Rules for the Classification of Steel ships

Part 7 Ships of Special Service

Chapter 5 Ships Carrying Liquefied Gases in Bulk

(For external opinion inquiry)

2025.9.

Machinery Rule Development Team

- Main Amendments -

<Effective date : 1 July 2026 (based on contract date for construction)

(1) Request for Amendment

◉ Part 7, Ch. 5, 102.1 - Clarification of approval documents related to filling limits

(2) Request for Amendment

◉ Part 7, Ch. 5, 509.3.(1) - Clarification of the text regarding non-destructive testing in line with the intent of the IGC Code

(3) Request for Amendment

◉ Part 7, Ch. 5 - Definition of bunkering manifold moved from 503.1 to 102.11; integration of 701.1 to 701.3

(4) Request for Amendment

◉ Part 7, Ch. 5, Appendix 7A-3, Paragraph 508.4 - Correction of reference and improvement of wording

(5) Request for Amendment

◉ Reflection of the regulatory amendment adopted at MSC 109 (Dec 2024) allowing the use of toxic cargoes (including ammonia) as fuel for gas carriers (1609.2; see RES. MSC.566(109))

(6) Request for Amendment

◉ Part 7, Ch. 5, 1810.1.(3) - Correction of incorrect reference

Present	Amendment	Reason
Section 1 General **102. Approval for plans** (...) **1. Plans and data for approval** (1) Manufacturing specifications for cargo tanks, insulations and secondary barriers (including welding procedures, inspection and testing procedures for weld and cargo tanks, properties of insulation materials and secondary barriers and their processing manual and working standards) (2) Details of cargo tank construction and cargo containment system (2019) (...) (25) Calculation sheets of relieving capacity for pressure relief valves of cargo tank (including calculation of the back pressure in cargo vent system) (2019) (26) Calculation sheets of relieving capacity for pressure relief valves of cargo piping where required by 505.7 (2019) (27) Emergency shutdown systems (2019) **2. Plans and data for reference 【See Guidance】** (1) Principal basic design and technical reports of cargo containment systems (2) Data of test method and its result, where model test is carried out in compliance with the requirements of Sec 4. (...) (14) Calculation sheets of filling limits for cargo tanks (15) Arrangement of access manholes stipulated in 305. in cargo tank area and the guide for access through these manholes. (16) Calculation for ship survival capability stipulated in Sec 2. (17) Equipment for personnel protection stipulated in Sec 14. (18) Capacity calculation of re-liquefaction system and gas combustion unit, if installed (2019)	**Section 1 General** **102. Approval for plans** (...) **1. Plans and data for approval** (1) Manufacturing specifications for cargo tanks, insulations and secondary barriers (including welding procedures, inspection and testing procedures for weld and cargo tanks, properties of insulation materials and secondary barriers and their processing manual and working standards) (2) Details of cargo tank construction and cargo containment system (2019) (...) (25) Calculation sheets of relieving capacity for pressure relief valves of cargo tank (including calculation of the back pressure in cargo vent system) (2019) (26) Calculation sheets of relieving capacity for pressure relief valves of cargo piping where required by **505.7** (2019) (27) Emergency shutdown systems (2019) (28) Calculation sheet for the maximum allowable loading limit of the cargo tank, based on the loading temperature and the maximum reference temperature (29) Calculation sheet for the increased filling limit of the cargo tank, where **1504** is applied (30) Calculation sheet demonstrating the compliance of the cargo tank venting system, where **1505.2** is applied **2. Plans and data for reference 【See Guidance】** (1) Principal basic design and technical reports of cargo containment systems (2) Data of test method and its result, where model test is carried out in compliance with the requirements of **Sec 4**. (...) ~~(14) Calculation sheets of filling limits for cargo tanks~~ (14) Arrangement of access manholes stipulated in **305.** in cargo tank area and the guide for access through these manholes	Clarification of approval documents related to filling limits.

Present	Amendment	Reason
Annex 7A-3 LNG Bunkering Systems **Section 1 General** **102. Definitions** (...) 10. **Certified safe type** means electrical equipment that is certified safe by the relevant authorities recognized by the Society for operation in a flammable atmosphere based on a recognized standard. (...) **503. Bunkering manifold** 1. Bunkering manifold is fixed pipe assembly mounted onboard to which the bunkering system connects. For the transfer arm, fixed pipe assembly connected to swivel is regarded as the bunkering manifold. (2022) (...)	**Annex 7A-3 LNG Bunkering Systems** **Section 1 General** **102. Definitions** (...) 10. **Certified safe type** means electrical equipment that is certified safe by the relevant authorities recognized by the Society for operation in a flammable atmosphere based on a recognized standard. 11. **Bunkering manifold** is fixed pipe assembly mounted onboard to which the bunkering system connects. For the transfer arm, fixed pipe assembly connected to swivel is regarded as the bunkering manifold. (2022) (...) **503. Bunkering manifold** ~~1. Bunkering manifold is fixed pipe assembly mounted onboard to which the bunkering system connects. For the transfer arm, fixed pipe assembly connected to swivel is regarded as the bunkering manifold. (2022)~~ ~~2.~~ 1.(...)	Definition in 503.1 moved to 102.11.

Present	Amendment	Reason
Annex 7A-3 LNG Bunkering Systems **Section 7 Fire Protection and Fire Extinction** **701. General** **1.** Water spray systems are to be installed at the bunkering manifold area in accordance with **Ch 5, 1103.** of the Rules. **2.** Dry chemical powder fire-extinguishing systems is to be installed at the bunkering manifold area in accordance with **Ch 5, 1104.** of the Rules. 3. For vessels provided with additional cargo transfer equipment including transfer loading arms, bunkering booms, transfer hoses, reducers, spool pieces and transfer hoses reels, when in use, this additional cargo transfer equipment shall comply, where appropriate, with the requirements of 1103.1 (4), 1103. 1 (5), 1104. 1, 1104. 3 and 1810. 3 (2) of Rules for fire detection and fire protection in the cargo area (such as fusible elements, ESD functionality, water spray system protection, dry chemical powder fire-extinguishing systems and drip trays) including hull protection from low temperatures.	**Annex 7A-3 LNG Bunkering Systems** **Section 7 Fire Protection and Fire Extinction** **701. General** ~~**1.** Water spray systems are to be installed at the bunkering manifold area in accordance with **Ch 5, 1103.** of the Rules.~~ ~~**2.** Dry chemical powder fire-extinguishing systems is to be installed at the bunkering manifold area in accordance with **Ch 5, 1104.** of the Rules.~~ ~~3.~~1. For vessels provided with additional ~~cargo~~ bunker transfer equipment including transfer loading arms, bunkering booms, transfer hoses, reducers, spool pieces and transfer hoses reels, when in use, this additional ~~cargo~~ bunker transfer equipment shall comply, where appropriate, with the requirements of 1103.1 (4), 1103. 1 (5), 1104. 1, 1104. 3 and 1810. 3 (2) of Ch.5 of Rules for fire detection and fire protection in the cargo area (such as fusible elements, ESD functionality, water spray system protection, dry chemical powder fire-extinguishing systems and drip trays) including hull protection from low temperatures.	701.3 added via MSC.1/Circ.1668 (UI), but not yet integrated with 701.1 and 701.2.

Present	Amendment	Reason
Annex 7A-3 LNG Bunkering Systems **Section 5 Arrangements and Design of Bunkering Systems** **508. Inerting systems** 1. The bunkering ship is to have onboard source of suitable inert gas for inerting, purging of bunkering lines. 2. Inert gas generators are to be in accordance with **Ch 5, 905.** of the Rules. 3. The inert gas used for purging of bunkering lines is to have dewpoint sufficiently low to eliminate risk of water condensate accumulation in the piping system. 4. Suitable arrangement to prevent back-flow of cargo vapor from cargo system into the inert gas system is to be provided in accordance with **Ch 5, 905. 4** of the Rules	**Annex 7A-3 LNG Bunkering Systems** **Section 5 Arrangements and Design of Bunkering Systems** **508. Inerting systems** 1. The bunkering ship is to have onboard source of suitable inert gas for inerting, purging of bunkering lines. 2. Inert gas generators are to be in accordance with Ch 5, 905. of the Rules. 3. The inert gas used for purging of bunkering lines is to have dewpoint sufficiently low to eliminate risk of water condensate accumulation in the piping system. 4. Suitable arrangement to prevent back-flow of cargo vapor from cargo system into the inert gas system is to be provided in accordance with **Ch 5, ~~905~~904. 4** of the Rules	Reference updated

Present	Amendment	Reason
Section 16 Use of Cargo as Fuel **1609. Alternative fuels and technologies (IGC Code 16.9)** 1. If acceptable to the Society, other cargo gases may be used as fuel, providing that the same level of safety as natural gas in this Chapter is ensured. Where LPG cargo is used as fuel, Annex 7A-5 is to apply. (2021) 2. The use of cargoes identified as toxic products is not to be permitted. 3. For cargoes other than LNG, the fuel supply system is to comply with the requirements of 1604. 1, 1604. 2, 1604. 3 and 1605, as applicable, and is to include means for preventing condensation of vapour in the system. 4. Liquefied gas fuel supply systems are to comply with 1604. 5. 5. In addition to the requirements of 1604. 3 (2), both ventilation inlet and outlet are to be located outside the machinery space. The inlet shall be in a non-hazardous area and the outlet shall be in a safe location.	**Section 16 Use of Cargo as Fuel** **1609. Alternative fuels and technologies (IGC Code 16.9)** 1. If acceptable to the Society, other cargo gases may be used as fuel, providing that the same level of safety as natural gas in this Chapter is ensured. Where LPG cargo is used as fuel, Annex 7A-5 is to apply. (2021) 2. ~~The use of cargoes identified as toxic products is not to be permitted.~~ The use of cargoes requiring carriage in type 1G ships, as identified in column "c" in the table of **Sec 19**, shall not be permitted. If acceptable to the Society, cargoes identified as toxic products in column "f" which are required to be carried in type 2G/2PG ships in column "c" in the table of **Sec 19** may be used as fuel, provided that the same level of safety as natural gas (methane) is ensured in accordance with the relevant provisions of the Rules, including those in **103**, and taking into account the guidelines developed by the Society, after special consideration has been given by the Society 3. For cargoes other than LNG, the fuel supply system is to comply with the requirements of 1604. 1, 1604. 2, 1604. 3 and 1605, as applicable, and is to include means for preventing condensation of vapour in the system. 4. Liquefied gas fuel supply systems are to comply with 1604. 5. 5. In addition to the requirements of 1604. 3 (2), both ventilation inlet and outlet are to be located outside the machinery space. The inlet shall be in a non-hazardous area and the outlet shall be in a safe location.	Request for ammendment : At MSC 109 (December 2024), an amendment to the IGC Code allowing the use of toxic cargoes (including ammonia) as fuel for gas carriers was adopted. (Refer to RES. MSC.566(109))

RULES FOR CLASSIFICATION(STEEL SHIPS)

(Rule for Pt 7 Ch 5)

2025.11.

Hull Rule Development Team

- Main Amendments -

(1) Enter into force on 1 January 2026 (the contract date for ship construction)

◉ To reflect Request for Establishment/Revision of Classification Technical Rules

- To reflect the revision item of MSC.523(106)

Present	Amendment
Chapter 5 Ships Carrying Liquefied Gases in Bulk	**Chapter 5 Ships Carrying Liquefied Gases in Bulk**
Section 1 ~ Section 5 <Omitted>	**Section 1 ~ Section 5 <Same as the present Rule>**
Section 6 Materials of Construction and Quality Control	**Section 6 Materials of Construction and Quality Control**
601. ~ 603. 〈Omitted〉	601. ~ 603. 〈Same as the present Rule〉
604. Requirements for metallic materials (IGC Cdoe 6.4) 1. General requirements for metallic material The requirements for materials of construction are shown in the tables as follows: Table 7.5.4 ~ Table 7.5.5b 〈Omitted〉 Table 7.5.6 : Plates, sections and forgings for cargo tanks, secondary barriers ad process pressure vessels for design temperature below -55°C and down to -165°C. Table 7.5.7 ~ Table 7.6.8 〈Omitted〉 ~~For cargo tanks using high manganese austenitic steel for cryogenic service, Annex 7A 4[High manganese austenitic steel for Cryogenic Service] should be applied. (2021)[See Guidance]~~	604. Requirements for metallic materials (IGC Cdoe 6.4) 1. General requirements for metallic material The requirements for materials of construction are shown in the tables as follows: Table 7.5.4 ~ Table 7.5.5b 〈Same as the present Rule〉 Table 7.5.6 : Plates, sections and forgings for cargo tanks, secondary barriers ad process pressure vessels for design temperature below -55°C and down to -165°C. Table 7.5.7 ~ Table 7.6.8 〈Same as the present Rule〉
605. ~ 607. 〈Omitted〉	605. ~ 607. 〈Same as the present Rule〉
Section 7 ~ Section 19 <Omitted>	**Section 7 ~ Section 19 <Same as the present Rule>**

<Present>

Table 7.5.6 PLATE, SECTIONS AND FORGINGS[1] FOR CARGO TANKS, SECONDARY BARRIERS AND PROCESS PRESSURE VESSELS FOR DESIGN TEMPERATURE BELOW -55°C AND DOWN TO -165°C[2]. Maximum thickness 25mm[3][4](2022)[See Guidance]

Minimum design temp.(°C)	Chemical composition[5] and heat treatment	Impact test temp.(°C)
-60	1.5 % nickel steel - normalized or normalized and tempered or quenchedand tempered or TMCP[6]	-65
-65	2.25 % nickel steel - normalized or normalized and tempered or quenchedand tempered or TMCP[6][7]	-70
-90	3.5 % nickel steel - normalized or normalized and tempered or quenchedand tempered or TMCP[6][7]	-95
-105	5 % nickel steel - normalized or normalized and tempered or quenchedand tempered or TMCP[6][7]	-110
-165	9 % nickel steel - double normalized and tempered or quenched and tempered[6]	-196
-165	Austenitic steels, such as types 304, 304 , 316, 316 , 321 and 347 solution treated[9]	-196
<New>	<New>	<New>
-165	Aluminium alloys; such as type 5083 annealed	Not required
-165	Austenitic Fe-Ni alloy (36 % nickel). Heat treatment as agreed	Not required
1. TENSILE AND TOUGHNESS(IMPACT) TEST REQUIREMENTS		
1.1 Sampling frequency		
Plates	Each “piece” to be tested	
Sections and forgings	Each “batch” to be tested	
1.2 Toughness(Charpy V-notch test)		
Plates	Transverse teset pieces. Minimum average energy value (KV) 27J	
Sections and forgings	Longitudinal teset pieces. Minimum average energy value (KV) 41J	

Notes:

(1)~(10) <Omitted>

(11) This table is generally applicable for material thickness up to 50mm. Proposals for greater thicknesses shall be approved by the Society.

(12) <New>

(13) <New>

<Amendment>

Table 7.5.6 PLATE, SECTIONS AND FORGINGS[1] FOR CARGO TANKS, SECONDARY BARRIERS AND PROCESS PRESSURE VESSELS FOR DESIGN TEMPERATURE BELOW -55°C AND DOWN TO -165°C[2]. Maximum thickness 25mm[3][4](2022)[See Guidance]

Minimum design temp.(°C)	Chemical composition[5] and heat treatment	Impact test temp.(°C)
-60	1.5 % nickel steel - normalized or normalized and tempered or quenchedand tempered or TMCP[6]	-65
-65	2.25 % nickel steel - normalized or normalized and tempered or quenchedand tempered or TMCP[6][7]	-70
-90	3.5 % nickel steel - normalized or normalized and tempered or quenchedand tempered or TMCP[6][7]	-95
-105	5 % nickel steel - normalized or normalized and tempered or quenchedand tempered or TMCP[6][7]	-110
-165	9 % nickel steel - double normalized and tempered or quenched and tempered[6]	-196
-165	Austenitic steels, such as types 304, 304 , 316, 316 , 321 and 347 solution treated[9]	-196
-165	High manganese austenitic steel-hot rolling and controlled cooling[12][13]	-196
-165	Aluminium alloys; such as type 5083 annealed	Not required
-165	Austenitic Fe-Ni alloy (36 % nickel). Heat treatment as agreed	Not required
1. TENSILE AND TOUGHNESS(IMPACT) TEST REQUIREMENTS		
1.1 Sampling frequency		
Plates	Each “piece” to be tested	
Sections and forgings	Each “batch” to be tested	
1.2 Toughness(Charpy V-notch test)		
Plates	Transverse teset pieces. Minimum average energy value (KV) 27J	
Sections and forgings	Longitudinal teset pieces. Minimum average energy value (KV) 41J	

Notes:

(1)~(10) <Same as the present Rule>

(11) This table is generally applicable for material thickness up to 50mm. Proposals for greater thicknesses shall be approved by the Society. High manganese austenitic steel is excluded.

(12) The use of the material shall meet Annex 2-11 of Guidance Part 2 and Annex 7A-4 of Guidance Part7 Chapter 6.

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

RULES FOR CLASSIFICATION(STEEL SHIPS)

(Guidance for Pt 7 Ch 5)

2025.11.

Hull Rule Development Team

- Main Amendments -

(1) Enter into force on 1 January 2026 (the contract date for ship construction)

◉ To reflect Request for Establishment/Revision of Classification Technical Rules

- To reflect the revision item of MSC.523(106)

Present	Amendment
Chapter 5 Ships Carrying Liquefied Gases in Bulk	**Chapter 5 Ships Carrying Liquefied Gases in Bulk**
Section 1 ~ Section 19 <Omitted>	**Section 1 ~ Section 19 <Same as the present Guidance>**
Annex 7A-1 ~ Annex 7A-3 <Omitted>	**Annex 7A-1 ~ Annex 7A-3 <Same as the present Guidance>**
Annex 7A-4 High manganese austenitic steel for Cryogenic Service	**Annex 7A-4 High manganese austenitic steel for Cryogenic Service**
Section 1 General	**Section 1 General**
101. Scope 1. <Omitted>	101. Scope 1. <Same as the present Guidance>
102. Application 1. <Omitted> 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 adminstration.~~ 3. High manganese austenitic steel is applicable to cargo tanks such as Ammonia anhydrous, Butane(all isomers), Butane-propane mixture, Carbon dioxide(High Purity and reclaimed quality), Ethane, Ethylene, Methane(LNG), Pentane(all isomers) or Propane. 4. The post-weld stress relief heat treatment referenced in Rules Part 7 Chapter 5, 1712.2.(2) is waived for ammonia cargo tanks.	102. Application 1. <Same as the present Guidance> 2. High manganese austenitic steel is applicable to cargo tanks such as Ammonia anhydrous, Butane(all isomers), Butane-propane mixture, Carbon dioxide(High Purity and reclaimed quality), Ethane, Ethylene, Methane(LNG), Pentane(all isomers) or Propane. 3. The post-weld stress relief heat treatment referenced in Rules Part 7 Chapter 5, 1712.2.(2) is waived for ammonia cargo tanks.
<Below omitted>	**<Below Same as the present Guidance>**

Amended Guidance for Classification of Steel Ships

Pt. 7 Ch. 6

2025. 6.

Machinery Rule Development Team

- Main Amendments -

(1) Effective date : 1 Jan. 2026 (based on the contracted date) - Circular will be issued

◉ IACS UR F44 Rev.3 : Fore peak ballast tank and space arrangement on oil & chemical tankers reflected in Pt.7. Therefore, amendment is prepared for the related requirement necessary to be applied to chemical tanker.

Amendment	Note

CHAPTER 6 Ships Carrying Dangerous Chemicals in Bulk

Section 3 Ship Arrangements

〈1 Jan. 2026 (Contracted date), Circular will be issued.〉

* IACS UR F44 Rev.3

305. Bilge and ballast arrangements 【See Rule】

1. General

(1) The discharge arrangements of permanent ballast tanks adjacent to cargo tanks may be such that ballast pumps in the machinery space are used as given as Fig **7.6.23** of the Guidance and ballast or bilges are discharged overboard through the eductor in the cargo pump room. In this case, check valve is to be provided between the ballast pump and eductor and spool piece is to be provided on the weather deck within the cargo area.

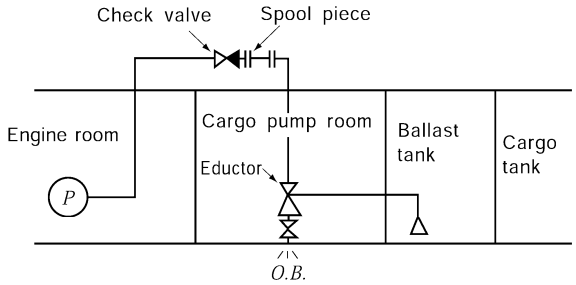
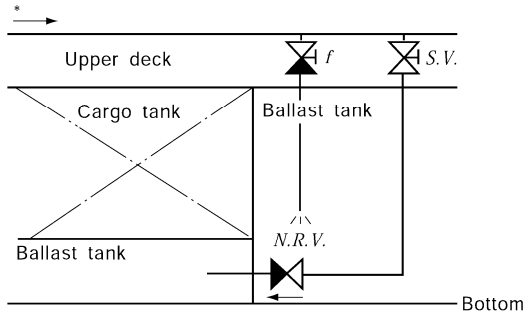


Fig. 7.6.23

(2) The words "ensure filling from tank deck level and check valves are fitted" referred to in **305. 1** of the Rules mean that exclusively used for filling from the weather deck but can not be used for discharging fitted with stop valves on the weather deck or stop valves operable from the weather deck and additionally check valves are provided as given in Fig **7.6.24** of the Guidance. Further, sufficient consideration is to be taken so as not to cause non-compliance with the damage stability requirements due to damage to pipelines or spillage of dangerous ballast or cargo into other compartments.

Amendment	Note
 * : A line to ensure filling only from the pump in machinery room N.R.V. : Non-return valve (Check valve) S.V. : Stop valve *f* : Stop valve + check valve or screw-down check valve **Fig. 7.6.24**	〈1 Jan. 2026 (Contracted date), Circular will be issued.〉 * IACS UR F44 Rev.3
(3) Pipelines of ballast tanks adjacent to cargo tanks and not adjacent to cargo tanks are to be basically independent. (4) The fore peak tank, which can be ballasted with the system serving other ballast tanks within the cargo area, and its space arrangement are to comply with the requirements of **Pt.7 Ch.1 1003. 3 of the Rules and the Pt.7 Ch.1 1003. 6. (1) of the Guidance.** **2. Filling of ballast in cargo tanks** (1) The case referred to in **305. 2** of the Rules as "the filling line has no permanent connection to cargo tanks or piping and that check valves are fitted" is to be as given in Fig **7.6.25** of the Guidance. In this case, filling is to be limited to that from the open deck, where spool pieces or hoses and stop valves or check valves are required. (2) When filling is made from the open deck according to the preceding (1), the piping arrangement in cargo tanks is to be such that the filling pipe is extended as close to the bottom as practicable to minimize generation of static electricity. 〈Omitted〉 **3. Bilge pumping arrangements for the cargo area** 〈Omitted〉	- Related requirements referenced to be applied.

Amended Guidances for Classification of Steel Ships

Pt. 7 Ch.1 / Pt. 7 Ch.6 / Pt. 8

2025. 9.

Machinery Rule Development Team

- Main Amendments -

(1) Effective date : 1 Jan. 2026 (based on the contract date, Circular will be issued.)

◉ MSC.1/Circ.1683 : UI for gas free arrangement reflected in Pt.8, Pt. 7 Ch.1 & Ch. 6

Amendment	Note
# PART 7 Ships of Special Service # CHAPTER 6 Ships Carrying Dangerous Chemicals in Bulk ## Section 3 Ship Arrangements **301. Cargo segregation** 【See Rule】 〈Omitted〉 **3. Cargo piping** Cargo piping is not to pass through the spaces specified in **301. 3** of the Rules and, in addition, spaces such as fuel oil tanks, fresh water tanks and control stations. **4.** In applying **301. 2**, **301. 4** and **305. 3** of the Rules, all cargo piping (including cargo tank venting piping, relief valve discharge piping, cargo tank purging and gas-freeing piping/ducts), except those serving for inerting gas supply and for bow or stern loading and unloading arrangement, should be arranged within the cargo areas, as defined in **Pt 8 Ch 1 103. 6** of the Rules and in **Pt 7 Ch 6 106. 6** of the **Rules for the Classification of Steel Ships**. However, gas-freeing air-supply fan(s)/blower(s) and related air-supply piping/ducts may be located in the forecastle area, outside of the cargo area, subject to the requirements in **Pt 8 Ch 2 406. 3** of the Guidance. *(2025)* 〈Omitted〉 ## Section 8 Cargo Tank Venting and Gas-freeing Arrangements **806. Cargo tank gas-freeing** 【See Rule】 **1.** The method and instruction of cargo tank gas-freeing are to be described on the Cargo Operation Manual in detail. Where gas-freeing air-supply fan(s)/blower(s) and related air-supply piping/ducts are located in the forecastle area, outside of the cargo area, in accordance with the requirements in **Pt 8 Ch 2 406. 3** of the Guidance, procedures complying with **Pt 8 Ch 2 406. 3** (7) are to be included in the manual. *(2025)* **2.** Openings for gas-freeing are to be arranged at places as far as at least the distance specified in **803.** or **1512.** of the Rules from all openings or air intakes of accommodation or service spaces.	〈1 Jan. 2026 (Based on the contract date), Circular will be issued.〉 * MSC.1/Circ.1683 Reflected - Paragraph 4. added according to MSC.1/Circ.1683 with reference to the requirement of Pt.8