

Amendments of the Guidance

(External Opinion Inquiry)

Pt. 7 Ships of Special Service

Ch.5 Ships Carrying Liquefied Gas in Bulk



2024. 01

Hull Rule Development Team

Background and main contents of the amendments

1. Background of amendments: (effective date : the date of contract for construction on or after 1 July 2024)

(1) Reflects request for technical rules received by the Machinery Rule Development Team(GCH4800-51- 2023):

: non-destructive test for independent tank type C

- Reflecting requirements of Annex 2-7 of Pt 2, guidelines of Ch 5 605 Pt 7 non-destructive inspection methods and acceptance criteria for independent tank type C have been revised.

(2) To reflect Request for Establishment/Revision of Classification Technical Rules

- To reflect the revision item of MSC.1/Circ.1599/Rev.3

2. Main Contents: Refer to the amendments

Present	Amendment	Note						
〈Guidance〉 – Pt 7 Ch.5 Ships Carrying Liquefied Gas in Bulk Section 6 Materials of Construction and Quality Control 603., 604. 〈omission〉 605. Welding of metallic materials and non-destructive testing [See Rule] 1. ~ 4. 〈omission〉 5. Non-destructive testing (1) For the purpose of the requirements in 605. 6 (2) of the Rules, the following requirements are to be complied with. (A) 〈omission〉 (B) The following requirements (a) through (d) are to apply as the <u>testing procedures and acceptance criteria for the non-destructive tests referred to in the requirements in 605. 6 (5) of the Rules :</u> (a) For radiographic tests, <u>the test may be in accordance with the requirements in KS B 0845, ISO 2437, ISO 2504 and ISO/R1027 where the acceptance criteria are to be KS Grade 2 or higher. In the case of KS Grade 3, acceptance is left to the discretion of the Society in consideration of the importancy of the structural members and nature of defects, etc.</u>	〈Guidance〉 – Pt 7 Ch.5 Ships Carrying Liquefied Gas in Bulk Section 6 Materials of Construction and Quality Control 603., 604. 〈same as current〉 605. Welding of metallic materials and non-destructive testing [See Rule] 1. ~ 4. 〈same as current〉 5. Non-destructive testing (1) 〈same as current〉 (A) 〈same as current〉 (B) <u>Non-destructive tests referred to in the requirements in 605. 6 (5) of the Rules are to be in accordance with Pt 2. Annex 2-7 of the Rules. (2024)</u> (a) For radiographic tests, <u>the quality level and acceptance levels are provided in table 7.5.7-1 below. When If the requirements in table 7.5.7-1 are not met, the acceptance is left to the discretion of the Society in consideration of the importancy of the structural members and nature of defects, etc.</u> Table 7.5.7-1 The acceptance levels and required quality levels for Radiographic Testing <table border="1"> <tr> <td>Quality Levels (ISO 5817:2014 applies)⁽¹⁾</td><td>Testing Techniques/ levels (ISO 17636-1:2022 applies)⁽¹⁾</td><td>Acceptance levels (ISO 10675-1:2021 applies)⁽¹⁾</td></tr> <tr> <td style="text-align: center;"><u>B</u></td><td style="text-align: center;"><u>B(class)</u></td><td style="text-align: center;"><u>1</u></td></tr> </table> <u>Note:</u> (1) Or any recognized standard agreed with the Society and demonstrated to be acceptable	Quality Levels (ISO 5817:2014 applies) ⁽¹⁾	Testing Techniques/ levels (ISO 17636-1:2022 applies) ⁽¹⁾	Acceptance levels (ISO 10675-1:2021 applies) ⁽¹⁾	<u>B</u>	<u>B(class)</u>	<u>1</u>	
Quality Levels (ISO 5817:2014 applies) ⁽¹⁾	Testing Techniques/ levels (ISO 17636-1:2022 applies) ⁽¹⁾	Acceptance levels (ISO 10675-1:2021 applies) ⁽¹⁾						
<u>B</u>	<u>B(class)</u>	<u>1</u>						

Present	Amendment	Note						
(b) For ultrasonic tests, <u>the requirements in KS B 0896 for cargo tanks and process pressure vessels and in KS D 0250 for piping apply correspondingly. (2021)</u>	(b) For ultrasonic tests, <u>the quality level and acceptance levels are provided in table 7.5.7-2 below.</u> Table 7.5.7-2 The acceptance levels and required quality levels for Ultrasonic Testing <table><tr><th>Quality Levels (ISO 5817:2014 applies)(1)</th><th>Testing Techniques/Levels (ISO 17640:2018 applies)(1)</th><th>Acceptance Levels (ISO 11666:2018 applies)(1)</th></tr><tr><td>B</td><td>at least B</td><td>2</td></tr></table> <u>Note:</u> (1) Or any recognized standard agreed with the Society and demonstrated to be acceptable	Quality Levels (ISO 5817:2014 applies)(1)	Testing Techniques/Levels (ISO 17640:2018 applies)(1)	Acceptance Levels (ISO 11666:2018 applies)(1)	B	at least B	2	
Quality Levels (ISO 5817:2014 applies)(1)	Testing Techniques/Levels (ISO 17640:2018 applies)(1)	Acceptance Levels (ISO 11666:2018 applies)(1)						
B	at least B	2						
(c) For magnetic particle test, <u>the requirements in KS D 0213 apply correspondingly.</u>	(c) For magnetic particle tests, <u>the quality level and acceptance levels are provided in table 7.5.7-3 below.</u> Table 7.5.7-3 The acceptance levels and required quality levels for Magnetic Partcile Testing <table><tr><th>Quality Levels (ISO 5817:2014 applies)(1)</th><th>Acceptance Levels (ISO 11666:2018 applies)(1)</th></tr><tr><td>B</td><td>2X</td></tr></table> <u>Note:</u> (1) Or any recognized standard agreed with the Society and demonstrated to be acceptable	Quality Levels (ISO 5817:2014 applies)(1)	Acceptance Levels (ISO 11666:2018 applies)(1)	B	2X			
Quality Levels (ISO 5817:2014 applies)(1)	Acceptance Levels (ISO 11666:2018 applies)(1)							
B	2X							

Present	Amendment	Note				
(d) For dye penetrant tests, <u>the requirements in KS B 0816 apply correspondingly.</u>	(c) For dye penetrant tests, <u>the quality level and acceptance levels are provided in table 7.5.7-4 below.</u> Table 7.5.7-4 The acceptance levels and required quality levels for Dye Panetrant Testing <table><tr><th>Quality Levels (ISO 5817:2014 applies)(1)</th><th>Acceptance Levels (ISO 11666:2018 applies)(1)</th></tr><tr><td>B</td><td>2X</td></tr></table> <u>Note:</u> (1) Or any recognized standard agreed with the Society and demon- strated to be acceptable	Quality Levels (ISO 5817:2014 applies)(1)	Acceptance Levels (ISO 11666:2018 applies)(1)	B	2X	
Quality Levels (ISO 5817:2014 applies)(1)	Acceptance Levels (ISO 11666:2018 applies)(1)					
B	2X					
(C) <omission> (2), (3) <omission> 606. <Omission>	(C) <same as current> (2), (3) <same as current> 606. <same as current>					

Present	Amendment	Note
Annex 7A-1 ~ Annex 7A-3 <Omitted> Annex 7A-4 High manganese austenitic steel for Cryogenic Service Section 1 General 101. Scope 1. <Omitted> 102. Application 1. This Annex provides the designer and manufacturer with practical information on the design and construction of cargo tanks using high manganese austenitic steel for cryogenic service to comply with the Design Conditions defined in Pt7, Chapter 5, 418. 2. High manganese austenitic steel for cryogenic service is used for only domestic voyage. When high manganese austenitic steel for cryogenic service is used for international voyage, it is to be approved by the relevant administration. 3. High manganese austenitic steel is applicable to cargo tanks such as Butane(all isomers), Butane-propane mixture, Carbon dioxide(High Purity and reclaimed quality), Ethane, Ethylene, Methane(LNG), Pentane(all isomers) or Propane. 4. <New> <Below omitted>	Annex 7A-1 ~ Annex 7A-3 <Same as the present Guidance> Annex 7A-4 High manganese austenitic steel for Cryogenic Service Section 1 General 101. Scope 1. <Same as the present Guidance> 102. Application 1. This Annex provides the designer and manufacturer with practical information on the design and construction of cargo tanks using high manganese austenitic steel for cryogenic service to comply with the Design Conditions defined in Pt7, Chapter 5, 418. 2. High manganese austenitic steel for cryogenic service is used for only domestic voyage. When high manganese austenitic steel for cryogenic service is used for international voyage, it is to be approved by the relevant administration. 3. High manganese austenitic steel is applicable to cargo tanks such as <u>Ammonia(anhydrous)</u>, Butane(all isomers), Butane-propane mixture, Carbon dioxide(High Purity and reclaimed quality), Ethane, Ethylene, Methane(LNG), Pentane(all isomers) or Propane. 4. <u>The post-weld stress relief heat treatment referenced in Rules Part 7 Chapter 5, 1712.2.(2) is waived for ammonia cargo tanks.</u> <Below Same as the present Guidance>	CCC 9 consensus (MSC.1/Circ.1599/Re v.3 draft) includes Ammonia, anhydrous and waives the post-weld stress relief heat treatment.

Amendments of the Rules

(External review)

Pt. 7 Ships of Special Service

Ch. 5 Ships Carrying Liquefied Gases in Bulk



2020. 11

Hull Rule Development Team

Background and main contents of the amendments

1. Background of amendments: IACS UI GC13 (R.3 Aug. 2023)

- (1) Guideline Pt7 Ch5 420. 6 Examination before and after the first loaded voyage (Only if the LNG, LPG Vessels) have been revised.
 - Rule IGC code(Res. MSc 370(93)) 4.20.3.5 “The overall performance of the cargo containment system shall be verified for compliance with the design parameters during the first full loading and discharging of the cargo, in accordance with the survey procedure and requirements in 104. and the requirements of the Society.”
 - > It is specified that the scope of application will be expanded from LNG and LPG carriers to all gas carriers. Revised to clarify the scope of verification that inspectors must perform during the first full load loading and unloading of cargo containment systems.

2. Main Contents: Refer to the amendments

Present	Amendment	Note
〈Guidance〉 – Pt 7 Ch. 5 Ships Carrying Liquefied Gases in Bulk Sec.1 ~ Sec.3 〈omit〉 Section 4 Cargo Containment 402. ~ 419. 〈omit〉 420. Construction processes 【See Rule】 1. ~ 3. 〈omit〉 4. <u>Gas-trial and cargo full loading test (related to 513. 2 (5) of the Rules)</u> 6. <u>Examination before and after the first loaded voyage (Only if the LNG, LPG Vessels)</u> In accordance with the requirements in 420. 3 (5) & (7) of the Rules, it is preferred that Cargo Loading Tests are finished at the shipyard, but either or both of these may be postponed until after entering in- to a voyage and the survey requirements are as follows (1) First Loading (Considered to be full loading) : (A) <u>Priority to be given to latter stages of loading (approximately last 6 hours).</u> (B) <u>Review cargo logs and alarm reports.</u> (C) <u>Witness satisfactory operation of the following:</u> - Gas detection system. - <u>Cargo control and monitoring systems such as level gaug- ing equipment, temperature sensors, pressure gauges, cargo pumps and compressors, proper control of cargo heat exchangers, if operating, etc.</u> - Nitrogen generating plant or inert gas generator, if operating.	〈Guidance〉 – Pt 7 Ch. 5 Ships Carrying Liquefied Gases in Bulk Sec.1 ~ Sec.3 〈same as current〉 Section 4 Cargo Containment 402. ~ 419. 〈same as current〉 420. Construction processes 【See Rule】 1. ~ 3. 〈same as current〉 4. <u>Verification before and after the first loaded voyage (all ships carry- ing liquefied gases in bulk) (2024)</u> In accordance with the requirements in 420. 3 (5) to (7), 513. 2 (5) and 1303. 5 of the Rules, surveyor attendance is required at the first cargo loading and first cargo unloading. Surveyor attendance during new building gas trials can be considered to comply with the below applicable verifications and examinations survey requirements, with the exceptions of the survey requirements marked (**).1 (1) <u>Verifications and examinations at gas trials or first full cargo load- ing, as applicable to cargo containment system</u> <u>Note: When attending at first full cargo loading, priority shall be given to latter stages of loading;</u> - <u>verify the satisfactory functionality of the emergency shutdown system during testing;</u> - <u>satisfactory operation of gas detection system;</u> - <u>satisfactory operation of cargo tank pressure monitoring system;</u> - <u>satisfactory operation of inter barrier space(s) and insulation space(s) pressure monitoring system, as applicable;</u>	- 420.4 → 420.6, 420.6 → 420.4 (reflect GC13 R3) - LNG/LPG vessels → all liquefied gas vessels - last 6 hours → latter stage of loading

Present	Amendment	Note
- Nitrogen pressure control system for insulation, inter-barrier, and annular spaces, as applicable. - <u>Cofferdam heating system, if in operation.</u> - Reliquefaction plant, if fitted. - Equipment fitted for the burning of cargo vapors such as boilers, engines, gas combustion units, etc., if operating. (D) Examination of on-deck cargo piping systems including expansion and supporting arrangements. (E) <u>Witness topping off process for cargo tanks including high level alarms activated during normal loading.</u> (F) Advise master to carry out cold spot examination of the hull and external insulation during transit voyage to unloading port. (2) <u>First Unloading :</u> (A) <u>Priority to be given to the commencement of unloading (approximately first 4 – 6 hours).</u> (B) <u>Witness emergency shutdown system testing prior to commencement of unloading.</u> (C) <u>Review cargo logs and alarm reports.</u> (D) <u>Witness satisfactory operation of the following:</u> - <u>Gas detection system.</u> - <u>Cargo control and monitoring systems such as level gauging equipment, temperature sensors, pressure gauges, cargo pumps and compressors, proper control of cargo heat exchangers, if operating, etc.</u> - <u>Nitrogen generating plant or inert gas generator, if operating.</u> - <u>Nitrogen pressure control system for insulation, inter-barrier, and annular spaces, as applicable.</u> - <u>On membrane vessels, verify that the readings of the cofferdam and inner hull temperature sensors are not below the allowable temperature for the selected grade of steel. Review previous readings.</u> - <u>Cofferdam heating system, if in operation.</u> - <u>Reliquefaction plant and review of records from previous voyage.</u> - <u>Equipment fitted for the burning of cargo vapors such as boilers, engines, gas combustion units, etc., if operating.</u>	- <u>satisfactory operation of cargo tank temperature monitoring system;</u> - <u>satisfactory operation of cargo tank level indicating system;</u> - <u>satisfactory operation of inter barrier space(s) and inner hull temperature monitoring system, as applicable;</u> - <u>inert gas generator, if operating;</u> - <u>nitrogen generating plant, if operating;</u> - <u>nitrogen pressure control system for insulation, interbarrier, and annular spaces, as applicable;</u> - <u>reliquefaction plant, if fitted;</u> - <u>equipment fitted for the burning of cargo vapours such as boilers, engines, gas combustion units, etc., if operating;</u> - <u>examination of on-deck cargo piping systems including expansion and supporting arrangements;</u> - <u>verification and examination of all piping systems, including valves, fittings and associated equipment for handling cargo or vapours²</u> - <u>advise Master to carry out cold spot examination of the hull and external insulation during transit voyage to unloading port and record in ship's logbook;</u> - <u>advise Master to test high-level alarm(s) with liquid cargo during voyage and record in ship's logbook, when loading condition permits.</u> (2) <u>Verifications and examinations at gas trials or first full cargo unloading, as applicable</u> <u>Note: When attending at first full cargo unloading, priority shall be given to the commencement of unloading.</u> - <u>examination of on-deck cargo piping systems including expansion and supporting arrangements;</u> - <u>review logbook entry of emergency shutdown system testing prior to commencement of unloading;</u> - <u>(**) review cargo logs and alarm reports for cargo tank pressure, temperature, and level indicating systems;</u> - <u>satisfactory operation of cargo compressors;</u> - <u>satisfactory operation of cargo pumps;</u> - <u>inert gas generator, if operating;</u> - <u>nitrogen generating plant, if operating;</u>	

Present	Amendment	Note
(E) Examination of on-deck cargo piping systems including expansion and supporting arrangements. (F) Obtain written statement from the Master that the cold spot examination was carried out during the transit voyage found satisfactory. Where possible, the surveyor should examine selected spaces.	- nitrogen pressure control system for insulation, interbarrier, and annular spaces, as applicable; - <u>(**) review of records for satisfactory operation of the reliquefaction plant, if fitted;</u> - <u>review of records for equipment fitted for the burning of cargo vapours such as boilers, engines, gas combustion units, etc.;</u> - <u>(**) on ships fitted with membrane tanks, review records of the cofferdam and inner hull temperature sensors to verify the readings are not below the allowable temperature for the selected grade of steel;</u> - <u>(**) cofferdam heating system, if in operation;</u> - <u>(**) review logbook entries for cold spot examination; and</u> - <u>(**) review logbook entry for testing of high-level alarm(s) with liquid cargo. If cargo conditions did not permit testing, surveyor to require testing at the first occasion where cargo conditions allow for testing. Master to be advised to record testing in ship's logbook which is to be verified no later than the first annual survey.</u> (3) Documentation to be requested to the Master <u>To demonstrate satisfactory functionality of the verifications, ship's Master shall be required to arrange and provide to the surveyor print outs or screen shots showing:</u> - <u>trends of cargo tanks pressure and temperature;</u> - <u>trends of pressure and temperature distribution of inter-barrier space(s) and insulation space(s), and temperature distribution of inner hull, as applicable;</u> - <u>trends record of performance of cofferdam heating system, when fitted;</u> - <u>trends record of consumption of nitrogen gas, and whether any abnormality has been observed;</u> - <u>list of any gas alarms, if occurred;</u> - <u>Cargo Tanks Containment System Cold Spot Inspection Statement; and</u> - <u>activation of Cargo Tanks High-Level Alarm and Overfill Protection tests.</u> <u>Note 1: The symbol (**) indicates survey requirements only feasible to be carried out at the time of first full cargo loading/unloading.</u> <u>Note 2: Refer to Table 7.5.5 Test Items at the Gas Trial.</u>	

Present	Amendment	Note
5. Cold spot inspection (1) The cold spot inspection of cargo tanks specified in 420. 3 (7) of the Rules is to be carried out during the cargo full loading test to capacity specified in 420. 4 (1) for the membrane tank, semi-membrane tank, internal insulation tank, and when necessary, independent tank. (2) The cold spot inspection of cargo tanks specified in the preceding (1) may be confirmed when the inspection for discharging operation is carried out. 4. Gas-trial and cargo full loading test (related to 513. 2 (5) of the Rules) (1) <u>In accordance with the requirements in 420. 3 (5) and 513. 2 (5) of the Rules the following tests (A) and (B) are to be conducted in the attendance of the Surveyor to verify the performance of the cargo containment installations and cargo handling equipment</u> ∴ (A) Gas-trial <u>On items given in Table 7.5.5 of the Guidance, tests are to be conducted to verify the performance of the cargo containment system cargo handling equipment and instrumentation using a suitable quantity of the cargo after the completion of all the construction work. However, for cargo tanks which do not require either cool-down operations or the cargo pressure / temperature control specified in Section 7 701. 1 of the Rules, the omission of this gas trials may be accepted if substitution is made by the operating test with the substituting medium at manufacturing plants or shipyards to verify the requirements given in Table 7.5.5 of the Guidance except for the case where the tank is of the first cargo tank manufactured by the manufacturer of cargo tanks.</u>	5. <same as current> 6. Additional information on the gas-trial and cargo full loading test (2024) (1) <u>Omission of the gas-trial and cargo full loading test:</u> (A) Gas-trial The tests are to be conducted to verify the performance of the cargo containment system cargo handling equipment and instrumentation using a suitable quantity of the cargo after the completion of all the construction work. <u>Refer to Table 7.5.5 for test items.</u> However, for cargo tanks which do not require either cool-down operations or the cargo pressure / temperature control specified in Section 7 701. 1 of the Rules, the omission of this gas trials may be accepted if substitution is made by the operating test with the substituting medium at manufacturing plants or shipyards to verify the requirements given in Table 7.5.5 of the Guidance except for the case where the tank is of the first cargo tank manufactured by the manufacturer of cargo tanks.	– 420.4 → 420.6,

Present	Amendment	Note
(B) Cargo full loading test On items given in Table 7.5.6 of the Guidance, tests are to be conducted after completion of all the construction work to verify that the cargo containment installations, cargo handling equipment and instrumentation satisfy the design conditions under the fully loaded condition of cargo. However, for this test, the attendance of the Surveyor may be omitted for ships whose cargo containment and cargo transfer installations can be regarded as of the same specification of those which have previously been built and tested at the same shipyard. (2) ~ (5) <omit> 421. ~ 428. <omit> Sec.5 ~ Sec.19 <omit>	(B) Cargo full loading test The tests are to be conducted after completion of all the construction work to verify that the cargo containment installations, cargo handling equipment and instrumentation satisfy the design conditions under the fully loaded condition of cargo. <u>Refer to Table 7.5.6 for test items.</u> However, for this test, the attendance of the Surveyor may be omitted for ships whose cargo containment and cargo transfer installations can be regarded as of the same specification of those which have previously been built and tested at the same shipyard. (2) ~ (5) <same s current> 421. ~ 428. <same as current> Sec.5 ~ Sec.19 <same as current>	

Table 7.5.5 Test Items at the Gas Trial

Test item	◎ : Attendance of the Surveyor ○ : Submission of the record	Inspection equipment	Survey item
1. Drying test	○	· Inert gas generator	· Dew point · Change of dryness in cargo tanks and hold spaces
2. Inerting test	○	· Inert gas generator	· Operation of the inert gas generator · Measuring of atmosphere in cargo tanks
3. Inert gas purge test using cargo vapour	○	· Cargo vapourizer · Compressor	· Change of O ₂ /temperature of cargo vapour in cargo tanks · Quantity of cargo vapour (or liquid) supply · Capacity of the vapourizer · Capacity of the compressor
4. Cool-down test	◎/○	· Spray pump · Compressor · Cargo piping · Temperature indicators for cargo tank · Spray piping	· Temperature curve of cargo tanks ¹⁾ · Inspection of hold spaces/condition of insulation of tanks (after cool-down) · Cooling condition of spray piping-Cooling condition of cargo piping · Capacity of spray pump · Cargo consumption · Capacity of compressor (property of return gas) · Temperature/pressure in cargo tank · Shrinkage of cargo tank ²⁾
5. Loading test of cargo liquid	◎/○	· Compressor · Cargo piping related for loading · level gauge/temperature indicator	· Temperature/pressure level in cargo tanks · Temperature/pressure in hold spaces · Temperature/pressure of cargo liquid/gas at manifolds · Service condition of cargo piping
6. Operation test of cargo pump	◎/○	· All cargo pumps	· Discharge pressure/current of cargo pumps · Liquid level/pressure in cargo tanks · Stripping
7. Operation test of pressure/temperature control system	◎/○	· Depend on the type of controls	· Depend on the type of controls

Notes :

1) The Society may approve omission in consideration of the quality control status and manufacturing records of insulation materials.

2) To be verified only in case of independent tanks.

Table 7.5.6 Survey Items of Full Load Test

	Survey items
1. At loading operation	· Continuous loading rate · Actual operation of level, temperature, pressure indicator, etc. · Actual operation of alarm system¹⁾ · Actual operation of overflow control system¹⁾
2. Condition of cargo tanks and other cargo containment systems after full loading	· Cargo tanks and supports · Hull adjacent to cargo tanks (cold spot) · Insulation capacity of cargo tanks and supports · Atmosphere in hold spaces
3. During voyage	· Insulation capacity of cargo tanks and supports · Cold spot on the construction adjacent to cargo tanks · Capacity of pressure/temperature indicator
4. At discharging operation	· Discharging rate · Other operation of discharging · Submitting/survey of related records without attendance for 3 above.
Note : 1) In case where implementation is difficult, the verification of operation may be made by suitable other method.	

Amendments of the Rules

(External review)

Pt. 7 Ships of Special Service

Ch. 5 Ships Carrying Liquefied Gases in Bulk



2023. 07

Hull Rule Development Team

Background and main contents of the amendments

1. Background of amendments

(1) Res. MSC 492(104) /18 Add.1 Annex2, IGC code Ch2 2.7 reflected (effective date 2024. 1. 1)

→ Pt 7 Ch 5 Sec2 207 Survival Requirements revised.

- As mentioned in the SOLAS convention and MSC.1 Circ.1572/Rev.1 (Pt 3 Ch 14 Sec 4 of the Rules), the type of watertight door of a cargo ship's watertight bulkhead depends on the frequency of use of the door during voyage. However, since the current IGC code only mentions 'remotely operated sliding doors', it has been amended to match the requirements of the SOLAS.

2. Main Contents: Refer to the amendments

Current	Amendment	Note
〈Rules〉 – Pt 7 Ch 5 Section 2 Ship Survival Capability and Location of Cargo Tanks 201. ~ 206. 〈omit〉 207. Survival requirements (IGC Code 2.7) 【See Guidance】 Ships subject to this Chapter shall be capable of surviving the assumed damage specified in 203., to the standard provided in 206., in a condition of stable equilibrium and shall satisfy the following criteria. 1. In any stage of flooding: (1) the waterline, taking into account sinkage, heel and trim, <u>shall</u> be below the lower edge of any opening through which progressive flooding or downflooding may take place. Such openings <u>shall</u> include air pipes and openings that are closed by means of weathertight doors or hatch covers <u>and may exclude those openings closed by means of</u> watertight manhole covers and watertight flush scuttles, small watertight cargo tank hatch covers that maintain the high integrity of the deck, remotely operated <u>watertight sliding doors and</u> sidescuttles of the non-opening type; (2) the maximum angle of heel due to unsymmetrical flooding shall not exceed 30°; and (3) the residual stability during intermediate stages of flooding shall not be less than that required by 2 (1). 2. At final equilibrium after flooding: 〈omit〉	〈Rules〉 – Pt 7 Ch 5 Section 2 Ship Survival Capability and Location of Cargo Tanks 201. ~ 206. 〈same as current〉 207. Survival requirements (IGC Code 2.7) 【See Guidance】 (2022) Ships subject to this Chapter shall be capable of surviving the assumed damage specified in 203., to the standard provided in 206., in a condition of stable equilibrium and shall satisfy the following criteria. 1. In any stage of flooding: (2023) (1) the waterline, taking into account sinkage, heel and trim, <u>should</u> be below the lower edge of any opening through which progressive flooding or downflooding may take place. Such openings <u>should</u> include air pipes and openings that are closed by means of weathertight doors or hatch covers. <u>But the opening that are closed by the following means may be excluded.</u> (A) watertight manhole covers and watertight flush scuttles, (B) small watertight cargo tank hatch covers that maintain the high integrity of the deck, (B) remotely operated <u>sliding watertight doors,</u> (D) <u>hinged watertight access doors with open/closed indication locally and at the navigation bridge, of the quick-acting or single-action type that are normally closed at sea,</u> (E) <u>hinged watertight doors that are permanently closed at sea, and</u> (F) <u>sidescuttles of the non-opening type;</u> (2), (3) 〈same as current〉 2. At final equilibrium after flooding: 〈same as current〉	- MSC492(104)/18 Add.1 Annex2 : I GC code Ch.2 2. 7.1

Amendments of the Rules

(External review)

Pt. 7 Ships of Special Service

Ch. 6 Ships Carrying Dangerous Chemicals in Bulk



2023. 07

Hull Rule Development Team

Background and main contents of the amendments

1. Background of amendments

■ Res. MSC 526(106) Annex, reflected (effective date 2024. 7. 1)

: Pt 7 Ch 6 Sec2 209 Survival Requirements revised.

Consistent with the amendments related to watertight doors of the IGC Code adopted through Resolutions MSC.492 (104). (Refer to Chapter 5 of Part 7 above)

2. Main Contents: Refer to the amendments

Present	Amendment	Note
〈Rules〉 – Pt 7 Ch 6 Section 2 Ship Survival Capability and Location of Cargo Tanks 201. ~ 208. 〈omit〉 209. Survival requirements (IBC Code 2.9) [See Guidance] 1. Ships subject to this Chapter should be capable of surviving the assumed damage specified in 205, to the standard provided in 208, in a condition of stable equilibrium and should satisfy the following criteria. 2. In any stage of flooding: (1) the waterline, taking into account sinkage, heel and trim, should be below the lower edge of any opening through which progressive flooding or downflooding may take place. Such openings should include air pipes and openings which are closed by means of weathertight doors or hatch covers <u>and may exclude those openings closed by means of watertight manhole covers and watertight flush scuttles, small watertight cargo tank hatch covers which maintain the high integrity of the deck, remotely operated watertight sliding doors, <u>and</u> sidescuttles of the non-opening type;</u> (2) the maximum angle of heel due to unsymmetrical flooding should not exceed 25° except that this angle may be increased up to 30° if no deck immersion occurs; (3) the residual stability during intermediate stages of flooding should be to the satisfaction of the Society. However, it should never be significantly less than that required by Par 3. 3. At final equilibrium after flooding: 〈omit〉	〈Rules〉 – Pt 7 Ch 6 Section 2 Ship Survival Capability and Location of Cargo Tanks 201. ~ 208. 〈same as current〉 209. Survival requirements (IBC Code 2.9) [See Guidance] 1. Ships subject to this Chapter should be capable of surviving the assumed damage specified in 205, to the standard provided in 208, in a condition of stable equilibrium and should satisfy the following criteria. 2. In any stage of flooding: (1) the waterline, taking into account sinkage, heel and trim, should be below the lower edge of any opening through which progressive flooding or downflooding may take place. Such openings should include air pipes and openings which are closed by means of weathertight doors or hatch covers. <u>But the opening that are closed by the following means may be excluded.</u> (A) watertight manhole covers and watertight flush scuttles, (B) small watertight cargo tank hatch covers that maintain the high integrity of the deck, (B) remotely operated <u>sliding watertight doors,</u> (D) <u>hinged watertight access doors with open/closed indication locally and at the navigation bridge, of the quick-acting or single-action type that are normally closed at sea,</u> (E) <u>hinged watertight doors that are permanently closed at sea, and</u> (F) <u>sidescuttles of the non-opening type;</u> (2), (3) 〈same as current〉 3. At final equilibrium after flooding: 〈same as current〉	- MSC526(106)/Annex: IBC code C h.2 2.9.2

Amendments of the Rules

(External review)

Pt. 7 Ships of Special Service

Pt. 8 Fire Protection and Fire Extinction



2020. 07

Hull Rule Development Team

Background and main contents of the amendments

1. Background of amendments

(1) IACS UI SC120(Corr.1)

: Access to forecastle spaces containing sources of ignition may be permitted through doors facing the cargo space, provided the doors are located outside hazardous areas

Current :

– IGC code Reg. 3.2.4 → Pt 7 Ch 5 302. 4(1)

‘(4) One access door to a forecastle with an ignition source facing the cargo space is permitted.’ (2016 edition)

– IBC code Reg. 3.2.3 → Pt 7 Ch 6 302. 3

– SOLAS Reg. II-2 / 4.5.2.1, 4.5.2.2 → Pt 8 Ch2 402. 1, 2

Guidance: ‘~ Access door, air inlets and opening facing cargo area may be provided subject to no sources of ignition in hazardous areas ~ ’

2. Main Contents: Refer to the amendments

Pt. 7 Ships of Special Service

Present		Note
〈Rules〉 Ch.5 Ships Carrying Liquefied Gasses in Bulk Section 3 Ship Arrangements 301. 〈omit〉 302. Accommodation, service and machinery spaces and control stations (IGC Code 3.2) [See Guidance] 1. ~ 3. 〈omit〉 4. (1) Entrances, air inlets and openings to accommodation spaces, service spaces, machinery spaces and control stations shall not face the cargo area. They shall be located on the end bulkhead not facing the cargo area or on the outboard side of the superstructure or deckhouse or on both at a distance of at least 4 % of the length (<i>L</i>) of the ship but not less than 3 m from the end of the superstructure or deckhouse facing the cargo area. This distance, however, need not exceed 5 m. (2) ~ (3) 〈omit〉 (4) Accesses to forecastle spaces containing sources of ignition may be permitted through a single door facing the cargo area, provided the doors are located outside hazardous areas as defined in Sec 10. 5. ~ 7. 〈omit〉 303. ~ 308. 〈omit〉	〈Rules〉 Ch.5 Ships Carrying Liquefied Gasses in Bulk Section 3 Ship Arrangements 〈same as current〉	- IGC code 3.2.4

Present	Amendment	Note
〈Guidance〉 Ch.5 Ships Carrying Liquefied Gasses in Bulk Section 3 Ship Arrangements 301. 〈omit〉 302. Accommodation, service and machinery spaces and control stations 【See Rule】 1. 〈omit〉 2. Arrangements of entrances, air inlets and openings (1) Windows and side-scuttles "so designed that a rapid and efficient gas and vapour tightening of the wheelhouse can be ensured" referred to in 302. 4 (2) of the Rules means those fitted with packing and clamping devices. These window and side scuttles are subject to hose tests or air tests in accordance with Pt 8 Ch 2 402. 2 of the Guidance. (2) In case where clear view screens are provided in wheelhouse within the restricted area specified in 302. 4 of the Rules, additional clamping devices are to be provided to the clear view screen or alternative arrangement of closing the window to make it gastight when the screen is not in rotating motion is to be made. (3) The requirements in 302. 4 of the Rules may not apply to ships dedicated to the carriage of cargo which require neither F nor T in column f of Table in Ch 5, Sec 19 of the Rules. 〈newly added〉 3. 〈omit〉 303. ~ 308. 〈omit〉	〈Guidance〉 Ch.5 Ships Carrying Liquefied Gasses in Bulk Section 3 Ship Arrangements 301. 〈same as current〉 302. Accommodation, service and machinery spaces and control stations 【See Rule】 1. 〈same as current〉 2. Arrangements of entrances, air inlets and openings (1) ~ (3) 〈same as current〉 <u>(4) In application of 302. 4 of the Rules, for gas carriers constructed on or after 1 July 1986 but before 1 July 2016, access to fore-castle spaces containing sources of ignition may be permitted through doors facing the cargo area, provided the doors are located outside hazardous areas as defined in Sec 10.</u> 3. 〈same as current〉 303. ~ 308. 〈same as current〉	– IACS UI SC 120 (Corr.1) – Sec 10: IEC60092-502:1999

Present		Note
Present 〈Rules〉 Ch.6 Ships Carrying Dangerous Chemicals in Bulk Section 3 Ship Arrangements 301. 〈omit〉 302. Accommodation, service and machinery spaces and control stations (IBC Code 3.2) [See Guidance] 1. ~ 2. 〈omit〉 3. Entrances, air inlets and openings to accommodation, service and machinery spaces and control stations should not face the cargo area. They should be located on the end bulkhead not facing the cargo area and/or on the 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 3 m from the end of the superstructure or deckhouse facing the cargo area. This distance, however, need not exceed 5 m. No doors should 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 should be insulated to "A-60" standard. Bolted plates for removal of machinery may be fitted within the limits specified above. Wheelhouse doors and wheel house 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 super structures and deckhouses within the limits specified above should be of the fixed (non-opening) type. Such sidescuttles in the first tier on the main deck should be fitted with inside covers of steel or equivalent material. 303. ~ 307. 〈omit〉	〈Rules〉 Ch.6 Ships Carrying Dangerous Chemicals in Bulk Section 3 Ship Arrangements 〈same as current〉	- IBC code 3.2.

Present		Note
Ch.6 Ships Carrying Dangerous Chemicals in Bulk Section 3 Ship Arrangements 301. <omit> 302. Accommodation, service and machinery spaces and control stations (IBC Code 3.2) [See Guidance] 1. ~ 2. <omit> 3. Entrances, air inlets and openings to accommodation, service and machinery spaces and control stations (1) ~ (3) <omit> (4) For ships carrying dangerous chemicals in bulk, irrespective of the kind of cargo, coaming is to be provided at the forward end of the deckhouse to prevent the ingress of the cargo overflown on the deck into the deckhouse including the accommodation and service spaces and control stations as given in Fig 7.6.16 of the Guidance. The height of coaming is to be 300 mm from the deck, 50 mm above the upper edge of the sheer strake or 50 mm above the upper face of the deck longitudinals, whichever is the greatest. <newly added> 303. ~ 307. <omit>	Ch.6 Ships Carrying Dangerous Chemicals in Bulk Section 3 Ship Arrangements 301. <same as current> 302. Accommodation, service and machinery spaces and control stations (IBC Code 3.2) [See Guidance] 1. ~ 2. <same as current> 3. Entrances, air inlets and openings to accommodation, service and machinery spaces and control stations (1) ~ (3) <same as current> (4) For ships carrying dangerous chemicals in bulk, irrespective of the kind of cargo, coaming is to be provided at the forward end of the deckhouse to prevent the ingress of the cargo overflown on the deck into the deckhouse including the accommodation and service spaces and control stations as given in Fig 7.6.16 of the Guidance. The height of coaming is to be 300 mm from the deck, 50 mm above the upper edge of the sheer strake or 50 mm above the upper face of the deck longitudinals, whichever is the greatest. (4) <u>In application of 302. 3 of the Rules, access to forecastle spaces containing sources of ignition may be permitted through doors facing the cargo area, provided the doors are located outside hazardous areas as defined in Ch 5 Sec 10.</u> 303. ~ 307. <same as current>	– IACS UI SC 120 (Corr.1) – Ch5 Sec 10: IEC60092-502:1999

Pt. 8 Fire Protection and Fire Extinction

Present		Note
CHAPTER 2 PROBABILITY OF IGNITION Section 4 Cargo Areas of Tankers [See Guidance] 401. <omit> 402. Restriction on boundary openings 1. Except as permitted in 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 3m from the end of the superstructure or deckhouse facing the cargo area. This distance need not exceed 5 m. [See Guidance] 2. ~ 6. <omit> 403. ~ 410. <omit>	CHAPTER 2 PROBABILITY OF IGNITION Section 4 Cargo Areas of Tankers [See Guidance] <same as current>	- SOLAS II-2 4.5.2.

Present	Amendment	Note
CHAPTER 2 PROBABILITY OF IGNITION Section 4 Cargo Areas of Tankers [See Guidance] 401. <omit> 402. Restriction on boundary openings 1. Owing to the design of a ship, where it is impossible or impractical to satisfy the requirements specified in 402. 1 of the Rules, access doors, air inlets and opening facing cargo areas may be provided subject to no sources of ignition in a hazardous areas as defined in Pt 7, Ch 1, 1101. 2. In such cases, explosion-protected electrical equipment complying with IEC 60092-502 is not regarded as a source of ignition. 【See Rule】 2. ~ 3. <omit> 403. ~ 410 <omit>	CHAPTER 2 PROBABILITY OF IGNITION Section 4 Cargo Areas of Tankers [See Guidance] 401. <omit> 402. Restriction on boundary openings 1. Owing to the design of a ship, where it is impossible or impractical to satisfy the requirements specified in 402. 1 of the Rules, access doors, air inlets and opening facing cargo areas may be provided subject to no sources of ignition in a hazardous areas as defined in Pt 7, Ch 1, 1101. 2. In such cases, explosion-protected electrical equipment complying with IEC 60092-502:1999 is not regarded as a source of ignition. <u>In application of 402. 1 of the Rules, access to forecandle spaces containing sources of ignition may be permitted through doors facing the cargo area, provided the doors are located outside hazardous areas as defined in IEC 60092-502:1999.</u> 2. ~ 3. <omit> 403. ~ 410 <omit>	- IACS UI SC 120 Corr.1)

Amendments of the Guidance

(External review)

Guidance for Approval of Manufacturing
Process and Type Approval, Etc.



2023. 07.

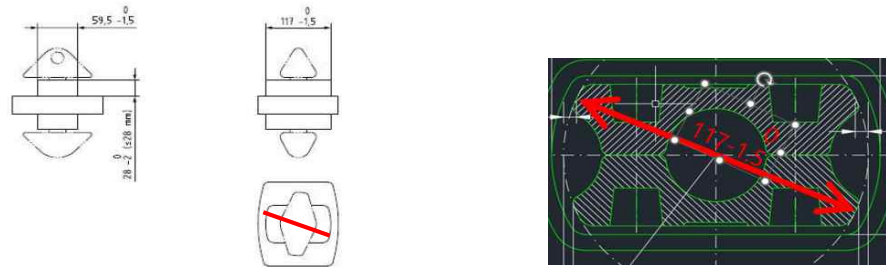
Hull Rule Development Team

Background and main contents of the amendments

1. Background of amendments

■ Request (HUC4100-1795-2023) (effective date 2023. 7. Circular to be issued)

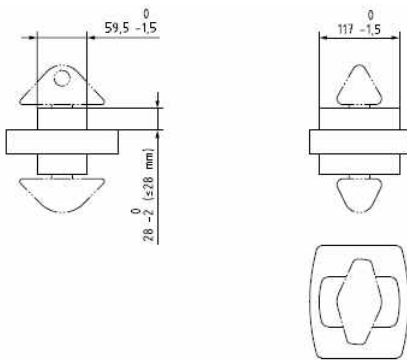
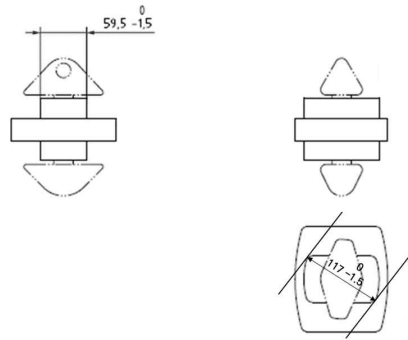
- (1) For twistlock of HHS (High Hold Securing) / HHT (High Holding Twistlock) notation, dimensions of the twistlock neck part required by ISO 3874 (ISO1161) are shown as example pictures in Ch.3, Sec.25 of Guidance for Approval and of Manufacturing Process and Type Approval. This is to limit the clearance between twistlock and corner casting.
- (2) In the figure(left), the entire twistlock neck is illustrated in a rectangular shape, but some manufacturers develop and present optimal designs that satisfy equal clearance. See picture(right)



2. Main Contents: Refer to the amendments

- (1) ‘ the dimension of the neck of the twistlock should be equal to or greater than the value according to **Fig. 3.25.5.** ’
 - ‘ The dimensions of the neck of the twistlock should be equal to or greater than the value according to **Fig. 3.25.5.** In this case, the neck of the twistlock should be symmetrical in the length/width direction.’
 - In figure 3.25.5, a mark indicating the diagonal distance has been added.

Guidance for Approval of Manufacturing Process and Type Approval, Etc.

Current	Amendment	Notes
Ch. 3 TYPE APPROVAL Section 25 Securing Device 2501.~ 2503. <omit> 2504. Test requirements of additional special feature notation HHS(High Holding Securing) 1. ~ 5. <omit> 6. The twistlock housing should be fastened with at least one bolt each at the top and bottom. Also the dimension of the neck of the twist lock should be equal to or greater than the value according to Fig. 3.25.5. (2023)  Fig. 3.25.5 7. <omit> 2505. <omit>	Ch. 3 TYPE APPROVAL Section 25 Securing Device 2501.~ 2503. <osame as current> 2504. Test requirements of additional special feature notation HHS(High Holding Securing) 1. ~ 5. <same as current> 6. The twistlock housing should be fastened with at least one bolt each at the top and bottom. Also the dimension of the neck of the twist lock should be equal to or greater than the value according to Fig. 3.25.5. <u>In this case, the neck of the twistlock should be symmetrical in the length/width direction.</u> (2023)  Fig. 3.25.5 7. <same as current> 2505. <same as current>	- ISO 3874 A 4.3 Collars

Corrigenda for 2023 Classification Technical Rules



2023. 00. 00

* Please note that this corrigenda is for the printed version of the 2023 Classification Technical Rules, and the PDF files posted on the website have been corrected.

Present	Amendment	Note
<Rules> Pt 4 Ch 1 RUDDERS Section 1 General 107. Equivalence 1. This Society may accept alternatives to requirements given in this Chapter provided they are deemed to be equivalent according to <u>Pt 1, 104, or 105, of the Guidance.</u>	<Rules> Pt 4 Ch 1 RUDDERS Section 1 General 107. Equivalence 1. This Society may accept alternatives to requirements given in this Chapter provided they are deemed to be equivalent according to <u>Pt 1, 105, of the Rules.</u>	

Present	Amendment	Note
Present 〈Guidance〉 Pt 4 Ch 1 RUDDERS Section 11 Propeller Nozzles 1101. Application [See Rule] In 1101. 1 of the Rules, the term "specially considered" means the cases as considered in accordance with <u>Pt 1, Ch 1, 104. or 105. of the Guidance.</u> Ch 2 HATCHWAYS AND OTHER DECK OPENINGS Section 5 Hatch cover details – Closing Arrangement, Securing Devices and Stoppers 502. General [See Rule] In 502. 6 of the Rules, the term "considered by the Society" means the cases as considered in accordance with <u>Pt 1, Ch 1, 104. or 105. of the Guidance.</u> Ch 11 ACCESS TO AND WITHIN SPACES, ~ 〈omission〉 BULK CARRIERS Section 2 Technical Provisions for Means of Access for Inspections 202. Technical provisions [See Rule] 7. In application of 202. 9 (6) of the Rules, ~ 〈omission〉 In 202. 9 (7) the Rules, the "other means of access, approved by and acceptable to this Society" means the case where the means are approved by <u>Pt 1, Ch 1, 104. or 105. of the Guidance</u> or equivalent means.	Amendment 〈Guidance〉 Pt 4 Ch 1 RUDDERS Section 11 Propeller Nozzles 1101. Application [See Rule] In 1101. 1 of the Rules, the term "specially considered" means the cases as considered in accordance with <u>Pt 1, Ch 1, 105. of the Rules.</u> Ch 2 HATCHWAYS AND OTHER DECK OPENINGS Section 5 Hatch cover details – Closing Arrangement, Securing Devices and Stoppers 502. General [See Rule] In 502. 6 of the Rules, the term "considered by the Society" means the cases as considered in accordance with <u>Pt 1, Ch 1, 105. of the Rules.</u> Ch 11 ACCESS TO AND WITHIN SPACES, ~ 〈omission〉 BULK CARRIERS Section 2 Technical Provisions for Means of Access for Inspections 202. Technical provisions [See Rule] 7. In application of 202. 9 (6) of the Rules, ~ 〈omission〉 In 202. 9 (7) the Rules, the "other means of access, approved by and acceptable to this Society" means the case where the means are approved by <u>Pt 1, Ch 1, 105. of the Rules.</u> or equivalent means.	

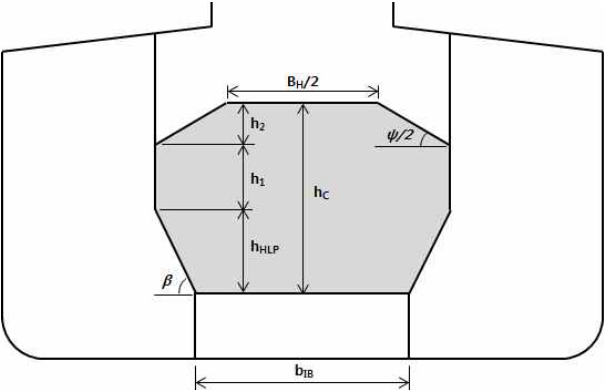
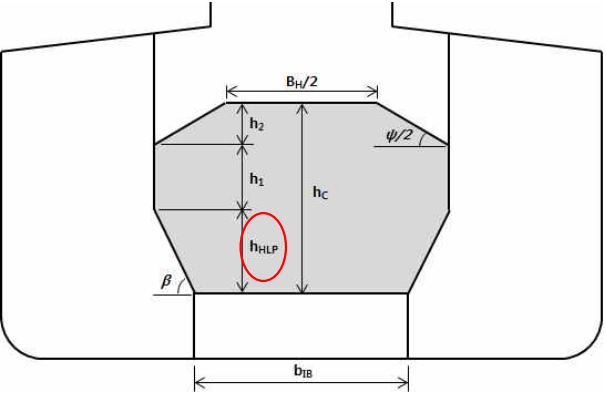
Present	Amendment	Note
⟨Rules⟩ Pt 7 CONTENTS CHAPTER 9 <u>TUGS</u> 177 CHAPTER 9 <u>TUGS</u> Section 1 General 101. Application 1. The construction and equipment of ships intended to be registered as "<u>Tug</u>" are to be in accordance with the requirements in this Chapter. The construction and equipment of ships intended to be registered as "Offshore Tug/Supply Ships" are to be in accordance with the requirements of Ch 8. Section 4 Panting and Strengthening of Bottom Forward 401. Panting region reinforcement The arrangements to resist panting required by Pt 3, Ch 9 do not apply to <u>tugs</u> less than 46 m in length. In <u>tugs</u> 46 m or more in length, addition stiffening is also to be fitted in the tween decks throughout the panting region. 402. Strengthening of bottom forward The requirements for strengthening of bottom forward detailed in Pt 3, Ch 7, Sec 8 do not apply to <u>tugs</u>.	⟨Rules⟩ Pt 7 CONTENTS CHAPTER 9 <u>TUG BOATS</u> 177 CHAPTER 9 <u>TUG BOATS</u> Section 1 General 101. Application 1. The construction and equipment of ships intended to be registered as "<u>Tug boat</u>" are to be in accordance with the requirements in this Chapter. The construction and equipment of ships intended to be registered as "Offshore Tug/Supply Ships" are to be in accordance with the requirements of Ch 8. Section 4 Panting and Strengthening of Bottom Forward 401. Panting region reinforcement The arrangements to resist panting required by Pt 3, Ch 9 do not apply to <u>tug boats</u> less than 46 m in length. In <u>tug boats</u> 46 m or more in length, addition stiffening is also to be fitted in the tween decks throughout the panting region. 402. Strengthening of bottom forward The requirements for strengthening of bottom forward detailed in Pt 3, Ch 7, Sec 8 do not apply to <u>tug boats</u>.	

Present	Amendments	Reason
Section 6 Towing Arrangements 601. Towing hooks 1. Towing hooks or equivalent should normally be 5 to 10 percent of the ship's length abaft amidships, but in no circumstances should they be sited forward of the longitudinal center of gravity of the <u>tug</u> in any anticipated condition of loading. In addition, the towing hook should be located as low as practicable in order to minimize heeling moments arising in normal working conditions. Section 8 Towing Winch Emergency Release Systems (2021) 801. General 2. Purpose The purpose of this section is to provide requirements to prevent the capsize of a <u>tug</u> when in the act of towage as a result of the towline force acting transversely to the <u>tug</u> (in beam direction) as a consequence of an unexpected event (could be loss of propulsion/steering or otherwise), whereby the resulting couple generated by offset and opposing transverse forces (towline force is opposed by thrust or hull resistance force) causes the <u>tug</u> to heel and, ultimately, to capsize. This capsize may be referred to as "girting", "girthing", "girding" or "tripping". See Fig 1 which shows the forces acting during towage operations. 804. Test requirements 2. Installation trials (1) The full functionality of the emergency release system is to be tested as part of the shipboard commissioning trials to the satisfaction of the surveyor. Testing may be conducted either during a bollard pull test or by applying the towline load against a strong point on the deck of the <u>tug</u> that is certified to the appropriate load.	Section 6 Towing Arrangements 601. Towing hooks 1. Towing hooks or equivalent should normally be 5 to 10 percent of the ship's length abaft amidships, but in no circumstances should they be sited forward of the longitudinal center of gravity of the <u>tug boat</u> in any anticipated condition of loading. In addition, the towing hook should be located as low as practicable in order to minimize heeling moments arising in normal working conditions. Section 8 Towing Winch Emergency Release Systems (2021) 801. General 2. Purpose The purpose of this section is to provide requirements to prevent the capsize of a <u>tug boat</u> when in the act of towage as a result of the towline force acting transversely to the <u>tug boat</u> (in beam direction) as a consequence of an unexpected event (could be loss of propulsion/steering or otherwise), whereby the resulting couple generated by offset and opposing transverse forces (towline force is opposed by thrust or hull resistance force) causes the <u>tug boat</u> to heel and, ultimately, to capsize. This capsize may be referred to as "girting", "girthing", "girding" or "tripping". See Fig 1 which shows the forces acting during towage operations. 804. Test requirements 2. Installation trials (1) The full functionality of the emergency release system is to be tested as part of the shipboard commissioning trials to the satisfaction of the surveyor. Testing may be conducted either during a bollard pull test or by applying the towline load against a strong point on the deck of the <u>tug boat</u> that is certified to the appropriate load.	

Present	Amendment	Note
〈Rules〉 Pt 7-2 Ch 5 Ships Carrying Liquefied Gases in Bulk Section 2 Ship Survival Capability and Location of Cargo Tanks 201. General (IGC Code 2.1) 1. Ships subject to this Chapter shall survive the hydrostatic effects of flooding following assumed hull damage caused by some external force. In addition, to safeguard the ship and the environment, the cargo tanks shall be protected from penetration in the case of minor damage to the ship resulting, for example, from contact with a jetty or <u>tug</u>, and also given a measure of protection from damage in the case of collision or grounding, by locating them at specified minimum distances inboard from the ship's shell plating. 〈omit〉	〈Rules〉 Pt 7-2 Ch 5 Ships Carrying Liquefied Gases in Bulk Section 2 Ship Survival Capability and Location of Cargo Tanks 201. General (IGC Code 2.1) 1. Ships subject to this Chapter shall survive the hydrostatic effects of flooding following assumed hull damage caused by some external force. In addition, to safeguard the ship and the environment, the cargo tanks shall be protected from penetration in the case of minor damage to the ship resulting, for example, from contact with a jetty or <u>tug boat</u>, and also given a measure of protection from damage in the case of collision or grounding, by locating them at specified minimum distances inboard from the ship's shell plating. 〈osame as current〉	

Present	Amendment	Note
CHAPTER 4 CONTAINER SHIPS Section 2 Longitudinal Strength 201. General 2. Symbols and definitions (1) symbols L : Rule length (m), as defined in Pt 3, Ch 1, 102. B : Moulded breadth (m) Section 3 Double Bottoms 304. Thickness of inner bottom plating 1. The thickness of inner bottom plating is not to be less than that obtained from the following formulae, whichever is the greater : where : d_0 : height of centre girder (m).	CHAPTER 4 CONTAINER SHIPS Section 2 Longitudinal Strength 201. General 2. Symbols and definitions (1) symbols L : Rule length (m), as defined in Pt 3, Ch 1, 102. B : Moulded breadth (m), <u>as defined in Pt 3, Ch 1, 104.</u> Section 3 Double Bottoms 304. Thickness of inner bottom plating 1. The thickness of inner bottom plating is not to be less than that obtained from the following formulae, whichever is the greater : where : d_0 : height of centre girder (<u>mm</u>).	

Present	Amendment	Note
Annex 7-2 Guidance for the Container Securing Arrangements 8. Determination and application of forces Table 6 Ship motions - if $B \geq 60\text{m}$, not to be taken less than $f_r \times 18^\circ$ ($f_r \times 0.314\text{rad}$) (If the B is a <u>median</u> value, θ is determined by linear interpolation) (3) Resultant applied forces for unlashed stack Q_i = wind force in one transverse end $Q_i = \frac{\alpha 7.33 c b V_w^2 \cos(C_{YG}\theta) \times 10^{-4}}{2} \quad (\text{kN})$	Annex 7-2 Guidance for the Container Securing Arrangements 8. Determination and application of forces Table 6 Ship motions - if $B \geq 60\text{m}$, not to be taken less than $f_r \times 18^\circ$ ($f_r \times 0.314\text{rad}$) (If the B is a <u>intermediate</u> value, θ is determined by linear interpolation) (3) Resultant applied forces for unlashed stack Q_i = wind force in one transverse end $Q_i = \frac{\alpha 7.33 c b V_w^2 \cos(C_{YG}\theta) \times 10^{-4}}{2} \quad (\text{kN})$	$\Theta \rightarrow \theta$

Present	Amendment	Note
〈Guidance〉 Pt 7 Annex 7-10 Guidance for Direct Strength Assessment for Ore Carriers  Fig 9 Assumed cargo surface (high density, $h_1 \geq 0$)	〈Guidance〉 Pt 7 Annex 7-10 Guidance for Direct Strength Assessment for Ore Carriers  Fig 9 Assumed cargo surface (high density, $h_1 \geq 0$) $h_{HLP} \rightarrow h_{HPL}$	

Present	Amendment	Note
〈Rules〉 Pt 7 CHAPTER 9 TUGS Section 8 Towing Winch Emergency Release Systems <u>Figure 1</u> Force during towing <u>Figure 2</u> Towline 'fleet angle' 〈Guidance〉 Pt 7 CHAPTER 3 BULK CARRIES 702. <u>Figs. 7.3.5</u> and ~ Annex 7-10 Guidance for Direct Strength Assessment for Ore Carriers <u>Figure 15</u> Transverse distribution of dynamic pressure for BSP-1P(left)와 BSP-1S(right) load cases <u>Figure 16</u> Transverse distribution of dynamic pressure for BSP-2P(left)와 BSP-2S(right) load cases	〈Rules〉 Pt 7 CHAPTER 9 TUGS Section 8 Towing Winch Emergency Release Systems <u>Fig 1</u> Force during towing <u>Fig 2</u> Towline 'fleet angle' 〈Guidance〉 Pt 7 CHAPTER 3 BULK CARRIES 702. <u>Fig 7.3.5</u> and ~ Annex 7-10 Guidance for Direct Strength Assessment for Ore Carriers <u>Fig 15</u> Transverse distribution of dynamic pressure for BSP-1P(left)와 BSP-1S(right) load cases <u>Fig 16</u> Transverse distribution of dynamic pressure for BSP-2P(left)와 BSP-2S(right) load cases	

Present	Amendment	Note
⟨Rules⟩ Pt 7-2 CHAPTER 5 603. 2. (2) <u>Figure</u> 7.5.17, (3) <u>Figure</u> 7.5.18, 605. 3. (4) (D) <u>Fig.</u> 7.5.18: 804. (84 Page) <u>Fig.</u> 7.5.19 ⟨Guidance⟩ Pt 7-2 CHAPTER 5 305. 3. <u>Fig.</u> 7.5.14 407. <u>Fig.</u> 7.5.16 423. <u>Fig.</u> 7.5.22 804. 2 <u>Fig.</u> 7.5.19 CHAPTER 6 701. 3 <u>Fig.</u>7.6.32	⟨Rules⟩ Pt 7-2 CHAPTER 5 603. 2. (2) <u>Fig</u> 7.5.17, (3) <u>Fig</u> 7.5.18, 605. 3. (4) (D) <u>Fig</u> 7.5.18: 804. (84 Page) <u>Fig</u> 7.5.19 ⟨Guidance⟩ Pt 7-2 CHAPTER 5 305. 3. <u>Fig</u> 7.5.14 407. <u>Fig</u> 7.5.16 423. <u>Fig</u> 7.5.22 804. 2 <u>Fig</u> 7.5.19 CHAPTER 6 701. 3 <u>Fig</u> 7.6.32	

Present	Amendment	Note
〈Guidance for Approval of Manufacturing Process and Type Approval, Etc.〉 CHAPTER 3 TYPE APPROVAL Section 25 Securing Devices 2504. Test requirements of additional special feature notation HHS(High Holding Securing) <i>(2021)</i> 1. 2. 3. Fig. 3.25.4 4. 5. 6. Fig. 3.25.5 7. 2505. Test requirements of additional special feature notation HHT(High Holding Twistlock) <i>(2021)</i> Table 3.25.4 HHS/HHT – Test Loads and Test Modes <i>(2021)</i> Fig. 3.25.2 Configuration of HHS test equipment (fully automatic twistlock) <i>(2021)</i> Table 3.25.5 HHS/HHT – Twistlock function test load <i>(2021)</i> Fig. 3.25.3 Configuration of HHS test equipment (semi-automatic twistlock) <i>(2021)</i>	〈Guidance for Approval of Manufacturing Process and Type Approval, Etc.〉 CHAPTER 3 TYPE APPROVAL Section 25 Securing Devices 2504. Test requirements of additional special feature notation HHS(High Holding Securing) <i>(2021)</i> 1. 2. 3. 4. 5. 6. 7. Table 3.25.4 HHS/HHT – Test Loads and Test Modes <i>(2021)</i> Fig. 3.25.2 Configuration of HHS test equipment (fully automatic twistlock) <i>(2021)</i> Table 3.25.5 HHS/HHT – Twistlock function test load <i>(2021)</i> Fig. 3.25.3 Configuration of HHS test equipment (semi-automatic twistlock) <i>(2021)</i> Fig. 3.25.4 Fig. 3.25.5 2505. Test requirements of additional special feature notation HHT(High Holding Twistlock) <i>(2021)</i>	

AMENDMENTS OF GUIDANCE RELATING TO RULES FOR CLASSIFICATION OF STEEL SHIPS

(Development Review : External Opinion Inquiry)

Part 7 Chapter 5 Ships Carrying Liquefied Gases in Bulk

2023. 08.



- Main Amendments -

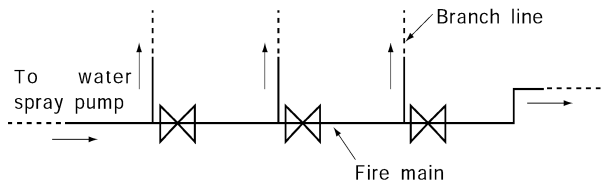
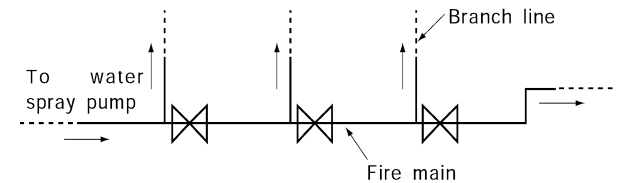
(1) Reflecting Request for Revision of Classification Technical Rules <ships contracted for construction on or after 2023/07/01>

● Area to be covered by and intermediate valves fitted at water spray system

(2) IACS Res. <ships constructed on or after 2024/01/01>

● UR G3 (New Dec 2022) : Fail-close action of Emergency Shut Down (ESD) valve

Present	Amendment	Reason
Section 11 Fire Protection and Fire Extinction 1101. to 1102. <omitted> 1103. Water spray system 1. Area to be covered [See Rule] (1) For the purpose of the requirements in 1103. 1 (1) of the Rules, the area to be covered at the exposed tank dome is to include the areas where stop valves for cargo tanks and emergency shutdown valves specified in the requirements in 505. 2 of the Rules are fitted. (2) For the purpose of the requirements 1103. 1. (4) of the Rules, the area of the discharge and loading connections is to include the areas where emergency shutdown valves specified in the requirements in 505. 3 of the Rules are fitted. Further, the "control valve" referred to in the requirements in 1103. 1 (4) of the Rules is to include stop valves for the transfer of cargo line to and from vapour line. (3) to (4) <omitted>	Section 11 Fire Protection and Fire Extinction 1101. to 1102. <same as the present> 1103. Water spray system 1. Area to be covered [See Rule] (1) For the purpose of the requirements in 1103. 1 (1) of the Rules, the area to be covered at the exposed tank dome is to include the areas where stop valves for cargo tanks and emergency shutdown valves specified in the requirements in 505. 2 of the Rules are fitted. (2) For the purpose of the requirements 1103. 1. (4) of the Rules, the area of the discharge and loading connections is to include the areas where emergency shutdown valves specified in the requirements in 505. 3 of the Rules are fitted. Further, the "control valve" referred to in the requirements in 1103. 1 (4) of the Rules is to include stop valves for the transfer of cargo line to and from vapour line. (2) to (3) <same as the present>	- delete redundant requirements which are already required by Rules (emergency shutdown valve) and which are not practical in actual installation. (stop valves for the transfer of cargo line to and from vapour line.)

Present	Amendment	Reason
2. Arrangement and capacity [See Rule] For the purpose of the requirements in 1103. 2 of the Rules, the following requirements (1) to (2) are to be complied with : (1) The nozzles for protecting vertical surfaces are to be arranged per every two tiers for the end walls of the accommodation spaces, as standard. (2) <u>The intermediate valves fitted with the fire main are to be provided at the connections between the branch line and spray main for example, as shown in Fig 7.5.37 of the Guidance.</u>  Fig 7.5.37	2. Arrangement and capacity [See Rule] For the purpose of the requirements in 1103. 2 of the Rules, the following requirements (1) to (2) are to be complied with : (1) The nozzles for protecting vertical surfaces are to be arranged per every two tiers for the end walls of the accommodation spaces, as standard. (2) The intermediate valves fitted with the fire main are to be provided at the connections between the branch line and spray main for example, as shown in Fig 7.5.37 of the Guidance.  Fig 7.5.37	- delete stringent requirements which is not required by Rules

Present	Amendment	Reason
Section 18 Operating Requirements 1809. Cargo sampling <omitted> 1810. Cargo emergency shutdown (ESD) system 1. Emergency shutdown valves [See Rule] The emergency shutdown valves specified in 1810. 2 (1) of the Rules are to be in accordance with the following requirements (1) to (4) : (1) The "fail-closed type" referred to in the requirement of the Rules is, for example, one of given in the following (A) and (B) : (A) <u>The type in which the hydraulic or pneumatic pressure is solely used in valve opening motion, and the valve closing motion including the case of fail-closure is effected by spring or weight.</u> (B) <u>Where valve diameter is so large that both opening and closing motions of the valve are hydraulically or pneumatically effected, the operating oil or air in the fail-closure operation is to be supplied from a specially provided accumulator. Alarm is to be given in the event of loss of hydraulic or pneumatic pressure for ordinary valve motion and activation of fail-closure operation.</u> (2) to (4) <omitted>	Section 18 Operating Requirements 1809. Cargo sampling <omitted> 1810. Cargo emergency shutdown (ESD) system 1. Emergency shutdown valves [See Rule] The emergency shutdown valves specified in 1810. 2 (1) of the Rules are to be in accordance with the following requirements (1) to (4) : (1) <u>When ESD valve is actuated by hydraulic or pneumatic system, the following is to complied with</u> (A) <u>Audible and visible alarm is to be given in the event of loss of pressure that causes activation of fail-close action. The alarm is to be provided in a normally manned control station (e.g. Cargo Control Room and/or the navigation bridge, etc.).</u> (B) <u>The following conditions are to also be complied to ensure the fail-close action:</u> (a) <u>Failure of hydraulic or pneumatic system is not to lead to loss of fail-close functionality (i.e. activated by spring or weight); or</u> (b) <u>Hydraulic or pneumatic system for fail-close action is to be arranged with stored power and separated from normal valve operation.</u> (2) to (4) <same as the present>	- To reflect IACS UR G3 (New Dec 2022)

Guidance Relating to the Rules for the Classification of Steel Ships

Part 7 Ships of Special Service (Ch 5, 6)

(Development Review : For external opinion inquiry)



2024. 2.

Machinery Rule Development Team

Effective Date : 1 July 2024

(The contract date for ship construction)

Present	Amendment	Note
CHAPTER 5 SHIPS CARRYING LIQUEFIED GASES IN BULK Section 1 - 12 <same as the present Rules> Section 13 Instrumentation and Automation Systems 1301. - 1304. <same as the present Rules> 1304. Gas detection 1. - 3. <same as the present Rules> 4. Instruments for measurement of oxygen levels [See Rule] The "suitable instrument for the measurement of oxygen levels" referred to in the requirements in 1306. 20 of the Rules means the one <u>as given in 511. 8 of the Guidance in a corresponding manner.</u> 1307. - 1309. <same as the present Rules> Section 15 - 19 <same as the present Rules>	CHAPTER 5 SHIPS CARRYING LIQUEFIED GASES IN BULK Section 1 - 12 <same as the present Rules> Section 13 Instrumentation and Automation Systems 1301. - 1304. <same as the present Rules> 1304. Gas detection 1. - 3. <same as the present Rules> 4. Instruments for measurement of oxygen levels [See Rule] The "suitable instrument for the measurement of oxygen levels" referred to in the requirements in 1306. 20 of the Rules means the one as given in 511. 8 of the Guidance in a corresponding manner. <u>that can measure oxygen concentration in an inert atmosphere and is adequate to international/national standards recognized by the Society or SOLAS Reg. XI-1/7.</u> 1307. - 1309. <same as the present Rules> Section 15 - 19 <same as the present Rules>	(Amended) - The citation regulations for oxygen concentration measuring devices has been amended.