Amendments to IGC code as mandated by MSC.523 (106)

Introduction

The International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code), adopted by resolution MSC.5(48), establishes mandatory technical requirements for the design, construction and equipment of ships carrying liquefied gases in bulk and is made mandatory under chapter VII of the International Convention for the Safety of Life at Sea (SOLAS).

Chapter 6 of the IGC Code addresses materials of construction and quality control, with particular emphasis on the suitability and performance of metallic materials intended for service under cryogenic temperature conditions.

At its 106th session, the Maritime Safety Committee (MSC) adopted resolution MSC.523 (106), introducing amendments to chapter 6.4.1 (General requirements for metallic materials) of the IGC Code. These amendments replace Table 6.3 in its entirety and revise the material selection, qualification and testing requirements for cargo tanks, secondary barriers and process pressure vessels designed for temperatures below −55°C.Summary of amendments.

The amendments are based on accumulated service experience, advances in metallurgical technology and updated fracture toughness performance data, and aim to enhance safety and regulatory clarity for liquefied gas carriers operating at very low temperatures.

2. Scope and Applicability (Revised)

This Technical Information applies to:

a) Ships subject to SOLAS chapter VII;
b) Cargo tanks, secondary barriers and process pressure vessels falling within the scope of the IGC Code;
c) Metallic materials used in systems designed for minimum design temperatures below −55°C and down to −165°C, as specified in chapter 6.4.1 of the IGC Code.

The amended requirements apply to new installations and new material approvals associated with ships to which the IGC Code applies, in accordance with the entry-into-force provisions of resolution MSC.523 (106).

This Technical Information does not introduce retrofit requirements for existing installations, as MSC.523 (106) does not explicitly mandate retroactive application. Any application to existing ships or equipment remains subject to the discretion of the Administration on a case-by-case basis.

3. Summary of Amendments

Resolution MSC.523 (106) replaces Table 6.3 under IGC Code paragraph 6.4.1 in its entirety.

The revised Table 6.3 establishes mandatory requirements for:

a) Permitted metallic material types;
b) Maximum material thickness;
c) Minimum design temperatures;
d) Heat treatment conditions;
e) Impact test temperatures and absorbed energy values;
f) Sampling frequency for mechanical testing.

The amended table applies to plates, sections and forgings intended for use in cargo tanks, secondary barriers and process pressure vessels with design temperatures below −55°C and down to −165°C, with a general maximum thickness limit of 25 mm, subject to specific exceptions defined in the Notes to the table.

4. Entry into Force and Transitional Arrangements

The amendments adopted by resolution MSC.523 (106) and enter into force on 1 January 2026.

Prior to entry into force, material approvals and construction activities may continue in accordance with the pre-amendment version of the IGC Code, subject to acceptance by the Administration.

For ships or equipment under construction where material procurement or fabrication commenced prior to 1 January 2026, Administrations may permit continued use of previously approved materials, provided their suitability for the intended design temperature is verified and documented.

From 1 January 2026 onwards, all new material approvals and installations within the scope of chapter 6.4.1 of the IGC Code shall comply with the amended Table 6.3 and its Notes.

5. Actions Required by Stakeholders

Ship-owners / Ship Managers

a) Verify that newbuilding and major conversions comply with amended Table 6.3.
b) Ensure material specifications reflect updated impact testing and thickness requirements.

Shipyards / Manufacturers

a) Update material procurement specifications and quality plans.
b) Coordinate early with Class and Flag for acceptance of TMCP and special heat-treated steels.

Surveyors / Technical Staff

a) Apply revised Table 6.3 and Notes during design approval and construction surveys.
b) Confirm correct application of impact test temperatures and sampling frequency.

8. Conclusion

The amendments to the IGC Code adopted by resolution MSC.523 (106) represent a significant enhancement of the regulatory framework governing metallic materials for cryogenic service. By replacing Table 6.3 in its entirety and introducing clarified material categories, testing regimes and administrative controls, the amendments strengthen structural integrity and safety margins for liquefied gas carriers.

This Technical Information provides guidance for uniform and consistent implementation of the amended requirements by all stakeholders involved in the design, construction, approval and survey of ships subject to the IGC Code.

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