

# GUIDANCE RELATING TO RULES FOR CLASSIFICATION OF STEEL SHIPS

(Development Review : External Opinion Inquiry)

## Part 7 Chapter 5 Ships Carrying Liquefied Gases in Bulk

2022. 08.



## – Main Amendments –

(1) Reflecting (MSC Circ. 1651, IACS UI GC 32(rev.1) <ships contracted for construction on or after 2023/01/01>

● MRD4800–131–2022: Outer Duct in Gas Fuel Piping Systems

Present	Amendment	Reason
<p style="text-align: center;"><b>Section 5 Process Pressure Vessels and Liquid, Vapour and Pressure Piping Systems</b></p> <p>501. to 503. &lt;omitted&gt;</p> <p>504. Design pressure [See Rule]</p> <p>1. &lt;omitted&gt; &lt;newly added&gt;</p> <p>2. For the purpose of the requirements in 504. 4 of the Rules, the expression "design pressure of the outer pipe or duct" is either of the following: (2021)</p> <p>(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</p> <p>(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 is to be calculated in accordance with <b>Ch 9, 802. of Rules for the Classification of Ships Using Low-flashpoint Fuels.</b></p>	<p style="text-align: center;"><b>Section 5 Process Pressure Vessels and Liquid, Vapour and Pressure Piping Systems</b></p> <p>501. to 503. &lt;same as the present&gt;</p> <p>504. Design pressure [See Rule]</p> <p>1. &lt;same as the present&gt;</p> <p>2. <u>The expression "duct" in 504. 4 of the Rules means to include the equipment enclosure required in 1604. 3 (1) and (2) of the Rules (e.g. 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 or superstructure or deck house, where permitted, other than gas valve unit rooms. The gas valve unit rooms are to be: (2023)</u></p> <p>(1) <u>gastight toward other enclosed spaces;</u></p> <p>(2) <u>equipped with mechanical exhaust ventilation having a capacity of at least 30 air changes per hour and arranged to maintain a pressure less than the atmospheric pressure; and</u></p> <p>(3) <u>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.</u></p> <p>3. For the purpose of the requirements in 504. 4 of the Rules, the expression "design pressure of the outer pipe or duct" is either of the following: (2021)</p> <p>(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</p> <p>(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 is to be calculated in accordance with <b>Ch 9, 802. of Rules for the Classification of Ships Using Low-flashpoint Fuels.</b></p>	<p>&lt;</p> <p>- Interpretation of the duct used as GVU enclosure for Gas Fuel Piping Systems</p>

Present	Amendment	Reason
<p><b>501. to 512. &lt;omitted&gt;</b></p> <p><b>513. Testing requirements (2022)</b></p> <p>1. Requirements of type tests [See Rule] &lt;omitted&gt;</p> <p>2. Application [See Rule]</p> <p>For the purpose of the requirements in <b>513. 2 (1)</b> of the Rules, for pipes within the cargo tank and pipes with open ends, the hydraulic test and leak test specified in the requirements in <b>513. 2 (2)</b> and (3) of the Rules may be omitted. However, the hydraulic test specified in the requirements in <b>513. 2 (2)</b> of the Rules is to be conducted for pipes without open ends and discharging pipes provided inside the cargo tanks.</p> <p>3. Pressure test</p> <p>For the purpose of the requirements in <b>513. 2 (4)</b> of the Rules, the expression "maximum pressure at gas pipe rupture" 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 <b>504. 4</b> of the Rules. (2021)</p> <p>4. Test under operating condition</p> <p>For the purpose of the requirements in <b>513. 2 (5)</b> of the Rules, the test is to be conducted according to the requirements in <b>420. 4</b> of the Guidance.</p> <p>&lt;hereafter, omitted&gt;</p>	<p><b>501. to 512. &lt;same as the present Guidance&gt;</b></p> <p><b>513. Testing requirements (2022)</b></p> <p>1. Requirements of type tests [See Rule] &lt;same as the present&gt;</p> <p>2. Application [See Rule]</p> <p>For the purpose of the requirements in <b>513. 2 (1)</b> of the Rules, for pipes within the cargo tank and pipes with open ends, the hydraulic test and leak test specified in the requirements in <b>513. 2 (2)</b> and (3) of the Rules may be omitted. However, the hydraulic test specified in the requirements in <b>513. 2 (2)</b> of the Rules is to be conducted for pipes without open ends and discharging pipes provided inside the cargo tanks.</p> <p>3. Pressure test</p> <p>For the purpose of the requirements in <b>513. 2 (4)</b> of the Rules, the expression "maximum pressure at gas pipe rupture" 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 <b>504. 4</b> of the Rules. <u>The expression "duct" in <b>513. 2 (4)</b> of the Rules means to comply <b>504. 2. (2023)</b></u></p> <p>4. Test under operating condition</p> <p>For the purpose of the requirements in <b>513. 2 (5)</b> of the Rules, the test is to be conducted according to the requirements in <b>420. 4</b> of the Guidance.</p> <p>&lt;hereafter, same as the present&gt;</p>	