regulation	2. Frequency of Use while at sea	3. Type	4. Remote Closure	5. Remote Indication	6. Audible / Visual Closing Alarm	7. Notice	8. Comments
I. Passenger Ships								
(1) Below	SOLAS II-1/15.10, 16.2, 22.7 and 22.13	Perm. Closed	S, H	No	Yes	No	Yes	
(2) At or above	SOLAS II-1/16.2, 17.6, 22.8 to 22.13	Norm. Closed / Perm. Closed	S, H	No	Yes	No	Yes	If hinged, normally closed door shall be of single action type.
	SOLAS II-1/16.2, 17-1, 23.3, 23.5, 23.6 and 23.8	Norm. Closed / Perm. Closed	S, H	No	Yes	Yes remote/local	Yes	
II. Cargo Ships								
(1) Below	SOLAS II-1/15.10, 15- 1.2 to 15-1.4, 16.2, 22.7, 22.12, 22.13 and 24.1	Perm. Closed	S, H	No	Yes	No	Yes	
(2) At or above	SOLAS II-1/15-1.2 and 16.2	Norm. Closed	S, H	No	Yes	No	Yes	If hinged, normally closed door shall be of single action type.
	SOLAS II-1/15-1.2 to 15-1.4, 16.2, 22.8 and 24.1	Perm. Closed	S, H	No	Yes	No	Yes	

SC156
(cont)

End of Document

SC157 Main Source of Electrical Power

(June 2000)
(Rev.1 Feb 2005)

(Regulation II-1/41.5)

Interpretation of the clause "...will be maintained or immediately restored" as detailed in Reg. II-1/41.5.1.1 amending SOLAS Reg. II-1/41 - Main Source of electrical power and lighting systems.

1. Reg. II-1/41.5.1.1 - Where the main source of electrical power is necessary for propulsion and steering of the ship, the system shall be so arranged that the electrical supply to equipment necessary for propulsion and steering and to ensure safety of the ship will be maintained or immediately restored in case of loss of any one of the generators in service.

2. To fulfil the above the following measures are required:

2.1 Where the electrical power is normally supplied by more than one generator set simultaneously in parallel operation, provision of protection, including automatic disconnection of sufficient non-essential services and if necessary secondary essential services and those provided for habitability, should be made to ensure that, in case of loss of any of these generating sets, the remaining ones are kept in operation to permit propulsion and steering and to ensure safety.

2.2 Where the electrical power is normally supplied by one generator provision shall be made, upon loss of power, for automatic starting and connecting to the main switchboard of stand-by generator(s) of sufficient capacity with automatic restarting of the essential auxiliaries, in sequential operation if required. Starting and connection to the main switchboard of the stand-by generator is to be preferably within 30 seconds, but in any case not more than 45 seconds, after loss of power.
Where prime movers with longer starting time are used, this starting and connection time may be exceeded upon approval from the society.

2.3 Load shedding or other equivalent arrangements should be provided to protect the generators required by this regulation against sustained overload.

2.3.1 The load shedding should be automatic.

2.3.2 The non-essential services, service for habitable conditions may be shed and where necessary, additionally the secondary essential services, sufficient to ensure the connected generator set(s) is/are not overloaded.

Note: 1. This UI SC 157 is to be uniformly implemented by IACS Members and Associates from 1 January 2001.

2. Amendments introduced in Rev.1 are to be uniformly implemented from 1 January 2006.

END

SC158 Horizontal fire zone concept

(June 2000)
(Rev.1
Nov 2005)

(Reg. II-2/20.2.2.1)

The "Total overall clear height" is the sum of distances between deck and web frames of the decks forming one horizontal zone.

(MSC/Circ. 1120)

Note: This UI SC 158 is to be uniformly implemented by IACS Members and Associates from 1 January 2001.

◄◄

SC159 Equivalent Protection SOLAS II-2/10.7.2

(June 2000)
(Corr.1 May 2001)
(Rev.1 Nov 2005)
(Corr.1 Sep 2021)

Interpretation of regulation 10.7.2 of SOLAS Chapter II-2

SOLAS Chapter II-2, Regulation 10.7.2 reads as follows:

10.7.2 A ship engaged in the carriage of dangerous goods in any cargo spaces shall be provided with a fixed carbon dioxide or inert gas fire-extinguishing system complying with the provisions of the Fire Safety Systems Code or with a fire-extinguishing system which, in the opinion of the Administration, gives equivalent protection for the cargoes carried.

Interpretation

Water supplies as defined in SOLAS II-2/19.3.1.2 are considered as an acceptable protection for cargoes listed in Table 2 of the latest revision of MSC.1/Circ.1395.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships constructed from 1 January 2001.

End of Document

SC160 Method IIIC Construction

(June 2000)
(Rev.1
Nov 2005)

(Reg. II-2/7.5.5.3)

In the case of ships built in accordance with Method IIIC, the detection system is only relevant to the accommodation block. Service spaces built away from the accommodation block need not be fitted with a fixed fire detection system.

Note: This UI SC 160 is to be uniformly implemented by IACS Members and Associates from 1 January 2001.

◄◄

SC 161

Timber deck cargo in the context of damage stability requirements

(May 2000) (Rev.1 Feb 2008) (Rev.2 Apr 2021 Withdrawn) (Rev.3 May 2022)

SOLAS Regulation II-1/5-1 reads:

1 The master shall be supplied with such information to the satisfaction of the Administration as is necessary to enable him by rapid and simple processes to obtain accurate guidance as to the stability of the ship under varying conditions of service. A copy of the stability information shall be furnished to the Administration.

2 The information should include:

.1 curves or tables of minimum operational metacentric height (GM) and maximum permissible trim versus draught which assures compliance with the intact and damage stability requirements where applicable, alternatively corresponding curves or tables of the maximum allowable vertical centre of gravity (KG) and maximum permissible trim versus draught, or with the equivalents of either of these curves or tables;

.2 instructions concerning the operation of cross-flooding arrangements; and

.3 all other data and aids which might be necessary to maintain the required intact stability and stability after damage.

3 The intact and damage stability information required by regulation 5-1.2 shall be presented as consolidated data and encompass the full operating range of draught and trim. Applied trim values shall coincide in all stability information intended for use on board. Information not required for determination of stability and trim limits should be excluded from this information.

Note:

1. Implementation date 1 January 2001.

2. Rev.1 of this UI is to be applied by all Members and Associate on ships contracted for construction on or after 1 January 2009. However, Members and Associate are not precluded from applying this UI before this date.

3. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR)No. 29.

4. Rev.2 of this UI was withdrawn before coming into force on 1 July 2022.

5. Rev.3 of this UI is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2023.

SC161 (cont'd)

4 If the damage stability is calculated in accordance with regulation 6 to regulation 7-3 and, if applicable, with regulations 8 and 9.8, a stability limit curve is to be determined using linear interpolation between the minimum required GM assumed for each of the three draughts d_s, d_p and d_l. When additional subdivision indices are calculated for different trims, a single envelope curve based on the minimum values from these calculations shall be presented. When it is intended to develop curves of maximum permissible KG it shall be ensured that the resulting maximum KG curves correspond with a linear variation of GM.

5 As an alternative to a single envelope curve, the calculations for additional trims may be carried out with one common GM for all of the trims assumed at each subdivision draught. The lowest values of each partial index A_s, A_p and A_l across these trims shall then be used in the summation of the attained subdivision index A according to regulation 7.1. This will result in one GM limit curve based on the GM used at each draught. A trim limit diagram showing the assumed trim range shall be developed.

6 When curves or tables of minimum operational metacentric height (GM) or maximum allowable KG versus draught are not provided, the master shall ensure that the operating condition does not deviate from approved loading conditions, or verify by calculation that the stability requirements are satisfied for this loading condition.

Scope

The provisions given hereunder apply to ships that are subject to SOLAS, Chapter II-1, subdivision and damage stability calculations and engaged in carrying timber deck cargoes where the buoyancy of the timber deck cargo is taken into account in the damage stability calculations.

Definitions

The following definitions apply for the purposes of this interpretation:

timber is used as a collective expression used for all types of wooden material covered by CODE OF SAFE PRACTICE FOR SHIPS CARRYING TIMBER DECK CARGOES, 2011 (Resolution A.1048(27)), including both round and sawn wood but excluding wood pulp and similar cargo;

timber deck cargo means a cargo of timber carried on an uncovered part of a freeboard or superstructure deck.

timber load line means a special load line assigned to ships complying with certain conditions set out in the International Convention on Load Lines.

deepest timber subdivision draught is the waterline which corresponds to the timber summer draught to be assigned to the ship;

partial timber subdivision draught is the light service draught as defined in SOLAS Reg.II-1/2.11 plus 60% of the difference between the light service draught and the deepest timber subdivision draught.

SC161 (cont'd)

Interpretation

1. The ship shall be supplied with comprehensive stability information which takes into account timber deck cargo. Such information shall enable the master to rapidly and simply obtain accurate guidance as to the stability of the ship under varying conditions of service, and as required in SOLAS Regulation II-1/5-1 it shall include, among other damage stability related issues, a curve of minimum operating metacentric height (*GM*) versus draught or maximum allowable vertical centre of gravity (*KG*) versus draught which covers the requirements of SOLAS Regulation II-1/5-1.2.1.

2. To ensure the buoyancy of timber deck cargo can be justifiably credited in damage stability calculations, the integrity of the lashed timber deck cargo shall comply with the following:

.1 The timber deck cargo is to be stowed in accordance with the requirements of 2.9 of the CODE OF SAFE PRACTICE FOR SHIPS CARRYING TIMBER DECK CARGOES, 2011 (Resolution A.1048(27)).

.2 The timber deck cargo is to be secured by lashings and/or uprights.

.3 Lashings and uprights are to comply with the requirements of 2.10 of the CODE OF SAFE PRACTICE FOR SHIPS CARRYING TIMBER DECK CARGOES, 2011 (Resolution A.1048(27)).

3. The height and extent of the timber deck cargo shall be in accordance with 3.3.2 of Chapter 3, Part A of the International Code on Intact Stability, 2008 and shall be at least stowed to the standard height of one superstructure.

4. The permeability of the timber deck cargo is not to be less than 25% of the volume occupied by the cargo up to one standard superstructure.

5. Unless instructed otherwise by the Administration, the stability information for ships with timber deck cargoes shall be supplemented by additional curve(s) of limiting *GM* (or *KG*) covering the timber draught range.

6. The above described curve(s) applicable for conditions with timber deck cargo is/are to be developed as described in SOLAS Regulation II-1/5-1.4 and considering timber deck cargo at the deepest timber subdivision draught and at the partial timber subdivision draught only.

7. The limiting GM shall be varied linearly between the deepest timber subdivision draught, and between the partial timber subdivision draught and the light service draught respectively. Where timber freeboards are not assigned the deepest and partial draughts shall relate to the summer load line.

8. When considering the vertical extent of damage, the upper deck may be regarded as a horizontal subdivision (in accordance with SOLAS Regulation II-1/7-2.6.1). Thus when calculating damage cases which are limited vertically to the upper deck with the corresponding v-factor, the timber deck cargo may be considered to remain buoyant with an assumed permeability of 0.25 at the deepest and partial draught. For damage extending above the upper deck the timber deck cargo buoyancy in way of the damage zone is to be ignored.

End of Document

SC 162 Emergency fire pumps in cargo ships - General

(Feb. 2002)
(Rev.1
Nov 2005)

(Reg. II-2/10.2.2.3.1.2)

Unless the two main fire pumps, their sea suctions and the fuel supply or source of power for each pump are situated within compartments separated at least by A - O divisions, so that a fire in any one compartment will not render both fire pumps inoperable, an emergency fire pump should be fitted.

An arrangement in which one main fire pump is located in a compartment having more than one bulkhead or deck adjacent to the compartment containing the other main fire pump should also require an emergency fire pump.

SC 163

(Feb 2002) (Rev.1 Nov 2005) (Rev.2 Sept 2009)

Emergency fire pumps in cargo ships - sea suction and sea valve

(FSS Code, Ch. 12, 2.2.1.1)
(SOLAS Chapter II-2, Reg.10, 2.2.3.1)
(SOLAS Chapter II-2, Reg.10, 2.2.4.2)

The emergency fire pump shall as a minimum comply with paragraph 2.2.1.1 of FSS Code, Ch.12.

Where a fixed water-based fire extinguishing system installed for the protection of the machinery space in accordance with SOLAS regulation II-2/Reg.10.4.1.1, is supplied by the emergency fire pump, the emergency fire pump capacity shall be adequate to supply the fixed fire extinguishing system at the required pressure plus two jets of water.

The capacity of the two jets shall in any case be calculated by that emanating from the biggest nozzle size available onboard from the following table (*note), but shall not be less than 25 m^3/h.

Capacity of single jet

Nozzle size / Pressure at Hydrant	16 mm	19 mm
0.27 N/mm^2	16 m^3/h	23.5 m^3/h

*note: When selecting the biggest nozzle size available onboard, the nozzles located in the space where the main fire pumps are located can be excluded.

Note:

1. Changes introduced in Rev.2 are to be uniformly implemented by IACS Members and Associates to ships contracted for construction on/after 1 January 2010.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 164 Emergency fire pumps in cargo ships - priming

(Feb. 2002)
(Rev.1
Nov 2005)

(FSS Code, Ch. 12, 2.2.1.3)

Where necessary to ensure priming, the emergency fire pump should be of the self-priming type.

SC 165

(June 2002) (Rev.1 May 2004)

Electrical cables for the emergency fire pump

(Reg.II-2/10.2.2.3.1.2)

Deleted Dec 2014.

End of Document

SC166 Waste receptacles

(June 2002)
(Rev.1
Nov 2005)

(SOLAS 2000 Amendments (MSC.99(73)), Reg.II-2/4.4.2)

This regulation is not intended to preclude the use of containers constructed of combustible materials in galleys, pantries, bars, garbage handling or storage spaces and incinerator rooms provided they are intended purely for the carriage of wet waste, glass bottles and metal cans and are suitably marked.

(MSC/Circ. 1120)

Note: This UI SC 166 is to be uniformly implemented by IACS Members and Associates from 1 January 2003.

◄◄

SC167 Electrical distribution boards

(June 2002)
(Rev.1 Nov 2005)
(Corr.1 Nov 2021)

Interpretation of SOLAS chapter II-2 regulations 9.2.2.3.2.2(7), 9.2.2.4.2.2(5), 9.2.3.3.2.2(5) and 9.2.4.2.2.2(5))

SOLAS II-2/9.2.2.3.2.2(7) reads as follows:

For determining the appropriate fire integrity standards to be applied to boundaries between adjacent spaces, such spaces are classified according to their fire risk as shown in categories (1) to (14) below. Where the contents and use of a space are such that there is a doubt as to its classification for the purpose of this regulation, or where it is possible to assign two or more classifications to a space, it shall be treated as a space within the relevant category having the most stringent boundary requirements. Smaller, enclosed rooms within a space that have less than 30% communicating openings to that space are considered separate spaces. The fire integrity of the boundary bulkheads and decks of such smaller rooms shall be as prescribed in tables 9.1 and 9.2. The title of each category is intended to be typical rather than restrictive. The number in parentheses preceding each category refers to the applicable column or row in the tables.

(7) Accommodation spaces of moderate fire risk

Spaces as in category (6) above but containing furniture and furnishings of other than restricted fire risk.

Public spaces containing furniture and furnishings of restricted fire risk and having a deck area of 50 m^2 or more.

Isolated lockers and small store-rooms in accommodation spaces having areas less than 4 m^2 (in which flammable liquids are not stowed).

Motion picture projection and film stowage rooms. Diet kitchens (containing no open flame).

Cleaning gear lockers (in which flammable liquids are not stowed).

Laboratories (in which flammable liquids are not stowed).

Pharmacies.

Small drying rooms (having a deck area of 4 m^2 or less).

Specie rooms.

Operating rooms.

Note:

1. This UI SC167 is to be uniformly implemented by IACS Members and Associates from 1 January 2003.

SC167 (cont)

SOLAS II-2/9.2.2.4.2.2(5) reads as follows:

For determining the appropriate fire integrity standards to be applied to divisions between adjacent spaces, such spaces are classified according to their fire risk as shown in categories (1) to (11) below. Where the contents and use of a space are such that there is a doubt as to its classification for the purpose of this regulation, or where it is possible to assign two or more classifications to a space, it shall be treated as a space within the relevant category having the most stringent boundary requirements. Smaller, enclosed rooms within a space that have less than 30 % communicating openings to that space are considered separate spaces. The fire integrity of the boundary bulkheads and decks of such smaller rooms shall be as prescribed in tables 9.3 and 9.4. The title of each category is intended to be typical rather than restrictive. The number in parentheses preceding each category refers to the applicable column or row in the tables.

(5) Service spaces (low risk)
Lockers and store-rooms not having provisions for the storage of flammable liquids and having areas less than 4 m^2 and drying rooms and laundries.

SOLAS II-2/9.2.3.3.2.2(5) reads as follows:

For determining the appropriate fire integrity standards to be applied to divisions between adjacent spaces, such spaces are classified according to their fire risk as shown in categories (1) to (11) below. Where the contents and use of a space are such that there is a doubt as to its classification for the purpose of this regulation, or where it is possible to assign two or more classifications to a space, it shall be treated as a space within the relevant category having the most stringent boundary requirements. Smaller, enclosed rooms within a space that have less than 30% communicating openings to that space are considered separate spaces. The fire integrity of the boundary bulkheads and decks of such smaller rooms shall be as prescribed in tables 9.5 and 9.6. The title of each category is intended to be typical rather than restrictive. The number in parentheses preceding each category refers to the applicable column or row in the tables.

(5) Service spaces (low risk)
Lockers and store-rooms not having provisions for the storage of flammable liquids and having areas less than 4 m^2 and drying rooms and laundries.

SOLAS II-2/9.2.4.2.2.2(5) reads as follows:

For determining the appropriate fire integrity standards to be applied to divisions between adjacent spaces, such spaces are classified according to their fire risk as shown in categories (1) to (10) below. Where the contents and use of a space are such that there is a doubt as to its classification for the purpose of this regulation, or where it is possible to assign two or more classifications to a space, it shall be treated as a space within the relevant category having the most stringent boundary requirements. Smaller, enclosed areas within a space that have less than 30% communicating openings to that space are considered separate areas. The fire integrity of the boundary bulkheads and decks of such smaller spaces shall be as prescribed in tables 9.7 and 9.8. The title of each category is intended to be typical rather than restrictive. The number in parentheses preceding each category refers to the applicable column or row in the tables.

(5) Service spaces (low risk)
Lockers and store-rooms not having provisions for the storage of flammable liquids and having areas less than 4 m^2 and drying rooms and laundries.

SC167 Interpretation

(cont)

Distribution boards may be located behind panels/linings within accommodation spaces including stairway enclosures, without the need to categorize the space, provided no provision is made for storage.

If distribution boards are located in an identifiable space having a deck area of less than 4 m^2, this space may be categorized in (7), according to regulation 9.2.2.3.2.2, or (5), according to regulations 9.2.2.4.2.2, 9.2.3.3.2.2 and 9.2.4.2.2.2.

(MSC/Circ. 1120)

End of Document

SC168 Hydrants for dangerous goods

(June 2002)
(Rev.1
Nov 2005)

(SOLAS 2000 Amendments (MSC.99(73)), Reg.II-2/19.3.1.2)

The number and position of hydrants should be such that at least two of the required four jets of water, when supplied by single lengths of hose, may reach any part of the cargo space when empty; and all four jets of water, each supplied by single lengths of hose may reach any part of ro-ro cargo spaces.

(MSC/Circ. 1120)

Note: This UI SC 168 is to be uniformly implemented by IACS Members and Associates from 1 January 2003.

◄◄

SC169 Foam systems positions of aft monitors

(June 2002) (Corr.1 Feb 2003) (Rev.1 Nov 2021)

Interpretation of SOLAS chapter II-2, regulation 10.8 as amended by resolution MSC.339(91) and the FSS Code chapter 14, paragraph 2.3.2.3

SOLAS II-2/10.8 reads as follows:

8.1 Fixed deck foam fire-extinguishing systems

8.1.1 For tankers of 20,000 tonnes deadweight and upwards, a fixed deck foam fire-extinguishing system shall be provided in accordance with the requirements of the Fire Safety Systems Code, except that, in lieu of the above, the Administration, after having given consideration to the ship's arrangement and equipment, may accept other fixed installations if they afford protection equivalent to the above, in accordance with regulation I/5. The requirements for alternative fixed installations shall comply with the requirements in paragraph 8.1.2.

8.1.2 In accordance with paragraph 8.1.1, where the Administration accepts an equivalent fixed installation in lieu of the fixed deck foam fire-extinguishing system, the installation shall:
.1 be capable of extinguishing spill fires and also preclude ignition of spilled oil not yet ignited; and
.2 be capable of combating fires in ruptured tanks.

8.1.3 Tankers of less than 20,000 tonnes deadweight shall be provided with a deck foam fire-extinguishing system complying with the requirements of the Fire Safety Systems Code.

Paragraph 2.3.2.3 of the FSS Code, chapter 14 reads as follows:

A monitor and hose connection for a foam applicator shall be situated both port and starboard at the front of the poop or accommodation spaces facing the cargo tanks deck. The monitors and hose connections shall be aft of any cargo tanks, but may be located in the cargo area above pump-rooms, cofferdams, ballast tanks and void spaces adjacent to cargo tanks if capable of protecting the deck below and aft of each other. On tankers of less than 4,000 tonnes deadweight a hose connection for a foam applicator shall be situated both port and starboard at the front of the poop or accommodation spaces facing the cargo tanks deck.

Interpretation

The port and starboard monitors required by this paragraph may be located in the cargo area above oil bunker tanks adjacent to cargo tanks if capable of protecting the deck below and aft of each other.

(MSC.1/Circ.1491)

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Members and Associates from 1 January 2003.

2. Rev.1 of this Unified Interpretation is to be uniformly implemented by IACS Societies from 1 January 2023.

End of Document

SC 170 Low pressure CO2 systems

(June 2002) (Rev.1 Nov 2005) (Deleted Aug 2021)

Deleted in July 2022 because of FSS Code amendments introduced by resolution MSC.206(81) and UR F46.

End of Document

SC 171
(July 2002)
(Rev.1 Mar 2008)
(Corr.1 Mar 2008)
(Rev.2 Aug 2008)

Interpretation of the term "First Survey"

The term “first survey” which is referenced by a regulation in SOLAS 74, as amended.

Interpretation

Unless indicated otherwise, when the term “first survey” is referenced by a regulation in SOLAS 74, as amended, it means the first annual survey, the first periodical survey or the first renewal survey as applicable to the relevant certificates, whichever is due first after the date specified in the relevant regulation or any other survey if the administration deems it to be reasonable and practicable, taking into account the extent of repairs and alterations being undertaken.

For a ship under construction, where the keel is laid before, but the ship is delivered after, the date specified in the relevant regulation, the initial survey is the “first survey”, and this ship needs to comply with the relevant regulation when it is delivered.

Note:

1. This UI SC 171 is to be uniformly implemented by IACS Members and Associates from 1 July 2002.

2. Changes introduced in Rev.1 are to be uniformly implemented by IACS Members and Associates from 31 December 2008.

3. Changes introduced in Rev.2 supersede Rev.1 on, and are to be uniformly implemented by IACS Members and Associates from, 31 December 2008.

End of Document

SC172 Monitoring the concentration of hydrocarbon gases in cargo pump rooms on oil tankers

(Aug. 2002)
(Rev.1
Nov 2005)

(Chapter II-2, Reg 4.5.10.1.3 (Res MSC.99(73))

Regulations

SOLAS Regulation II-2/4.5.10.1.3 reads:

In tankers,

.3 a system for continuous monitoring of the concentration of hydrocarbon gases shall be fitted. Sampling points or detector heads shall be located in suitable positions in order that potentially dangerous leakages are readily detected. When the hydrocarbon gas concentration reaches a pre-set level which shall not be higher than 10% of the lower flammable limit, a continuous audible and visual alarm signal shall be automatically effected in the pump-room, engine control room, cargo control room and navigation bridge to alert personnel to the potential hazard; and

Interpretation

1 Sequential sampling is acceptable as long as it is dedicated for the pump room only, including exhaust ducts, and the sampling time is reasonably short.

2 Detection positions are the zones where air circulation is reduced (e.g. recessed corners).

(MSC/Circ. 1120)

Note: 1. This UI SC 172 is to be uniformly implemented by IACS Members and Associates from 1 July 2002.

2. Rev.1 of this UI is to be uniformly implemented by IACS Societies from 1 July 2006.

SC173 Safety Devices in Venting Systems (Reg.II-2/4.5.3.3)

(July 2003)

Ullage openings do not include cargo tank openings that are fitted with standpipe arrangements with its own manually operated shutoff valves.

Examples include the common 1" to 2" diameter standpipe arrangements that are used for sampling, monitoring or measuring of ullage/temperature/interface, oxygen, liquid and hand dipping in the cargo tank.

Note:

1. This UI is to be uniformly implemented by IACS Members and Associates from 1 January 2004.

SC174 A 60 Front Insulation of Tankers (Reg.II-2/9.2.4.2.5)

(July 2003)
(Rev.1
Aug 2006)

For the portions which face the cargo area, the “A-60” class insulation should be provided up to the underside of the deck of the navigation bridge.

(MSC.1/Circ.1203)

Note:
1. This UI is to be uniformly implemented by IACS Members and Associates from 1 January 2004.
2. Rev.1 of this UI is editorially amended to refer to MSC.1/Circ.1203.

SC175 Combustible Gaskets in Ventilation Duct Connections (Reg.II-2/9.7.1.1)

(July 2003)

Combustible gaskets in flanged ventilation duct connections are not permitted within 600 mm of an opening in an A class or B class division and in ducts required to be of A class construction.

Note:

1. This UI is to be uniformly implemented by IACS Members and Associates from 1 January 2004.

SC176 Fixed Local Application Fire Extinguishing System (Reg.II-2/10.5.6)

(July 2003)
(Rev.1
May 2004)

Any installation of nozzles on board should reflect the arrangement successfully tested in accordance with MSC/Circ.913. If a specific arrangement of the nozzles is foreseen on board, deviating from the one tested as per MSC/circ. 913, it can be accepted provided such arrangement additionally passes fire tests based on the scenarios of this circular.

The automatic release should be activated by a detection system capable of reliably identifying the local zones. Consideration should be given to prevent accidental release.

Oil fired equipment, such as inert gas generators and thermal oil heaters should also be protected by this system, if located in machinery spaces above 500m^3.

Boiler fronts should be interpreted as the boiler burner location irrespective of the boiler design.

Grouped visual and audible alarms, as well as indication of the activated zone, should be provided in each protected space, in the engine control room and in the wheelhouse. Audible alarms may use a single tone.

Note:

1. This UI is to be uniformly implemented by IACS Members and Associates from 1 January 2004.

2. Rev.1 is to be uniformly implemented from 1 July 2004.

◄◄

SC177 (July 2003) Lubricating Oil and other Flammable Oil System Arrangements — Retroactive Application of Regulations II-2/15.3 and 15.4 of SOLAS (2001 Edition)

SOLAS regulations II-2/15.2.10 and 15.2.11 are not intended to apply to lubricating oil and other flammable oil system arrangements on ships constructed before 1 July 1998.

Note:

1. This UI is to be uniformly implemented by IACS Members and Associates from 1 January 2004.

IACS Int. 2003

SC 178 Emergency Fire Pumps in Cargo Ships (FSS Code, Ch. 12, 2.2.1.3)

(July 2003) (Withdrawn Apr 2005) (Rev.1 Apr 2011)

FSS Code, Chapter 12, paragraph 2.2.1.3 Suction heads

The total suction head and the net positive suction head of the pump shall be determined having due regard to the requirements of the Convention and this chapter on the pump capacity and on the hydrant pressure under all conditions of list, trim, roll and pitch likely to be encountered in service. The ballast condition of a ship on entering or leaving a dry dock need not be considered a service condition.

Interpretation

1. It shall be documented that the suction inlet is fully submerged under "*all conditions of list, trim, roll and pitch likely to be encountered in service*" as given below.

1.1 Operational seagoing condition for which roll, pitch and heave shall be applied is as follows:

The lightest seagoing condition shall be considered, which is defined as the ballast condition which gives the shallowest draught at the position of the sea chest and emergency fire pump as given in the approved stability booklet (or preliminary stability calculation for new building). The following table shall be applied for the calculation of roll, pitch and heave. The heave combined pitch and heave combined roll are taken into account separately.

Note:

1. This UI is to be uniformly implemented by IACS Members and Associates from 1 January 2004.
2. Rev.1 to the interpretation is applicable to members for ships contracted for construction on or after 1 January 2012.
3. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No.29.

SC 178 (cont)

1.1.1 Heave combined pitch[1)] in head sea

L (m)	75 and below	100	125	150	175	200	225	250	300	350 and above
Φ (deg)	4.5	4	3.2	2.7	2.3	2.1	1.8	1.7	1.6	1.5
H (m)	0.73	0.8	0.87	0.93	0.98	1.03	1.07	1.11	1.19	1.25

Note: Values at the intermediate length of ships are to be obtained by linear interpolation.

Where:

L: length of the ship, in meters, as defined in the International Convention on Load Lines in force, or length between perpendiculars at the ballast draught, whichever is greater

φ: pitch angle[2)] as defined in figure 1

H: heave amplitude as defined in figure 1

1.1.2 Heave combined roll in beam sea

Heave combined roll angle[2)] shall be taken as:

.1 ships with bilge keels: 11°; and

.2 ships without bilge keels: 13°

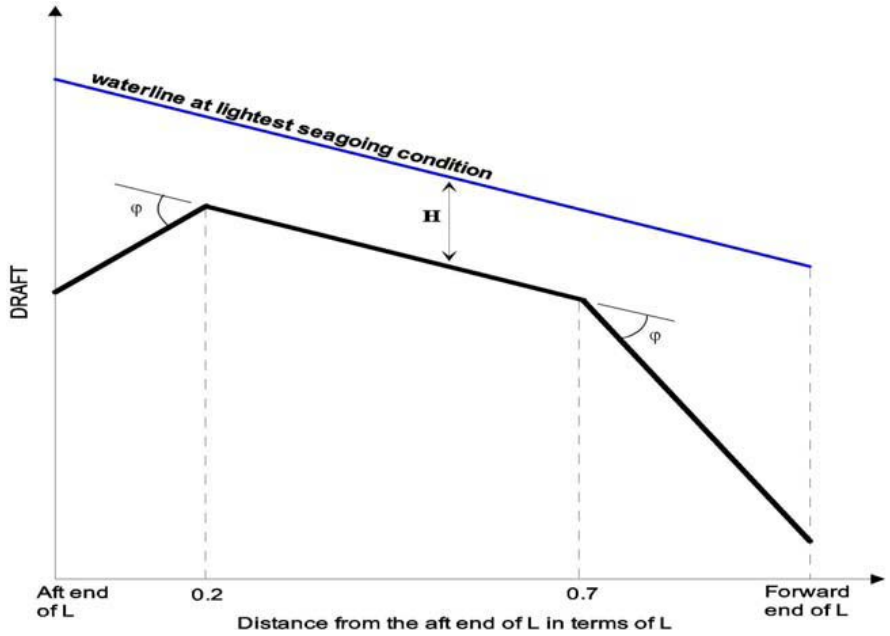


Figure 1 – Waterline for which heave combined pitch is taken into account

[1)] The heave combined pitch is taken into account as in figure 1.
[2)] Angle is to be measured from still waterline and downwards.

SC 178 (cont)

1.2 The emergency fire pump suction shall be submerged at the waterlines corresponding to the two following conditions:

.1 a static waterline drawn through the level of 2/3 immersion of the propeller at even keel (for pod or thruster driven ship, special consideration should be given); and

.2 the ship in the arrival ballast condition, as per the approved trim and stability booklet, without cargo and with 10% stores and fuel remaining.

For either condition, roll, pitch and heave need not be applied.

1.3 A ship operating solely in sheltered water issued with SOLAS Certificates shall be subject to compliance with the still water submergence requirements set out in paragraph 1.2.1 above.

2. In all cases the net positive suction head (NPSH) available for the pump shall be greater than the NPSH required.

3. Upon completion of the emergency fire pump installation, a performance test confirming the pump's capacity required in the FSS Code, chapter 12, paragraph 2.2.1.1, shall be carried out and, if the emergency fire pump is the main supply of water for any fixed fire-extinguishing system provided to protect the spaces where the main fire pumps are located, the pump shall have the capacity for this system. As far as practicable, the test shall be carried out at the draught corresponding to the lightest seagoing condition.

End of Document

SC 179 Dewatering of forward spaces of bulk carriers (Resolution MSC.188(79))

(Sept 2003) (Rev.1 Nov 2005) (Rev.2 Mar 2011) (Rev.3 Feb 2021)

Regulation 13.1 of SOLAS Chapter XII as amended by IMO resolutions up to MSC.170(79) and IMO interpretation of SOLAS regulation XII/13 (MSC/Circ.1069)

SOLAS regulation XII/13.1 reads as follows.

1. On bulk carriers, the means for draining and pumping ballast tanks forward of the collision bulkhead and bilges of dry spaces any part of which extends forward of the foremost cargo hold shall be capable of being brought into operation from a readily accessible enclosed space, the location of which is accessible from the navigation bridge or propulsion machinery control position without traversing exposed freeboard or superstructure decks. Where pipes serving such tanks or bilges pierce the collision bulkhead, valve operation by means of remotely operated actuators may be accepted, as an alternative to the valve control specified in regulation II-1/12, provided that the location of such valve controls complies with this regulation.

MSC/Circ.1069 reads as follows.

1. The spaces where availability of pumping systems is required in accordance with paragraph 1 of SOLAS regulation XII/13 should be the same watertight spaces where water level detectors are required in accordance with paragraph 1.3 of SOLAS regulation XII/12.

2. This means that paragraph 1 of regulation XII/13 does not apply to the enclosed spaces the volume of which does not exceed 0.1% of the ship's maximum displacement volume and to the chain locker.

Note:

1. IACS Members are to implement this UI for equipment and arrangement approval requests received on or after 1 October 2003. Equipment and arrangements which do not fully comply with this UI may be installed until 31 December 2003 for compliance with SOLAS regulation XII/13.

2. Refer to IMO MSC/Circ. 1176 (Rev.1 is to introduce a reference to IMO MSC/Circ.1176 with no change of technical substance).

3. Arrangements complying with the changes introduced in Rev.2 of this UI are to be uniformly applied by IACS Members on ships contracted for construction on or after 1 January 2012 and are acceptable on any ship subject to this SOLAS Regulation.

4. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

5. Rev.3 of this UI is to be uniformly implemented by IACS Members on ships contracted for construction on or after 1 July 2022.

SC 179 (cont)

Interpretation

1. Where the piping arrangements for dewatering closed dry spaces are connected to the piping arrangements for the drainage of water ballast tanks, two non-return valves are to be provided to prevent the ingress of water into dry spaces from those intended for the carriage of water ballast. One of these non-return valves is to be fitted with shut-off isolation arrangement. The non-return valves are to be located in readily accessible positions. The shut-off isolation arrangement is to be capable of being controlled from the navigation bridge, the propulsion machinery control position or enclosed space which is readily accessible from the navigation bridge or the propulsion machinery control position without travelling exposed freeboard or superstructure decks. In this context, a position which is accessible via an under deck passage, a pipe trunk or other similar means of access is not to be taken as being in the "readily accessible enclosed space".

2. Under this Regulation 13.1 of SOLAS Chapter XII as amended by IMO resolutions up to MSC.170(79) (hereinafter the same):

2.1 the valve specified under Regulation 12.5.1 of SOLAS Chapter II-1 as amended by IMO resolutions up to MSC.436(99) (hereinafter the same) is to be capable of being controlled from the navigation bridge, the propulsion machinery control position or enclosed space which is readily accessible from the navigation bridge or the propulsion machinery control position without travelling exposed freeboard or superstructure decks. In this context, a position which is accessible via an under deck passage, a pipe trunk or other similar means of access is not to be taken as being in the "readily accessible enclosed space";

2.2 the valve is not to move from the demanded position in the case of failure of the control system power or actuator power;

2.3 positive indication is to be provided at the remote control station to show that the valve is fully open or closed;

2.4 local hand powered valve operation from above the freeboard deck as specified in Regulation 12.5.1 of SOLAS Chapter II-1 is required. An acceptable alternative to such arrangement may be remotely operated actuators as specified in Regulation 13.1 of SOLAS Chapter XII on the condition that all provisions in 13.1 are met.

3. The dewatering arrangements are to be such that any accumulated water can be drained directly by a pump or eductor.

4. The dewatering arrangements are to be such that when they are in operation, other systems essential for the safety of the ship including fire-fighting and bilge systems remain available and ready for immediate use. The systems for normal operation of electric power supplies, propulsion and steering are not to be affected by the operation of the dewatering systems. It must also be possible to immediately start fire pumps and have a ready available supply of fire-fighting water and to be able to configure and use bilge system for any compartment when the dewatering system is in operation.

5. Bilge wells are to be provided with gratings or strainers that will prevent blockage of the dewatering system with debris.

6. The enclosures of electrical equipment for the dewatering system installed in any of the forward dry spaces are to provide protection to IPX8 standard as defined in IEC 60529:1989/AMD2:2013/COR1:2019 for a water head equal to the height of the space in which the electrical equipment is installed for a time duration of at least 24 hours.

End of Document

SC 180
(Sep 2005)
(Rev.1 May 2004)
(Rev.2 Nov 2005)
(Rev.3 Mar 2012)
(Rev.4 Feb 2021)

Hold, ballast and dry space water level detectors and Performance Standards for Water Level Detectors on Bulk Carriers and Single Hold Cargo Ships other than Bulk Carriers (Resolution MSC.188(79))

Interpretation of Regulation 25 of SOLAS Chapter II-1 as amended by IMO resolutions up to MSC.436(99) and Regulation 12 of SOLAS Chapter XII as amended by IMO resolutions up to MSC.170(79)

Introduction

When water level detectors are installed on single hold cargo ships other than bulk carriers subject to Regulation 25 of SOLAS Chapter II-1 as amended by IMO resolutions up to MSC.436(99) or bulk carriers subject to Regulation 12 of SOLAS Chapter XII as amended by IMO resolutions up to MSC.170(79), the Performance Standards for water level detectors on bulk carriers and single hold cargo ships other than bulk carriers, annexed to IMO Resolution MSC.188(79) adopted on 3 December 2004 are to be applied, taking into account the following interpretations to the paragraphs of the Performance Standards, as applicable:

Note:

1. IACS Members are to implement this UI and its referenced standards for equipment approval requests received on or after 1 October 2003. Equipment, for which equipment approval requests were received before 1 October 2003 and which may not fully comply with this UI and its referenced standards, may be installed until 31 December 2003 for compliance with SOLAS XII/12.

2. Rev.1 is to be uniformly implemented by IACS Members from 1 July 2004.

3. Rev.2 is to be uniformly implemented by IACS Members on ships contracted for construction on or after 1 January 2007.

4. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

5. Refer to IMO MSC/Circ.1176.

6. Rev.3 reflects that MSC.188(79) superseded and revoked MSC.145(77) and extended the application of the Performance Standards to include single hold cargo ships other than bulk carriers subject to compliance with SOLAS II-1/25, with no substantive change to the technical requirements of the Performance Standards. Thus, there are no substantive changes in the technical content of the interpretations in Rev.3 in relation to Rev.2 of this UI. Rev.3 is to be uniformly implemented by IACS Members on ships contracted for construction on or after 1 July 2012.

7. Rev.4 is to be uniformly implemented by IACS Members on ships contracted for construction on or after 1 July 2022.

SC 180 (cont)

Performance Standards, paragraph 3.2.1 reads as follows.

3.2.1 Detector system should provide a reliable indication of water reaching a preset level.

Interpretation

One sensor capable of detecting both preset levels (pre-alarm level and main alarm level) is allowed.

*****

Performance Standards, paragraph 3.2.3 reads as follows.

3.2.3 Detection equipment should be suitably corrosion resistant for all intended cargoes.

Interpretation

Detection equipment includes the sensor and any filter and protection arrangements for the detector installed in cargo holds and other spaces as required by SOLAS regulation II-1/25 or XII/12.1.

*****

Performance Standards, paragraph 3.2.5 reads as follows.

3.2.5 The part of the system which has circuitry in the cargo area, should be intrinsically safe.

Interpretation

- In general, the construction and type testing is to be in accordance with IEC 60079-11:2011 to a minimum requirement of EX(ib). Where a ship is designed only for the carriage of cargoes that cannot create a combustible or explosive atmosphere then the requirement for intrinsically safe circuitry is not to be insisted upon, provided the operational instructions included in the Manual required by 4.1 of the Appendix to the Annex specifically exclude the carriage of cargoes that could produce a potential explosive atmosphere. Any exclusion of cargoes identified in the Annex is to be consistent with the ship's Cargo Book and any Certification relating to the carriage of specifically identified cargoes.

- The maximum surface temperature of equipment installed within cargo spaces is to be appropriate for the combustible dusts and/or explosive gasses likely to be encountered. Where the characteristics of the dust and gases are unknown, the maximum surface temperature of equipment is not to exceed 85 deg. C.

- Where intrinsically safe equipment is installed, it is to be of a certified safe type.

- Where detector systems include intrinsically safe circuits, plans of the arrangements are to be appraised/approved by individual classification societies.

*****

SC 180 (cont)

Performance Standards, paragraph 3.3.2 reads as follows.

3.3.2 Visual and audible alarms should conform to the Code on Alarms and Indicators,1995, as may be amended, as applicable to a primary alarm for the preservation or safety of the ship.

Interpretation

The pre-alarm, as a primary alarm, is to indicate a condition that requires prompt attention to prevent an emergency condition and the main-alarm, as an emergency alarm is to indicate that immediate actions are to be taken to prevent danger to human life or to the ship.

*****

Performance Standards, paragraph 3.3.5 reads as follows.

3.3.5 The system may be provided with a capability of overriding indication and alarms for the detection systems installed only in tanks and holds that have been designed for carriage of water ballast (SOLAS regulation XII/12.1).

Interpretation
The water ingress alarm system is not to be capable of overriding the alarm of the spaces (e.g., dry spaces, cargo holds, etc.), that are neither designed nor intended to carry water ballast.

- Enabling the facility to override alarms is to be customized for each specific ship prior to the commissioning tests witnessed by a classification society surveyor pursuant to certification. Any subsequent modifications are subject to re-certification.

- A "Caution Plate", which prohibits personnel from overriding an alarm to any hold, is not an acceptable alternative to the above provisions.

*****

Performance Standards, paragraph 3.3.7 reads as follows.

3.3.7 Requirements for malfunctions, alarms and indications should include a facility for continuous monitoring of the system which, on detecting a fault, activates a visual and audible alarm. The audible alarm should be capable of being muted, but the visual indication should remain active until the malfunction is cleared.

Interpretation
Fault monitoring is to address faults associated with the system, e.g. open circuit, short circuit, loss of power supplies, CPU failure.

*****

SC 180 (cont)

Performance Standards, paragraph 3.3.8 reads as follows.

3.3.8 The water level indicator should be capable of being supplied with electrical power from two independent electrical supplies. Failure of the primary electrical power supply should be indicated by an alarm.

Interpretation

- The electrical power supply is to be from two separate sources, one is to be the main source of electrical power and the other is to be the emergency source, unless a continuously charged dedicated accumulator battery is fitted, having arrangement, location and endurance equivalent to that of the emergency source (18h). The battery supply may be an internal battery in the water level detector system.

- The changeover arrangement of supply from one electrical source to another need not be integrated into the water level detector system.

- Where batteries are used for the secondary power supply, failure alarms for both power supplies are to be provided.

*****

Performance Standards, paragraph 3.4.1 reads as follows.

3.4.1 – Footnote

With regard to testing, reference is made to IEC 60092-504 and IEC 60529. Electrical components installed in the cargo holds, ballast tanks and dry spaces should satisfy the requirements of IP 68 in accordance with IEC 60529.

Interpretation

- IACS UR E10 may be used as an equivalent test standard to IEC 60092-504:2016.

- The range of tests is to include the following:

For alarm/monitoring panel:

- functional tests in accordance with MSC.188(79);

- electrical power supply failure test;

- power supply variation test;

- dry heat test;

- damp heat test;

- vibration test;

- eMC tests;

- insulation resistance test;

- high voltage test; and

SC 180 (cont)

- static and dynamic inclinations tests, if moving parts are contained.

For IS barrier unit if located in the wheelhouse:

- In addition to the certificate issued by a competent independent testing laboratory, EMC tests are also to be carried out.

For water ingress detectors:

- functional tests in accordance with MSC.188(79);
- electrical power supply failure test;
- power supply variation test;
- dry heat test;
- damp heat test;
- cold test;
- vibration test;
- enclosure class in accordance with MSC.188(79);
- insulation resistance test;
- high voltage test;
- EMC tests, (if the detector is capable of producing electromagnetic noise), and
- static and dynamic inclinations tests, (if the detectors contain moving parts).

*****

Performance Standards, APPENDIX, paragraph 2.1.1 reads as follows.

2.1.1 Detector equipment should provide a reliable indication of water reaching a preset level and should be type tested to demonstrate their robustness and suitability under the appropriate conditions of IEC 60092-504 and the following:

Interpretation

The test procedure is to satisfy the following criteria:

- The type tests are to be witnessed by a classification society surveyor if the tests are not carried out by a competent independent test facility.
- Type tests are to be carried out on a prototype or randomly selected item(s) which are representative of the manufactured item that is being type tested.
- Type tests are to be documented (type test reports) by the manufacture and submitted for review by classification societies.

*****

SC 180 (cont)

Performance Standards, APPENDIX, paragraph 2.1.1.1 reads as follows.

2.1.1.1 Protection of the enclosures of electrical components installed in the cargo holds, ballast tanks and dry spaces should satisfy the requirements of IP68 in accordance with IEC 60529. The water pressure testing of the enclosure should be based on a pressure head held for a period depending on the application. For detectors to be fitted in holds intended for the carriage of water ballast or ballast tanks the application head should be the hold or tank depth and the hold period should be 20 days. For detectors to be fitted in spaces intended to be dry the application should be the depth of the space and the hold period should be 24 h.

Interpretation

- The submerged test period for electrical components intended to be installed in ballast tanks and cargo tanks used as ballast tanks is to be not less than 20 days.

- The submerged test period for electrical components intended to be installed in dry spaces and cargo holds not intended to be used as ballast tanks is to be not less than 24 hours.

- Where a detector and/or cable connecting device (e.g. junction box, etc.) is installed in a space adjacent to a cargo hold (e.g. lower stool, etc.) and the space is considered to be flooded under damage stability calculations, the detectors and equipment are to satisfy the requirements of IP68 for a water head equal to the hold depth for a period of 20 days or 24 hours on the basis of whether or not the cargo hold is intended to be used as a ballast tank as described in the previous bullet points.

*****

Performance Standards, APPENDIX, paragraph 2.1.1.2 reads as follows.

2.1.1.2 Operation in cargo/water mixture for a selected range of cargoes such as iron ore dust, coal dust, grains and oils using seawater in suspension of representative fine material for each cargo group. For type test purposes an agitated suspension of representative fine materials in seawater, with a concentration of 50% by weight, should be used with the complete detector assembly including any filtration fitted. The functioning of the detection assembly with any filtration arrangements should be verified in the cargo/water mixture with immersion repeated ten times without cleaning any filtration arrangements.

Interpretation

1 The type test required for the sensor is to be in accordance with the following:

.1 the test container for the cargo/water mixture is to be dimensioned so that its height and volume are such that the sensor and any filtration fitted can be totally submerged for the repeated functionality tests required by 2.1.1.2 and the static and dynamic inclination tests identified in the previous interpretation.

.2 the sensor and any filtration fitted that are to be submerged and are to be arranged in the container as they would be installed in accordance with the installation instructions required by 4.4.

.3 the pressure in the container for testing the complete detector is to be not more than 0.2 bar at the sensor and any filter arrangement. The pressure may be realised by pressurisation or by using a container of sufficient height.

SC 180 (cont)

.4 the cargo/water mixture is to be pumped into the test container and suitable agitation of the mixture provided to keep the solids in suspension. The effect of pumping the cargo/water mixture into the container is not to affect the operation of the sensor and filter arrangements.

.5 the cargo/water mixture is to be pumped into the test container to a predetermined level that submerges the detector and the operation of the alarm observed.

.6 the test container is then to be drained and the de-activation of the alarm condition observed.

.7 the test container and sensor with any filter arrangement are to be allowed to dry without physical intervention.

.8 the test procedure is to be repeated consecutively ten times without cleaning any filter arrangement that may be fitted in accordance with the manufacturer's installation instructions (see also 2.1.1.2).

.9 satisfactory alarm activation and de-activation at each of the ten consecutive tests will demonstrate satisfactory type testing.

2 The cargo/water mixture used for type testing are to be representative of the range of cargoes within the following groups and is to include the cargo with the smallest particles expected to be found from a typical representative sample:

.1 iron ore particles and seawater;

.2 coal particles and sea water;

.3 grain particles and seawater; and

.4 aggregate (sand) particles and sea water.

The smallest and largest particle size together with the density of the dry mixture is to be ascertained and recorded. The particles are to be evenly distributed throughout the mixture. Type testing with representative particles will in general qualify all types of cargoes within the four groupings shown above.

The following provides guidance on the selection of particles for testing purposes:

.1 Iron ore particles are to mainly consist of small loose screenings of iron ore and not lumps of ore (dust with particle size < 0.1 mm).

.2 Coal particles are to mainly consist of small loose screenings of coal and not lumps of coal (dust with particle size < 0.1 mm).

.3 Grain particles are to mainly consist of small loose grains of free flowing grain (grain having a size > 3mm, such as wheat).

.4 Aggregate particles are to mainly consist of small loose grains of free flowing sand and without lumps (dust with particle size < 0.1 mm)

*****

SC 180 (cont)

Performance Standards, APPENDIX, paragraph 2.2.1 reads as follows.

1.2.1 The sensors should be located in a protected position that is in communication with the specified part of the cargo hold (usually the aft part) such that the position of the sensor detects the level that is representative of the levels in the actual hold space. These sensors should be located:

.1 either as close to the centreline as practible, or

.2 at both the port and starboard sides of the cargo hold.

Interpretation

For ships having keel laid on or after 1 July 2004, if sensors are not placed within a distance less than or equal to 1 corrugation space or 1 bulkhead vertical stiffener space from the centreline, sensors are to be located at both the port and starboard sides of the cargo hold.

For ships having keel laid before 1 July 2004, if sensors are not placed within a distance less than or equal to B/6 from the centreline, sensors are to be located at both the port and starboard sides of the cargo hold.

*****

Performance Standards, APPENDIX, paragraph 3.1.1 reads as follows.

3.1.1 Alarm systems should be type tested in accordance with IEC 60092-504, as appropriate.

Interpretation

The test procedure is to satisfy the following criteria:

- The type tests are to be witnessed by a classification society surveyor if the tests are not carried out by a competent independent test facility.
- Type tests are to be carried out on a prototype or randomly selected item(s) which are representative of the manufactured item that is being type tested.
- Type tests are to be documented (type test reports) by the manufacture and submitted for review by classification societies.

*****

Performance Standards, APPENDIX, Section 4 reads as follows.

4 MANUALS

Manuals should be provided on board and should contain the following information and operational instructions:

SC 180 (cont)

Interpretation

For each ship, a copy of the manual is to be made available to the surveyor at least 24 hours prior to survey of the water level detection installation. Each classification society is to ensure that any plans required for classification purposes have been appraised/approved as appropriate.

End of Document

UI SC 181 BRIDGE DESIGN, EQUIPMENT ARRANGEMENT AND PROCEDURES

Withdrawn pending further development work

SC 182 Bulk carriers not complying with SOLAS XII/9 as of 1 January 2004

(Chapter XII, Regulation 9)

(Nov 2003) (Corr.1 Dec 2003) (Rev.1 Nov 2005)

Deleted in April 2020.

End of Document

SC183 (Nov 2003) (Rev.1, Nov. 2005) Endorsement of Certificates with the Date of Completion of the Survey on which they are Based

LL67 (Nov 2003) (Rev.1, Nov. 2005)

MPC10 (Nov 2003) (Rev.1, Nov. 2005)

“Resolutions MSC.170(79), MSC.171(79), MSC.172(79), MSC.174(79) through MSC.179(79) and MSC.181(79) through MSC.187(79) require that the identified certificates include the statement:

"Completion date of the survey on which this certificate is based: dd/mm/yyyy".

Interpretation

For application of the above resolutions, the following IACS Unified Interpretation applies:

The “Completion date of the survey on which this certificate is based”, is the date of the last **initial/renewal** survey visit on which all statutory and class items, required to be surveyed, have been surveyed (regardless if they were found satisfactory or with minor deficiency).

Note:

1. This UI is to be uniformly implemented by IACS Members and Associates from 1 March 2004.

2. Revision 1 of this UI is to be uniformly implemented by IACS Members and Associates from 1 July 2006.

◄◄

SC184 Machinery Installations – Dead Ship Condition

(Dec 2003) (Rev.1 Nov 2005)

SOLAS Regulation II-1/26.4

Means shall be provided to ensure that machinery can be brought into operation from the dead ship condition without external aid.

Interpretation

1. Dead ship condition for the purpose of regulation II-1/26.4, is to be understood to mean a condition under which the main propulsion plant, boilers and auxiliaries are not in operation and in restoring the propulsion, no stored energy for starting and operating the propulsion plant, the main source of electrical power and other essential auxiliaries is assumed to be available.

2. Where the emergency source of power is an emergency generator which complies with regulation II-1/44, UI SC185 and UI SC124, this generator may be used for restoring operation of the main propulsion plant, boilers and auxiliaries where any power supplies necessary for engine operation are also protected to a similar level as the starting arrangements.

3. Where there is no emergency generator installed or an emergency generator does not comply with regulation II-1/44, the arrangements for bringing main and auxiliary machinery into operation are to be such that the initial charge of starting air or initial electrical power and any power supplies for engine operation can be developed on board ship without external aid. If for this purpose an emergency air compressor or an electric generator is required, these units are to be powered by a hand-starting oil engine or a hand-operated compressor. The arrangements for bringing main and auxiliary machinery into operation are to have capacity such that the starting energy and any power supplies for engine operation are available within 30 minutes of a dead ship condition.

Note:

1. This UI is to be uniformly implemented by IACS Members and Associates from 1 March 2004.

2. Refer to IMO MSC/Circ. 1176 (Rev.1 is to introduce a reference to IMO MSC/Circ. 1176 with no change of technical substance).

◄◄

SC185 Starting Arrangements for Emergency Generating Sets

(Dec 2003) (Rev.1 Nov 2005)

SOLAS Regulation II-1/44, paragraph 1

Emergency generating sets shall be capable of being readily started in their cold condition at a temperature of 0 deg C. If this is impracticable, or if lower temperatures are likely to be encountered, provision acceptable to the Administration shall be made for the maintenance of heating arrangements, to ensure ready starting of the generating sets.

Interpretation (From MSC/Circ.736)

Emergency generating sets are to be capable of being readily started in their cold condition at a temperature of 0 deg C. If this is impracticable, or if lower temperatures are likely to be encountered, heating is to be provided to ensure ready starting of the generating sets.

SOLAS Regulation II-1/44, paragraph 2

Each emergency generating set arranged to be automatically started shall be equipped with starting devices approved by the Administration with a stored energy capability of at least three consecutive starts. A second source of energy shall be provided for an additional three starts within 30 minutes unless manual starting can be demonstrated to be effective.

Interpretation (From MSC/Circ.736)

Each emergency generating set arranged to be automatically started is to be equipped with starting devices with a stored energy capability of at least three consecutive starts. A second source of energy is to be provided for an additional three starts within 30 minutes unless manual starting can be demonstrated to be effective.

Note:

1. This UI is to be uniformly implemented by IACS Members and Associates from 1 March 2004.

2. Refer to IMO MSC/Circ. 1176 (Rev.1 is to introduce a reference to IMO MSC/Circ. 1176 with no change of technical substance).

◄◄

SC186 Acceptable voltage variations in voltage when the emergency loads are supplied from a battery via an electronic converter/inverter

(May 2004)
(Corr.1
Jan 2010)

(Reg.II-1/42.3.2.1, 42.4, 43.3.2.1 & 43.4)

Reg.II-1/42.3.2.1

3.2 Where the emergency source of electrical power is an accumulator battery, it shall be capable of:

.1 carrying the emergency electrical load without recharging while maintaining the voltage of the battery throughout the discharge period within 12% above or below its nominal voltage;

Reg.II-1/42.4

4. The transitional source of emergency electrical power required by paragraph 3.1.3 shall consist of an accumulator battery suitably located for use in an emergency which shall operate without recharging while maintaining the voltage of the battery throughout the discharge period within 12% above or below its nominal voltage and be of sufficient capacity and so arranged as to supply automatically in the event of failure of either the main or emergency source of electrical power at least the following services, if they depend upon an electrical source for their operation:

4.1 For half an hour:

.1 the lighting required by paragraphs 2.1 and 2.2;

.2 all services required by paragraphs 2.3.1, 2.3.3 and 2.3.4 unless such services have an independent supply for the period specified from an accumulator battery suitably located for use in an emergency.

4.2 Power to operate the watertight doors, as required by regulation 15.7.3.3, but not necessarily all of them simultaneously, unless an independent temporary source of stored energy is provided. Power to the control, indication and alarm circuits as required by regulation 15.7.2 for half an hour.

Reg.II-1/43.3.2.1

3.2 Where the emergency source of electrical power is an accumulator battery, it shall be capable of:

.1 carrying the emergency electrical load without recharging while maintaining the voltage of the battery throughout the discharge period within 12% above or below its nominal voltage;

Note:

This UI SC186 is to be uniformly implemented by IACS Members and Associates from 1 January 2005.

SC186 (cont)

Reg.II-1/43.4

4 The transitional source of emergency electrical power where required by paragraph 3.1.3 shall consist of an accumulator battery suitably located for use in an emergency which shall operate without recharging while maintaining the voltage of the battery throughout the discharge period within 12% above or below its nominal voltage and be of sufficient capacity and shall be so arranged as to supply in the event of failure of either the main or the emergency source of electrical power for half an hour at least the following services if they depend upon an electrical source for their operation:

.1 the lighting required by paragraphs 2.1, 2.2 and 2.3.1. For this transitional phase, the required emergency electrical lighting, in respect of the machinery space and accomodaton and service spaces may be provided by permanently fixed, individual, automatically charged, relay operated accumulator lamps; and

.2 all services required by paragraphs 2.4.1, 2.4.3 and 2.4.4 unless such services have an independent supply for the period specified from an accumulator battery suitably located for use in an emergency.

Interpretation

Where the emergency and/or transitional emergency loads are supplied from a battery via an electronic converter or inverter the maximum permitted d.c voltage variations are to be taken as those on the load side of the converter or inverter.

Where the d.c. is converted into a.c. the maximum variations are not exceed those given in UR E5.

End of Document

SC187 Electric steering gear overload alarm

(May 2004)

(Reg.II-1/30.3)

SOLAS Reg.II-1/30.3

Short circuit protection and an overload alarm be provided for circuits supplying electric or electrohydraulic steering gear motors. Protection against excess current, including starting current, if provided, is required to be for not less than twice the full load current of the motor or circuit so protected, and is to be arranged to permit the passage of the appropriate starting currents.

Interpretation:

Steering gear motor circuits obtaining their power supply via an electronic converter, e.g. for speed control, and which are limited to full load current are exempt from the requirement to provide protection against excess current, including starting current, of not less than twice the full load current of the motor. The required overload alarm is to be set to a value not greater than the **normal load**[1] of the electronic converter.

[1] **Normal load** is the load in normal mode of operation that approximates as close as possible to the most severe conditions of normal use in accordance with the manufacturer s operating instructions.

Note: This UI SC 187 is to be uniformly implemented by IACS Members and Associates from 1 January 2005.

SC 188 Segregation of Cargo Oil Tanks (Reg.II-2/4.5.1.1)

(May 2004)
(Rev.1 Nov 2005)
(Rev.2 Feb 2015)
(Rev.3 July 2015)

SOLAS Reg. II-2/4.5.1.1 reads:

Pump-rooms, containing pumps and their accessories for ballasting those spaces situated adjacent to cargo tanks and slop tanks and pumps for oil fuel transfer shall be considered as equivalent to a cargo pump-room within the context of this regulation provided that such pump-rooms have the same safety standard as that required for cargo pump-rooms.

Interpretation

Pump-rooms intended solely for ballast transfer need not comply with the requirements of regulation II-2/4.5.10. The requirements of regulation II-2/4.5.10 are only applicable to the pump-rooms, regardless of their location, where pumps for cargo, such as cargo pumps, stripping pumps, pumps for slop tanks, pumps for COW or similar pumps are provided. (MSC/Circ.1037 and MSC/Circ.1120).

"Similar pumps" includes pumps intended for transfer of fuel oil having a flashpoint of less than 60^{o}C. Pump-rooms intended for transfer of fuel oil having a flashpoint of not less than 60^{o}C need not comply with the requirements of regulation II-2/4.5.10.

Notes:

1. This UI is to be uniformly implemented from 1 July 2004.

2. Rev.2 of the UI is to be uniformly implemented on ships constructed on or after 1 January 2016.

3. Rev.3 of the UI is to be uniformly implemented on ships constructed on or after 1 January 2016.

End of Document

SC189 High pressure oil fuel delivery lines on small engines

(May 2004)

(SOLAS chapter II-2, regulations 15.2.9 and 15.2.12

(Resolution MSC.31(63))

Regulation

SOLAS Regulations II-2/15.2.9 and 15.2.12 under MSC.31(63) read:

15.2.9 All external high-pressure fuel delivery lines between the high-pressure fuel pumps and fuel injectors shall be protected with a jacketed piping system capable of containing fuel from a high-pressure line failure. A jacketed pipe incorporates an outer pipe into which the high-pressure fuel pipe is placed, forming a permanent assembly. The jacketed piping system shall include a means for collection of leakages and arrangements shall be provided for an alarm to be given of a fuel line failure.

15.2.12 Ships constructed before 1 July 1998 shall comply with the requirements of paragraphs 2.9 to 2.11 not later than 1 July 2003, except that a suitable enclosure on engines having an output of 375 kW or less having fuel injection pumps serving more than one injector may be used as an alternative to the jacketed piping system in paragraph 2.9.

Interpretation

1. Application

1.1 This interpretation applies to ships constructed before 1 July 1998.

1.2 The requirements of SOLAS regulation II-2/15.2.9 and 15.2.12 are applicable to internal combustion engines installed in any area on board ships irrespective of service and location. These requirements do not apply to gas turbines.

1.3 Engines having a single cylinder, multi-cylinder engines having separate fuel pumps and those having multiple fuel injection pump units are included.

1.4 For the purpose of these regulations lifeboat engines are excluded.

2. Suitable enclosure

2.1 For engines of less than 375kW where an enclosure is fitted, the enclosure is to have a similar function to jacketed pipes i.e., prevent spray from a damaged injector pipe impinging on a hot surface.

_____

Note: This UI is to be uniformly implemented from 1 July 2004. ▶

IACS Int. 2004

SC189 (cont)

2.2 The enclosure is to completely surround the injection pipes except that existing "cold" engine surfaces may be considered as part of the enclosure.

2.3 All engine parts within the enclosure are to have a surface temperature not exceeding 220°C when the engine is running at its maximum rating.

2.4 The enclosure is to have sufficient strength and cover area to resist the effects of high pressure spray from a failed fuel pipe in service, prevent hot parts from being sprayed and restrict the area that can be reached by leaked fuel. Where the enclosure is not of metallic construction, it is to be made of non-combustible, non oil-absorbing material.

2.5 Screening by the use of reinforced tapes is not acceptable as a suitable enclosure.

2.6 Where leaked oil can reach hot surfaces, suitable drainage arrangements are to be fitted to enable rapid passage of leaked oil to a safe location which may be a drain tank. Leaked fuel flow onto "cold" engine surfaces can be accepted, provided that it is prevented from leaking onto hot surfaces by means of screens or other arrangements.

2.7 Where the enclosure has penetrations to accommodate high pressure fittings, the penetrations are to be a close fit to prevent leakage.

◄◄

SC 190 (Apr 2004) (Rev.1 Apr 2019) (Rev.2 Nov 2024) IACS Unified Interpretations (UI) SC 190 for Application of SOLAS Regulation II-1/3-6 (Res MSC.134(76)) and Technical Provisions on Permanent Means of Access (Res MSC.133(76))

Note:

1. This UI is to be applied by IACS Members and Associates when acting as a recognized organization, authorized by flag State Administrations to act on their behalf, unless otherwise advised, from 1 January 2005.

2. Rev.1 is to be applied by IACS Members from 1 July 2019.

3. Rev.2 is to be applied by IACS Members from 1 July 2025.

SC 190 (cont)

SOLAS Reg.II-1/3-6

1 Application

1.1 Except as provided for in paragraph 1.2, this regulation applies to **oil tankers** of 500 gross tonnage and over and bulk carriers, as defined in regulation IX/1, of 20,000 gross tonnage and over, constructed on or after 1 January 2005.

1.2 Oil tankers of 500 gross tonnage and over constructed on or after 1 October 1994 but before 1 January 2005 shall comply with the provisions of regulation II-1/12-2 adopted by resolution MSC.27(61).

Interpretation

Oil tankers:

Notwithstanding the definition of “oil tanker” in Reg.II-1/2.12, this regulation is only applicable to oil tankers having integral tanks for carriage of oil, which is contained in the definition of oil in Annex 1 of MARPOL 73/78. Independent oil tanks can be excluded.

Reg. II-1/3-6 is not normally applied to FPSO or FSO unless the Administration decides otherwise.

Technical Background

Permanent Means of Access (PMA) specified in the Technical Provision contained in Resolution MSC.133(76) is not specific whether it assumes application to integral cargo oil tanks or also to independent cargo oil tanks. ESP requirements of oil tankers have been established assuming the target cargo oil tanks are integral tanks. The PMA regulated under SOLAS Reg.II-1/3-6 is for overall and close-up inspections as defined in regulation IX/1. Therefore it is assumed that the target cargo oil tanks are those of ESP, i.e. integral cargo tanks.

Reg. II-1/3-6 is applicable to FPSO or FSO if they are subject to the ESP Code as amended.

Ref.

SOLAS Reg. IX/1 and the ESP Code as amended.

SC 190 (cont)

SOLAS Reg.II-1/3-6

2 Means of access to cargo and other spaces

2.1 Each space within **the cargo area** shall be provided with a permanent means of access to enable, throughout the life of a ship, overall and close-up inspections and thickness measurements of the ship's structures to be carried out by the Administration, the company, as defined in regulation IX/1, and the ship's personnel and others as necessary. Such means of access shall comply with the requirements of paragraph 5 and with the Technical provisions for means of access for inspections, adopted by the Maritime Safety Committee by resolution MSC.133(76), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than chapter I.

Interpretation

Forepeak tanks on oil tankers and bulk carriers are to be addressed in the Technical Provisions as follows:

For fore peak tank with a depth of 6 m or more at the center line of the collision bulkhead a suitable means of access is to be provided for access to critical areas such as the underdeck structure, stringers, collision bulkhead and side shell structure.

Stringers of less than 6 m in vertical distance from the deck head or a stringer immediately above are considered to provide suitable access in combination with portable means of access.

In case the vertical distance between the deck head and stringers, stringers or the lowest stringer and the tank bottom is 6 m or more alternative means of access as defined in paragraph 9 of the Technical Provisions is to be provided.

Technical Background (Observation):

1) The third paragraph of Preamble of the Technical Provision contained in Annex of Resolution MSC.133(76) defines the ship structure referred to in SOLAS regulation II-1/3-6 on access to and within spaces in the cargo area of oil tankers and bulk carriers. Further it is defined that terms used in the Technical provisions have the same meaning as those defined in the 1974 SOLAS Conventions as amended, and in the ESP Code, as amended.

2) Definition of cargo area in SOLAS Reg. II-2/3.32 is cross-referenced in the ESP Code for oil tankers. However "cargo length area" is used for bulk carriers in the ESP Code for the relevant definition. This difference of terminology caused confusion for defining tanks or spaces, which are to be subject to the Technical provision.

3) Fore peak tanks have unique structural configurations and their means of access is addressed separately form other ballast tanks.

Ref.

SOLAS Reg. II-2/3.32 and the ESP Code.

SC 190 (cont)

SOLAS Reg.II-1/3-6

2.2 Where a permanent means of access may be susceptible to damage during normal cargo loading and unloading operations or where it is impracticable to fit permanent means of access, the Administration may allow, in lieu thereof, the provision of movable or portable means of access, as specified in the Technical provisions, provided that the means of attaching, rigging, suspending or supporting the portable means of access forms a permanent part of the ship's structure. All portable equipment shall be capable of being readily erected or deployed by ship's personnel.

Interpretation:

1) Movable means of access was envisioned in place of the elevated passageways for the permanent means of access to deck transverse. No specific design has been proposed that is considered appropriate. However a door should be kept open for an innovative approach in the future for developing alternative means of access suitable for the purposes:

Alternate means of access should include but not be limited to such devices as:

.1 hydraulic arm fitted with a stable base

.2 wire lift platform.

.3 staging

.4 Rafting

.5 Robot arm or ROV

.6 Rope access

.7 Portable ladders more than 5 m long shall only be utilized if fitted with a mechanical device to secure the upper end of the ladder

.8 other means of access, approved by and acceptable to the administration.

Means for safe operation and rigging such equipment to and from, and within these spaces, must be clearly demonstrated in the Ship Structure Access Manual.

2) Subject to acceptance as equivalent by the Administration, an unmanned robot arm, ROV's and dirigibles with necessary equipment of the permanent means of access for overall and close-up inspections and thickness measurements of the deck head structure such as deck transverses and deck longitudinals of cargo oil tanks and ballast tanks. Such robot arm and equipment are to be capable of:

- safe operation in ullage space in gas-free environment;
- introduction into the place from an access hole of the deck plating.

Technical Background

Elevated passageways in particular for access to deck transverses and upper part of transverse bulkheads and longitudinal bulkheads are subject to structural damages due to sloshing of liquid in the tank, corrosion and fatigue. Such damages would render the effective use of the permanent means of access when needed for survey and inspection of under deck structure.

SC 190 (cont)

Innovative approaches in particular a development of robot in place of elevated passageways are encouraged and it is considered worthwhile to provide the functional requirement for the innovative approach.

SC 190 (cont)

SOLAS Reg.II-1/3-6

2.3 The construction and materials of all means of access and their attachment to the ship's structure shall be to the satisfaction of the Administration. The means of access shall be subject to survey prior to, or in conjunction with, its use in carrying out surveys in accordance with regulation I/10.

Interpretation:

Inspection

The PMA arrangements, including portable equipment and attachments, are to be annually inspected by the crew or competent inspectors and the inspections are to be recorded in Part 2 of the Ship Structure Access Manual. In addition prior to any space examinations that utilized the permanent means of access, an inspection to confirm the condition of the permanent means of access is to be recorded for each space.

Procedures

1. Any authorised person using the PMA shall assume the role of inspector and check for obvious damage prior to using the access arrangements. Whilst using the PMA the inspector is to verify the condition of the sections used by close up examination of those sections and note any deterioration in the provisions. Should any damage or deterioration be found, the effect of such deterioration including loss of coating and wastage is to be assessed as to whether the damage or deterioration affects the safety for continued use of the access. Deterioration found that is considered to affect safe use is to be determined as "substantial damage" and measures are to be put in place to ensure that the affected section(s) are not to be further used prior to effective repair. Substantial damage is to be reported in Part 2 of the Ship Structure Access Manual.

2. Statutory survey of any space that contains PMA shall include verification of the continued effectiveness of the PMA in that space. Survey requirements of the PMA shall not be expected to exceed the scope and extent of the survey being undertaken. If the PMA is found deficient the scope of survey should be extended as found appropriate.

3. Records of all inspections are to be established with specific requirements detailed in the ships Safety Management System. The record is to be readily available to persons using the PMAs and it is recommended that a copy be attached to the Ship Structure Access Manual. The original records should include as a minimum the date of the inspection, the name and title of the inspector, a confirmation signature, the sections of PMA inspected, verification of continued serviceable condition or details of any deterioration or substantial damage found and repairs carried out. A file of permits issued should be maintained for verification. Inspection records of permanent means of access are to be made available to classification society surveyors prior to survey.

Technical Background

It is recognised that PMA is subject to deterioration in a long term due to corrosive environment and external forces from ship motions and sloshing of liquid contained in the tank, and mechanical damage in cargo hold. PMA therefore is to be inspected at every

SC 190 (cont)

opportunity of tank/space entry, but at a minimum annually. The above interpretation is to be contained in a section of the Ship Structure Access Manual.

SC 190 (cont)

SOLAS Reg.II-1/3-6

3 Safe access to cargo holds, cargo tanks, ballast tanks and other spaces

3.1 Safe access* to cargo holds, cofferdams, ballast tanks, cargo tanks and other spaces in the cargo area shall be direct from the open deck and such as to ensure their complete inspection. Safe access to double bottom spaces may be from a pump-room, deep cofferdam, pipe tunnel, cargo hold, double hull space or similar compartment not intended for the carriage of oil or hazardous cargoes.

* Refer to the Recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.864(20).

Interpretation

Access to a double side skin space of bulk carriers may be either from a topside tank or double bottom tank or from both.

Technical Background

Unless used other purposes, the double side skin space is to be designed as a part of a large U-shaped ballast tank and such space is to be accessed through the adjacent part of the tank, i.e. topside tank or double bottom/bilge hopper tank. Access to the double side skin space from the adjacent part rather than direct from the open deck is justified.

SC 190 (cont)

SOLAS Reg.II-1/3-6

3.2 Tanks, and subdivisions of tanks, having a length of 35 m or more shall be fitted with at least two access hatchways and ladders, as far apart as practicable. Tanks less than 35 m in length shall be served by at least one access hatchway and ladder. When a tank is subdivided by one or more swash bulkheads or similar obstructions which do not allow ready means of access to the other parts of the tank, at least two hatchways and ladders shall be fitted.

Interpretation

A cargo oil tank of less than 35 m length without a swash bulkhead requires only one access hatch.

SC 190 (cont)

SOLAS Reg.II-1/3-6

3.3 Each cargo hold shall be provided with at least two means of access as far apart as practicable. In general, these accesses should be arranged diagonally, for example one access near the forward bulkhead on the port side, the other one near the aft bulkhead on the starboard side.

Interpretation

N/A

Ref.

Paragraph 19 of Annex to MSC/Circ.686.

SC 190 (cont)

SOLAS Reg.II-1/3-6

4 Ship structure access manual

4.1 A ship's means of access to carry out overall and close-up inspections and thickness measurements shall be described in a Ship structure access manual approved by the Administration, an updated copy of which shall be kept on board. The Ship structure access manual shall include the following for each space in the cargo area:

.1 plans showing the means of access to the space, with appropriate technical specifications and dimensions;

.2 plans showing the means of access within each space to enable an overall inspection to be carried out, with appropriate technical specifications and dimensions. The plans shall indicate from where each area in the space can be inspected;

.3 plans showing the means of access within the space to enable close-up inspections to be carried out, with appropriate technical specifications and dimensions. The plans shall indicate the positions of critical structural areas, whether the means of access is permanent or portable and from where each area can be inspected;

.4 instructions for inspecting and maintaining the structural strength of all means of access and means of attachment, taking into account any corrosive atmosphere that may be within the space;

.5 instructions for safety guidance when rafting is used for close-up inspections and thickness measurements;

.6 instructions for the rigging and use of any portable means of access in a safe manner;

.7 an inventory of all portable means of access; and

.8 records of periodical inspections and maintenance of the ship's means of access.

Interpretation

As a minimum the English version should be provided

- The ship structure access manual is to contain at least the following two parts:

Part 1: Plans, instructions and inventory required by paragraphs 4.1.1 to 4.1.7 of Reg. II-1/3-6;

Part 2: Form of record of inspections and maintenance, and change of inventory of portable equipment due to additions or replacement after construction

- The part 1 of plans, instruction and inventory is to be approved by the Administration or the Classification Societies recognised by the Administration.

- The part 2 of record of inspections and maintenance, etc. is be approved for its form only at new building.

- The following matters are to be addressed in the ship structure access manual:

1) The access manual should clearly cover scope as specified in the regulations for use by crews, surveyors and port state control officers.

2) Approval / re-approval procedure for Manual, i.e. any changes of the PMA, portable, movable or alternative means of access within the scope of the Regulation and the Technical Provisions are subject to review and approval by the Administration or by the

SC 190 (cont)

classification societies recognised by the Administration.

3) Verification of PMA be part of safety construction survey for continued effectiveness of the PMA in that space which is subject to the statutory survey.

4) Inspection of PMA by the crew and/or a competent inspector of the company as a part of regular inspection and maintenance.
(See Interpretation for paragraph 2.3 of SOLAS Reg.II-1/3-6)

5) Actions to be taken if PMA is found unsafe to use.

6) In case of use of portable equipment plans showing the means of access within each space indicating from where and how each area in the space can be inspected;

Model Section 5 “Inspection” of the access manual is to be developed addressing authorised use, permit to use system, inspection, and maintenance and repairs.

SC 190 (cont)

SOLAS Reg.II-1/3-6

4.2 For the purpose of this regulation “critical structural areas” are locations which have been identified from calculations to require monitoring or from the service history of similar or sister ships to be sensitive to cracking, buckling, deformation or corrosion which would impair the structural integrity of the ship.

Interpretation

1) Critical structural areas are to be identified by advanced calculation techniques for structural strength and fatigue performance, if available and feed back from the service history and design development of similar or sister ships.

2) Reference is to be made to the following publications for critical structural areas, where applicable:

- Oil tankers: Guidance Manual for Tanker Structures by TSCF;
- Bulk carriers: Bulk Carriers Guidelines for Surveys, Assessment and Repair of Hull Structure by IACS;
- Oil tankers and bulk carriers: The ESP Code as amended.

Technical Background

These documents contain the relevant information for the present ship types. However identification of critical areas for new double hull tankers and double side skin bulk carriers of improved structural design would have to be made by structural analysis at design stage if available.

SC 190 (cont)

SOLAS Reg.II-1/3-6

5 General technical specifications

5.1 For access through horizontal openings, hatches or manholes, the dimensions shall be sufficient to allow a person wearing a self-contained air-breathing apparatus and protective equipment to ascend or descend any ladder without obstruction and also provide a clear opening to facilitate the hoisting of an injured person from the bottom of the space. The minimum clear opening shall not be less than 600 mm x 600 mm. When access to a cargo hold is arranged through the cargo hatch, the top of the ladder shall be placed as close as possible to the hatch coaming. Access hatch coamings having a height greater than 900 mm shall also have steps on the outside in conjunction with the ladder.

Interpretation

The minimum clear opening of 600 mm x 600 mm may have corner radii up to 100 mm maximum. The clear opening is specified in MSC/Circ.686 to keep the opening fit for passage of personnel wearing a breathing apparatus. In such a case where as a consequence of structural analysis of a given design the stress is to be reduced around the opening, it is considered appropriate to take measures to reduce the stress such as making the opening larger with increased radii, e.g. 600 x 800 with 300 mm radii, in which a clear opening of 600 x 600 mm with corner radii up to 100mm maximum fits.

Technical Background

The interpretation is based upon the established Guidelines in MSC/Circ.686.

Ref.

Paragraphs 9 of Annex of MSC/Circ.686.

SC 190 (cont)

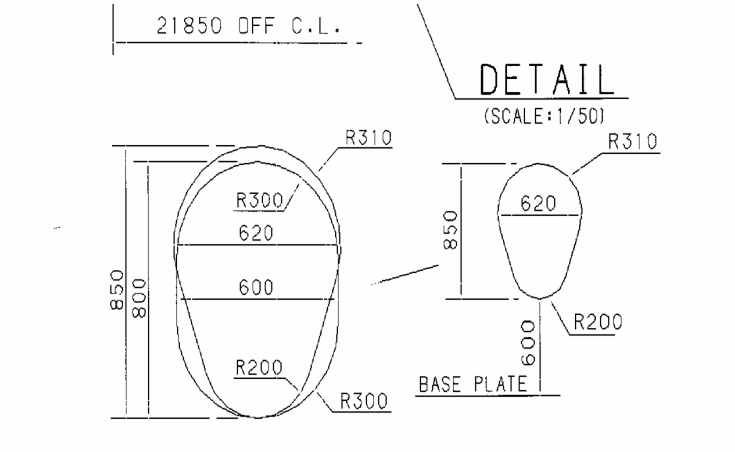
SOLAS Reg.II-1/3-6

5.2 For access through vertical openings, or manholes, in swash bulkheads, floors, girders and web frames providing passage through the length and breadth of the space, the minimum opening shall be not less than 600 mm x 800 mm at a height of not more than 600 mm from the bottom shell plating unless gratings or other foot holds are provided.

Interpretation

1) The minimum clear opening of not less than 600 mm x 800 mm may also includes an opening with corner radii of 300 mm.

2) Subject to verification of easy evacuation of injured person on a stretcher the vertical opening 850 mm x 620 mm with wider upper half than 600 mm , while the lower half may be less than 600 mm with the overall height not less than 850 mm is considered acceptable alternative to the traditional opening of 600 mm x 800 mm with corner radii of 300 mm..



3) If a vertical opening is at a height of more than 600 mm steps and handgrips are to be provided. In such arrangement it should be demonstrated that an injured person can be easily evacuated.

Technical Background

The interpretation is based upon the established Guidelines in MSC/Circ.686 and an innovative design in consideration of human body to easily access through the opening.

Ref.

Paragraphs 11 of Annex of MSC/Circ.686.

SC 190 (cont)

SOLAS Reg.II-1/3-6

5.3 For oil tankers of less than 5,000 tonnes deadweight, the Administration may approve, in special circumstances, smaller dimensions for the openings referred to in paragraphs 5.1 and 5.2, if the ability to traverse such openings or to remove an injured person can be proved to the satisfaction of the Administration."

Interpretation

N/A

SC 190 (cont)

Technical Provision, Resolution MSC.133(76)

Preamble

It has long been recognised that the only way of ensuring that the condition of a ship's structure is maintained to conform with the applicable requirements is for all its components to be surveyed on a regular basis throughout their operational life so as to ensure that they are free from damage such as cracks, buckling or deformation due to corrosion, overloading or contact damage and that thickness diminution is within established limits. The provision of suitable means of access to the hull structure for the purpose of carrying out overall and close-up surveys and inspections is essential and such means should be considered and provided for at the ship design stage.

Ships should be designed and built with due consideration as to how they will be surveyed by flag State inspectors and classification society surveyors during their in-service life and how the crew will be able to monitor the condition of the ship. Without adequate access, the structural condition of the ship can deteriorate undetected and major structural failure can arise. A comprehensive approach to design and maintenance is required to cover the whole projected life of the ship.

Interpretation

N/A

SC 190 (cont)

Technical Provision, Resolution MSC.133(76)

Preamble

3rd Paragraph

In order to address this issue, the Organization has developed these Technical provisions for means of access for inspections, intended to facilitate close-up inspections and thickness measurements of the ship's structure referred to in SOLAS regulation II-1/3-6 on Access to and within spaces in the cargo area of oil tankers and bulk carriers.

Interpretation

To refer to the observation of "cargo area" in Reg. II-1/3-6.2.1.

SC 190 (cont)

Technical Provision, Resolution MSC.133(76)

Definitions

Terms used in the Technical provisions have the same meaning as those defined in the 1974 SOLAS Convention, as amended, and in the ESP Code, as amended.

Interpretation

The following definitions other than those contained in the ESP Code have been used for the interpretations:

1. Rung means the step of vertical ladder or step on the vertical surface.

2. Tread means the step of inclined ladder, or for vertical access opening.

3. Flight of an inclined ladder means the actual stringer length of an inclined ladder. For vertical ladders, it is the distance between the platforms.

4. Stringer means

a. the frame of a ladder; or

b. the stiffened horizontal plating structure fitted on side shell, transverse bulkheads and/or longitudinal bulkheads in the space. For the purpose of ballast tanks of less than 5 m width forming double side spaces, the horizontal plating structure is credited as a stringer that is installed to secure continuous 600 mm or more in width past side longitudinals or stiffeners on side shell or longitudinal bulkhead. Openings in the stringer plating, if any, are to be arranged with safe guard rails or grid cover for not to impair safe passage on the stringer or safe access to each transverse web.

5. vertical ladder means the ladder of which inclined angle is 70 degrees and over up to 90 degrees. Vertical ladder shall not be skewed by more than 2 degrees.

6. Overhead obstructions mean the deck or stringer structure including stiffeners above the means of access.

7. Distance below the deck head means the distance below the plating.

Technical Background

The definition of stringer as the horizontal structural member is defined in the context of Section 2 (Wing water ballast tanks of less than 5 m width forming double side space and their bilge hopper sections) of Table 1 – Means of access for oil tankers. This section is also referred to by paragraph 2.8 (Double skin side tanks) of Table 2 – Means of access for bulk carriers.

SC 190 (cont)

Technical Provision, Resolution MSC.133(76)

1 Structural members subject to the close-up inspections and thickness measurements of the ship's structure referred to in SOLAS regulation II-1/ 3-6, except those in double bottom spaces, shall be provided with a permanent means of access to the extent as specified in table 1 and table 2, as applicable. For oil tankers and wing ballast tanks of ore carriers, rafting may be used in addition to the specified permanent means of access, provided that the structure allows for its safe and effective use.

Interpretation

The permanent means of access to a space can be credited for the permanent means of access for inspection.

For oil tankers and wing ballast tanks of ore carriers, approved alternative methods may be used in combination with the fitted permanent means of access, provided that the structure allows for its safe and effective use.

Technical Background

The Technical Provisions specify means of access to a space and to hull structure for carrying out overall and close up surveys and inspections. Requirements of PMA to hull structure may not always be suitable for access to a space. However if the PMA for access to a space can also be used for the intended surveys and inspections such PMA can be credited for the PMA for use for surveys and inspections.

SC 190 (cont)

Technical Provision, Resolution MSC.133(76)

2 Elevated passageways, where fitted, shall have a minimum width of 600 mm and be provided with toe boards not less than 150 mm high and guard rails over both sides of their entire length. Sloping structure providing part of the access shall be of a non-skid construction. Guard rails shall be 1,000 mm in height and consist of a rail and intermediate bar 500 mm in height and of substantial construction. Stanchions shall be not more than 3 m apart.

Interpretation

1) Guardrail arrangement specified by the provisions of paragraphs (2) and (3) of Reg.25 in ICLL, i.e. guardrails of 1.0 m in height having intermediate rails such that lowest course is not more than 230mm with a 50 mm toe board and other courses are not more than 380mm is to be considered as an alternative to the toe boards and the guard rails specified in TP.2.

2) Permanent means of access of the following configuration is to be considered as an alternative to the elevated passageways: The permanent means of access is integrated in the structure by means of wide longitudinals, on stiffened structural surfaces is to have a minimum clear width of 600 mm. The clear width may be minimum 450 mm for going around vertical webs. Guardrails is to be fitted over the open side of their entire length and is to be of substantial construction, 1,000 mm in height and consist of a rail and an intermediate bar at 500 mm in height. Stanchions is to be not more than 3 m apart

3) Height of toe board is to be measured from the surface of the passage way.

4) Slopping structures are structures that are sloped by 5 or more degrees from horizontal plane when a ship is in upright position at even-keel.

5) Guard rails are to be fitted on the open side. For stand alone passageways guard rails are to be fitted on both sides of these structures.

6) Discontinuous handrails and toe boards in way thereof are allowed provided the gap for both does not exceed 50 mm. The maximum distance between the adjacent stanchions across the handrail gaps is to be 350 mm.

7) Non-skid construction is such that the surface on which personnel walks provides sufficient friction to the sole of boots even the surface is wet and covered with thin sediment.

8) “Substantial construction” is taken to refer to the as designed strength as well as the residual strength during the service life of the vessel. Durability of passageways together with guard rails should be ensured by the initial corrosion protection and inspection and maintenance during services.

9) For guard rails, use of alternative materials such as GRP should be subject to compatibility with the liquid carried in the tank. Non-fire resistant materials should not be used for means of access to a space with a view to securing an escape route at a high temperature.

SC 190 (cont)

10) Requirements for resting platforms placed between ladders are equivalent to those applicable to elevated passageways.

Technical Background

1) The toe board fitted to the wide face plate of a deck transverse for an elevated passageway would easily trap sludge and sediment, which would likely cause difficulty for a safe use of the passageway. The interpretation in items 1) and 2) above provides practical solution for a safe use of the permanent means of access.

Ref.

Paragraph 10 of Annex to MSC/Circ.686

SC 190 (cont)

Technical Provision, Resolution MSC.133(76)

3 Access to elevated passageways and vertical openings from the ship's bottom shall be provided by means of easily accessible passageways, ladders or treads. Treads shall be provided with lateral support for the foot. Where the rungs of ladders are fitted against a vertical surface, the distance from the centre of the rungs to the surface shall be at least 150 mm. Where vertical manholes are fitted higher than 600 mm above the walking level, access shall be facilitated by means of treads and hand grips with platform landings on both sides.

Interpretation

If the vertical opening is at a height of more than 600 mm steps and handgrips are to be provided. In such an arrangement it should be demonstrated that an injured person can be easily evacuated.

SC 190 (cont)

Technical Provision, Resolution MSC.133(76)

4 Tunnels passing through cargo holds shall be equipped with ladders or steps at each end of the hold so that personnel may easily cross such tunnels.

Interpretation

the tunnel would mean a shaft tunnel of a ship having a cargo hold aft of engine room.

SC 190 (cont)

Technical Provision, Resolution MSC.133(76)

5 Permanent ladders, except for vertical ladders, which are fitted on vertical structures for close-up inspection or thickness measurement, shall be inclined at an angle of less than 70º. There shall be no obstructions within 750 mm of the face of the inclined ladder, except that in way of an opening this clearance may be reduced to 600 mm. The flights of ladders shall not be more than 9 m in actual length. Resting platforms of adequate dimensions shall be provided. Ladders and handrails shall be constructed of steel or equivalent material of adequate strength and stiffness and securely attached to the tank structure by stays. The method of support and length of stay shall be such that vibration is reduced to a practical minimum. In cargo holds, ladders shall be designed and arranged so that the risk of damage from cargo handling gear is minimized.

PMA for access to ballast tanks, cargo tanks and spaces:

For oil tankers:

1) Tanks and subdivisions of tanks having a length of 35 m or more: Inclined ladder or ladders are to be used for one of the access hatchways. For another, a vertical ladder may be used for access to a space where the vertical distance is 6 m or less between the deck and the stringer, between stringers, or between the deck or a stringer and the bottom of the space immediately below the entrance. In such a case where the vertical distance is more than 6 m but not exceeding 9 m vertical ladders comprising one or more ladder linking platforms spaced not more than 6 m apart vertically and displaced to one side of the ladder may also be used for this purpose. The uppermost, entrance section from deck, of the vertical ladder of a tank should be vertical for 2.5 m measured clear of the overhead obstructions and comprises a ladder linking platform. It should be displaced to one side of a vertical ladder. However, the vertical ladder may be down to 1.6 m to 3 m below deck structure if it lands on longitudinal or athwartship permanent means of access fitted within that range.

2) For the other access hatchway of the tank or subdivisions of tanks, an inclined ladder or combination of ladders are to be used for access to the space. The uppermost, entrance section from deck, of the ladder should be vertical for 2.5 m to clear an overhead obstructions and comprises a landing platform and continued with an inclined ladder. However, the vertical ladder may be down to 1.6 m to 3 m below deck structure if it lands on longitudinal or athwartship permanent means of access fitted within that range. The flights of the inclined ladders are not to be more than 9 meters in actual length and normally not more than 6 m in vertical height. The lowermost section of the ladders may be vertical for the vertical distance not exceeding 2.5 m.

3) Tanks less than 35 m in length and served by one access hatchway an inclined ladder or combination of ladders are to be used to the space as specified in 2) above.

4) In double hull spaces of less than 2.5 m width the access to the space may be by means of vertical ladders that comprises one or more ladder linking platforms spaced not more than 6 m apart vertically and displace to one side of the ladder. The uppermost, entrance section, of the vertical ladder of a tank from deck should be vertical for 2.5 m measured clear of the overhead obstructions and comprises a ladder linking platform. However, the

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vertical ladder may be down to 1.6 m to 3 m below overhead structure if it lands on longitudinal or athwartship permanent means of access fitted within that range. Adjacent sections of ladder should be laterally offset from each other by at least the width of the ladder. (Paragraph 20 of MSC/Circ.686)

5) Access from deck to a double bottom space may be of vertical ladders through a trunk. The vertical distance from deck to a resting platform, between resting platforms or a resting platform and the tank bottom is not be more than 6 m unless otherwise approved by the Administration.

For bulk carriers:

1) A vertical ladder may be used as a means of access to topside tanks, where the vertical distance is 6 m or less between the deck and the longitudinal means of access in the tank, the stringer or the bottom of the space immediately below the entrance. The uppermost, entrance section from deck, of the vertical ladder of the tank should be vertical for 2.5 m measured clear of the overhead obstructions and comprises a ladder linking platform unless landing on the longitudinal means of access, the stringer or the bottom,

2) Unless allowed in 1) above, an inclined ladder or combination of ladders are to be used for access to a tank or a space where the vertical distance is greater than 6 m between the deck and a stringer immediately below the entrance, between stringers, or between the deck or a stringer and the bottom of the space immediately below the entrance.

3) In case of paragraph 2) above the uppermost, entrance section from deck, of the ladder should be vertical for 2.5 m clear of the overhead obstructions and connected to a landing platform and continued with an inclined ladder. The flights of the inclined ladders are not to be more than 9 meters in actual length. The height of the inclined ladder is normally not to be more than 6m. The lowermost section of the inclined ladder may be vertical for a vertical distance not exceeding 2.5 m.

4) In double side skin spaces of less than 2.5 m width between top side tanks and bilge hopper tanks the access to the space may be by means of vertical ladders that comprises one or more ladder linking platforms spaced not more than 6 m apart vertically and displace to one side of the ladder. Adjacent sections of ladder should be laterally offset from each other by at least the width of the ladder. (Paragraph 20 of MSC/Circ.686)

PMA for inspection of the vertical structure of oil tankers and of double side skin spaces of bulk carriers:

1) Vertical ladders provided for means of access to the space may be used for access for inspection of the vertical structure

2) Vertical ladders that are fitted on vertical structures for inspection should comprise one or more ladder linking platforms spaced not more than 6 m apart vertically and displace to one side of the ladder. Adjacent sections of ladder should be laterally offset from each other by at least the width of the ladder. (Paragraph 20 of MSC/Circ.686)

Obstruction distances

SC 190 (cont)

The minimum distance between the inclined ladder face and obstructions, i.e. 750 mm and, in way of openings, 600 mm specified in TP.5 is to be measured perpendicular to the face of the ladder.

Use of spiral ladders

A spiral ladder is considered acceptable as an alternative for inclined ladders. In this regard it is noted that the uppermost 2.5m may continue to be comprised of the spiral ladder and need not change over to vertical ladders. In such a case where it is not practicable to continue the spiral ladder within the uppermost 2.5m underneath the upper entrance such as cross deck or bottom or upper stool, a vertical ladder is to be used for that part. The design is to be according to recongnised International or National standards that are acceptable to the Administration.

Technical Background

- It is a common practice to use a vertical ladder from deck to the first landing to clear overhead obstructions before continuing to an inclined ladder or a vertical ladder displaced to one side of the first vertical ladder.
- As provided in paragraph 20 of Annex to MSC/Circ.686, vertical ladders are to comprise one or more ladder linking platforms spaced not more than 6 m apart vertically. Therefore for the access to a space with the vertical distance not more than 6m between stringers or the lowest stringer and the bottom a vertical ladder can also be used safely.
- For narrow double hull spaces, i.e. less than 2.5 m width inclined ladders or vertical ladders may be installed with linking platforms spaced not more than 6 m apart.

Ref.

For vertical ladders: Paragraph 20 of Annex to MSC/Circ.686

For spiral stairways: AMSA Marine Orders Part 32, Appendix 17:

SC 190 (cont)

Technical Provision, Resolution MSC.133(76)

6 The width of ladders between stringers shall not be less than 400 mm. The treads shall be equally spaced at a distance apart, measured vertically, of between 250 mm and 300 mm. When steel is used, the treads shall be formed of two square bars of not less that 22 mm by 22 mm in section, fitted to form a horizontal step with the edges pointing upward. The treads shall be carried through the side stringers and attached thereto by double continuous welding. All sloping ladders shall be provided with handrails of substantial construction on both sides fitted at a convenient distance above the treads.

Interpretation

1) Vertical height of handrails is not to be less than [890] mm from the center of the step and two course handrails are to be provided.

2) The requirement of two square bares for treads specified in TP 6 is based upon the specification of construction of ladders in paragraph 3(e) of Annex 1 to Resolution A.272(VIII), which addresses inclined ladders. TP.3 allows for single rungs fitted to vertical surfaces, which is considered for a safe grip. For vertical ladders, when steel is used, the treads should be formed of single square bars of not less than 22 mm by 22 mm for the sake of safe grip.

3) The width of inclined ladders for access to a cargo hold is to be at least 450 mm to comply Australian AMSA Marine Orders Part 32, Appendix 17.

4) The width of inclined ladders other than an access to a cargo hold is to be not less than 400 mm.

5) The minimum width of vertical ladders is to be 350 mm and the pitch of the treads is to be equal and is to be between 250 mm and 300 mm.

6) A minimum climbing clearance in width is to be 600 mm other than the ladders placed between the hold frames.

7) The vertical ladders should be secured at intervals not exceeding 2.5 m apart to prevent vibration.

Technical Background

- TP.6 is a continuation of TP.5, which addresses inclined ladders. Interpretations for vertical ladders are needed based upon the current standards of IMO, AMSA or the industry.

- Interpretations 2) and 5) address vertical ladders based upon the current standards.

- Double square bars for treads become too large for a grip for vertical ladders and single treads facilitate a safe grip.

SC 190 (cont)

- Interpretation 7) is introduced consistently with the requirement and the interpretation of TP 3.

Ref.

- Annex 1 to Resolution A.272(VIII)
- Australian AMSA Marine Orders Part 32, Appendix 17
- ILO Code of Practice “Safety and Health in Dockwork” – Section 3.6 Access to Ship’s Holds

SC 190 (cont)

Technical Provision, Resolution MSC.133(76)

7 No free-standing portable ladder shall be more than 5 m long.

Interpretation

N/A

SC 190 (cont)

Technical Provision, Resolution MSC.133(76)

8 Portable ladders more than 5 m long may only be utilized if fitted with a remotely controlled mechanical device to secure the upper end of the ladder.

Interpretation

A mechanical device such as hooks for securing at the upper end of a ladder is considered as an alternative to a remotely controlled mechanical device stipulated in TP 8 if a movement fore/aft and sideways can be prevented at the upper end of the ladder.

Technical Background

Innovative design is to be accepted if it fits for the functional requirement with due consideration for safe use.

SC 190 (cont)

Technical Provision, Resolution MSC.133(76)

9 Movable means of access includes such devices as:

.1 hydraulic arm fitted with a stable base and with local control at the safety cage. The operational conditions should be in accordance with applicable safety requirements of the manufacturer; and

.2 wire lift platform.

Interpretation

Alternative means of access includes but not limited to such devices as:

.1 hydraulic arm fitted with a stable base;

.2 wire lift platform.

.3 staging

.4 Rafting

.5 Robot arm or ROV

.6 Rope access

.7 Portable ladders more than 5 m long may only be utilized if fitted with a mechanical device to secure the upper end of the ladder

.8 other means of access, approved by and acceptable to the Administration.

Technical Background

Innovative design is to be accepted if it fits for the functional requirement with due consideration for safe use.

SC 190 (cont)

Technical Provision, Resolution MSC.133(76)

10 For bulk carriers, access ladders to a cargo hold shall be:

.1 where the vertical distance between the upper surface of adjacent decks or between deck and the bottom of the cargo space is not more than 6 m, either a vertical ladder or an inclined ladder; and

.2 where the vertical distance between the upper surface of adjacent decks or between deck and the bottom of the cargo space is more than 6 m, an inclined ladder or ladders, except the uppermost 2.5 m of a cargo space measured clear of overhead obstructions and the lowest 6 m may have vertical ladders, provided that the vertical extent of the inclined

Interpretation

1) Either a vertical or an inclined ladder or a combination of them may be used for access to a cargo hold where the vertical distance is 6 m or less from the deck to the bottom of the cargo hold.

2) An inclined ladder or a combination of ladders are to be used for access to a cargo hold where the vertical distance is more than 6 m. The uppermost, entrance section, of the ladder directly exposed to a cargo hold should be vertical for 2.5 m measured clear of overhead obstructions, connected to a landing platform and continued with an inclined ladder system. The flights of the inclined ladders are not to be more than 9 meters in actual length. The lowermost section of the combination of ladders may be vertical for the vertical distance not exceeding 6 m, provided that the vertical extent of the inclined ladder or ladders connecting the vertical ladders is not less than 2.5 m.

3) Spiral stairways are considered acceptable as an alternative for providing access to the cargo holds. In this regard it is noted that the uppermost 2.5m and lowermost 6m may continue to be comprised of the spiral stairways and need not change over to vertical ladders. In such a case where it is not practicable to continue the spiral stairways within the uppermost 2.5m underneath the upper entrance such as cross deck or bottom or upper stool, a vertical ladder may be used for that part. The design is to be according to recongnised International or National standards that are acceptable to the Administration.

4) One of the two means of access required by SOLAS Reg. 3-6-3.3 for each cargo hold is to comply with paragraph 10.2 of the technical Provisions.

Technical Background for items 4) and 5)

Present bulk carriers have two independent means of access to a cargo hold, the design of which is in compliance with the Australian requirements. Practical problems have been envisioned for inclined ladders in existing bulk carriers. Inclined ladders including spiral ladders are more prone to cargo damages than staggered vertical ladders unless properly protected by bulkheads. It is desirable therefore that the PMA for a cargo hold are provided in two different types, one inclined ladder system and the other more robust ladder system that has been proven in existing bulk carriers with a view to minimizing possibility of damages to and consequential loss of means of access to a cargo hold at the same time due to a cargo

SC 190 (cont)

damage during voyages and/or during cargo handling in ports. Such damages to both of the means of access to a cargo hold result in difficulty in accessing for repairs of the PMA.

Ref.

Australian AMSA Marine Orders Part 32, Appendix 17

SC 190 (cont)

Table 1 – Means of access for oil tankers, Resolution MSC.133(76)

1 Water ballast tanks, except those specified in the right column, and cargo oil tanks

Access to overhead structure

1.1 For tanks of which the height is 6 m and over, permanent means of access shall be provided in accordance with .1 to .3:

Interpretation

1) Section 1 of Table 1 is also to be applied to void spaces in cargo area, except those spaces covered by Section 2.

2) Where a permanent means of access is provided adjacent to hull structure forming a wall on one side, guard rails are to be fitted on the open side of the permanent means of access (ref. to the degree of slope).

3) The vertical distance below the overhead structure is to be measured from the underside of the main deck plating to the top of the platform of the means of access at a given location.

4) The height of the tank is to be measured at each tank. For a tank the height of which varies at different bays item 1.1 is to be applied to such bays of a tank that have height 6 m and over.

Technical Background

Item 1) The guard rails are to be arranged such that the person on the permanent means of access is well protected on the free edge.

Item 3) If the height of the tank is increasing along the length of a ship the permanent means of access is to be provided locally where the height is above 6 m.

Ref.

Paragraph 10 of Annex to MSC/Circ.686.

SC 190 (cont)

Table 1 – Means of access for oil tankers, Resolution MSC.133(76)

1.1.1 continuous athwartship permanent access arranged at the transverse bulkheads and at every deck transverse, at a minimum of 1.8 m to a maximum of 2.5 m below the overhead structure. If the access is fitted on the side of the unobstructed side of the web plating, then lightening holes of at least 300 mm diameter shall be fitted in the web plating, providing access adjacent to both sides of each tripping bracket;

Interpretation

1) Permanent means of access for inspection specified in 1.1.1 is to be provided for transverse bulkheads of tanks on stiffened surface.

2) When deck stiffeners are fitted outside of the tank and bulkhead connection to deck is plate to plate with no stiffeners or brackets inside the tank, then a continuous athwartship access may not be required.

3) Also, continuous athwartship permanent access may not be fitted at deck transverses for an overhead structure where deck stiffeners and transverses fitted on the out side surface of deck plating of the tank.

4) In such a case where the depth of deck transverses is less than 1800mm for design scantling and the athwartship permanent access is to be fitted to the deck transverses the required distance of 1.8 to 2.5m below the overhead structure is provided above the permanent means of access by an extension.

5) Alternatively the depth of deck transverses is to be extended so that the required distance below overhead structure is provided above the extended face plate of the deck transverses.

(Operational safety measures should be detailed in an access manual.)

Technical Background

- Interpretation item 2): The PMA is intended for access to internal structures. In such a case where internal structures are entirely outside of the tank PMA becomes superfluous as long as deck plating and upper part of bulkhead plating are accessible outside of the tank.

- The longitudinal permanent means of access in the upper part of the longitudinal bulkheads allows overall inspection of deck transverses and close up surveys of their potential critical areas in the vicinity of their ends.

SC 190 (cont)

Table 1 – Means of access for oil tankers, Resolution MSC.133(76)

1.1.2 at least one longitudinal permanent means of access at a minimum of 1.8 m to a maximum of 2.5 m below the overhead structure. Where the longitudinal bulkhead contains attached framing, the access shall be provided at that side; and

Interpretation

1) Longitudinal permanent means of access is to be provided on each side of the tank if an alternative arrangement is applied in place of the continuous athwartship permanent means of access at every deck transverse.

2) For tanks with no internal stiffeners arranged in top of the longitudinal bulkheads on either side or in deck, no longitudinal permanent access are to be provided unless required by item 1.1.3 of Table 1. This will typically apply to product tankers with webframes on deck and corrugated longitudinal bulkhead.

3) In case there are vertical webs and stiffeners on longitudinal bulkheads both sides within the tank a longitudinal permanent means of access is to be provided to each side of the tank.

Technical Background

Critical areas for ESP are normally found in load bearing internals. In a tank with flush internal surfaces without load bearing internals condition of plates of the flush surfaces can be assessed from the easily accessible locations outside the tank. It is therefore considered that the permanent means of access would be of little use for the intended inspections.

However those longitudinal permanent means of access suggested above as an alternative arrangement provides sufficient overall inspection of under deck structure, deck transverses and vertical webs in way of the permanent means of access and is considered efficient for the intended purposes.

SC 190 (cont)

Table 1 – Means of access for oil tankers, Resolution MSC.133(76)

1.1.3 access between the arrangements specified in .1 and .2 and from the main deck to either .1 or .2.

Interpretation

Means of access to tanks may be used for access to the permanent means of access for inspection.

Technical Background

As a matter of principle, in such a case where the means of access can be utilised for the purpose of accessing structural members for inspection there is no need of duplicated installation of the PMA.

SC 190 (cont)

Table 1 – Means of access for oil tankers, Resolution MSC.133(76)

Access to vertical structures

1.3 For tanks of which the height is 6 m and over, containing internal structures, permanent means of access shall be provided to each transverse web.

Interpretation

1) 'Transverse web" includes vertical structures of non-watertight transverse bulkheads (swash bulkheads).

2) A combination of vertical ladders on transverse webs and alternate means as may be provided for small vessels.

4) Center and side struts (cross ties) are included as part of the ring web frame and PMA is to be provided for struts if they are at 6 m or more above the tank bottom to the extent necessary for visual inspection at a reasonable vicinity to toes of end brackets.

5) For tanks of which the height is 6 m and over, containing internal structures such as longitudinals and transverse webs, permanent means of access are to be provided to the transverse webs by means of longitudinal permanent means of access which are integrated in the structural member, which are to be in alignment with horizontal girders of transverse bulkheads.

Technical Background

- Though the types of permanent means of access to each transverse web are not specified in paragraph 1.3 of Table 1, inclined ladders or vertical ladders would meet the requirement. In large tankers inspection of all transverse webs by climbing up and down the ladders would not be an efficient way of overall and close-up. Alternative arrangement by use of longitudinal permanent means of access is preferred. They are to be provided in alignment with horizontal girders of transverse bulkheads for structural continuation and appropriate distance between them.
- Where the longitudinal permanent means of access is impracticable for smaller vessels a combination of vertical ladders on transverse webs and alternate means as may be provided.
- The longitudinal permanent means of access using wider longitudinals at an appropriate distance apart through transverse webs provide sufficient access for overall inspection and sampling and, if necessary, alternative means of access or portable means of access can be used to access the remaining part of the transverse webs. Such arrangement is considered an acceptable alternative.

SC 190 (cont)

Table 1 – Means of access for oil tankers, Resolution MSC.133(76)

1.4 For tanks of which the height is less than 6 m, raft or portable means may be utilized in lieu of the permanent means of access.

Interpretation

Alternative means of access may also be used in place of raft.

SC 190 (cont)

Table 1 - Means of access for oil tankers, Resolution MSC.133(76)

FOREPEAK TANKS

Interpretation

Fore peak tanks with a depth of 6 m or more at the center line of the collision bulkhead shall be provided with a suitable means of access for access to critical areas such as the deck structure, overhead structure of stringers and side shell structure.

Stringers of less than 6 m in vertical distance from the overhead structure are considered to provide suitable access in combination with portable means of access.

In case the vertical distance between deck structure and the uppermost stringer or stringers are 6 m or more alternative means of access is to be provided.

Technical Background

The unique structural configurations and feed back information form service record as well as the present requirements for coating and surveys has been taken into account for identifying the types of damages and locations for enabling risk based inspections.

SC 190 (cont)

Table 1 – Means of access for oil tankers, Resolution MSC.133(76)

2 Wing water ballast tanks less than 5 m width forming double side spaces and their bilge hopper sections

Access to the overhead structure

2.1 Where the vertical distance between horizontal upper stringer and deck head exceeds 6 m, one continuous permanent means of access shall be provided for the full length of the tank with a means to allow passing through transverse swash bulkheads installed a minimum of 1.8 m to a maximum of 2.5 m from the overhead structure with a vertical access ladder at each end and mid-span of tank.

Interpretation

1) Section 2 of Table 1 is also to be applied to wing tanks designed as void spaces.

2) For a tank the vertical distance between horizontal upper stringer and deck head of which varies at different sections item 2.1 is to be applied to such sections that falls under the criteria.

3) The continuous permanent means of access may be a wide longitudinal, which provides access to critical details on the opposite side by means of platforms as necessary on webframes. In case the vertical opening of the web is located in way of the open part between the wide longitudinal and the longitudinal on the opposite side, platforms shall be provided on both sides of the web to allow safe passage through the web.

Technical Background

Item 1) Reg. II-1/3-6.2.1 requires each space within the cargo area shall be provided with a permanent means of access. Though void spaces are not addressed in the technical provisions contained in Resolution MSC.133(76) it is arguable whether PMA is not required in void spaces. PMA or portable means of access are necessary arrangement to facilitate inspection of the structural condition of the space and the boundary structure. Therefore the requirements of Section 2 of Table 1 is to be applied to double hull spaces even designed as void spaces.

Item 2) The interpretation of varied tank height in item 1 of Table 1 is applied to the vertical distance between horizontal upper stringer and deck head for consistency.

SC 190 (cont)

Table 1 – Means of access for oil tankers, Resolution MSC.133(76)

2.2 For bilge hopper sections of which the vertical distance from baseline to the upper knuckle point is 6 m and over, one longitudinal permanent means of access shall be provided for the full length of the tank. It shall be accessible by vertical permanent means of access at both ends of the tank.

Interpretation

1) The longitudinal continuous permanent means of access may be installed at a minimum 1.6 m to a maximum 3 m from top of bilge hopper section. When extension platform is arranged on the web, allowing hands on access to critical areas in upper knuckle point of bilge section, then the requirement to vertical ladder for access to these, as given in 2.5.1, will not apply.

2) Alternatively the longitudinal continuous permanent means of access may be installed at a minimum of 1.2 m to a maximum of 1.8 m below the top of the clear opening of the web ring in way of the knuckle point allowing a use of portable means of access to reach identified structural critical areas.

3) The longitudinal continuous permanent means of access may otherwise be installed at a location within 6 m from the knuckle point if used in combination with alternative methods to gain an access to the knuckle point.

4) Permanent means of access between the longitudinal continuous permanent means of access and the bottom of the space is to be provided.

5) The height of a bilge hopper tank located outside of the parallel part of vessel is to be taken as the maximum of the clear vertical distance measured from the bottom plating to the hopper plating of the tank.

6) The foremost and aftmost bilge hopper ballast tanks with raised bottom, of which the height is 6 m and over, a combination of transverse and vertical PMA for access to the upper knuckle point for each transverse web is to be accepted in place of the longitudinal permanent means of access.

Technical Background

Interpretation 4): The bilge hopper tanks at fore and aft of cargo area narrow due to raised bottom plating and the actual vertical distance from the bottom of the tank to hopper plating of the tank is more appropriate to judge if a portable means of access could be utilized for the purpose.

Interpretation 5): in the foremost or aftmost bilge hopper tanks where the vertical distance is 6 m or over but installation of longitudinal permanent means of access is not practicable permanent means of access of combination of transverse and vertical ladders provides an alternative means of access to the upper knuckle point.

SC 190 (cont)

Table 1 – Means of access for oil tankers, Resolution MSC.133(76)

2.3 Where the vertical distance referred to in 2.2 is less than 6 m, portable means of access may be utilised in lieu of the permanent means of access. To facilitate the operation of the portable means of access, in-line openings in horizontal stringers should be provided. The openings should be of an adequate diameter and should have suitable protective railings.

Interpretation

N/A

SC 190 (cont)

Table 1 – Means of access for oil tankers, Resolution MSC.133(76)

2.4 Whenever practicable, the distance between the overhead structure and the uppermost longitudinal stringer and between the longitudinal stringers should not exceed 6 m.

Interpretation

1) Longitudinal permanent means of access installed in accordance with paragraph 2.1 in the upper most space and at a vertical distance not exceeding 6 m within the remaining part of the double side spaces provide access to the overhead structure as well as to the vertical structure. Plated stringers are to be provided in alignment with horizontal girders of transverse bulkheads for structural continuity. The maximum distance between the deck head and the uppermost plated stringer and between the longitudinal plated stringers in any case is not to exceed 9 m.

Stringer in the context of Section 2 of Table 1 is taken to be a horizontal structure that is extended from side shell plating to a longitudinal bulkhead and provides passage of clear width of 600 mm or more. It may be a plating construction with stiffeners or a build up construction with wide longitudinals, which serves as longitudinal permanent means of access.

Technical Background

1) The functional purposes of the permanent means of access are to enable to monitor the condition of the ship and to facilitate close-up inspections and thickness measurements of the ship’s structure, The plating stringers or the build-up stringers installed not exceeding 6m apart vertically provide access to underdeck structures and overhead and vertical structures above the permanent means of access, thus satisfy the technical provision of items 2.1, 2.4 and 2.5 of Table 1.

SC 190 (cont)

Table 1 – Means of access for oil tankers, Resolution MSC.133(76)

Access to the vertical structure

2.5 Vertical permanent means of access shall be provided to each transverse web in the following cases where the vertical distance is 6 m and over:

.1 from baseline to the upper knuckle point of the bilge hopper section;

.2 from the upper knuckle point of the bilge hopper section to main deck where no horizontal stringers are provided; and

.3 between horizontal stringers.

Interpretation

1) **PMA for inspection of the vertical structure:** (See the interpretation of stringers item 2.4 of Table 1)

2) Means for facilitating a use of a portable means of access for inspection of the upper part of transverse web is to be provided, where the vertical distance defined in paragraph 2.5 is less than 6 m and vertical PMA is not provided.

3) Vertical ladders that are fitted on vertical structures for inspection should comprise one or more ladder linking platforms spaced not more than 6 m apart vertically and displace to one side of the ladder. Adjacent sections of ladder should be laterally offset from each other by at least the width of the ladder. (Paragraph 20 of MSC/Circ.686) (Extract from the interpretation of TP.5)

4) Continuous longitudinal permanent means of access as required for deck area in 2.1 is acceptable as alternative to vertical means of access on every vertical web when distance between the longitudinal continuous permanent means is not exceeding 6 m.

5) The continuous longitudinal permanent means of access are to provide access to critical details on the opposite side by means of platforms fitted on web frames as necessary In case the vertical opening of the web is located in way of the open part between the longitudinal permanent means of access and a longitudinal on the other side of the space, platforms are to be provided on both sides of the web to allow safe passage through the web.

6) The height of a bilge hopper tank located outside of the parallel part of vessel is to be taken as the maximum of the clear vertical height measured from the bottom plating to the hopper plating of the tank.

Technical Background

1) As provided in the interpretation for paragraph 2.4 of Table 1, the longitudinal permanent means of access described therein facilitate access from the stringers to critical areas of vertical structure, i.e. transverse web and joining parts of longitudinals. Portable means of access is to be used for the higher area between the adjacent longitudinal permanent means of access which are spaced not exceeding 6m apart.

2) The interpretation of paragraph 2.5.above is in the same vein of the alternative means of access for paragraph 1.3 of Table 1, i.e. the horizontal permanent means of access in place of inclined or vertical ladders to transverse webs.

SC 190 (cont)

Table 1 – Means of access for oil tankers, Resolution MSC.133(76)

2.6 Access holes within 600 mm of the stringer shall be provided in each transverse web/swash bulkhead above each stringer and tank base.

Interpretation

If the vertical opening is at a height of more than 600 mm steps and handgrips are to be provided. In all cases it should demonstrated that an injured person can be easily evacuated.

Technical Background

SOLAS Reg. II-1/3-6.5.2 allows vertical openings higher than 600 mm from the bottom shell plating if gratings or other foot holds are provided. The above interpretation aimed at a consistency with the Regulation.

SC 190 (cont)

Table 1 – Means of access for oil tankers, Resolution MSC.133(76)

2.7 In the case where the vertical distance referred to in 2.5 is less than 6 m, portable means may be utilised in lieu of the permanent means of access.

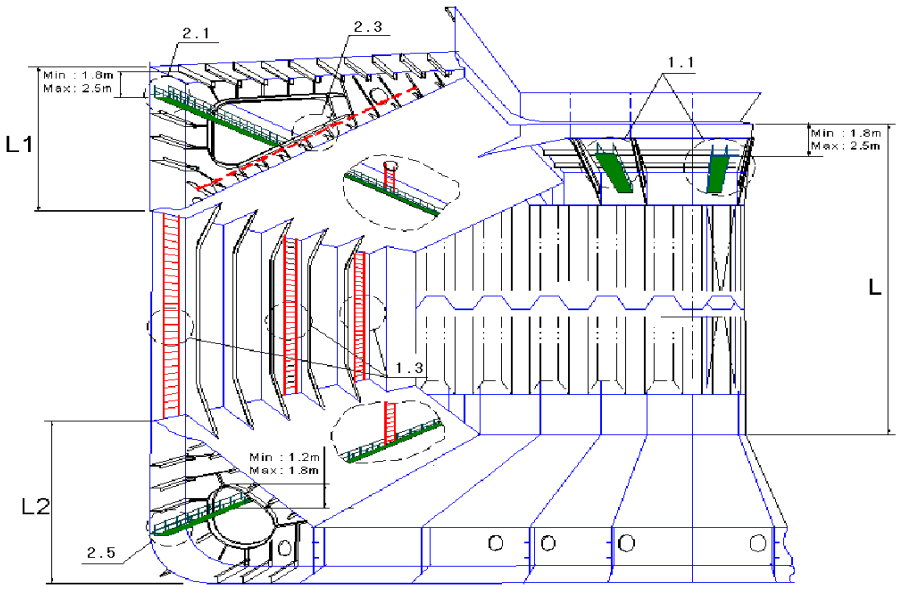
Interpretation

The interpretation of paragraph 2.2 of Table 1 refers.

SC 190 (cont)

Table 2 – Means of access for bulk carriers, Resolution MSC.133(76)

Arrangement of means of access for single side skin bulk carriers as written in the Technical Provisions.



SC 190 (cont)

Table 2 – Means of access for bulk carriers, Resolution MSC.133(76)

1 Cargo holds

***Access* to overhead structure**

1.1 At least 3 permanent means of access shall be fitted to provide access to the overhead structure at both sides of the cross deck and in the vicinity of the centreline. Each means of access shall be accessible from the cargo hold access or directly from the main deck and installed at a minimum of 1.8 m to a maximum of 2.5 m below the deck.

Interpretation

1) Interconnected means of access under the cross deck for access to three locations at both sides and in the vicinity of the centerline is acceptable as the three means of access.

2) Permanent means of access fitted at three separate locations accessible independently, one at each side and one in the vicinity of the centerline is acceptable.

3) Athwartship permanent means of access fitted on transverse bulkheads from side to side at a minimum 1.6 m to a maximum 3 m below the deck head is considered as an alternative to the requirement.

4) Access to the means of access to overhead structure of cross deck may be via the upper stool.

5) Attention is to be paid to the structural strength where any access opening is provided in the main deck or cross deck.

6) The requirements for bulk carrier cross deck structure is also considered applicable for ore carriers.

Technical Background

Pragmatic arrangements of the PMA are provided.

SC 190 (cont)

Table 2 – Means of access for bulk carriers, Resolution MSC.133(76)

1.2 Alternatively, movable means of access may be utilized for access to the overhead structure of cross deck if its vertical distance is 17 m or less above the tank top.

Interpretation

1) The movable means of access to the underdeck structure of cross deck need not necessarily be carried on board the vessel. It is sufficient if it is made available when needed.

2) The requirements for bulk carrier cross deck structure is also considered applicable for ore carriers.

SC 190 (cont)

Table 2 – Means of access for bulk carriers, Resolution MSC.133(76)

Access to vertical structures

1.3 Permanent means of vertical access shall be provided in all cargo holds and built into the structure to allow for an inspection of a minimum of 25 % of the total number of hold frames port and starboard equally distributed throughout the hold including at each end in way of transverse bulkheads. But in no circumstance shall this arrangement be less than 3 permanent means of vertical access fitted to each side (fore and aft ends of hold and mid-span). Means to readily secure safety cages to the permanent means of access shall be provided. Permanent means of vertical access fitted between two adjacent hold frames is counted for an access for the inspection of both hold frames. A means of portable access may be used to gain access over the sloping plating of lower hopper ballast tanks.

Interpretation

1) For practical reasons a single vertical ladder (not staggered ones) is accepted for the inspection of the hold side frames in a single side skin construction.

2) The minimum width of vertical ladders for access to hold frames is to be 350 mm measured between stringers and the maximum pitch of the treads is to be 350 mm..

3) For double side skin bulk carrier no vertical ladders for inspection of the cargo hold surfaces are to be provided. Inspection of this structure is to be provided from within the double hull space.

4) Safety cage in the context of item 1.3 of Table 1 is such that is to be arranged to protect surveyor/crews from falling form the ladder and provides rest during inspection. For example a safety harness worn by the personnel during the inspection is an acceptable equivalence. If safety harness is to be used, means should be provided for connecting the safety harness in suitable places in a practical way.

Technical Background

Item 4) Permanent installation of a safety cage is not practicable due to high risks of cargo damages. Portable one for use by individuals is to be envisioned. Alternatively safety harness may be used.

The maximum pitch of the treads of 350 mm is applied with a view to reducing trapping cargoes.

SC 190 (cont)

Table 2 – Means of access for bulk carriers, Resolution MSC.133(76)

1.4 In addition, portable or movable means of access shall be utilized for access to the remaining hold frames up to their upper brackets and transverse bulkheads.

Interpretation

Portable, movable or alternative means of access also is to be applied to corrugated bulkheads.

SC 190 (cont)

Table 2 – Means of access for bulk carriers, Resolution MSC.133(76)

2 Ballast tanks

Interpretation

Refer to the Observation for paragraph 2.1 of Reg. II-1/3-6.

SC 190 (cont)

Table 2 – Means of access for bulk carriers, Resolution MSC.133(76)

Top side tanks

2.1 For each topside tank of which the height is 6 m and over, one longitudinal continuous permanent means of access shall be provided along the side shell webs and installed at a minimum of 1.8 m to a maximum of 2.5 m below deck with a vertical access ladder in the vicinity of each access to that tank.

Interpretation

One continuous longitudinal permanent means of access may be provided along the side shell webs and installed at a minimum of 1.6 m to a maximum of 3 m below deck with a vertical access ladder in the vicinity of each access to that tank.

Technical Background

Structural configuration may require flexibility of the location of longitudinal continuous permanent means of access.

SC 190 (cont)

Table 2 – Means of access for bulk carriers, Resolution MSC.133(76)

2.2 If no access holes are provided through the transverse ring webs within 600 mm of the tank base and the web frame rings have a web height greater than 1 m in way of side shell and sloping plating, then step rungs/grab rails shall be provided to allow safe access over each transverse web frame ring.

Interpretation

N/A

SC 190 (cont)

Table 2 – Means of access for bulk carriers, Resolution MSC.133(76)

2.3 Three permanent means of access, fitted at the end bay and middle bay of each tank, shall be provided spanning from tank base up to the intersection of the sloping plate with the hatch side girder. The existing longitudinal structure may be used as part of this means of access.

Interpretation

If the longitudinal structures on the sloping plate are fitted outside of the tank a means of access is to be provided.

SC 190 (cont)

Table 2 – Means of access for bulk carriers, Resolution MSC.133(76)

2.4 For topside tanks of which the height is less than 6 m, a portable means may be utilized in lieu of the permanent means of access.

Interpretation

N/A

SC 190 (cont)

Table 2 – Means of access for bulk carriers, Resolution MSC.133(76)

Bilge hopper tanks

2.5 For each bilge hopper tank of which the height is 6 m and over, one longitudinal continuous permanent means of access shall be provided along the side shell webs and installed at a minimum of 1.2 m to a maximum of 1.8 m below the top of the clear opening of the web ring with a vertical access ladder in the vicinity of each access to the tank.

Interpretation

1) Permanent means of access between the longitudinal continuous permanent means of access and the bottom of the space is to be provided.

2) The longitudinal continuous permanent means of access may be alternatively located through the upper web plating above the clear opening of the web ring, when this arrangement facilitates more suitable inspection of identified structurally critical areas. A wide longitudinal frame of at least 600 mm clear width may used for the purpose of the longitudinal continuous permanent means of access.

3) The height of a bilge hopper tank located outside of the parallel part of vessel is to be taken as the maximum of the clear vertical height measured from the bottom plating to the hopper plating of the tank.

4) It should be demonstrated that portable means for inspection can deployed and made readily available in the areas where needed.

5) For double side skin bulk carriers the longitudinal continuous permanent means of access may be installed at a location within 6 m from the knuckle point if used in combination with alternative methods to gain an access to the knuckle point.

Technical Background

The functional requirement to get access to the identified critical area can be satisfied by the alternative arrangement given in item 5).

SC 190 (cont)

Table 2 – Means of access for bulk carriers, Resolution MSC.133(76)

2.6 If no access holes are provided through the transverse ring webs within 600 mm of the tank base and the web frame rings have a web height greater than 1 m in way of side shell and sloping plating, then step rungs/grab rails shall be provided to allow safe access over each transverse web frame ring.

Interpretation

N/A

SC 190 (cont)

Table 2 – Means of access for bulk carriers, Resolution MSC.133(76)

2.7 For bilge hopper tanks of which the height is less than 6 m, a portable means may be utilized in lieu of the permanent means of access.

Interpretation

1) The interpretation of paragraph 2.7 of Table 1 refers.

2) It should be demonstrated that a portable means can deployed and made readily available for inspection in the areas where needed.

SC 190 (cont)

Table 2 – Means of access for bulk carriers, Resolution MSC.133(76)

Double side skin tanks

2.8 Permanent means of access shall be provided in accordance with the applicable sections of table 1.

Interpretation

N/A

SC 190 (cont)

Table 2 - Means of access for bulk carriers, Resolution MSC.133(76)

FOREPEAK TANKS

Interpretation

Fore peak tanks with a depth of 6 m or more at the center line of the collision bulkhead shall be provided with a suitable means of access for access to critical areas such as the deck structure, overhead structure of stringers and side shell structure.

Stringers of less than 6 m in vertical distance from the overhead structure are considered to provide suitable access in combination with portable means of access.

In case the vertical distance between deck structure and the uppermost stringer or stringers are 6 m or more alternative means of access is to be provided.

Technical Background

The unique structural configurations and feed back information form service record as well as the present requirements for coating and surveys has been taken into account for identifying the types of damages and locations for enabling risk based inspections.

SC 190 (cont)

Table 2 – Means of access for bulk carriers, Resolution MSC.133(76)

Footnote

For ore carriers, permanent means of access in wing ballast tanks shall be provided in accordance with the applicable section of table 1.

Interpretation

The requirements to Ore Carrier wing tanks arranged as void spaces should be as for wing ballast tanks.

Technical Background

The wing tanks are prone to damages even when arranged as void space, rafting is not an option and permanent means of access are needed to monitor the structural condition.

End of Document

SC 191 IACS Unified Interpretations (UI) SC 191 for the application of amended SOLAS regulation II-1/3-6 (resolution MSC.151(78)) and revised Technical provisions for means of access for inspections (resolution MSC.158(78))

(Nov 2004) (Rev.1 May 2005) (Rev.2 Oct 2005) (Corr. Dec 2005) (Rev.3 Mar 2006) (Rev.4 Sep 2011) (Corr.1 Nov 2011) (Rev.5 May 2013) (Rev.6 May 2014) (Corr.1 Sep 2014) (Rev.7 Jan 2015) (Corr.1 Jun 2016) (Corr.2 Dec 2016) (Corr.3 Jan 2017) (Rev.8 Apr 2019) (Rev.9 Nov 2024)

Note:

1. This UI is to be applied by IACS Members and Associates when acting as recognized organizations, authorized by flag State Administrations to act on their behalf, unless otherwise advised, from 1 January 2005.

2. Rev.1 (May 2005) introduced new Annex to UI SC 191. Rev.1 is to be applied by IACS Members and Associates from 1 July 2005.

3. Rev.2 (Oct.2005) re-categorized the Annex to UI SC191 (Rev.1) as Recommendation No.91.

   Rev.2 (Oct.2005 / Corr. Dec. 2005) is to be applied by IACS Members and Associates to ships contracted for construction on or after 1 May 2006.

   Refer to IMO MSC/Circ. 1176.

4. The ‘contracted for construction’ date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details about the date of ‘contract for construction’, refer to IACS Procedural Requirement (PR) No. 29.

5. Rev.3 is to be applied by IACS Members and Associates from 1 October 2006.

6. Rev.4 is to be applied by IACS Members to ships contracted for construction from 1 July 2012.

7. Rev.5 is to be applied by IACS Members to ships contracted for construction from 24 June 2013.

8. Rev.6 is to be applied by IACS Members to ships contracted for construction from 1 July 2015.

9. Rev.7 is to be applied by IACS Members to ships contracted for construction from 1 July 2016.

10. Rev.8 is to be applied by IACS Members to ships contracted for construction from 1 July 2019.

11. Rev.9 is to be applied by IACS Members from 1 July 2025.

SC 191 (cont)

SOLAS regulation II-1/3-6, section 1

1 Application

1.1 Except as provided for in paragraph 1.2, this regulation applies to oil tankers of 500 gross tonnage and over and bulk carriers, as defined in regulation IX/1, of 20,000 gross tonnage and over, constructed on or after 1 January 2006.

1.2 Oil tankers of 500 gross tonnage and over constructed on or after 1 October 1994 but before 1 January 2005 shall comply with the provisions of regulation II-1/12-2 adopted by resolution MSC.27(61).

Interpretation

Oil tankers:

This regulation is only applicable to oil tankers having integral tanks for carriage of oil in bulk, which is contained in the definition of oil in Annex 1 of MARPOL 73/78. Independent oil tanks can be excluded.

Regulation II-1/3-6 is not normally applied to FPSO or FSO unless the Administration decides otherwise.

Technical Background

Means of Access (MA) specified in the Technical provisions contained in resolution MSC.158(78) are not specific with respect to the application to integral cargo oil tanks or also to independent cargo oil tanks. ESP requirements of oil tankers have been established assuming the target cargo oil tanks are integral tanks. The MA regulated under SOLAS regulation II-1/3-6 is for overall and close-up inspections as defined in regulation IX/1. Therefore it is assumed that the target cargo oil tanks are those of ESP, i.e. integral cargo tanks.

Regulation II-1/3-6 is applicable to FPSO or FSO if they are subject to the scope of ESP as contained in the ESP Code, as amended.

Ref.

SOLAS regulation IX/1 and the ESP Code, as amended.

SC 191 (cont)

SOLAS regulation II-1/3-6, paragraph 2.1

2.1 Each space shall be provided with a permanent means of access to enable, throughout the life of a ship, overall and close-up inspections and thickness measurements of the ship's structures to be carried out by the Administration, the company, as defined in regulation IX/1, and the ship's personnel and others as necessary. Such means of access shall comply with the requirements of paragraph 5 and with the Technical provisions for means of access for inspections, adopted by the Maritime Safety Committee by resolution MSC.133(76), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than chapter 1.

Interpretation

Each space for which close-up inspection is not required such as fuel oil tanks and void spaces forward of cargo area, may be provided with a means of access necessary for overall survey intended to report on the overall conditions of the hull structure.

SC 191 (cont)

SOLAS regulation II-1/3-6, paragraph 2.2

2.2 Where a permanent means of access may be susceptible to damage during normal cargo loading and unloading operations or where it is impracticable to fit permanent means of access, the Administration may allow, in lieu thereof, the provision of movable or portable means of access, as specified in the Technical provisions, provided that the means of attaching, rigging, suspending or supporting the portable means of access forms a permanent part of the ship's structure. All portable equipment shall be capable of being readily erected or deployed by ship's personnel.

Interpretation

Some possible alternative means of access are listed under paragraph 3.9 of the Technical Provisions for means of access for inspection(TP). Always subject to acceptance as equivalent by the Administration, alternative means such as an unmanned robot arm, ROV's and dirigibles with necessary equipment of the permanent means of access for overall and close-up inspections and thickness measurements of the deck head structure such as deck transverses and deck longitudinals of cargo oil tanks and ballast tanks, are to be capable of:

- safe operation in ullage space in gas-free environment;
- introduction into the place directly from a deck access.

When considering use of alternative means of access as addressed by paragraph 3.9 of the TP, refer to IACS Recommendation No.91 "Guidelines for Approval/Acceptance of Alternative Means of Access".

Technical Background

Innovative approaches, in particular a development of robot in place of elevated passageways, are encouraged and it is considered worthwhile to provide the functional requirement for the innovative approach.

SC 191 (cont)

SOLAS regulation II-1/3-6, paragraph 2.3

2.3 The construction and materials of all means of access and their attachment to the ship's structure shall be to the satisfaction of the Administration. The means of access shall be subject to survey prior to, or in conjunction with, its use in carrying out surveys in accordance with regulation I/10.

Interpretation

Inspection

The MA arrangements, including portable equipment and attachments, are to be annually inspected by the crew or competent inspectors and the inspections are to be recorded in Part 2 of the Ship Structure Access Manual. In addition prior to any space examinations that utilized the permanent means of access, an inspection to confirm the condition of the permanent means of access is to be recorded for each space.

Procedures

1. Any Company authorised person using the MA shall assume the role of inspector and check for obvious damage prior to using the access arrangements. Whilst using the MA the inspector is to verify the condition of the sections used by close up examination of those sections and note any deterioration in the provisions. Should any damage or deterioration be found, the effect of such deterioration including loss of coating and wastage is to be assessed as to whether the damage or deterioration affects the safety for continued use of the access. Deterioration found that is considered to affect safe use is to be determined as "substantial damage" and measures are to be put in place to ensure that the affected section(s) are not to be further used prior to effective repair. Substantial damage is to be reported in Part 2 of the Ship Structure Access Manual.

2. Statutory survey of any space that contains MA shall include verification of the continued effectiveness of the MA in that space. Survey of the MA shall not be expected to exceed the scope and extent of the survey being undertaken. If the MA is found deficient the scope of survey is to be extended if this is considered appropriate.

3. Records of all inspections are to be established based on the requirements detailed in the ships Safety Management System. The records are to be readily available to persons using the MAs and a copy attached to the Ship Structure Access Manual. The latest record for the portion of the MA inspected is to include as a minimum the date of the inspection, the name and title of the inspector, a confirmation signature, the sections of MA inspected, verification of continued serviceable condition or details of any deterioration or substantial damage found and repairs carried out. A file of permits issued is to be maintained for verification. Inspection records of permanent means of access are to be made available to classification society surveyors prior to survey.

Technical Background

It is recognised that MA may be subject to deterioration in the long term due to corrosive environment and external forces from ship motions and sloshing of liquid contained in the tank, and mechanical damage in cargo hold. MA therefore is to be inspected at every opportunity of tank/space entry, but at a minimum annually. The above interpretation is to be contained in a section of the Ship Structure Access Manual.

SC 191 (cont)

SOLAS regulation II-1/3-6, paragraph 3.1

3 Safe access to cargo holds, cargo tanks, ballast tanks and other spaces

3.1 Safe access* to cargo holds, cofferdams, ballast tanks, cargo tanks and other spaces in the cargo area shall be direct from the open deck and such as to ensure their complete inspection. Safe access to double bottom spaces or to forward ballast tanks may be from a pump-room, deep cofferdam, pipe tunnel, cargo hold, double hull space or similar compartment not intended for the carriage of oil or hazardous cargoes.

* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27).

Interpretation

Access to a double side skin space of bulk carriers may be either from a topside tank or double bottom tank or from both.

The wording "not intended for the carriage of oil or hazardous cargoes" applies only to "similar compartments", i.e. safe access can be through a pump-room, deep cofferdam, pipe tunnel, cargo hold or double hull space.

Technical Background

Unless used for other purposes, the double side skin space is to be designed as a part of a large U-shaped ballast tank and such space is to be accessed through the adjacent part of the tank, i.e. topside tank or double bottom/bilge hopper tank. Access to the double side skin space from the adjacent part rather than direct from the open deck is justified. Any such arrangement is to provide a directly routed, logical and safe access that facilitates easy evacuation of the space.

SC 191 (cont)

SOLAS regulation II-1/3-6, paragraph 3.2

3.2 Tanks, and subdivisions of tanks, having a length of 35 m or more shall be fitted with at least two access hatchways and ladders, as far apart as practicable. Tanks less than 35 m in length shall be served by at least one access hatchway and ladder. When a tank is subdivided by one or more swash bulkheads or similar obstructions which do not allow ready means of access to the other parts of the tank, at least two hatchways and ladders shall be fitted.

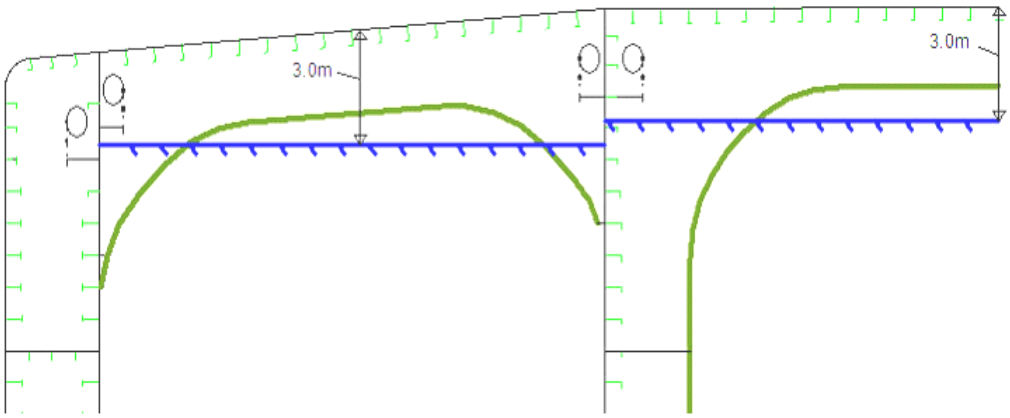
Interpretation

A cargo oil tank of less than 35 m length without a swash bulkhead requires only one access hatch.

Where rafting is indicated in the ship structures access manual as the means to gain ready access to the under deck structure, the term "*similar obstructions*" referred to in the regulation includes internal structures (e.g., webs >1.5m deep) which restrict the ability to raft (at the maximum water level needed for rafting of under deck structure) directly to the nearest access ladder and hatchway to deck. When rafts or boats alone, as an alternative means of access, are allowed under the conditions specified in the ESP Code, as amended, permanent means of access are to be provided to allow safe entry and exit. This means:

a) access direct from the deck via a vertical ladder and small platform fitted approximately 2m below the deck in each bay; or

b) access to deck from a longitudinal permanent platform having ladders to deck in each end of the tank. The platform shall, for the full length of the tank, be arranged in level with, or above, the maximum water level needed for rafting of under deck structure. For this purpose, the ullage corresponding to the maximum water level is to be assumed not more than 3m from the deck plate measured at the midspan of deck transverses and in the middle length of the tank. (See Figure below). A permanent means of access from the longitudinal permanent platform to the water level indicated above is to be fitted in each bay (e.g., permanent rungs on one of the deck webs inboard of the longitudinal permanent platform).



SC 191 (cont)

SOLAS regulation II-1/3-6, paragraph 4.1

4 Ship structure access manual

4.1 A ship's means of access to carry out overall and close-up inspections and thickness measurements shall be described in a Ship structure access manual approved by the Administration, an updated copy of which shall be kept on board. The Ship structure access manual shall include the following for each space:

.1 plans showing the means of access to the space, with appropriate technical specifications and dimensions;

.2 plans showing the means of access within each space to enable an overall inspection to be carried out, with appropriate technical specifications and dimensions. The plans shall indicate from where each area in the space can be inspected;

.3 plans showing the means of access within the space to enable close-up inspections to be carried out, with appropriate technical specifications and dimensions. The plans shall indicate the positions of critical structural areas, whether the means of access is permanent or portable and from where each area can be inspected;

.4 instructions for inspecting and maintaining the structural strength of all means of access and means of attachment, taking into account any corrosive atmosphere that may be within the space;

.5 instructions for safety guidance when rafting is used for close-up inspections and thickness measurements;

.6 instructions for the rigging and use of any portable means of access in a safe manner;

.7 an inventory of all portable means of access; and

.8 records of periodical inspections and maintenance of the ship's means of access.

Interpretation

The access manual is to address spaces listed in paragraph 3 of the regulation II-1/3-6.

As a minimum the English version is to be provided.

The ship structure access manual is to contain at least the following two parts:

Part 1: Plans, instructions and inventory required by paragraphs 4.1.1 to 4.1.7 of regulation II-1/3-6. This part is to be approved by the Administration or the organization recognised by the Administration.

Part 2: Form of record of inspections and maintenance, and change of inventory of portable equipment due to additions or replacement after construction. This part is to be approved for its form only at new building.

The following matters are to be addressed in the ship structure access manual:

1. The access manual is to clearly cover scope as specified in the regulations for use by crews, surveyors and port State control officers.

SC 191 (cont)

2. Approval / re-approval procedure for the manual, i.e. any changes of the permanent, portable, movable or alternative means of access within the scope of the regulation and the Technical provisions are subject to review and approval by the Administration or by the organization recognised by the Administration.

3. Verification of MA is to be part of safety construction survey for continued effectiveness of the MA in that space which is subject to the statutory survey.

4. Inspection of MA by the crew and/or a competent inspector of the company as a part of regular inspection and maintenance (see interpretation for paragraph 2.3 of SOLAS regulation II-1/3-6).

5. Actions to be taken if MA is found unsafe to use.

6. In case of use of portable equipment plans showing the means of access within each space indicating from where and how each area in the space can be inspected.

Refer to IACS Recommendation No.90 “Ship Structural Access Manual”

SC 191 (cont)

SOLAS regulation II-1/3-6, paragraph 4.2

4.2 For the purpose of this regulation “critical structural areas” are locations which have been identified from calculations to require monitoring or from the service history of similar or sister ships to be sensitive to cracking, buckling, deformation or corrosion which would impair the structural integrity of the ship.

Interpretation

1) Critical structural areas are to be identified by advanced calculation techniques for structural strength and fatigue performance, if available, and feed back from the service history and design development of similar or sister ships.

2) Reference is to be made to the following publications for critical structural areas, where applicable:

- Oil tankers: Guidance Manual for Tanker Structures by TSCF;
- Bulk carriers: Bulk Carriers Guidelines for Surveys, Assessment and Repair of Hull Structure by IACS;
- Oil tankers and bulk carriers: the ESP Code, as amended.

Technical Background

These documents contain the relevant information for the present ship types. However identification of critical areas for new double hull tankers and double side skin bulk carriers of improved structural design is to be made by structural analysis at the design stage, this information is to be taken in to account to ensure appropriate access to all identified critical areas.

SC 191 (cont)

SOLAS regulation II-1/3-6, paragraph 5.1

5 General technical specifications

5.1 For access through horizontal openings, hatches or manholes, the dimensions shall be sufficient to allow a person wearing a self-contained air-breathing apparatus and protective equipment to ascend or descend any ladder without obstruction and also provide a clear opening to facilitate the hoisting of an injured person from the bottom of the space. The minimum clear opening shall not be less than 600 mm x 600 mm. When access to a cargo hold is arranged through the cargo hatch, the top of the ladder shall be placed as close as possible to the hatch coaming. Access hatch coamings having a height greater than 900 mm shall also have steps on the outside in conjunction with the ladder.

Interpretation

The minimum clear opening of 600 mm x 600 mm may have corner radii up to 100 mm maximum. The clear opening is specified in MSC/Circ.686 to keep the opening fit for passage of personnel wearing a breathing apparatus. In such a case where as a consequence of structural analysis of a given design the stress is to be reduced around the opening, it is considered appropriate to take measures to reduce the stress such as making the opening larger with increased radii, e.g. 600 x 800 with 300 mm radii, in which a clear opening of 600 x 600 mm with corner radii up to 100mm maximum fits.

Technical Background

The interpretation is based upon the established Guidelines in MSC/Circ.686.

Ref.

Paragraphs 9 of Annex of MSC/Circ.686.

SC 191 (cont)

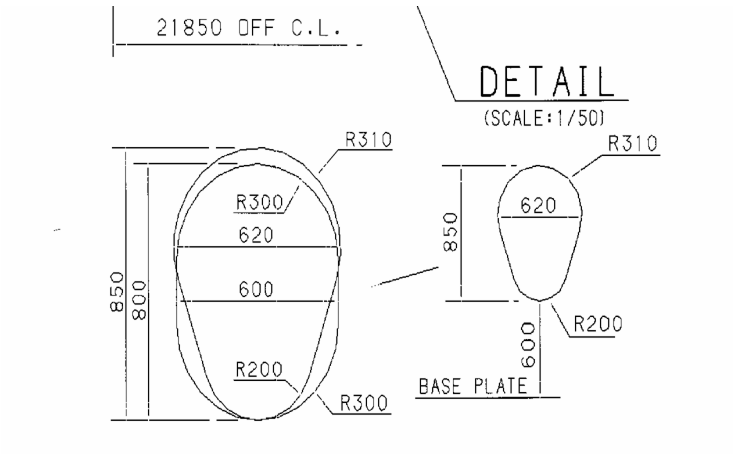
SOLAS regulation II-1/3-6, paragraph 5.2

5.2 For access through vertical openings, or manholes, in swash bulkheads, floors, girders and web frames providing passage through the length and breadth of the space, the minimum opening shall be not less than 600 mm x 800 mm at a height of not more than 600 mm from the bottom shell plating unless gratings or other foot holds are provided.

Interpretation

1. The minimum clear opening of not less than 600 mm x 800 mm may also include an opening with corner radii of 300 mm. An opening of 600mm in height x 800mm in width may be accepted as access openings in vertical structures where it is not desirable to make large opening in the structural strength aspects, i.e. girders and floors in double bottom tanks.

2. Subject to verification of easy evacuation of injured person on a stretcher the vertical opening 850 mm x 620 mm with wider upper half than 600 mm, while the lower half may be less than 600 mm with the overall height not less than 850 mm is considered an acceptable alternative to the traditional opening of 600 mm x 800 mm with corner radii of 300 mm.



3. If a vertical opening is at a height of more than 600 mm steps and handgrips are to be provided. In such arrangements it is to be demonstrated that an injured person can be easily evacuated.

Technical Background

The interpretation is based upon the established Guidelines in MSC/Circ.686 and an innovative design is considered for easy access by humans through the opening.

Ref.

Paragraphs 11 of Annex of MSC/Circ.686.

SC 191 (cont)

Technical Provision, resolution MSC.158(78), paragraph 1.3

1. Preamble

1.3 In order to address this issue, the Organization has developed these Technical provisions for means of access for inspections (hereinafter called the “Technical provisions”), intended to facilitate close-up inspections and thickness measurements of the ship’s structure referred to in SOLAS regulation II-1/3-6 on Access to and within spaces in, and forward of, the cargo area of oil tankers and bulk carriers. The Technical provisions do not apply to the cargo tanks of combined chemical/oil tankers complying with the provisions of the IBC Code.

Interpretation

A "combined chemical/oil tankers complying with the provisions of the IBC Code" is a tanker that holds both a valid IOPP certificate as tanker and a valid certificate of fitness for the carriage of dangerous chemicals in bulk. i.e. a tanker that is certified to carry both oil cargoes under MARPOL Annex I and Chemical cargoes in chapter 17 of the IBC Code either as full or part cargoes.

The Technical provisions are to be applied to ballast tanks of combined chemical/oil tankers complying with the provisions of the IBC Code.

SC 191 (cont)

Technical Provision, resolution MSC.158(78), paragraph 1.4

1. Preamble

1.4 Permanent means of access which are designed to be integral parts of the structure itself are preferred and Administrations may allow reasonable deviations to facilitate such designs.

Interpretation

In the context of the above requirement, the deviation shall be applied only to distances between integrated PMA that are the subject of paragraph 2.1.2 of Table 1.

Deviations shall not be applied to the distances governing the installation of underdeck longitudinal walkways and dimensions that determine whether permanent access are required or not, such as height of the spaces and height to elements of the structure (e.g. cross-ties).

SC 191 (cont)

Technical Provision, resolution MSC.158(78), paragraph 3.1

3.1 Structural members subject to the close-up inspections and thickness measurements of the ship's structure referred to in SOLAS regulation II-1/ 3-6, except those in double bottom spaces, shall be provided with a permanent means of access to the extent as specified in table 1 and table 2, as applicable. For oil tankers and wing ballast tanks of ore carriers, approved alternative methods may be used in combination with the fitted permanent means of access, provided that the structure allows for its safe and effective use.

Interpretation

The permanent means of access to a space can be credited for the permanent means of access for inspection.

Technical Background

The Technical provisions specify means of access to a space and to hull structure for carrying out overall and close up surveys and inspections. Requirements of MA to hull structure may not always be suitable for access to a space. However if the MA for access to a space can also be used for the intended surveys and inspections such MA can be credited for the MA for use for surveys and inspections.

SC 191 (cont)

Technical Provision, resolution MSC.158(78), paragraph 3.3

3.3 Elevated passageways forming sections of a permanent means of access, where fitted, shall have a minimum clear width of 600 mm, except for going around vertical webs where the minimum clear width may be reduced to 450 mm, and have guard rails over the open side of their entire length. Sloping structure providing part of the access shall be of a non-skid construction. Guard rails shall be 1,000 mm in height and consist of a rail and intermediate bar 500 mm in height and of substantial construction. Stanchions shall be not more than 3 m apart.

Interpretation

1. Sloping structures are structures that are sloped by 5 or more degrees from horizontal plane when a ship is in upright position at even-keel.

2. Guard rails are to be fitted on the open side and should be at least 1,000 mm in height. For stand alone passageways guard rails are to be fitted on both sides of these structures. Guardrail stanchions are to be attached to the PMA. The distance between the passageway and the intermediate bar and the distance between intermediate bar and the top rail shall not be more than 500 mm.

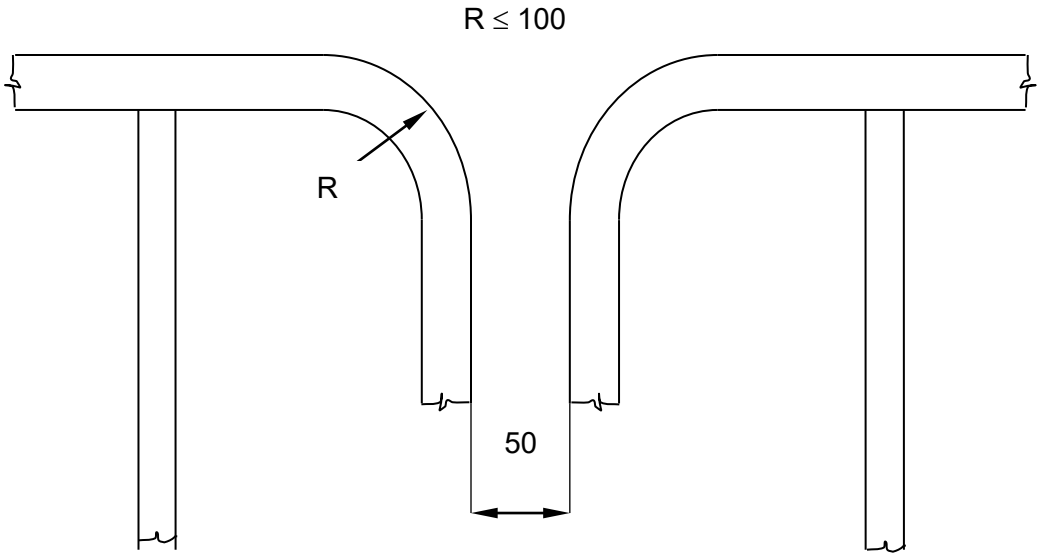
3. Discontinuous top handrails are allowed, provided the gap does not exceed 50 mm.

The same maximum gap is to be considered between the top handrail and other structural members (i.e. bulkhead, web frame, etc.).

The maximum distance between the adjacent stanchions across the handrail gaps is to be 350 mm where the top and mid handrails are not connected together and 550 mm when they are connected together.

The maximum distance between the stanchion and other structural members is not to exceed 200 mm where the top and mid handrails are not connected together and 300 mm when they are connected together.

When the top and mid handrails are connected by a bent rail, the outside radius of the bent part is not to exceed 100 mm (see Figure below).



SC 191 (cont)

4. Non-skid construction is such that the surface on which personnel walks provides sufficient friction to the sole of boots even if the surface is wet and covered with thin sediment.

5. “Substantial construction” is taken to refer to the as-designed strength as well as the residual strength during the service life of the vessel. Durability of passageways together with guard rails is to be ensured by the initial corrosion protection and inspection and maintenance during services.

6. For guard rails, use of alternative materials such as GRP is to be subject to compatibility with the liquid carried in the tank. Non-fire resistant materials are not to be used for means of access to a space with a view to securing an escape route at a high temperature.

7. Requirements for resting platforms placed between ladders are equivalent to those applicable to elevated passageways.

Ref.

Paragraph 10 of Annex to MSC/Circ.686

SC 191 (cont)

Technical Provision, resolution MSC.158(78), paragraph 3.4

3.4 Access to permanent means of access and vertical openings from the ship's bottom shall be provided by means of easily accessible passageways, ladders or treads. Treads shall be provided with lateral support for the foot. Where the rungs of ladders are fitted against a vertical surface, the distance from the centre of the rungs to the surface shall be at least 150 mm. Where vertical manholes are fitted higher than 600 mm above the walking level, access shall be facilitated by means of treads and hand grips with platform landings on both sides.

Interpretation

Where the vertical manhole is at a height of more than 600 mm above the walking level, it shall be demonstrated that an injured person can be easily evacuated.

SC 191 (cont)

Technical Provision, resolution MSC.158(78), paragraph 3.5

3.5 Permanent inclined ladders shall be inclined at an angle of less than 70º. There shall be no obstructions within 750 mm of the face of the inclined ladder, except that in way of an opening this clearance may be reduced to 600 mm. Resting platforms of adequate dimensions shall be provided normally at a maximum of 6 m vertical height. Ladders and handrails shall be constructed of steel or equivalent material of adequate strength and stiffness and securely attached to the structure by stays. The method of support and length of stay shall be such that vibration is reduced to a practical minimum. In cargo holds, ladders shall be designed and arranged so that cargo handling difficulties are not increased and the risk of damage from cargo handling gear is minimized.

MA for access to ballast tanks, cargo tanks and spaces other than fore peak tanks:

For oil tankers:

1. Tanks and subdivisions of tanks having a length of 35 m or more with two access hatchways:

First access hatchway: Inclined ladder or ladders are to be used.

Second access hatchway:

i. A vertical ladder may be used. In such a case where the vertical distance is more than 6 m, vertical ladders are to comprise one or more ladder linking platforms spaced not more than 6 m apart vertically and displaced to one side of the ladder.

The uppermost section of the vertical ladder, measured clear of the overhead obstructions in way of the tank entrance, is not to be less than 2.5 m but not exceed 3.0 m and is to comprise a ladder linking platform which is to be displaced to one side of a vertical ladder. However, the vertical distance of the upper most section of the vertical ladder may be reduced to 1.6 m, measured clear of the overhead obstructions in way of the tank entrance, if the ladder lands on a longitudinal or athwartship permanent means of access fitted within that range. Adjacent sections of the ladder are to be laterally offset from each other by at least the width of the ladder (see paragraph 20 of MSC/Circ.686 and refer to the interpretation of Technical Provision, resolution MSC.158(78), paragraph 3.13.2 and paragraph 3.13.6); or

ii. Where an inclined ladder or combination of ladders is used for access to the space, the uppermost section of the ladder, measured clear of the overhead obstructions in way of the tank entrance, is to be vertical for not less than 2.5 m but not exceed 3.0m and is to comprise a landing platform continuing with an inclined ladder. However, the vertical distance of the upper most section of the vertical ladder may be reduced to 1.6 m, measured clear of the overhead obstructions in way of the tank entrance, if the ladder lands on a longitudinal or athwartship permanent means of access fitted within that range. The flights of the inclined ladders are normally to be not more than 6 m in vertical height. The lowermost section of the ladders may be vertical for the vertical distance not exceeding 2.5 m.

2. Tanks less than 35 m in length and served by one access hatchway an inclined ladder or combination of ladders are to be used to the space as specified in 1.ii above.

3. In spaces of less than 2.5 m width the access to the space may be by means of vertical ladders that comprises one or more ladder linking platforms spaced not more than 6 m apart vertically and displaced to one side of the ladder. The uppermost section of the vertical ladder, measured clear of the overhead obstructions in way of the tank

SC 191 (cont)

entrance, is not to be less than 2.5 m but not exceed 3.0 m and is to comprise a ladder linking platform which is to be displaced to one side of a vertical ladder. However, the vertical distance of the upper most section of the vertical ladder may be reduced to 1.6 m, measured clear of the overhead obstructions in way of the tank entrance, if the ladder lands on a longitudinal or athwartship permanent means of access fitted within that range. Adjacent sections of the ladder are to be laterally offset from each other by at least the width of the ladder (see paragraph 20 of MSC/Circ.686 and refer to the interpretation of Technical Provision, resolution MSC.158(78), paragraph 3.13.2 and paragraph 3.13.6).

4. Access from deck to a double bottom space may be by means of vertical ladders through a trunk. The vertical distance from deck to a resting platform, between resting platforms or a resting platform and the tank bottom is not to be more than 6 m unless otherwise approved by the Administration.

MA for inspection of the vertical structure of oil tankers:

Vertical ladders provided for means of access to the space may be used for access for inspection of the vertical structure.

Unless stated otherwise in Table 1 of TP, vertical ladders that are fitted on vertical structures for inspection are to comprise one or more ladder linking platforms spaced not more than 6 m apart vertically and displace to one side of the ladder. Adjacent sections of ladder are to be laterally offset from each other by at least the width of the ladder (paragraph 20 of MSC/Circ.686 and refer to the interpretation of Technical Provision, resolution MSC.158(78), paragraph 3.13.2 and paragraph 3.13.6).

Obstruction distances

The minimum distance between the inclined ladder face and obstructions, i.e. 750 mm and, in way of openings, 600 mm specified in TP 3.5 is to be measured perpendicular to the face of the ladder.

Technical Background

It is a common practice to use a vertical ladder from deck to the first landing to clear overhead obstructions before continuing to an inclined ladder or a vertical ladder displaced to one side of the first vertical ladder.

Ref.

For vertical ladders: Paragraph 20 of the annex to MSC/Circ.686.

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Technical Provision, resolution MSC.158(78), paragraph 3.6

3.6 The width of inclined ladders between stringers shall not be less than 400 mm. The treads shall be equally spaced at a distance apart, measured vertically, of between 200 mm and 300 mm. When steel is used, the treads shall be formed of two square bars of not less than 22 mm by 22 mm in section, fitted to form a horizontal step with the edges pointing upward. The treads shall be carried through the side stringers and attached thereto by double continuous welding. All inclined ladders shall be provided with handrails of substantial construction on both sides fitted at a convenient distance above the treads.

Interpretation

1. Vertical height of handrails is not to be less than 890 mm from the center of the step and two course handrails need only be provided where the gap between stringer and top handrail is greater than 500 mm.

2. The requirement of two square bars for treads specified in TP, paragraph 3.6, is based upon the specification of construction of ladders in paragraph 3(e) of Annex 1 to resolution A.272(VIII), which addresses inclined ladders. TP, paragraph 3.4, allows for single rungs fitted to vertical surfaces, which is considered for a safe grip. For vertical ladders, when steel is used, the rungs are to be formed of single square bars of not less than 22 mm by 22 mm for the sake of safe grip.

3. The width of inclined ladders for access to a cargo hold is to be at least 450 mm to comply with the Australian AMSA Marine Orders Part 32, Appendix 17.

4. The width of inclined ladders other than an access to a cargo hold is to be not less than 400 mm.

5. The minimum width of vertical ladders is to be 350 mm and the vertical distance between the rungs is to be equal and is to be between 250 mm and 350 mm.

6. A minimum climbing clearance in width is to be 600 mm other than the ladders placed between the hold frames.

7. The vertical ladders are to be secured at intervals not exceeding 2.5 m apart to prevent vibration.

Technical Background

- TP, paragraph 3.6, is a continuation of TP, paragraph 3.5, which addresses inclined ladders. Interpretations for vertical ladders are needed based upon the current standards of IMO, AMSA or the industry.

- Interpretations 2 and 5 address vertical ladders based upon the current standards.

- Double square bars for treads become too large for a grip for vertical ladders and single rungs facilitate a safe grip.

- Interpretation 7 is introduced consistently with the requirement and the interpretation of TP, paragraph 3.4.

SC 191 (cont)

Ref.

- Annex 1 to resolution A.272(VIII).
- Australian AMSA Marine Orders Part 32, Appendix 17.
- ILO Code of Practice “Safety and Health in Dockwork” – Section 3.6 Access to Ship’s Holds.

SC 191 (cont)

Technical Provision, resolution MSC.158(78), paragraph 3.9.6

3.9.6 Portable ladders more than 5 m long may only be utilized if fitted with a mechanical device to secure the upper end of the ladder.

Interpretation

A mechanical device such as hooks for securing at the upper end of a ladder is to be considered as an appropriate securing device if a movement fore/aft and sideways can be prevented at the upper end of the ladder.

Technical Background

Innovative design is to be accepted if it fits the functional requirement with due consideration for safe use.

SC 191 (cont)

Technical Provision, resolution MSC.158(78), paragraph 3.10 and 3.11

3.10 For access through horizontal openings, hatches or manholes, the minimum clear opening shall not be less than 600 mm x 600 mm. When access to a cargo hold is arranged through the cargo hatch, the top of the ladder shall be placed as close as possible to the hatch coaming. Access hatch coamings having a height greater than 900 mm shall also have steps on the outside in conjunction with the ladder.

3.11 For access through vertical openings, or manholes, in swash bulkheads, floors, girders and web frames providing passage through the length and breadth of the space, the minimum opening shall be not less than 600 mm x 800 mm at a height of not more than 600 mm from the passage unless gratings or other foot holds are provided.

Interpretation

See interpretation for paragraphs 5.1 and 5.2 of SOLAS regulation II-1/3-6.

SC 191 (cont)

Technical Provision, resolution MSC.158(78), paragraph 3.13.1

3.13. For bulk carriers, access ladders to a cargo hold shall be:

.1 where the vertical distance between the upper surface of adjacent decks or between deck and the bottom of the cargo space is not more than 6 m, either a vertical ladder or an inclined ladder; and

Interpretation

Either a vertical or an inclined ladder or a combination of them may be used for access to a cargo hold where the vertical distance is 6 m or less from the deck to the bottom of the cargo hold.

SC 191 (cont)

Technical Provision, resolution MSC.158(78), paragraph 3.13.2 and paragraph 3.13.6

3.13. For bulk carriers, access ladders to a cargo hold shall be:

.1 ....omissis.....

.2 Where the vertical distance between the upper surface of adjacent decks or between deck and the bottom of the cargo space is more than 6 m, an inclined ladder or series of inclined ladders at one end of the cargo hold, except the uppermost 2.5 m of a cargo space measured clear of overhead obstructions and the lowest 6 m may have vertical ladders, provided that the vertical extent of the inclined ladder or ladders connecting the vertical ladders is not less than 2.5 m.

The second means of access at the other end of the cargo hold may be formed of a series of staggered vertical ladders, which should comprise of one or more ladder linking platforms spaced not more than 6 m apart vertically and displaced to one side of the ladder. Adjacent sections of ladder should be laterally offset from each other by at least the width of the ladder. The uppermost entrance section of the ladder directly exposed to a cargo hold should be vertical for a distance of 2.5 m measured clear of overhead obstructions and connected to a ladder-linking platform.

.3 ....omissis.....

.4 ....omissis.....

.5 ....omissis.....

.6 In double-side skin spaces of less than 2.5 m width, the access to the space may be by means of vertical ladders that comprise of one or more ladder linking platforms spaced mnot more than 6 m apart vertically and displaced to one side of the ladder. Adjacent sections of ladder should be laterally offset from each other by at least the width of the ladder.

. 7 ....omissis.....

Interpretation

Adjacent sections of vertical ladder need to be installed so that the following provisions are complied with:

- the minimum “lateral offset” between two adjacent sections of vertical ladder, is the distance between the sections, upper and lower, so that the adjacent stringers are spaced at least 200 mm apart, measured from half thickness of each stringer.

- adjacent sections of vertical ladder shall be installed so that the upper end of the lower section is vertically overlapped, in respect to the lower end of the upper section, to a height of 1500 mm in order to permit a safe transfer between ladders.

- no section of the access ladder shall be terminated directly or partly above an access opening.

Technical Background

The aims of the above are to:

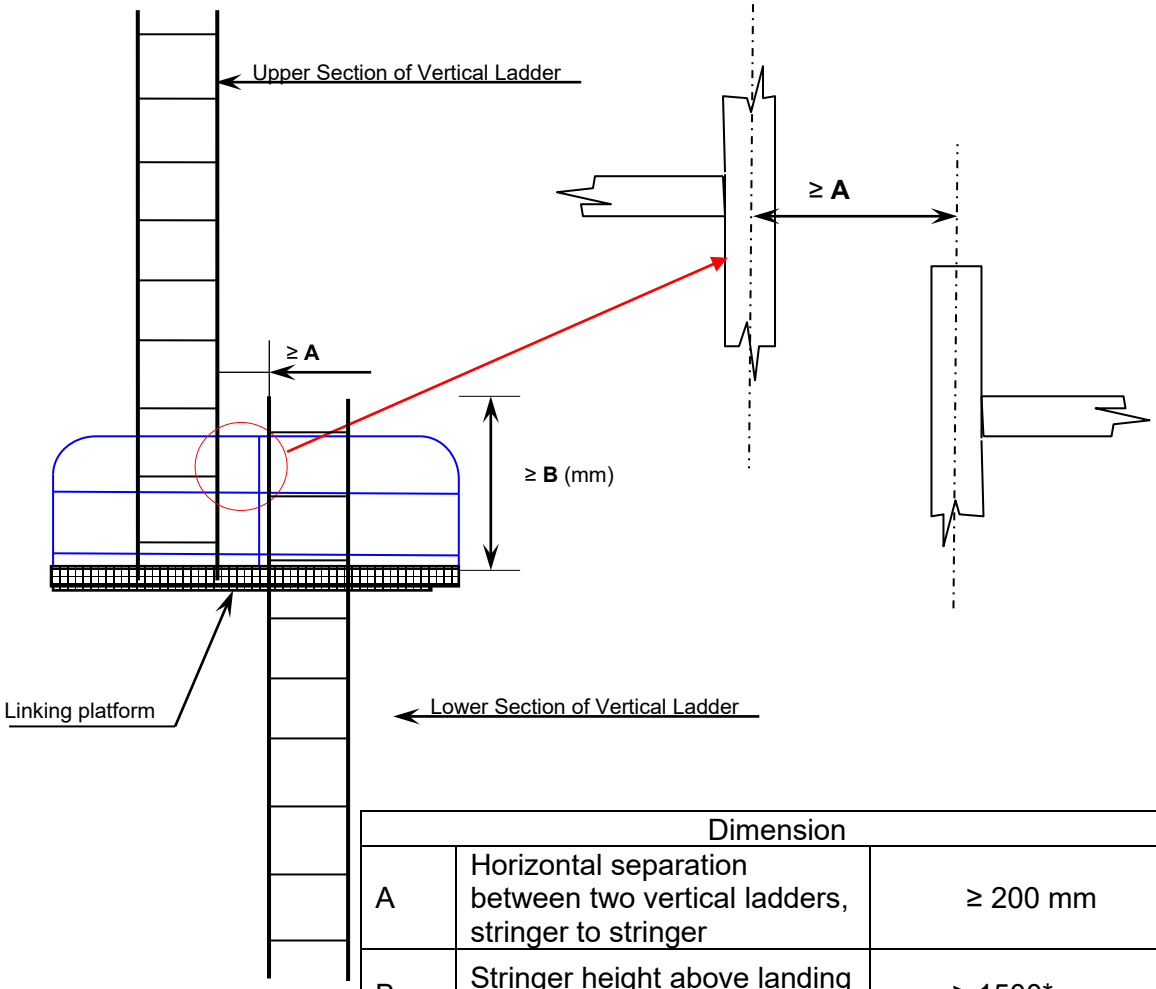
SC 191 (cont)

a. Reduce the risk of accidents due to tiredness by providing a rest platform at appropriate intervals.

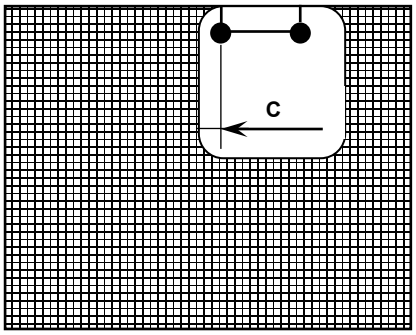
b. Reduce the risk of collateral injury from falling or dropping items of equipment by preventing the lateral overlap of two ladders.

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Figure "A"
Vertical Ladder – Ladder through the linking platform

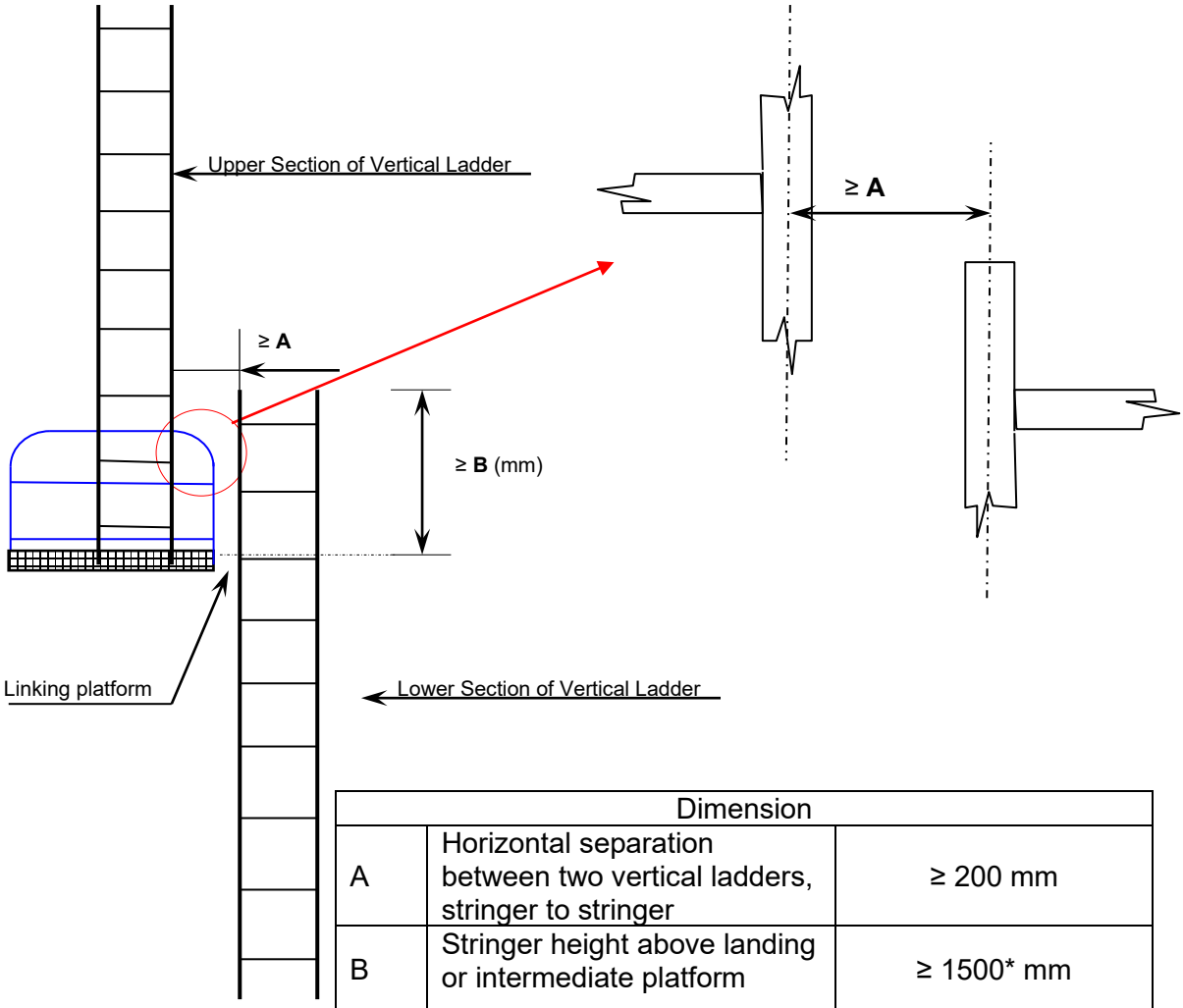


Dimension		
A	Horizontal separation between two vertical ladders, stringer to stringer	≥ 200 mm
B	Stringer height above landing or intermediate platform	≥ 1500* mm
C	Horizontal separation between ladder and platform	100 mm ≤C< 300 mm
*Note: the minimum height of the handrail of resting platform is of 1000 mm (Technical Provision, resolution MSC.158(78), paragraph 3.3)		

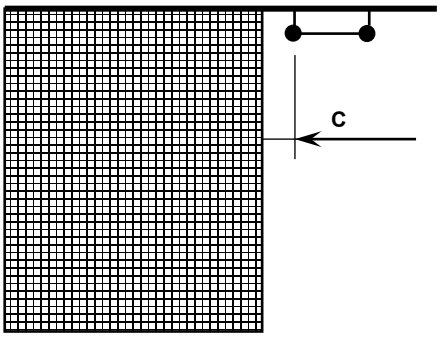


SC 191 (cont)

Figure "B"
Vertical Ladder – Side mount



Dimension		
A	Horizontal separation between two vertical ladders, stringer to stringer	≥ 200 mm
B	Stringer height above landing or intermediate platform	≥ 1500* mm
C	Horizontal separation between ladder and platform	100 mm ≤C< 300 mm
*Note: the minimum height of the handrail of resting platform is of 1000 mm (Technical Provision, resolution MSC.158(78), paragraph 3.3)		



SC 191 (cont)

Technical Provision, resolution MSC.158(78), paragraph 3.14

3.14 The uppermost entrance section from deck of the vertical ladder providing access to a tank should be vertical for a distance of 2.5 m measured clear of overhead obstructions and comprise a ladder linking platform, displaced to one side of a vertical ladder. The vertical ladder can be between 1.6 m and 3 m below deck structure if it lands on a longitudinal or athwartship permanent means of access fitted within that range.

Interpretation

Deck is defined as “weather deck”.

SC 191 (cont)

Table 1 – Means of access for oil tankers, resolution MSC.158(78), paragraph 1.1

1 Water ballast tanks, except those specified in the right column, and cargo oil tanks

Access to overhead structure

1.1 For tanks of which the height is 6 m and over containing internal structures, permanent means of access shall be provided in accordance with .1 to .6:

Interpretation

1. Sub-paragraphs .1, .2 and .3 define access to underdeck structure, access to the uppermost sections of transverse webs and connection between these structures.

2. Sub-paragraphs .4, .5 and .6 define access to vertical structures only and are linked to the presence of transverse webs on longitudinal bulkheads.

3. If there are no underdeck structures (deck longitudinals and deck transverses) but there are vertical structures in the cargo tank supporting transverse and longitudinal bulkheads, access in accordance with sub-paragraphs from .1 through to .6 is to be provided for inspection of the upper parts of vertical structure on transverse and longitudinal bulkheads.

4. If there is no structure in the cargo tank, section 1.1 of Table 1 is not to be applied.

5. Section 1 of Table 1 is also to be applied to void spaces in cargo area, comparable in volume to spaces covered by the regulation II-1/3-6, except those spaces covered by Section 2.

6. The vertical distance below the overhead structure is to be measured from the underside of the main deck plating to the top of the platform of the means of access at a given location.

7. The height of the tank is to be measured at each tank. For a tank the height of which varies at different bays, item 1.1 is to be applied to such bays of a tank that have height 6 m and over.

Technical Background

Interpretation 7: If the height of the tank is increasing along the length of a ship the permanent means of access is to be provided locally where the height is above 6 m.

Ref.

Paragraph 10 of the annex to MSC/Circ.686.

SC 191 (cont)

Table 1 – Means of access for oil tankers, resolution MSC.158(78), paragraph 1.1.2

1.1.2 at least one continuous longitudinal permanent means of access at each side of the tank. One of these accesses shall be at a minimum of 1.6 m to a maximum of 6 m below the deck head and the other shall be at a minimum of 1.6 m to a maximum of 3 m below the deck head;

Interpretation

There is need to provide continuous longitudinal permanent means of access when the deck longitudinals and deck transverses are fitted on deck but supporting brackets are fitted under the deck.

SC 191 (cont)

Table 1 – Means of access for oil tankers, resolution MSC.158(78), paragraph 1.1.3

1.1.3 access between the arrangements specified in .1 and .2 and from the main deck to either .1 or .2.

Interpretation

Means of access to tanks may be used for access to the permanent means of access for inspection.

Technical Background

As a matter of principle, in such a case where the means of access can be utilised for the purpose of accessing structural members for inspection there is no need of duplicated installation of the MA.

SC 191 (cont)

Table 1 – Means of access for oil tankers, resolution MSC.158(78), paragraph 1.1.4

1.1.4 continuous longitudinal permanent means of access which are integrated in the structural member on the stiffened surface of a longitudinal bulkhead, in alignment, where possible, with horizontal girders of transverse bulkheads are to be provided for access to the transverse webs unless permanent fittings are installed at the uppermost platform for use of alternative means as defined in paragraph 3.9 of the Technical provisions for inspection at intermediate heights;

Interpretation

The permanent fittings required to serve alternative means of access such as wire lift platform, that are to be used by crew and surveyors for inspection shall provide at least an equal level of safety as the permanent means of access stated by the same paragraph. These means of access shall be carried on board the ship and be readily available for use without filling of water in the tank.

Therefore, rafting is not to be acceptable under this provision.

Alternative means of access are to be part of Access Manual which is to be approved on behalf of the flag State.

For water ballast tanks of 5 m or more in width, such as on an ore carrier, side shell plating shall be considered in the same way as “longitudinal bulkhead”.

SC 191 (cont)

Table 1 – Means of access for oil tankers, resolution MSC.158(78), paragraph 2.1

2 Water ballast wing tanks of less than 5 m width forming double side spaces and their bilge hopper sections

Access to the underdeck structure

2.1 For double side spaces above the upper knuckle point of the bilge hopper sections, permanent means of access are to be provided in accordance with .1 and .2:

Interpretation

Section 2 of Table 1 is also to be applied to wing tanks designed as void spaces.

Paragraph 2.1.1 represents requirements for access to underdeck structures, while paragraph 2.1.2 is a requirement for access for survey and inspection of vertical structures on longitudinal bulkheads (transverse webs).

Technical Background

Regulation II-1/3-6.2.1 requires each space to be provided with means of access. Though void spaces are not addressed in the technical provisions contained in resolution MSC.158(78) it is arguable whether MA is not required in void spaces. MA or portable means of access are necessary arrangement to facilitate inspection of the structural condition of the space and the boundary structure. Therefore the requirements of Section 2 of Table 1 is to be applied to double hull spaces even designed as void spaces.

SC 191 (cont)

Table 1 – Means of access for oil tankers, resolution MSC.158(78), paragraph 2.1.1

2. Wing water ballast tanks less than 5 m width forming double side spaces and their bilge hopper sections

Access to the underdeck structure

2.1.1 Where the vertical distance between horizontal uppermost stringer and deck head is 6 m or more, one continuous permanent means of access shall be provided for the full length of the tank with a means to allow passing through transverse webs installed a minimum of 1.6 m to a maximum of 3 m below the deck head with a vertical access ladder at each end of tank;

Interpretation

1. For a tank, the vertical distance between horizontal upper stringer and deck head of which varies at different sections, item 2.1.1 is to be applied to such sections that falls under the criteria.

2. The continuous permanent means of access may be a wide longitudinal, which provides access to critical details on the opposite side by means of platforms as necessary on web frames. In case the vertical opening of the web frame is located in way of the open part between the wide longitudinal and the longitudinal on the opposite side, platforms shall be provided on both sides of the web frames to allow safe passage through the web frame.

3. Where two access hatches are required by SOLAS regulation II-1/3-6.3.2, access ladders at each end of the tank are to lead to the deck.

Technical Background

Interpretation 1: The interpretation of varied tank height in item 1 of Table 1 is applied to the vertical distance between horizontal upper stringer and deck head for consistency.

SC 191 (cont)

Table 1 – Means of access for oil tankers, resolution MSC.158(78), paragraph 2.1.2

2.1.2 continuous longitudinal permanent means of access, which are integrated in the structure, at a vertical distance not exceeding 6 m apart; and

Interpretation

The continuous permanent means of access may be a wide longitudinal, which provides access to critical details on the opposite side by means of platforms as necessary on webframes. In case the vertical opening of the web is located in way of the open part between the wide longitudinal and the longitudinal on the opposite side, platforms shall be provided on both sides of the web to allow safe passage through the web.

A “reasonable deviation”, as noted in TP, paragraph 1.4, of not more than 10% may be applied where the permanent means of access is integral with the structure itself.

SC 191 (cont)

Table 1 – Means of access for oil tankers, resolution MSC.158(78), paragraph 2.2

2.2 For bilge hopper sections of which the vertical distance from the tank bottom to the upper knuckle point is 6 m and over, one longitudinal permanent means of access shall be provided for the full length of the tank. It shall be accessible by vertical permanent means of access at both ends of the tank.

Interpretation

1. Permanent means of access between the longitudinal continuous permanent means of access and the bottom of the space is to be provided.

2. The height of a bilge hopper tank located outside of the parallel part of vessel is to be taken as the maximum of the clear vertical distance measured from the bottom plating to the hopper plating of the tank.

3. The foremost and aftmost bilge hopper ballast tanks with raised bottom, of which the height is 6 m and over, a combination of transverse and vertical MA for access to the upper knuckle point for each transverse web is to be accepted in place of the longitudinal permanent means of access.

Technical Background

Interpretation 2: The bilge hopper tanks at fore and aft of cargo area narrow due to raised bottom plating and the actual vertical distance from the bottom of the tank to hopper plating of the tank is more appropriate to judge if a portable means of access could be utilized for the purpose.

Interpretation 3: in the foremost or aftmost bilge hopper tanks where the vertical distance is 6 m or over but installation of longitudinal permanent means of access is not practicable permanent means of access of combination of transverse and vertical ladders provides an alternative means of access to the upper knuckle point.

SC 191 (cont)

Table 2 – Means of access for bulk carriers, resolution MSC.158(78), paragraph 1.1

1 Cargo holds

Access to underdeck structure

1.1 Permanent means of access shall be fitted to provide access to the overhead structure at both sides of the cross deck and in the vicinity of the centreline. Each means of access shall be accessible from the cargo hold access or directly from the main deck and installed at a minimum of 1.6 m to a maximum of 3 m below the deck.

Interpretation

1. Means of access shall be provided to the crossdeck structures of the foremost and aftermost part of the each cargo hold.

2. Interconnected means of access under the cross deck for access to three locations at both sides and in the vicinity of the centerline is to be acceptable as the three means of access.

3. Permanent means of access fitted at three separate locations accessible independently, one at each side and one in the vicinity of the centerline is to be acceptable.

4. Special attention is to be paid to the structural strength where any access opening is provided in the main deck or cross deck.

5. The requirements for bulk carrier cross deck structure is also to be considered applicable to ore carriers.

Technical Background

Pragmatic arrangements of the MA are provided.

SC 191 (cont)

Table 2 – Means of access for bulk carriers, resolution MSC.158(78), paragraph 1.3

1.3 Access to the permanent means of access to overhead structure of the cross deck may also be via the upper stool.

Interpretation

Particular attention is to be paid to preserve the structural strength in way of access opening provided in the main deck or cross deck.

SC 191 (cont)

Table 2 – Means of access for bulk carriers, resolution MSC.158(78), paragraph 1.4

1.4 Ships having transverse bulkheads with full upper stools with access from the main deck which allows monitoring of all framing and plates from inside, do not require permanent means of access of the cross deck.

Interpretation

“Full upper stools” are understood to be stools with a full extension between top side tanks and between hatch end beams.

SC 191 (cont)

Table 2 – Means of access for bulk carriers, resolution MSC.158(78), paragraph 1.5

1.5 Alternatively, movable means of access may be utilized for access to the overhead structure of cross deck if its vertical distance is 17 m or less above the tank top.

Interpretation

1. The movable means of access to the underdeck structure of cross deck need not necessarily be carried on board the vessel. It is sufficient if it is made available when needed.

2. The requirements for bulk carrier cross deck structure is also to be considered applicable to ore carriers.

SC 191 (cont)

Table 2 – Means of access for bulk carriers, resolution MSC.158(78), paragraph 1.6

Access to vertical structures

1.6 Permanent means of vertical access shall be provided in all cargo holds and built into the structure to allow for an inspection of a minimum of 25 % of the total number of hold frames port and starboard equally distributed throughout the hold including at each end in way of transverse bulkheads. But in no circumstance shall this arrangement be less than 3 permanent means of vertical access fitted to each side (fore and aft ends of hold and mid-span). Permanent means of vertical access fitted between two adjacent hold frames is counted for an access for the inspection of both hold frames. A means of portable access may be used to gain access over the sloping plating of lower hopper ballast tanks.

Interpretation

The maximum vertical distance of the rungs of vertical ladders for access to hold frames is to be 350 mm.

If safety harness is to be used, means are to be provided for connecting the safety harness in suitable places in a practical way.

Technical Background

The maximum vertical distance of the rungs of 350 mm is applied with a view to reducing trapping cargoes.

SC 191 (cont)

Table 2 – Means of access for bulk carriers, resolution MSC.158(78), paragraph 1.7

1.7 In addition, portable or movable means of access shall be utilized for access to the remaining hold frames up to their upper brackets and transverse bulkheads.

Interpretation

Portable, movable or alternative means of access also is to be applied to corrugated bulkheads.

SC 191 (cont)

Table 2 – Means of access for bulk carriers, resolution MSC.158(78), paragraph 1.8

1.8 Portable or movable means of access may be utilized for access to hold frames up to their upper bracket in place of the permanent means required in 1.6. These means of access shall be carried on board the ship and readily available for use.

Interpretation

Readily available means;

Able to be transported to location in cargo hold and safely erected by ship's staff.

SC 191 (cont)

Table 2 – Means of access for bulk carriers, resolution MSC.158(78), paragraph 2.3

2.3 Three permanent means of access, fitted at the end bay and middle bay of each tank, shall be provided spanning from tank base up to the intersection of the sloping plate with the hatch side girder. The existing longitudinal structure may be used as part of this means of access.

Interpretation

If the longitudinal structures on the sloping plate are fitted outside of the tank a means of access is to be provided.

SC 191 (cont)

Table 2 – Means of access for bulk carriers, resolution MSC.158(78), paragraph 2.5

Bilge hopper tanks

2.5 For each bilge hopper tank of which the height is 6 m and over, one longitudinal continuous permanent means of access shall be provided along the side shell webs and installed at a minimum of 1.2 m below the top of the clear opening of the web ring with a vertical access ladder in the vicinity of each access to the tank.

Interpretation

1. The height of a bilge hopper tank located outside of the parallel part of vessel is to be taken as the maximum of the clear vertical height measured from the bottom plating to the hopper plating of the tank.

2. It is to be demonstrated that portable means for inspection can deployed and made readily available in the areas where needed.

SC 191 (cont)

Table 2 – Means of access for bulk carriers, resolution MSC.158(78), paragraph 2.5.2

Bilge hopper tanks

2.5.2 Alternatively, the longitudinal continuous permanent means of access can be located through the upper web plating above the clear opening of the web ring, at a minimum of 1.6 m below the deck head, when this arrangement facilitates more suitable inspection of identified structurally critical areas. An enlarged longitudinal frame can be used for the purpose of the walkway.

Interpretation

A wide longitudinal frame of at least 600 mm clear width may be used for the purpose of the longitudinal continuous permanent means of access. The foremost and aftermost bilge hopper ballast tanks with raised bottom, of which the height is 6 m and over, a combination of transverse and vertical MA for access to the sloping plate of hopper tank connection with side shell plating for each transverse web can be accepted in place of the longitudinal permanent means of access.

SC 191 (cont)

Table 2 – Means of access for bulk carriers, resolution MSC.158(78), paragraph 2.6

2.6 If no access holes are provided through the transverse ring webs within 600 mm of the tank base and the web frame rings have a web height greater than 1 m in way of side shell and sloping plating, then step rungs/grab rails shall be provided to allow safe access over each transverse web frame ring.

Interpretation

The height of web frame rings is to be measured in way of side shell and tank base.

Technical Background

In the bilge hopper tank the sloping plating is above the opening, while the movement of the surveyor is along the bottom of the tank. Therefore the measurement of 1 m is to be taken from the bottom of the tank.

End of Document

SC192 Arrangement of galley ducts

(Dec 2004)

SOLAS Reg.II-2/9.7.2.1:

The ventilation systems for machinery spaces of category A, vehicle spaces, ro-ro spaces, galleys, special category spaces and cargo spaces shall, in general, be separated from each other and from the ventilation systems serving other spaces, except that the galley ventilation systems on cargo ships of less than 4,000 gross tonnage and in passenger ships carrying not more than 36 passengers need not be completely separated, but may be served by separate ducts from a ventilation unit serving other spaces. In any case, an automatic fire damper shall be fitted in the galley ventilation duct near the ventilation unit.

Interpretation

The expression “in any case” means, in this context, “for any duct section” and this sentence actually applies to arrangements where a ventilation unit serves some spaces and a galley by a separate duct, as permitted for cargo ships of less than 4,000 gross tonnage and for passenger ships carrying not more than 36 passengers.

Note:
This UI is to be uniformly implemented by IACS Members and Associates to ships keel laid from 1 July 2005.

END

IACS Int. 2004

SC 194 Installation of electrical and electronic appliances on the bridge and vicinity of the bridge

(Sep 2005)
(Rev.1
Feb 2021)

Interpretation of Regulation 17 of SOLAS Chapter V as amended by IMO resolutions up to MSC.350(92)

SOLAS regulation V/17 reads as follows.

*1 Administrations shall ensure that all electrical and electronic equipment on the bridge or in the vicinity of the bridge, on ships constructed on or after 1 July 2002, is tested for electromagnetic compatibility, taking into account the recommendations developed by the Organization.**

2 Electrical and electronic equipment shall be so installed that electromagnetic interference does not affect the proper function of navigational systems and equipment.

3 Portable electrical and electronic equipment shall not be operated on the bridge if it may affect the proper function of navigational systems and equipment.

** Refer to the General requirements for electromagnetic compatibility for all electrical and electronic ship's equipment adopted by the Organization by resolution A.813(19).*

Note:

1. This UI SC 194 is to be uniformly implemented by IACS Members and Associates from 1 January 2007.

2. This Rev. 1 is to be uniformly implemented by IACS Societies on ships contracted for construction on and after 1 July 2022.

3. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

SC 194 (cont)

Interpretation

1. Scope

All electrical and electronic appliances installed on the bridge and vicinity of the bridge other than mandatory navigation and communication equipment having been type tested according to IEC 60945:2002, as well as loose equipment placed on board by the builders or owners shall have been EMC tested for Conducted and Radiated Emission.

Bridge and vicinity of the bridge covers deck and bridge zone, i.e.

- the wheelhouse including bridge wings

- control rooms, characterized by equipment for inter-communication, signal processing, radio communication and navigation, auxiliary equipment

- area in close proximity to receiving and/or transmitting antennas and large openings in the metallic structure (equipment beyond 5 meters need not be considered for this purposes).

2. Test standards

The following are acceptable test standards:

- IEC 60945:2002

- IEC 60533:2015

For the purpose of this UI, equipment need be tested for Conducted and Radiated Emission only.

Note:
Equipment having been type tested for EMC in accordance with other appropriate standards will have to be considered.
In particular the level of radiated emission in the frequency band from 156 to 165 MHz and the location of the equipment shall be evaluated.

IEC 60533:2015 gives guidance to type of equipment and applicable tests.

Passive-EM equipment, defined below, which is excluded from the scope of the EMC since it is considered not liable to cause or be susceptible to disturbances need not to be tested but shall be provided with an exemption statement.

Definition:

Equipment is considered a passive-EM equipment if, when used as intended (without internal protection measures such as filtering or shielding) and without any user intervention, it does not create or produce any switching or oscillation of current or voltage and is not affected by electromagnetic disturbances.

Example of equipment which include no active electronic part:

- cables and cabling systems, cables accessories.

SC 194 (cont)

- equipment containing only resistive loads without any automatic switching device; e.g. simple domestic heaters with no controls, thermostat, or fan.

- batteries and accumulators.

3. Evidence to be provided

All electrical and electronic appliances installed on the bridge and vicinity of the bridge other than mandatory navigation and communication equipment having been type tested according to IEC 60945:2002, as well as loose equipment placed on board by the builders or owners shall be listed and be provided with at least the following information. The list and the evidence of equipment are to be kept onboard.

- equipment description

- manufacturer

- type / model

- evidence of EMC compatibility which may be:

  - type approval certificate covering EMC requirements for bridge installations;

  - test certificate or report / conformity statement; or

  - exemption statement.

End of Document

SC195 (Sept. 2005) Performance Standards For Universal Automatic Identification Systems (AIS) (SOLAS Reg.V/18.2)

Deleted and Re-categorised as Rec 93 (Dec 2006).

END

SC196 Document of compliance for the carriage of dangerous goods (DoC) (Reg.II-2/19.4)

(Mar 2005)

Regulation II-2/19.4:

The Administration shall provide the ship with an appropriate document as evidence of compliance of construction and equipment with the requirements of this regulation.

Interpretation:

1. Ships constructed on or after 1 July 2002 have to comply with SOLAS reg. II-2/19 and all the requirements introduced with 2000 SOLAS amendments and should be issued with a DoC in pursuance of regulation II-2/19.

2. Ships constructed on or after 1 July 1998 and before 1 July 2002 have to comply with SOLAS regulation II-2/54 and all the requirements introduced with 1996 SOLAS amendments and should be issued with a DoC in pursuance of regulation II-2/54.

3. Ships constructed on or after 1 September 1984 and before 1 July 1998 have to comply with SOLAS regulation II-2/54 and all the requirements introduced with 1981 SOLAS amendments and should be issued with a DoC in pursuance of regulation II-2/54.

4. Ships constructed before 1 September 1984, upon request of the owner, should be issued with a DoC in pursuance of regulation II-2/54 provided they comply with the requirements of regulation II-2/54 and other regulations referred to in reg. II-2/54.

Note:

This UI is to be uniformly implemented by IACS Members and Associates from 1 July 2005.

END

IACS Int. 2005

SC 197 Non-combustible cargoes (Reg.II-2/10.7.1.4)

(Mar 2005) (Rev.1 Aug 2006) (Rev.2 Mar 2021)

SOLAS Regulation II-2/10.7.1.4 reads:

The Administration may exempt from the requirements of paragraphs 7.1.3 and 7.2 cargo spaces of any cargo ship if constructed, and solely intended, for the carriage of ore, coal, grain, unseasoned timber, non-combustible cargoes or cargoes which, in the opinion of the Administration, constitute a low fire risk. Such exemptions may be granted only if the ship is fitted with steel hatch covers and effective means of closing all ventilators and other openings leading to the cargo spaces. When such exemptions are granted, the Administration shall issue an Exemption Certificate, irrespective of the date of construction of the ship concerned, in accordance with regulation I/12(a)(vi), and shall ensure that the list of cargoes the ship is permitted to carry is attached to the Exemption Certificate.*

**Refer to the IMSBC Code (resolution MSC.268(85), as amended), appendix 1, entry for coal, and to the Lists of solid bulk cargoes for which a fixed gas fire-extinguishing system may be exempted or for which a fixed gas fire-extinguishing system is ineffective (MSC.1/Circ.1395 Rev. 4).*

Interpretation

1. Non-combustible cargoes, such as materials listed in paragraph 1 of Annex 2 to the 2010 FTP Code, need not be mentioned on exemption certificates issued under Reg.II-2/10.7.1.4.

2. The document of compliance with Reg.II-2/19 may not permit more cargoes than indicated in the list of cargoes attached to the exemption certificate issued under Reg.II-2/10.7.1.4.

(MSC.1/Circ.1203)

Note:

1. This UI is to be uniformly implemented by IACS Members and Associates from 1 July 2005.

2. Rev.1 of this UI is editorially amended to refer to MSC.1/Circ.1203.

3. Rev.2 of the UI is editorially amended to refer to the 2010 FTP Code.

End of Document

SC 198 Sections in local application fire extinguishing systems

(June 2005)
(Corr.1 Sep 2022)

Interpretation of SOLAS chapter II-2 regulation 10.5.6.3 as amended by resolution MSC.338(91)

SOLAS Regulation II-2/10.5.6.3 reads as follows:

Fixed local application fire-extinguishing systems are to protect areas such as the following without the necessity of engine shutdown, personnel evacuation, or sealing of the spaces:

.1 the fire hazard portions of internal combustion machinery or, for ships constructed before 1 July 2014, the fire hazard portions of internal combustion machinery used for the ship's main propulsion and power generation; …

Interpretation

In multi-engine installations, at least two sections shall be arranged.*

(* refer to item 3.2.4 of MSC.1/Circ.1387)

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Members on ships the keels of which are laid from 1 January 2006.

End of Document

SC199 Fire fighting systems in cargo sampling lockers

(June 2005)

(Reg.II-2/10.6.3.2)

Regulation:

Flammable liquid lockers shall be protected by an appropriate fire-extinguishing arrangement approved by the Administration.

Interpretation:

"The requirements given in SOLAS Reg. II-2/10.6.3.2. and 10.6.3.3 are not considered applicable for cargo service spaces intended for the stowage of cargo samples, when such spaces are positioned within the cargo area onboard tankers."

Note:

This UI is to be uniformly implemented by IACS Members and Associates on ships the keels of which are laid from 1 January 2006.

END

SC 200 (June 2005) (Corr.1 May 2022) Container storage arrangement for equivalent fixed gas fire extinguishing systems (FSS Code, Ch. 5, 2.4)

Interpretation of paragraph 2.4 of Chapter 5 of the IMO International Code for Fire Safety Systems as amended by resolution MSC.339(91)

Paragraph 2.4 of Chapter 5 of the FSS Code reads as follows:

Fixed gas fire-extinguishing systems equivalent to those specified in paragraphs 2.2 to 2.3 shall be approved by the Administration based on the guidelines developed by the Organisation.

Interpretation:

Agent containers stored in a protected space shall be distributed throughout the space with bottles or groups of bottles located in at least six separate locations. Duplicate power release lines shall be arranged to release all bottles simultaneously. The release lines shall be so arranged that in the event of damage to any power release line, five sixth of the fire extinguishing gas can still be discharged. The bottle valves are considered to be part of the release lines and a single failure shall include also failure of the bottle valve.

For systems that need less than six cylinders (using the smallest bottles available), the total amount of extinguishing gas on the bottles shall be such that in the event of a single failure to one of the release lines (including bottle valve), five sixth of the fire extinguishing gas can still be discharged. This may be achieved by for instance using more extinguishing gas than required so that if one bottle is not discharging due to a single fault, the remaining bottles will discharge the minimum five sixth of the required amount of gas. This can be achieved with minimum two bottles. However, NOAEL values calculated at the highest expected engine room temperature are not to be exceeded when discharging the total amount of extinguishing gas simultaneously.

Systems that can not comply with the above, for instance systems using only one bottle located inside the protected space, cannot be accepted. Such systems shall be designed with the bottle(s) located outside the protected space, in a dedicated room in compliance with SOLAS Reg.II-2/10.4.3.

Note:

1. This UI is to be uniformly implemented by IACS Members and Associates on ships the keels of which are laid from 1 January 2006.

End of Document

SC 201 Location of paint lockers within cargo block

(Sep 2005) (Corr.1 Jan 2006) (Rev.1 Apr 2006) (Corr.1 May 2022)

Interpretation of SOLAS Chapter II-2 regulations 4.5.1.2 and 4.5.1.3, and of the International code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) regulation 3.2.1, as amended by resolution MSC.176(79)

SOLAS Regulations II-2/4.5.1.2 and 4.5.1.3 read:

4.5.1.2
Main cargo control stations, control stations, accommodation and service spaces (excluding isolated cargo handling gear lockers) shall be positioned aft of cargo tanks, slop tanks, and spaces which isolate cargo or slop tanks from machinery spaces, but not necessarily aft of the oil fuel bunker tanks and ballast tanks, and shall be arranged in such a way that a single failure of a deck or bulkhead shall not permit the entry of gas or fumes from the cargo tanks into the main cargo control stations, control stations, or accommodation and service spaces. A recess provided in accordance with paragraph 5.1.1 need not be taken into account when the position of these spaces is being determined.

4.5.1.3
However, where deemed necessary, the Administration may permit main cargo control stations, control stations, accommodation and service spaces forward of the cargo tanks, slop tanks and spaces which isolate cargo and slop tanks from machinery spaces, but not necessarily forward of oil fuel bunker tanks or ballast tanks. Machinery spaces, other than those of category A, may be permitted forward of the cargo tanks and slop tanks provided they are isolated from the cargo tanks and slop tanks by cofferdams, cargo pump-rooms, oil fuel bunker tanks or ballast tanks, and have at least one portable fire extinguisher. In cases where they contain internal combustion machinery, one approved foam-type extinguisher of at least 45 l capacity or equivalent shall be arranged in addition to portable fire extinguishers. If operation of a semiportable fire extinguisher is impracticable, this fire extinguisher may be replaced by two additional portable fire extinguishers. Main cargo control stations, control stations and accommodation and service spaces shall be arranged in such a way that a single failure of a deck or bulkhead shall not permit the entry of gas or fumes from the cargo tanks into such spaces. In addition, where deemed necessary for the safety or navigation of the ship, the Administration may permit machinery spaces containing internal combustion machinery not being main propulsion machinery having an output greater than 375 kW to be located forward of the cargo area provided the arrangements are in accordance with the provisions of this paragraph.

Note:

1. This UI is to be uniformly implemented by IACS Members and Associates to ships constructed or arrangements fitted on or after 1 January 2006.

2. Revision 1 is to be uniformly implemented by IACS Members and Associates to ships constructed or arrangements fitted on or after 1 July 2006. Revision 0, Sept 2005, is withdrawn in light of the decision of FP 50.

SC201 (cont)

IBC Code regulation 3.2.1 reads:

No accommodation or service spaces or control stations shall be located within the cargo area except over a cargo pump-room recess or pump-room recess that complies with SOLAS regulations II-2/4.5.1 to 4.5.2.4 and no cargo or slop tank shall be aft of the forward end of any accommodation.

Interpretation

Paint lockers, regardless of their use, cannot be located above the tanks and spaces defined in SOLAS II-2/4.5.1.2 for oil tankers and the cargo area for chemical tankers.

End of Document

SC 203 Carriage requirements for shipborne navigational systems and equipment

(Mar 2006) (Corr.1 May 2007)

Regulation

SOLAS regulation V/19.2.2.1 reads *"2.2 All ships of 150 gross tonnage and upwards and passenger ships irrespective of size shall, in addition to the requirements of paragraph 2.1, be fitted with:*

.1 a spare magnetic compass interchangeable with the magnetic compass, as referred to in paragraph 2.1.1, or other means to perform the function referred to in paragraph 2.1.1 by means of replacement or duplicate equipment;

SOLAS regulation V/19.2.5.1 reads *"2.5 All ships of 500 gross tonnage and upwards shall, in addition to meeting the requirements of paragraph 2.3 with the exception of paragraphs 2.3.3 and 2.3.5, and the requirements of paragraph 2.4, have:*

.1 a gyro compass, or other means, to determine and display their heading by shipborne non-magnetic means and to transmit heading information for input to the equipment referred in paragraphs 2.3.2, 2.4 and 2.5.5;

Interpretation

A gyrocompass can be fitted, as the "other means" mentioned in regulation V/19.2.2.1, to comply with that regulation. However, this gyrocompass:

- cannot be credited to fulfill regulation V/19.2.5.1; and
- shall be fed by both main and emergency power supply and, in addition, it shall be provided with a transitional source of power (e.g. a battery).

(MSC.1/Circ. 1224)

Note:

1. This Unified Interpretation is to be applied by all Members and Associate on ships contracted for construction on or after 1 January, 2007.

2. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 204 Storage of fire-extinguishing media forward the cargo holds

(Apr 2006)
(Corr.1 May 2022)

Interpretation of SOLAS Chapter II-2 regulation 10.4.3 and paragraph 2.1.3.3, Chapter 5 of the IMO International Code for Fire Safety Systems (FSS Code), as amended by resolution MSC.206(81)

SOLAS II-2/10.4.3 reads as follows

"When the fire-extinguishing medium is stored outside a protected space, it shall be stored in a room which is located behind the forward collision bulkhead, and is used for no other purposes. Any entrance to such a storage room shall preferably be from the open deck and shall be independent of the protected space. If the storage space is located below deck, it shall be located no more than one deck below the open deck and shall be directly accessible by a stairway or ladder from the open deck. Spaces which are located below deck or spaces where access from the open deck is not provided, shall be fitted with a mechanical ventilation system designed to take exhaust air from the bottom of the space and shall be sized to provide at least 6 air changes per hour. Access doors shall open outwards, and bulkheads and decks including doors and other means of closing any opening therein, which form the boundaries between such rooms and adjacent enclosed spaces shall be gastight. For the purpose of the application of tables 9.1 to 9.8, such storage rooms shall be treated as fire control stations."

FSS Code, Chapter 5, paragraph 2.1.3.3 reads as follows

"The means of control of any fixed gas fire-extinguishing system shall be readily accessible, simple to operate and shall be grouped together in as few locations as possible at positions not likely to be cut off by a fire in a protected space. At each location there shall be clear instructions relating to the operation of the system having regard to the safety of personnel."

Interpretation

Fire-extinguishing media protecting the cargo holds may be stored in a room located forward the cargo holds, but aft of the collision bulkhead, provided that both the local manual release mechanism and remote control(s) for the release of the media are fitted, and the latter is of robust construction or so protected as to remain operable in case of fire in the protected spaces. The remote controls shall be placed in the accommodation area in order to facilitate their ready accessibility by the crew. The capability to release different quantities of fire-extinguishing media into different cargo holds so protected shall be included in the remote release arrangement.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies from 1 January 2007

End of Document

SC205 (May 2006) Portable fire-fighting appliances in cargo holds loaded with vehicles with fuel in their tanks (Regulation II-2/20.6.2)

Regulation

Regulation II-2/20.6.2 reads:

6.2 Portable fire extinguishers

6.2.1 Portable extinguishers shall be provided at each deck level in each hold or compartment where vehicles are carried, spaced not more than 20 m apart on both sides of the space. At least one portable fire-extinguisher shall be located at each access to such a cargo space.

6.2.2 In addition to the provision of paragraph 6.2.1, the following fire extinguishing appliances shall be provided in vehicle, ro-ro and special category spaces intended for the carriage of motor vehicles with fuel in their tanks for their own propulsion:

.1 at least three water-fog applicators; and

.2 one portable foam applicator unit complying with the provisions of the Fire Safety Systems Code, provided that at least two such units are available in the ship for use in such spaces.

Interpretation

Cargo holds, loaded with vehicles with fuel in their tanks and stowed in open or closed containers need not to be provided with the portable fire extinguishers, water-fog applicators and foam applicator unit.

Note:
This UI is to be uniformly implemented by IACS Members and Associates from 1 July 2006.

SC 207
(June 2006)
(Corr.1 Oct 2007)
(Corr.2 Jan 2020)

SOLAS XII/5 in terms of Structural Strength of Bulk Carriers in case of Accidental Hold Flooding

(SOLAS regulation XII/5)

Regulations

Regulation XII/5 reads:

*"**Regulation 5 Structural strength of bulk carriers***

1 Bulk carriers of 150 m in length and upwards of single-side skin construction, designed to carry solid bulk cargoes having a density of 1,000 kg/m^3 and above constructed on or after 1 July 1999, shall have sufficient strength to withstand flooding of any one cargo hold to the water level outside the ship in that flooded condition in all loading and ballast conditions, taking also into account dynamic effects resulting from the presence of water in the hold, and taking into account the recommendations adopted by the Organization.

2 Bulk carriers of 150 m in length and upwards of double-side skin construction, in which any part of longitudinal bulkhead is located within B/5 or 11.5 m, whichever is less, inboard from the ship's side at right angle to the centreline at the assigned summer load line, designed to carry bulk cargoes having a density of 1,000 kg/m^3 and above constructed on or after 1 July 2006, shall comply with the structural strength provisions of paragraph 1."

Interpretation

Regardless of the date of contract for construction, or the cargo hold cross section configuration, of ships which shall comply with SOLAS XII/5.2, such ships are to comply with IACS Unified Requirements as amended (UR) S17, S18 for corrugated transverse bulkheads, where fitted, and S20, if they do not comply with the IACS CSR for Bulk Carriers and Oil Tankers.

Note:

1. This UI is to be uniformly implemented by IACS Societies from 1 July 2006.

2. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

End of document

SC 208 SOLAS XII/6.5.1 in terms of protection of cargo holds from loading/discharge equipment

(June 2006) (Corr.1 Oct 2007) (Corr.2 June 2009)

(SOLAS regulation XII/6.5.1 and SLS.14/Circ.250)

Regulations

SOLAS regulation XII/6.5.1 reads:

"In bulk carriers of 150 m in length and upwards, carrying solid bulk cargoes having a density of 1,000 kg/m^3 and above, constructed on or after 1 July 2006:

.1 the structure of cargo holds shall be such that all contemplated cargoes can be loaded and discharged by standard loading/discharge equipment and procedures without damage which may compromise the safety of the structure."

Unified Interpretation (SLS.14./Circ.250)

The paragraph 1 for SOLAS regulation XII/6.5.1 in SLS.14/Circ.250 reads:

"Regulation XII/6.5.1 Protection of cargo holds from loading/discharge equipment

1. *The protection of the structure of the cargo holds should be achieved by structural design features such as mandatory application of classification society grab notation.*

2. *The protection of hatchways and coamings from grab wire damage may be achieved by fitting protection bars (e.g., half-round bar) on the hatch-side girder (e.g., upper portion of top-side tank plates), hatch-end beams and the upper portion of hatch coamings."*

Interpretation

Bulk Carriers which shall comply with SOLAS regulation XII/6.5.1 and which do not comply with the IACS CSR for Bulk Carriers, are to comply with the following:

1. The Society's "Grab Notation";

2. Wire rope grooving in way of cargo holds openings is to be prevented by fitting suitable protection such as half-round bar on the hatch side girders (i.e. upper portion of top side tank plates)/hatch end beams in cargo hold and upper portion of hatch coamings.

Note:

1. This UI is to be uniformly implemented by IACS Societies from 1 July 2006.

2. Prior to Corr.2, half-round bars may be applied on the hatch side girders (i.e. upper portion of top side tank plates)/hatch end beams in cargo hold or upper portion of hatch coamings. The corrected interpretation in Corr.2 is not applicable retrospectively (i.e. to ships contracted for construction before 1 July 2009).

3. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 209 (June 2006) (Rev.1 Dec 2019) SOLAS XII/6.4.3 in terms of redundancy of stiffening structural members for vessels not designed according to CSR

(SOLAS regulation XII/6.4.3 and SLS.14/Circ.250)

Regulations

Regulation 6 “Structural and other requirements for bulk carriers” contains the following in Regulation XII/6.4:

In bulk carriers of 150 m in length and upwards, carrying solid bulk cargoes having a density of 1,000 kg/m3 and above, constructed on or after 1 July 2006:

1. the structure of cargo holds shall be such that all contemplated cargoes can be loaded and discharged by standard loading/discharge equipment and procedures without damage which may compromise the safety of the structure;

2. effective continuity between the side shell structure and the rest of the hull structure shall be assured; and

3. the structure of cargo areas shall be such that single failure of one stiffening structural member will not lead to immediate consequential failure of other structural items potentially leading to the collapse of the entire stiffened panels.

Interpretation

Ships which shall comply with SOLAS XII/6.4.3 are to satisfy either 1) or 2) as given below:

1) CSR (Common Structural Rules for Bulk Carriers and Oil Tankers), Pt 1, Ch 3, Sec.1 “Materials” and Pt 1, Ch. 8, Sec. 5, “Buckling Capacity”.

2) For ships not designed according to CSR (Pt 1, Ch 3, Sec1 and Ch 8, Sec 5):

a) For ships with single side structures the material grade shall not be less than grade D/DH for:

- lower bracket of side frame

- side shell plate between two points located to 0.125ℓ, above and 0.125ℓ, below the intersection of side shell and bilge hopper sloping plate or inner bottom plate. The span of the side frame, ℓ, is defined as the distance between the supporting structures.

Notes:

1. This UI is to be uniformly implemented by IACS Societies from 1 July 2006.

2. Revision 1 of this UI is to be applied by IACS Societies to ships contracted for construction on or after 1 July 2020.

SC 209 (cont)

In case of side frames built with multiple spans, the above requirements apply to the lower part only. (See Fig. 1)

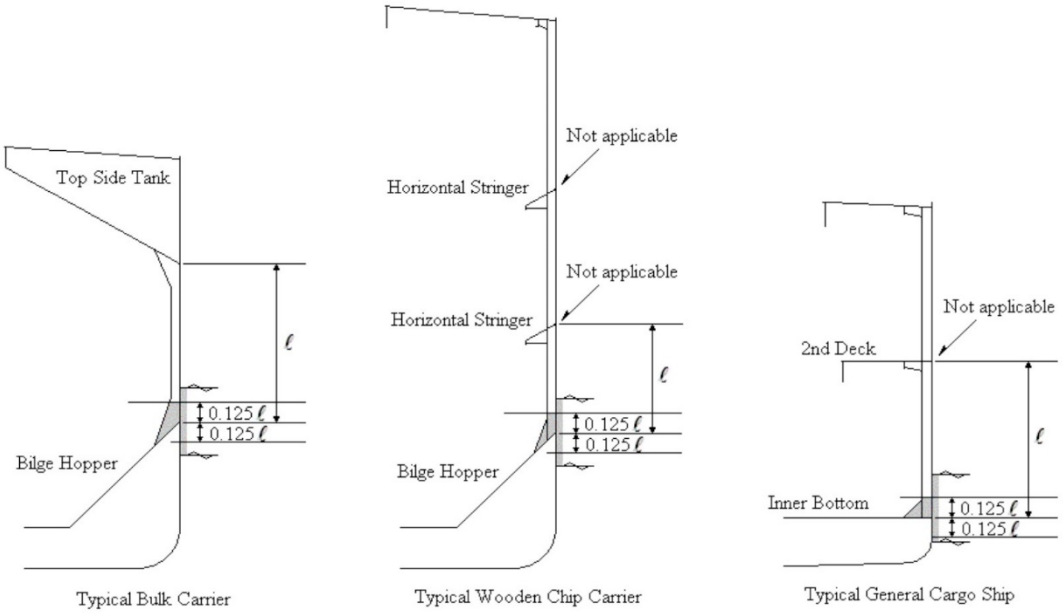


Figure 1

b) The safety factor with respect to lateral buckling of longitudinal and transverse ordinary stiffeners is to be increased by a factor at least of 1.15 (allowable utilization factor to be reduced by at least 1/1.15 = 0.87) for the following areas:

- hatchway coaming
- inner bottom
- sloped stiffened panel of topside tanks and hopper tanks (if any)
- inner side (if any)
- top stool and bottom stool of transverse bulkhead (if any)
- stiffened transverse bulkhead (if any)
- side shell (if directly bounding the cargo hold)

The lateral buckling requirements of ordinary stiffeners shall be in accordance with the Rules of the Classification Society.

End of Document

SC 210 Double-side skin construction on bulk carriers

(June 2006)

(regulations XII/1.4 and XII/6.2)

Regulation XII/1.4 **Definitions**

Regulation XII/1.4 as contained in resolution MSC.170(79), entering into force on 1 July 2006, reads:

> *4 Double-side skin means a configuration where each ship side is constructed by the side shell and a longitudinal bulkhead connecting the double bottom and the deck. Hopper side tanks and top-side tanks may, where fitted, be integral parts of the double-side skin configuration.*

Regulation XII/6.2 **Structural and other requirements for bulk carriers**

Regulation XII/6.2 as contained in resolution MSC.170(79), entering into force on 1 July 2006, reads:

> *2 Bulk carriers of 150 m in length and upwards constructed on or after 1 July 2006, in all areas with double-side skin construction shall comply with the following requirements:*
>
> *.1…*
>
> *.2 Subject to the provisions below, the distance between the outer shell and the inner shell at any transverse section shall not be less than 1,000 mm measured perpendicular to the side shell. The double-side skin construction shall be such as to allow access for inspection as provided in regulation II-1/3-6 and the Technical Provisions referring thereto.*
>
> *.1 The clearances below need not be maintained in way of cross ties, upper and lower end brackets of transverse framing or end brackets of longitudinal framing.*
>
> *.2 The minimum width of the clear passage through the double-side skin space in way of obstructions such as piping or vertical ladders shall not be less than 600 mm.*
>
> *….*
>
> *.3 ...*

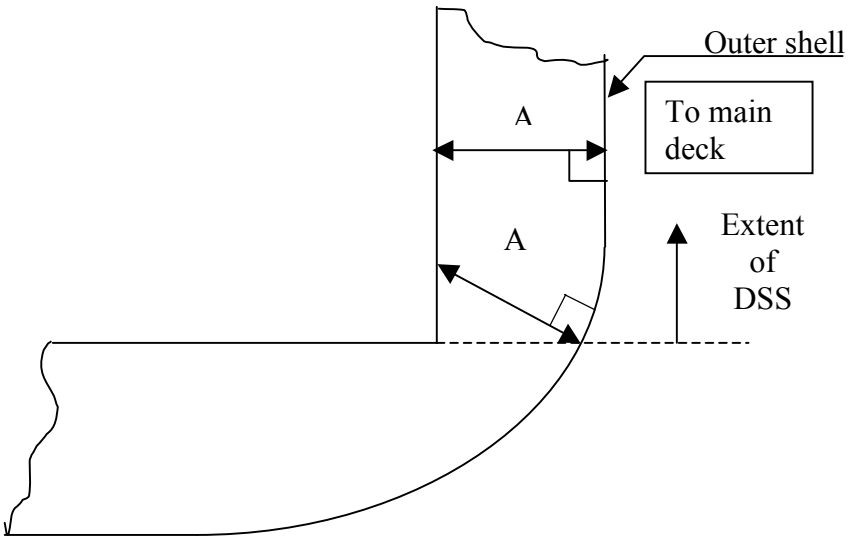
Interpretation

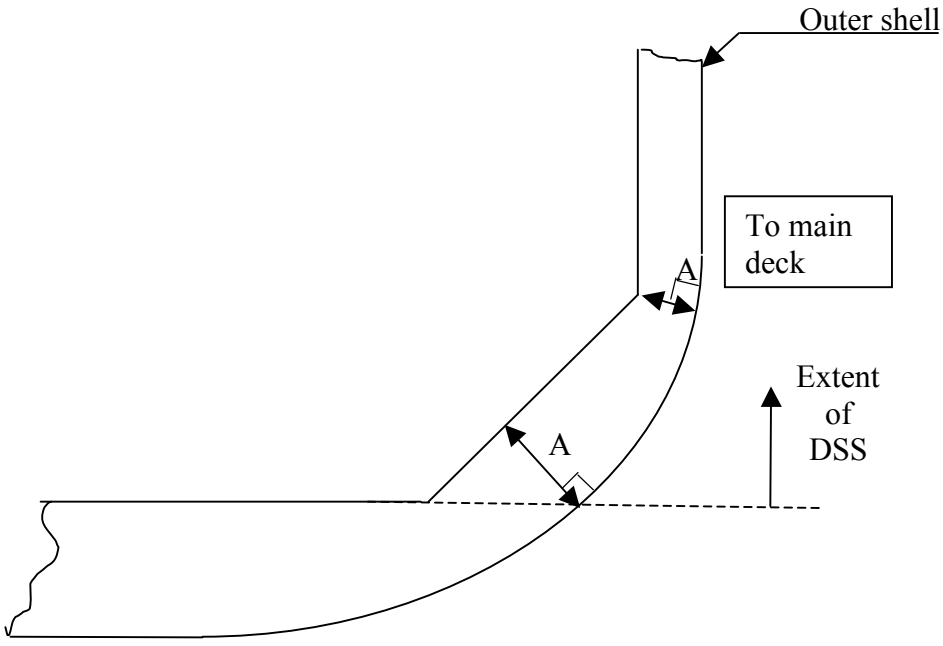
1. The extent of the double-side skin defined in regulation XII/1.4, where the 1000 mm minimum distance specified in XII/6.2.2 is to be met, is to be measured perpendicular to the outer shell from the top of the double bottom to the main deck, as indicated in the attached sketches.

2. The 1000 mm minimum distance specified in XII/6.2.2 is measured between the outer shell and the inner shell and shall be maintained throughout the whole double-side skin construction as defined in paragraph 1, above, and as indicated in the attached sketches.

Note: This UI is to be uniformly implemented by IACS Societies from 1 July 2006.

Distance between inner and outer shell in way of double-side skin





The value of A shall not be less than 1000mm

END

SC211. Protection of fuel oil tanks and designation of fore peak spaces

(June 2006) (Corr.1 Oct 2007) (Rev.1 Sep 2024)

Interpretation of regulations 3.6 and 4.5.1.1 of SOLAS Chapter II-2 and paragraphs 1.3.6 and 3.2.1 of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)

SOLAS II-2/3.6 reads as follows:

"Cargo area is that part of the ship that contains cargo holds, cargo tanks, slop tanks and cargo pump-rooms including pump-rooms, cofferdams, ballast and void spaces adjacent to cargo tanks and also deck areas throughout the entire length and breadth of the part of the ship over the above-mentioned spaces."

SOLAS II-2/4.5.1.1 reads as follows:

"Cargo pump-rooms, cargo tanks, slop tanks and cofferdams shall be positioned forward of machinery spaces. However, oil fuel bunker tanks need not be forward of machinery spaces. Cargo tanks and slop tanks shall be isolated from machinery spaces by cofferdams, cargo pump-rooms, oil bunker tanks or ballast tanks. Pump-rooms containing pumps and their accessories for ballasting those spaces situated adjacent to cargo tanks and slop tanks and pumps for oil fuel transfer, shall be considered as equivalent to a cargo pump-room within the context of this regulation provided that such pump rooms have the same safety standard as that required for cargo pump-rooms. Pump-rooms intended solely for ballast or oil fuel transfer, however, need not comply with the requirements of regulation 10.9. The lower portion of the pump-room may be recessed into machinery spaces of category A to accommodate pumps, provided that the deck head of the recess is in general not more than one third of the moulded depth above the keel, except that in the case of ships of not more than 25,000 tonnes deadweight, where it can be demonstrated that for reasons of access and satisfactory piping arrangements this is impracticable, the Administration may permit a recess in excess of such height, but not exceeding one half of the moulded depth above the keel."

Note:
1. This UI is to be uniformly implemented by IACS Societies for ships contracted for construction on or after 1 July 2006.

2. Rev.1 of this UI is to be uniformly implemented by IACS Societies for ships contracted for construction on or after 1 January 2026.

3. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

SC211 (cont)

Paragraph 1.3.6 of the IBC Code reads as follows:

Cargo area is that part of the ship that contains cargo tanks, slop tanks, cargo pump rooms including pump rooms, cofferdams, ballast or void spaces adjacent to cargo tanks or slop tanks and also deck areas throughout the entire length and breadth of the part of the ship over the above mentioned spaces. Where independent tanks are installed in hold spaces, cofferdams, ballast or void spaces at the after end of the aftermost hold space or at the forward end of the forward-most hold space are excluded from the cargo area.

Paragraph 3.2.1 of the IBC Code reads as follows:

No accommodation or service spaces or control stations shall be located within the cargo area except over a cargo pump-room recess or pump-room recess that complies with SOLAS regulation II-2/4.5.1 to 4.5.2.4 and no cargo or slop tank shall be aft the forward end of any accommodation.

Interpretations

Interpretation 1

Void space or ballast water tank protecting fuel oil tank as shown in Figure 1 at Annex, need not be considered as "cargo area" defined in Reg. II-2/3.6 even though they have a cruciform contact with the cargo oil tank or slop tank.

The void space protecting fuel oil tank is not considered as a cofferdam specified in Reg. II-2/4.5.1.1. There is no objection to the locations of the void space shown in Figure 1, even though they have a cruciform contact with the slop tank.

Interpretation 2

Regarding the spaces referred to in SOLAS II-2/3.6 and IBC Code 1.3.6, the following interpretation is provided:

- A non-hazardous space in the forecastle area which is protected from the cargo tanks by cofferdam, void space or other compartments, will not be defined as part of cargo area.
- Compartments located above the Cofferdam, void or other compartments protecting the non-hazardous spaces will be defined as part of the cargo area.

Interpretation 2 is illustrated in Figure 2.

SC211
(cont)

Annex

Figure 1

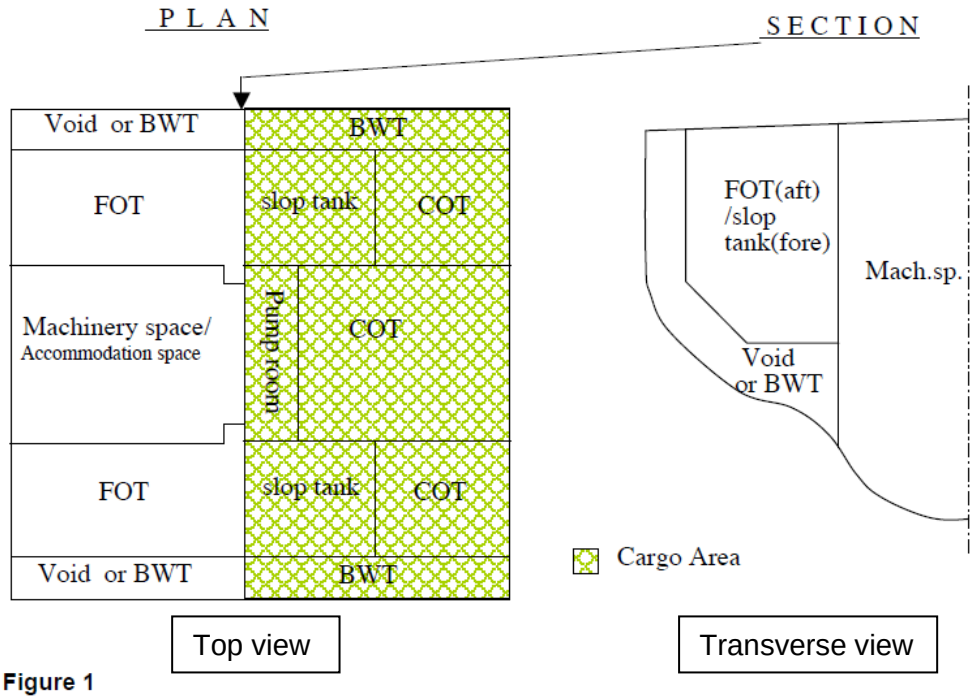


Figure 1

BWT ballast water tank

FOT Fuel oil tank

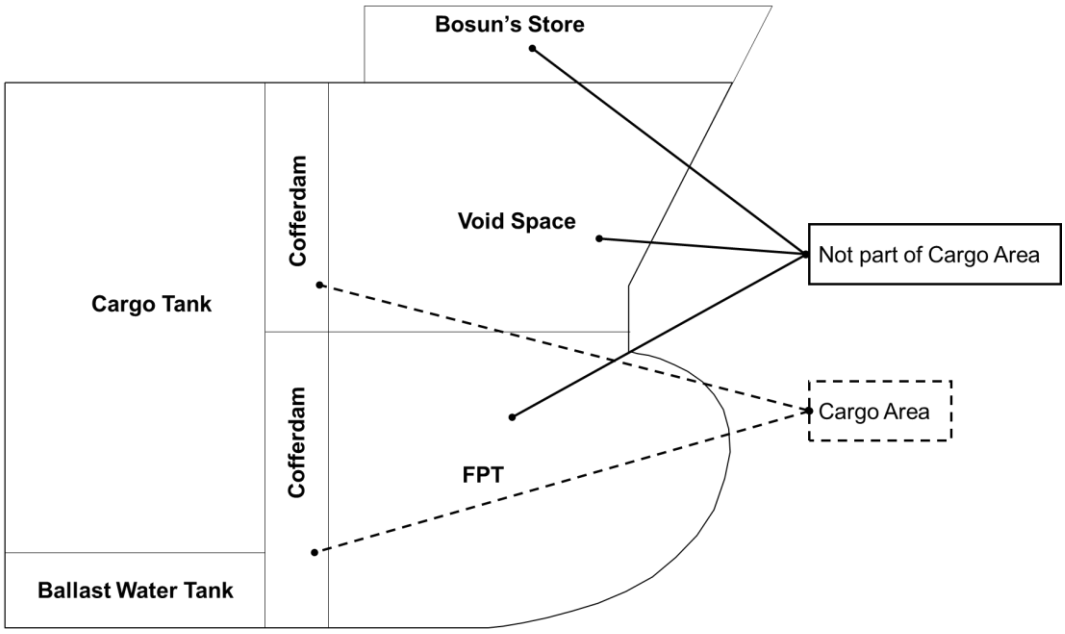
COT Cargo oil tank

SC211

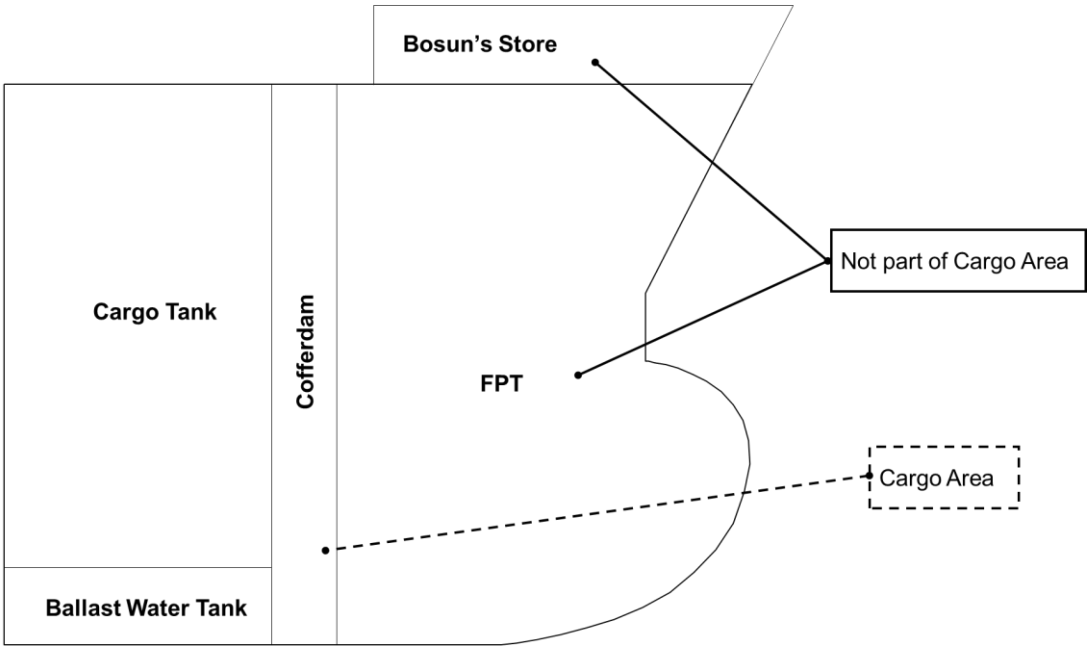
Figure 2

(cont) Arrangements shown in samples 1, 2, 5 and 6 are applicable to both oil tankers and chemical tankers

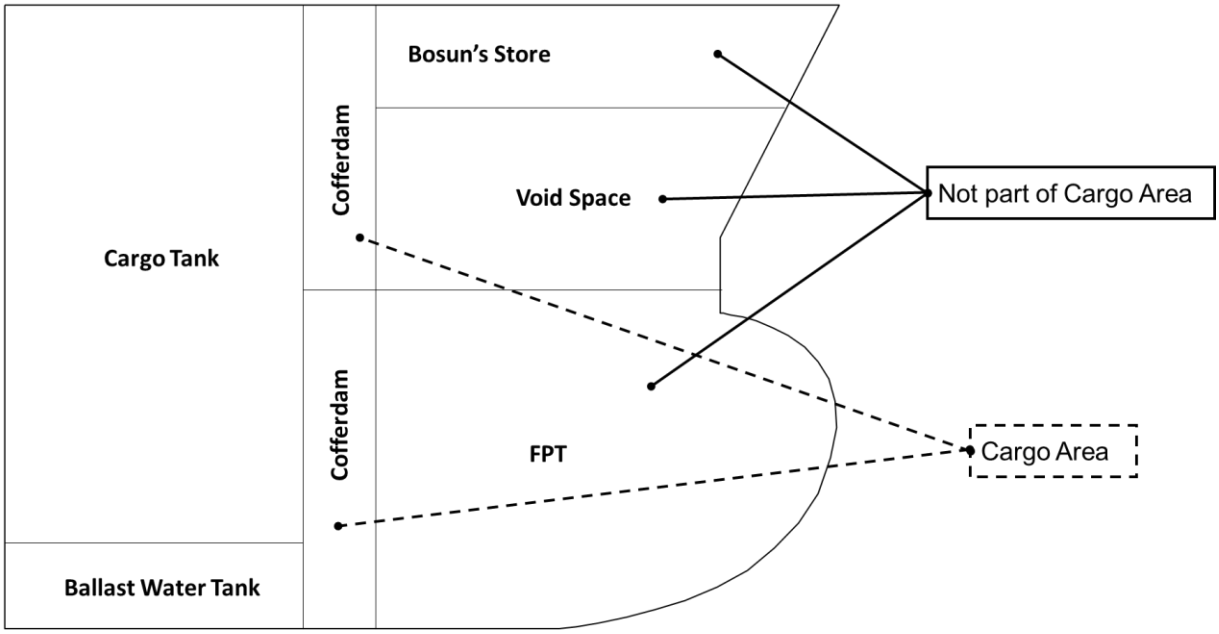
[Sample 1]



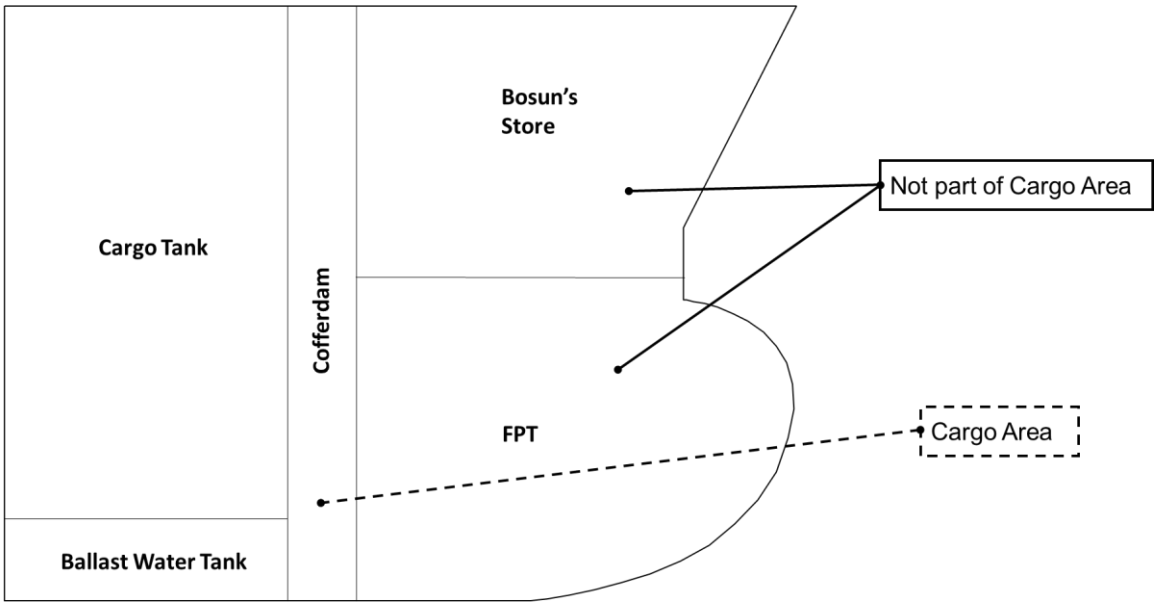
[Sample 2]



SC211 [Sample 5]
(cont)



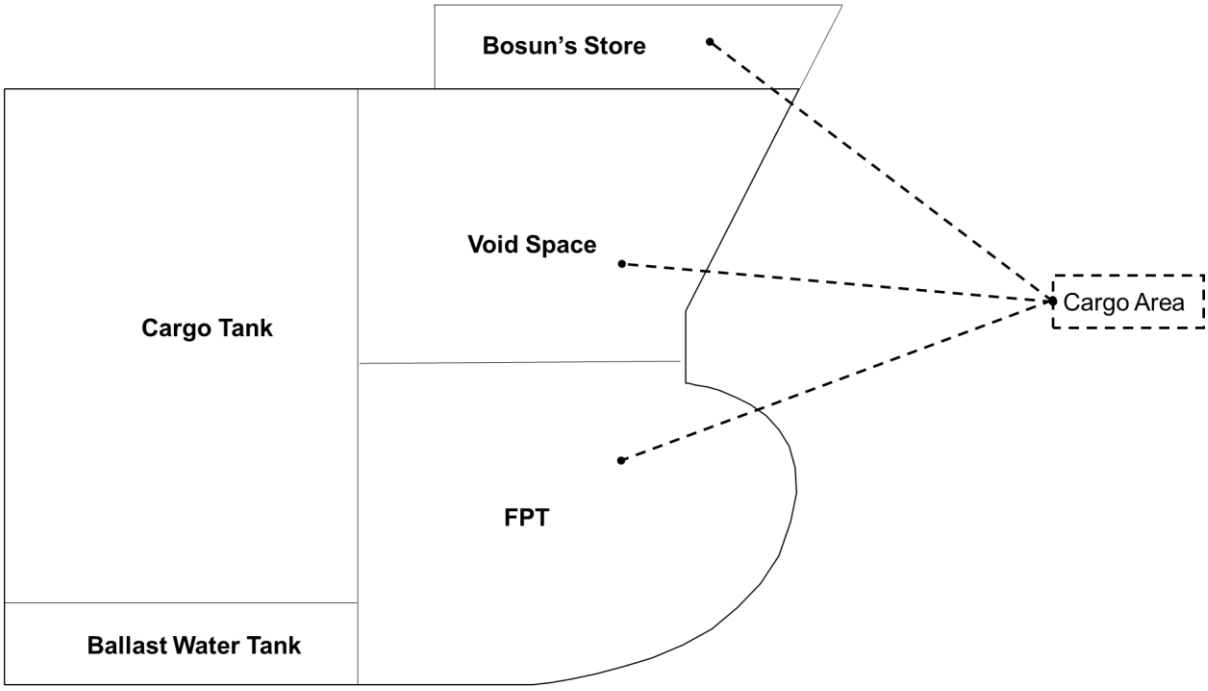
[Sample 6]



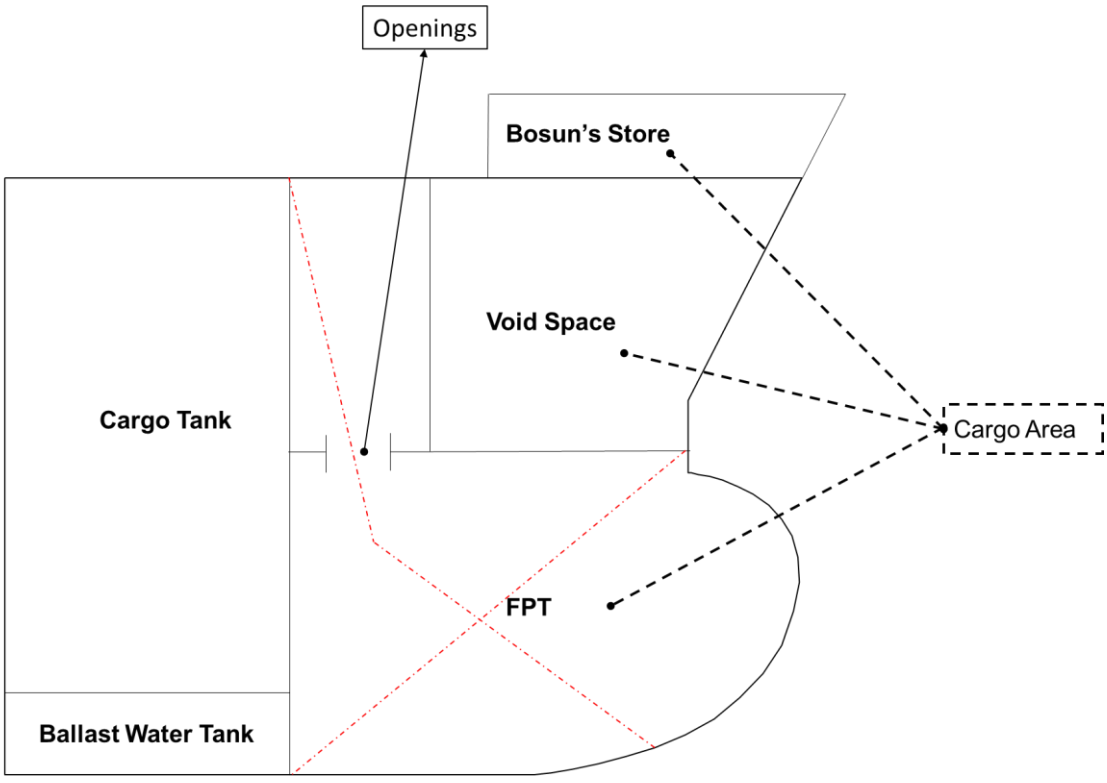
SC211
(cont)

Arrangements shown in samples 3 and 4 are applicable to oil tankers only.

[Sample 3]



[Sample 4]



End of Document

SC 212 Shipboard fittings and supporting hull structures associated with towing and mooring on conventional vessels

（Sept 2006）(Corr.1 July 2007) (Corr.2 Oct 2007) (Corr.3 Dec 2019) (Rev.1 Nov 2023 Complete Revision)

Interpretation of the Reg. II-1/3-8 of the SOLAS as amended by Resolution MSC.474(102)

Regulation II-1/ 3-8 reads as follows:

1 Paragraphs 4 to 6 of this regulation apply to ships constructed on or after 1 January 2007.

2 Paragraphs 7 and 8 of this regulation only apply to ships:

.1 for which the building contract is placed on or after 1 January 2024; or

.2 in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 July 2024; or

.3 the delivery of which is on or after 1 January 2027.

3 This regulation does not apply to towing arrangements provided in accordance with regulation 3-4.

4 Ships shall be provided with arrangements, equipment and fittings of sufficient safe working load to enable the safe conduct of all towing and mooring operations associated with the normal operation of the ship.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships constructed on or after 1 January 2007.

2. The “date of contract for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

3. Revision 1 of this UI is to be uniformly implemented by IACS Societies;

   - for interpretations 2 and 3, on ships contracted for construction on or after 1 January 2024, and

   - for interpretations 1, 4 and 5, on or after 1 January 2024.

SC 212 (cont)

*5 Arrangements, equipment and fittings provided in accordance with paragraph 4 above shall meet the appropriate requirements of the Administration or an organization recognized by the Administration under regulation I/6.**

* *Refer to the Guidance on shipboard towing and mooring equipment (MSC.1/Circ.1175) for ships constructed on or after 1 January 2007 but before 1 January 2024 and the Guidance on shipboard towing and mooring equipment (MSC.1/Circ.1175/Rev.1) for ships constructed on or after 1 January 2024.*

6 Each fitting or item of equipment provided under this regulation shall be clearly marked with any limitations associated with its safe operation, taking into account the strength of the supporting ship's structure and its attachment to it.

7 For ships of 3,000 gross tonnage and above, the mooring arrangement shall be designed, and the mooring equipment including lines shall be selected, in order to ensure occupational safety and safe mooring of the ship, based on the guidelines developed by the Organization.† Ship-specific information shall be provided and kept on board. ‡

† *Refer to the Guidelines on the design of mooring arrangements and the selection of appropriate mooring equipment and fittings for safe mooring (MSC.1/Circ.1619).*

‡ *Refer to towing and mooring arrangement plan in the Guidelines on the design of mooring arrangements and the selection of appropriate mooring equipment and fittings for safe mooring (MSC.1/Circ.1619).*

8 Ships of less than 3,000 gross tonnage should comply with the requirement in paragraph 7 above as far as reasonably practicable, or with applicable national standards of the Administration.

9 For all ships, mooring equipment, including lines, shall be inspected and maintained in a suitable condition for their intended purposes. §

§ *Refer to the Guidelines for inspection and maintenance of mooring equipment including lines (MSC.1/Circ.1620).*

Interpretation

1 The expression "all ships" in SOLAS regulation II-1/3-8.9 means ships constructed before, on, or after 1 January 2009 in accordance with SOLAS regulation II-1/1.3.3

2 While applying the requirements of SOLAS regulation II-1/3-8.4 to regulation II-1/3-8.6 and SOLAS regulation II-1/3-8.8, for ships of less than 3,000 gross tonnage, the following shall be confirmed:

.1 the "Towing and mooring arrangements plan" shall be provided for information, where the maximum brake holding load shall be included in addition to the information provided in section 5 (Towing and mooring arrangements plan) of the annex to MSC.1/Circ.1175/Rev.1. A technical specification document of the mooring lines supplied with the ship shall be provided for information. The manufacturers' recommended minimum diameter D of each fitting in contact with the mooring lines and the Line Design Break Force (LDBF) of the mooring lines shall be included in the document;

SC 212 (cont)

.2 for confirmation of the appropriate selection of mooring line, the properties of mooring lines related to LDBF and bend radius (D/d ratio) shall be submitted to the Administration or the RO. A warning shall be provided that the wear rate of lines may be higher for lower diameter (paragraph 5.6 of MSC.1/Circ.1620); and

.3 at delivery of the ship, the Administration or the RO shall confirm that the towing and mooring arrangements plan is provided on board.

3 While applying the requirements of SOLAS regulation II-1/3-8.4 to regulation II-1/3-8.6 and the SOLAS regulation II-1/3-8.7, for ships of 3,000 gross tonnage and above, the following shall be confirmed in addition to those specified under paragraph 2 of this interpretation:

.1 a document shall be provided by the designer for information and as a supplement to the towing and mooring arrangements plan, confirming that MSC.1/Circ.1619 has been considered. The document shall explicitly state that the deviations, if any, were unavoidable;

.2 deviations shall be recorded (paragraph 6.1 of MSC.1/Circ.1619), justification and suitable safety measures shall be provided (paragraph 6.2 of MSC.1/Circ.1619) in the supplement to the towing and mooring arrangements plan. A reference to the supplement shall be included in the towing and mooring arrangements plan (paragraph 6.3 of MSC.1/Circ.1619);

.3 if deviations are not found necessary, and the supplement is not needed, then this shall be mentioned explicitly in the towing and mooring arrangements plan;

.4 the mooring maximum brake holding load shall be less than 100% of the Ship Design Minimum Breaking Load (MBLSD) (paragraphs 5.2.3.3 and 5.2.4 of MSC.1/Circ.1619). The winches shall be fitted with brakes that allow for the reliable setting of the brake rendering load; and

.5 at delivery of the ship, the Administration or the RO shall confirm that the towing and mooring arrangements plan and the supplement describing deviations and suitable safety measures is provided on board.

4 While applying the requirements of SOLAS regulation II-1/3-8.9, the following shall be complied with, and compliance shall be confirmed by the surveyor at the initial survey for new ships or at the first annual / intermediate / renewal survey for the issuance of the Cargo Ship Safety Construction Certificate or renewal survey for the issuance of the Passenger Ship Safety Certificate after 1 January 2024 for existing ships:

.1 procedures for mooring operations, inspection and maintenance of mooring equipment, including mooring lines, shall be established and available on board (paragraph 3.1 of MSC.1/Circ.1620), taking into account industry practices (section 7 of MSC.1/Circ.1620);

.2 procedures to allow the identification and control of mooring lines, tails and associated attachments shall be established and available on board (paragraph 3.3 of MSC.1/Circ.1620);

.3 the periodic inspection of mooring lines, mooring line tails and associated attachments shall be included in the onboard maintenance plan or equivalent maintenance management system (paragraph 4.1.1 of MSC.1/Circ.1620);

SC 212 (cont)

.4 manufacturers' criteria for replacement of mooring lines shall be available (paragraph 4.3.1 of MSC.1/Circ.1620);

.5 records of the original design concept, equipment, arrangements and specifications shall be available on board (paragraph 4.4.4 of MSC.1/Circ.1620). For ships the keels of which were laid before 1 January 2007 and without appropriate documentation, owners may establish the MBLSD for mooring based on the safe working load of mooring equipment provided on board. If no safe working load is specified, then owners are advised to check strength of mooring equipment and their supporting hull structure based on MSC.1/Circ.1175/Rev.1 and determine MBLSD based on actual capacity of the equipment and their supporting hull structure on board. Manufacturers' test certificates for mooring lines, joining shackles and synthetic tails shall be kept on board and properly linked back to the equipment, if available (paragraph 6.2 of MSC.1/Circ.1620); and

.6 a document shall be provided on board for gathering the information above and describing how the information listed above is filed and collected.

5 While applying the requirements of SOLAS regulation II-1/3-8.9, the following shall be complied with, and the compliance shall be confirmed by the surveyor at every periodical survey for endorsement/issue of the Cargo Ship Safety Construction Certificate or every renewal survey for the Passenger Ship Safety Certificate after 1 January 2024 for existing ships:

.1 the records of inspection and maintenance of mooring equipment and inspection and replacement of mooring lines, since the last periodical survey, shall be kept updated and available on board (paragraphs 4.4.3 and 6.1 of MSC.1/Circ.1620).

End of Document

SC 213 Arrangements for remotely located survival craft

(Aug 2006) (Corr.1 Oct 2007) (Rev.1 June 2008) (Corr.2 June 2011) (Rev.2 Nov 2013) (Rev.3 Dec 2015) (Rev.4 Nov 2016) (Rev.5 Sep 2021)

(SOLAS Regulations III/31.1.4, III/7.2.1.4, III/11.4, III/11.7, III/13.1.3, III/16.7 and LSA Code paragraph 4.1.3.2)

SOLAS Regulations:

Regulation III/31.1.4 reads:

"Cargo ships where the horizontal distance from the extreme end of the stem or stern of the ship to the nearest end of the closest survival craft is more than 100 m shall carry, in addition to the liferafts required by paragraphs 1.1.2 and 1.2.2, a liferaft stowed as far forward or aft, or one as far forward and another as far aft, as is reasonable and practicable. Such liferaft or liferafts may be securely fastened so as to permit manual release and need not be of the type which can be launched from an approved launching device"

Regulation III/7.2.1.4

"a sufficient number of lifejackets shall be carried for persons on watch and for use at remotely located survival craft stations. The lifejackets carried for persons on watch should be stowed on the bridge, in the engine control room and at any other manned watchstation."

Note:

1. This UI is to be uniformly implemented by IACS Societies for ships contracted for construction on or after 1 January 2007.

2. Rev.1 of this UI is to be uniformly implemented by IACS Societies for ships contracted for construction on or after 1 July 2008.

3. Rev.2 of this UI is to be uniformly implemented by IACS Societies for ships contracted for construction on or after 1 July 2014.

4. Rev.3 of this UI is to be uniformly implemented by IACS Societies for ships contracted for construction on or after 1 January 2017.

5. Rev.4 of this UI is to be uniformly implemented by IACS Societies for ships contracted for construction on or after 1 January 2017.

6. Rev.5 of this UI is to be uniformly implemented by IACS Societies for ships contracted for construction on or after 1 January 2023.

7. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

SC 213 (cont)

Regulation III/11.4

"Muster and embarkation stations shall be adequately illuminated by lighting supplied from the emergency source of electrical power required by regulation II-1/42 or II-1/43, as appropriate."

Regulation III/11.7

"An embarkation ladder complying with the requirements of paragraph 6.1.6 of the Code extending, in a single length, from the deck to the waterline in the lightest seagoing condition under all conditions of trim of up to 10° and a list of up to 20° either way shall be provided at each embarkation station or at every two adjacent embarkation stations for survival craft launched down the side of the ship. However, the Administration may permit such ladders to be replaced by approved devices to afford access to the survival craft when waterborne, provided that there shall be at least one embarkation ladder on each side of the ship. Other means of embarkation enabling descent to the water in a controlled manner may be permitted for the liferafts required by regulation 31.1.4."

Regulation III/13.1.3

"1 Each survival craft shall be stowed:

…

.3 in a state of continuous readiness so that two crew members can carry out preparations for embarkation and launching in less than 5 min"

Regulation III/16.7

"During preparation and launching, the survival craft, its launching appliance, and the area of water into which it is to be launched shall be adequately illuminated by lighting supplied from the emergency source of electrical power required by regulation II-1/42 or II-1/43, as appropriate."

LSA Code paragraph 4.1.3.2

"The liferaft shall be fitted with an efficient painter of length equal to not less than 10 m plus the distance from the stowed position to the waterline in the lightest seagoing condition or 15 m whichever is the greater. …"

Interpretation

1. Liferafts required by SOLAS III/31.1.4 shall be regarded as "remotely located survival craft" with regard to SOLAS III/7.2.1.4.

2. The area where these remotely located survival craft are stowed shall be provided with:

.1 a minimum number of two lifejackets and two immersion suits;

.2 adequate means of illumination complying with SOLAS III/16.7, either fixed or portable, which shall be capable of illuminating the liferaft stowage position as well as the area of water into which the liferaft should be launched. Portable lights, when used, shall have brackets to permit their positioning on both sides of the vessel;

.3 an embarkation ladder or other means of embarkation enabling descent to the water in a controlled manner* as per SOLAS III/11.7; and

SC 213 (cont)

.4 self-contained battery-powered lamps (i.e. luminaires) may be accepted as means of illumination for complying with SOLAS III/16.7. Such lamps shall be capable of being recharged from the ship's main and emergency source of electrical power, and shall be stowed close to the liferaft and embarkation ladder they are intended to serve, under charge. When disconnected from the ship's power, the lamp shall give a minimum duration of three hours of undiminished performance. The lamps shall comply with the requirements of the LSA Code section 1.2.3. The lamps (i.e. luminaires) should meet the requirements of Ingress Protection rating IP 55. The batteries for the subject lamps should comply with IACS Unified Requirement (UR) E18 requirements irrespective of whether the expiry date is marked by the manufacturer or not.

3. With regard to the distance between the embarkation station and stowage location of the liferaft as required by SOLAS III/31.1.4 (remotely located survival craft), the embarkation station shall be so arranged that the requirements of SOLAS III/13.1.3 can be satisfied.

4. Exceptionally, the embarkation station and stowage position of the liferaft (remotely located survival craft) may be located on different decks provided that the liferaft can be launched from the stowage deck using the attached painter to relocate it to the embarkation ladder positioned on the other deck (traversing a stairway between different decks with the liferaft carried by crew members is not acceptable).

5. Notwithstanding paragraph 2, where the exceptional cases mentioned in paragraph 4 exist, the following provisions shall be applied:

.1 the lifejackets and the immersion suits required by paragraph 2.1 may be stowed at the embarkation station;

.2 adequate means of illumination complying with paragraph 2.2, shall also illuminate the liferaft stowage position, embarkation station and area of water where the liferaft is to be embarked;

.3 the embarkation ladder or other means of embarkation as required by paragraph 2.3 may be stowed at the embarkation station; and

.4 notwithstanding the requirements in LSA Code paragraph 4.1.3.2, the painter is to be long enough to reach the relevant embarkation station.

* Note:
Controlled manner: a knotted rope is not acceptable for this purpose.

End of Document

SC214 Portions of open decks utilized for the storage of gas bottles

(July 2006)

Regulation II-2/4.3 Arrangements for gaseous fuel for domestic purposes

Gaseous fuel systems used for domestic purposes shall be approved by the Administration. Storage of gas bottles shall be located on the open deck or in a well ventilated space which opens only to the open deck.

Interpretation

A portion of open deck, recessed into a deck structure, machinery casing, deck house, etc., utilized for the exclusive storage of gas bottles is considered acceptable for the purpose of reg. II-2/4.3 provided that:

(1) such a recess has an unobstructed opening, except for small appurtenant structures, such as opening corner radii, small sills, pillars, etc. The opening may be provided with grating walls and door;

(2) the depth of such a recess is not greater than 1 m.

A portion of open deck meeting the above shall be considered as open deck in applying tables 9.1 to 9.8 of SOLAS Chapter II-2.

Note : This UI is to be uniformly implemented by IACS Members and Associates starting from 1 January 2007.

SC 215 Embarkation Ladder

(Feb 2007) (Corr.1 Oct 2007)

Regulation

SOLAS Regulation III/16.1 reads:

Unless expressly provided otherwise, launching and embarkation appliances complying with the requirements of section 6.1 of the Code shall be provided for all survival craft except those which are:

.1 boarded from a position on deck less than 4.5 m above the waterline in the lightest seagoing condition and which have a mass of not more than 185 kg; or

.2 boarded from a position on deck less than 4.5 m above the waterline in the lightest seagoing condition and which are stowed for launching directly from the stowed position under unfavourable conditions of trim of up to 10 degrees and list of up to 20 degrees either way; or

.3 carried in excess of the survival craft for 200% of the total number of persons on board the ship and which have a mass of not more than 185 kg; or

.4 carried in excess of the survival craft for 200% of the total number of persons on board the ship, are stowed for launching directly from the stowed position under unfavourable conditions of trim of up to 10 degrees and list of up to 20 degrees either way, or

.5 provided for use in conjunction with a marine evacuation system, complying with the requirements of section 6.2 of the Code and stowed for launching directly from the stowed position under unfavourable conditions of trim of up to 10 degrees and list of up to 20 degrees either way.

SOLAS Regulation III/31.1.3 reads:

In lieu of meeting the requirements of paragraph 1.1 or 1.2, cargo ships of less than 85 m in length other than oil tankers, chemical tankers and gas carriers, may comply with the following:

.1 they shall carry on each side of the ship, one or more inflatable or rigid liferafts complying with the requirements of section 4.2 or 4.3 of the Code and of such aggregate capacity as will accommodate the total number of persons on board;

Note:

1. This Unified Interpretation is to be applied by all Members and Associates on ships contracted for construction on/after 1 July 2007.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

SC 215 (cont)

.2 unless the liferafts required by paragraph 1.3.1 are stowed in a position providing for easy side-to-side transfer at single open deck level, additional liferafts shall be provided so that the total capacity available on each side will accommodate 150% of the total number of persons on board;

.3 if the rescue boat required by paragraph 2 is also a totally enclosed lifeboat complying with the requirements of section 4.6 of the Code, it may be included in the aggregate capacity required by paragraph 1.3.1, provided that the total capacity available on either side of the ship is at least 150% of the total number of persons on board; and

.4 in the event of any one survival craft being lost or rendered unserviceable, there shall be sufficient survival craft available for use on each side, including any which are stowed in a position providing for easy side-to-side transfer at a single open deck level, to accommodate the total number of persons on board.

Interpretation

Ships as defined in SOLAS III/31.1.3 and which are fitted with non-davit launched liferafts as per regulation III/16.1 shall be provided with an embarkation ladder at each side of the ship.

End of Document

SC 216 FSS Code – Water-based fire-extinguishing systems

(Aug 2007) Withdrawn August 2008 until conclusion of IMO FP52 CG becomes available.

End of Document

SC 217 (Aug 2007) (Corr.1 Sept 2007) (Corr.2 Aug 2022) Nozzles installation for fixed water based local application fire-fighting systems for use in category A machinery spaces (MSC/Circ.913)

IMO MSC/Circ.913 paragraphs 3.4.2.1 and 3.4.2.2 in the Appendix of the Annex read:

3.4.2 The results of the tests should be interpreted as follows:

.1 Systems (utilizing a 3 x 3 nozzle grid) that extinguish fires referred to in 3.3.2.1 to 3.3.2.3 are considered to have successfully completed the protocol with the condition that the outer nozzles should be installed outside of the protected area a distance of at least 1/4 of the maximum nozzle spacing.

.2 Systems (utilizing either a 2 x 2 or 3 x 3 nozzle grid) that extinguish fires referred to in 3.3.2.3 to 3.3.2.5 are considered to have successfully completed the protocol and can be designed with the outer nozzles located at the edge of the protected area. This does not prohibit the location of the nozzles outside of the protected area.

Paragraph 3.4.2.4 in the Appendix of the Annex reads:

.4 For installations which may be adequately protected using individual nozzles or a single row of nozzles, the effective nozzle coverage (width and length) is defined as 1/2 the maximum nozzle spacing.

Note:

1. This Unified Interpretation is to be applied by all Members and Associate on ships contracted for construction on or after 1 April 2008. However, Members and Associate are not precluded from applying this UI before this date.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

3. This UI was originally developed to interpret IMO MSC/Circ.913 which is superseded by MSC.1/Circ.1387. According to paragraph 4 of MSC.1/Circ.1387, fire and component tests previously conducted in accordance with MSC/Circ.913 remain valid for the approval of new systems.

   Existing fixed water-based local application fire-fighting systems approved and installed based on MSC/Circ.913 should be permitted to remain in service as long as they are serviceable.

Interpretation:

The end nozzles of a single line of nozzles shall be positioned:

i) outside the hazard where paragraph 3.4.2.1 is applicable, to the distance established in testing, and

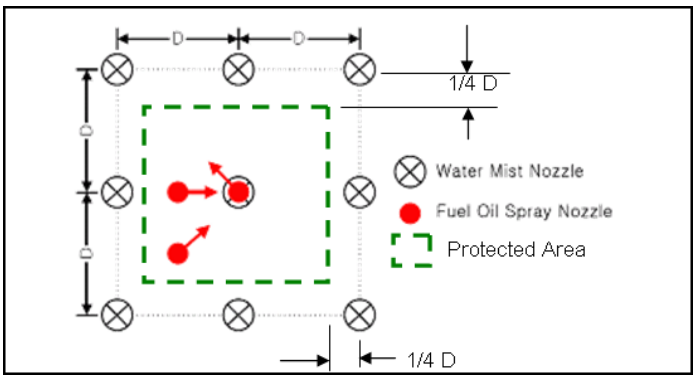
ii) at the edge or outside of the protected area where paragraph 3.4.2.2 is applicable.

A single nozzle shall be located above the fire source and at the centre of an area having dimensions D/2 x D/2.

Sketches of acceptable arrangements are shown in the Annex.

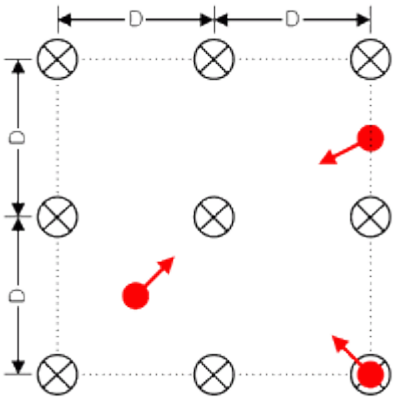
ANNEX

a. System (utilizing a 3 X 3 nozzle grid) that extinguishes fires referred to in 3.3.2.1 to 3.3.2.3 of Appendix of Annex of MSC/Circ.913.



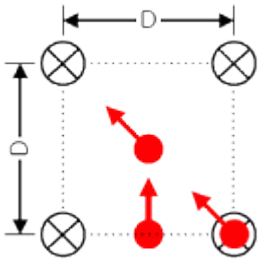
For this system, the outer nozzles should be installed outside of the protected area a distance of at least 1/4 of the maximum nozzle spacing.

b. System (utilizing a 3 X 3 nozzle grid) that extinguishes fires referred to in 3.3.2.3 to 3.3.2.5



For this system, outer nozzles can be located either at the edge of the protected area or outside of the protected area.

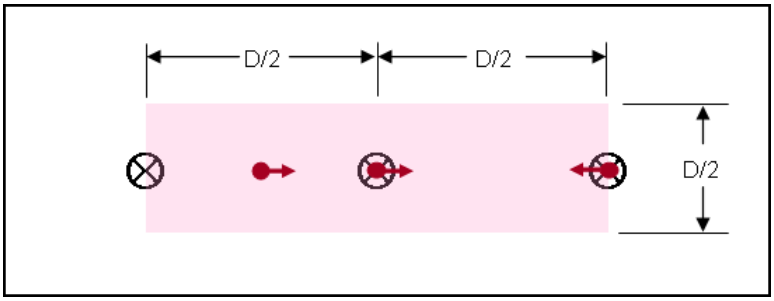
c. System (utilizing a 2 X 2 nozzle grid) that extinguishes fires referred to in 3.3.2.3 to 3.3.2.5



For this system, outer nozzles can be located either at the edge of the protected area or outside of the protected area.

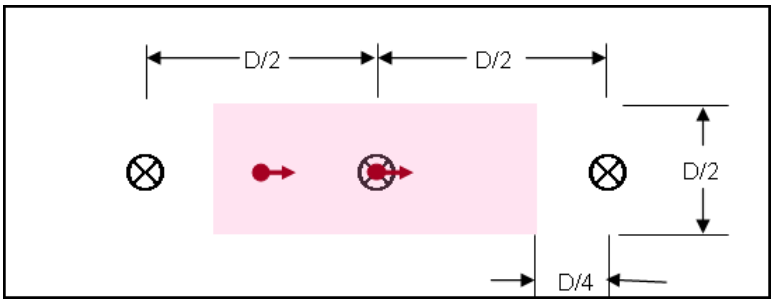
d. A single row of nozzles

i) System that extinguishes fires referred to in 3.3.2.3 to 3.3.2.5



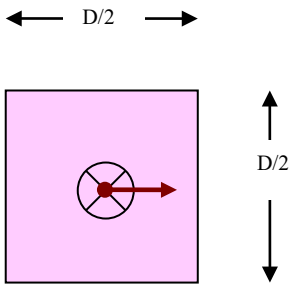
For this system, outer nozzles should be placed at least at the edge of the protected area.

ii) System that extinguishes fires referred to in 3.3.2.1 to 3.3.2.3



For this system, the outer nozzles should be placed outside of the protected area a distance of at least 1/4 of the maximum nozzle spacing.

e. Single nozzle



End of Document

SC218 Fire Testing of Equivalent Water-Based Fire Extinguishing Systems

(Oct 2007)
(Rev.1
July 2022)

Interpretation of IMO MSC/Circ.1165, Appendix B, 4.5.1, as amended by MSC.1/Circ.1237 and MSC.1/1269

IMO MSC/Circ.1165, Appendix B, 4.5.1, as amended by MSC.1/Circ.1237 and MSC.1/Circ.1269 reads:

4.5 Procedure
4.5.1 Except for the flowing fire, the trays used in the test should be filled with at least 50 mm fuel on a water base. Freeboard should be 150 ± 10 mm. For the flowing fire, the fuel should be ignited when flowing down the side of the mock-up, approximately 1 m below the notch. The pre-burn time should be measured from the ignition of the fuel.

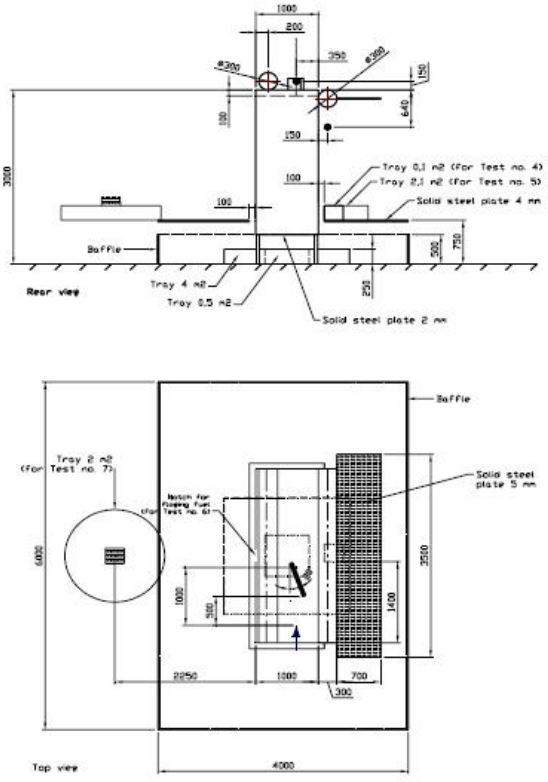


Figure 1

Note:

1. This Unified Interpretation is to be applied by all Members and Associate for systems approved on or after 1 July 2008.

2. Rev.1 of this UI shall be uniformly implemented by IACS Societies on or after 1 July 2023.

SC
(cont)

Interpretation

It has been recognized that this cannot be achieved for the top tray as the total height of this particular tray is only 100 mm.

The freeboard requirement of 150 mm applies consequently only to the 0.1 m^2, 0.5 m^2, 2.1 m^2 and 4 m^2 tray (see IMO MSC.1/Circ.1237, Annex, Figure 1).

Freeboard in the top tray measured from heptane level (which is same as top of notch) to the top of this tray shall be 50 mm.

End of Document

SC219 Fire Testing of Equivalent Water-Based Fire Extinguishing Systems

(Oct 2007)
(Rev.1
July 2022)

Interpretation of IMO MSC/Circ.1165, Appendix B, 4.5.4.1, as amended by MSC.1/Circ.1237 and MSC.1/Circ.1269

Regulation IMO MSC/Circ.1165, Appendix B, 4.5.4.1, as amended by MSC.1/Circ.1237 and MSC.1/Circ.1269 reads as follows:

4.5.4 Duration of test
4.5.4.1 After ignition of all fuel sources, a 2-min preburn time is required before the extinguishing agent is discharged for the fuel tray fires and thermal management tests and 5-15 s for the fuel spray and heptane fires and 30 s for the Class A fire test (Test No.7).

Interpretation

For flowing fire (Test No. 6), the 4 m^2 fire tray below the engine mock-up should be filled with a 50 mm water base and the fire tray on top of the engine mock-up should be filled with a 40 mm water base. The fuel should be ignited when flowing down the side of the mock-up, approximately 1m below the notch. The pre-burn time should be measured from the ignition of the fuel.

Note:

1. This Unified Interpretation is to be applied by all Members and Associate for systems approved on or after 1 July 2008.

2. Rev.1 of this UI shall be uniformly implemented by IACS Societies for systems approved on or after 1 July 2023.

End of Document

SC 220
(Oct 2007)
(Rev.1 Feb 2010)
(Corr.1 Sept 2016)
(Corr.2 Mar 2017)

Special requirements for ro-ro passenger ships

SOLAS regulation II-1/20-2.1 (SOLAS/CONF.3/46, Resolution 1) states:

"Subject to the provisions of subparagraphs .2 and .3, all accesses that lead to spaces below the bulkhead deck shall have a lowest point which is not less than 2.5 m above the bulkhead deck;"

SOLAS regulation II-1/17-1.1.1 (MSC.194(80)) states:

"Subject to the provisions of subparagraphs 1.2 and 1.3, all accesses that lead to spaces below the bulkhead deck shall have a lowest point which is not less than 2.5 m above the bulkhead deck;"

Interpretation

(a) Stern, bow and side doors of large dimensions, when manual devices would not be readily accessible, are to be normally secured by means of power systems. Alternative means of securing are also to be provided for emergency use in case of failure of the power systems.

(b) In ro-ro passenger ships, constructed before 1 July 1997, all access doors or hatchways to spaces below the ro-ro deck, which may be used at sea, are to have sills or coamings not less than 380 mm in height above the ro-ro deck, and are to be provided with doors or covers considered weathertight in relation to their position, refer to SOLAS regulation II-1/20-2 (SOLAS/CONF.3/46, Resolution 1).

For ro-ro passenger ships constructed on or after 1 July 1997 but before 1 January 2009, refer to SOLAS regulation II-1/20-2 (SOLAS/CONF.3/46, Resolution 1).

The ro-ro deck, referred to in the preceding paragraph is the deck above which the stern, bow or side doors are fitted, or the first deck above the load waterline.

Note:

1. This UI is to be implemented by IACS Members and Associates not later than 15 April 2008.

2. Changes introduced in Rev.1 are editorial in nature and therefore do not require a new implementation date.

End of Document

SC 221 (Oct 2007) Separation of Galley Exhaust Ducts from Spaces (Reg II-2/9)

Deleted in Sep 2017 as content is included in SOLAS II-2.

End of Document

SC 222 Stripe coats and salt measurement

(March 2008)

Withdrawn from 1 July 2008.

Contents incorporated into UI SC 223 (NEW, June 2008).

End of Document

SC 223

(June 2008) (Corr.1 July 2008) (Corr.2 Apr 2009) (Rev.1 July 2010) (Rev.2 July 2011) (Corr.1 June 2012) (Rev.3 Sept 2013) (Corr.1 Oct 2014)

For Application of SOLAS Regulation II-1/3-2 Performance Standard for Protective Coatings (PSPC) for Dedicated Seawater Ballast Tanks in All Types of Ships and Double-side Skin Spaces of Bulk Carriers, adopted by Resolution MSC.215(82)

CONTENT

PSPC 2 Definitions

PSPC 3 General Principles

PSPC 4 Coating Standard

PSPC 4, Table 1: Footnotes of Standards
PSPC 4, Table 1: 1 Design of Coating System
PSPC 4, Table 1: 2 PSP (Primary Surface Preparation)
PSPC 4, Table 1: 3 Secondary Surface Preparation
PSPC 4, Table 1: 4 Miscellaneous

PSPC 5 Coating System Approval

PSPC 6 Coating Inspection Requirements

PSPC 7 Verification Requirements

PSPC Annex 1 Test Procedures for Coating Qualification for Dedicated Seawater Ballast Tank of All Types of Ships and Double-side Skin Spaces of Bulk Carriers

PSPC Annex 1: Footnotes of Standards

Note:

1. This UI is to be applied by IACS Members and Associates for ships subject to SOLAS Chapter II-1, Part A-1, Reg.3-2.2, as amended by resolution MSC.216(82) when acting as a recognized organization, authorized by flag State Administrations to act on their behalf, unless otherwise advised, from 1 July 2008.

2. Rev.1 to the interpretation is applicable to members for ships contracted for construction on or after 1 July 2011.

3. Rev.2 to the interpretation is applicable to members for ships contracted for construction on or after 1 July 2012.

   Notwithstanding above, paragraph 1.3.5 in PSPC 4 is applicable to coating pre-qualification test commenced on or after 1 July 2012.

4. Rev.3 to the interpretation is applicable to members for ships contracted for construction on or after 1 January 2014.

5. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

SC 223 (cont)

PSPC 2 DEFINITIONS

For the purpose of this Standard, the following definitions apply.

…

2.6 "GOOD" condition is the condition with minor spot rusting as defined in resolution A.1049(27) (2011 ESP Code), as amended.

…

Interpretation

GOOD: Condition with spot rusting on less than 3% of the area under consideration without visible failure of the coating. Rusting at edges or welds, must be on less than 20 % of edges or weld lines in the area under consideration.

Coating Technical File: A term used for the collection of documents describing issues related to the coating system and its application from the point in time when the first document is provided and for the entire life of the ship including the inspection agreement and all elements of PSPC 3.4.

SC 223 (cont)

PSPC 3 GENERAL PRINCIPLES

"3.2 Inspection of surface preparation and coating processes shall be agreed upon between the ship owner, the shipyard and the coating manufacturer and presented to the Administration for review. The Administration may, if it so requires, participate in the agreement process. Clear evidence of these inspections shall be reported and be included in the Coating Technical File (CTF) (see 3.4)."

Interpretation

1. Inspection of surface preparation and coating processes agreement shall be signed by shipyard, shipowner and coating manufacturer and shall be presented by the shipyard to the Administration for review prior to commencement of any coating work on any stage of a new building and as a minimum shall comply with the PSPC.

2. To facilitate the review, the following from the CTF, shall be available:

a) Coating specification including selection of areas (spaces) to be coated, selection of coating system, surface preparation and coating process.

b) Statement of Compliance or Type Approval of the coating system.

3. The agreement shall be included in the CTF and shall at least cover:

a) Inspection process, including scope of inspection, who carries out the inspection, the qualifications of the coating inspector(s) and appointment of one qualified coating inspector (responsible for verifying that the coating is applied in accordance with the PSPC). Where more than one coating inspector will be used then their areas of responsibility shall be identified. (For example, multiple construction sites).

b) Language to be used for documentation.

4. Any deviations in the procedure relative to the PSPC noted during the review shall be raised with the shipyard, which is responsible for identifying and implementing the corrective actions.

5. A Passenger Ship Safety Certificate or Cargo Ship Safety Certificate or Cargo Ship Safety Construction Certificate, as appropriate, shall not be issued until all required corrective actions have been closed to the satisfaction of the Administration.

*****

"3.4 ***Coating Technical File***

3.4.1 Specification of the coating system applied to the dedicated seawater ballast tanks and double-side skin spaces, record of the shipyard's and shipowner's coating work, detailed criteria for coating selection, job specifications, inspection, maintenance and repair shall be documented in the Coating Technical File (CTF), and the Coating Technical File shall be reviewed by the Administration.

3.4.2 New construction stage

The Coating Technical File shall contain at least the following items relating to this Standard and shall be delivered by the shipyard at new ship construction stage:

SC 223 (cont)

.1 copy of Statement of Compliance or Type Approval Certificate;

.2 copy of Technical Data Sheet, including:

.2.1 product name and identification mark and/or number;
.2.2 materials, components and composition of the coating system, colours;
.2.3 minimum and maximum dry film thickness;
.2.4 application methods, tools and/or machines;
.2.5 condition of surface to be coated (de-rusting grade, cleanness, profile, etc.); and
.2.6 environmental limitations (temperature and humidity);

.3 shipyard work records of coating application, including:

.3.1 applied actual space and area (in square meters) of each compartment;
.3.2 applied coating system;
.3.3 time of coating, thickness, number of layers, etc.;
.3.4 ambient condition during coating; and
.3.5 method of surface preparation;

.4 procedures for inspection and repair of coating system during ship construction;

.5 coating log issued by the coating inspector, stating that the coating was applied in accordance with the specifications to the satisfaction of the coating supplier representative and specifying deviations from the specifications (example of daily log and non-conformity report (see annex 2));

.6 shipyard's verified inspection report, including:

.6.1 completion date of inspection;
.6.2 result of inspection;
.6.3 remarks (if given); and
.6.4 inspector signature; and

.7 procedures for in-service maintenance and repair of coating system.

3.4.3 In-service maintenance, repair and partial re-coating

In-service maintenance, repair and partial re-coating activities shall be recorded in the Coating Technical File in accordance with the relevant section of the Guidelines for coating maintenance and repair.

3.4.4 Re-coating

If a full re-coating is carried out, the items specified in 3.4.2 shall be recorded in the Coating Technical File.

3.4.5 The Coating Technical File shall be kept on board and maintained throughout the life of the ship."

SC 223 (cont)

Interpretation

Procedure for Coating Technical File Review

1 The shipyard is responsible for compiling the Coating Technical File (CTF) either in paper or electronic format, or a combination of the two.

2 The CTF is to contain all the information required by the PSPC 3.4 and the inspection of surface preparation and the coating processes agreement (see PSPC 3.2).

3 The CTF shall be reviewed for content in accordance with the PSPC 3.4.2.

4 Any deviations found under 3 shall be raised with the shipyard, which is responsible for identifying and implementing the corrective actions.

5 A Passenger Ship Safety Certificate or Cargo Ship Safety Certificate or Cargo Ship Safety Construction Certificate, as appropriate, shall not be issued until all required corrective actions have been closed to the satisfaction of the Administration.

*****

"3.5 ***Health and safety***

The shipyard is responsible for implementation of national regulations to ensure the health and safety of individuals and to minimize the risk of fire and explosion."

Interpretation

In order to document compliance with PSPC 3.5, relevant documentation from the coating manufacturer concerning health and safety aspects such as Material Safety Data Sheet is recommended to be included in the CTF for information.

SC 223 (cont)

PSPC 4 COATING STANDARD

*"4.3 **Special application***

4.3.1 This Standard covers protective coating requirements for the ship's steel structure. It is noted that other independent items are fitted within the tanks to which coatings are applied to provide protection against corrosion.

4.3.2 It is recommended that this Standard is applied, to the extent possible, to those portions of permanent means of access provided for inspection not integral to the ship's structure, such as rails, independent platforms, ladders, etc. Other equivalent methods of providing corrosion protection for the non-integral items may also be used, provided they do not impair the performance of the coatings of the surrounding structure. Access arrangements that are integral to the ship structure, such as increased stiffener depths for walkways, stringers, etc., are to fully comply with this Standard.

4.3.3 It is also recommended that supports for piping, measuring devices, etc., be coated in accordance with the non-integral items indicated in 4.3.2."

Interpretation

Reference is made to the non-mandatory MSC/Circ.1279 "Guidelines for corrosion protection of permanent means of access arrangements", adopted by MSC 84 in May 2008.

SC 223 (cont)

PSPC 4 Table 1: Footnotes of Standards

"Footnotes:

5 Type of gauge and calibration in accordance with SSPC-PA2:2004. Paint Application Specification No.2.

6 Reference standard: ISO 8501-1:1988/Suppl:1994. Preparation of steel substrate before application of paints and related products – Visual assessment of surface cleanliness.

7 Reference standard: ISO 8503-1/2:1988. Preparation of steel substrate before application of paints and related products – Surface roughness characteristics of blast-cleaned steel substrates.

8 Conductivity measured in accordance with the following standards:

.1 ISO 8502-9:1998. Preparation of steel substrate before application of paints and related products – Test for the assessment of surface cleanliness; or

.2 NACE SP0508-2010 Item no.21134. Standard practice methods of validating equivalence to ISO 8502-9 on measurement of the levels of soluble salts.

9 Reference standard: ISO 8501-3:2001 (grade P2). Preparation of steel substrate before application of paints and related products – Visual assessment of surface cleanliness. (referred in 3.1).

10 Reference standard: ISO 8502-3:1993. Preparation of steel substrate before application of paints and related products – Test for the assessment of surface cleanliness. (referred in 3.5)."

Interpretation

Only the footnoted standards referred to in PSPC Table 1 are to be applied, i.e. they are mandatory.

SC 223 (cont)

PSPC 4 Table 1: 1 Design of coating system

"1.3 Coating pre-qualification test

Epoxy-based systems tested prior to the date of entry into force of this Standard in a laboratory by a method corresponding to the test procedure in annex 1 or equivalent, which as a minimum meets the requirements for rusting and blistering; or which have documented field exposure for 5 years with a final coating condition of not less than "GOOD" may be accepted.

For all other systems, testing according to the procedure in annex 1, or equivalent, is required."

Interpretation

Procedure for Coating System Approval

Type Approval Certificate showing compliance with the PSPC 5 shall be issued if the results of either method A+D, or B+D, or C+D are found satisfactory by the Administration.

The Type Approval Certificate shall indicate the Product and the Shop Primer tested. The certificate shall also indicate other type approved shop primers with which the product may be used which have under gone the cross over test in a laboratory meeting the requirements in Method A, 1.1 of this UI.

The documents required to be submitted are identified in the following sections, in addition for all type approvals the following documentation is required:

Technical Data Sheet showing all the information required by PSPC 3.4.2.2.

Winter type epoxy is required separate prequalification test including shop primer compatibility test according to PSPC Annex 1. Winter and summer type coating are considered different unless Infrared (IR) identification and Specific Gravity (SG) demonstrates that they are the same.

Method A: Laboratory Test

1.1 Coating pre-qualification test shall be carried out by the test laboratory which is recognized by the Administration and the test laboratory shall meet the requirements set out in IACS UR Z17.

1.2 Results from satisfactory pre-qualification tests (PSPC Table 1: 1.3) of the coating system shall be documented and submitted to the Administration.

1.3.1 Type Approval tests shall be carried out for the epoxy based system with the stated shop primer in accordance with the PSPC Annex 1. If the tests are satisfactory, a Type Approval Certificate will be issued to include both the epoxy and the shop primer. The Type Approval Certificate will allow the use of the epoxy either with the named shop primer or on bare prepared steel.

1.3.2 An epoxy based system may be used with shop primers other than the one with which it was originally tested provided that, the other shop primers are approved as part of a system, PSPC Table 1: 2.3 and Table 1: 3.2, and have been tested according to PSPC Annex 1, Appendix 1, 1.7, which is known as the "Crossover Test". If the test or tests are satisfactory, a Type Approval Certificate will be issued. In this instance the Type Approval

SC 223 (cont)

Certificate will include the details of the epoxy and a list of all shop primers with which it has been tested that have passed these requirements. The Type Approval Certificate will allow the use of the epoxy with all the named shop primers or on bare prepared steel.

1.3.3 Alternatively the epoxy can be tested without shop primer on bare prepared steel to the requirements of the PSPC Annex 1. If the test or tests are satisfactory, a Type Approval Certificate will be issued. The Type Approval Certificate will just record the epoxy. The certificate will allow the use of the epoxy on bare prepared steel only. If in addition, crossover tests are satisfactorily carried out with shop primers, which are approved as part of a system, the Type Approval Certificate will include the details of shop primers which have satisfactorily passed the crossover test. In this instance the Type Approval Certificate will allow the use of the epoxy based system with all the named shop primers or on bare prepared steel.

1.3.4 The Type Approval Certificate is invalid if the formulation of either the epoxy or the shop primer is changed. It is the responsibility of the coating manufacturer to inform the Administration immediately of any changes to the formulation.

1.3.5 For the coating pre-qualification test, the measured average dry film thickness (DFT) on each prepared test panels shall not exceed a nominal DFT (NDFT) of 320 microns plus 20% unless a paint manufacturer specifies a NDFT greater than 320 microns. In the latter case, the average DFT shall not exceed the specified NDFT plus 20% and the coating system shall be certified to the specified NDFT if the system passes the tests according to Annex 1 of MSC 215(82). The measured DFT shall meet the “90/10” rule and the maximum DFT shall be always below the maximum DFT value specified by the manufacturer.

Method B: 5 years field exposure

1.4 Coating manufacturer’s records, which shall at least include the information indicated in 1.4.1, shall be examined to confirm coating system has 5 years field exposure, and the current product is the same as that being assessed.

1.4.1 Manufacturer’s Records

- Original application records
- Original coating specification
- Original technical data sheet
- Current formulation’s unique identification (Code or number)
- If the mixing ratio of base and curing agent has changed, a statement from the coating manufacturer confirming that the composition mixed product is the same as the original composition. This shall be accompanied by an explanation of the modifications made.
- Current technical data sheet for the current production site
- SG and IR identification of original product
- SG and IR identification of the current product
- If original SG and IR cannot be provided then a statement from the coating manufacturer confirming the readings for the current product are the same as those of the original.

1.5 Either survey records from an Administration or a joint (coating manufacturer and Administration) survey of all ballast tanks of a selected vessel is to be carried out for the purpose of verification of compliance with the requirements of 1.4 and 1.9. The reporting of the coating condition in both cases shall be in accordance with the IACS Recommendation 87, section 2 (IACS Recommendation 87 is not mandatory).

SC 223 (cont)

1.6 The selected vessel is to have ballast tanks in regular use, of which:

- At least one tank is approximately 2000 m^3 or more in capacity
- At least one tank shall be adjacent to a heated tank and
- At least one tank contains an underdeck exposed to the sun.

1.7 In the case that the selected vessel does not meet the requirements in 1.6 then the limitations shall be clearly stated on the type approval certificate. For example, the coating cannot be used in tanks adjacent to heated tanks or underdeck or tanks with volume greater than the size surveyed.

1.8 In all cases of approval by Method B, the shop primer shall be removed prior to application of the approved epoxy based system coating, unless it can be confirmed that the shop primer applied during construction, is identical in formulation to that applied in the selected vessel used as a basis of the approval.

1.9 All ballast tanks shall be in "GOOD" condition excluding mechanical damages, without touch up or repair in the prior 5 years.

1.9.1 "Good" is defined as: *Condition with spot rusting on less than 3% of the area under consideration without visible failure of the coating. Rusting at edges or welds, must be on less than 20% of edges or welds in the area under consideration.*

1.9.2 Examples of how to report coating conditions with respect to areas under consideration should be as those given in IACS Recommendation 87.

1.10 If the applied NDFT is greater than required by the PSPC, the applied NDFT will be the minimum to be applied during construction. This will be reported prominently on the Type Approval Certificate.

1.11 If the results of the inspection are satisfactory, a Type Approval Certificate shall be issued to include both the epoxy based system and the shop primer. The Type Approval Certificate shall allow the use of the epoxy based system either with the named shop primer or on bare prepared steel. The Type Approval Certificate shall reference the inspection report which will also form part of the Coating Technical File.

1.12 The Type Approval Certificate is invalid if the formulation of either the epoxy based system or the shop primer is changed. It is the responsibility of the coating manufacturer to inform the Administration immediately of any changes to the formulation.

Method C: Existing Marintek B1 Approvals

1.13 Epoxy based system Coatings Systems with existing satisfactory Marintek test reports minimum level B1 including relevant IR identification and SG, issued before 8 December 2006 can be accepted. If original SG and IR documentation cannot be provided, then a statement shall be provided by the coating manufacturer confirming that the readings for the current product are the same as those of the original.

1.14 The Marintek test report with IR and SG information shall be reviewed and if satisfactory, a Type Approval certificate shall be issued. The certificate shall record the report reference and the shop primer used. The Type Approval Certificate shall allow the use of the epoxy based system either with the named shop primer, unless there is evidence to indicate that it is unsuitable, or on bare prepared steel.

SC 223 (cont)

1.15 The epoxy based system approved by this method may be used with other shop primers if satisfactory crossover tests are carried out with shop primers which are approved as part of a system, see Method A, 1.3.2. In this instance, the Type Approval Certificate will include the details of the epoxy based system and a list of all shop primers which have passed these requirements. The Type Approval Certificate will allow the use of the epoxy based system with all the named shop primers or on bare prepared steel.

1.16 Such coatings shall be applied in accordance with PSPC Table 1 rather than the application conditions used during the approval test which may differ from the PSPC, unless these are more stringent than PSPC Annex 1, for example if the NDFT is higher or high pressure water washing and or sweep blasting of the shop primer is used. In such cases these limiting conditions shall be added to the type approval certificate and shall be followed during coating application in the shipyard.

1.17 The Type Approval Certificate is invalid if the formulation of either the epoxy based system or the shop primer is changed. It is the responsibility of the coating manufacturer to inform the Administration immediately of any changes to the formulation.

Method D: Coating Manufacturer

1.18 The coating/shop primer manufacturer shall meet the requirements set out in IACS UR Z17 paragraphs 4, 5, 6 and 7, (except for 4.6) and paragraphs 1.18.1 to 1.18.6 below, which shall be verified by the Administration.

1.18.1 Coating Manufacturers

(a) Extent of Engagement – Production of coating systems in accordance with PSPC and this UI.

(b) These requirements apply to both the main coating manufacturer and the shop primer manufacturer where both coatings form part of the total system.

(c) The coating manufacturer should provide to the Administration the following information;

- A detailed list of the production facilities.
- Names and location of raw material suppliers will be clearly stated.
- A detailed list of the test standards and equipment to be used, (Scope of approval).
- Details of quality control procedures employed.
- Details of any sub-contracting agreements.
- List of quality manuals, test procedures and instructions, records, etc.
- Copy of any relevant certificates with their issue number and/or date e.g. Quality Management System certification.

(d) Inspection and audit of the manufacturer's facilities will be based on the requirements of the PSPC.

(e) With the exception of early 'scale up' from laboratory to full production, adjustment outside the limitations listed in the QC instruction referred to below is not acceptable, unless justified by trials during the coating system's development programme, or subsequent testing. Any such adjustments must be agreed by the formulating technical centre.

SC 223 (cont)

(f) If formulation adjustment is envisaged during the production process the maximum allowable limits will be approved by the formulating technical centre and clearly stated in the QC working procedures.

(g) The manufacturer's quality control system will ensure that all current production is the same formulation as that supplied for the Type Approval Certificate. Formulation change is not permissible without testing in accordance with the test procedures in the PSPC and the issue of a Type Approval Certificate by the Administration.

(h) Batch records including all QC test results such as viscosity, specific gravity and airless spray characteristics will be accurately recorded. Details of any additions will also be included.

(i) Whenever possible, raw material supply and lot details for each coating batch will be traceable. Exceptions may be where bulk supply such as solvents and pre-dissolved solid epoxies are stored in tanks, in which case it may only be possible to record the supplier's blend.

(j) Dates, batch numbers and quantities supplied to each coating contract will be clearly recorded.

1.18.2 All raw material supply must be accompanied the supplier's 'Certificate of Conformance'. The certificate will include all requirements listed in the coating manufacturer's QC system.

1.18.3 In the absence of a raw material supplier's certificate of conformance, the coating manufacturer must verify conformance to all requirements listed in the coating manufacturer's QC system.

1.18.4 Drums must be clearly marked with the details as described on the 'Type Approval Certificate'.

1.18.5 Product Technical Data Sheets must comply with all the PSPC requirements. The QC system will ensure that all Product Technical Data Sheets are current.

1.18.6 QC procedures of the originating technical centre will verify that all production units comply with the above stipulations and that all raw material supply is approved by the technical centre.

1.19 In the case that a coating manufacturer wishes to have products which are manufactured in different locations under the same name, then IR identification and SG shall be used to demonstrate that they are the same coating, or individual approval tests will be required for the paint manufactured in each location.

1.20 The Type Approval Certificate is invalid if the formulation of either the epoxy based system or the shop primer is changed. It is the responsibility of the coating manufacturer to inform class immediately of any changes to the formulation. Failure to inform class of an alteration to the formulation will lead to cancellation of the certificates for that manufacturer's products.

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SC 223 (cont)

"1.4 Job specification

There shall be a minimum of two stripe coats and two spray coats, except that the second stripe coat, by way of welded seams only, may be reduced in scope where it is proven that the NDFT can be met by the coats applied, in order to avoid unnecessary over-thickness. Any reduction in scope of the second stripe coat shall be fully detailed in the CTF.

Stripe coats shall be applied by brush or roller. Roller to be used for scallops, rat holes, etc., only.

Each main coating layer shall be appropriately cured before application of the next coat, in accordance with coating manufacturer's recommendations. Surface contaminants such as rust, grease, dust, salt, oil, etc., shall be removed prior to painting with proper method according to the paint manufacturer's recommendation. Abrasive inclusions embedded in the coating shall be removed. Job specifications shall include the dry-to-recoat times and walk-on time given by the manufacturer.

1.5 NDFT (nominal total dry film thickness)[5]

NDFT 320 µm with 90/10 rule for epoxy-based coatings; other systems to coating manufacturer's specifications.

Maximum total dry film thickness according to manufacturer's detailed specifications.

Care shall be taken to avoid increasing the thickness in an exaggerated way. Wet film thickness shall be regularly checked during application. Thinner shall be limited to those types and quantities recommended by the manufacturer."

Interpretation

Wet film thickness shall be regularly checked during application for quality control by the Builder. PSPC does not state who should check WFT, it is accepted for this to be the Builder. Measurement of DFT shall be done as part of the inspection required in PSPC 6.

Stripe coats should be applied as a coherent film showing good film formation and no visible defects. The application method employed should insure that all areas that require stripe coating are properly coated by brush or roller. A roller may be used for scallops, ratholes etc., but not for edges and welds.

SC 223 (cont)

PSPC 4 Table 1: 2 PSP (Primary Surface Preparation)

"2. PSP (Primary Surface Preparation)

2.1 Blasting and profile[6, 7]

Sa $2^1/_2$; with profiles between 30-75 µm

Blasting shall not be carried out when:

.1 the relative humidity is above 85%; or

.2 the surface temperature of steel is less than 3°C above the dew point.

Checking of the steel surface cleanliness and roughness profile shall be carried out at the end of the surface preparation and before the application of the primer, in accordance with the manufacturer's recommendations.

2.2 Water soluble salt limit equivalent to NaCl[8]

≤ 50 mg/m^2 of sodium chloride.

2.3 Shop primer

Zinc containing inhibitor free zinc silicate based or equivalent. Compatibility with main coating system shall be confirmed by the coating manufacturer."

Interpretation

of para 2.2:
The conductivity of soluble salts is measured in accordance with ISO 8502-6 and ISO 8502-9 or equivalent method as validated according to NACE SP0508-2010, and compared with the conductivity of 50 mg/m^2 NaCl. If the measured conductivity is less than or equal to, then it is acceptable. Minimum readings to be taken are one (1) per plate in the case of manually applied shop primer. In cases where an automatic process for application of shop primer is used, there should be means to demonstrate compliance with PSPC through a Quality Control System, which should include a monthly test.

of para 2.3:
Shop primers not containing zinc or not silicate based are considered to be "alternative systems" and therefore equivalency is to be established in accordance with Section 8 of the PSPC with test acceptance criteria for "alternative systems" given in section 3.1 (right columns) of Appendixes 1 and 2 to ANNEX 1 of MSC.215(82).

Procedure for review of Quality Control of Automated Shop Primer plants

1 It is recognised that the inspection requirements of PSPC 6.2 may be difficult to apply to an automated shop primer plant and a Quality Control approach would be a more practical way of enabling compliance with the requirements of PSPC.

2 As required in PSPC it is the responsibility of the coating inspector to confirm that the quality control procedures are ensuring compliance with PSPC.

3 When reviewing the Quality Control for automated shop primer plants the following procedures should be included.

SC 223 (cont)

3.1 Procedures for management of the blasting grit including measurement of salt and contamination.

3.2 Procedures recording the following; steel surface temperature, relative humidity, dewpoint.

3.3 Procedures for controlling or monitoring surface cleanliness, surface profile, oil, grease, dust and other contamination.

3.4 Procedures for recording/measuring soluble salts.

3.5 Procedures for verifying thickness and curing of the shop primer conforms to the values specified in the Technical Specification.

SC 223 (cont)

PSPC 4 Table 1: 3 SSP (Secondary Surface Preparation)

"3.2 Sa $2^1/_2$ on damaged shop primers and welds

Sa 2 removing at least 70% of intact shop primer, which has not past a prequalification certified by test procedures in 1.3."

"3.3 Surface treatment after erection[6]

Butts St 3 or better or Sa $2^1/_2$ where practicable. Small damages up to 2% of total area: St 3. Contiguous damages over 25 m^2 or over 2% of the total area of the tank, Sa $2^1/_2$ shall be applied.

Coating in overlap shall be feathered."

"3.4 In case of full or partial blasting 30-75 µm, otherwise as recommended by the coating manufacturer."

Interpretation

Usually, the fillet welding on tank boundary watertight bulkhead is left without coating on block stage (because not yet be leakage tested), in which case it can be categorized as erection joint ("butt") to be power tooled to St 3.

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"3.6 Water soluble salts limit equivalent to NaCl after blasting/grinding[8]

≤ 50 mg/m^2 of sodium chloride."

Interpretation

The conductivity of soluble salts is measured in accordance with ISO 8502-6 and ISO 8502-9, or equivalent method as validated according to NACE SP0508-2010, and compared with the conductivity of 50 mg/m^2 NaCl. If the measured conductivity is less than or equal to, then it is acceptable.

All soluble salts have a detrimental effect on coatings to a greater or lesser degree. ISO 8502-9:1998 does not provide the actual concentration of NaCl. The % NaCl in the total soluble salts will vary from site to site. Minimum readings to be taken are one (1) reading per block/section/unit prior to applying.

SC 223 (cont)

PSPC 4 Table 1: 4 Miscellaneous

"4.3 Testing of coating[5]

Destructive testing shall be avoided.

Dry film thickness shall be measured after each coat for quality control purpose and the total dry film thickness shall be confirmed after completion of final coat, using appropriate thickness gauges (see annex 3)."

Interpretation

All DFT measurements shall be measured. Only the final DFT measurements need to be measured and reported for compliance with the PSPC by the qualified coating inspector. The Coating Technical File may contain a summary of the DFT measurements which typically will consist of minimum and maximum DFT measurements, number of measurements taken and percentage above and below required DFT. The final DFT compliance with the 90/10 practice shall be calculated and confirmed, see PSPC 2.8.

SC 223 (cont)

PSPC 5 COATING SYSTEM APPROVAL

"Results from pre-qualification tests (Table 1, paragraph 1.3) of the coating system shall be documented and a Statement of Compliance or Type Approval Certificate shall be issued if found satisfactory by a third party, independent of the coating manufacturer."

Interpretation

See Interpretation of PSPC Table 1: 1 Design of coating system, 1.3 Coating prequalification test.

SC 223 (cont)

PSPC 6 COATING INSPECTION REQUIREMENTS

"6.1 General

6.1.1 To ensure compliance with this Standard, the following shall be carried out by qualified coating inspectors certified to NACE Coating Inspector Level 2, FROSIO Inspector Level III or equivalent as verified by the Administration.

6.1.2 Coating inspectors shall inspect surface preparation and coating application during the coating process by carrying out, as a minimum, those inspection items identified in section 6.2 to ensure compliance with this Standard. Emphasis shall be placed on initiation of each stage of surface preparation and coatings application as improper work is extremely difficult to correct later in the coating progress. Representative structural members shall be non-destructively examined for coating thickness. The inspector shall verify that appropriate collective measures have been carried out.

6.1.3 Results from the inspection shall be recorded by the inspector and shall be included in the CTF (refer to annex 2 (Example of daily log and non-conformity report)).”

Interpretation

Procedure for Assessment of Coating Inspectors' Qualifications

1 Coating inspectors required to carry out inspections in accordance with the PSPC 6 shall be qualified to NACE Coating Inspector Level 2, FROSIO Inspector Level III, or an equivalent qualification. Equivalent qualifications are described in 3 below.

2 However, only coating inspectors with at least 2 years relevant coating inspector experience and qualified to NACE Coating Inspector Level 2 or FROSIO Inspector Level III, or with an equivalent qualification, can write and\or authorise procedures, or decide upon corrective actions to overcome non-compliances.

3 Equivalent Qualification

3.1 Equivalent qualification is the successful completion, as determined by course tutor, of an approved course.

3.1.1 The course tutors shall be qualified with at least 2 years relevant experience and qualified to NACE Coating Inspector Level 2 or FROSIO Inspector Level III, or with an equivalent qualification.

3.1.2 Approved Course: A course that has a syllabus based on the issues associated with the PSPC including the following:

- Health Environment and Safety
- Corrosion
- Materials and design
- International standards referenced in PSPC
- Curing mechanisms
- Role of inspector
- Test instruments
- Inspection Procedures
- Coating specification
- Application Procedures
- Coating Failures

SC 223 (cont)

- Pre-job conference
- MSDS and product data sheet review
- Coating technical file
- Surface preparation
- Dehumidification
- Waterjetting
- Coating types and inspection criteria
- Specialized Application Equipment
- Use of inspection procedures for destructive testing and non destructive testing instruments.
- Inspection instruments and test methods
- Coating inspection techniques
- Cathodic protection
- Practical exercises, case studies.

Examples of approved courses may be internal courses run by the coating manufacturers or shipyards etc.

3.1.3 Such a course shall have an acceptable measurement of performance, such as an examination with both theoretical and practical elements. The course and examination shall be approved by the Administration.

3.2 Equivalent qualification arising from practical experience: An individual may be qualified without attending a course where it can be shown that the individual:

- has a minimum of 5-years practical work experience as a coating inspector of ballast tanks during new construction within the last 10 years, and
- has successfully completed the examination given in 3.1.3.

4 Assistants to coating Inspectors

4.1 If the coating inspectors requires assistance from other persons to perform part of the inspections, those persons shall perform the inspections under the coating inspector’s supervision and shall be trained to the coating inspector’s satisfaction.

4.2 Such training should be recorded and endorsed either by the inspector, the yard's training organisation or inspection equipment manufacturer to confirm competence in using the measuring equipment and confirm knowledge of the measurements required by the PSPC.

4.3 Training records shall be available for verification.

SC 223 (cont)

PSPC 7 VERIFICATION REQUIREMENTS

"The following shall be carried out by the Administration prior to reviewing the Coating Technical File for the ship subject to this Standard:

.1 check that the Technical Data Sheet and Statement of Compliance or Type Approval Certificate comply with this Standard;

.2 check that the coating identification on representative containers is consistent with the coating identified in the Technical Data Sheet and Statement of Compliance or Type Approval Certificate;

.3 check that the inspector is qualified in accordance with the qualification standards in paragraph 6.1.1;

.4 check that the inspector's reports of surface preparation and the coating's application indicate compliance with the manufacturer's Technical Data Sheet and Statement of Compliance or Type Approval Certificate; and

.5 monitor implementation of the coating inspection requirements."

Interpretation

Procedure for Verification of Application of the PSPC

1 The verification requirements of PSPC 7 shall be carried out by the Administration.

1.1 Monitoring implementation of the coating inspection requirements, as called for in PSPC 7.5 means checking, on a sampling basis, that the inspectors are using the correct equipment, techniques and reporting methods as described in the inspection procedures reviewed by the Administration.

2 Any deviations found under 1.1 shall be raised initially with the coating inspector, who is responsible for identifying and implementing the corrective actions.

3 In the event that corrective actions are not acceptable to the Administration or in the event that corrective actions are not closed out then the shipyard shall be informed.

4 A Passenger Ship Safety Certificate or Cargo Ship Safety Certificate or Cargo Ship Safety Construction Certificate, as appropriate, shall not be issued until all required corrective actions have been closed out to the satisfaction of the Administration.

SC 223 (cont)

PSPC Annex 1: TEST PROCEDURES FOR COATING QUALIFICATION FOR DEDICATED SEAWATER BALLAST TANK OF ALL TYPES OF SHIPS AND DOUBLE-SIDE SKIN SPACES OF BULK CARRIERS

Annex 1 Footnotes of Standards

"Footnotes:

10 Reference standard: ISO 2811-1/4:1997. Paints and varnishes. Determination of density.

11 Reference standards: ISO 4628/2:2003. Paints and varnishes – Evaluation of degradation of coatings – Designation of quantity and size of defects, and of intensity of uniform changes in appearance – Part 2. ISO 4628:2003. Paints and varnishes – Evaluation of degradation of coatings – Designation of quantity and size of common types of defect – Part 3: Designation of degree of rusting.

12 Nine equally distributed measuring points are used on panel's size 150 mm x 150 mm or 15 equally distributed measuring points on panel's size 200 mm x 400 mm.

13 Reference standard: ISO 4624:2002. Pull-off test for adhesion.

14 Reference standards: ASTM D4145:1983. Standard Test Method for Coating Flexibility of Prepainted Sheet.

16 Reference standard: ISO 6270-1:1998 Paints and varnishes – Determination of resistance to humidity – Part 1: Continuous condensation."

Interpretation

Only the footnoted standards referred to in Annex 1 are to be applied, i.e. they are mandatory.

End of Document

SC224 Measurement of Distances

(Aug 2008)

LL74

(Aug 2008)

Several IMO instruments (e.g., ICLL, SOLAS and MARPOL Conventions, the IBC Code and the IGC Code, etc.) require distances to be measured such as tank length, height, width, ship (or subdivision or waterline) length, etc..

MPC95

(Aug 2008)

Interpretation

Unless explicitly stipulated otherwise in the text of the regulations in SOLAS, Load Line and MARPOL Conventions and any of their mandatory Codes, distances are to be measured by using moulded dimensions.

Note:

This Unified Interpretation is to be uniformly implemented by IACS Societies from 1 April 2009.

End of Document

IACS Int. 2008

SC 225 (Sept 2008) (Corr.1 Mar 2021) The occupied volume by flooded water of a flooded space in the SOLAS Chapter II-1 (Regulation 2(14))

Regulation

Reg.2(14) of SOLAS II-1 (as in MSC.194(80)) reads:

"Permeability (μ) of a space is the proportion of the immersed volume of that space which can be occupied by water."

Interpretation

In determining the permeability of a space, the volume of a space is to be taken as the moulded volume, i.e. the immersed volume of a space shall be the underwater moulded volume of that space multiplied by the permeability.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Members and Associates from 1 April 2009.

2. Unified Interpretation of SOLAS Chapter II-1 is also provided in IMO circular MSC.1/Circ.1362

End of Document

SC 226 (Nov 2008) (Rev.1 Dec 2012) IACS Unified Interpretations (UI) on the application of SOLAS regulations to conversions of Single-Hull Oil Tankers to Double-Hull Oil Tankers or Bulk Carriers

Reference table of the clarification of the applicability of SOLAS regulations

No.	Reg.	Title/Content	Note
1	II-1/1.3	Alterations and modifications of a major character	As amended by MSC.216(82)
2	II-1/3.2, 2 & 3.2, 4	Protective coatings of dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers	As amended by MSC.216(82)
3	II-1/3-6	Access to and within spaces in, and forward of, the cargo area of oil tankers and bulk carriers	As amended by MSC.194(80)
4	II-1/3-8	Towing and Mooring Equipment	As amended by MSC.194(80)
5	II-1/Part B & Part B-1	Subdivision and stability	As amended by MSC.216(82)
6	II-2/1.3	Repairs, alterations, modifications and outfitting	
7	III/1.4.2	Alterations and modifications of a major character	
8	III/31.1.8	Survival craft and rescue boats	
9	V/22	Navigation bridge visibility	
10	XII/4	Damage stability requirements applicable to bulk carriers	
	XII/5.1 & 5.2	Structural strength of bulk carriers	
	XII/6.1	Structural and other requirements for bulk carriers	
	XII/6.2	Structural and other requirements for bulk carriers	
	XII/6.3	Structural and other requirements for bulk carriers	As amended by MSC.216(82) Annex 1
	XII/6.4	Structural and other requirements for bulk carriers	As amended by MSC.216(82) Annex 1
	XII/7.1	Survey and maintenance of bulk carrier	
	XII/7.2	Survey and maintenance of bulk carrier	
	XII/8	Information on compliance with requirements for bulk carriers	
	XII/9	Requirements for bulk carriers not being capable of complying with regulation 4.3 due to the design configuration of their cargo holds	
	XII/10	Solid bulk cargo density declaration	
	XII/11	Loading instrument	
	XII/12	Hold, ballast and dry space water ingress alarms	
	XII/13	Availability of pumping systems	
	XII/14	Restrictions from sailing with any hold empty	

Note:

1. This UI is to be applied by IACS Societies when acting as recognized organizations, authorized by flag State Administrations to act on their behalf, unless otherwise advised, from 1 January 2014.

SC 226 (cont)

SC226.1 Alterations and modifications of a major character SOLAS Chapter II-1 Reg. 1.3 (as amended by MSC.216(82))

SOLAS Chapter II-1, Reg. 1 'Application':

"3 All ships which undergo repairs, alterations, modifications and outfitting related thereto shall continue to comply with at least the requirements previously applicable to these ships. Such ships, if constructed before the date on which any relevant amendments enter into force, shall, as a rule, comply with the requirements for ships constructed on or after that date to at least the same extent as they did before undergoing such repairs, alterations, modifications or outfitting. Repairs, alterations and modifications of a major character and outfitting related thereto shall meet the requirements for ships constructed on or after the date on which any relevant amendments enter into force, in so far as the Administration deems reasonable and practicable."

Interpretation

1. The date on which a conversion occurs for the purposes of determining the applicability of requirements for ships constructed on or after the date on which any relevant amendments enters into force is to be:

    .1 the date on which the contract is placed for the conversion; or

    .2 in the absence of a contract, the date on which the work identifiable with the specific conversion begins; or

    .3 the completion date of the conversion, if that occurs more than three years after the date specified in subparagraph .1 above or 30 months after the date specified in subparagraph .2 above, either as applicable.

2 As for paragraph 1 above, the following applies:

    .1 Where the completion date of the conversion has been subject to delay beyond the period referred to in paragraph 1.3 above due to unforeseen circumstances beyond the control of the builder and the owner, the date on which contract is placed for the conversion or, if applicable, the date on which the work identifiable with the specific conversion begins may be accepted by the Administration in lieu of the completion date of the conversion. The treatment of such ships is to be considered by the Administration on a case-by-case basis, bearing in mind the particular circumstances.

    .2 It is important that ships accepted by the Administration under the provisions of subparagraph .1 above are also to be accepted as such by port States. In order to ensure this, the following practice is recommended to Administrations when considering an application for such a ship:

        .1 the Administration should thoroughly consider applications on a case-by-case basis, bearing in mind the particular circumstances.
        In doing so in the case of a ship converted in a foreign country, the Administration may require a formal report from the authorities of the country in which the ship was converted, stating that the delay was due to unforeseen circumstances beyond the control of the builder and the owner;

SC 226 (cont)

.2 when a ship is accepted by the Administration under the provisions of subparagraph .1 above, information on the conversion date annotated on the relevant certificates is to be footnoted to indicate that the ship is accepted by the Administration under the unforeseen delay in completion of the conversion provisions of this interpretation; and

.3 the Administration should report to the Organization on the identity of the ship and the grounds on which the ship has been accepted under the unforeseen delay in the completion of the conversion provisions of this interpretation.

For conversions of single-hull oil tankers to double-hull oil tankers or bulk carriers, the following is to apply:

.1 Conversions of single-hull oil tankers to double-hull oil tankers or bulk carriers is to be regarded as modifications of a major character for the purposes of SOLAS chapter II-1.

.2 Repairs, alterations and modifications of a major character include:

.1 Substantial alteration of the dimensions of a ship, for example lengthening of a ship by adding a new midbody. The new midbody is to comply with SOLAS chapter II-1.

.2 A change of ship type, for example an oil tanker converted to a bulk carrier. Any structure, machinery and systems that are added or modified is to comply with SOLAS chapter II-1, taking into account the interpretation of SOLAS chapter II-1 regulations as contained herein.

SC 226 (cont)

SC226.2 Protective coatings of dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers SOLAS Chapter II-1 Reg. 3-2, 2 and Reg. 3-2, 4 (as amended by MSC.216(82))

SOLAS Chapter II-1, Reg. 3-2:

"2 All dedicated seawater ballast tanks arranged in ships and double-side skin spaces arranged in bulk carriers of 150 m in length and upwards shall be coated during construction in accordance with the Performance standard for protective coatings for dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers, adopted by the Maritime Safety Committee by resolution MSC.215(82), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than chapter I."

and

"4 Maintenance of the protective coating system shall be included in the overall ship's maintenance scheme. The effectiveness of the protective coating system shall be verified during the life of a ship by the Administration or an organization recognized by the Administration, based on the guidelines developed by the Organization."*

Interpretation

1. For single-hull oil tanker conversion into double-hull oil tanker, SOLAS regulation II-1/3-2 as adopted by resolution MSC.216(82) is to apply to dedicated water ballast tanks if constructed with all structural members being entirely new. If converting existing spaces into water ballast tanks with part of the existing structural members remaining in place, revised SOLAS regulation II-1/3-2 (MSC.216(82)) need not be applied. However, dedicated sea water ballast tanks are to have an efficient corrosion prevention system such as hard protective coatings or equivalent and be of light colour.

2. For single-hull oil tanker conversion into bulk carrier, SOLAS regulation II-1/3-2 as adopted by resolution MSC.216(82) is to apply to dedicated water ballast tanks and double-side skin spaces of bulk carriers if constructed with all structural members being entirely new. If converting existing spaces into dedicated water ballast tanks or double-side skin space of bulk carriers with part of the existing structural members remaining in place, revised SOLAS regulation II-1/3-2 (MSC.216(82)) need not be applied. However, dedicated sea water ballast tanks are to have an efficient corrosion prevention system such as hard protective coatings or equivalent and be of light colour.

SC 226 (cont)

SC226.3 Access to and within spaces in, and forward of, the cargo area of oil tankers and bulk carriers SOLAS Chapter II-1 Reg. 3-6 (as amended by MSC.194(80))

Regulation texts are not inserted here.

Interpretation

1. For single-hull oil tanker conversion into double-hull oil tanker

1.1 Permanent means of access contained in table 1 of the Technical provisions for means of access for inspections (resolution MSC.158(78)) need not apply. However, if, in the course of conversion, substantial new structures are added, these new structures are to comply with the regulation.

1.2 The term "substantial new structures" means hull structures that are entirely renewed or augmented by new double bottom and/or double-side construction (e.g., replacing the entire structure within cargo area or adding a new double bottom and/or double-side section to the existing cargo area).

1.3 Additionally, an approved Ship Structure Access Manual is to be provided.

2. For single-hull oil tanker conversion into bulk carrier

2.1 Permanent means of access contained in table 2 of the Technical provisions for means of access for inspections (resolution MSC.158(78)) need not apply. However, if, in the course of conversion, substantial new structures are added, these new structures are to comply with the regulation.

2.2 The term "substantial new structures" means hull structures that are entirely renewed or augmented by new double bottom and/or double-side skin construction (e.g., replacing the entire structure within cargo area or adding a new double bottom and/or double-side section to the existing cargo area).

2.3 Additionally, an approved Ship Structure Access Manual is to be provided.

SC 226 (cont)

SC226.4 Towing and Mooring Equipment SOLAS Chapter II-1 Reg. 3-8 (as amended by MSC.194(80))

Regulation texts are not inserted here.

Interpretation

For single-hull oil tanker conversion into double-hull oil tanker or bulk carrier

This regulation is to be applied when equipment and fittings for mooring/towing are replaced, modified or the safe working load of the existing equipment and fittings is known. Where the latter cannot be ascertained, alternative compliance with SOLAS regulation II-1/3-8 is to be sought (e.g., the equipment is to be replaced, tested or modified).

SC 226 (cont)

SC226.5 Subdivision and stability SOLAS Chapter II-1 Part B and Part B-1 (as amended by MSC.216(82)

Regulation texts are not inserted here.

Interpretation

1. **For single-hull oil tanker conversion into double-hull oil tanker**

Oil tankers complying with damage stability requirements contained in Annex I to MARPOL 73/78 (except for combination carriers with type B freeboards) may be excluded from the damage stability requirements contained in SOLAS chapter II-1, part B-1.

2. **For single-hull oil tanker conversion into bulk carrier**

2.1 A bulk carrier which is assigned a B reduced freeboard complying with damage stability requirements contained in regulation 27 of the 1966 Load Line Convention, and resolutions A.320(IX) and A.514(13); or regulation 27 of the 1988 Load Line Protocol, may be excluded from the damage stability requirements contained in SOLAS chapter II-1, part B-1.

2.2 For a bulk carrier which is assigned a B freeboard, SOLAS chapter II-1, Parts B and B-1 are to be applied.

SC 226 (cont)

SC226.6 Repairs, alterations, modifications and outfitting SOLAS Chapter II-2 Reg. 1.3

SOLAS Chapter II-2, Reg. 1.3 'Repairs, alterations, modifications and outfitting':

"3.1 All ships which undergo repairs, alterations, modifications and outfitting related thereto shall continue to comply with at least the requirements previously applicable to these ships. Such ships, if constructed before 1 July 2002, shall, as a rule, comply with the requirements for ships constructed on or after that date to at least the same extent as they did before undergoing such repairs, alterations, modifications or outfitting.

3.2 Repairs, alterations and modifications which substantially alter the dimensions of a ship or the passenger accommodation spaces, or substantially increase a ship's service life and outfitting related thereto shall meet the requirements for ships constructed on or after 1 July 2002 in so far as the Administration deems reasonable and practicable."

Interpretation

For single-hull oil tanker conversion into double-hull oil tanker or bulk carrier, new and converted parts are to comply with the latest applicable requirements.

SC 226 (cont)

SC226.7 Alterations and modifications of a major character SOLAS Chapter III Reg. 1.4.2

SOLAS Chapter III, Reg. 1 'Application':

"4 For ships constructed before 1 July 1998, the Administration shall:

.1 …….; and

.2 ensure that when life-saving appliances or arrangements on such ships are replaced or such ships undergo repairs, alterations or modifications of a major character which involve replacement of, or any addition to, their existing life-saving appliances or arrangements, such life-saving appliances or arrangements, in so far as is reasonable and practicable, comply with the requirements of this chapter. However, if a survival craft other than an inflatable liferaft is replaced without replacing its launching appliance, or vice versa, the survival craft or launching appliance may be of the same type as that replaced."

Interpretation

For single-hull oil tanker conversion into double-hull oil tanker or bulk carrier, this to be considered as an alteration or modification of a major character.

SC 226 (cont)

SC226.8 Survival craft and rescue boats SOLAS Chapter III Reg. 31.1.8

SOLAS Chapter III, Reg. 31 'Survival craft and rescue boats':

"1.2 In lieu of meeting the requirements of paragraph 1.1, cargo ships may carry:

.1 one or more free-fall lifeboats, complying with the requirements of section 4.7 of the Code, capable of being free-fall launched over the stern of the ship of such aggregate capacity as will accommodate the total number of persons on board; and

.2 in addition, one or more inflatable or rigid liferafts complying with the requirements of section 4.2 or 4.3 of the Code, on each side of the ship, of such aggregate capacity as will accommodate the total number of persons on board. The liferafts on at least one side of the ship shall be served by launching appliances."

and

"1.8 Notwithstanding the requirements of paragraph 1.1, bulk carriers as defined in regulation IX/1.6 constructed on or after 1 July 2006 shall comply with the requirements of paragraph 1.2."

Interpretation

1. For single-hull oil tanker conversion into double-hull oil tanker, this regulation is not relevant.

2. For single-hull oil tanker conversion into bulk carrier, SOLAS regulation III/31.1.8 is to be met as for new ships, except where the space available for fitting and/or launching a free-fall lifeboat in accordance with regulation III/31.1.2.1 is not adequate, in which case the Administration is to be contacted to determine whether or not existing arrangement may be accepted.

SC 226 (cont)

SC226.9 Navigation bridge visibility SOLAS Chapter V Reg. 22

Regulation text is not inserted here.

Interpretation

For single-hull oil tanker conversion into double-hull oil tanker or bulk carrier, the level of visibility possessed by the ship prior to the conversion at the ballast loading condition is to be maintained after the conversion. Where a conversion involves the modification of structural arrangements used to establish minimum bridge visibility, the provisions of SOLAS regulation V/22 is to apply.

SC 226 (cont)

SC226.10 Damage stability requirements applicable to bulk carriers SOLAS regulation XII/4, structural strength of bulk carriers SOLAS regulation XII/5.1 and 5.2, structural and other requirements for bulk carriers SOLAS regulation XII/6.1, XII/6.2, XII/6.3 (MSC.216(82) Annex 1) and XII/6.4 (MSC.216(82) Annex 1), survey and maintenance of bulk carriers SOLAS regulation XII/7.1 and XII/7.2, information on compliance with requirements for bulk carriers SOLAS regulation XII/8, Requirements for bulk carriers not being capable of complying with regulation 4.3 due to the design configuration of their cargo holds SOLAS regulation XII/9, Solid bulk cargo density declaration SOLAS regulation XII/10, Loading instrument SOLAS regulation XII/11, Hold, ballast and dry space water ingress alarms SOLAS regulation XII/12, Availability of pumping systems SOLAS regulation XII/13, Restrictions from sailing with any hold empty SOLAS regulation XII/14

Regulation texts are not inserted here.

Interpretation

1. For single-hull oil tanker conversion into double-hull oil tanker, these regulations are not relevant.

2. For single-hull oil tanker conversion into bulk carrier, the provisions of chapter XII applicable for ships constructed on or after the date on which conversion occurs, are to be applied as for a new ship to the entire bulk carrier, i.e. all new and existing parts and spaces, as indicated in the table below.

SC 226 (cont)

Table of application of the Regulations of SOLAS Chapter XII to the conversions of Single Hull Tankers to Bulk Carriers/Ore Carriers

Regulation	Applicability	Note
4.1	Apply	
4.2	Apply, based on the Unified interpretations of SOLAS regulations XII/4.2 and XII/5.2 (MSC.1/Circ.1178).	
4.3	NA	
4.4	NA	This regulation is referred to within regulations 4.1 and 4.2
4.5	NA	
4.6	Apply	
4.7	Apply	
5.1	Apply	
5.2	Apply, based on the Unified interpretations of SOLAS regulations XII/4.2 and XII/5.2 (MSC.1/Circ.1178).	
6.1	NA	
6.2	Apply	
6.3	Apply	
6.4	Apply	
7.1	NA. However, SOLAS regulation XI-1/2 is applicable.	
7.2	Apply	
8.1	Apply	
8.2	NA	
8.3	NA	
9	NA	
10.1	Apply	
10.2	NA	
11.1	Apply	
11.2	NA	
11.3	Apply	
12.1	Apply	
12.2	Apply	
12.3	NA	
13.1	Apply	
13.2	NA	
14	NA	

End of Document

SC 227

(Jan 2009) (Rev.1 May 2011) (Rev.2 Nov 2016)

The dedicated seawater ballast tanks in SOLAS Chapter II-1 (Regulation 3-2)

Regulation

Reg.3-2 of SOLAS II-1 (as in MSC.216(82)) reads:

"2 All dedicated seawater ballast tanks arranged in ships and double-side skin spaces arranged in bulk carriers of 150 m in length and upwards shall be coated during construction in accordance with the Performance standard for protective coatings for dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers, adopted by the Maritime Safety Committee by resolution MSC.215(82), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than chapter I."

Interpretation

The following tanks shall not be considered to be dedicated seawater ballast tanks and shall therefore be exempted from the application and requirements of the Performance standard for protective coatings for dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers (resolution MSC.215(82)), provided the coatings applied in the tanks described in paragraphs 2. and 3. below are confirmed by the coating manufacturer to be resistant to the media stored in these tanks and provided such coatings are applied and maintained according to the coating manufacturer's procedures.

1. Ballast tank identified as "Spaces included in Net Tonnage" in the 1969 ITC Certificate;

2. Sea water ballast tanks in passenger vessels also designated for the carriage of grey water or black water;

3. Sea water ballast tanks in livestock carriers also designated for the carriage of the livestock dung.

Note:

1. This UI is to be uniformly implemented by IACS Societies to ships as defined in Regulation 3-2.1 of SOLAS II-1.

2. Refer to TB for the reasons for exempting PSPC application to the a/m tanks.

3. Rev.2 to the interpretation is applicable to members for ships contracted for construction on or after 1 July 2017.

4. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC228 Machinery shutoff arrangements - Oil mist detector arrangements

(Dec 2008)

SOLAS Regulation II-1/27.5: Machinery – Automatic shutoff arrangements:

"Main turbine propulsion machinery and, where applicable, main internal combustion propulsion machinery and auxiliary machinery shall be provided with automatic shutoff arrangements in the case of failures ... which could lead rapidly to ... serious damage or explosion. The administration may permit overriding automatic shutoff devices."

Interpretation

The OMD arrangements (or engine bearing temperature monitors or equivalent devices) are part of the automatic shutoff arrangements required by SOLAS Reg. II-1/27.5, in the case of medium and high speed diesel engines of 2,250 kW and above or having cylinders of more than 300 mm bore.

For the case of low speed diesel engines of 2,250 kW and above or having cylinders of more than 300 mm bore, the OMD arrangements (or engine bearing temperature monitors or equivalent devices) are to initiate the alarm and slow down procedures.

The consequences of overriding automatic shutoff arrangements are to be established and documented.

Note:

1. This UI is to be uniformly implemented by IACS Members and Associates for engines:

   i) when an application for certification of an engine is dated on or after 1 January 2010; or

   ii) which are installed in new ship for which the date of contract for construction is on or after 1 January 2010.

2. The "contract for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural requirement (PR) No.29."

End of Document

IACS Int. 2008

SC 232 (May 2009) Steam Boilers and Boiler Feed Systems

SOLAS Reg. II-1/32.4

Every steam generating system which provides services essential for the safety of the ship, or which could be rendered dangerous by the failure of its feedwater supply, shall be provided with not less than two separate feedwater systems from and including the feed pumps, noting that a single penetration of the steam drum is acceptable. Unless overpressure is prevented by the pump characteristics, means shall be provided which will prevent overpressure in any part of the systems.

Interpretation

Where a steam generation system consists of two or more adequately sized boilers, and the feed water for each of these boilers is supplied by a single feed water pipe, the level of redundancy for the piping of the feedwater system is considered to comply with SOLAS II-1/32.4.

Note:

1. This Unified Interpretation is to be applied by all members and associate on ships contracted for construction on or after 1 January 2010. However members are not precluded from applying this UI before this date.

2. The 'contracted for construction' date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of 'contract for construction', refer to Procedural Requirement (PR) No. 29.

End of Document

SC 233 (Feb 2009) (Rev.1 Nov 2012)

LSA Code – lifeboat exterior colour

LSA Code item 1.2.2.6 as amended by MSC Res. 207(81)

LSA Code item 1.2.2.6 as amended by MSC Res. 207(81) reads:

"be of international or vivid reddish orange, or a comparably highly visible colour on all parts where this will assist detection at sea;"

Interpretation

'Highly visible colour' only includes colours of strong chromatic content, i.e. pure achromatic colours such as white and all shades of grey shall not be accepted as 'comparable' colours.

The above is applicable to the exterior of the rigid watertight enclosure of totally enclosed lifeboats and the exterior of the canopy of partially enclosed lifeboats.

Notes:

1. This UI is to be uniformly implemented by IACS Societies for approvals issued in accordance with SOLAS III/34 and the LSA Code from 1 July 2010.

2. Rev.1 of this UI is to be uniformly implemented by IACS Societies for approvals issued in accordance with SOLAS III/34 and the LSA Code from 1 July 2013.

End of Document

SC234 Initial Statutory Surveys at New Construction

(Apr 2009)
(Corr.1 Jul 2010)
(Rev.1 Feb 2014)
(Rev.2 Dec 2014)

Deleted June 2016.

LL76

(Apr 2009)
(Corr.1 Jul 2010)
(Rev.1 Feb 2014)
(Rev.2 Dec 2014)

MPC96

(Apr 2009)
(Corr.1 Jul 2010)
(Rev.1 Feb 2014)
(Rev.2 Dec 2014)

End of Document

SC 235

(Jan 2011) (Corr.1 Dec 2011) (Corr.2 June 2013)

Navigation bridge visibility to ship's side

(Chapter V, Regulation 22)

Regulation

SOLAS regulation V/22.1.6 reads:

"1 Ships of not less than 55 m in length, as defined in regulation 2.4, constructed on or after 1 July 1998, shall meet the following requirements:

.6 The ship's side shall be visible from the bridge wing;"

SOLAS regulation V/22.3 reads:

On ships of unconventional design which, in the opinion of the Administration, cannot comply with this regulation, arrangements shall be provided to achieve a level of visibility that is as near as practical to that described in this regulation.

Interpretation

1. The requirements of SOLAS regulation V/22.1.6 are accomplished when:

   .1 a view from the bridge wing plus a distance corresponding to a reasonable and safe distance of a seafarer leaning over the side of the bridge wing, which needs not to be more than 400 mm, to the location vertically right under the maximum beam of the ship at the lowest seagoing draught is not obscured; or

   .2 the sea surface at the lowest seagoing draught and with a transverse distance of 500 mm and more from the maximum beam throughout the ship's length is visible from the side of the bridge wing.

2. A schematic diagram depicting the unified interpretations is also attached herewith.

Notes:

1. This Unified Interpretation is to be applied by IACS Societies on ships contracted for construction on or after 1 January 2011.

2. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

3. In Corr.2, paragraphs 3 and 4 of the UI are amended to be in line with MSC.1/Circ.1350/Rev.1.

SC 235 (cont)

3. For particular types of ships* such as tug/tow boat, offshore supply vessel (OSV), rescue ship, work ship (e.g. floating crane), in meeting the requirements of SOLAS regulation V/22.1.16, the bridge wings shall at least extend to a location from which the sea surface, at the lowest seagoing draught and at a transverse distance of 1,500 mm from the maximum beam throughout the ship's length, is visible. If this ship type is changed to a type other than those addressed in this paragraph then the interpretation in this paragraph would no longer apply.

4. The use of a remote camera system may be accepted for ships of unconventional design, other than those mentioned in paragraph 3 above, as means for achieving the view of the ship's side from the bridge wing, provided:

- the installed remote camera system is to be redundant from the circuit breaker to the camera and screen, including communication cables, i.e. the system is to provide on each side of the ship redundancy of:

  - the power cables and circuit breakers from the main switchboard to the camera and the screen;
  - the camera;
  - the screen;
  - the transmission lines from the camera to the display screen; and
  - the components associated with these lines and cables;

- the remote camera system is powered from the ship's main source of electrical power and is not required to be powered by the emergency source of electrical power;

- the remote camera system is capable of continuous operation under environmental conditions as per UR E10;

- the view provided by the remote camera system complies with the requirements of regulation V/22.1.6 and is also displayed at locations where the manoeuvring of the ship may take place;

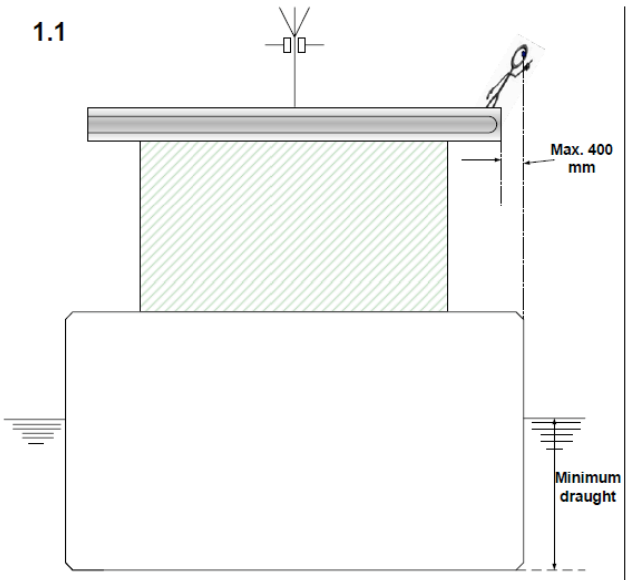
- the upper edge of the ship's side abeam is directly visible by the observer from locations where the manoeuvring of the ship may take place.

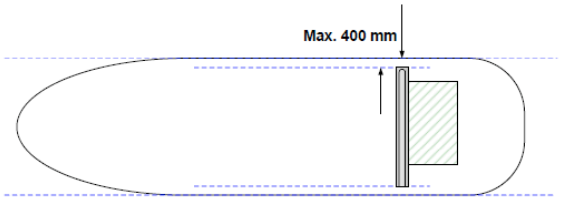
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* - Ships that are designed such that, in normal operations, they come along side, or operate in close proximity to, other vessels or offshore structures at sea.

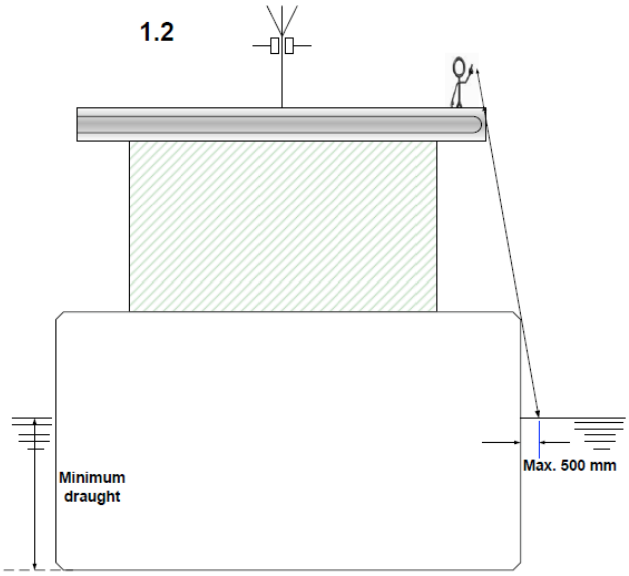
SC 235 (cont)

1.1

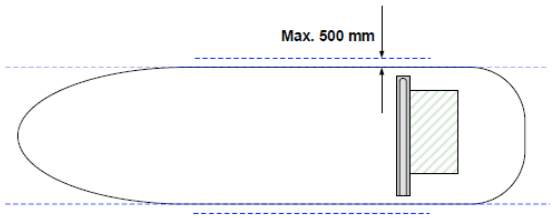




1.2



Wherever the maximum width of the ship occurs.



End of Document

SC 239 (June 2010)

Insulation with approved non-combustible materials (Reg. II-2/3.2.3)

Regulation

2 "A" class divisions are those divisions formed by bulkheads and decks which comply with the following criteria:

.3 They are insulated with approved non-combustible materials such that the average temperature of the unexposed side will not rise more than 140°C above the original temperature, nor will the temperature, at any one point, including any joint, rise more than 180°C above the original temperature, within the time listed below:

class "A-60"	*60 min*
class "A-30"	*30 min*
class "A-15"	*15 min*
class "A-0"	*0 min*

Interpretation

Insulated "A" class bulkheads and decks used on board ships, including the means of affixing the insulation to the "A" class structural members, shall be consistent with the materials, details and arrangements used during, and documented in the test reports issued for, the approval test for that insulating material.

Note:

1. This UI is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2012.

2. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 240 (Oct 2010) (Corr.1 Sept 2011) Closing device for ventilation of battery rooms (SOLAS II-2/5.2.1.1)

SOLAS Reg. II-2/5.2.1.1

The main inlets and outlets of all ventilation systems shall be capable of being closed from outside the spaces being ventilated. The means of closing shall be easily accessible as well as prominently and permanently marked and shall indicate whether the shut-off is open or closed.

Interpretation

Battery room ventilators are to be fitted with a means of closing whenever:

i) The battery room does not open directly onto an exposed deck.

ii) The ventilation opening for the battery room is required to be fitted with a closing device according to the Load Line Convention (i.e. the height of the opening does not extend to more than 4.5 m (14.8 feet) above the deck for position 1 or to more than 2.3 m (7.5 feet) above the deck in position 2; or

iii) The battery room is fitted with a fixed gas fire extinguishing system.

Where a battery room ventilator is fitted with a closing device, then a warning notice stating, for example “This closing device is to be kept open and only closed in the event of fire or other emergency – Explosive gas”, is to be provided at the closing device to mitigate the possibility of inadvertent closing.

Notes:

1. This UI is to be uniformly implemented by IACS Societies on ships contracted for construction (as defined in IACS PR29) on or after 1 July 2011.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 241 Manually operated call points (SOLAS II-2/7.7)

(Nov 2010)

Regulations

SOLAS Ch. II-2 Reg. 7.7

Manually operated call points complying with the Fire Safety Systems Code shall be installed throughout the accommodation spaces, service spaces and control stations. One manually operated call point shall be located at each exit. Manually operated call points shall be readily accessible in the corridors of each deck such that no part of the corridor is more than 20 m from a manually operated call point.

Interpretation

The phrase 'Manually operated call points complying with the Fire Safety Systems Code shall be installed throughout the accommodation spaces, service spaces and control stations' does not require the fitting of a manually operated call point in an individual space within the accommodation spaces, service spaces and control stations. However, a manually operated call point shall be located at each exit (inside or outside) to the open deck from the corridor such that no part of the corridor is more than 20 m from a manually operated call point. Service spaces and control stations which have only one access, leading directly to the open deck, shall have a manually operated call point not more than 20 m (measured along the access route using the deck, stairs and/or corridors) from the exit. A manually operated call point is not required to be installed for spaces having little or no fire risk, such as voids and carbon dioxide rooms, nor at each exit from the navigation bridge, in cases where the control panel is located in the navigation bridge.

Note:

This Unified Interpretation is to be uniformly implemented by IACS Societies from 1 December 2010.

End of Document

SC 242

(Jan 2011) (Corr.1 Aug 2011) (Rev.1 Apr 2016, Deleted on 20 Dec 2017) (Corr.1 Aug 2011 reinstated from 21 Dec 2017) (Rev.2 Jan 2020)

Arrangements for steering capability and function on ships fitted with propulsion and steering systems other than traditional arrangements for a ship's directional control

(Chapter II-1, Regulations 28.3, 29.1, 29.2.1, 29.3, 29.4, 29.6.1, 29.14 and 30.2)

Introduction

The SOLAS requirements for steering gears have been established for ships having a traditional propulsion system and one rudder. For ships fitted with alternative propulsion and steering arrangements, such as but not limited to, azimuthing propulsors or water jet propulsion systems, SOLAS Regulations II-1/28.3, 29.1, 29.2.1, 29.3, 29.4, 29.6.1, 29.14 and 30.2 are to be interpreted as follows, except 29.14, which is limited to the steering systems having a certain steering capability due to ship speed also in case propulsion power has failed.

Note:

1) This UI is to be uniformly implemented by IACS Members and Associates for propulsion and steering systems other than traditional arrangements for a ship's directional control:

   a) when an application for certification of non traditional steering systems is dated on or after 1 January 2012; or

   b) which are installed in a new ship for which the date of contract for construction is on or after 1 January 2012.

2) Rev.1 of this UI is to be uniformly implemented by IACS Societies for propulsion and steering systems other than traditional arrangements for a ship's directional control:

   a) when an application for certification of non traditional steering systems is dated on or after 1 July 2017; or

   b) which are installed in a new ship for which the date of contract for construction is on or after 1 July 2017.

3) Rev.1 of this UI is deleted on 20 Dec 2017 and Corr.1 Aug 2011 is reinstated from 21 Dec 2017.

4) The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural requirement (PR) No.29."

5) Rev.2 of this UI is to be uniformly implemented by IACS Societies for propulsion and steering systems other than traditional arrangements for a ship's directional control:

   a) when an application for certification of non traditional steering systems is dated on or after 1 July 2020; or

   b) which are installed in a new ship for which the date of contract for construction is on or after 1 July 2020.

SC 242 (cont)

Regulation 28 - Means of going astern

Regulation 28.3

28.3 The stopping times, ship headings and distances recorded on trials, together with the results of trials to determine the ability of ships having multiple propellers to navigate and manoeuvre with one or more propellers inoperative, shall be available on board for the use of the master or designated personnel.

Interpretation

The stopping times, ship headings and distances recorded on trials, together with the results of trials to determine the ability of ships having multiple propulsion/steering arrangements to navigate and manoeuvre with one or more of these devices inoperative, shall be available on board for the use of the master or designated personnel.

Regulation 29 – Steering Gear

Regulation 29.1

29.1 Unless expressly provided otherwise, every ship shall be provided with a main steering gear and an auxiliary steering gear to the satisfaction of the administration. The main steering gear and the auxiliary steering gear shall be so arranged that the failure of one of them will not render the other one inoperative.

Interpretation

For a ship fitted with multiple steering propulsion units, such as but not limited to azimuthing propulsors or water jet propulsion systems each of the steering-propulsion units shall be provided with a main steering gear and an auxiliary steering gear or with two or more identical steering actuating systems in compliance with interpretation of SOLAS regulation II-1/29.6.1. The main steering gear and the auxiliary steering gear shall be so arranged that the failure of one of them will not render the other one inoperative.

For a ship fitted with a single steering-propulsion unit, the requirement in SOLAS regulation II-1/29.1 is considered satisfied if the steering gear is provided with two or more steering actuating systems and is in compliance with interpretation of SOLAS regulation II-1/29.6.1. A detailed risk assessment is to be submitted in order to demonstrate that in the case of any single failure in the steering gear, control system and power supply the ship steering is maintained.

Regulation 29.2.1

29.2.1 All the steering gear components and the rudder stock are to be of sound reliable construction to the satisfaction of the Administration. Special consideration shall be given to the suitability of any essential component which is not duplicated. Any such essential component shall, where appropriate, utilize anti-friction bearings such as ball bearings, roller bearings or sleeve bearings which shall be permanently lubricated or provided with lubrication fittings.

Interpretation

All components used in steering arrangements for ship directional control are to be of sound reliable construction to the satisfaction of the Administration or recognized organizations acting on its behalf. Special consideration shall be given to the suitability of any essential

SC 242 (cont)

component which is not duplicated. Any such essential component shall, where appropriate, utilize anti-friction bearings such as ball bearings, roller bearings or sleeve bearings which shall be permanently lubricated or provided with lubrication fittings.

Regulation 29.3

29.3 The main steering gear and rudder stock shall be:

.1 of adequate strength and capable of steering the ship at maximum ahead service speed which shall be demonstrated;

.2 capable of putting the rudder over from 35° on one side to 35° on the other side with the ship at its deepest seagoing draught and running ahead at maximum ahead service speed and under the same conditions, from 35° on either side to 30° on the other side in not more than 28 s; where it is impractical to demonstrate compliance with this requirement during sea trials with the ship at its deepest seagoing draught and running ahead at the speed corresponding to the number of maximum continuous revolutions of the main engine and maximum design pitch, ships regardless of date of construction may demonstrate compliance with this requirement by one of the following methods:

.1 during sea trials the ship is at even keel and the rudder fully submerged whilst running ahead at the speed corresponding to the number of maximum continuous revolutions of the main engine and maximum design pitch; or

.2 where full rudder immersion during sea trials cannot be achieved, an appropriate ahead speed shall be calculated using the submerged rudder blade area in the proposed sea trial loading condition. The calculated ahead speed shall result in a force and torque applied to the main steering gear which is at least as great as if it was being tested with the ship at its deepest seagoing draught and running ahead at the speed corresponding to the number of maximum continuous revolutions of the main engine and maximum design pitch; or

.3 the rudder force and torque at the sea trial loading condition have been reliably predicted and extrapolated to the full load condition. The speed of the ship shall correspond to the number of maximum continuous revolutions of the main engine and maximum design pitch of the propeller;

.3 operated by power where necessary to meet the requirements of paragraph 3.2 and in any case when the Administration requires a rudder stock of over 120 mm diameter in way of the tiller, excluding strengthening for navigation in ice;

.4 so designed that they will not be damaged at maximum astern speed; however, this design requirement need not be proved by trials at maximum astern speed and maximum rudder angle.

Interpretation

The main steering arrangements for ship directional control shall be:

.1 of adequate strength and capable of steering the ship at maximum ahead service speed which shall be demonstrated;

SC 242 (cont)

.2 capable of changing direction of the steering-propulsion unit from one side to the other at declared steering angle limits at an average turning speed of not less than 2.3°/s with the ship running ahead at maximum ahead service speed;

.3 for all ships, operated by power; and

.4 so designed that they will not be damaged at maximum astern speed; this design requirement need not be proved by trials at maximum astern speed and declared steering angle limits.

Ship manoeuvrability tests, such as according to Resolution MSC.137(76) on Standards for ship manoeuvrability, are to be carried out with steering angles not exceeding the declared steering angle limits.

> **Definition**: Declared steering angle limits are the operational limits in terms of maximum steering angle, or equivalent, according to manufacturers' guidelines for safe operation, also taking into account the ship's speed or propeller torque/speed or other limitation; the "declared steering angle limits" are to be declared by the directional control system manufacturer for each ship specific non-traditional steering mean; ship manoeuvrability tests, such as those in the Standards for ship manoeuvrability (resolution MSC.137(76)) are to be carried out with steering angles not exceeding the declared steering angle limits.

Regulation 29.4

29.4 The auxiliary steering gear shall be:

.1 of adequate strength and capable of steering the ship at navigable speed and of being brought speedily into action in an emergency;

.2 capable of putting the rudder over from 15° on one side to 15° on the other side in not more than 60 s with the ship at its deepest sea-going draught and running ahead at one half of the maximum ahead service speed or 7 knots, whichever is the greater; where it is impractical to demonstrate compliance with this requirement during sea trials with the ship at its deepest seagoing draught and running ahead at one half of the speed corresponding to the number of maximum continuous revolutions of the main engine and maximum design pitch or 7 knots, whichever is greater, ships regardless of date of construction, including those constructed before 1 January 2009, may demonstrate compliance with this requirement by one of the following methods:

> *.1 during sea trials the ship is at even keel and the rudder fully submerged whilst running ahead at one half of the speed corresponding to the number of maximum continuous revolutions of the main engine and maximum design pitch or 7 knots, whichever is greater; or*
>
> *.2 where full rudder immersion during sea trials cannot be achieved, an appropriate ahead speed shall be calculated using the submerged rudder blade area in the proposed sea trial loading condition. The calculated ahead speed shall result in a force and torque applied to the auxiliary steering gear which is at least as great as if it was being tested with the ship at its deepest seagoing draught and running ahead at one half of the speed corresponding to the number of maximum continuous revolutions of the main engine and maximum design pitch or 7 knots, whichever is greater; or*

SC 242 (cont)

.3 the rudder force and torque at the sea trial loading condition have been reliably predicted and extrapolated to the full load condition; and

.3 operated by power where necessary to meet the requirements of paragraph 4.2 and in any case when the Administration requires a rudder stock of over 230 mm diameter in way of the tiller, excluding strengthening for navigation in ice.

Interpretation

The auxiliary steering arrangements for ship directional control shall be:

.1 of adequate strength and capable of steering the ship at navigable speed and of being brought speedily into action in an emergency;

.2 capable of changing direction of the ship's directional control system from one side to the other at declared steering angle limits at an average turning speed of not less than 0.5°/s with the ship running ahead at one half of the maximum ahead service speed or 7 knots, whichever is the greater; and

.3 for all ships, operated by power where necessary to meet the requirements of SOLAS regulation II-1/29.4.2 and in any ship having power of more than 2,500 kW propulsion power per steering-propulsion unit.

Ship manoeuvrability tests, such as according to Resolution MSC.137(76), are to be carried out with steering angles not exceeding the declared steering angle limits.

The definition of "declared steering angle limits", set out in the interpretation of Regulation 29.3 above, applies.

Regulation 29.6.1

29.6.1 Where the main steering gear comprises two or more identical power units, an auxiliary steering gear need not be fitted, provided that:

.1 in a passenger ship, the main steering gear is capable of operating the rudder as required by paragraph 3.2 while any one of the power units is out of operation;

.2 in a cargo ship, the main steering gear is capable of operating the rudder as required by paragraph 3.2 while operating with all power units;

.3 the main steering gear is arranged so that after a single failure in its piping system or in one of the power units the defect can be isolated so that steering capability can be maintained or speedily regained.

Interpretation

For a ship fitted with a single steering-propulsion unit where the main steering gear comprises two or more identical power units and two or more identical steering actuators, an auxiliary steering gear need not be fitted provided that the steering gear:

.1 in a passenger ship is capable of satisfying the requirements in interpretation to SOLAS regulation II-1/29.3 while any one of the power units is out of operation;

SC 242 (cont)

.2 in a cargo ship, is capable of satisfying the requirements in Interpretation to SOLAS regulation II-1/29.3 while operating with all power units; and

.3 is arranged so that after a single failure in its piping system or in one of the power units' steering capability can be maintained or speedily regained.

For a ship fitted with multiple steering propulsion units, where each main steering system comprises two or more identical steering actuating systems, an auxiliary steering gear need not be fitted provided that each steering gear:

.1 in a passenger ship, is capable of satisfying the requirements in Interpretation to SOLAS regulation II-1/29.3 while any one of the steering gear steering actuating systems is out of operation;

.2 in a cargo ship, is capable of satisfying the requirements in Interpretation to SOLAS regulation II-1/29.3 while operating with all steering gear steering actuating systems;

.3 is arranged so that after a single failure in its piping or in one of the steering actuating systems, steering capability can be maintained or speedily regained

the above capacity requirements apply regardless whether the steering systems are arranged with common or dedicated power units.

Definition: *Steering gear power unit* – For the purposes of alternative steering arrangements, the steering gear power unit is to be considered as defined in SOLAS regulation II-1/3. For electric steering gears, refer to SOLAS regulation II-1/3; electric steering motors are to be considered as part of the power unit and actuator.

Regulation 29.14

29.14 Where the rudder stock is required to be over 230 mm diameter in way of the tiller, excluding strengthening for navigation in ice, an alternative power supply, sufficient at least to supply the steering gear power unit which complies with the requirements of paragraph 4.2 and also its associated control system and the rudder angle indicator, shall be provided automatically, within 45 s, either from the emergency source of electrical power or from an independent source of power located in the steering gear compartment. This independent source of power shall be used only for this purpose. In every ship of 10,000 gross tonnage and upwards, the alternative power supply shall have a capacity for at least 30 min of continuous operation and in any other ship for at least 10 min.

Interpretation

This interpretation is valid to the steering propulsion units having a certain proven steering capability due to ship speed also in case propulsion power has failed.

Where the propulsion power exceeds 2,500kW per thruster unit, an alternative power supply, sufficient at least to supply the steering arrangements which complies with the requirements of SOLAS regulation II-1/29.4.2 and also its associated control system and the steering gear response indicator, shall be provided automatically, within 45 s, either from the emergency source of electrical power or from an independent source of power located in the steering gear compartment. This independent source of power shall be used only for this purpose. In every ship of 10,000 gross tonnage and upwards, the alternative power supply shall have a capacity for at least 30 min of continuous operation and in any other ship for at least 10 min.

SC 242 (cont)

Regulation 30 - Additional requirements for electric and electrohydraulic steering gear

Regulation 30.2

30.2 Each electric or electrohydraulic steering gear comprising one or more power units shall be served by at least two exclusive circuits fed directly from the main switchboard; however, one of the circuits may be supplied through the emergency switchboard. An auxiliary electric or electrohydraulic steering gear associated with a main electric or electrohydraulic steering gear may be connected to one of the circuits supplying this main steering gear. The circuits supplying an electric or electro hydraulic steering gear shall have adequate rating for supplying all motors which can be simultaneously connected to them and may be required to operate simultaneously.

Interpretation

For a ship fitted with multiple steering systems, the requirements in SOLAS regulation II-1/30.2 are to be applied to each of the steering systems**.**

End of Document

SC 243 (Mar 2011) (Rev.1 May 2012) Access to controls for closing of ventilation of vehicle, special category and ro-ro spaces (SOLAS II-2/20.3.1.4.1)

Regulations

SOLAS Ch. II-2 Reg. 20.3.1.4.1

Arrangements shall be provided to permit a rapid shutdown and effective closure of the ventilation system from outside of the space in case of fire, taking into account the weather and sea conditions.

Interpretation

Access routes to the controls for closure of the ventilation system "permit a rapid shutdown" and adequately "take into account the weather and sea conditions" if the routes:

- are clearly marked and at least 600 mm clear width;
- are provided with a single handrail or wire rope lifeline not less than 10 mm in diameter, supported by stanchions not more than 10 m apart in way of any route which involves traversing a deck exposed to weather; and
- are fitted with appropriate means of access (such as ladders or steps) to the closing devices of ventilators located in high positions (i.e. 1.8 m and above).

Alternatively, remote closing and position indicator arrangements from the bridge or a fire control station for those ventilator closures is acceptable.

Notes:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2012.
2. Rev.1 is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2013.
3. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 244

(May 2011) (Rev.1 Nov 2012) (Corr.1 Nov 2015)

Load testing of hooks for primary release of lifeboats and rescue boats

(IMO Res. MSC.81(70), Part 2, Ch. 5.3.4)

Regulation

5.3.4 The connection of each release gear which is fixed to the boat should be subjected to a load equal to the weight of the boat with its full complement of persons and equipment (or two times the weight of the boat in the case of single fall systems). There should be no damage to the release gear or its connection to the boat.

Interpretation

1. The above regulation applies only to lifeboats and rescue boats launched by falls.

2. The test does not apply to the secondary means of launching for freefall lifeboats.

3. The test may be carried out onboard the ship or onshore, either at the manufacturer's plant or at the shipyard, by using an appropriate mock-up of the launching arrangements which is equivalent to the launching arrangement installed onboard the ship.

4. The "weight of the boat" to be considered for the load in the case of single fall systems is the "weight of the boat with its full complement of persons and equipment", which according to MSC.81(70), Part 2, Paragraph 5.3.4 shall be multiplied by two.

Notes:

1. This UI is to be uniformly implemented by IACS Societies on ships the keels of which are laid from 1 July 2012.

2. Rev.1 of this UI is to be uniformly implemented by IACS Societies on ships the keels of which are laid from 1 January 2014.

End of Document

SC 245
(June 2011)
(Corr.1 Jan 2012)
(Rev.1 Jan 2023)

Suction and discharge piping of emergency fire pumps, which are run through the machinery space

Interpretation of SOLAS II-2 Regulation 10.2.1.4.1

SOLAS II-2 Regulation 10.2.1.4.1 reads as follows:

The emergency fire pump, its seawater inlet, and suction and delivery pipes and isolating valves shall be located outside the machinery space. If this arrangement cannot be made, the sea-chest may be fitted in the machinery space if the valve is remotely controlled from a position in the same compartment as the emergency fire pump and the suction pipe is as short as practicable. Short lengths of suction or discharge piping may penetrate the machinery space, provided they are enclosed in a substantial steel casing, or are insulated to "A-60" class standards. The pipes shall have substantial wall thickness, but in no case less than 11 mm, and shall be welded except for the flanged connection to the sea inlet valve.

Interpretation

1 “the valve” in second sentence means “sea inlet valve”;

2 in cases where suction or discharge piping penetrating machinery spaces are enclosed in a substantial steel casing, or are insulated to “A-60” class standards, it is not necessary to enclose or insulate “distance pieces”, “sea inlet valves” and “sea-chests”.

3 the method for insulating pipes to ““A-60” class standards” is that they are to be covered/protected in a practical manner by insulation material which is approved as a part of “A-60” class divisions in accordance with the FTP Code; and

4 where the sea inlet valve is in the machinery space, the valve should not be a fail-close type. Where the sea inlet valve is in the machinery space and is not a fail-open type, measures should be taken so that the valve can be opened in the event of fire, e.g. control piping, actuating devices and/or electric cables with fire resistant protection equivalent to “A- 60” class standards.

5 In cases where main fire pumps are provided in compartments outside machinery spaces and where the emergency fire pump suction or discharge piping penetrates such compartments, the above interpretation is to be applied to the piping.

Note:

1. This Unified Interpretation is to be applied by IACS Societies on ships contracted for construction on or after 1 July 2012.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

3. Rev 1 of this UI is to be applied by IACS Societies on ships contracted for construction on or after 1 July 2023.

End of Document

SC 246 Steering gear test with the vessel not at the deepest seagoing draught

(June 2011) (Corr.1 Dec 2011) (Rev.1 Sept 2015)

Regulations

1. SOLAS II-1/29.3:

The main steering gear and rudder stock shall be:

.1 of adequate strength and capable of steering the ship at maximum ahead service speed which shall be demonstrated;

.2 capable of putting the rudder over from 35° on one side to 35° on the other side with the ship at its deepest seagoing draught and running ahead at maximum ahead service speed and, under the same conditions, from 35° on either side to 30° on the other side in not more than 28 s;

where it is impractical to demonstrate compliance with this requirement during sea trials with the ship at its deepest seagoing draught and running ahead at the speed corresponding to the number of maximum continuous revolutions of the main engine and maximum design pitch, ships regardless of date of construction may demonstrate compliance with this requirement by one of the following methods:

.1 during sea trials the ship is at even keel and the rudder fully submerged whilst running ahead at the speed corresponding to the number of maximum continuous revolutions of the main engine and maximum design pitch; or

.2 where full rudder immersion during sea trials cannot be achieved, an appropriate ahead speed shall be calculated using the submerged rudder blade area in the proposed sea trial loading condition. The calculated ahead speed shall result in a force and torque applied to the main steering gear which is at least as great as if it was being tested with the ship at its deepest seagoing draught and running ahead at the speed corresponding to the number of maximum continuous revolutions of the main engine and maximum design pitch; or

.3 the rudder force and torque at the sea trial loading condition have been reliably predicted and extrapolated to the full load condition. The speed of the ship shall correspond to the number of maximum continuous revolutions of the main engine and maximum design pitch of the propeller;

.3 operated by power where necessary to meet the requirements of paragraph 3.2 and in any case when the Administration requires a rudder stock of over 120 mm diameter in way of the tiller, excluding strengthening for navigation in ice; and

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Note:

1 This UI is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2012.

2. Rev.1 of UI SC246 is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2017.

3. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

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.4 so designed that they will not be damaged at maximum astern speed; however, this design requirement need not be proved by trials at maximum astern speed and maximum rudder angle.

2. SOLAS II-1/29.4:

The auxiliary steering gear shall be:

.1 of adequate strength and capable of steering the ship at navigable speed and of being brought speedily into action in an emergency;

.2 capable of putting the rudder over from 15° on one side to 15° on the other side in not more than 60 s with the ship at its deepest seagoing draught and running ahead at one half of the maximum ahead service speed or 7 knots, whichever is the greater;

where it is impractical to demonstrate compliance with this requirement during sea trials with the ship at its deepest seagoing draught and running ahead at one half of the speed corresponding to the number of maximum continuous revolutions of the main engine and maximum design pitch or 7 knots, whichever is greater, ships regardless of date of construction, including those constructed before 1 January 2009, may demonstrate compliance with this requirement by one of the following methods:

.1 during sea trials the ship is at even keel and the rudder fully submerged whilst running ahead at one half of the speed corresponding to the number of maximum continuous revolutions of the main engine and maximum design pitch or 7 knots, whichever is greater; or

.2 where full rudder immersion during sea trials cannot be achieved, an appropriate ahead speed shall be calculated using the submerged rudder blade area in the proposed sea trial loading condition. The calculated ahead speed shall result in a force and torque applied to the auxiliary steering gear which is at least as great as if it was being tested with the ship at its deepest seagoing draught and running ahead at one half of the speed corresponding to the number of maximum continuous revolutions of the main engine and maximum design pitch or 7 knots, whichever is greater; or

.3 the rudder force and torque at the sea trial loading condition have been reliably predicted and extrapolated to the full load condition; and

.3 operated by power where necessary to meet the requirements of paragraph 4.2 and in any case when the Administration requires a rudder stock of over 230 mm diameter in way of the tiller, excluding strengthening for navigation in ice.

Interpretation

In order for ships to comply with the performance requirements stated in regulations 29.3.2 and 29.4.2 they are to have steering gear capable of meeting these performance requirements when at their deepest seagoing draught.

In order to demonstrate this ability, the trials may be conducted in accordance with Section 6.1.5.1 of ISO 19019:2005 Sea-going vessels and marine technology – Instructions for planning, carrying out and reporting sea trials.

On all occasions when trials are conducted with the vessel not at the deepest seagoing draught the loading condition can be accepted on the conditions that either:

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1. the rudder is fully submerged (at zero speed waterline) and the vessel is in an acceptable trim condition.

2. the rudder torque at the trial loading condition have been reliably predicted (based on the system pressure measurement) and extrapolated to the maximum seagoing draught condition using the following method to predict the equivalent torque and actuator pressure at the deepest seagoing draught:

$$Q_F = Q_T \alpha$$

$$\alpha = 1.25(\frac{A_F}{A_T})(\frac{V_F}{V_T})^2$$

Where:

α is the Extrapolation factor.

Q_F is the rudder stock moment for the deepest service draught and maximum service speed condition.
Q_T is the rudder stock moment for the trial condition.
A_F is the total immersed projected area of the movable part of the rudder in the deepest seagoing condition.
A_T is the total immersed projected area of the movable part of the rudder in the trial condition.
V_F is the contractual design speed of the vessel corresponding to the maximum continuous revolutions of the main engine at the deepest seagoing draught.
V_T is the measured speed of the vessel (considering current) in the trial condition.

Where the rudder actuator system pressure is shown to have a linear relationship to the rudder stock torque the above equation can be taken as:

$$P_F = P_T \alpha$$

Where:
P_F is the estimated steering actuator hydraulic pressure in the deepest seagoing draught condition.
P_T is the maximum measured actuator hydraulic pressure in the trial condition.

Where constant volume fixed displacement pumps are utilised then the regulations can be deemed satisfied if the estimated steering actuator hydraulic pressure at the deepest draught is less than the specified maximum working pressure of the rudder actuator. Where a variable delivery pump is utilised pump data should be supplied and interpreted to estimate the delivered flow rate corresponds to the deepest seagoing draught in order to calculate the steering time and allow it to be compared to the required time.

Where A_T is greater than $0.95A_F$ there is no need for extrapolation methods to be applied.

3. Alternatively the designer or builder may use computational fluid dynamic (CFD) studies or experimental investigations to predict the rudder stock moment at the full sea going draught condition and service speed. These calculations or experimental investigations are to be to the satisfaction of the Society.

In any case for the main steering gear trial, the speed of the ship corresponding to the number of maximum continuous revolution of main engine and maximum design pitch applies.

End of Document

SC 247 (Sept 2011) Emergency exit hatches to open deck (SOLAS Reg. II-2/13.1)

SOLAS Reg. II-2/13.1 Purpose

The purpose of this regulation is to provide means of escape so that persons on board can safely and swiftly escape to the lifeboat and liferaft embarkation deck. For this purpose, the following functional requirements shall be met:

.1 safe escape routes shall be provided;

.2 escape routes shall be maintained in a safe condition, clear of obstacles; and

.3 additional aids for escape shall be provided as necessary to ensure accessibility, clear marking, and adequate design for emergency situations.

Interpretation

To facilitate a swift and safe means of escape to the lifeboat and liferaft embarkation deck, the following provisions apply to overhead hatches fitted along the escape routes addressed by Reg. II-2/13:

1. the securing devices shall be of a type which can be opened from both sides;

2. the maximum force needed to open the hatch cover should not exceed 150 N; and

3. the use of a spring equalizing, counterbalance or other suitable device on the hinge side to reduce the force needed for opening is acceptable.

Notes

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2012.

2. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 248 (Sept 2011) (Rev.1, Apr 2015) Greatest Launching Height for a Free-Fall Lifeboat (LSA Code 1.1.4)

LSA Code, paragraph 1.1.4 (Free-fall certification height):

"Free-fall certification height is the greatest launching height for which the lifeboat is to be approved, measured from the still water surface to the lowest point on the lifeboat when the lifeboat is in the launch configuration."

LSA Code, section 4.7.3 (Performance requirements):

"4.7.3.1 Each free-fall lifeboat shall make positive headway immediately after water entry and shall not come into contact with the ship after a free-fall launching against a trim of up to 10^o and a list of up to 20^o either way from the certification height when fully equipped and loaded…

4.7.3.2 For oil tankers, chemical tankers and gas carriers with a final angle of heel greater than 20^o calculated in accordance with the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, and the recommendations of the Organization, as applicable, a lifeboat shall be capable of being free-fall launched at the final angle of heel and on the base of the final waterline of that calculation."*

LSA Code, paragraph 6.1.1.1 (Launching and embarkation appliances):

"With the exception of the secondary means of launching for free-fall lifeboats, each launching appliance shall be so arranged that the fully equipped survival craft or rescue boat it serves can be safely launched against unfavourable conditions of trim of up to 10^o and a list of up to 20^o either way…"

LSA Code, paragraph 6.1.4.4 (Launching appliances for free-fall lifeboats):

"The launching appliance shall be designed and arranged so that in its ready to launch position, the distance from the lowest point on the lifeboat it serves to the water surface with the ship in its lightest seagoing condition does not exceed the lifeboat's free-fall certification height, taking into consideration the requirements of paragraph 4.7.3."

Notes

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2012.

2. Rev.1 to the interpretation is applicable for ships contracted for construction on or after 1 July 2015.

3. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

SC 248 (cont)

SOLAS regulation III/3.13 (Lightest seagoing condition):

"Lightest sea going condition is the loading condition with the ship on even keel, without cargo, with 10% stores and fuel remaining and in the case of a passenger ship with the full number of passengers and crew and their luggage."

Interpretation

The 'greatest launching height' of a free-fall lifeboat shall be determined based on the lightest seagoing condition as defined in SOLAS III/3.13.

The *"water surface"* used in determining the distance referred to in 6.1.4.4 of the LSA Code is the waterline typically associated with the lightest sea going condition as defined in SOLAS regulation III/3.13.

The trim and heel conditions in paragraph 6.1.1.1 of the LSA Code and in the phrase *"taking into consideration the requirements of paragraph 4.7.3"* in paragraph 6.1.4.4 of the Code should be used only to determine the ability of the lifeboat to be safely launched within the operational capabilities of the equipment and without contacting the ship under the specified conditions, and not in the determination of the *"greatest launching height"*.

End of Document

SC 249 Implementation of SOLAS II-1, Regulation 3-5 and MSC.1/Circ.1379

(Oct 2011) (Corr.1 Apr 2012) (Rev.1 Feb 2013) (Rev.2 Jan 2024)

SOLAS Chapter II-1, Regulation 3-5

"From 1 January 2011, for all ships, new installation of materials which contain asbestos shall be prohibited."

MSC.1/Circ.1379

"In the context of this regulation, new installation of materials containing asbestos means any new physical installation on board. Any material purchased prior to 1 January 2011 being kept in the ship's store or in the shipyard for a ship under construction, should not be permitted to be installed after 1 January 2011 as a working part."

Unified Interpretations

SOLAS II-1, Regulation 3-5
1. Verification that "new installation of materials which contain asbestos" under SOLAS II-1/3-5 is not made on ships requires the Recognized Organization to review asbestos-free declarations and supporting documentation, for the structure, machinery, electrical installations and equipment covered by the SOLAS Convention, which is to be provided to the Recognized Organization by shipyards, repair yards, and equipment manufacturers taking into account appendix 6 of the 2023 Guidelines for the development of the inventory of hazardous materials (resolution MEPC.379(80)) for:

- new construction (keel laid, or at a similar stage of construction, on or after 1 July 2012);

- conversions (contract date for the conversion or, in the absence of a contract, the date on which the work identifiable with the specific conversion begins) on or after 1 July 2012;

NOTES:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies not later than 1 July 2012.

2. Revision 1 of this Unified Interpretation is to be uniformly implemented by IACS Societies not later than 1 July 2013.

3. Revision 2 of this Unified Interpretation is to be uniformly implemented by IACS Societies on ships not later than 1 January 2025.

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MSC.1/Circ.1379

2. The phrase "*new installation of materials containing asbestos*"[1] in MSC.1/Circ.1379:

- means that material used (i.e., repaired, replaced, maintained or added) as a working part of the ship as per Annex 1 which is installed on or after 1 July 2012 is required to be documented with an asbestos-free declaration. The Administration or Recognized Organization shall review this documentation, in consultation with the Company's nominated person responsible to control asbestos containing material onboard as per the Safety Management System in accordance with the Guidelines for maintenance and monitoring of on-board material containing asbestos (MSC/Circ.1045), during annual safety construction and safety equipment surveys; and

- does not preclude the stowage of material which contains asbestos onboard (e.g., spare parts existing on board as of 1 July 2012).

3. The phrase "*should not be permitted to be installed after 1 January 2011 as a working part*" in MSC.1/Circ.1379 means that replacement, maintenance or addition of materials which contain asbestos used for the structure, machinery, electrical installations and equipment covered by the SOLAS Convention is prohibited.

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1 "Materials containing asbestos" means that asbestos is present in the product/material above the threshold value stipulated in row A-1 of the table A of appendix 1 of resolution MEPC.379(80).

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Annex 1

Structure and/or equipment	Component
Propeller shafting	Packing with low pressure hydraulic piping flange Packing with casing Clutch Brake lining Synthetic stern tubes
Diesel engine	Packing with piping flange Lagging material for fuel pipe Lagging material for exhaust pipe Lagging material turbocharger
Turbine engine	Lagging material for casing Packing with flange of piping and valve for steam line, exhaust line and drain line Lagging material for piping and valve of steam line, exhaust line and drain line
Boiler	Insulation in combustion chamber Packing for casing door Lagging material for exhaust pipe Gasket for manhole Gasket for hand hole Gas shield packing for soot blower and other hole Packing with flange of piping and valve for steam line, exhaust line, fuel line and drain line Lagging material for piping and valve of steam line, exhaust line, fuel line and drain line
Exhaust gas economizer	Packing for casing door Packing with manhole Packing with hand hole Gas shield packing for soot blower Packing with flange of piping and valve for steam line, exhaust line, fuel line and drain line Lagging material for piping and valve of steam line, exhaust line, fuel line and drain line
Incinerator	Packing for casing door Packing with manhole Packing with hand hole Lagging material for exhaust pipe
Auxiliary machinery (pump, compressor, oil purifier, crane)	Packing for casing door and valve Gland packing Brake lining
Heat exchanger	Packing with casing Gland packing for valve Lagging material and insulation

SC 249 (cont)

Structure and/or equipment	Component
Valve	Gland packing with valve, sheet packing with piping flange Gasket with flange of high pressure and/or high temperature
Pipe, duct	Lagging material and insulation
Tank (fuel tank, hot water, tank, condenser), other equipment (fuel strainer, lubricant oil strainer)	Lagging material and insulation
Electric equipment	Insulation material
Ceiling, floor and wall in accommodation area	Ceiling, floor, wall
Fire door	Packing, construction and insulation of the fire door
Inert gas system	Packing for casing, etc.
Air-conditioning system	Sheet packing, lagging material for piping and flexible joint
Miscellaneous	Ropes Thermal insulating materials Fire shields/fire proofing Space/duct insulation Electrical cable materials Brake linings Floor tiles/deck underlay Steam/water/vent flange gaskets Adhesives/mastics/fillers Sound damping Moulded plastic products Sealing putty Shaft/valve packing Electrical bulkhead penetration packing Circuit breaker arc chutes Pipe hanger inserts Weld shop protectors/burn covers Fire-fighting blankets/clothing/equipment Concrete ballast

Note:

1 The above list is taken from IMO Resolution MEPC.379(80), Appendix 5, paragraph 2.2.3.2.

End of Document

SC 250 Fire-Extinguishing Arrangements in Cargo Spaces (IMSBC Code, as amended)

(Oct 2011)
(Corr.1 July 2012)
(Corr.2 Nov 2022)

Interpretation of the IMSBC Code, as amended by resolution MSC.462(101)

For certain individual schedules of solid bulk cargoes in Appendix 1 of the IMSBC Code as amended, such as FISHMEAL (FISHSCRAP) STABILIZED UN 2216, SEED CAKE (a) UN 1386 and SEED CAKE (b) UN 1386, SEED CAKE UN 2217, SEED CAKES AND OTHER RESIDUES OF PROCESSED OILY VEGETABLES of Group B the following ventilation requirement is present:

QUOTE

If the temperature of the cargo exceeds 55°C and continues to increase, ventilation to the cargo space shall be stopped. If self-heating continues, then carbon dioxide or inert gas shall be introduced to the cargo spaces

UNQUOTE

Interpretation

This self-heating phenomenon shall be regarded as an emergency condition such that it is not necessary to provide a separate fixed carbon dioxide fire-extinguishing system or inert gas system dedicated to the control of the self-heating of the cargo within the cargo holds. The fixed carbon dioxide or inert gas fire-extinguishing system complying with the provisions of the Fire Safety Systems Code required by SOLAS Regulations II-2/10.7.1.3 or II-2/10.7.2 may be used for this purpose. Fixed gas fire-extinguishing systems or inert gas systems installed on board dedicated to the protection of spaces other than cargo spaces cannot be used for this purpose.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies from 1 July 2012.

End of Document

SC 251 (Oct 2011) Controls of emergency bilge suction valve in periodically unattended machinery spaces (SOLAS regulations II-1/48.3)

SOLAS Regulation II-1/48.3 reads:

Regulation 48
Protection against flooding

3 The location of the controls of any valve serving a sea inlet, a discharge below the waterline or a bilge injection system shall be so sited as to allow adequate time for operation in case of influx of water to the space, having regard to the time likely to be required in order to reach and operate such controls. If the level to which the space could become flooded with the ship in the fully loaded condition so requires, arrangements shall be made to operate the controls from a position above such level.

Interpretation

(A) 'Bilge injection system' is same as 'direct suction' referred in SOLAS Reg.II-1/35-1 3.7.1 and 3.7.2 and is understood to mean 'Emergency bilge suction', which is used to discharge overboard large quantities of sea water accumulated in engine room bilges using the main circulating pump or another suitable pump as permitted by 35-1 3.7.2.

(B) The requirements for the controls of the "valves serving a sea inlet, a discharge below the waterline or a bilge injection system" are not applicable to valves serving an emergency bilge system provided:

(1) The emergency bilge valve is normally maintained in a closed position,

(2) A non-return device is installed in the emergency bilge piping, and

(Note: A normally closed non-return valve with positive means of closing is considered to satisfy both (1) and (2) above.)

(3) The emergency bilge suction piping is located inboard of a shell valve that is fitted with the control arrangements required by SOLAS Reg. II-1/48.3.

Note:

1. This UI is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2013.

2. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 252 (Oct 2011)

Controls for releasing carbon dioxide and activating the alarm in the protected space (FSS Code 5.2.2.2)

FSS CODE, Chapter 5, Paragraph 2.1.3.2, *System control requirements*

Means shall be provided for automatically giving audible warning of the release of fire-extinguishing medium into any ro-ro spaces and other spaces in which personnel normally work or to which they have access. The pre-discharge alarm shall be automatically activated (e.g., by opening of the release cabinet door). The alarm shall operate for the length of time needed to evacuate the space, but in no case less than 20 s before the medium is released. Conventional cargo spaces and small spaces (such as compressor rooms, paint lockers, etc.) with only a local release need not be provided with such an alarm.

FSS CODE, Chapter 5, Paragraph 2.2.2, *Controls*

Carbon dioxide systems shall comply with the following requirements:

.1 two separate controls shall be provided for releasing carbon dioxide into a protected space and to ensure the activation of the alarm. One control shall be used for opening the valve of the piping which conveys the gas into the protected space and a second control shall be used to discharge the gas from its storage containers. Positive means shall be provided so they can only be operated in that order; and

.2 the two controls shall be located inside a release box clearly identified for the particular space. If the box containing the controls is to be locked, a key to the box shall be in a break-glass-type enclosure conspicuously located adjacent to the box.

Interpretation

The pre-discharge alarm may be activated before the two separate system release controls are operated (e.g. by a micro-switch that activates the pre-discharge alarm upon opening the release cabinet door as per paragraph 2.1.3.2). Therefore, the two separate controls for releasing carbon dioxide into the protected space (i.e. one control to open the valve of the piping which conveys the gas into the protected space and a second control used to discharge the gas from its storage containers) as per paragraph 2.2.2 can be independent of the control for activating the alarm.

Notes

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2012.

2. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

SC 252 (cont)

A single control for activation of the alarm is sufficient.

The “positive means” referred to in 2.2.2.1 for the correct sequential operation of the controls, is to be achieved by a mechanical and/or electrical interlock that does not depend on any operational procedure to achieve the correct sequence of operation.

End of Document

SC 253 (Dec 2011) (Rev.1 May 2016) Fire resistance requirements for fibre-reinforced plastic (FRP) gratings used for safe access to tanker bows (IMO Res. MSC.62(67))

Regulation

Tankers, including oil tankers as defined in SOLAS regulation II-1/2.12, chemical tankers as defined in regulation VII/8.2 and gas carriers as defined in regulation VII/11.2, should be provided with means to enable the crew to gain safe access to the bow even in severe weather conditions. For tankers constructed on or after 1 July 1998, the access should be by means of either a walkway on the deck or a permanently constructed gangway of substantial strength at or above the level of the superstructure deck or the first tier of a deckhouse which should:

…

*.3 be constructed of **fire resistant** and non-slip material;*

…

Interpretation

Fibre Reinforced Plastic (FRP) gratings used in lieu of steel gratings for safe access to tanker bows shall possess:

1. low flame spread characteristics and shall not generate excessive quantities of smoke and toxic products as per the International Code for Application of Fire Test Procedures, 2010 (2010 FTP Code);

and

2. adequate structural fire integrity as per recognized standards* after undergoing tests in accordance with the above standards.

* For example, the Standard Specification for Fibre Reinforced Polymer (FRP) Gratings Used in Marine Construction and Shipbuilding (ASTM F3059-14).

Note:

1. This UI is to be uniformly implemented by IACS Societies on ships the keels of which are laid or which are at a similar stage of construction from 1 January 2013.

2. Rev.1 of this UI is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2017.

3. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 254 Fall Preventer Devices (MSC.1/Circ.1392 and Circ.1327)

(Apr 2012)
(Del Aug 2022) This UI is deleted in August 2022.

End of Document

SC 255 (July 2012) (Corr.1 Nov 2013) Fuel pump arrangement required for ships to maintain normal operation of propulsion machinery when operating in emission control areas and non-restricted areas

SOLAS II-I 26-3. (Partially)

Means shall be provided whereby normal operation of propulsion machinery can be sustained or restored even though one of the essential auxiliaries becomes inoperative. Special consideration shall be given to the malfunctioning of:

.4 the fuel oil supply systems for boilers or engines;

Interpretation

For ships intending to use Heavy Fuel Oil (HFO) or Marine Diesel Oil (MDO) in non-restricted areas and marine fuels with a sulphur content not exceeding 0,1 % m/m and minimum viscosity of 2 cSt in emission control areas, the following arrangements are considered to be in compliance with SOLAS II-I/26.3.4.

1. In non-restricted areas, ships provided with two (2) fuel oil pumps that can each supply the fuel primarily used by the ship (i.e. HFO or MDO) in the required capacity for normal operation of the propulsion machinery.

2. In emission control areas one of the following configurations:

a) Fuel oil pumps as in 1), provided these are each suitable for marine fuels with a sulphur content not exceeding 0,1 % m/m and minimum viscosity of 2 cSt operation at the required capacity for normal operation of propulsion machinery,

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Notes:

1. This Unified Interpretation is to be applied by IACS Societies on ships contracted for construction on or after 1 July 2013.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

SC 255 (cont)

b) When the fuel oil pumps in 1) are suitable to operate on marine fuels with a sulphur content not exceeding 0,1 % m/m and minimum viscosity of 2 cSt but one pump alone is not capable of delivering marine fuels with a sulphur content not exceeding 0,1 % m/m and minimum viscosity of 2 cSt at the required capacity, then both pumps may operate in parallel to achieve the required capacity for normal operation of propulsion machinery. In this case, one additional (third) fuel oil pump shall be provided. The additional pump shall, when operating in parallel with one of the pumps in 1), be suitable for and capable of delivering marine fuels with a sulphur content not exceeding 0,1 % m/m and minimum viscosity of 2 cSt at the required capacity for normal operation of the propulsion machinery.

c) In addition to 1), two separate fuel oil pumps shall be provided, each capable of and suitable for supplying marine fuels with a sulphur content not exceeding 0,1 % m/m and minimum viscosity of 2 cSt at the required capacity for normal operation of propulsion machinery.

Note 1: For the purpose of this interpretation if a marine distillate grade fuel with a different maximum sulphur content is specified by regulation for the area of operation of the ship (e.g., ECA, specific ports or local areas, etc.) then that maximum is to be applied.

Note 2: UR35.4.1 (automatic start of standby pumps) applies independent of the pump arrangement for vessels holding the class notation for unattended machinery space.

Note 3: Where electrical power is required for the operation of propulsion machinery, the requirements are also applicable for machinery for power generation when such machinery is supplied by common fuel supply pumps.

End of Document

SC 256 (June 2012)

MPC 100 (June 2012)

Date of Delivery under SOLAS and MARPOL Conventions

Under certain provisions of the SOLAS and MARPOL Conventions, the application of regulations to a new ship is governed by the dates:

1. for which the building contract is placed on or after dd/mm/yyyy; or
2. in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after dd/mm/yyyy; or
3. the delivery of which is on or after dd/mm/yyyy.

Interpretation

For the purpose of determining the application of mandatory requirements of the SOLAS and MARPOL Conventions to a new ship, the date of “delivery" means the completion date (day, month and year) of the survey on which the certificate is based (i.e. the initial survey before the ship is put into service and certificate issued for the first time) as entered on the relevant statutory certificates.

Note:

This UI is to be uniformly implemented by IACS Societies from 28 June 2012.

End of Document

IACS Int. 2012

SC 257 Pilot Transfer Arrangements (SOLAS V/23 as amended by Resolution MSC.308(88))

(Nov 2012) (Corr.1 Apr 2013) (Rev.1 Oct 2016)

SOLAS V/23.3.3 (Pilot Transfer Arrangements):

Safe and convenient access to, and egress from, the ship shall be provided by either:

.1 a pilot ladder requiring a climb of not less than 1.5 m and not more than 9 m above the surface of the water so positioned and secured that:

.4 the single length of pilot ladder is capable of reaching the water from the point of access to, or egress from, the ship and due allowance is made for all conditions of loading and trim of the ship, and for an adverse list of 15°; the securing strong point, shackles and securing ropes shall be at least as strong as the side ropes; or

.2 an accommodation ladder in conjunction with the pilot ladder (i.e. a combination arrangement), or other equally safe and convenient means, whenever the distance from the surface of the water to the point of access to the ship is more than 9 m.

Interpretation

Sub-paragraphs 1 and 2 of SOLAS regulation V/23.3.3. address two different and distinct arrangements - the former when only a pilot ladder is provided; the latter when a combined arrangement of “an accommodation ladder used in conjunction with the pilot ladder” is provided.

1. SOLAS regulation V/23.3.3.1 prescribes an operational instruction that limits the climb to not more than 9m on a single ladder regardless of the trim or list of the ship.

2. SOLAS regulation V/23.3.3.2 and Section 3 of Resolution A.1045(27) applies to a combined arrangement of “*an accommodation ladder used in conjunction with the pilot ladder”* for “*Safe and convenient access to, and egress from, the ship*” for which a 15° list requirement does not apply.

Notes:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2013.

2. Changes introduced in Rev.1 are for the purpose of clarification to avoid any misunderstanding and therefore do not require a new implementation date.

3. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No.29.

End of Document

SC 258 (Jan 2013) For Application of Regulation 3-11, Part A-1, Chapter II-1 of the SOLAS Convention (Corrosion Protection of Cargo Oil Tanks of Crude Oil Tankers), adopted by Resolution MSC.289 (87) The Performance Standard for Alternative Means of Corrosion Protection for Cargo Oil Tanks of Crude Oil Tankers

Content

PSPC-COT Alt 2.1	**General Principles**
PSPC-COT Alt 2.2	**Technical File**
PSPC-COT Alt 3.3	**Special Application**
PSPC-COT Alt 3.4	**Area of Application**
PSPC-COT Alt 4	**Approval**
PSPC-COT Alt 5	**Inspection and Verification Requirements**
PSPC-COT Alt Appendix	**Test Procedures for Qualification of Corrosion Resistant Steel for Cargo Tanks in Crude Oil Tankers**

Notes:

1. This UI is to be applied by IACS Societies for ships subject to SOLAS Chapter II-1, Part A-1, Reg.3-11, as amended by resolution MSC.291 (87) when acting as a recognized organization, authorized by flag State Administrations to act on their behalf, unless otherwise advised, from 1 January 2013.

2. Rev.0 to the interpretation is applicable to members for ships contracted for construction on or after 1 January 2013.

3. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

SC 258 (cont)

PSPC-COT Alt 2.1 General Principles

Interpretation

1. Normal and higher strength *Corrosion Resistant Steels* as defined within this UI, is steel whose corrosion resistance performance in the bottom or top of the internal cargo oil tank is tested and approved to satisfy the requirements in this MSC.289 (87) in addition to other relevant requirements for ship material, structure strength and construction. It is not the intention of this document to suggest that Corrosion Resistant Steels be used for corrosion resistant applications in other areas of a vessel.

2. *Corrosion Resistant Steels* are similar to conventional ship construction steels in terms of chemical composition and mechanical properties.

3. The weldability of *Corrosion Resistant Steels* is similar to the weldability of conventional ship construction steels and therefore normal shipyard welding requirements in terms of qualification by the approval of welding consumables and welding procedure qualification also apply.

SC 258 (cont)

PSPC-COT Alt 2.2 Technical File

Interpretation

1. The shipbuilder is to prepare and submit the Technical File to the Administration for verification. If the applicable corrosion protection method varies for different locations, the information required for the technical file is to include each location and corrosion protection method separately. Once verified, one copy of the Technical File is to be placed onboard the ship. The following construction records are to be included in the Technical File:

1.1 The copy of the Type Approval Certificate.

1.2 Other technical data is to include:

(a) Detail of the brand of welding consumables and welding process used.

(b) Repair method. Only to be included when specially recommended by the manufacturer of corrosion resistant steel.

1.3 Application records

(a) Areas of application / location of corrosion resistant steel.

(b) Brand of corrosion resistant steel and thickness.

Note: Items (a) and (b) above may be substituted by the information given in the hull-related approved drawings. However, each brand of corrosion resistant steel used and its location is to be indicated on the approved drawings, the drawings are to be included in the Technical File.

1.4 The test certificates and actual measured values of plate thickness of each corrosion resistant steel, and individual welding conditions need not be included.

2. After the ship enters service, the ship owner or operator is to maintain repair data in the Technical File for review by the Administration. The information required is to include each location and corrosion protection method separately. These records should include:

2.1 Where repairs are made in service to the cargo oil tank in which corrosion resistant steel is used, the following information is to be added to the Technical File.

(a) Areas of repair work

(b) Repair method (replacement by corrosion resistant steel or coating)

(c) Records of the brand of corrosion resistant steel used, plate thickness and welding consumables (brand name and welding method) if corrosion resistant steel is used.

(d) Records in accordance with Performance Standard for Protective Coatings for Cargo Oil Tanks (MSC.288 (87)), if coating is used.

2.2 Repairs that require records to be maintained as mentioned in paragraph 2.1 above include the following:

(a) Replacement by corrosion resistant steel

SC 258 (cont)

(b) Application of coating on members in which corrosion resistant steel is used (including cases where corrosion resistant steel is replaced with conventional steel and coating). (Note 1)

(c) Repairs of pitted parts. (Note 2)

Note 1: Details of coating on repairs to corrosion resistant steel are to be recorded in the Corrosion Resistant Steel Technical File. In such cases, duplicates of these coating records do not need to be included in the Coating Technical File.

Note 2: The wastage limit of the pitted part or area is to be as deemed appropriate by the Classification Society and/or Administration. However, the standard value of the permissible wastage amount is to be taken as about 40% of the original thickness. In this case weld repairs are required. Only welding consumables approved for the relevant corrosion resistant steel are to be used. The full depth of the pitting is to be filled up by the weld metal. If non-approved welding consumables are used, an appropriate area around the repaired part is to be coated suitably after the repairs in accordance with the IMO Performance Standard for Protective Coatings for Cargo Oil Tanks.

2.3 Plate thickness records during periodical surveys need not be recorded in the Technical File.

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PSPC-COT Alt 3.3 Special Application

Interpretation

1. Where other items of structure, such as appurtenances, are not clearly identified, the application of the PSPC**-COT Alt** to these items is described here.

1.1 Means of access, to be used for ship inspections, which are not integral to the ship structure.

1.1.1 Permanent means of access which are not integral to the ship's structure include:

- Ladders

- Rails

- Independent platforms

- Steps

1.1.2 Appropriate corrosion protection measures are to be adopted for permanent means of access mentioned in paragraph 1.1.1 above.

1.1.3 When corrosion resistant steel is used, in principle, a corrosion resistant steel of the same brand as used in the main structure is to be used for the means of access and the attachments.

1.1.4 When conventional steel is used, and is welded to corrosion resistant steel, corrosion protection measures for the attachment and weld are recommended to be in accordance with Performance Standard for Protective Coatings for Cargo Oil Tanks (MSC.288 (87)).

1.1.5 Other corrosion protection measures are to be left to the discretion of the Administration.

1.1.6 Where other corrosion protection measures other than those stated above, for example cathodic protection are used, the performance of the corrosion resistant steel of the surrounding structure is not to be impaired.

1.2 Access arrangements integral to the ship's structure

1.2.1 The phrase "Access arrangements that are integral to the ship structure" in paragraph 3.2.2 of the Annex to Performance Standard for Alternative Means of Corrosion Protection for Cargo Oil Tanks (MSC.291(87)) means access arrangements integral to the ship structure such as the items mentioned below, for access in the cargo oil tanks.

- Stiffeners and girders with increased depth for walkways

1.2.2 Appropriate corrosion protection measures are to be adopted for access arrangement given in paragraph 1.2.1. If coating is applied, the provisions of Performance Standard for Protective Coatings for Cargo Oil Tanks (MSC.288 (87)) are to be followed. If corrosion resistant steel is used on the above arrangements, in principle, corrosion resistant steel of the same brand/type as that used in the cargo oil tanks, is to be used.

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1.3 Supporting members, etc.

1.3.1 It is recommended that pipes and supporting members for measuring equipment or outfitting items that are not strength members of the hull be protected either by coating or by use of corrosion resistant steel in accordance with the provisions of paragraph 1.1.4.

1.4 Work Attachments

1.4.1 In the case of attachments (conventional steel) used only during construction work such as hanging pieces, if welding consumables which are not indicated on the Type Approval Certificate of the corrosion resistant steel are used, it is recommended that the welded part is coated in accordance with Fig. 3.3.1.

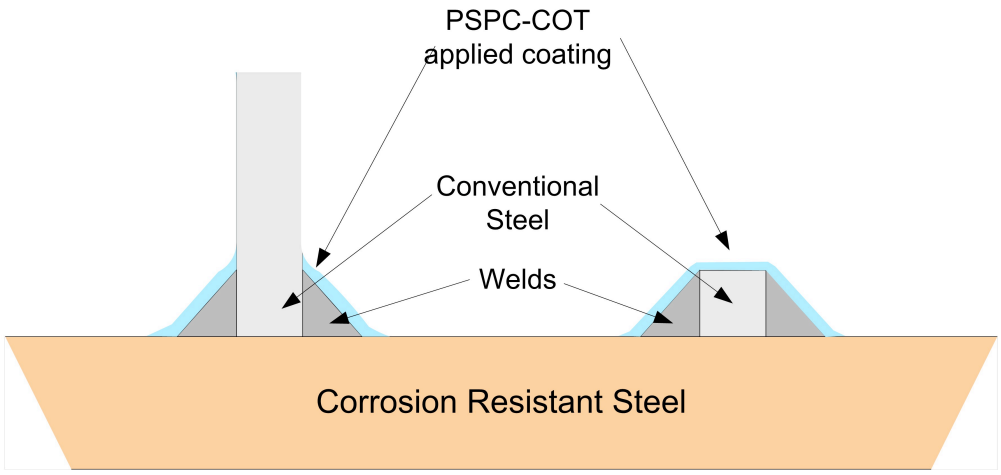


Fig. 3.3.1 Range of coating when work attachments are welded to corrosion resistant steel

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PSPC-COT Alt 3.4 Area of Application

Interpretation

1. Structural members in the COT that require protection measures against corrosion are specified in **MSC.289 (87) The Performance Standard for Alternative Means of Corrosion Protection for Cargo Oil Tanks of Crude Oil Tankers**.

2. Different methods of corrosion protection (coating and corrosion resistant steel) may be adopted for (a) and (b) above. Moreover, a combination of different corrosion protection methods may be used for each of the structural members within the areas identified by (a) and (b).

3. Acceptable combinations of corrosion protection methods are shown in Table 1.

Table 1 - Acceptable combinations of corrosion protection methods

Member		Lower surface of strength deck (a)	Upper surface of inner bottom plating (b)
Corrosion protection method	Case 1	Corrosion resistant steel – Brand A*	Corrosion resistant steel – Brand B*
	Case 2	Coating	Corrosion resistant steel – Brand B*
	Case 3	Corrosion resistant steel – Brand A*	Coating
	Case 4	Corrosion resistant steel – Brand C*	Corrosion resistant steel – Brand C*
*Corrosion Resistant Steel and coating may be used on the same member.			

4. If different corrosion protection methods (coating and corrosion resistant steel) are selected for either (a) or (b), the selected procedure for each member is to comply with the relevant performance standards.

5. Where corrosion resistant steel is used it is to be type approved by the Administration.

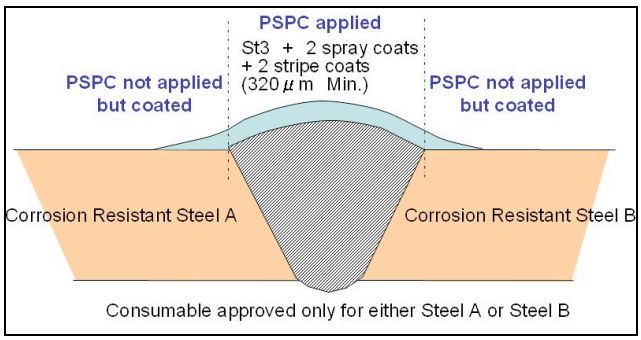


Figure 3.4.1

6. Where different brands of corrosion resistant steels are used in the same structural member, see Figure 3.4.1, the weld joining the two different steels is to be coated. Coating is to be in accordance with Performance Standard for Protective Coatings for Cargo Oil Tanks (MSC.288 (87)). However, coating of the weld is not required if the welding consumable used to produce the weld has been subject to the necessary corrosion tests. In such a case, a type approval certificate is required for the both steel brands in association with the welding consumable used.

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7. When corrosion resistant steel and conventional steel are used together in an area where corrosion protection is necessary, see Figure 3.4.2., the conventional steel and the weld is to be coated in accordance with Performance Standard for Protective Coatings for Cargo Oil Tanks (MSC.288 (87)),

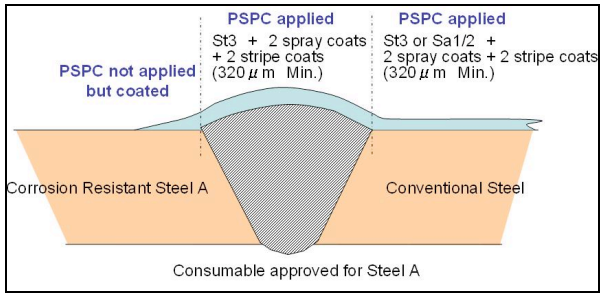


Figure 3.4.2

8. Where the welding consumable used is different from that indicated on the Type Approval Certificate of corrosion resistant steel, the weld is to be coated in accordance with Performance Standard for Protective Coatings for COT (MSC.288 (87)), see Figure 3.4.3.

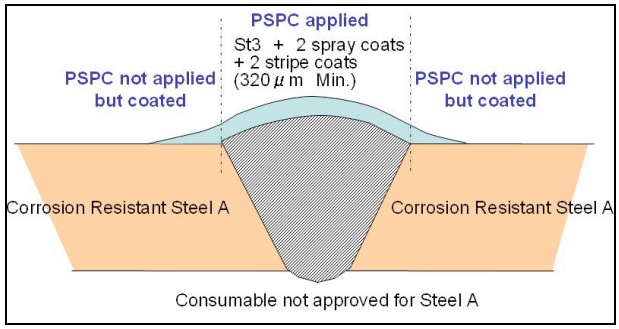


Figure 3.4.3

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PSPC-COT Alt 4 Approval

Interpretation

1. Approval procedure

1.1 The steel must be approved and graded accordingly.

1.2 The approval procedure for corrosion testing of corrosion resistant steel is described in the Annex to Performance Standard for Alternative Means of Corrosion Protection for Cargo Oil Tanks (MSC.289 (87)).

1.3 The Administration's approval is not needed for the testing laboratory where a surveyor of the Administration is present at specified stages to witness the approval tests.

1.4 In the case where the Administration is not present at specified stages to witness the approval tests, the testing laboratory is to be approved.

1.5 Where the scope of approval changes, for example for additions to the applicable welding consumables, the effects of these changes are to be subjected to corrosion resistance tests for the welded joints specified in the Annex to Performance Standard for Alternative Means of Corrosion Protection for Cargo Oil Tanks (MSC.289(87)).

2. Type Approval Certificate

2.1 The Type Approval Certificate for approved corrosion resistant steel is to include the following items:

(a) Brand name, manufacturer and certificate number

(b) Steel grade and area of application designation

(c) Chemical composition range (including additive and/or controlling element percentages to improve corrosion resistance)

(d) Maximum thickness

(e) Steelmaking process

(f) Casting process

(g) Delivery condition

(h) Brand of welding consumables and welding method

(i) Period of validity of approval

2.2 The Type Approval Certificate is valid for a maximum period of 5 years from the date of approval. When the renewal of approval is carried out, the period of validity will be a maximum period of 5 years from the next day after the expiry date of the previous validity.

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PSPC-COT Alt 5 Inspection and Verification Requirements

Interpretation

1. General requirements

1.1 The general requirements are as follows:

(a) Corrosion resistant steel type approved by the Administration is to be used.

(b) Welding consumables used are to be the Brand specified on the type approval certificate.

(c) Welding work is to be implemented according to the approved welding procedure.

(d) The correct use of corrosion resistant steel is verified by engineering review and survey.

(e) The shipbuilder is to prepare a Technical File after the construction work has been completed, and submit it to the Administration for verification.

(f) The Technical File is to be maintained onboard the ship.

1.2 If any of the items in 1.1(a) to 1.1(f) above are not complied with, the Administration notifies the shipbuilder immediately who confirms the corrective action to be followed and its completion. A SOLAS Safety Construction Certificate shall not be issued until all required corrective actions have been closed to the satisfaction of the Administration.

2 Procedure applicable to new ships

2.1. Product inspection is to be carried out as part of material certification. The control range of the chemical composition is determined as follows:

2.1.1 The manufacturer is to supply data relating to the control of applicable chemical elements that the manufacturer has intentionally added or is controlling to improve corrosion resistance. Upper and lower limits for all such elements and any relationship between these elements are to be disclosed. The manufacturer is to obtain the Administration’s approval for these additions and the relationships.

2.1.2 The effect of variation of each element is to be assessed by using sufficient corrosion tests to determine the effects of variation with variations of other elements used to enhance corrosion resistance.

2.1.3 The corrosion resistance test is to be conducted in accordance with Appendix of Annex 3 to Performance Standard for the Alternative Means of Corrosion Protection for Cargo Oil Tanks (MSC.289 (87)).

2.2 Survey during the construction stage

2.2.1 The Administration's surveyor is to verify that corrosion resistant steel has been used correctly at the appropriate locations.

2.2.2 The verification in 2.2.1 is to be implemented periodically, and the frequency is to be determined on assessment of quality control feedback of each shipyard. However, if some

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deficiency is found, the shipyard is to formulate the necessary remedial action with regard to both the deficient location and counter measures to be taken to improve inspection methods.

3. Procedure applicable to ships in service

3.1 If the repair method is described in the Technical File, repairs are to be carried out in accordance with the said method.

3.2 If corrosion resistant steel or coated member is to be replaced, the same corrosion protection method to the one used during construction is recommended.

3.3 If corrosion resistant steel is to be used during repairs, use of the corrosion resistant steel of the same brand as that used during construction is recommended.

3.4 If conventional steel is used in a corrosion resistant steel member that is to be replaced, coating is to be applied to the conventional steel. In this case, it is required that the coating complies with 3.4.3 of the Performance Standard for Protective Coatings for Crude Oil Tanks (MSC.288 (87)), see Figure 3.4.2.

3.5 The application of welding consumables to be used is to be confirmed through the latest Type Approval Certificate of the relevant corrosion resistant steel to ensure conformity (brands of the welding consumables are indicated on the Type Approval Certificate).

3.6 If the welding consumables specified in the Type Approval Certificate for the corrosion resistant steel cannot be used, the weld is to be coated, see Figure 3.4.3. In this case, it is required that the coating complies with 3.4.3 of the Performance Standard for Protective Coatings for Cargo Oil Tanks (MSC.288 (87)).

4. Welding Considerations

4.1 Welding workmanship standards accepted for conventional steel may be used.

4.2 An approved welding procedure is to be used for welding work as appropriate to the grades (excluding subscripts related to corrosion resistance), welding consumables, welding position and plate thickness, etc., of the corrosion resistant steel to be used.

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PSPC-COT Alt Appendix - Test Procedures for Qualification of Corrosion Resistant Steel for Cargo Tanks in Crude Oil Tankers

Interpretation

1. Test on simulated upper deck conditions

1.1 Test condition

(a) The chemical composition of the conventional shipbuilding steel used for test purposes (Table 1 in the Annex to the Performance Standard for Alternative Means of Corrosion Protection for Cargo Oil Tanks (MSC.289 (87))) is to be based on ladle analysis given in the mill certificate. Steel complying with a national standard that meets the requirements of Table 1 is also acceptable.

(b) All the base material specimens should be located in one tank. Figure 2 in the Annex to the Performance Standard for Alternative Means of Corrosion Protection for Cargo Oil Tanks (MSC.289 (87)) only shows locations of 20 specimens. The tank can be designed to hold 25 or more specimens; alternatively specimens can be added and removed as necessary so that the appropriate time periods are achieved within the total timescale of 98 days.

(c) Since certain factors such as control and measurement of temperature and size of chamber may affect the corrosion rate achieved, it should be confirmed that the corrosion rate of conventional steel in the conditions and equipment of the test, satisfies the rate criteria, before carrying out corrosion test for evaluation of corrosion resistant steel.

(d) To remove specimens, the chamber is to be purged with 100% nitrogen gas while the specimens are in the high temperature region until the specimens are dry.

(e) The cycling pattern of specimen temperature and temperature of distilled water should be controlled such that each cycle is as identical as possible throughout the whole corrosion test period. These temperatures must be recorded. See Figure App 1

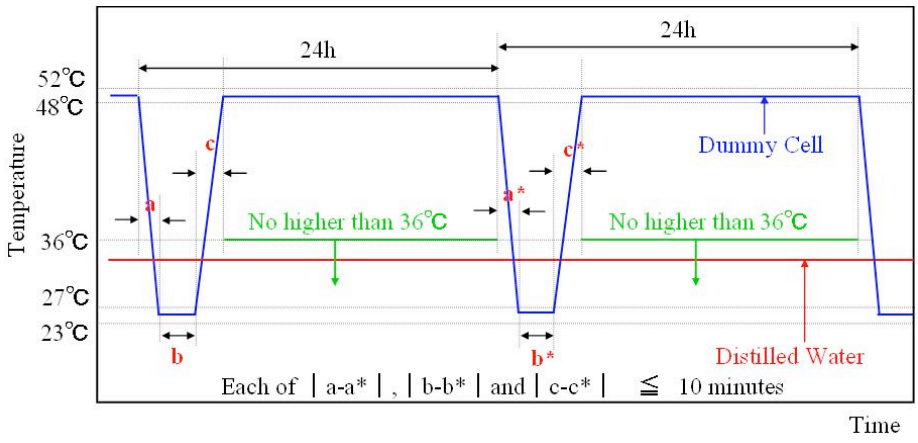


Figure App 1 - Schematic view of temperature controlling accuracy of specimens and distilled water during corrosion test

SC 258 (cont)

(f) The transition time, a, a*, c and c* in figure App 1 is the time from when the cooling and heating commences until the lower or upper temperature is reached, see Figure App 2. The transition of each cycle is to be as identical as possible throughout the whole corrosion test period.

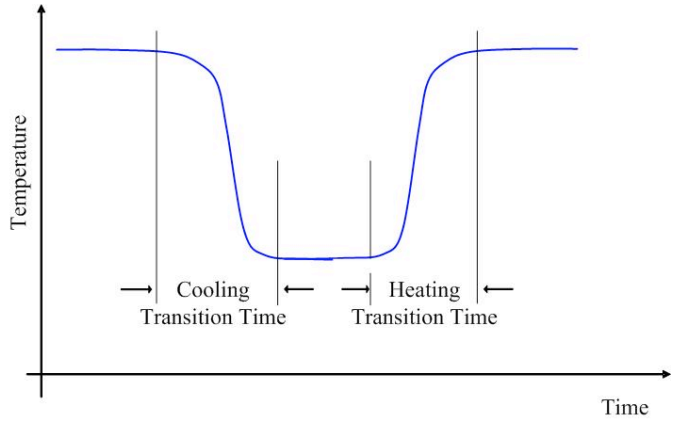


Figure App 2 - Transition time definition

(g) The temperature of both the specimens and the water is to be continuously recorded throughout the test.

(h) Welded specimens may be tested with the parent material tests or tested separately against 5 conventional steel specimens.

(i) Base material is to be prepared such that the surface to be tested is to be taken from a position within 2 mm of one rolled surface. This surface is to be ground to bare steel and polished to 600 grit finish.

(j) For welded samples, a test assembly is to be made from the same steel cast as the base material test in (i) but may be from a plate of different thickness. The assembly is to be welded using the process and consumable to be approved for use with the base material. The surface to be tested is to be selected such that the width of weld metal, excluding heat affected zone, is to be between 10 and 20 mm. This surface is to be ground to bare steel and polished to 600 grit finish.

(k) Specimens are to be weighed to an accuracy of ± 1 mg.

(l) Where the calculated corrosion loss of conventional steel is less than 0.05 mm/year, the concentration of H_2S may be increased in the simulated cargo oil tank gas. All tests will be carried out at this increased level.

(m) At least 3 values of individual weight loss of conventional steel should be in the range of maximum X and minimum Y measured in grams.

$X = (0.11 \times S \times D)/10$

$Y = (0.05 \times S \times D)/10$

Where
S = surface area (cm^2)
D = density (g/cm^3)

SC 258 (cont)

2. Test on simulated inner bottom conditions

2.1 Test condition

(a) The conventional steel used should also meet the requirements of Table 1 in the Annex to the Performance Standard for Alternative Means of Corrosion Protection for Cargo Oil Tanks (MSC.289 (87)) and interpretations 1.1 (a) above.

(b) Base material is to be prepared such that one surface is to be taken from a position within 2 mm of one rolled surface. All surfaces are to be ground to bare steel and polished to 600 grit finish.

(c) For welded samples, a test assembly is to be made from the same steel cast as the base material test in (e) but may be from a plate of different thickness. The assembly is to be welded using the process and consumable to be approved for use with the base material. The surface to be tested is to be selected such that the width of weld metal, excluding heat affected zone, is to be between 10 and 20 mm. This surface is to be ground to bare steel and polished to 600 grit finish.

(d) Specimens are to be weighed to an accuracy of ± 1 mg.

(e) One specimen that has a corrosion rate deviating from the average corrosion rate by more than +25% may be eliminated from the results, provided that the cause of the accelerated corrosion is demonstrated to be due to localized corrosion around the hanging hole and/or stamp (e.g. crevice corrosion, pitting corrosion, etc.).

3. Interpretation of weld discontinuity

3.1 Preparation of samples after corrosion test

(a) All five samples are to be prepared as follows.

(b) Two full thickness specimens approximately 20 mm long x 5 mm wide are to be sectioned with their principle axis perpendicular to the weld fusion line. Each specimen is to be located such that the weld fusion line is located approximately at its mid length. See Figure App 3.

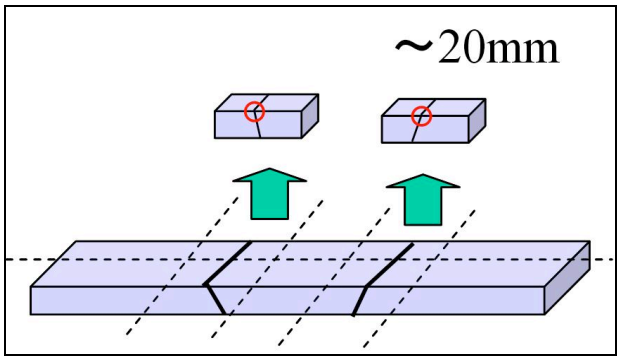


Figure App 3 - Sectioning plan

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(c) The specimens are to be mounted in resin to allow polishing of the cross section. The specimens are to be etched in Nital after polishing to reveal the fusion boundary.

(d) A photomicrograph is to be taken at a magnification of approximately 100 X.

3.2 Evaluation of depth step

(a) On the photomicrograph, construct a line **A–B**, perpendicular to the corrosion surface through the point where fusion line and the surface cross. See Figure App 4.

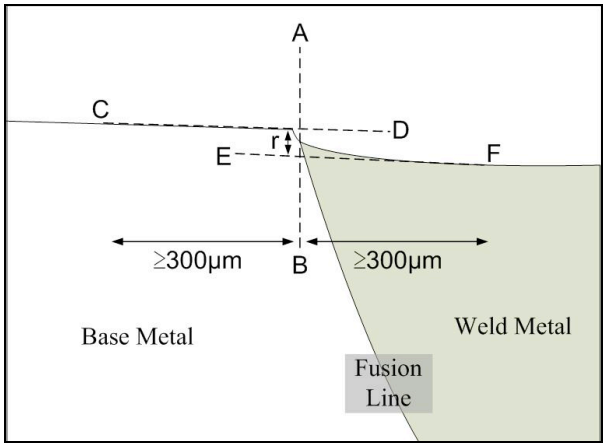


Figure App 4 - Determination of corrosion depth on photomicrograph

(b) Construct two parallel lines **C-D** and **E-F** one representing the higher level, the other the lower level. Each line is to be constructed over a distance of ≥ 300 μm from line A-B on the base metal and weld metal side, respectively.

(c) Measure the distance r mm between the intersection point at line A-B and each average surface line on the photomicrograph.

(d) If the intersection point at line A-B and average surface line of welded metal part is above that of base metal part, then the existence of step should be neglected for this sample.

(e) Calculate the depth of discontinuous step **R** in μm from the actual photomicrograph magnification M as follows.

$$R(\mu m) = \frac{r(mm) \times 1000}{M}$$

3.3 Evaluation of step angle

(a) Evaluation for angle of step is unnecessary if the depth of step calculated on both samples see 3.2, are not greater than 30 μm or if either step exceeds 50 μm for a single specimen. Otherwise the angle of step is to be calculated as follows.

(b) Produce a photomicrograph at a magnification of approximately 250 X, see Figure App 5.

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(c) Draw an average surface line C-D for base metal part and E-F for weld metal part.

(d) Find the closest intersection point with the step of the base metal surface profile and the constructed line C-D and the closest intersection point with the step for weld metal constructed line E-F respectively, and connect those two intersection points.

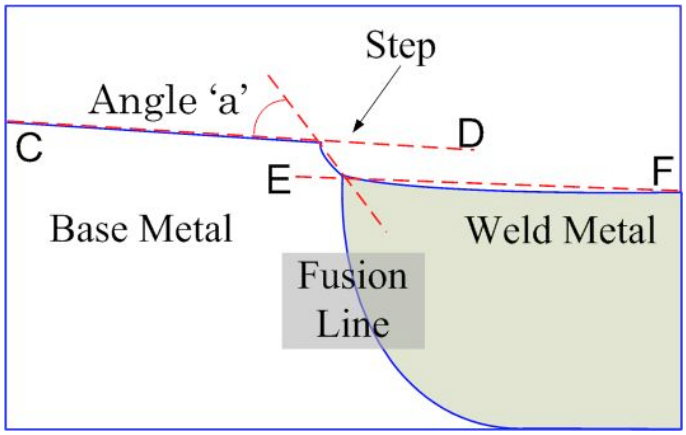


Figure App 5 - Calculation of step angle

(e) Measure the angle 'a' in degrees given by the line C-D and the connected line described in paragraph d, see Figure App 2.

3.4 Acceptance Criteria

(a) If the depth of both steps are less than or equal to 30 μm then the measurement of angle is unnecessary, and the sample is considered to be acceptable.

(b) If the depth of steps on both photomicrographs are less than or equal to 50 μm and in addition if both the measured angles are less than or equal to 15 degrees, then the sample is considered to be acceptable.

(c) If either of the conditions described in paragraphs a or b above are not in compliance, the sample is considered to contain a *"discontinuous surface"* and fails the test.

(d) Welds should be evaluated as "*without discontinuous surface"* when all 5 corrosion test samples are considered acceptable.

End of Document

SC 259 For Application of SOLAS Regulation II-1/3-11 Performance Standard for Protective Coatings for Cargo Oil Tanks of Crude Oil Tankers (PSPC-COT), adopted by Resolution MSC.288(87)

(Oct 2013) (Corr.1 May 2014) (Rev.1 Jun 2014) (Corr.1 Oct 2014) (Corr.2 Oct 2024)

CONTENT

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PSPC-COT Annex 1 Test Procedures for Coating Qualification for Cargo Oil Tanks of Crude Oil Tankers

PSPC-COT Annex 1: Footnotes of Standards

Note:

1. This UI is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2014.

2. Rev.1 of this UI is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2014.

3. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

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PSPC-COT 2 DEFINITIONS

For the purpose of this Standard, the following definitions apply.

…

2.6 "GOOD" condition is the condition with minor spot rusting as defined in resolution A.1049(27) (2011 ESP Code), as amended, for assessing the ballast tank coatings for tankers.

…

Interpretation

GOOD: Condition with spot rusting on less than 3% of the area under consideration without visible failure of the coating, or no-perforated blistering. Breakdown at edges or welds should be less than 20% of edges or weld lines in the area under consideration.

Coating Technical File: A term used for the collection of documents describing issues related to the coating system and its application from the point in time when the first document is provided and for the entire life of the ship including the inspection agreement and all elements of PSPC-COT 3.4.

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PSPC-COT 3 GENERAL PRINCIPLES

"3.2 Inspection of surface preparation and coating processes shall be agreed upon between the ship owner, the shipyard and the coating manufacturer and presented to the Administration for review. Clear evidence of these inspections shall be reported and included in the Coating Technical File (CTF) (see subsection 3.4)."

Interpretation

1. Inspection of surface preparation and coating processes agreement shall be signed by shipyard, shipowner and coating manufacturer and shall be presented by the shipyard to the Administration for review prior to commencement of any coating work on any stage of a new building and as a minimum shall comply with the PSPC-COT.

2. To facilitate the review, the following from the CTF, shall be available:

a) Coating specification including selection of areas (spaces) to be coated, selection of coating system, surface preparation and coating process.

b) Statement of Compliance or Type Approval of the coating system.

3. The agreement shall be included in the CTF and shall at least cover:

a) Inspection process, including scope of inspection, who carries out the inspection, the qualifications of the coating inspector(s) and appointment of one qualified coating inspector (responsible for verifying that the coating is applied in accordance with the PSPC-COT). Where more than one coating inspector will be used then their areas of responsibility shall be identified. (For example, multiple construction sites).

b) Language to be used for documentation.

4. Any deviations in the procedure relative to the PSPC-COT noted during the review shall be raised with the shipyard, which is responsible for identifying and implementing the corrective actions.

5. Cargo Ship Safety Certificate or Cargo Ship Safety Construction Certificate, as appropriate, shall not be issued until all required corrective actions have been closed to the satisfaction of the Administration.

*****

*"3.4 **Coating Technical File (CTF)***

3.4.1 Specification of the cargo oil tank coating system applied, record of the shipyard's and shipowner's coating work, detailed criteria for coating selection, job specifications, inspection, maintenance and repair shall be included in the Coating Technical File required by resolution MSC.215(82).

3.4.2 New construction stage

The Coating Technical File shall contain at least the following items relating to this Standard and shall be delivered by the shipyard at new ship construction stage:

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.1 copy of Statement of Compliance or Type Approval Certificate;

.2 copy of Technical Data Sheet, including:

.2.1 product name and identification mark and/or number;
.2.2 materials, components and composition of the coating system,
.2.3 minimum and maximum dry film thickness;
.2.4 application methods, tools and/or machines;
.2.5 condition of surface to be coated (de-rusting grade, cleanness, profile, etc.); and
.2.6 environmental limitations (temperature and humidity);

.3 shipyard work records of coating application, including:

.3.1 applied actual areas (in square metres) of coating in each cargo oil tank;
.3.2 applied coating system;
.3.3 time of coating, thickness, number of layers, etc.;
.3.4 ambient conditions during coating; and
.3.5 details of surface preparation;

.4 procedures for inspection and repair of coating system during ship construction;

.5 coating log issued by the coating inspector – stating that the coating was applied in accordance with the specifications to the satisfaction of the coating supplier representative and specifying deviations from the specifications (see annex 2);

.6 shipyard's verified inspection report, including:

.6.1 completion date of inspection;
.6.2 result of inspection;
.6.3 remarks (if given); and
.6.4 inspector signature; and

*.7 procedures for in-service maintenance and repair of coating systems.**

**Guidelines to be developed by the Organization.*

3.4.3 In-service maintenance and repair

In-service maintenance and repair activities shall be recorded in the Coating Technical File in accordance with the relevant section of the Guidelines for coating maintenance and repair.

3.4.4 The Coating Technical File shall be kept on board and maintained throughout the life of the ship."

Interpretation

Procedure for Coating Technical File Review

1 The shipyard is responsible for compiling the Coating Technical File (CTF) either in paper or electronic format, or a combination of the two.

2 The CTF is to contain all the information required by the PSPC 3.4 and the inspection of surface preparation and the coating processes agreement (see PSPC-COT 3.2).

3 The CTF shall be reviewed for content in accordance with the PSPC-COT 3.4.2.

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4 Any deviations found under 3 shall be raised with the shipyard, which is responsible for identifying and implementing the corrective actions.

5 Cargo Ship Safety Certificate or Cargo Ship Safety Construction Certificate, as appropriate, shall not be issued until all required corrective actions have been closed to the satisfaction of the Administration.

*****

*"3.5 **Health and safety***

The shipyard is responsible for implementation of national regulations to ensure the health and safety of individuals and to minimize the risk of fire and explosion."

Interpretation

In order to document compliance with PSPC-COT 3.5, relevant documentation from the coating manufacturer concerning health and safety aspects such as Material Safety Data Sheet (MSDS) or Safety Data Sheet (SDS) is recommended to be included in the CTF for information.

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PSPC-COT 4 COATING STANDARD

*"4.5 **Special application***

4.5.1 This Standard covers protective coating requirements for steel structure within cargo oil tanks. It is noted that there are other independent items that are fitted within the cargo oil tanks and to which coatings are applied to provide protection against corrosion.

4.5.2 It *is recommended that this Standard is applied, to the extent practicable, to those portions of means of access provided for inspection within the areas specified in subsection 4.4 that are not integral to the ship structure, such as rails, independent platforms, ladders, etc. Other equivalent methods of providing corrosion protection for non-integral items may also be used, provided they do not impair the performance of the coatings of the surrounding structure. Access arrangements that are integral to the ship structure, such as stiffener depths for walkways, stringers, etc., are to fully comply with this Standard when located within the coated areas.*

4.5.3 It is also recommended that supports for piping, measuring devices, etc., be coated as a minimum in accordance with the non-integral items indicated in paragraph 4.5.2.

Interpretation

Reference is made to the non-mandatory MSC/Circ.1279 "Guidelines for corrosion protection of permanent means of access arrangements", adopted by MSC 84 in May 2008.

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PSPC-COT 4 Table 1: Footnotes of Standards

"Footnotes:

1 Type of gauge and calibration in accordance with SSPC-PA2:2004 Paint Application Specification No.2.

2 Refer to standard ISO 8501-1: 1988/Suppl: 1994. Preparation of steel substrate before application of paints and related products – Visual assessment of surface cleanliness.

3 Refer to standard ISO 8503-1/2: 1988. Preparation of steel substrate before application of paints and related products – Surface roughness characteristics of blast-cleaned steel substrates.

4 Conductivity measured in accordance with the following standards:

.1 ISO 8502-9:1998. Preparation of steel substrate before application of paints and related products – Test for the assessment of surface cleanliness; or

.2 NACE SP0508-2010 Item no.21134. Standard practice methods of validating equivalence to ISO 8502-9 on measurement of the levels of soluble salts.

5 Refer to standard ISO 8501-3: 2001. Preparation of steel substrate before application of paints and related products – Visual assessment of surface cleanliness.

6 See footnote 2 above

7 See footnote 3 above

8 Refer to standard ISO 8502-3:1993. Preparation of steel substrate before application of paints and related products – Test for the assessment of surface cleanliness.

9 See footnote 4 above

10 See footnote 1 above"

Interpretation

Only the footnoted standards referred to in PSPC-COT Table 1 are to be applied, i.e. they are mandatory.

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PSPC-COT 4 Table 1: 1 Design of coating system

"1.3 Coating test

Epoxy-based systems tested prior to the date of entry into force of this Standard in a laboratory by a method corresponding to the test procedure in annex 1 or equivalent, which as a minimum meets the requirements for rusting and blistering, or which have documented field exposure for 5 years with a final coating condition of not less than "GOOD", may be accepted.

For epoxy-based systems approved on or after entry into force of this Standard, testing according to the procedure in annex 1, or equivalent, is required."

Interpretation

Procedure for Coating System Approval

Type Approval Certificate showing compliance with the PSPC-COT 5 shall be issued if the results of either method A+C, or B+C are found satisfactory by the Administration.

The Type Approval Certificate shall indicate the Product and the Shop Primer tested. The certificate shall also indicate other type approved shop primers with which the product may be used which have under gone the cross over test in a laboratory meeting the requirements in Method A, 1.1 of this UI.

The documents required to be submitted are identified in the following sections, in addition for all type approvals the following documentation is required:

Technical Data Sheet showing all the information required by PSPC-COT 3.4.2.2.

Winter type epoxy is required separate prequalification test including shop primer compatibility test according to PSPC-COT Annex 1. Winter and summer type coating are considered different unless Infrared (IR) identification and Specific Gravity (SG) demonstrates that they are the same.

Method A: Laboratory Test

1.1 Coating pre-qualification test shall be carried out by the test laboratory which is recognized by the Administration.

1.2 Results from satisfactory pre-qualification tests (PSPC-COT Table 1: 1.3) of the coating system shall be documented and submitted to the Administration.

1.3.1 Type Approval tests shall be carried out for the epoxy based system with the stated shop primer in accordance with the PSPC-COT Annex 1. If the tests are satisfactory, a Type Approval Certificate will be issued to include both the epoxy and the shop primer. The Type Approval Certificate will allow the use of the epoxy either with the named shop primer or on bare prepared steel.

1.3.2 An epoxy based system may be used with shop primers other than the one with which it was originally tested provided that, the other shop primers are approved as part of a system, PSPC-COT Table 1: 2.3 and Table 1: 3.2, and have been tested according to the immersion test of PSPC-COT Annex 1 or in accordance with Res.MSC.215(82), which is known as the "Crossover Test". If the test or tests are satisfactory, a Type Approval Certificate will be issued. In this instance the Type Approval Certificate will include the details of the epoxy and a list of all shop primers with which it has been tested that have passed

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these requirements. The Type Approval Certificate will allow the use of the epoxy with all the named shop primers or on bare prepared steel.

1.3.3 Alternatively the epoxy can be tested without shop primer on bare prepared steel to the requirements of the PSPC-COT Annex 1. If the test or tests are satisfactory, a Type Approval Certificate will be issued. The Type Approval Certificate will just record the epoxy. The certificate will allow the use of the epoxy on bare prepared steel only. If in addition, crossover tests are satisfactorily carried out with shop primers, which are approved as part of a system, the Type Approval Certificate will include the details of shop primers which have satisfactorily passed the crossover test. In this instance the Type Approval Certificate will allow the use of the epoxy based system with all the named shop primers or on bare prepared steel.

1.3.4 The Type Approval Certificate is invalid if the formulation of either the epoxy or the shop primer is changed. It is the responsibility of the coating manufacturer to inform the Administration immediately of any changes to the formulation.

1.3.5 For the coating pre-qualification test, the measured average dry film thickness (DFT) on each prepared test panels shall not exceed a nominal DFT (NDFT) of 320 microns plus 20% unless a paint manufacturer specifies a NDFT greater than 320 microns. In the latter case, the average DFT shall not exceed the specified NDFT plus 20% and the coating system shall be certified to the specified NDFT if the system passes the tests according to Annex 1 of PSPC-COT. The measured DFT shall meet the “90/10” rule and the maximum DFT shall be always below the maximum DFT value specified by the manufacturer.

Method B: 5 years field exposure

1.4 Coating manufacturer’s records, which shall at least include the information indicated in 1.4.1, shall be examined to confirm coating system has 5 years field exposure, and the current product is the same as that being assessed.

1.4.1 Manufacturer’s Records

- Original application records
- Original coating specification
- Original technical data sheet
- Current formulation’s unique identification (Code or number)
- If the mixing ratio of base and curing agent has changed, a statement from the coating manufacturer confirming that the composition mixed product is the same as the original composition. This shall be accompanied by an explanation of the modifications made.
- Current technical data sheet for the current production site
- SG and IR identification of original product
- SG and IR identification of the current product
- If original SG and IR cannot be provided then a statement from the coating manufacturer confirming the readings for the current product are the same as those of the original.

1.5 Either class survey records from an Administration or a joint (coating manufacturer and Administration) survey of cargo tanks of a selected vessel is to be carried out for the purpose of verification of compliance with the requirements of 1.4 and 1.9. The reporting of the coating condition in both cases shall be in accordance with the principles given in section 4 of MSC.1/Circ.1399/Rev.1.

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1.6 The selected vessel is to have cargo tanks in regular use, of which:

- At least one tank is exposed to minimum temperature of 60 degree C plus or minus 3 degree
- For field exposure the ship should be trading in varied trade routes and carrying substantial varieties of crude oils including highest temperature and lowest pH limits to ensure a realistic sample: for example, three ships on three different trade areas with different varieties of crude cargoes.

1.7 In the case that the selected vessel does not meet the requirements in 1.6 then the limitations on lowest pH and Highest temperature of crude oils carried shall be clearly stated on the type approval certificate.

1.8 In all cases of approval by Method B, the shop primer shall be removed prior to application of the approved epoxy based system coating, unless it can be confirmed that the shop primer applied during construction, is identical in formulation to that applied in the selected vessel used as a basis of the approval.

1.9 All cargo tanks shall be in “GOOD” condition excluding mechanical damages, without touch up or repair in the prior 5 years.

1.9.1 “Good” is defined as: Condition with spot rusting on less than 3% of the area under consideration without visible failure of the coating, or no perforated blistering. Breakdown at edges or welds should be less than 20% of edges or welds in the area under consideration.

1.9.2 Examples of how to report coating conditions with respect to areas under consideration should be as those given in the principles given in section 4 of MSC.1/Circ.1399/Rev.1.

1.10 If the applied NDFT is greater than required by the PSPC, the applied NDFT will be the minimum to be applied during construction. This will be reported prominently on the Type Approval Certificate.

1.11 If the results of the inspection are satisfactory, a Type Approval Certificate shall be issued to include both the epoxy based system and the shop primer. The Type Approval Certificate shall allow the use of the epoxy based system either with the named shop primer or on bare prepared steel. The Type Approval Certificate shall reference the inspection report which will also form part of the Coating Technical File.

1.12 The Type Approval Certificate is invalid if the formulation of either the epoxy based system or the shop primer is changed. It is the responsibility of the coating manufacturer to inform the Administration immediately of any changes to the formulation.

Method C: Coating Manufacturer

1.13 The coating/shop primer manufacturer shall meet the requirements set out in IACS UR Z17 paragraphs 4, 5, 6 and 7, (except for 4.6) and paragraphs 1.13.1 to 1.13.6 below, which shall be verified by the Administration.

1.13.1 Coating Manufacturers

(a) Extent of Engagement – Production of coating systems in accordance with PSPC-COT and this UI.

(b) These requirements apply to both the main coating manufacturer and the shop primer manufacturer where both coatings form part of the total system.

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(c) The coating manufacturer should provide to the Administration the following information;

- A detailed list of the production facilities.
- Names and location of raw material suppliers will be clearly stated.
- A detailed list of the test standards and equipment to be used, (Scope of approval).
- Details of quality control procedures employed.
- Details of any sub-contracting agreements.
- List of quality manuals, test procedures and instructions, records, etc.
- Copy of any relevant certificates with their issue number and/or date e.g. Quality Management System certification.

(d) Inspection and audit of the manufacturer's facilities will be based on the requirements of the PSPC-COT.

(e) With the exception of early 'scale up' from laboratory to full production, adjustment outside the limitations listed in the QC instruction referred to below is not acceptable, unless justified by trials during the coating system's development programme, or subsequent testing. Any such adjustments must be agreed by the formulating technical centre.

(f) If formulation adjustment is envisaged during the production process the maximum allowable limits will be approved by the formulating technical centre and clearly stated in the QC working procedures.

(g) The manufacturer's quality control system will ensure that all current production is the same formulation as that supplied for the Type Approval Certificate. Formulation change is not permissible without testing in accordance with the test procedures in the PSPC-COT and the issue of a Type Approval Certificate by the Administration.

(h) Batch records including all QC test results such as viscosity, specific gravity and airless spray characteristics will be accurately recorded. Details of any additions will also be included.

(i) Whenever possible, raw material supply and lot details for each coating batch will be traceable. Exceptions may be where bulk supply such as solvents and pre-dissolved solid epoxies are stored in tanks, in which case it may only be possible to record the supplier's blend.

(j) Dates, batch numbers and quantities supplied to each coating contract will be clearly recorded.

1.13.2 All raw material supply must be accompanied the supplier's 'Certificate of Conformance'. The certificate will include all requirements listed in the coating manufacturer's QC system.

1.13.3 In the absence of a raw material supplier's certificate of conformance, the coating manufacturer must verify conformance to all requirements listed in the coating manufacturer's QC system.

1.13.4 Drums must be clearly marked with the details as described on the 'Type Approval Certificate'.

1.13.5 Product Technical Data Sheets must comply with all the PSPC-COT requirements. The QC system will ensure that all Product Technical Data Sheets are current.

SC 259 (cont)

1.13.6 QC procedures of the originating technical centre will verify that all production units comply with the above stipulations and that all raw material supply is approved by the technical centre.

1.14 In the case that a coating manufacturer wishes to have products which are manufactured in different locations under the same name, then IR identification and SG shall be used to demonstrate that they are the same coating, or individual approval tests will be required for the paint manufactured in each location.

1.15 The Type Approval Certificate is invalid if the formulation of either the epoxy based system or the shop primer is changed. It is the responsibility of the coating manufacturer to inform class immediately of any changes to the formulation. Failure to inform class of an alteration to the formulation will lead to cancellation of the certificates for that manufacturer's products.

*****

"1.4 Job specification

There shall be a minimum of two stripe coats and two spray coats, except that the second stripe coat, by way of welded seams only, may be reduced in scope where it is proven that the NDFT can be met by the coats applied in order to avoid unnecessary over thickness. Any reduction in scope of the second stripe coat shall be fully detailed in the CTF.

Stripe coat shall be applied by brush or roller. Roller shall be used for scallops, ratholes, etc., only.

Each main coating layer shall be appropriately cured before application of the next coat, in accordance with the coating manufacturer's recommendations.

Job specifications shall include the dry-to-recoat times and walk-on time given by the manufacturer.

Surface contaminants such as rust, grease, dust, salt, oil, etc., shall be removed prior to painting. The method to be according to the paint manufacturer's recommendations. Abrasive inclusions embedded in the coating shall be removed.

1.5 NDFT (nominal total dry film thickness)[5]

NDFT 320 µm with 90/10 rule for epoxy-based systems; other systems to the coating manufacturer's specifications.

Maximum total dry film thickness according to the manufacturer's detailed specifications.

Care shall be taken to avoid increasing the DFT in an exaggerated way. Wet film thickness shall be regularly checked during application.

Thinners shall be limited to those types and quantities recommended by the manufacturer."

Interpretation

Wet film thickness shall be regularly checked during application for quality control by the Builder. PSPC-COT does not state who should check WFT, it is accepted for this to be the Builder. Measurement of DFT shall be done as part of the inspection required in PSPC-COT 6.

SC 259 (cont)

Stripe coats should be applied as a coherent film showing good film formation and no visible defects. The application method employed should insure that all areas that require stripe coating are properly coated by brush or roller. A roller may be used for scallops, ratholes etc., but not for edges and welds.

SC 259 (cont)

PSPC-COT 4 Table 1: 2 PSP (Primary Surface Preparation)

"2. PSP (Primary Surface Preparation)

2.1 Blasting and profile[2, 3]

Sa $2^1/_2$; with profiles between 30-75 µm

Blasting shall not be carried out when:

.1 the relative humidity is above 85%; or

.2 the surface temperature of steel is less than 3°C above the dew point.

Checking of the steel surface cleanliness and roughness profile shall be carried out at the end of the surface preparation and before the application of the primer, and in accordance with the coating manufacturer's recommendations.

2.2 Water soluble salt limit equivalent to NaCl[4]

≤ 50 mg/m^2 of sodium chloride.

2.3 Shop primer

Zinc containing inhibitor free zinc silicate based or equivalent. Compatibility with main coating system shall be confirmed by the coating manufacturer."

Interpretation

of para 2.2:
The conductivity of soluble salts is measured in accordance with ISO 8502-6 and ISO 8502-9 or equivalent method as validated according to NACE SP0508-2010, and compared with the conductivity of 50 mg/m^2 NaCl. If the measured conductivity is less than or equal to, then it is acceptable. Minimum readings to be taken are one (1) per plate in the case of manually applied shop primer. In cases where an automatic process for application of shop primer is used, there should be means to demonstrate compliance with PSPC-COT through a Quality Control System, which should include a monthly test.

of para 2.3:
Shop primers not containing zinc or not silicate based are considered to be "alternative systems" and therefore equivalency is to be established in accordance with Section 8 of the PSPC-COT with test acceptance criteria for "alternative systems" given in section 3.1 (right columns) of Appendixes 1 and 2 to ANNEX 1 of PSPC-COT.

Procedure for review of Quality Control of Automated Shop Primer plants

1 It is recognised that the inspection requirements of PSPC-COT 6.2 may be difficult to apply to an automated shop primer plant and a Quality Control approach would be a more practical way of enabling compliance with the requirements of PSPC-COT.

2 As required in PSPC it is the responsibility of the coating inspector to confirm that the quality control procedures are ensuring compliance with PSPC-COT.

3 When reviewing the Quality Control for automated shop primer plants the following procedures should be included.

SC 259 (cont)

3.1 Procedures for management of the blasting grit including measurement of salt and contamination.

3.2 Procedures recording the following; steel surface temperature, relative humidity, dewpoint.

3.3 Procedures for controlling or monitoring surface cleanliness, surface profile, oil, grease, dust and other contamination.

3.4 Procedures for recording/measuring soluble salts.

3.5 Procedures for verifying thickness and curing of the shop primer conforms to the values specified in the Technical Specification.

SC 259 (cont)

PSPC-COT 4 Table 1: 3 SSP (Secondary Surface Preparation)

"*3.2 Sa $2^1/_2$ on damaged shop primers and welds*

All surfaces to be coated shall be blasted to Sa 2 removing at least 70% of intact shop primer, which has not past a prequalification certified by test procedures in table 1.3."

"3.3 Surface treatment after erection

Erection joints St 3 or better or Sa $2^1/_2$where practicable.

For inner bottom:

- Damages *up to 20% of the area to be coated to be treated to minimum St 3.*
- *Contiguous* damages *over 25 m^2 or over 20% of the area to be coated, Sa $2^1/_2$ shall be applied.*

For underdeck:

- *Damages up to 3% of area to be coated to be treated to minimum St 3.*
- *Contiguous damages over 25 m^2 or over 3% of the area to be coated, Sa $2^1/_2$ shall be applied.*

Coating in overlap shall be feathered."

"3.4 In case of full or partial blasting 30-75 µm, otherwise as recommended by the coating manufacturer."

Interpretation

Usually, the fillet welding on tank boundary watertight bulkhead is left without coating on block stage (because not yet be leakage tested), in which case it can be categorized as erection joint ("butt") to be power tooled to St 3.

*****

"*3.6 Water soluble salts limit equivalent to NaCl after blasting/grinding[9]*

≤ 50 mg/m^2 of sodium chloride."

Interpretation

The conductivity of soluble salts is measured in accordance with ISO 8502-6 and ISO 8502-9, or equivalent method as validated according to NACE SP0508-2010, and compared with the conductivity of 50 mg/m^2 NaCl. If the measured conductivity is less than or equal to, then it is acceptable.

All soluble salts have a detrimental effect on coatings to a greater or lesser degree.
ISO 8502-9:1998 does not provide the actual concentration of NaCl. The % NaCl in the total soluble salts will vary from site to site. Minimum readings to be taken are one (1) reading per block/section/unit prior to applying.

SC 259 (cont)

PSPC-COT 4 Table 1: 4 Miscellaneous

"*4.3 Testing of coating*[10]

Destructive testing should be avoided.

Sample dry film thickness shall be measured after each coat for quality control purpose and the total dry film thickness shall be confirmed after completion of final coat, using appropriate thickness gauges."

Interpretation

All DFT measurements shall be measured. Only the final DFT measurements need to be measured and reported for compliance with the PSPC-COT by the qualified coating inspector. The Coating Technical File may contain a summary of the DFT measurements

which typically will consist of minimum and maximum DFT measurements, number of measurements taken and percentage above and below required DFT. The final DFT compliance with the 90/10 practice shall be calculated and confirmed, see PSPC-COT 2.8.

SC 259 (cont)

PSPC-COT 5 COATING SYSTEM APPROVAL

"Results from pre-qualification tests (Table 1, paragraph 1.3) of the coating system shall be documented and a Statement of Compliance or Type Approval Certificate shall be issued if found satisfactory by a third party, independent of the coating manufacturer."

Interpretation

See Interpretation of PSPC-COT Table 1: 1 Design of coating system, 1.3 Coating prequalification test.

SC 259 (cont)

PSPC-COT 6 COATING INSPECTION REQUIREMENTS

"6.1 General

6.1.1 To ensure compliance with this Standard, the following shall be carried out by qualified coating inspectors certified to AMPP Certified Coatings Inspector, FROSIO Inspector Level III or equivalent as verified by the Administration.

6.1.2 Coating inspectors shall inspect surface preparation and coating application during the coating process by carrying out, as a minimum, those inspection items identified in subsection 6.2 to ensure compliance with this Standard. Emphasis shall be placed on initiation of each stage of surface preparation and coatings application as improper work is extremely difficult to correct later in the coating progress. Representative structural members shall be non-destructively examined for coating thickness. The inspector shall verify that appropriate collective measures have been carried out.

6.1.3 Results from the inspection shall be recorded by the inspector and shall be included in the CTF (refer to annex 2)."

Interpretation

Procedure for Assessment of Coating Inspectors' Qualifications

1 Coating inspectors required to carry out inspections in accordance with the PSPC-COT 6 shall be qualified to AMPP Certified Coatings Inspector, FROSIO Inspector Level III, or an equivalent qualification. Equivalent qualifications are described in 3 below.

2 However, only coating inspectors with at least 2 years relevant coating inspector experience and qualified to AMPP Certified Coatings Inspector or FROSIO Inspector Level III, or with an equivalent qualification, can write and/or authorise procedures, or decide upon corrective actions to overcome non-compliances.

3 Equivalent Qualification

3.1 Equivalent qualification is the successful completion, as determined by course tutor, of an approved course.

3.1.1 The course tutors shall be qualified with at least 2 years relevant experience and qualified to AMPP Certified Coatings Inspector or FROSIO Inspector Level III, or with an equivalent qualification.

3.1.2 Approved Course: A course that has a syllabus based on the issues associated with the PSPC including the following:

- Health Environment and Safety
- Corrosion
- Materials and design
- International standards referenced in PSPC
- Curing mechanisms
- Role of inspector
- Test instruments
- Inspection Procedures
- Coating specification
- Application Procedures
- Coating Failures
- Pre-job conference

SC 259 (cont)

- MSDS (or SDS) and product data sheet review
- Coating technical file
- Surface preparation
- Dehumidification
- Waterjetting
- Coating types and inspection criteria
- Specialized Application Equipment
- Use of inspection procedures for destructive testing and non destructive testing instruments.
- Inspection instruments and test methods
- Coating inspection techniques
- Cathodic protection
- Practical exercises, case studies.

Examples of approved courses may be internal courses run by the coating manufacturers or shipyards etc.

3.1.3 Such a course shall have an acceptable measurement of performance, such as an examination with both theoretical and practical elements. The course and examination shall be approved by the Administration.

3.2 Equivalent qualification arising from practical experience: An individual may be qualified without attending a course where it can be shown that the individual:

- has a minimum of 5-years practical work experience as a coating inspector of ballast tanks and/or cargo tanks during new construction within the last 10 years, and

- has successfully completed the examination given in 3.1.3.

4 Assistants to coating Inspectors

4.1 If the coating inspectors requires assistance from other persons to perform part of the inspections, those persons shall perform the inspections under the coating inspector’s supervision and shall be trained to the coating inspector’s satisfaction.

4.2 Such training should be recorded and endorsed either by the inspector, the yard's training organisation or inspection equipment manufacturer to confirm competence in using the measuring equipment and confirm knowledge of the measurements required by the PSPC-COT.

4.3 Training records shall be available for verification.

SC 259 (cont)

PSPC-COT 7 COATING VERIFICATION REQUIREMENTS

"The following shall be carried out by the Administration prior to reviewing the Coating Technical File for the ship subject to this Standard:

.1 check that the Technical Data Sheet and Statement of Compliance or Type Approval Certificate comply with the Standard;

.2 check that the coating identification on representative containers is consistent with the coating identified in the Technical Data Sheet and Statement of Compliance or Type Approval Certificate;

.3 check that the inspector is qualified in accordance with the qualification standards in paragraph 6.1.1;

.4 check that the inspector's reports of surface preparation and the coating's application indicate compliance with the manufacturer's Technical Data Sheet and Statement of Compliance or Type Approval Certificate; and

.5 monitor implementation of the coating inspection requirements."

Interpretation

Procedure for Verification of Application of the PSPC-COT

1 The verification requirements of PSPC-COT 7 shall be carried out by the Administration.

1.1 Monitoring implementation of the coating inspection requirements, as called for in PSPC-COT 7.5 means checking, on a sampling basis, that the inspectors are using the correct equipment, techniques and reporting methods as described in the inspection procedures reviewed by the Administration.

2 Any deviations found under 1.1 shall be raised initially with the coating inspector, who is responsible for identifying and implementing the corrective actions.

3 In the event that corrective actions are not acceptable to the Administration or in the event that corrective actions are not closed out then the shipyard shall be informed.

4 Cargo Ship Safety Certificate or Cargo Ship Safety Construction Certificate, as appropriate, shall not be issued until all required corrective actions have been closed out to the satisfaction of the Administration.

SC 259 (cont)

PSPC-COT Annex 1: TEST PROCEDURES FOR COATING QUALIFICATION FOR CARGO OIL TANKS OF CRUDE OIL CARRIERS

Annex 1 Footnotes of Standards

"Footnotes:

12 Related test method is derived from, but not identical to, standard ISO 2812-1:2007 - Paints and varnishes - Determination of resistance to liquids - Part 1: Immersion in liquids other than water.

13 Refer to standard ISO 8217:2005 - Petroleum products - Fuels (class F) - Specifications of marine fuels.

14 Refer to standard ISO 6618:1997 - Petroleum products and lubricants - Determination of acid or base number - Colour-indicator titration method.

15 Refer to standard ASTM D1141 - 98(2008) - Standard Practice for the Preparation of Substitute Ocean Water.

16 Refer to standard ISO 2811-1/4:1997 - Paints and varnishes. Determination of density.

17 Six equally distributed measuring points are used on panels size 150 mm x 100 mm.

18 Refer to the following standards:

.1 ISO 4628-1:2003 - Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 1: General introduction and designation system;

.2 ISO 4628-2:2003 - Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 2: Assessment of degree of blistering; and

.3 ISO 4628:2003 - Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of common types of defect - Part 3: Designation of degree of rusting.

19 It should be noted that the test is valid irrespective of production site, meaning that no individual testing of product from different production sites is required.

20 Refer to the following standards:

.1 ISO 8502-6:2006. Preparation of steel substrates before application of paints and related products □ Tests for the assessment of surface clean - *Part 6: Extraction of soluble contaminants for analysis - The Bresle method; and*

.2 ISO 8502-9:1998. Preparation of steel substrates before application of paints and related products - Tests for the assessment of surface cleanliness - Part 9: Field method for the conductometric determination of water-soluble salts.

21 Both of actual specimen data and manufacturer's requirement/recommendation.

22 See footnote 12 above

23 See footnote 16 above

SC 259 (cont)

24 *Six equally distributed measuring points are used on panels size 150 mm x 100 mm.*

25 *See footnote 18 above*

26 *It should be noted that the test is valid irrespective of production site, meaning that no individual testing of product from different production sites is required.*

27 *See footnote 20 above*

28 *Both of actual specimen data and manufacturer's requirement/recommendation."*

Interpretation

Only the footnoted standards referred to in Annex 1 are to be applied, i.e. they are mandatory.

End of Document

SC 260 (Mar 2013) (Rev.1 June 2015) Sample Extraction Smoke Detection System (FSS Code / Chapter 10 / 2.4.1.2 as amended by MSC.292 (87))

FSS Code 10.2.4.1.2:

The control panel shall be located on the navigation bridge or in the fire control station. An indicating unit shall be located on the navigation bridge if the control panel is located in the fire control station.

SOLAS II-2/3.18 (Definitions):

Control stations are those spaces in which the ship's radio or main navigating equipment or the emergency source of power is located or where the fire recording or fire control equipment is centralized. Spaces where the fire recording or fire control equipment is centralized are also considered to be a fire control station.

SOLAS II-2/10.4.3 (Storage rooms of fire extinguishing medium):

When the fire extinguishing medium is stored outside a protected space, it shall be stored in a room which is located behind the forward collision bulkhead, and is used for no other purposes. Any entrance to such a storage room shall preferably be from the open deck and shall be independent of the protected space. If the storage space is located below deck, it shall be located no more than one deck below the open deck and shall be directly accessible by a stairway or ladder from the open deck. Spaces which are located below deck or spaces where access from the open deck is not provided, shall be fitted with a mechanical ventilation system designed to take exhaust air from the bottom of the space and shall be sized to provide at least 6 air changes per hour. Access doors shall open outwards, and bulkheads and decks including doors and other means of closing any opening therein, which form the boundaries between such rooms and adjacent enclosed spaces shall be gastight. For the purpose of the application of tables 9.1 to 9.8, such storage rooms shall be treated as fire control stations.

Interpretation

If the CO_2 system discharge pipes are used for the sample extraction smoke detection system, the control panel can be located in the CO_2 room provided that an indicating unit* is located on the navigation bridge. Such arrangements are considered to satisfy the requirements of the regulation of FSS Code 10.2.4.1.2 as amended by MSC.292(87).

**Indicating unit has the same meaning as repeater panel and observation of smoke should be made either by electrical means or by visual on repeater panel.*

Notes

1. This Unified Interpretation is to be uniformly implemented by IACS Societies not later than 1 January 2014.

2. Rev.1 of this Unified Interpretation is to be uniformly implemented by IACS Societies not later than 1 January 2016.

End of Document

SC 261 Interpretation of Performance Standards for voyage data recorders (VDRs)

(May 2013)
(Rev.1
Apr 2022)

(resolution MSC.333(90) as amended by MSC.494(104))

Operative paragraph 2 of resolution MSC.494(104) reads:

2. RECOMMENDS Governments to ensure that VDRs:

.1 if installed on or after 1 July 2022, conform to performance standards not inferior to those specified in the annex to resolution MSC.333(90), as amended by the present resolution;

.2 if installed on or after 1 July 2014 and before 1 July 2022, conform to performance standards not inferior to those specified in the annex to resolution MSC.333(90);

Interpretation

For application of resolution MSC.333(90) as amended by MSC.494(104), the phrase “installed on or after 1 July 2022” shall be interpreted as follows:

(a) for ships for which the building contract is placed on or after 1 July 2022, or in the absence of the contract, constructed on or after 1 July 2022, "installed on or after 1 July 2022" means any installation on the ship; and

(b) for ships other than those ships prescribed in (a) above, "installed on or after 1 July 2022" means a contractual delivery date for the equipment or, in the absence of a contractual delivery date, the actual delivery of the equipment to the ship on or after 1 July 2022.

Note:

1. This UI is to be uniformly implemented by IACS Societies from 1 July 2014.

2. Rev.1 of this Unified Interpretation is to be uniformly implemented by IACS Societies not later than 1 July 2022.

End of Document

SC 262 (June 2013) (Rev.1 May 2015) Fixed Foam Fire Extinguishing Systems, Foam-generating Capacity (FSS Code / CHAPTER 6 / 3.2.1.2 and 3.3.1.2 as amended by Res. MSC.327(90))

FSS Code Ch. 6, (as amended by Res. MSC.327(90)) 3.2.1.2 and 3.3.1.2:

Sufficient foam-generating capacity shall be provided to ensure the minimum design filling rate for the system is met and in addition shall be adequate to completely fill the largest protected space within 10 min.

Interpretation

1. This interpretation of the term “largest protected space” applies to a Machinery space of category A protected by a fixed high-expansion foam fire-extinguishing system complying with the provisions of the FSS Code.

2. Where such a machinery space includes a casing (e.g. an engine casing in a machinery space of category A containing internal combustion machinery, and/or a boiler), the volume of such casing, above the *level up to which foam shall be filled to protect the highest position of the fire risk objects within the machinery space*, need not be included in the volume of the protected space (See Figure 1).

3. The *level up to which foam shall be filled to protect the highest positioned fire risk objects within the machinery space* shall not be less than:
   - 1 m above the highest point of any such object; or
   - the lowest part of the casing,

   whichever is higher (See Figure 1).

4. Where such a machinery space does not include a casing, the volume of the largest protected space shall be that of the space in its entirety, irrespective of the location of any fire risk object therein (See Figure 2).

5. Fire risk objects include, but may not be limited to, those listed in SOLAS regulation II-2/3.31, and those defined in regulation II-2/3.34. Although not referred to in those regulations, they may also include items having a similar fire risk such as exhaust gas boilers or oil fuel tanks.

Notes

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2014.

2. Rev.1 is to be applied by IACS Societies on ships contracted for construction on or after 1 January 2016.

3. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

SC 262
(cont)

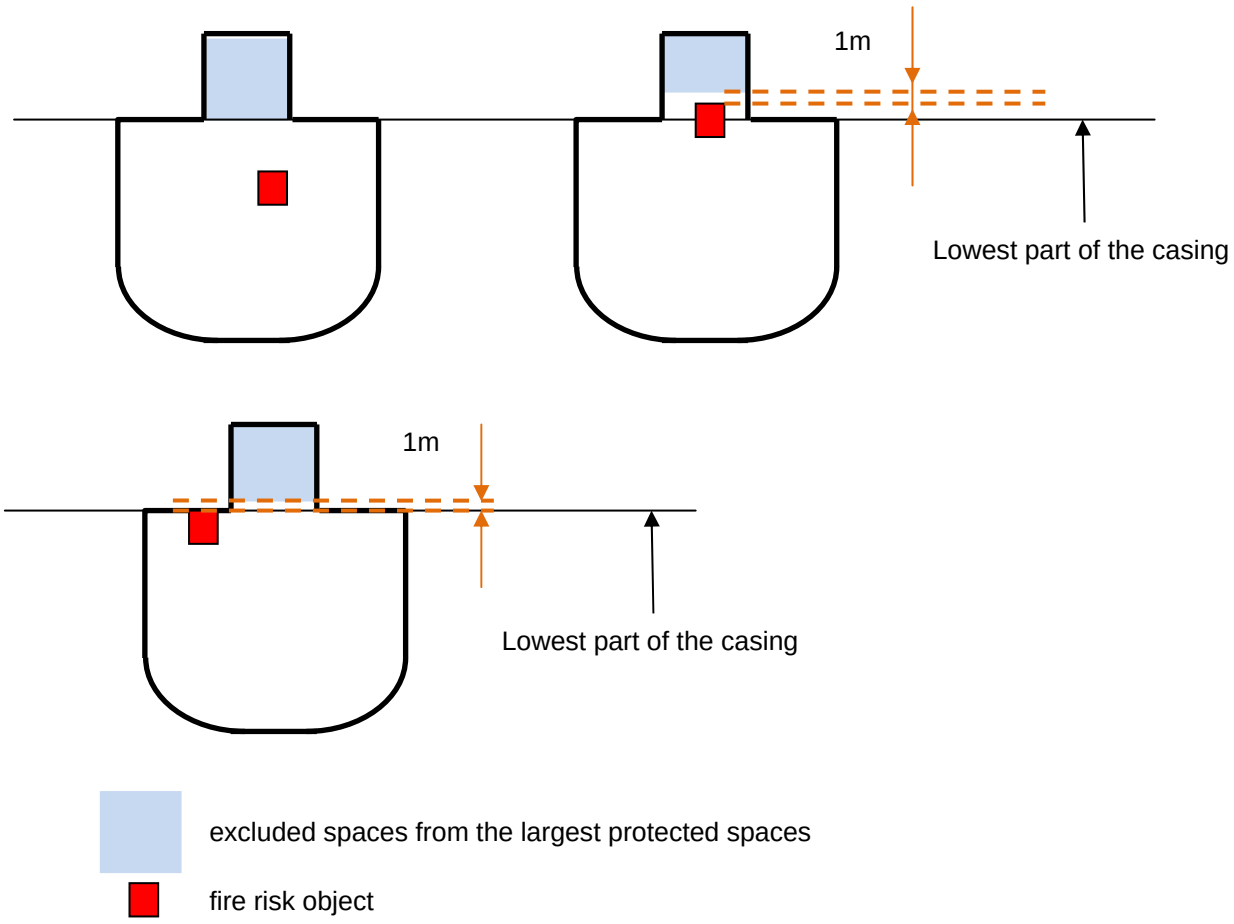


Figure 1
Machinery space including a casing

SC 262 (cont)

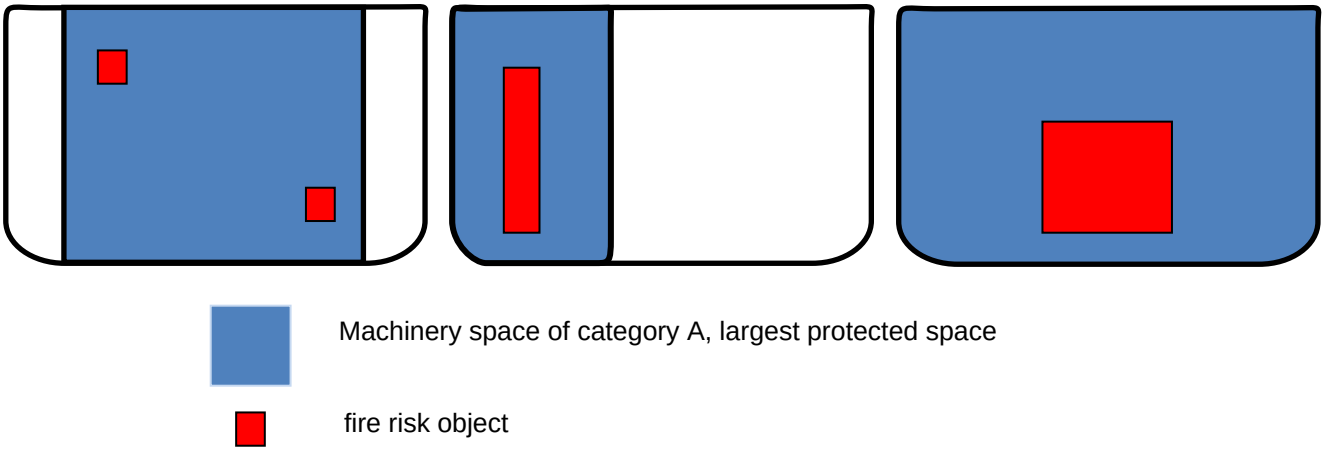


Figure 2
Machinery space not including a casing

End of Document

SC 263 Gaskets in fixed gas fire-extinguishing systems (SOLAS II-2/10.4, IMO FSS Code Ch 5)

(Oct 2013)

Deleted June 2014.

End of Document

SC 264 (Dec 2013) (Corr.1 Dec 2023) Non-combustible material as 'steel or equivalent' for ventilation ducts (SOLAS II-2, Reg. 9.7.1.1)

SOLAS II-2, Reg. 9.7.1 states:

7.1.1 Ventilation ducts, including single and double wall ducts, shall be of steel or equivalent material except flexible bellows of short length not exceeding 600 mm used for connecting fans to the ducting in air-conditioning rooms. Unless expressly provided otherwise in paragraph 7.1.6, any other material used in the construction of ducts, including insulation, shall also be non-combustible. However, short ducts, not generally exceeding 2 m in length and with a free cross-sectional area* not exceeding 0.02 m^2, need not be of steel or equivalent material, subject to the following conditions:

*.1 the ducts shall be made of non-combustible material, which may be faced internally and externally with membranes having low flame-spread characteristics and, in each case, a calorific value** not exceeding 45 MJ/m^2 of their surface area for the thickness used;*

.2 the ducts are only used at the end of the ventilation device; and

.3 the ducts are not situated less than 600 mm, measured along the duct, from an opening in an "A" or "B" class division, including continuous "B" class ceiling.

* The term free cross-sectional area means, even in the case of a pre-insulated duct, the area calculated on the basis of the inner dimensions of the duct itself and not the insulation.

** Refer to the recommendations published by the International Organization for Standardization, in particular publication ISO 1716:2002, Reaction to the fire tests for building products – Determination of the heat of combustion.

Interpretation

With respect to SOLAS II-2/9.7.1.1, a ventilation duct made of material other than steel may be considered equivalent to a ventilation duct made of steel, provided the material is non-combustible and has passed a standard fire test in accordance with Annex 1: Part 3 of the FTP Code as non-load bearing structure for 30 minutes following the requirements for testing "B" class divisions.

End of Document

NOTES:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies for ships contracted for construction on or after 1 July 2015.
2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

SC 265 (Dec 2013) (Del Nov 2023) Revised guidelines for cargo securing manual and code of safe practice for cargo stowage and securing - scope of application

Deleted in Nov 2023 as all recommendations are considered by MSC.1/Circ.1352/Rev.1.

End of Document

SC 266 (Dec 2013) (Del Feb 2024) Revised guidelines for cargo securing manual and code of safe practice for cargo stowage and securing - scope of application

Deleted in February 2024.

SC 267 (Jan 2015) (Rev.1 Jan 2016) (Rev.2 Sept 2016) Implementation of the requirements relating to lifeboat release and retrieval systems (LSA Code Paragraph 4.4.7.6 as amended by resolution MSC.320(89))

LSA Code, paragraph 4.4.7.6.9, as amended by resolution MSC.320(89):

.9 all components of the hook unit, release handle unit, control cables or mechanical operating links and the fixed structural connections in a lifeboat shall be of material corrosion resistant in the marine environment without the need for coatings or galvanizing. ...

Interpretation

All Interlocks ("mechanical protection" of on load release), which include hydrostatic components in the operating mechanism, shall also be of material corrosion resistant in the marine environment.

Where stainless steel having a Pitting Resistance Equivalent Number (PREN = 1 • %Cr + 3.3 (%Mo + 0.5 • %W) + 16 • %N) of 22 or more is chosen, such stainless steel do not need to be subjected to ISO 9227:2012 or other equivalent recognized national standard.

Where stainless steel having a PREN < 22, or another corrosion resistant material/alloy is chosen, the material is to be qualified by corrosion test according to ISO 9227:2012 or other equivalent recognized national standard. When the test is carried out in accordance with ISO 9227:2012, neutral salt spray (NSS) is to be used, with 1000 hours test duration for components outside the lifeboat, and 160 hours for those inside the lifeboat. The salt spray tests may be conducted by using round specimens (diameter is 14mm) according to IACS UR W2.4.2.

After the salt spray test, the release mechanism shall be subjected to load and release test as described in resolution MSC.81(70), as amended by resolution MSC.321(89), part 1, paragraph 6.9.4.1 to demonstrate satisfactory operation. The load and release shall be repeated 10 times. Where specimens are used for the salt spray tests, tensile tests shall be conducted in lieu of the load and release test. The results from the tests shall be in order to verify that the reduction in the ultimate tensile strength and reduction in cross sectional area ratio is less than 5% between corrosion tested and non-corrosion tested specimens.

NOTE:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies for approvals issued in accordance with SOLAS III/34 and the LSA Code on or after 1 January 2016.

2. Revision 1 of this Unified Interpretation is to be uniformly implemented by IACS Societies for approvals issued in accordance with SOLAS III/34 and the LSA Code no later than 1 July 2016.

3. Revision 2 of this Unified Interpretation is to be uniformly implemented by IACS Societies for approvals issued in accordance with SOLAS III/34 and the LSA Code no later than 1 January 2017.

SC 267 (cont)

Where austenitic stainless steels (e.g. 316L or 316) are used for welded structures, the risk of sensitisation to intergranular corrosion is to be addressed by the component manufacturer's quality control system.

Austenitic stainless steels 201, 304, 321, 347 are susceptible to pitting and crevice corrosion, and therefore unsuitable for these applications.

For operating cables covered with sheath and installed inside the lifeboat, inner cables made of austenitic stainless steels 304 are acceptable without the corrosion test above.

LSA Code, paragraph 4.4.7.6.7.2, as amended by resolution MSC.320(89):

... This release mechanism shall be provided with a hydrostatic interlock unless other means are provided to ensure that the boat is waterborne before the release mechanism can be activated. In case of failure or when the boat is not waterborne, there shall be a means to override the hydrostatic interlock or similar device to allow emergency release ...

LSA Code, paragraph 4.4.7.6.6, as amended by resolution MSC.320(89):

.6 if a hydrostatic interlock is provided, it shall automatically reset upon lifting the boat from the water.

Interpretation

The reset function as required by paragraph 4.4.7.6.6 is also to apply to the "other means" or "similar device" referred to in paragraph 4.4.7.6.7.2.

Where a safety pin is fitted to facilitate compliance with SOLAS regulation III/1.5 then, in line with paragraph 4 of the Annex to MSC.1/Circ.1327, the safety pin arrangement must be acceptable to the hook manufacturer (as defined in paragraph 9.9 of the Annex to MSC.1/Circ.1392).

LSA Code, paragraph 4.4.7.6.14, as amended by resolution MSC.320(89):

.14 the load-bearing components of the release mechanism and the fixed structural connections in the lifeboat shall be designed with a calculated factor of safety of 6 based on the ultimate strength of the materials used, and the mass of the lifeboat when loaded with its full complement of persons, fuel and equipment, assuming the mass of the lifeboat is equally distributed between the falls, except that the factor of safety for the hanging-off arrangement may be based upon the mass of the lifeboat when loaded with its full complement of fuel and equipment plus 1,000 kg; ...

Interpretation

The hanging off arrangement (including the connections to the lifeboat RRS and davit) shall be designed with a calculated factor of safety of 6 based on the ultimate strength of the materials used, and mass of the lifeboat when loaded with its full complement of fuel and equipment plus 1,000 kg equally distributed between the falls.

End of Document

SC 268 (Mar 2014) Arrangements for fixed hydrocarbon gas detection systems in double-hull and double-bottom spaces of oil tankers

SOLAS Chapter II-2, Regulation 4.5.7.3.1

In addition to the requirements in paragraphs 5.7.1 and 5.7.2, oil tankers of 20,000 tonnes deadweight and above, constructed on or after 1 January 2012, shall be provided with a fixed hydrocarbon gas detection system complying with the Fire Safety Systems Code for measuring hydrocarbon gas concentrations in all ballast tanks and void spaces of double-hull and double-bottom spaces adjacent to the cargo tanks, including the forepeak tank and any other tanks and spaces under the bulkhead deck adjacent to cargo tanks.

Interpretation

1. The term *"cargo tanks"* in the phrase *"spaces adjacent to the cargo tanks"* includes slop tanks except those arranged for the storage of oily water only.

2. The term *"spaces"* in the phrase *"spaces under the bulkhead deck adjacent to cargo tanks"* includes dry compartments such as ballast pump-rooms and bow thruster rooms and any tanks such as freshwater tanks, but excludes fuel oil tanks.

3. The term *"adjacent"* in the phrase *"adjacent to the cargo tanks"* includes ballast tanks, void spaces, other tanks or compartments located below the bulkhead deck located adjacent to cargo tanks and includes any spaces or tanks located below the bulkhead deck which form a cruciform (corner to corner) contact with the cargo tanks.

NOTE:

1. This Unified Interpretation is to be applied by IACS Societies on ships contracted for construction on or after 1 July 2015.

2. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 269 Means of escape from the steering gear space in cargo ships

(Dec 2014) (Rev.1 Dec 2016) (Rev.2 Nov 2024)

Interpretation of SOLAS regulation II-2/13.4.2.2 and 13.4.2.3

The last sentence of SOLAS regulation II-2/13.4.2.2 reads:

"*4.2.2 Dispensation from two means of escape*

…

In the steering gear space, a second means of escape shall be provided when the emergency steering position is located in that space unless there is direct access to the open deck."

SOLAS regulation II-2/13.4.2.3 reads:

"*4.2.3 Escape from machinery spaces other than those of category A*

From machinery spaces other than those of category A, two escape routes shall be provided except that a single escape route may be accepted for spaces that are entered only occasionally, and for spaces where the maximum travel distance to the door is 5 m or less."

Interpretation

1. Steering gear spaces which do not contain the emergency steering position need only have one means of escape.

2. Steering gear spaces containing the emergency steering position can have one means of escape provided it leads directly onto the open deck. Otherwise, two means of escape are to be provided but they do not need to lead directly onto the open deck.

3. The dispensations allowed in the last sentence of SOLAS regulation II-2/13.4.2.2 and by SOLAS regulation II-2/13.4.2.3 are to apply regardless of the ship's size.

Notes:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2016.

2. Rev.1 of this Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2018.

3. Rev.2 of this Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2026.

3. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 270

(Jan 2015) (Corr.1 Mar 2015) (Corr.2 Sept 2015) (Rev.1 Dec 2015)

Fire pumps in ships designed to carry five or more tiers of containers on or above the weather deck (Res. MSC.365(93), SOLAS II-2/10.2.1.3, II-2/10.2.2.4.1.2, II-2/10.7.3.2.3, II-2/19.3.1 and IMO FSS Code Ch. 12.2.2.1.1)

Regulation

SOLAS II-2/10.2.1.3, as per MSC.365(93)

The diameter of the fire main and water service pipes shall be sufficient for the effective distribution of the maximum required discharge from two fire pumps operating simultaneously, except that in the case of cargo ships, other than those included in paragraph 7.3.2, the diameter need only be sufficient for the discharge of 140 m^3/h.

SOLAS II-2/10.2.2.4.1.2, as per MSC.365(93)

pumps in cargo ships, other than any emergency pump, the quantity of water is not less than four thirds of the quantity required under regulation II-1/35-1 to be dealt with by each of the independent bilge pumps in a passenger ship of the same dimension when employed in bilge pumping, provided that in no cargo ship, other than those included in paragraph 7.3.2, need the total required capacity of the fire pumps exceed 180 m^3/h.

SOLAS II-2/10.7.3.2.3, as per MSC.365(93)

The mobile water monitors may be supplied by the fire main, provided the capacity of fire pumps and fire main diameter are adequate to simultaneously operate the mobile water monitors and two jets of water from fire hoses at the required pressure values. If carrying dangerous goods, the capacity of fire pumps and fire main diameter shall also comply with regulation 19.3.1.5, as far as applicable to on-deck cargo areas.

NOTE:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2016.

2. Rev.1 of the Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2017.

3. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to the IACS Procedural Requirement (PR) No. 29.

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SOLAS II-2/19.3.1, as per MSC.365(93)

3.1.2. The quantity of water delivered shall be capable of supplying four nozzles of a size and at pressures as specified in regulation 10.2, capable of being trained on any part of the cargo space when empty. This amount of water may be applied by equivalent means to the satisfaction of the Administration.

3.1.3. Means shall be provided for effectively cooling the designated underdeck cargo space by at least 5 l/min per square metre of the horizontal area of cargo spaces, either by a fixed arrangement of spraying nozzles or flooding the cargo space with water.

3.1.5. The total required capacity of the water supply shall satisfy paragraphs 3.1.2 and 3.1.3, if applicable, simultaneously calculated for the largest designated cargo space. The capacity requirements of paragraph 3.1.2 shall be met by the total capacity of the main fire pump(s), not including the capacity of the emergency fire pump, if fitted.

IMO FSS Code Ch. 12.2.2.1.1

2.2.1 Emergency fire pumps
2.2.1.1 Capacity of the pump

The capacity of the pump shall not be less than 40% of the total capacity of the fire pumps required by regulation II-2/10.2.2.4.1 of the Convention and in any case not less than the following:

.1 for passenger ships less than 1,000 gross tonnage and for cargo ships of 2,000 gross tonnage and upwards - 25 m^3/h; and

.2 for cargo ships less than 2,000 gross tonnage - 15 m^3/h.

Interpretation

1. On board cargo ships designed to carry five or more tiers of containers on or above the weather deck:

.1 in cases where the mobile water monitors are supplied by separate pumps and piping system, the total capacity of the main fire pumps need not exceed 180 m^3/h and the diameter of the fire main and water service pipes (hereinafter referred to “the pipework diameter”) need only be sufficient for the discharge of 140 m^3/h.

.2 in cases where the mobile water monitors are supplied by the main fire pumps; the total capacity of required main fire pumps and the pipework diameter shall be sufficient for simultaneously supplying both the required number of fire hoses and mobile water monitors. However, the total capacity shall not be less than the following .1 or .2, whichever is smaller:

.1 four thirds of the quantity required under regulation II-1/35-1 to be dealt with by each of the independent bilge pumps in a passenger ship of the same dimension when employed in bilge pumping; or

.2 180 m^3/h.

SC 270 (cont.)

.3 in cases where the mobile water monitors and the “water spray system” (fixed arrangement of spraying nozzles or flooding the cargo space with water) required by SOLAS regulation II-2/19.3.1.3 are supplied by the main fire pumps, the total capacity of the main fire pumps and the pipework diameter need only be sufficient to supply whichever of the following is the greater:

.1 the mobile water monitors and the four nozzles required by SOLAS regulation II-2/19.3.1.2; or

.2 the four nozzles required by SOLAS regulation II-2/19.3.1.2 and the water spray system required by SOLAS regulation II-2/19.3.1.3.

The total capacity, however, is not to be less than 1.2.1 or 1.2.2, whichever is smaller.

2. On board cargo ships designed to carry five or more tiers of containers on or above the weather deck, the total capacity of the emergency fire pump need not exceed 72 m^3/h.

End of Document

SC 271 (Jan 2015) Additional indicating unit in the cargo control room in accordance with amended FSS Code Chapter 9.2.5.1.3

FSS Code Chapter 9.2.5.1.3

In passenger ships, an indicating unit that is capable of individually identifying each detector that has been activated or manually operated call point that has operated shall be located on the navigation bridge. In cargo ships, an indicating unit shall be located on the navigation bridge if the control panel is located in the fire control station. In ships constructed on or after 1 July 2014, with a cargo control room, an additional indicating unit shall be located in the cargo control room. In cargo ships and on passenger cabin balconies, indicating units shall, as a minimum, denote the section in which a detector has activated or manually operated call point has operated.

Interpretation

A space in which a cargo control console is installed, but does not serve as a dedicated cargo control room (e.g. ship's office, machinery control room), should be regarded as a cargo control room for the purposes of paragraph 2.5.1.3 of chapter 9 of the FSS Code, as amended by resolution MSC.339(91), and therefore be provided with an additional indicating unit.

Note:

1. This Unified Interpretation is to be applied by IACS Societies on cargo ships contracted for construction on or after 1 January 2016.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 272 Inert gas supply to double-hull spaces (SOLAS II-2/4.5.5.1)

(Dec 2015) (Rev.1 July 2016)

SOLAS II-2/4.5.5.1 Application (as amended by Res.MSC.365(93))

5.5.1.4 Tankers required to be fitted with inert gas systems shall comply with the following provisions:
.1 double-hull spaces shall be fitted with suitable connections for the supply of inert gas;

SOLAS II-2/4.5.7.3 Arrangements for fixed hydrocarbon gas detection systems in double-hull and double-bottom spaces of oil tankers

5.7.3.1 In addition to the requirements in paragraphs 5.7.1 and 5.7.2, oil tankers of 20,000 tonnes deadweight and above, constructed on or after 1 January 2012, shall be provided with a fixed hydrocarbon gas detection system complying with the Fire Safety Systems Code for measuring hydrocarbon gas concentrations in all ballast tanks and void spaces of double-hull and double-bottom spaces adjacent to the cargo tanks, including the forepeak tank and any other tanks and spaces under the bulkhead deck adjacent to cargo tanks.

Interpretation

Double-hull spaces required to be fitted with suitable connections for the supply of inert gas as per SOLAS II-2/4.5.5.1.4.1 are all ballast tanks and void spaces of double-hull and double-bottom spaces adjacent to the cargo tanks, including the forepeak tank and any other tanks and spaces under the bulkhead deck adjacent to cargo tanks, except cargo pump-rooms and ballast pump-rooms.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2017.

2. Rev.1 of this Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2017.

3. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 273 (Nov 2015) (Rev.1 May 2016) Inclusion of mediums of the fire-fighting systems in lightweight (SOLAS II-1/2.21, SOLAS II-2/3.28) and lightship condition (IS Code 2008 Paragraph 2.23)

Regulations

SOLAS II-1/2.21 and SOLAS II-2/3.28

"Lightweight is the displacement of a ship in tonnes without cargo, fuel, lubricating oil, ballast water, fresh water and feedwater in tanks, consumable stores, and passengers and crew and their effects."

IS Code 2008 Paragraph 2.23

"Lightship condition is a ship complete in all respects, but without consumables, stores, cargo, crew and effects, and without any liquids on board except that machinery and piping fluids, such as lubricants and hydraulics, are at operating levels."

Interpretation

The weight of mediums on board for the fixed fire-fighting systems (e.g. freshwater, CO_2, dry chemical powder, foam concentrate, etc.) shall be included in the lightweight and lightship condition.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2017.

2. Rev.1 of this Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2017.

3. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 274 (Dec 2015) (Rev.1 Feb 2021) Hazardous area classification in respect of selection of electrical equipment, cables and wiring and positioning of openings and air intakes

Interpretation of SOLAS regulation II-1/45.11

Regulation 45.11 of SOLAS Chapter II-1 as amended by IMO resolutions up to MSC.436(99) reads as follows.

11 In tankers, electrical equipment, cables and wiring shall not be installed in hazardous locations unless it conforms with standards not inferior to those acceptable to the Organization. However, for locations not covered by such standards, electrical equipment, cables and wiring which do not conform to the standards may be installed in hazardous locations based on a risk assessment to the satisfaction of the Administration, to ensure that an equivalent level of safety is assured.*

** Refer to the standards published by the International Electrotechnical Commission, IEC 60092-502:1999 Electrical installations in ships - Tankers.*

Interpretation

Where the prescriptive requirements within SOLAS and related Codes (IBC, IGC) and the standards published by the International Electrotechnical Commission, such as but not limited to IEC 60092-502:1999, are not aligned, the prescriptive requirements in SOLAS and Codes take precedence and are to be applied. The differences revealed between the above-mentioned documents are listed in Annex.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies from 1 January 2017.

2. Rev.1 of this UI is to be uniformly implemented by IACS Societies on ship constructed on or after from 1 July 2022.

SC 274 (cont)

ANNEX - Summary of Discrepancies on the Hazardous Area Classification Issues among SOLAS/IBC/IGC and IEC 60092-502:1999

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999
1	Hazardous area and classification on open deck from the cargo tank ventilation outlet for small flow by thermal variations	Within 5m radius; Regulation 11.6.2.2 of SOLAS Chapter II-2 as amended by IMO resolutions up to MSC.421(98) (hereinafter the same). Reference is made to UI SC70 “Cargo tank vent systems and selection of electrical equipment”.			Within 4.5m radius; IEC 60092-502:1999, 4.2.2.7 and 4.2.3.1. Zone 1: open areas on deck within a 3m radius. Zone 2: additional 1.5m beyond Zone 1; IEC 60092-502:1999, 4.2.2.7 and 4.2.3.1.
2	The separation distance of the nearest air intakes for non-hazardous spaces from the tank ventilation outlet for small flow by thermal variations	At least 10m; the openings shall be arranged in accordance with regulation 4.5.3.4.1 of SOLAS Chapter II-2 referred to in regulation 11.6.2 of SOLAS Chapter II-2.	At least 10m; paragraph 8.3.4.2 of the IBC Code as amended by IMO resolutions up to MSC.460(101). At least 15m; paragraph 15.12.1.3 of the IBC Code (although toxicity not flammability).	At least 10m; paragraph 8.2.11.2 of the IGC Code as amended by IMO resolutions up to MSC.441(99) (hereinafter the same). Cargo tank PRV vent exits: at least equal to B or 25m, whichever is less. For ships less than 90m in length, smaller distances may be permitted; paragraph 8.2.11.1 of the IGC Code.	At least 6m; IEC 60092-502:1999, 4.2.2.7, 4.2.3.1 and 8.2.5.
3	The separation distance of the nearest air intakes for non-hazardous spaces from the tank vent	At least 10m; Regulation 4.5.3.4.1.3 of SOLAS Chapter II-2. At least 10m; Regulation	At least 10m; paragraph 12.1.5 of the IBC Code. At least 15m; paragraph 15.12.1.3 of the IBC	At least 10m; paragraph 12.1.6 of the IGC Code. Cargo tank PRV vent exits: at least equal to B	At least 11.5m; IEC 60092-502:1999, 4.2.2.8, 4.2.3.2 and 8.2.5.

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No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999
	outlets for cargo loading, discharging and ballasting	11.6.2.2 of SOLAS Chapter II-2 referring back to 4.5.3.4.1 of SOLAS Chapter II-2.	Code (although toxicity not flammability).	or 25m, whichever is less. For ships less than 90m in length, smaller distances may be permitted; paragraph 8.2.11.1 of the IGC Code. All other vent outlets connected to the cargo containment system: at least 10m; paragraph 8.2.11.2 of the IGC Code.	
4	The separation distance of the nearest air intakes for non-hazardous areas from the ventilation exhaust outlet for hazardous areas (i.e. cargo compressor room, cargo pump room, etc.)	MSC.1/Circ.1321 Pt.IV Ch.3 Para.1.2: the position of the cargo pump room vent outlet should be arranged at a distance of at least 3m measured horizontally from any ignition source and from the nearest opening to accommodation, service or machinery spaces.	At least 10m; paragraph 12.1.5 of the IBC Code.	At least 10m; paragraph 12.1.6 of the IGC Code. Ventilation ducts, air intakes and exhaust outlets serving artificial ventilation systems shall be positioned in accordance with recognized standards*; paragraph 12.1.5 of the IGC Code. * IEC60092-502:1999	At least 6m; IEC 60092-502:1999, 4.2.2.7, 4.2.3.1 and 8.2.5.
5	Hazardous area and classification on open deck from the cargo shore connection or spillage coaming		Within the coaming required by paragraph 3.7.7 of the IBC Code or within a 3m radius beyond the coaming; paragraph 3.7.8 of the IBC Code.	Within 3m beyond the spillage coaming up to a height of 2.4m above the deck; paragraph 1.2.24.15 of the IGC Code.	Within 4.5m radius; IEC 60092-502:1999, 4.2.2.10 and 4.2.3.1. Zone 1: open areas on deck within a 3m radius, up to a height of 2.4m

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No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999
			It should be noted that paragraph 3.7.8 of the IBC Code only applies to stern or bow loading arrangements.		above the deck. Zone 2: additional 1.5m beyond Zone 1; IEC 60092-502:1999, 4.2.2.10 and 4.2.3.1.
6	Opening to main cargo control stations and service spaces not giving access to accommodations, control stations and similar spaces containing sources of ignition	Subject to Administration; Regulation 4.5.2.2 of SOLAS Chapter II-2. Note: Regulation 4.5.2.2 of SOLAS Chapter II-2 does not categorize the space as hazardous or non-hazardous.	Paragraph 3.2.3 of the IBC Code.		The intent of a minimum distance of 1.5m from the boundaries of any hazardous area is to be followed; IEC 60092-502:1999, 8.2.5.
7	Openings to accommodation spaces, service spaces, control stations and machinery spaces facing the cargo area	Not less than 4% of L, but not less than 3m from the end of the superstructure or deckhouse. (This distance need not exceed 5m); Regulation. 4.5.2 of SOLAS Chapter II-2.	Not less than 4% of L, but not less than 3m from the end of the superstructure or deckhouse. (This distance need not exceed 5m); paragraph 3.2.3 of the IBC Code.	Not less than 4% of L, but not less than 3m from the end of the superstructure or deckhouse. (This distance need not exceed 5m); paragraph 3.2.4.1 of the IGC Code.	At least 1.5m from the boundaries of any hazardous area; IEC 60092-502:1999, 8.2.5.
8	Access doors to forecastle spaces containing source of ignition facing the cargo area	Access doors to forecastle spaces containing source of ignition shall not face the cargo area; Regulation 4.5.2.1 of SOLAS Chapter II-2. Access doors to forecastle spaces containing source of ignition shall not face the	Access doors to forecastle spaces containing source of ignition shall not face the cargo area; paragraph 3.2.3 of the IBC Code. Reference is made to UI SC120 “Access to forecastle spaces on tankers; regulations 4.5.2.1 and 4.5.2.2 of	Access doors to forecastle spaces containing source of ignition shall not face the cargo area; paragraph 3.2.4.1 of the IGC Code. Accesses to forecastle spaces containing sources of ignition may be permitted through a single door facing the	The forecastle spaces installed the access doors facing the cargo area shall be designated as the hazardous area of Zone 2; IEC 60092-502:1999, 4.2. See also IEC 60092-502:1999, 4.2.3.6 as commented in item 18 below.

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No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999
		cargo area and are to be at not less than 3m from the end of the superstructure or deckhouse. (This distance need not exceed 5m); Regulation. 4.5.2.1 of SOLAS Chapter II-2. Reference is made to UI SC120 “Access to forecastle spaces on tankers; regulations 4.5.2.1 and 4.5.2.2 of SOLAS Chapter II-2, paragraph 3.2.3 of the IBC Code and paragraph 3.2.4” of the IGC Code.	SOLAS Chapter II-2, paragraph 3.2.3 of the IBC Code and paragraph 3.2.4 of the IGC Code”.	cargo area, provided the doors are located outside hazardous areas as defined in chapter 10; paragraph 3.2.4.4 of the IGC Code. Reference is made to UI SC120 “Access to forecastle spaces on tankers; regulations 4.5.2.1 and 4.5.2.2 of SOLAS Chapter II-2, paragraph 3.2.3 of the IBC Code and paragraph 3.2.4” of the IGC Code.	
9	Ventilation of cargo pump rooms (cargo handling spaces on chemical and gas carriers)	20 air changes/hour; Regulation 4.5.4.1 of SOLAS Chapter II-2 and MSC.1/Circ.1321, Pt. IV, Ch. 3, Para. 1.1.	30 air changes/hour; paragraph 12.1.3 of the IBC Code. 45 air changes/hour; paragraph 15.17 of the IBC Code (toxic).	30 air changes/hour; paragraph 12.1.3 of the IGC Code.	Spaces containing sources of release: 30 air changes/hour; IEC 60092-502:1999, 8.1.3. Note: The IEC standard refer to spaces “containing sources of release”, while the IBC and IGC Codes refer to spaces for “cargo handling operations”.
10	Ventilation of hazardous spaces not containing		20 air changes/hour; spaces normally entered		Spaces not containing sources of release: 6 air

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No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999
	source of release		paragraph 12.2 of the IBC Code. 8 air changes/hour; spaces not normally entered paragraph 12.3 of the IBC Code (16 air changes/hour if portable).		changes/hour; IEC 60092-502:1999, 8.1.3.
11	Concentration of gas implying that space is non-hazardous (alarm limits)	10% LFL (Lower Flammable Limit) for cargo pump rooms in tankers; Regulation 4.5.10.1.3 of SOLAS Chapter II-2. 30% LFL for all ballast tanks and void spaces of double-hull and double-bottom spaces adjacent to the cargo tanks in oil tankers of 20,000 tonnes deadweight and above; Regulation 4.5.7.3 of SOLAS Chapter II-2 and Paragraph 2.2.3.3 of Chapter 16 of the FSS Code as amended by IMO resolutions up to MSC.410(97).	10% LFL for cargo pump room; paragraph 11.1.1.7 of the IBC Code (Res. MSC.219(82)), clarifying that regulation 4.5.10 of SOLAS Chapter II-2 applies, in which case “hydrocarbon gases” are replaced by “flammable vapours”.	Alarms shall be activated for flammable products when the vapour concentration reaches 30% of the lower flammable limit, for the spaces of paragraph 13.6.2 of the IGC Code; paragraph 13.6.15 of the IGC Code.	30% LFL; IEC 60092-502:1999, 8.4.2. Note: The requirement of the standard applies to spaces protected by over-pressure.
12	Fan monitoring (air lock)			Where spaces are protected by pressurization, the	Motor running or rotating fan monitoring device is not accepted; IEC

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No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999
				ventilation shall be designed and installed in accordance with recognized standards*; paragraph 3.6.2 of the IGC Code. * IEC 60092-502:1999. As per the Note to 8.4.3 of the standard, a fan motor or a fan rotation monitoring device will not satisfy this requirement.	60092-502:1999, 8.4.3.
13	Tanks for heated cargo	Tanker requirements apply to tankers carrying cargo with FP below 60°C; Regulation 1.6.1 of SOLAS Chapter II-2. For petroleum cargoes with FP of 60°C and above only deck foam requirements apply; Regulation 1.6.4 of SOLAS Chapter II-2. Hazardous zone classification and electrical installation shall be complied with IEC 60092-502:1999; Regulation 45.11 of SOLAS Chapter II-1 as	Follows SOLAS principle related to flashpoint, however the IBC Code considers non-flammable (NF) products and products with a flashpoint of 60°C and above, in a different way (paragraphs 11.1.2 & 11.1.3 of the IBC Code); In the case of a heated cargo, carriage conditions might need to be established and the requirements for cargoes having a flashpoint not exceeding 60°C applied; paragraph 10.1.6 of the IBC Code.		When carrying cargoes heated to temperature within 15°C of their flash point, hazardous zone classification for tankers carrying cargoes with FP not exceeding 60°C applies; IEC 60092-502:1999, 4.3.2 referring back to 4.2.

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No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999
		amended by IMO resolutions up to MSC.436(99) (hereinafter the same).			
14	Classification of cargo pump room	Hazardous zone classification and electrical installation shall be complied with IEC 60092-502:1999; Regulation 45.11 of SOLAS Chapter II-1.		Paragraph 1.2.24.6 of the IGC Code.	IEC 60092-502:1999, 4.1.4.1 Table 1 and 4.2.2.4 may indicate that cargo pump rooms are Zone 1. However, as ventilation is only running during cargo handling, the requirements may be interpreted that it is Zone 0 (Flag Administration position may be required).
15	Discontinuation of ventilation for long periods		Spare parts shall be carried for each type of ventilation fan required onboard; paragraph 12.1.9 of the IBC Code.	Where fans are required, full required ventilation capacity for each space shall be available after failure of any single fan, or spare parts shall be provided comprising a motor, starter spares and complete rotating element, including bearings of each type; paragraph 12.1.8 of the IGC Code.	IEC 60092-502:1999, 8.3.1 includes an assumption that ventilation shall not be discontinued for long periods.
16	Gas carrier ballast tanks			Ballast tanks may be connected to pumps in machinery spaces;	Ballast tanks on gas carriers, separated from a hold space, where

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No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999
				paragraph 3.7.5 of the IGC Code.	cargo is carried in a cargo tank requiring a secondary barrier, by a single gastight boundary, are hazardous areas Zone 1.
17	Gas carrier hold space				Hold spaces of gas carriers (except those with C-tanks), where a secondary barrier is required, are considered hazardous areas Zone 0; IEC 60092-502:1999, 4.4.1 and Annex D.
18	Access to forward spaces below level of main deck	Access openings to service spaces, control stations and machinery spaces are not to face the cargo area; Regulation 4.5.2 of SOLAS Chapter II-2. Reference is made to UI SC120 “Access to forecastle spaces on tankers; regulations 4.5.2.1 and 4.5.2.2 of SOLAS Chapter II-2, paragraph 3.2.3 of the IBC Code and paragraph 3.2.4” of the IGC Code.	Reference is made to UI SC120 “Access to forecastle spaces on tankers; regulations 4.5.2.1 and 4.5.2.2 of SOLAS Chapter II-2, paragraph 3.2.3 of the IBC Code and paragraph 3.2.4” of the IGC Code.	Reference is made to UI SC120 “Access to forecastle spaces on tankers; regulations 4.5.2.1 and 4.5.2.2 of SOLAS Chapter II-2, paragraph 3.2.3 of the IBC Code and paragraph 3.2.4” of the IGC Code.	It is implied that as long as the sill height is above 0.5m then it is exempted from SOLAS and can face the cargo area; IEC 60092-502:1999, 4.2.3.6.
19	Hazardous zone classification on main deck of tankers with deck				The entire deck area up to 2.4m is considered as Zone 1 if deck girders

SC 274 (cont)

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999
	girders				are provided as they are considered to restrict natural ventilation; IEC 60092-502:1999, 4.2.2.11.
20	Hazardous zone in way of P/V-breaker	Regulation 4.6.2.2 of SOLAS Chapter II-2: at least 5m. Regulation 11.6.2.2 of SOLAS Chapter II-2: at least 10m .			10m from a cargo gas outlet intended for the passage of large volumes of gas or vapour mixture during cargo loading; IEC 60092-502:1999, 4.2.2.8 & 4.2.3.2 based on UI SC140, otherwise 4.5m from a P/V breaker which does not release large volumes of gas or vapour locally; IEC 60092-502:1999, 4.2.2.7 & 4.2.3.1.
21	Location of fan motors for cargo pump room and compressor room		To be located outside ducts; paragraph 12.1.8 of the IBC Code.	To be located outside ducts; paragraph 12.1.7 of the IGC Code.	IEC 60092-502:1999; follows zone classification. I.e. if Zone 0, outside ventilation duct (based on 6.5.2). If Zone 1, inside OK, provided certified for Zone 1.
22	Openings to accommodation spaces, service spaces, control stations and machinery spaces facing the cargo	Shall not face the cargo area. Can be located at the transverse bulkhead not facing the cargo area, at a distance of at least	Shall not face the cargo area. They shall be located on the end bulkhead not facing the cargo area and/or on the	Shall not face the cargo area. They Shall be located on the end bulkhead not facing the cargo area or on the	Access doors or other openings shall not be provided between an area intended to be considered as non-

SC 274 (cont)

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999
	area	4% of the length of the ship but not less than 3m from the end of the superstructure or deckhouse facing the cargo area. This distance need not exceed 5m; Regulation 4.5.2.1 of SOLAS Chapter II-2. Refer to Regulation 4.5.2.2 of SOLAS Chapter II-2 for permitted access doors to main cargo control stations and service spaces and to wheelhouse doors and windows.	outboard side of the superstructure or deck-house at a distance of at least 4% of the length (L) of the ship but not less than 3m from the end of the superstructure or deck-house facing the cargo area. This distance, however, need not exceed 5m. Refer to same paragraph for permitted access doors to spaces not having access to accommodation and service spaces and control stations, and wheelhouse doors and windows; paragraph 3.2.3 of the IBC Code.	outboard side of the superstructure or deck-house or on both at a distance of at least 4% of the length (L) of the ship but not less than 3m from the end of the superstructure or deck-house facing the cargo area. This distance, however, need not exceed 5m. Refer to same paragraph for wheelhouse doors and windows; paragraph 3.2.4.1 of the IGC Code.	hazardous and a hazardous area, or between a space intended to be considered as Zone 2 and a Zone 1 space except where required for operational reasons. Where access doors or other openings are provided for operational reasons, 4.1.5.2, 4.1.5.3, 4.1.5.4 or 4.1.5.5 apply; IEC 60092-502:1999, 4.1.5. Where a space has an opening into an adjacent, more hazardous space or area, it may be made into a less hazardous space or non-hazardous space by pressurisation designed and operated in accordance with the requirements given in 8.2 and 8.4; IEC 60092-502:1999, 8.1.4. Note: SOLAS and Codes refer to permitted openings of spaces,

SC 274 (cont)

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999
					while the IEC standard defines hazardous areas.
23	Protection by over-pressure			Paragraph 12.1.4 of the IGC Code.	Protection by over-pressure where a non-hazardous space has openings into a hazardous space; IEC 60092-502:1999, 8.4.
24	Air locks			Paragraph 3.6 of the IGC Code.	IEC 60092-502:1999, 4.1.5.3.
25	Earthed distribution systems and hull return systems	Earthed distribution systems shall not be used in a tanker. The Administration may exceptionally permit in a tanker the earthing of the neutral for alternating current power networks of 3,000 V (line to line) and over, provided that any possible resulting current does not flow directly through any of the dangerous spaces; Regulation 45.4.1 of SOLAS Chapter II-1. The hull return system of distribution shall not be used for any purpose in a tanker; Regulation 45.3.1 of SOLAS Chapter II-1.			Distribution systems: Distribution systems shall comply with the provisions of IEC 60092-201:2019. Both insulated and earthed distribution systems are permitted; systems with a hull or structure return, other than those noted under 5.2.2, are not permitted; IEC 60092-502:1999, 5.2.1. The following systems are permitted to be of hull or structure return type: − limited and locally earthed systems outside any hazardous area;

SC 274 (cont)

No.	Title	SOLAS	IBC	IGC	IEC 60092-502:1999
		The above regulation does not preclude under conditions approved by the Administration the use of: − impressed current cathodic protective systems; − limited and locally earthed systems; or − insulation level monitoring devices provided the circulation current does not exceed 30 mA under the most unfavourable conditions. Regulation 45.3.2 of SOLAS Chapter II-1.			− intrinsically-safe systems; − impressed current cathodic protective systems; IEC 60092-502:1999, 5.2.2. The neutral and any conductor required for protection against electric shock shall not be connected together or combined in a single conductor in a hazardous area; IEC 60092-502:1999, 5.2.3.
26	Hazardous zone classification on main deck of tankers	Hazardous zone classification and electrical installation shall be complied with IEC 60092-502:1999; Regulation 45.11 of SOLAS Chapter II-1.	Chapter 10 of the IBC Code: IEC 60092-502:1999.	Paragraph 1.2.24.9 of the IGC Code.	The cargo tanks, including all ballast tanks with cargo tank area; IEC 60092-502:1999, 4.2.2.11 & 4.2.3.5 (areas on open deck over cargo tanks as per the above IEC paragraphs do not coincide with the definition of the cargo area in SOLAS or the Codes).

End of Document

SC 275 Suitable number of spare air cylinders to be provided in connection with drills

(Jan 2016) (Rev.1 Sept 2016)

SOLAS II-2/15.2.2.6 (as added by Res. MSC.338(91), applicable from 01 July 2014)

"2.2.6 An onboard means of recharging breathing apparatus cylinders used during drills shall be provided or a suitable number of spare cylinders shall be carried on board to replace those used."

Interpretation

"A suitable number of spare cylinders" to be carried on board to replace those used for fire drills shall be at least one 'set of cylinders' for each mandatory breathing apparatus, unless additional spare cylinders are required by the shipboard safety management system (SMS).

'Set of cylinders' means the number of cylinders which are required to operate the breathing apparatus.

No additional cylinders are required for fire drills for breathing apparatus sets required by SOLAS Reg. II-2/19, IMSBC Code, the IBC Code or IGC Code.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies for all ships from 1 January 2017.

2. Rev.1 of this UI is to be uniformly implemented by IACS Societies for all ships from 1 January 2017.

End of Document

SC 276 Escape from machinery spaces on passenger ships

(Jan 2016)
(Rev.1
May 2024)

Interpretation of Regulation 13.4.1 of SOLAS Chapter II-2 as amended by MSC.99(73)

Regulation 13.4.1 reads as follows:

4.1.1 Escape from spaces below the bulkhead deck

Where the space is below the bulkhead deck, the two means of escape shall consist of either:

.1 two sets of steel ladders, as widely separated as possible, leading to doors in the upper part of the space, similarly separated and from which access is provided to the appropriate lifeboat and liferaft embarkation decks. One of these ladders shall be located within a protected enclosure that satisfies regulation 9.2.2.3, category (2), or regulation 9.2.2.4, category (4), as appropriate, from the lower part of the space it serves to a safe position outside the space. Self-closing fire doors of the same fire integrity standards shall be fitted in the enclosure. The ladder shall be fixed in such a way that heat is not transferred into the enclosure through non-insulated fixing points. The protected enclosure shall have minimum internal dimensions of at least 800 mm x 800 mm, and shall have emergency lighting provisions; or

.2 one steel ladder leading to a door in the upper part of the space from which access is provided to the embarkation deck, and additionally, in the lower part of the space and in a position well separated from the ladder referred to, a steel door capable of being operated from each side and which provides access to a safe escape route from the lower part of the space to the embarkation deck.

4.1.2 Escape from spaces above the bulkhead deck

Where the space is above the bulkhead deck, the two means of escape shall be as widely separated as possible and the doors leading from such means of escape shall be in a position from which access is provided to the appropriate lifeboat and liferaft embarkation decks. Where such means of escape require the use of ladders, these shall be of steel.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 February 2016.

2. Revision 1 of this Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2025.

3. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

SC 276 (cont)

4.1.4 Escape from machinery control rooms

Two means of escape shall be provided from a machinery control room located within a machinery space, at least one of which will provide continuous fire shelter to a safe position outside the machinery space.

Interpretation

1. A “safe position” can be any space, such as steering gear spaces where hydraulic oils for the steering gear equipment are stowed, and special category spaces and ro-ro spaces, from which access is provided and maintained clear of obstacles to the embarkation decks. This excludes lockers and storerooms, cargo spaces and spaces where flammable liquids are stowed.

2. Inclined ladders/stairways in machinery spaces being part of, or providing access to, escape routes but not located within a protected enclosure shall not have an inclination greater than 60° and shall not be less than 600 mm in clear width. Such requirement need not be applied to ladders/stairways not forming part of an escape route, only provided for access to equipment or components, or similar areas, from one of the main platforms or deck levels within such spaces (regulation II-2/13.4.1).

3. Machinery spaces may include working platforms and passageways, or intermediate decks at more than one deck level. In such case, the lower part of the space shall be regarded as the lowest deck level, platform or passageway within the space. At deck levels, other than the lowest one, where only one means of escape other than the protected enclosure is provided, self-closing fire doors shall be fitted in the protected enclosure at that deck level. Smaller working platforms in-between deck levels, or only for access to equipment or components, need not be provided with two means of escape (regulation II-2/13.4.1.1).

4. A protected enclosure providing escape from machinery spaces to an open deck may be fitted with a hatch as means of egress from the enclosure to the open deck. The hatch shall have minimum internal dimensions of 800 mm x 800 mm (regulation II-2/13.4.1.1.1).

5. Internal dimensions shall be interpreted as clear width, so that a passage having diameter of 800 mm is available throughout the vertical enclosure, as shown in Figure 1, clear of ship’s structure, with insulation and equipment, if any. The ladder within the enclosure can be included in the internal dimensions of the enclosure. When protected enclosures include horizontal portions their clear width shall not be less than 600 mm. Figure 1 is given as example of some possible arrangements which may be in line with the above interpretation (regulation II-2/13.4.1.1.1).

SC 276 (cont)

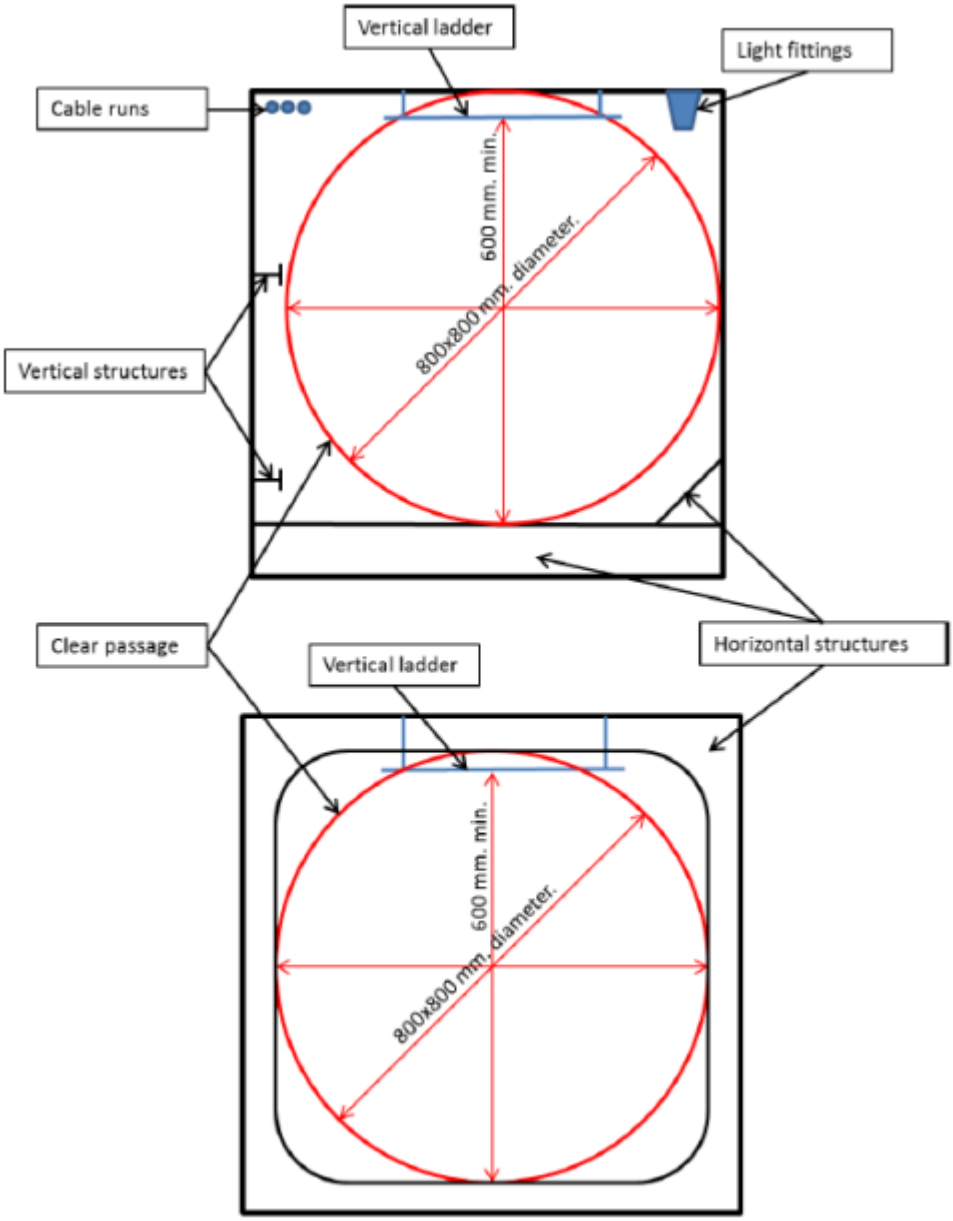


Figure 1

End of Document

SC 277
(Jan 2016)
(Rev.1
May 2024)

Escape from machinery spaces on cargo ships

Interpretation of Regulation 13.4.2 of SOLAS Chapter II-2 as amended by MSC.99(73)

Regulation 13.4.2 reads as follows:

4.2.1 Escape from machinery spaces of category A

Except as provided in paragraph 4.2.2, two means of escape shall be provided from each machinery space of category A. In particular, one of the following provisions shall be complied with:

.1 two sets of steel ladders, as widely separated as possible, leading to doors in the upper part of the space, similarly separated and from which access is provided to the open deck. One of these ladders shall be located within a protected enclosure that satisfies regulation 9.2.3.3, category (4), from the lower part of the space it serves to a safe position outside the space. Self-closing fire doors of the same fire integrity standards shall be fitted in the enclosure. The ladder shall be fixed in such a way that heat is not transferred into the enclosure through non-insulated fixing points. The enclosure shall have minimum internal dimensions of at least 800 mm x 800 mm, and shall have emergency lighting provisions; or

.2 one steel ladder leading to a door in the upper part of the space from which access is provided to the open deck and, additionally, in the lower part of the space and in a position well separated from the ladder referred to, a steel door capable of being operated from each side and which provides access to a safe escape route from the lower part of the space to the open deck.

4.2.3 Escape from machinery spaces other than those of category A

From machinery spaces other than those of category A, two escape routes shall be provided except that a single escape route may be accepted for spaces that are entered only occasionally and for spaces where the maximum travel distance to the door is 5 m or less.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 February 2016.

2. Revision 1 of this Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2025.

3. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

SC 277 (cont)

Interpretation

1. A “safe position” can be any space, such as steering gear spaces where hydraulic oils for the steering gear equipment are stowed, and vehicle and ro-ro spaces, from which access is provided and maintained clear of obstacles to the open deck. This excludes cargo spaces, lockers and storerooms, cargo pump-rooms and spaces where flammable liquids are stowed.

2. Inclined ladders/stairways in machinery spaces being part of, or providing access to, escape routes, but not located within a protected enclosure shall not have an inclination greater than 60° and shall not be less than 600 mm in clear width. Such requirement need not be applied to ladders/stairways not forming part of an escape route, only provided for access to equipment or components, or similar areas, from one of the main platforms or deck levels within such spaces (regulation II-2/13.4.2.1).

3. Machinery spaces of category A may include working platforms and passageways, or intermediate decks at more than one deck level. In such case, the lower part of the space shall be regarded as the lowest deck level, platform or passageway within the space.

At deck levels, other than the lowest one, where only one means of escape other than the protected enclosure is provided, self-closing fire doors shall be fitted in the protected enclosure at that deck level. Smaller working platforms in-between deck levels, or only for access to equipment or components, need not be provided with two means of escape (regulation II-2/13.4.2.1).

4. A protected enclosure providing escape from machinery spaces of category A to an open deck may be fitted with a hatch as means of egress from the enclosure to the open deck. The hatch shall have minimum internal dimensions of 800 mm x 800 mm (regulation II-2/13.4.2.1.1).

5. Internal dimensions shall be interpreted as clear width, so that a passage having diameter of 800 mm is available throughout the vertical enclosure, as shown in Figure 1, clear of ship’s structure, with insulation and equipment, if any. The ladder within the enclosure can be included in the internal dimensions of the enclosure. When protected enclosures include horizontal portions their clear width shall not be less than 600 mm. Figure 1 is given as example of some possible arrangements which may be in line with the above interpretation (regulation II-2/13.4.2.1.1).

6. In machinery spaces other than those of category A, which are not entered only occasionally, the travel distance shall be measured from any point normally accessible to the crew, taking into account machinery and equipment within the space (regulation II-2/13.4.2.3).

SC 277
(cont)

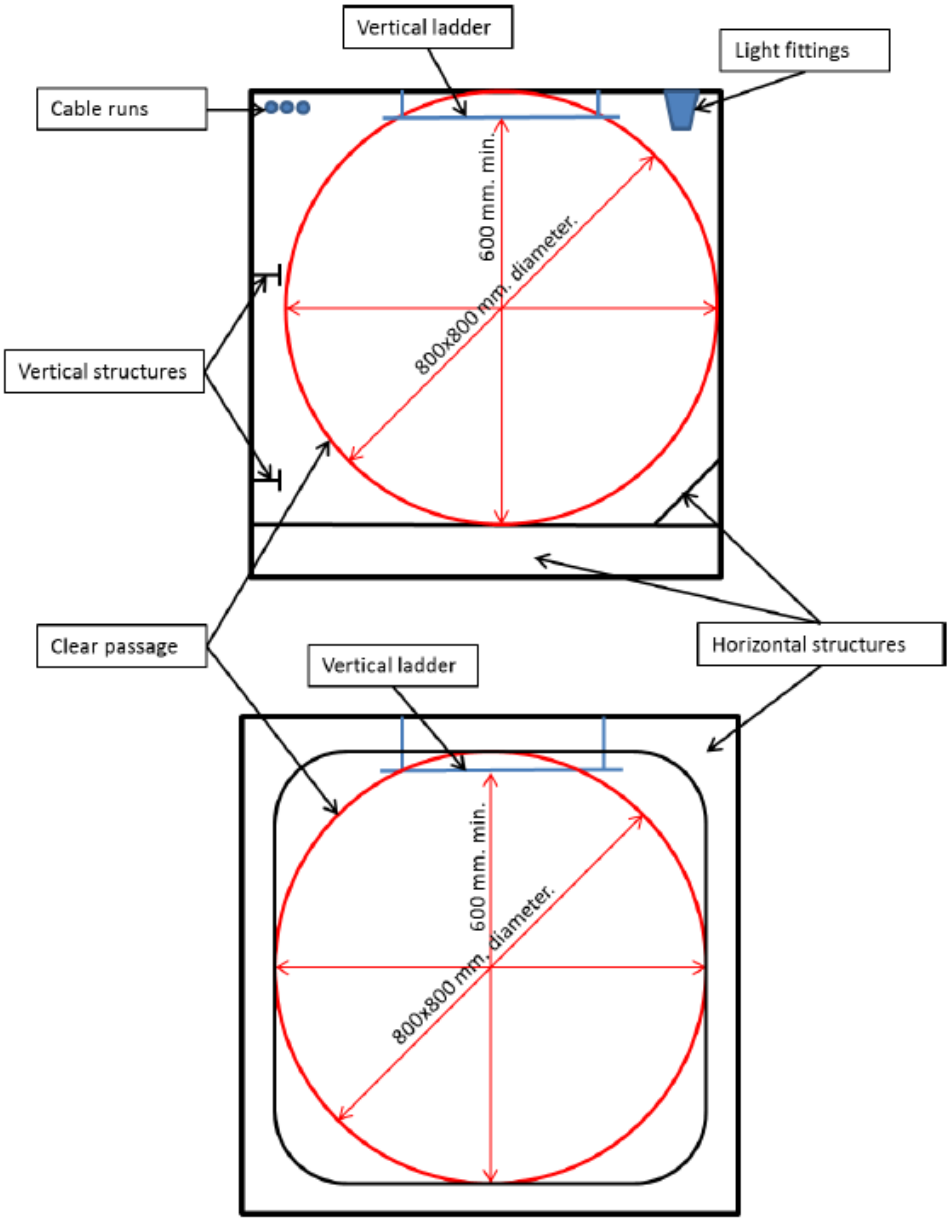


Figure 1

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SC 278 (Jan 2016) Escape from accommodation spaces, service spaces and control stations on cargo ships

SOLAS Chapter II-2, Regulation 13.3.3.2 and 13.3.3.3

3.3.2 Escape from spaces below the lowest open deck

Below the lowest open deck the main means of escape shall be a stairway and the second escape may be a trunk or a stairway.

3.3.3 Escape from spaces above the lowest open deck

Above the lowest open deck the means of escape shall be stairways or doors to an open deck or a combination thereof.

Interpretation

The “lowest open deck” shall be a category (10) “Open deck” (as defined in SOLAS chapter II-2, regulations 9.2.3.3.2.2 and 9.2.4.2.2.2) at the lowest height from baseline in way of accommodation spaces.

Note:

1. This Unified Interpretation is to be applied by IACS Societies on ships contracted for construction on or after 1 February 2016.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

End of Document

IACS Int. 2016

SC 279
(June 2016)

Annual testing of VDR, S-VDR, AIS and EPIRB

- **SOLAS regulation V/18.8 - Annual performance test of Voyage Data Recorder (VDR) and Simplified Voyage Data Recorder (S-VDR)**
- **SOLAS regulation V/18.9 - Annual performance test of Automatic Identification System (AIS)**
- **SOLAS regulation IV/15.9 - Annual test of EPIRB**

The SOLAS 74 as amended at regulation V/18 paragraph 8 reads:

SOLAS regulation V/18.8

The voyage data recorder system, including all sensors, shall be subjected to an annual performance test. The test shall be conducted by an approved testing or servicing facility to verify the accuracy, duration and recoverability of the recorded data. In addition, tests and inspections shall be conducted to determine the serviceability of all protective enclosures and devices fitted to aid location. A copy of the certificate of compliance issued by the testing facility, stating the date of compliance and the applicable performance standards, shall be retained on board the ship.

Moreover the annex to MSC.1 Circ./1222 at paragraph 3 expects:

3 The manufacturer must complete a review, record any changes and issue the completed test report within 45 days. To accommodate performance checks to align with the appropriate survey under the Harmonized System of Survey and Certification (HSSC), the annual performance check may be carried out up to 3 months before the due date for a passenger ship and -/+ 3 months of the due date for a cargo ship. (The maximum period between subsequent checks is, therefore, 15 months for passenger ships and 18 months for cargo ships, unless either certificate has been extended as permitted by SOLAS regulation I/14, in which case a similar extension may be granted.)

Interpretation

The annual performance test of VDR (or S-VDR) shall be carried out within the “time window” of the annual / periodical / renewal survey under the Harmonized System of Survey and Certification (HSSC), but not later than the date of completion of the survey for endorsement / renewal of the relevant Certificate.

Note:

1. This UI is to be applied by IACS Members when acting as recognized organizations, authorized by flag State Administrations to act on their behalf, unless otherwise advised, from 1 July 2017.

SC 279 (cont)

The SOLAS 74 as amended at regulation V/18 paragraph 9 reads:

SOLAS regulation V/18.9

9. The automatic identification system (AIS) shall be subjected to an annual test. The test shall be conducted by an approved surveyor or an approved testing or servicing facility. The test shall verify the correct programming of the ship static information, correct data exchange with connected sensors as well as verifying the radio performance by radio frequency measurement and on-air test using, e.g., a Vessel Traffic Service (VTS). A copy of the test report shall be retained on board the ship.

Moreover the annex to MSC.1 Circ./1252 at paragraph 3 expects:

3 To accommodate performance test to align with the appropriate survey under the Harmonized System of Survey and Certification (HSSC), the annual testing may be carried out:

.1 up to 3 months before the due date of the passenger ship renewal survey or the cargo ship safety equipment renewal survey; and

.2 3 months before or after the due date of the cargo ship safety equipment periodical/annual survey (the maximum period between subsequent test is governed by the time window associated to the subsequent surveys, unless either certificate has been extended as permitted by SOLAS regulation I/14, in which case a similar extension may be granted by the Administration).

Interpretation

The annual performance test of the Automatic Identification System (AIS) shall be carried out within the “time window” of the annual / periodical / renewal survey under the Harmonized System of Survey and Certification (HSSC), but not later than the date of completion of the survey for endorsement / renewal of the relevant Certificate.

SC 279 (cont)

The SOLAS 74 as amended at regulation IV/15 paragraph 9 reads:

SOLAS regulation IV/15.9

9 Satellite EPIRBs shall be:

.1 annually tested for all aspects of operational efficiency, with special emphasis on checking the emission on operational frequencies, coding and registration, at intervals as specified below:

.1 on passenger ships, within 3 months before the expiry date of the Passenger Ship Safety Certificate; and

.2 on cargo ships, within 3 months before the expiry date, or 3 months before or after the anniversary date, of the Cargo Ship Safety Radio Certificate.

The test may be conducted on board the ship or at an approved testing station; and

.2 subject to maintenance at intervals not exceeding five years, to be performed at an approved shore-based maintenance facility.

Moreover the MSC.1 Circ./955 at paragraph 2 and 4 reads:

…….omission……

The servicing intervals of the aforementioned life-saving appliances and satellite EPIRBs required by SOLAS regulations III/20.8, III/20.9 and IV/15.9, respectively, shall not exceed 12 months which may be extended to 17 months where in any case this is impracticable in exceptional circumstances. In the meantime, according to regulations I/8 and I/9 of the 1988 SOLAS Protocol, the said appliances shall be subjected to an annual or a periodical survey within 3 months before or after each anniversary of the Cargo Ship Safety Equipment Certificate and of the Cargo Ship Safety Radio Certificate, respectively, or the Cargo Ship Safety Certificate, i.e. maximum 18 months interval.

…….omission……

The Committee, in pursuance of the HSSC's objectives to "simplify survey requirements, thereby reducing the burden on Administrations, operators of ships and the crews of ships", decided that:

"the servicing intervals of life-saving appliances and radiocommunication equipment for ships, whose flag States implement the HSSC, may be in concert with the terms of the HSSC annual, periodical and renewal survey stipulated in the 1988 SOLAS Protocol notwithstanding regulations III/20.8, III/20.9 and IV/15.9 of the 1974 SOLAS Convention, as amended".

Interpretation

The annual test of the EPIRBs shall be carried out within the "time window" of the prescribed survey, but not later than the date of completion of the survey for endorsement / renewal of the relevant Certificate.

End of Document

SC 280 (June 2016) (Rev.1 June 2022) Angle of down-flooding (ϕf) / Angle at which an opening incapable of being closed weathertight (θv)

Interpretation of 2008 IS Code, International Grain Code and SOLAS/Ch.II-1-Reg.7-2

2008 IS Code & International Grain Code read as follows:

Φf is an angle of heel at which openings in the hull, superstructures or deckhouses which cannot be closed weathertight immerse.

SOLAS II-1/7-2 reads as follows:

θv is the angle, in any stage of flooding, where the righting lever becomes negative, or the angle at which an opening incapable of being closed weathertight becomes submerged.

Interpretation

In applying Φf or θv, openings which cannot be or are incapable of being closed weathertight include ventilators (complying with ICLL 19(4)) that for operational reasons have to remain open to supply air to the engine room, emergency generator room or closed ro-ro and vehicle spaces (if the same is considered buoyant in the stability calculation or protecting openings leading below) for the effective operation of the ship.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2017.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

3. Rev.1 is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2023.

End of Document

SC 281 (July 2016) Single fall and hook system used for launching a lifeboat or rescue boat - Interpretation of the LSA Code as amended by MSC.320(89) and MSC.81(70) as amended by MSC.321(89)

Withdrawn June 2017.

End of Document

SC 282 (Dec 2016) Application of materials other than steel on engine, turbine and gearbox installations

SOLAS Reg. II-2/4.2.2.5 Oil fuel piping

2.2.5.1 Oil fuel pipes and their valves and fittings shall be of steel or other approved material, ...

SOLAS Reg. II-2/4.2.3 Arrangements for lubricating oil

2.3.1 The arrangements for the storage, distribution and utilization of oil used in pressure lubrication systems shall be such as to ensure the safety of the ship and persons on board. The arrangements made in machinery spaces of category A, and whenever possible in other machinery spaces, shall at least comply with the provisions of paragraphs …, 2.2.5.1, …

SOLAS Reg. II-2/4.2.4 Arrangements for other flammable oils

The arrangements for the storage, distribution and utilization of other flammable oils employed under pressure in power transmission systems, control and activating systems and heating systems shall be such as to ensure the safety of the ship and persons on board. … In locations where means of ignition are present, such arrangements shall at least comply with the provisions of paragraphs …, 2.2.5.1, …

MSC.1/Circ. 1321, Guidelines for measures to Prevent Fires in Engine-rooms and Cargo pump-rooms, Part 2, Chapter 2

4.1.1 Housings and bodies of filters and strainers used in oil fuel, lubricating oil or other flammable oil systems should be made of steel or other equivalent material with a melting point above 930°C and with an elongation above 12%. Other housing and body materials may be utilized provided their use is specially considered on a case-by-case basis in relation to the risk of fire.

Interpretation

Materials other than steel may be assessed in relation to the risk of fire associated with the component and its installation. The use of materials other than steel is considered acceptable for the following applications:

1. internal pipes which cannot cause any release of flammable fluid onto the machinery or into the machinery space in case of failure, or

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Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships constructed on or after 1 July 2017.

SC 282 (cont)

2. components that are only subject to liquid spray on the inside when the machinery is running, such as machinery covers, rocker box covers, camshaft end covers, inspection plates and sump tanks. It is a condition that the pressure inside these components and all the elements contained therein is less than 0.18 N/mm^2 and that wet sumps have a volume not exceeding 100 litres, or

3. components attached to machinery which satisfy fire test criteria according to standard ISO 19921:2005/19922:2005 or other standards acceptable to the Administration, and which retain mechanical properties adequate for the intended installation.

End of Document

SC 283 Fire detection and alarms for boilers in unattended machinery spaces

(Aug 2017)

Withdrawn in Oct 2017

End of Document

SC 284 Automatic shutdown of the inert gas system and its components parts

(June 2018)

FSS Code Chapter 15.2.2.2.2 reads:

Automatic shutdown of the inert gas system and its components parts shall be arranged on predetermined limits being reached, taking into account the provisions of paragraphs 2.2.4, 2.3.2 and 2.4.2.

Interpretation

The automatic shut-down of the inert gas system and its components shall involve the following:

Shut-down of fans and closing of regulating valve for the following:
- High water level in scrubber (not applicable for N2)
- Low pressure/flow to scrubber (not applicable for N2)
- High-high temperature of inert gas supply

Closing of regulating valve in the event of:
- High oxygen content (in excess of 5% by volume)
- Failure of blowers/fans or N2 compressors

Activation of double-block and bleed arrangement upon (for ships with double block and bleed replacing water seal):
- Loss of inert gas supply
- Loss of power

Note:

1. This UI is to be uniformly implemented by IACS Societies for ships contracted for construction on or after 1 July 2019.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 285 Operational status of valves to cargo tanks

(June 2018)

FSS Code Chapter 15.2.2.3.2.2 reads:

The inert gas main shall be fitted with branch piping leading to the cargo tank. Branch piping for inert gas shall be fitted with either stop valves or equivalent means of control for isolating each tank. Where stop valves are fitted, they shall be provided with locking arrangements. The control system shall provide unambiguous information of the operational status of such valves to at least the control panel required in paragraph 2.2.4.

Interpretation

Unambiguous information regarding the operational status of stop valves in branch piping leading from the inert gas main to cargo tanks means position indicators providing open/intermediate/closed status information in the control panel required in the FSS code 15.2.2.4. Limit switches should be used to positively indicate both open and closed position. Intermediate position status shall be indicated when the valve is in neither open nor closed position.

Note:

1. This UI is to be uniformly implemented by IACS Societies for ships contracted for construction on or after 1 July 2019.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

End of Document

IACS Int. 2018

SC 286

(June 2018)

Operational status of the inert gas system

FSS Code Chapter 15.2.2.4.1 reads:

The operation status of the inert gas system shall be indicated in a control panel.

Interpretation

The operational status of the inert gas system shall be based on indication that inert gas is being supplied downstream of the gas regulating valve and on the pressure or flow of the inert gas mains downstream of the non-return devices. However, the operational status of the IG system as required by FSS Code 15.2.2.4.1 shall not be considered to require additional indicators and alarms other than those specified in the FSS code 15.2.2.4 and 15.2.3.2 or 15.2.4.2, as appropriate.

Note:

1. This UI is to be uniformly implemented by IACS Societies for ships contracted for construction on or after 1 July 2019.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

End of Document

IACS Int. 2018

SC 287 Low pressure audible alarm system

(June 2018)

FSS Code Chapter 15.2.2.4.5 reads:

2.2.4.5 Audible and visual alarms

2.2.4.5.1 Audible and visual alarms shall be provided, based on the system designed, to indicate:

.1 oxygen content in excess of 5% by volume;

.2 failure of the power supply to the indicating devices as referred to in paragraph 2.2.4.2;

.3 gas pressure less than 100 mm water gauge. The alarm arrangement shall be such as to ensure that the pressure in slop tanks in combination carriers can be monitored at all times;

.4 high-gas pressure; and

.5 failure of the power supply to the automatic control system.

2.2.4.5.2 The alarms required in paragraphs 2.2.4.5.1.1, 2.2.4.5.1.3 and 2.2.4.5.1.5 shall be fitted in the machinery space and cargo control room, where provided, but in each case in such a position that they are immediately received by responsible members of the crew.

2.2.4.5.3 An audible alarm system independent of that required in paragraph 2.2.4.5.1.3 or automatic shutdown of cargo pumps shall be provided to operate on predetermined limits of low pressure in the inert gas main being reached.

2.2.4.5.4 Two oxygen sensors shall be positioned at appropriate locations in the space or spaces containing the inert gas system. If the oxygen level falls below 19%, these sensors shall trigger alarms, which shall be both visible and audible inside and outside the space or spaces and shall be placed in such a position that they are immediately received by responsible members of the crew.

Note:

1. This UI is to be uniformly implemented by IACS Societies for ships contracted for construction on or after 1 July 2019.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

SC 287 (Cont)

Interpretation

The term “independent alarm system” as specified in FSS Code 15.2.2.4.5 means that a second pressure sensor, independent of the sensor serving the alarms for low pressure, high pressure and pressure indication/recorder shall be provided. Notwithstanding the above, a common programmable logic controller (PLC) is, however, accepted for the alarms in the control system. The independent sensor is not required if the system is arranged for the shut-down of cargo pumps. If a system for shutdown of cargo pumps is arranged, an automatic system shutting down all cargo pumps shall be provided. The shutdown shall be alarmed at the control station. The shutdown shall not prevent the operation of ballast pumps or pumps used for bilge drainage of a cargo pump room.

End of Document

SC 288 Carriage of Dangerous Goods – Required Air Changes

(Dec 2018)

SOLAS Reg. II-2/19.3.4.1 reads:

3.4 Ventilation

3.4.1 Adequate power ventilation shall be provided in enclosed cargo spaces. The arrangement shall be such as to provide for at least six air changes per hour in the cargo space, based on an empty cargo space, and for removal of vapours from the upper or lower parts of the cargo space, as appropriate.

SOLAS Reg. II-2/19.3.5.4 reads:

3.5 Bilge Pumping

3.5.4 Enclosed spaces outside machinery spaces containing bilge pumps serving cargo spaces intended for carriage of flammable or toxic liquids shall be fitted with separate mechanical ventilation giving at least six air changes per hour. If the space has access from another enclosed space, the door shall be self-closing.

SOLAS Table 19.1 reads:

Note 1 for container cargo spaces:

……For classes 2, 3, 6.1 and 8 when carried in closed freight containers, the ventilation rate may be reduced to not less than two air changes per hour. For classes 4 and 5.1 liquids when carried in closed freight containers, the ventilation rate may be reduced to not less than two air changes per hour……

Interpretation

1. The reduced air changes per hour as per Note 1 of Table 19.1 apply equally to the ventilation air change requirements in SOLAS Reg. II-2/19.3.4.1 and in SOLAS Reg. II-2/19.3.5.4, when the bilge pump is located directly inside a container cargo space.

2. In such a case, where several container cargo spaces are served by the same bilge pump, the bilge pump is to be installed in the container cargo space with the highest ventilation rate, compared to the other container cargo spaces.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2020.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

End of Document

IACS Int. 2018

SC 289 Separation arrangements between inert gas piping and cargo tanks

(Dec 2018)

Withdrawn in July 2019

End of Document

SC 290 Emergency source of electrical power on Gas Carriers and Chemical Tankers

(Dec 2018)

SOLAS Chapter II-1, Regulation 43.6 reads:

"6 The emergency generator and its prime mover and any emergency accumulator battery shall be so designed and arranged as to ensure that they will function at full rated power when the ship is upright and when inclined at any angle of list up to 22.5° or when inclined up to 10° either in the fore or aft direction, or is in any combination of angles within those limits."

Interpretation

The following additional requirements are to be taken into account:

1. IMO International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (Res.MSC.5(48) as amended by Res.MSC.370(93)), clause 2.7.2.2.

2. IMO International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, clause 2.9.3.2.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships constructed on or after 1 January 2020.

End of Document

SC 291 (Jan 2020) Safe Type requirements for two-way portable radiotelephone apparatus for fire-fighter's communication (SOLAS Regulation II-2/10.10.4)

Interpretation of SOLAS Regulation II-2/10.10.4 (Amendments adopted by Resolution MSC. 338(91))

SOLAS Regulation II-2/10.10.4 reads:

"10.4 Fire-fighter's communication

For ships constructed on or after 1 July 2014, a minimum of two two-way portable radiotelephone apparatus for each fire party for fire-fighter's communication shall be carried on board. Those two-way portable radiotelephone apparatus shall be of an explosion-proof type or intrinsically safe. Ships constructed before 1 July 2014 shall comply with the requirements of this paragraph not later than the first survey after 1 July 2018."

Interpretation

1. Two-way portable radiotelephone apparatus for fire-fighter's communication, required by SOLAS Regulation II-2/10.10.4, should be of certified safe type suitable for use in zone 1 hazardous areas as defined in IEC Publication 60079.

2. The minimum requirements in respect to the apparatus group and temperature class are to be consistent with the most restrictive requirements for the hazardous area zone on board which is accessible to fire party.

Note:

1. This UI is to be applied by IACS Members

   i) to ships contracted for construction on or after 1 July 2020.

   ii) to existing ships (contracted for construction before 1 July 2020) when new, additional or replaced equipment is installed on/after 1 July 2020.

2. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

3. The "Installed" date means a contractual delivery date of the equipment to the ship on or after 1 July 2020 or, in the absence of a contractual delivery date to the ship, the date that the equipment was actually delivered to the ship on or after 1 July 2020.

End of Document

SC 292 (Feb 2020) Ships intended to operate in low air temperature in Polar waters - Survival craft and rescue boat communications capabilities

Interpretation of Polar Code (Res. MSC.385(94)), part I-A, paragraphs 10.2.2 and 10.3.2

Paragraph 1.2.7 of Part I-A of Polar Code reads:

"1.2.7 Maximum expected time of rescue means the time adopted for the design of equipment and system that provide survival support. It shall never be less than 5 days."

Paragraph 10.2.2 of Part I-A of Polar Code reads:

"10.2.2 Survival craft and rescue boat communications capabilities

10.2.2.1 For ships intended to operate in low air temperature, all rescue boats and lifeboats, whenever released for evacuation, shall maintain capability for distress alerting, locating and on-scene communications.

10.2.2.2 For ships intended to operate in low air temperature, all other survival craft, whenever released, shall maintain capability for transmitting signals for location and for communication.

10.2.2.3 Mandatory communication equipment for use in survival craft, including liferafts, and rescue boats shall be capable of operation during the maximum expected time of rescue."

Paragraph 10.3.2 of Part I-A of Polar Code reads:

"10.3.2 Survival craft and rescue boat communications capabilities

10.3.2.1 For ships intended to operate in low air temperature, in order to comply with the functional requirements of paragraph 10.2.2.1 above, all rescue boats and lifeboats, whenever released for evacuation, shall:

.1 for distress alerting, carry one device for transmitting ship to shore alerts;

.2 in order to be located, carry one device for transmitting signals for location; and

.3 for on-scene communications, carry one device for transmitting and receiving on-scene communications.

Note:

1. This UI is to be applied by Members on ships contracted for construction on or after 1 July 2020

2. The "contracted for construction" means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

SC 292 (cont)

10.3.2.2 For ships intended to operate in low air temperature, in order to comply with the functional requirements of paragraph 10.2.2.2 above, all other survival craft shall:

.1 in order to be located, carry one device for transmitting signals for location; and

.2 for on-scene communications, carry one device for transmitting and receiving on-scene communications.

10.3.2.3 In order to comply with the functional requirements of paragraph 10.2.2.3 above, recognizing the limitations arising from battery life, procedures shall be developed and implemented such that mandatory communication equipment for use in survival craft, including liferafts, and rescue boats are available for operation during the maximum expected time of rescue."

Interpretation

1. All rescue boats, all lifeboats and all other survival crafts carried by the ship, notwithstanding the redundancy in aggregate capacity of survival crafts required by SOLAS Regulation III/21 and Regulation III/31, and taking into account the different possible distress scenarios, are considered able to be released for evacuation simultaneously and shall be provided with mandatory communication equipment as required by paragraph 10.3.2 of Part I-A of Polar Code accordingly.

2. The expressions "shall maintain capability for", "shall be capable of operation during the maximum expected time of rescue" and "are available for operation during the maximum expected time of rescue" used in paragraphs 10.2.2.1 and 10.2.2.2, 10.2.2.3, 10.3.2.3 of Part I-A, mean ability of mandatory communication equipment for use in survival craft, including liferafts, and rescue boats to maintain the ready-for-operation state within the maximum expected time of rescue at the Polar Service Temperature (PST) assigned to the vessel, and after that to be capable to perform its functions at the PST assigned to the vessel with the operating time not less than specified in respective existing performance standards*.

Note: For example, it is not required that an EPIRB being used for distress alerting continues distress messaging for maximum expected time of rescue, and two-way VHF radiotelephone apparatus being used for transmitting and receiving on-scene communications does not need to be technically in operation at its highest rated power with a duty cycle of 1:9 for maximum expected time of rescue, as specified in Paragraph 1.2.7 of Part I-A of Polar Code.

3. Procedures referred to in paragraph 10.3.2.3 can include both operational requirements and any other means including technical solutions i.e. thermal insulation, chemical heat sources, additional batteries, rechargeable batteries with respective chargers, etc., and shall be documented in Polar Water Operational Manual (PWOM).

* *EPIRB - Res. A.810(19) and MSC.471(101);*
Radar transponder - Res. A.802(19);
AIS-SART - Res. MSC.246 (83);
Two-way VHF radiotelephone apparatus - Res. MSC.149(77).

End of Document

SC 293 (Feb 2020) Lifebuoy Arrangements for Means of Embarkation/Disembarkation (SOLAS Reg. II-1/3-9 and III/7)

SOLAS Regulations:

Regulation III/7.1.3 reads:

"….lifebuoys with lights and those with lights and smoke signals shall be equally distributed on both sides of the ship and shall not be the lifebuoys provided with lifelines in compliance with the requirements of paragraph 1.2."

Regulation II-1/3-9.2 Means of embarkation on and disembarkation from ships

*"2 The means of embarkation and disembarkation required in paragraph 1 shall be constructed and installed based on the guidelines developed by the Organization.**

** Refer to MSC.1/Circular.1331, Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation."*

MSC.1/Circular.1331 paragraph 3.3

"A lifebuoy equipped with a self-igniting light and a buoyant lifeline should be available for immediate use in the vicinity of the embarkation and disembarkation arrangement when in use."

Interpretation

When considering the minimum number and distribution of lifebuoys as required by regulations 22.1.1 or 32.1.1, as applicable, a lifebuoy, fitted with both a light and a lifeline as per MSC.1/Circular.1331 for compliance with SOLAS regulation II-1/3-9.2, should not be taken into account.

Note:

1. This UI is to be uniformly implemented by IACS Societies for ships contracted for construction on or after 1 July 2020.

2 The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

End of Document

IACS Int. 2020

SC 294 (Feb 2020) Fire integrity of the division between engine room and urea or sodium hydroxide solution tank installation spaces

SOLAS Chapter II-2, Regulation 3.30 reads:

"30 Machinery spaces are machinery spaces of category A and other spaces containing propulsion machinery, boilers, oil fuel units, steam and internal combustion engines, generators and major electrical machinery, oil filling stations, refrigerating, stabilizing, ventilation and air conditioning machinery, and similar spaces, and trunks to such spaces."

SOLAS Chapter II-2, Regulation 9.2 reads:

Regulation 9.2.2.3.2.2 (Ships carrying more than 36 passengers)

"(10) Tanks, voids and auxiliary machinery spaces having little or no fire risk

Water tanks forming part of the ship's structure.

Voids and cofferdams.

Auxiliary machinery spaces which do not contain machinery having a pressure lubrication system and where storage of combustibles is prohibited, such as:

ventilation and air-conditioning rooms;
windlass room; steering gear room;
stabilizer equipment room;
electrical propulsion motor room;
rooms containing section switchboards and purely electrical equipment other than oil-filled electrical transformers (above 10 kVA);
shaft alleys and pipe tunnels;
spaces for pumps and refrigeration machinery (not handling or using flammable liquids).

Closed trunks serving the spaces listed above.

Other closed trunks such as pipe and cable trunks."

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2020.

2. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

SC 294 (Cont)

Regulation 9.2.2.4.2.2 (Ships carrying not more than 36 passengers)

"(7) Other machinery spaces

Electrical equipment rooms (auto-telephone exchange, air-conditioning duct spaces).

Spaces as defined in regulation 3.30 excluding machinery spaces of category A."

Regulation 9.2.3.3.2.2 (Cargo Ships except tankers)

"(7) Other machinery spaces

Electrical equipment rooms (auto-telephone exchange, air-conditioning duct spaces).

Spaces as defined in regulation 3.30 excluding machinery spaces of category A."

Regulation 9.2.4.2.2.2 (Tankers)

"(7) Other machinery spaces

Electrical equipment rooms (auto-telephone exchange and air-conditioning duct spaces).

Spaces as defined in regulation 3.30 excluding machinery spaces of category A."

Interpretation

In cases where urea or sodium hydroxide solution tanks for selective catalytic reduction (SCR) systems, exhaust gas recirculation (EGR) systems or exhaust gas cleaning systems (EGCS) are installed in a space separated from engine room, in determining fire integrity of divisions, the solution tank space should be considered as "similar spaces" in the definition of "*Machinery spaces*" in regulation 3.30 and should be categorized as:

"(10) *Tanks, voids and auxiliary machinery spaces having little or no fire risk*" in regulation 9.2.2.3.2.2, for ships carrying more than 36 passengers; or

"(7) *Other machinery spaces*" in regulations 9.2.2.4.2.2, 9.2.3.3.2.2 or 9.2.4.2.2.2 for ships carrying not more than 36 passengers and cargo ships;

The division between the engine room and the solution tank space should have a fire integrity of at least "A-0" class.

End of Document

SC 295 (July 2021) Interpretation of Performance Standards for Float-free Emergency Position-indicating radio beacons (EPIRBs) Operating on 406 MHz (resolution MSC.471(101))

Interpretation of Operative paragraph 2 of resolution MSC.471(101)

Operative paragraph 2 of resolution MSC.471(101) reads:

2. RECOMMENDS Governments to ensure that float-free EPIRBs operating on the frequency 406 MHz:

.1 if installed on or after 1 July 2022, conform to performance standards and type-approval standards not inferior to those specified in the annex to the present resolution;

.2 if installed before 1 July 2022, conform to performance standards not inferior to those specified in the annex to resolution A.810(19), as amended by resolutions MSC.56(66) and MSC.120(74), and type-approval standards not inferior to those specified in resolution A.696(17);

Interpretation

For application of resolution MSC.471(101), the phrase “installed on or after 1 July 2022” shall be interpreted as follows:

(a) for ships for which the building contract is placed on or after 1 July 2022, or in the absence of the contract, constructed on or after 1 July 2022, "installed on or after 1 July 2022" means any installation on the ship; and

(b) for ships other than those ships prescribed in (a) above, "installed on or after 1 July 2022" means a contractual delivery date for the equipment or, in the absence of a contractual delivery date, the actual delivery of the equipment to the ship on or after 1 July 2022.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies from 1 July 2022.

End of Document

SC 296 Noise level limit in workshops onboard ships

(May 2022)

Interpretation of paragraph 4.2.1 of Res. MSC.337(91), Code on Noise Levels on Board Ships

The part of paragraph 4.2.1 reads as follows:

4.2 Noise level limits

Limits for noise levels (dB(A)) are specified for various spaces as follows:

Designation of rooms and spaces	*Ship size*	
	1,600 up to 10,000 GT	*≥10,000 GT*
4.2.1 Work spaces (see 5.1)		
Workshops other than those forming part of machinery spaces	*85*	*85*

Interpretation

For the purposes of applying the provisions of MSC.337(91) "Code on Noise Levels On Board Ships", "Workshops other than those forming part of machinery spaces" are enclosed workshops that are separated from the engine room with bulkheads, which may include access doors of the equivalent acoustic insulating properties as the bulkhead. Workbenches and workstations located inside the machinery space are not to be considered as "workshops other than those forming part of machinery spaces".

The noise level limit for workshops that are forming part of machinery space is as for the machinery space 110 dB(A).

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2023.

2 The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 297 (Aug 2022) Amendment to stability/loading information in conjunction with the alterations of lightweight

Interpretation of SOLAS chapter II-1, regulations 5.4 and 5.5 (as amended by resolution MSC.421(98)) and of resolution MSC.429(98)/Rev.1 and Rev.2, Explanatory Notes.

SOLAS II-1/Regulation 5.4 and 5.5 reads as follows:

4 Where any alterations are made to a ship so as to materially affect the stability information supplied to the master, amended stability information shall be provided. If necessary the ship shall be re-inclined. The ship shall be re-inclined if anticipated deviations exceed one of the values specified in paragraph 5.

5 At periodical intervals not exceeding five years, a lightweight survey shall be carried out on all passenger ships to verify any changes in lightship displacement and longitudinal centre of gravity. The ship shall be re-inclined whenever, in comparison with the approved stability information, a deviation from the lightship displacement exceeding 2% or a deviation of the longitudinal centre of gravity exceeding 1% of L is found or anticipated.

Explanatory Notes to SOLAS II-1 Regulation 5.4 (resolution MSC.429(98)/Rev.1 and Rev.2) read as follows:

1 When alterations are made to a ship in service that result in calculable differences in the lightship properties, a detailed weights and centres of gravity calculation to adjust the lightship properties should be carried out. If the adjusted lightship displacement or longitudinal centre of gravity, when compared to the approved values, exceeds one of the deviation limits specified in regulation 5.5, the ship should be re-inclined. In addition, if the adjusted lightship vertical centre of gravity, when compared to the approved value, exceeds 1%, the ship should be re-inclined. The lightship transverse centre of gravity is not subject to a deviation limit.

2 When a ship does not exceed the deviation limits specified in explanatory note 1 above, amended stability information should be provided to the master using the new calculated lightship properties if any of the following deviations from the approved values are exceeded:

.1 1% of the lightship displacement; or

.2 0.5% of L for the longitudinal centre of gravity; or

.3 0.5% of the vertical centre of gravity.

However, in cases when these deviation limits are not exceeded, it is not necessary to amend the stability information supplied to the master.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships which have their lightship properties changed on or after 1 January 2023.

Interpretation

Definition of lightweight calculation

For the purposes of this interpretation, the term “lightweight calculation” means a detailed calculation of weights added to, removed from and relocated on a vessel, resulting from all alterations to the vessel since the date of the last approved inclining test, to determine the adjusted lightship properties. Lightship properties include weights and the centre of gravity. The documented weights and their centres of gravity shall be verified onboard/onsite by the attending Class Surveyor.

When weights are added, removed or relocated the final cumulative change is to be compared to the last approved inclining test.

Definition of stability information

“Stability information” includes any document (whether on paper or electronic) or electronic means of calculation of stability which includes light ship properties. This could include, but is not limited to, the approved stability book, computer software for onboard calculation of stability, the approved strength book and the loading instrument.

Amendment of stability information in conjunction with alterations of lightship properties

1. If the lightweight calculation, regardless of keel laying date, shows a deviation in lightweight mass, or the longitudinal or vertical position of the centre of gravity:-

a) beyond any of the tolerance limits specified in the explanatory note 1 to Regulation 5.4 of MSC.429(98)/Rev.1 and Rev.2, then the ship should be re-inclined and the stability information, as defined above, should be updated to reflect the lightship properties derived from the inclining test and approved;

b) within the tolerance limits specified in the explanatory note 1 and any of the deviations specified in the explanatory note 2 to Regulation 5.4 of MSC.429(98)/Rev.1 and Rev.2 is exceeded, then the stability information should be updated to reflect the lightship properties derived from the lightweight calculation and approved; or

c) within the tolerance limits specified in the explanatory note 2 to Regulation 5.4 of MSC.429(98)/Rev.1 and Rev.2, then a copy of the endorsed lightweight calculation report should be provided onboard for future reference with no further amendments required to the stability information.

However, even if addition, removal or relocation of any weight results in lightship properties being within tolerable limits, that deviation of lightship properties should be noted in the onboard stability information and applied for all future references and stability/loading calculations.

2. A summary of paragraph 1 is provided in the following table. Where stability information is to be updated, it shall be approved and provided to the Master with instruction that it should now be used for all stability calculations.

Scenario, as calculated by lightweight calculation	Requirement for Inclining Test	Update of Stability Information
Lightweight change > 2%	Yes	Yes, using new incline result
LCG change > 1% of L (either forward or aft)	Yes	Yes, using new incline result
VCG change > 1%	Yes	Yes, using new incline result
1% < Lightweight change ≤ 2%	No	Yes, using lightweight calculation
0.5% of L < LCG change ≤ 1% of L (either forward or aft)	No	Yes, using lightweight calculation
0.5%< VCG change ≤ 1%	No	Yes, using lightweight calculation
Lightweight change ≤ 1%	No	No
LCG change ≤ 0.5% of L (either forward or aft)	No	No
VCG change ≤ 0.5%	No	No

3. Lightship properties shall be consistent in all documents which use them, e.g. loading manual, stability manual, computer data.

4. A change in lightweight will result in a change in deadweight unless there is an associated change in freeboard. The consequences of the change could have an impact on compliance with regulations that are applied based on deadweight.

End of Document

SC 298 Interpretations of various Performance Standards related to GMDSS radio installations

(Dec 2022)
(Corr.1 Nov 2023)

Operative paragraphs 2.1 and 3.1 of resolution MSC.508(105) respectively read:

2 RECOMMENDS Governments to ensure that NAVTEX receiver equipment:

.1 if installed on or after 1 January 2024, conforms to performance standards not inferior to those specified in the annex to the present resolution;

3 ALSO RECOMMENDS that equipment for the reception of NBDP broadcasts of navigational and meteorological warnings and urgent information to ships by HF:

.1 if installed on or after 1 January 2024, conforms to performance standards not inferior to those specified in the annex to the present resolution; and

Operative paragraphs 2 and 3 of resolution MSC.510(105) respectively read:

2 RECOMMENDS Governments to ensure that radar SARTs that will form part of the GMDSS, conform to performance standards not inferior to those specified in the annex to this resolution;

3 DETERMINES that this resolution supersedes resolutions A.530(13) and A.802(19), as amended, as from 1 January 2024;

Operative paragraph 2.1 of resolution MSC.511(105) read:

2 RECOMMENDS Governments to ensure that shipborne VHF radio installations capable of voice communication and digital selective calling which will form part of the GMDSS:

.1 if installed on or after 1 January 2024, conform to performance standards not inferior to those specified in the annex to the present resolution;

Operative paragraph 2.1 of resolution MSC.512(105) read:

2 RECOMMENDS Governments to ensure that shipborne MF and MF/HF radio installations capable of voice communication, digital selective calling and reception of maritime safety information which will form part of the GMDSS:

.1 if installed on or after 1 January 2024, conform to performance standards not inferior to those specified in the annex to the present resolution;

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS member Societies on or after 1 January 2024.

Operative paragraph 3.1 of resolution MSC.513(105) read:

3 RECOMMENDS Governments to ensure that every Inmarsat-C ship earth station which forms part of the GMDSS:

.1 if installed on or after 1 January 2024 conforms to performance standards not inferior to those specified in the annex to the present resolution; and

Operative paragraph 2.1 of resolution MSC.515(105) read:

2 RECOMMENDS Governments to ensure that survival craft portable two-way VHF radiotelephone apparatus:

.1 if installed on or after 1 January 2024 conforms to performance standards not inferior to those specified in the annex to the present resolution;

Operative paragraph 2.1 of resolution MSC.516(105) read:

2 RECOMMENDS Governments to ensure that on-scene (aeronautical) two-way VHF radiotelephone apparatus for use in search and rescue operations:

.1 if installed on or after 1 January 2024, conforms to performance standards not inferior to those specified in the annexes to resolution MSC.80(70), as amended by the present resolution; and

Operative paragraph 2.1 of resolution MSC.517(105) read:

2 RECOMMENDS Governments to ensure that a shipborne integrated communication system (ICS) when used in the GMDSS:

.1 if installed on or after 1 January 2024 conforms to performance standards not inferior to those specified in the annex to the present resolution; and

Interpretation:

For application of resolutions MSC.508(105), MSC.511(105)[1], MSC.512(105)[1], MSC.513(105)[1], MSC.515(105), MSC.516(105) and MSC.517(105), the phrase “installed on or after 1 January 2024” shall be interpreted as follows:

(a) for ships for which the building contract is placed on or after 1 January 2024, or in the absence of the contract, the keel of which is laid or which are at a similar stage of construction on or after 1 January 2024, "installed on or after 1 January 2024" means any installation on the ship; and

(b) for ships other than those ships prescribed in (a) above, "installed on or after 1 January 2024" means a contractual delivery date for the equipment or, in the absence of a contractual delivery date, the actual delivery of the equipment to the ship on or after 1 January 2024.

The revised performance standards specified in the annex of resolution MSC.510(105) (Radar SARTs) shall apply to;

(c) the equipment installed for ships for which the building contract is placed on or after 1 January 2024, or in the absence of the contract, for ships the keel of which is laid or which are at a similar stage of construction on or after 1 January 2024; and

(d) For ships other than those ships prescribed in (c) above, the equipment with, a contractual delivery date on or after 1 January 2024 or, in the absence of a contractual delivery date, an actual delivery date of the equipment to the ship on or after 1 January 2024.

Footnote:

[1] With reference to MSC.1 Circular 1676, this circular allows, based on the flag state’s acceptance, postponement of installation of equipment according to MSC.511(105), MSC.512(105) and MSC.513(105) until 1 January 2028.

End of Document

SC 299 (July 2023) Watertight testing after fire testing of penetrations in watertight divisions in passenger ships

Interpretation of SOLAS Chapter II-1, regulation 13.2.3 and the related explanatory notes contained in resolution MSC.429(98)/Rev.2

SOLAS Regulation II-1/13.2.3 reads as follows:

Regulation 13 - Openings in watertight bulkheads below the bulkhead deck in passenger ships

2.3 Lead or other heat-sensitive materials shall not be used in systems which penetrate watertight bulkheads, where deterioration of such systems in the event of fire would impair the watertight integrity of the bulkheads.

The Explanatory Notes to SOLAS Regulation II-1/13.2.3 (as contained in resolution MSC.429(98)/Rev.2) read as follows:

3 Materials used in systems which penetrate watertight bulkheads should be of sufficient strength after exposure to heat or be considered as part of an open piping system. Closing devices using intumescent material (swelling when exposed to heat) for open piping systems should not be considered equivalent to the fitting of a valve, since the fire might be located too far from the device to create a watertight seal.

4 Approval of pipe penetrations fitted to ensure the watertight integrity of a bulkhead or deck where heat-sensitive materials are used should include a prototype test of watertightness after having undergone the standard fire test appropriate for the location in which the penetrations are to be installed[*].

4.1 The fire tested pipe penetration should then be tested to a test pressure of not less than 1.5 times the design pressure as defined in regulation 2.18. The pressure should be applied to the same side of the division as the fire test.

4.2 The fire tested pipe penetration should be tested for a period of at least 30 minutes under hydraulic pressure equal to the test pressure, but minimum 1.0 bar. There should be no leakage during this test.

4.3 The fire tested pipe penetration should continue to be tested for a further 30 minutes with the test pressure. The quantity of water leakage is not to exceed a total of 1 litre.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Members on ships contracted for construction on or after 1 July 2024.

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

SC 299 (cont)

4.4 The prototype test should be considered valid only for the pipe typology (e.g. thermoplastic and multilayer), pressure classes, the maximum/minimum dimensions tested, and the type and fire rating of the division tested.

** Refer to the requirements for A-class division set out in part 3 of annex 1 to the 2010 FTP Code*

5 The pressure test need not be carried out on the hot penetration arrangement. Ample time may be given to prepare for the pressure test, i.e. dismantling the fire testing equipment and rigging the pressure test equipment.

5.1 The pressure test should be carried out with the pipe section used in the fire test still in place.

5.2 Any pipe insulation fitted for the purpose of the fire test may be removed before the pressure test.

5.3 Prototype testing need not be carried out if the pipe penetration is made of steel or equivalent material having a thickness of 3 mm or greater and a length of not less than 900 mm (preferably 450 mm on each side of the division), and there are no openings. Such penetrations shall be suitably insulated by extension of the insulation at the same level of the division. See also regulation II-2/9.3.1 with respect to piping. However, the penetration must still comply with the watertight integrity requirement in regulation 2.17.

Interpretation

1 Any penetration used for the passage of heat-sensitive piping systems through a watertight bulkhead or deck on a passenger ship under SOLAS regulation II-1/13.2.3 shall be tested with the heat-sensitive piping and shall be type approved for watertight integrity as per paragraphs 4 and 5 of the explanatory notes to regulation II-1/13.2.3 contained in the annex of resolution MSC.429(98)/ Rev.2, as applicable, after the fire test.

2 SOLAS regulation II-1/13.2.3 shall be applicable to heat-sensitive piping systems and shall not be applied to cable penetrations in watertight bulkheads and decks.

End of Document

SC 300 Containment of fire: details of fire insulation of duct penetrations

(Aug 2023)

Interpretation of the paragraphs 9.7.3.1.2 and 9.7.3.2 of SOLAS Chapter II-2 as amended by 2017 SOLAS Amendments

The paragraph 9.7.3.1.2 reads as follows:

7.3.1 Ducts passing through "A" class divisions shall meet the following requirements:

.1 …

.2 *where ventilation ducts with a free cross-sectional area exceeding 0.02 m^2, but not more than 0.075 m^2, pass through "A" class divisions, the openings shall be lined with steel sheet sleeves. The ducts and sleeves shall have a thickness of at least 3 mm and a length of at least 900 mm. When passing through bulkheads, this length shall be divided preferably into 450 mm on each side of the bulkhead. These ducts, or sleeves lining such ducts, shall be provided with fire insulation. The insulation shall have at least the same fire integrity as the division through which the duct passes; and*

Interpretation

The fire insulation required by regulation SOLAS II-2/9.7.3.1.2 should be provided only to the part of the duct and/or sleeve that is on the same side of the division being fire insulated, and be extended for a minimum of 450 mm along the duct and/or sleeve.

The paragraph 9.7.3.2 reads as follows:

7.3.2 Ventilation ducts with a free cross-sectional area exceeding 0.02 m^2 passing through "B" class bulkheads shall be lined with steel sheet sleeves of 900 mm in length, divided preferably into 450 mm on each side of the bulkheads unless the duct is of steel for this length.

Interpretation

When a duct passing through a division is to be in accordance with SOLAS regulations II-2/9.3.2 and II-2/9.7.3.2, no clearance should be allowed between the duct and the division.

End of Document

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 July 2024

2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

SC 301 SOLAS Regulations II-2/9.7.2 and 9.7.5.1 – Separation of ducts from spaces

(May 2024)

SOLAS Regulation Ch II-2/9.7.2 states as amended by IMO Res. MSC.365(93):

7.2 Arrangement of ducts

7.2.1 The ventilation systems for machinery spaces of category A, vehicle spaces, ro-ro spaces, galleys, special category spaces and cargo spaces shall, in general, be separated from each other and from the ventilation systems serving other spaces. However, the galley ventilation systems on cargo ships of less than 4,000 gross tonnage and in passenger ships carrying not more than 36 passengers need not be completely separated from other ventilation systems, but may be served by separate ducts from a ventilation unit serving other spaces. In such a case, an automatic fire damper shall be fitted in the galley ventilation duct near the ventilation unit.

7.2.2 Ducts provided for the ventilation of machinery spaces of category A, galleys, vehicle spaces, ro-ro spaces or special category spaces shall not pass through accommodation spaces, service spaces, or control stations unless they comply with paragraph 7.2.4.

7.2.3 Ducts provided for the ventilation of accommodation spaces, service spaces or control stations shall not pass through machinery spaces of category A, galleys, vehicle spaces, ro-ro spaces or special category spaces unless they comply with paragraph 7.2.4.

7.2.4 As permitted by paragraphs 7.2.2 and 7.2.3 ducts shall be either:

.1.1 constructed of steel having a thickness of at least 3 mm for ducts with a free cross-sectional area of less than 0.075 m^2, at least 4 mm for ducts with a free cross-sectional area of between 0.075 m^2 and 0.45 m^2, and at least 5 mm for ducts with a free cross-sectional area of over 0.45 m^2;

.1.2 suitably supported and stiffened;

.1.3 fitted with automatic fire dampers close to the boundaries penetrated; and

.1.4 insulated to "A-60" class standard from the boundaries of the spaces they serve to a point at least 5 m beyond each fire damper;

or

.2.1 constructed of steel in accordance with paragraphs 7.2.4.1.1 and 7.2.4.1.2; and

---

Note:

1. This UI is to be uniformly implemented by IACS Societies for vessels contracted for construction on or after 1 July 2025.
2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

SC 301 (cont)

.2.2 insulated to "A-60" class standard throughout the spaces they pass through, except for ducts that pass through spaces of category (9) or (10) as defined in paragraph 2.2.3.2.2.

7.2.5 For the purposes of paragraphs 7.2.4.1.4 and 7.2.4.2.2, ducts shall be insulated over their entire cross-sectional external surface. Ducts that are outside but adjacent to the specified space, and share one or more surfaces with it, shall be considered to pass through the specified space, and shall be insulated over the surface they share with the space for a distance of 450 mm past the duct.*

7.2.6 Where it is necessary that a ventilation duct passes through a main vertical zone division, an automatic fire damper shall be fitted adjacent to the division. The damper shall also be capable of being manually closed from each side of the division. The control location shall be readily accessible and be clearly and prominently marked. The duct between the division and the damper shall be constructed of steel in accordance with paragraphs 7.2.4.1.1 and 7.2.4.1.2 and insulated to at least the same fire integrity as the division penetrated. The damper shall be fitted on at least one side of the division with a visible indicator showing the operating position of the damper.

***Note**: * Sketches of such arrangements are contained in the Unified Interpretations of SOLAS chapter II-2 (MSC.1/Circ.1276/Rev.2).*

SOLAS Regulation Ch II-2/9.7.5.1 states:

7.5.1 Requirements for passenger ships carrying more than 36 passengers

7.5.1.1 In addition to the requirements in sections 7.1, 7.2 and 7.3, exhaust ducts from galley ranges shall be constructed in accordance with paragraphs 7.2.4.2.1 and 7.2.4.2.2 and insulated to "A-60" class standard throughout accommodation spaces, service spaces, or control stations they pass through. They shall also be fitted with:

.1 a grease trap readily removable for cleaning unless an alternative approved grease removal system is fitted;

.2 a fire damper located in the lower end of the duct at the junction between the duct and the galley range hood which is automatically and remotely operated and, in addition, a remotely operated fire damper located in the upper end of the duct close to the outlet of the duct;

.3 a fixed means for extinguishing a fire within the duct;*

.4 remote-control arrangements for shutting off the exhaust fans and supply fans, for operating the fire dampers mentioned in paragraph 7.5.1.1.2 and for operating the fire-extinguishing system, which shall be placed in a position outside the galley close to the entrance to the galley. Where a multi-branch system is installed, a remote means located with the above controls shall be provided to close all branches exhausting through the same main duct before an extinguishing medium is released into the system; and

.5 suitably located hatches for inspection and cleaning, including one provided close to the exhaust fan and one fitted in the lower end where grease accumulates.

SC 301 (cont)

7.5.1.2 Exhaust ducts from ranges for cooking equipment installed on open decks shall conform to paragraph 7.5.1.1, as applicable, when passing through accommodation spaces or spaces containing combustible materials.

Interpretation

With respect to the application of SOLAS regulations II-2/9.7.2 and 9.7.5.1, for determining fire insulation for trunks and ducts which pass through an enclosed space, the term “pass through” pertains to the part of the trunk/duct contiguous to the enclosed space.

The following sketches are given as examples:

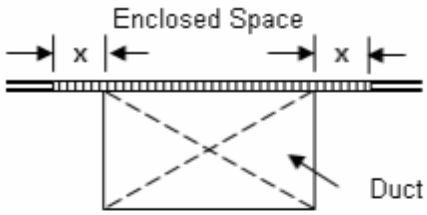


Figure 1

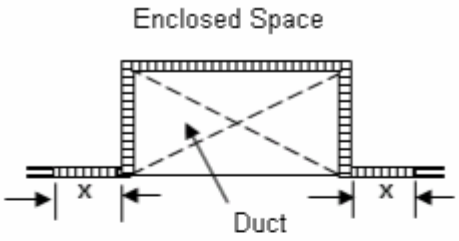


Figure 2

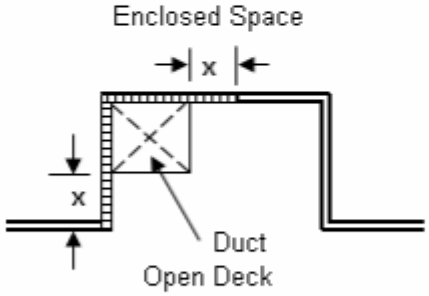


Figure 3

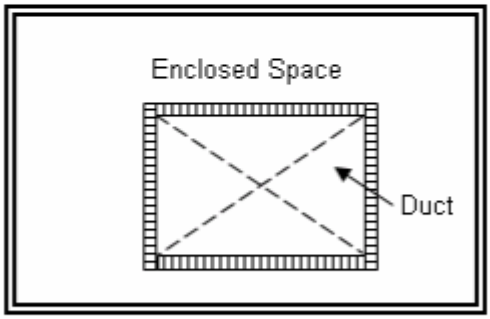


Figure 4

= fire insulation

x = 450 mm

Examples of ducts contiguous to enclosed space

End of Document

SC 302 (May 2024) Interpretation of SOLAS Regulation II-2/11.4.1 Pertaining to Crowns of Machinery Spaces of Category A

SOLAS regulation II-2/11.4.1 reads as follows:

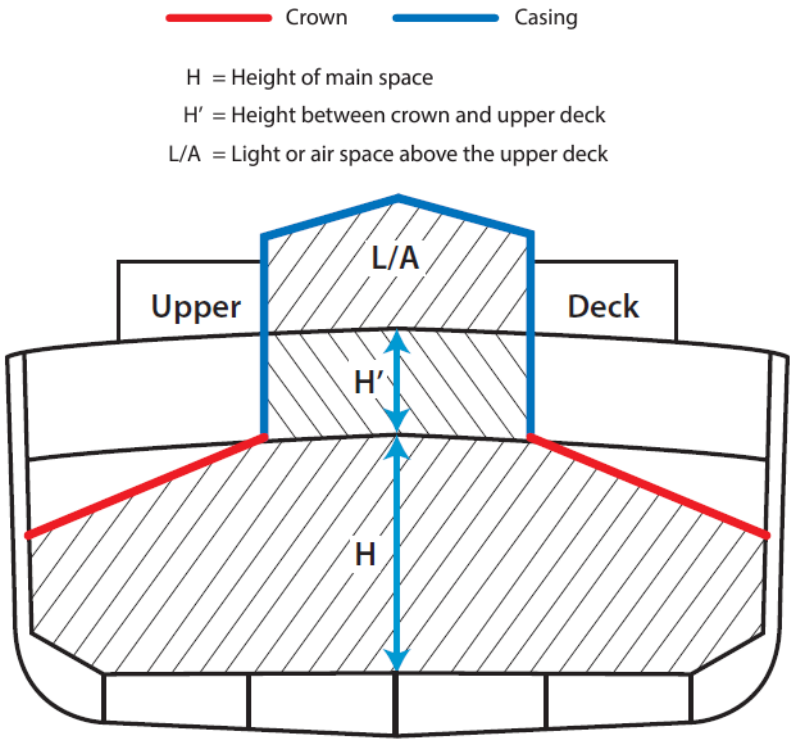
"Crowns and casings

Crowns and casings of machinery spaces of category A shall be of steel construction and shall be insulated as required by tables 9.5 and 9.7, as appropriate.".

Interpretation

The crown of a machinery space of category A should be understood to mean the underside of the deck and the uppermost horizontal part of the main space of the machinery space. If the upper side bulkheads are sloping, the sloping parts of the bulkheads should be included in the crown.

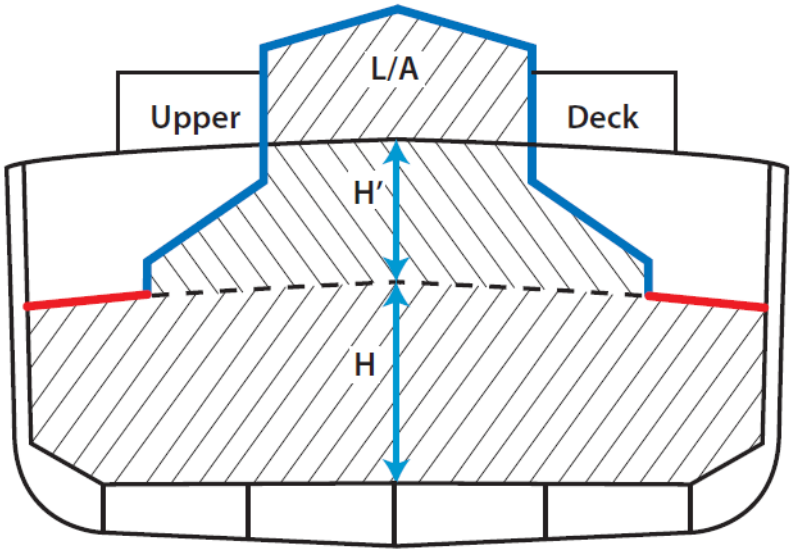
The following sketches are given as examples:



Note:

1. This Unified Interpretation is to be uniformly implemented by IACS member Societies for ships contracted for construction on or after 1 July 2025.

SC 302
(cont)



End of Document

SC 303 Harmonization of Industrial Personnel Safety Certificate with SOLAS Safety Certificates

(July 2024)

The implementation of initial and maintenance surveys as required in SOLAS regulations XV/3.2, XV/3.3 and XV/5.1 (resolution MSC.521(106)) and paragraph 3 of part I of the IP Code (resolution MSC.527(106)) is to be interpreted as indicated in the following tables:

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on or after 1 July 2025.

SC 303 (cont)

Initial and maintenance surveys pertaining to SOLAS chapter XV and the IP Code

Table 1 SHIPS UNDER HARMONIZED SYSTEM OF SURVEY AND CERTIFICATION (HSSC) SCHEME

Type of ship	Initial survey for issuance of the Industrial Personnel Safety Certificate	Surveys for the maintenance of the Industrial Personnel Safety Certificate	Surveys for renewal of the Industrial Personnel Safety Certificate
Cargo ship	First Safety Construction intermediate survey or renewal survey, as required by SOLAS regulation I/10, whichever occurs first after 1 July 2024.	a) Aligned with maintenance survey (annual or intermediate) related to the Cargo Ship Safety Certificate. The Industrial Personnel Safety Certificate shall be endorsed upon satisfactory results of the maintenance survey related to the IP Code and Cargo Ship Safety; or b) Aligned with maintenance survey (annual or intermediate) related to the Cargo Ship Safety Construction Certificate. The Industrial Personnel Safety Certificate shall be endorsed upon satisfactory results of the maintenance survey (annual or intermediate) related to the IP Code and Safety Construction, provided that valid Cargo Ship Safety Equipment Certificate is held by a ship.	a) Aligned with renewal survey related to the Cargo Ship Safety Certificate. The Industrial Personnel Safety Certificate shall be issued upon satisfactory results of the renewal survey related to the IP Code and Cargo Ship Safety; or b) Aligned with renewal Survey of Safety Construction. The Industrial Personnel Safety Certificate shall be issued upon satisfactory results of the renewal survey related to the IP Code and Safety Construction, provided that valid Cargo Ship Safety Equipment Certificate is held by a ship.
High-speed cargo craft	The third periodical or first renewal survey, as required by the 2000 HSC Code, paragraph 1.5, whichever occurs first after 1 July 2024.	Aligned with periodical survey related to the High-Speed Craft Safety Certificate. The Industrial Personnel Safety Certificate shall be endorsed upon satisfactory results of the periodical survey related to the IP Code and High-Speed Craft Safety.	Aligned with renewal survey related to the High-Speed Craft Safety Certificate. The Industrial Personnel Safety Certificate shall be issued upon satisfactory results of the renewal survey related to the IP Code and High-Speed Craft Safety.

SC 303 (cont)

Table 2 SHIPS NOT UNDER THE HSSC SCHEME

Type of ship	Initial Survey for issuance of the Industrial Personnel Safety Certificate	Surveys for the maintenance of the Industrial Personnel Safety Certificate	Surveys for renewal of the Industrial Personnel Safety Certificate
Cargo ship	First Safety Construction renewal survey as required by SOLAS regulation I/10, which occurs after 1 July 2024 but, in any case, not later than 30 September 2027.	Aligned with maintenance survey (annual or intermediate) related to the Cargo Ship Safety Construction Certificate. The Industrial Personnel Safety Certificate shall be endorsed upon satisfactory results of maintenance survey (annual or intermediate) related to the IP Code and Safety Construction, provided that valid Cargo Ship Safety Equipment Certificate is held by a ship.	Aligned with renewal Survey of Safety Construction. The Industrial Personnel Safety Certificate shall be issued upon satisfactory results of the renewal survey related to the IP Code and Safety Construction, provided that valid Cargo Ship Safety Equipment Certificate is held by a ship.
High-speed cargo craft	The third periodical or first renewal survey, as required by the 2000 HSC Code, paragraph 1.5, whichever occurs first after 1 July 2024.	Aligned with periodical survey related to the High-Speed Craft Safety Certificate. The Industrial Personnel Safety Certificate shall be endorsed upon satisfactory results of the periodical survey related to the IP Code and High-Speed Craft Safety.	Aligned with renewal survey related to the High-Speed Craft Safety Certificate. The Industrial Personnel Safety Certificate shall be issued upon satisfactory results of the renewal survey related to the IP Code and High-Speed Craft Safety.

End of Document

SC 304 MSC.337(91) Code on noise levels onboard ships - calibration of sound instruments

(Oct 2024)

MSC.337(91) regarding measuring equipment reads as follows:

"2.1 Equipment specifications

2.1.1 Sound level meters

Measurement of sound pressure levels shall be carried out using precision integrating sound level meters subject to the requirements of this chapter. Such meters shall be manufactured to IEC 61672-1(2002-05)[1] type/class 1 standard as applicable, or to an equivalent standard acceptable to the Administration[2].

[1] Recommendation for sound level meters.

[2] Sound level meters class/type 1 manufactured according to IEC 651/IEC 804 may be used until 1 July 2016.

2.2 Use of equipment

2.2.1 Calibration

Sound calibrators shall comply with the standard IEC 60942 (2003-01) and shall be approved by the manufacturer of the sound level meter used.

2.2.2 Check of measuring instrument and calibrator

Calibrator and sound level meter shall be verified at least every two years by a national standard laboratory or a competent laboratory accredited according to ISO 17025 (2005) as corrected by (Cor 1:2006)."

Interpretation

1. The calibration shall be carried out in accordance with IEC 61672-3 for sound level meters and IEC 60942 Appendix B for field calibrators. The edition of the calibration standard shall correspond with the edition of the manufacturing standard for the instruments. The measurement company shall provide documentation about the standard which has been met if not clearly marked on the sound level meter or field calibrator. The documentation, or marking, shall include a clear statement about the results of the periodic tests and which performance class the instrument meets after calibration.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies for equipment used to conduct noise measurement in accordance with MSC.337(91) from their next calibration due date on or after 1 July 2026.

End of Document

SC 305 Single essential propulsion components and their reliability

(Oct 2024)

Interpretation of SOLAS regulation II-1/26.2

SOLAS regulation II-1/26.2 states reads as follows:

"The Administration shall give special consideration to the reliability of single essential propulsion components and may require a separate source of propulsion power sufficient to give the ship a navigable speed, especially in the case of unconventional arrangements. "

Interpretation

1 The possibility of failures in electric machines shall be considered. Sufficient propulsion capacity shall be maintained or restored within due time for the following failure modes of electric machines, as a minimum:

.1 winding insulation failures; and

.2 excitation failures.

2 Single electric propulsion motors (both single and dual winding with a single rotor) for main propulsion shall not be considered to provide the reliability required for a single essential propulsion component. A separate propulsion unit sufficient to give the ship a navigable speed should be required for such arrangements.

3 Propulsion arrangements with two independent rotors on a single shaft shall be considered to provide the required reliability, provided it is possible to de-excite or de-flux each of the rotors individually and to supply independently the stators.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2026.

2. The "contracted for construction" date means the date on which the contract to build thevessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

End of Document

SC 306 Valve piercing ship's collision bulkhead

(Nov 2024)

Interpretation of SOLAS II-1/12.6.2, as adopted by resolution MSC.474(102)

SOLAS regulation II-1/12.6.2 reads as follows:

"Regulation 12 - Peak and machinery space bulkheads, shaft tunnels, etc.

6.2 For ships constructed on or after 1 January 2024, except as provided in paragraph 6.3, the collision bulkhead may be pierced below the bulkhead deck of passenger ships and the freeboard deck of cargo ships by not more than one pipe for dealing with fluid in the forepeak tank, provided that the pipe is fitted with a remotely controlled valve capable of being operated from above the bulkhead deck of passenger ships and the freeboard deck of cargo ships. The valve shall be normally closed. If the remote control system should fail during operation of the valve, the valve shall close automatically or be capable of being closed manually from a position above the bulkhead deck of passenger ships and the freeboard deck of cargo ships. The valve shall be located at the collision bulkhead on either the forward or aft side, provided the space on the aft side is not a cargo space. The valve shall be of steel, bronze or other approved ductile material. Valves of ordinary cast iron or similar material are not acceptable."

Interpretation

1 For the compliance with SOLAS regulation II-1/12.6.2, as amended by resolution MSC.474(102), the valve fitted on the pipe piercing ship's collision bulkhead below the bulkhead deck of passenger ships and the freeboard deck of cargo ships may be either a deck standing manual type or a mechanically powered type with a fail-close arrangement.

2 For the purpose of the fail-close arrangement, the valve shall be of an automatic fail-close type, or shall have an additional manual-closing function activated from a position above the bulkhead deck of passenger ships and the freeboard deck of cargo ships.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2026.

2. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29

End of Document

SC 307 Hydrocarbon Gas Detection and Bilge High Level Alarms in Cargo Pump-Rooms

(Nov 2024)

SOLAS II-2/4.5.10 reads as follows:

"5.10 Protection of cargo pump-rooms

5.10.1 In tankers:

…

.3 a system for continuous monitoring of the concentration of hydrocarbon gases shall be fitted. Sampling points or detector heads shall be located in suitable positions in order that potentially dangerous leakages are readily detected. When the hydrocarbon gas concentration reaches a pre-set level which shall not be higher than 10% of the lower flammable limit, a continuous audible and visual alarm signal shall be automatically affected in the pump-room, engine control room, cargo control room and navigation bridge to alert personnel to the potential hazard; and

.4 all pump-rooms shall be provided with bilge level monitoring devices together with appropriately located alarms..."

Interpretation

1 Characteristics of the cargoes and their vapors (flammability, density, etc.) should be taken into consideration to determine the type and arrangement of detectors.

2 Suitable numbers of detectors or sampling heads should be provided in the cargo pump room at upper and lower positions, at least covering the following places:

.1 (perpendicular) upper part of each cargo pump or between two cargo pumps;

.2 within 30 cm above the lowest part of the cargo pump-room bottom floor;

.3 not more than 1 m below the cargo pump room ceiling/head deck; and

.4 one detector every 10 m length or width of the cargo pump-room.

.5 areas where the air circulation is reduced (e.g. recessed corners).

Notes:

1. This UI is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 01 January 2026.

2. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

SC 307 (cont)

3 A high level of liquid in the pump room should activate a continuous audible and visual alarm signal in the pump-room, cargo control room, engine control room and on the navigation bridge.

End of Document