



RUSSIAN MARITIME REGISTER OF SHIPPING

CIRCULAR LETTER

No. 313-68-1856c

dated 18.11.2022

Re:

amendments to the Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk, 2022, ND No. 2-020101-157-E

Item(s) of supervision:

systems and piping under construction and in service

Entry-into-force date:

01.01.2023

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Appendices:

Appendix 1: information on amendments introduced by the Circular Letter

Appendix 2: text of amendments to Part VI "Systems and Piping"

Director General

Konstantin G. Palnikov

Text of CL:

We hereby inform that considering the experience in application of the Rules as well as in connection with coming into force of IACS Unified Interpretation (UI) GC32 (Rev.1 Feb 2022), the Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk shall be amended as specified in the Appendices to the Circular Letter.

It is necessary to do the following:

1. Bring the content of the Circular Letter to the notice of the RS surveyors, interested organizations and persons in the area of the RS Branch Offices' activity.
2. Apply the provisions of the Circular Letter during review and approval of the technical documentation on products as well as when performing technical supervision during manufacture of products requested on or after 01.01.2023.

List of the amended and/or introduced paras/chapters/sections:

Part VI: paras 2.2.1.1; 2.2.1.2; 2.2.1.2.1; 11.2.3; 11.6; 11.7; 11.10; 12.2.4

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**Information on amendments introduced by the Circular Letter
(for inclusion in the Revision History to the RS Publication)**

Nos.	Amended paras/chapters/ sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
1	Para 2.2.1.1	Part of the para has been deleted and transferred to paras 2.2.1.2 and 2.2.1.2.1	313-68-1856c of 18.11.2022	01.01.2023
2	Para 2.2.1.2.	New para has been introduced containing the terms "duct" and "structural pipe duct" have been specified in connection with implementation of IACS UI GC32 (Rev.1 Feb 2022)	313-68-1856c of 18.11.2022	01.01.2023
3	Para 2.2.1.2.1	New para has been introduced containing explanation to the expression "maximum pressure at gas pipe rupture" have been specified in connection with implementation of IACS UI GC32 (Rev.1 Feb 2022)	313-68-1856c of 18.11.2022	01.01.2023
4	Paras 2.2.1.2 — 2.2.1.5	Paras 2.2.1.2 — 2.2.1.4 and references thereto have been renumbered 2.2.1.3 — 2.2.1.5, accordingly	313-68-1856c of 18.11.2022	01.01.2023
5	Para 11.2.3	New para has been introduced containing requirements for gas valve unit (GVU) enclosures	313-68-1856c of 18.11.2022	01.01.2023
6	Para 11.6	Requirements for multiple consumers have been introduced	313-68-1856c of 18.11.2022	01.01.2023
7	Para 11.7	Requirement for actuation of oil mist concentration sensor has been deleted	313-68-1856c of 18.11.2022	01.01.2023
8	Para 11.10	Requirements for engine crankcase alarm have been introduced	313-68-1856c of 18.11.2022	01.01.2023
9	Para 12.2.4	New para has been introduced containing requirements for testing of double-wall pipes	313-68-1856c of 18.11.2022	01.01.2023

RULES FOR THE CLASSIFICATION AND CONSTRUCTION OF SHIPS CARRYING LIQUEFIED GASES IN BULK, 2022,

ND No. 2-020101-157-E

PART VI. SYSTEMS AND PIPING

2 PIPING

1 **Para 2.2.1.1** is replaced by the following text:

"2.2.1.1 p (design pressure) is the maximum pressure, to which the system may be subjected in service.

The greater of the following design conditions shall be used for piping systems and components, based on the cargoes being carried:

for vapour piping systems or components that may be separated from their relief valves and which may contain some liquid, the saturated vapour pressure at a design temperature of 45 °C. Higher or lower values may be used (refer to 13.2, Part IV "Cargo Containment"); or

for systems or components that may be separated from their relief valves and which contain only vapour at all times, the superheated vapour pressure at 45 °C, assuming operating pressure and temperature as initial conditions for vapour saturation in the system. Higher or lower values may be used (refer to 13.2, Part IV "Cargo Containment"), assuming an initial condition of saturated vapour in the system at the system operating pressure and temperature; or

the MARVS of the cargo tanks and cargo processing systems; or

the pressure setting of the associated pump or compressor discharge relief valve; or

the maximum total discharge or loading head of the cargo piping system; or

the relief valve setting on a pipeline system.

In any case, the design pressure p shall not be less than 1 MPa except for open-ended lines where it shall be not less than 0,5 MPa or 10 times that of the relief valve setting.

Those parts of the liquid piping systems that may be subjected to surge pressures shall be designed to withstand this pressure."

2 **New paras 2.2.1.2 and 2.2.1.2.1** are introduced reading as follows:

"2.2.1.2 The design pressure of the outer pipes or ducts of gas fuel systems shall not be less than the maximum working pressure of the inner gas pipe. Alternatively, for gas fuel systems with a working pressure greater than 1 MPa, the design pressure of the outer duct shall not be less than the maximum built-up pressure arising in the annular space considering the local instantaneous peak pressure in way of any rupture and the ventilation arrangements.

The expression "duct" in 2.2.1.2 and 12.2.4 means to include the equipment enclosure required (e.g., for gas valve unit (GVU) enclosure) as well as the structural pipe duct intended to contain any release of gas from inner pipe or equipment. The term "structural pipe duct" means an outer duct forming part of a structure such as a hull structure, superstructure or deck house, where permitted, other than gas valve unit rooms.

2.2.1.2.1 The expression "design pressure of the outer pipe or duct" in 2.2.1.2 is either of the following:

.1 the maximum pressure that can act on the outer pipe or equipment enclosure after the inner pipe rupture as documented by suitable calculations taking into account the venting arrangements; or

.2 for gas fuel systems with inner pipe working pressure greater than 1 MPa, the "maximum built-up pressure arising in the annular space", after the inner pipe rupture, which shall be calculated in accordance with 9.5.7.2, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification;

.3 the expression "maximum pressure at gas pipe rupture" in 12.2.4 is the maximum pressure to which the outer pipe or duct is subjected after the inner pipe rupture and for testing purposes it is the same as the design pressure used in 2.2.1.2."

3 **Paras 2.2.1.2 — 2.2.1.4** and references thereto are renumbered 2.2.1.3 — 2.2.1.5, accordingly.

11 USE OF CARGO AS FUEL

4 **New para 11.2.3** is introduced reading as follows:

"**.3** the gas valve unit rooms shall comply with the following requirements and be:

.3.1 gastight toward other enclosed spaces;

.3.2 equipped with ventilation according to 11.2.2;

.3.3 able to withstand the maximum built-up pressure arising in the room in case of a gas pipe rupture, as documented by suitable calculations taking into account the ventilation arrangements."

5 **Para 11.6** is replaced by the following text:

"**11.6** Each gas utilization unit shall be provided with a set of three automatic valves. Two of these valves shall be in series in the gas fuel pipe to the consuming equipment. The third valve shall be in a pipe that vents, to a safe location in the open air, that portion of the gas fuel piping that is between the two valves in series. The shut-off valves shall be arranged for manual reset.

These valves shall be arranged so that failure of the necessary forced draught, loss of flame on boiler burners, abnormal pressure in the gas fuel supply line, or failure of the hydraulic valve control actuator will cause the two gas fuel valves which are in series to close automatically and the vent valve to open automatically.

One of the valves in series and the vent valve can be incorporated into one valve body so arranged that, when one of the above conditions occurs, flow to the gas utilization unit will be blocked and the vent opened.

In a space containing multiple consumers, the shutdown of one shall not affect the gas supply to the others."

6 **Para 11.7** is replaced by the following text:

"**11.7** A master gas fuel valve shall be installed outside the machinery space. The valve shall be arranged so as to close automatically if:

leakage of gas fuel is detected;

conditions stated in 11.2.1 are fringed.

It is recommended that the master gas fuel valve will be closed automatically when the gas valves referred to in 11.6 are actuated."

7 **Para 11.10** is replaced by the following text:

"**11.10** Gas detection systems referred to in 11.2 and 11.5 shall activate the alarm at 30 % of the lower flammable limit (LFL) and shut down the gas fuel supply to the machinery space before the gas concentration reaches 60 % LFL. The crankcases of internal combustion engines that can run on gas shall be equipped with alarm devices arranged to alarm before 100 % LFL."

12 TESTING

8 **New para 12.2.4** is introduced reading as follows:

"12.2.4 In double wall gas-fuel piping systems, the outer pipe or duct shall also be pressure tested to show that it can withstand the expected maximum pressure at gas pipe rupture."