

SUB-COMMITTEE ON CARRIAGE OF
CARGOES AND CONTAINERS
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Agenda item 8

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**UNIFIED INTERPRETATION OF PROVISIONS OF IMO SAFETY, SECURITY AND
ENVIRONMENT-RELATED CONVENTIONS**

Unified interpretation of paragraph 5.12.3.1 of the IGC Code

Submitted by IACS

SUMMARY

Executive summary: This document provides a copy of IACS UI GC25 on paragraph 5.12.3.1 of the IGC Code to facilitate the consistent and global implementation of this regulation

Strategic direction, if applicable: 6

Output: 6.1

Action to be taken: Paragraph 9

Related documents: None

Introduction

1 The International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code), as amended by resolution MSC.370(93), provides an international standard for the construction of ships carrying liquefied gases in bulk.

2 IACS members, acting as recognized organizations, have discussed how to implement the requirements of the revised IGC Code and have found some instances where further clarification is needed to facilitate the global and uniform implementation of these mandatory provisions.

Discussion

3 Paragraph 5.12.3.1 of the IGC Code specifies requirements regarding the insulation of cargo piping systems both to minimize heat leak and to protect personnel, as follows:

"5.12.3.1 Cargo piping systems shall be provided with a thermal insulation system as required to minimize heat leak into the cargo during transfer operations and to protect personnel from direct contact with cold surfaces."

4 Regarding the term "to minimize heat leak", IACS is of the opinion that the thermal insulation of the cargo piping to minimize heat ingress is primarily a design issue. In this regard IACS considers that this term should be interpreted to refer to the overall heat calculation undertaken for the tank containment system and associated pressure/temperature control system. Designers are, therefore, responsible for showing that heat ingress through piping is duly considered at the design stage.

5 Regarding the term "to protect personnel", IACS considers that the purpose of the insulation to protect personnel is to ensure that the accessible surfaces of the piping system are prevented from being cold enough that contact with them could result in pain, followed by numbness and possibly, in severe cases, frostbite. IACS members have agreed that cold surfaces are those with a temperature colder than minus 10°C; and that the cargo piping system design temperature could be used as criteria for determining whether surfaces of cargo piping systems are regarded as "cold surfaces".

6 IACS members have also discussed the matter of design features (e.g. screening) that could restrict the access and therefore reduce the scope of application of the IGC Code requirement. This resulted in the identification, in the interpretation, of the parts of the piping system that should be excluded from the scope of application of the IGC Code requirement. In this regard, bellows are excluded as these are expandable systems and insulating them may introduce cavities or spaces where sea water/salt may accumulate, thereby promoting pitting corrosion, in particular in stainless steel used for cargo piping.

7 To clarify the above issues, IACS has developed a Unified Interpretation (IACS UI GC25), a copy of which is provided at the annex.

8 The Sub-Committee is invited to note that UI GC25 is to be uniformly implemented by IACS Societies on ships constructed on or after 1 July 2019, unless they are provided with written instructions to apply a different interpretation by the Administration on whose behalf they are authorized to act as a recognized organization.

Action requested of the Sub-Committee

9 The Sub-Committee is invited to consider the comments provided in paragraphs 3 to 6 above and IACS UI GC25 provided in the annex; note the implementation provisions explained in paragraph 8 above; and take action as appropriate.

ANNEX

GC25 Cargo piping insulation

(July 2018)

IGC Code paragraph 5.12.3.1

Cargo piping systems shall be provided with a thermal insulation system as required to minimize heat leak into the cargo during transfer operations and to protect personnel from direct contact with cold surfaces.

Interpretation

The phrase 'a thermal insulation system as required to minimize heat leak into the cargo during transfer operations' means that the properties of the thermal insulation for cargo piping systems shall take into consideration the overall heat calculation undertaken for the tank containment system and the capacity of the proposed pressure/temperature control system (e.g. refrigeration plants) adopted on each ship in accordance with the requirements of chapter 7 of the Code.

The phrase "cargo piping systems shall be provided with a thermal insulation system as required ... to protect personnel from direct contact with cold surfaces" means that surfaces of cargo piping systems with which personnel is likely to contact under normal conditions shall be protected by a thermal insulation.

"Surfaces of cargo piping systems with which personnel is likely to contact under normal conditions" do not include areas such as:

- surfaces of cargo piping systems which are protected by physical screening measures to prevent such direct contact;
- surfaces of manual valves, having extended spindles that protect the operator from the cargo temperature;
- bellows; and
- surfaces of cargo piping systems whose design temperature (to be determined from inner fluid temperature) is above minus 10°C.

Note:

1. This Unified Interpretation is to be uniformly implemented by IACS Societies on ships constructed on or after 1 July 2019.

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