IGC Code

International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk

2016 Edition

Supplement

January 2026

The following amendments to the International Code for the Construction and Equipment of Ships Carrying Liquified Gases in Bulk *(IGC Code) were adopted by the Maritime Safety Committee (MSC) at its 106th session by resolution MSC.523(106) and enter into force on 1 January 2026.*

Resolution MSC.523(106)
adopted on 10 November 2022

Chapter 6
Materials of construction and quality control

6.4 Requirements for metallic materials

6.4.1 General requirements for metallic materials

Table 6.3 is replaced in its entirety by the following:

"**Table 6.3 –** *Plates, sections and forgings*[1] *for cargo tanks, secondary barriers and process pressure vessels for design temperatures below –55°C and down to –165°C*[2]

Maximum thickness 25 mm[3], [4]

Minimum design temperature (°C)	Chemical composition[5] and heat treatment	Impact test temperature (°C)
–60	1.5% nickel steel – normalized or normalized and tempered or quenched and tempered or TMCP[6]	–65
–65	2.25% nickel steel – normalized or normalized and tempered or quenched and tempered or TMCP[6], [7]	–70
–90	3.5% nickel steel – normalized or normalized and tempered or quenched and tempered or TMCP[6], [7]	–95
–105	5% nickel steel – normalized or normalized and tempered or quenched and tempered[6], [7], [8]	–110
–165	9% nickel steel – double normalized and tempered or quenched and tempered[6]	–196
–165	Austenitic steels, such as types 304, 304L, 316, 316L, 321 and 347 solution treated[9]	–196
–165	High manganese austenitic steel – hot rolling and controlled cooling[10], [11]	–196
–165	Aluminium alloys; such as type 5083 annealed	Not required
–165	Austenitic Fe-Ni alloy (36% nickel). Heat treatment as agreed	Not required
Tensile and toughness (impact) test requirements		
Sampling frequency		
Plates	Each "piece" to be tested	
Sections and forgings	Each "batch" to be tested	
Toughness (Charpy V-notch test)		
Plates	Transverse test pieces. Minimum average energy value (KV) 27 J	
Sections and forgings	Longitudinal test pieces. Minimum average energy (KV) 41 J	

Notes

(1) The impact test required for forgings used in critical applications shall be subject to special consideration by the Administration.

(2) The requirements for design temperatures below −165°C shall be specially agreed with the Administration.

(3) For materials 1.5% Ni, 2.25% Ni, 3.5% Ni and 5% Ni, with thicknesses greater than 25 mm, the impact tests shall be conducted as follows:

Material thickness (mm)	**Test temperature (°C)**
$25 < t \leq 30$	10°C below design temperature
$30 < t \leq 35$	15°C below design temperature
$35 < t \leq 40$	20°C below design temperature

The energy value shall be in accordance with the table for the applicable type of test specimen. For material thickness of more than 40 mm, the Charpy V-notch values shall be specially considered.

(4) For 9% Ni steels, austenitic stainless steels, high manganese austenitic steels and aluminium alloys, thickness greater than 25 mm may be used.

(5) The chemical composition limits shall be in accordance with recognized standards.

(6) TMCP nickel steels will be subject to acceptance by the Administration.

(7) A lower minimum design temperature for quenched and tempered steels may be specially agreed with the Administration.

(8) A specially heat treated 5% nickel steel, for example triple heat treated 5% nickel steel, may be used down to −165°C, provided that the impact tests are carried out at −196°C.

(9) The impact test may be omitted, subject to agreement with the Administration.

(10) The use of the material shall be subject to the required conditions specified by the Administration based on the Guidelines developed by the Organization.*

(11) The impact test may not be omitted for high manganese austenitic steel.

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* Refer to *Revised guidelines on the application of high manganese austenitic steel for cryogenic service* (MSC.1/Circ.1599/Rev.2)."