

Fire Safety Measures for the Vehicle Spaces, Special Category Spaces and Ro-ro Spaces of Ro-ro Passenger Ships and Cargo Ships

Amended Guidance

Rules for the Survey and Construction of Steel Ships Parts R
Rules for the Survey and Construction of Passenger Ships
Guidance for the Survey and Construction of Steel Ships Part B
Guidance for the Survey and Construction of Passenger Ships

Reason for Amendment

The IMO Maritime Safety Committee (MSC) discussed comprehensive amendments to SOLAS Chapter II-2 and the FSS Code at its 96th session (MSC 96) in June 2016; this was in response to recent fire incidents on ro-ro passenger ships. The IMO discussion focused on the establishment of additional fire safety measures for ro-ro spaces and special category spaces of such, and, as a result of this discussion, amendments related to SOLAS Chapter II-2 and FSS Code requirements for fixed fire detection and alarm systems, fixed water-based fire-extinguishing systems and the protection of structures which required video monitoring systems for such ships were proposed. The IMO also clarified that linear heat detectors and combined smoke and heat detectors, which are a type of fire detection and fire alarm system, may be installed not only on ro-ro passenger ships but also on cargo ships. Amendments to the convention and code were subsequently adopted as resolutions MSC.550(108) and MSC.555(108) respectively at MSC 108 in May 2024 and will enter into force on 1 January 2028.

Accordingly, relevant requirements are amended based on MSC.550(108) and MSC.555(108).

Outline of Amendment

The main contents of this amendment are as follows:

- (1) Specifies requirements related to the specification, testing and arrangement of linear heat detectors and combined smoke and heat detectors.
- (2) Specifies fire safety measures required for ro-ro passenger ships.

Effective Date and Application

- (1) Chapter 29, Part R of the Rules
This amendment applies to ships the keels of which are laid or which are at a similar stage of construction on or after 1 January 2026.
- (2) B1.1.3, Part B of the Guidance and Chapter 1, Part 2 and Chapter 4, Part 7 of the Guidance for Passenger Ships
Effective date of the amendment is 1 January 2026

An asterisk (*) after the title of a requirement indicates that there is also relevant information in the corresponding Guidance.

ID:DX24-16

Amended-Original Requirements Comparison Table

(Fire Safety Measures for the Vehicle Spaces, Special Category Spaces and RO-RO Spaces of RO-RO Passenger Ships and Cargo Ships)

Amended	Original	Remarks
<p align="center">RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p align="center">Part R FIRE PROTECTION, DETECTION AND EXTINCTION</p> <p align="center">Chapter 29 FIXED FIRE DETECTION AND FIRE ALARM SYSTEMS</p> <p>29.2 Engineering Specifications</p> <p>29.2.3 Component Requirements*</p> <p>1 Detectors Detectors are to be in accordance with the followings. (Omitted)</p> <p>(3) Heat <u>detectors and linear heat</u> detectors are to be certified to operate before the temperature exceeds 78°C but not until the temperature exceeds 54°C, when the temperature is raised to those limits at a rate less than 1°C per minute, when tested according to <u>relevant parts of standards EN 54:2001 and IEC 60092-504</u>. Alternative testing standards may be used as determined by the Administration. At higher rates of temperature rise, the heat detector <u>and linear heat</u></p>	<p align="center">RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p align="center">Part R FIRE PROTECTION, DETECTION AND EXTINCTION</p> <p align="center">Chapter 29 FIXED FIRE DETECTION AND FIRE ALARM SYSTEMS</p> <p>29.2 Engineering Specifications</p> <p>29.2.3 Component Requirements*</p> <p>1 Detectors Detectors are to be in accordance with the followings. (Omitted)</p> <p>(3) Heat detectors are to be certified to operate before the temperature exceeds 78°C but not until the temperature exceeds 54°C, when the temperature is raised to those limits at a rate less than 1°C per minute, when tested according to standards <i>EN 54:2001 and IEC 60092-504</i>. Alternative testing standards may be used as determined by the Administration. At higher rates of temperature rise, the heat detector <u>is</u> to operate within temperature</p>	

Amended-Original Requirements Comparison Table

(Fire Safety Measures for the Vehicle Spaces, Special Category Spaces and RO-RO Spaces of RO-RO Passenger Ships and Cargo Ships)

Amended	Original	Remarks
<p><u>detector are to operate within temperature limits to the satisfaction of the Society having regard to the avoidance of detector insensitivity or oversensitivity.</u></p> <p>(4) The operation temperature of heat detectors <u>and linear heat detectors</u> in drying rooms and similar spaces of a normal high ambient temperature may be up to 130°C, and up to 140°C in saunas.</p> <p>(5) <u>Linear heat detectors are to be tested according to standards EN 54-22:2015 and IEC 60092-504. Alternative testing standards may be used as determined by the Administration.</u></p> <p>(6) Flame detectors are to be tested according to standards EN 54-10:2001 and IEC 60092-504. Alternative testing standards may be used as determined by the Administration.</p> <p>(7) All detectors are to be of a type such that they can be tested for correct operation and restored to normal surveillance without the renewal of any component.</p> <p>(8) Fixed fire detection and fire alarm systems for cabin balconies are to be approved by the Society.</p> <p>(9) Detectors fitted in hazardous areas are to be tested and approved for such service. Detectors required by 20.4 and installed in spaces that comply with requirement in 20.3.2-2 need not be suitable for hazardous areas. Detectors fitted in spaces carrying dangerous goods, required by Chapter 19, Table R19.3 to comply with requirements in 19.3.2, are to be suitable for hazardous areas.</p>	<p>limits to the satisfaction of the Society having regard to the avoidance of detector insensitivity or oversensitivity.</p> <p>(4) The operation temperature of heat detectors in drying rooms and similar spaces of a normal high ambient temperature may be up to 130°C, and up to 140°C in saunas.</p> <p>(Newly added)</p> <p>(5) Flame detectors are to be tested according to standards EN 54-10:2001 and IEC 60092-504. Alternative testing standards may be used as determined by the Administration.</p> <p>(6) All detectors are to be of a type such that they can be tested for correct operation and restored to normal surveillance without the renewal of any component.</p> <p>(7) Fixed fire detection and fire alarm systems for cabin balconies are to be approved by the Society.</p> <p>(8) Detectors fitted in hazardous areas are to be tested and approved for such service. Detectors required by 20.4 and installed in spaces that comply with requirement in 20.3.2-2 need not be suitable for hazardous areas. Detectors fitted in spaces carrying dangerous goods, required by Chapter 19, Table R19.3 to comply with requirements in 19.3.2, are to be suitable for hazardous areas.</p>	

Amended-Original Requirements Comparison Table

(Fire Safety Measures for the Vehicle Spaces, Special Category Spaces and RO-RO Spaces of RO-RO Passenger Ships and Cargo Ships)

Amended	Original	Remarks
<p>29.2.4 Installation Requirements*</p> <p>2 Positioning of detectors</p> <p>(1) Detectors are to be located for optimum performance. Positions near beams and ventilation ducts, or other positions where patterns of air flow could adversely affect performance, and positions where impact or physical damage is likely, are to be avoided. Detectors are to be located on the overhead at a minimum distance of 0.5 <i>m</i> away from bulkheads, except in corridors, lockers and stairways.</p> <p>(2) The maximum spacing of detectors is to be in accordance with the Table R29.1.</p> <p>(a) The Society may require or permit other spacing based upon test data which demonstrate the characteristics of the detectors. Detectors located below moveable ro-ro decks are to be in accordance with the Table R29.1.</p> <p>(b) <u>The distance between two sensor cables of a linear heat detection system is not to be more than 9.0 <i>m</i>, while the distance between such cables and bulkheads is not to be more than 4.5 <i>m</i>.</u></p>	<p>29.2.4 Installation Requirements*</p> <p>2 Positioning of detectors</p> <p>(1) Detectors are to be located for optimum performance. Positions near beams and ventilation ducts, or other positions where patterns of air flow could adversely affect performance, and positions where impact or physical damage is likely, are to be avoided. Detectors are to be located on the overhead at a minimum distance of 0.5 <i>m</i> away from bulkheads, except in corridors, lockers and stairways.</p> <p>(2) The maximum spacing of detectors is to be in accordance with the Table R29.1. The Society may require or permit other spacing based upon test data which demonstrate the characteristics of the detectors. Detectors located below moveable ro-ro decks are to be in accordance with the Table R29.1.</p> <p>(Newly added)</p>	

Amended-Original Requirements Comparison Table
(Fire Safety Measures for the Vehicle Spaces, Special Category Spaces and RO-RO Spaces of RO-RO Passenger Ships and Cargo Ships)

Amended	Original	Remarks																
<table border="1" style="margin: auto; border-collapse: collapse;"> <caption>Table R29.1 Spacing of Detectors</caption> <thead> <tr> <th style="width: 15%;">Type of Detector</th> <th style="width: 20%;">Maximum floor area per detectors</th> <th style="width: 20%;">Maximum distance apart between centre</th> <th style="width: 20%;">Maximum distance away from bulkheads</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Heat</td> <td style="text-align: center;"><u>37 m²</u></td> <td style="text-align: center;"><u>9 m</u></td> <td style="text-align: center;"><u>4.5 m</u></td> </tr> <tr> <td style="text-align: center;">Smoke</td> <td style="text-align: center;"><u>74 m²</u></td> <td style="text-align: center;"><u>11 m</u></td> <td style="text-align: center;"><u>5.5 m</u></td> </tr> <tr> <td style="text-align: center;"><u>Combined smoke and heat</u></td> <td style="text-align: center;"><u>74 m²</u></td> <td style="text-align: center;"><u>9 m</u></td> <td style="text-align: center;"><u>4.5 m</u></td> </tr> </tbody> </table>			Type of Detector	Maximum floor area per detectors	Maximum distance apart between centre	Maximum distance away from bulkheads	Heat	<u>37 m²</u>	<u>9 m</u>	<u>4.5 m</u>	Smoke	<u>74 m²</u>	<u>11 m</u>	<u>5.5 m</u>	<u>Combined smoke and heat</u>	<u>74 m²</u>	<u>9 m</u>	<u>4.5 m</u>
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The effective date of the amendment is according to EFFECTIVE DATE AND APPLICATION (A)																		

Amended-Original Requirements Comparison Table

(Fire Safety Measures for the Vehicle Spaces, Special Category Spaces and RO-RO Spaces of RO-RO Passenger Ships and Cargo Ships)

Amended	Original	Remarks
<p align="center">RULES FOR THE SURVEY AND CONSTRUCTION OF PASSENGER SHIPS</p> <p align="center">Part 7 FIRE SAFETY MEASURES</p> <p>Chapter 4 FIRE PROTECTION APPARATUS</p> <p>4.1 General</p> <p>4.1.1 Application* Fire protection apparatus are to be in accordance with the relevant requirements in Chapter II-2, <i>SOLAS</i> Convention and <u>the <i>FSS</i> Code</u>, unless otherwise specified in this Chapter. Reference is to be made to relevant provisions in Part R of the Rules for the Survey and Construction of Steel Ships.</p>	<p align="center">RULES FOR THE SURVEY AND CONSTRUCTION OF PASSENGER SHIPS</p> <p align="center">Part 7 FIRE SAFETY MEASURES</p> <p>Chapter 4 FIRE PROTECTION APPARATUS</p> <p>4.1 General</p> <p>4.1.1 Application* Fire protection apparatus are to be in accordance with the provisions of <u>Regulations 7 and 10 and the relevant requirements in Regulations 3, 14 to 16 and 18 to 20</u>, Chapter II-2, <i>SOLAS</i> Convention, unless otherwise specified in this Chapter. Reference is to be made to relevant provisions in Part R of the Rules for the Survey and Construction of Steel Ships.</p>	

Amended-Original Requirements Comparison Table

(Fire Safety Measures for the Vehicle Spaces, Special Category Spaces and RO-RO Spaces of RO-RO Passenger Ships and Cargo Ships)

Amended	Original	Remarks
<p>GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p>Part B CLASS SURVEYS</p> <p>B1 GENERAL</p> <p>B1.1 Surveys</p> <p>B1.1.3 Intervals of Class Maintenance Surveys 3 The Occasional Surveys specified in 1.1.3-3(5), Part B of the Rules are as specified below: ((1) to (24) are omitted.) <u>(25) Linear heat detectors and combined smoke and heat detectors</u> <u>For ships equipped with linear heat detectors and combined smoke and heat detectors which had been at the beginning stage of construction before 1 January 2026, a survey is to be carried out to verify that such detectors comply with the requirements of 29.2.3-1(3), (4) and Table R29.1, Part R of the Rules by 1 January 2026.</u></p>	<p>GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p>Part B CLASS SURVEYS</p> <p>B1 GENERAL</p> <p>B1.1 Surveys</p> <p>B1.1.3 Intervals of Class Maintenance Surveys 3 The Occasional Surveys specified in 1.1.3-3(5), Part B of the Rules are as specified below: ((1) to (24) are omitted.) (Newly added)</p>	

Amended-Original Requirements Comparison Table

(Fire Safety Measures for the Vehicle Spaces, Special Category Spaces and RO-RO Spaces of RO-RO Passenger Ships and Cargo Ships)

Amended	Original	Remarks
<p align="center">GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF PASSENGER SHIPS</p> <p align="center">Part 2 CLASS SURVEY</p> <p align="center">Chapter 1 GENERAL</p> <p>1.1 Surveys</p> <p>1.1.3 Intervals of Class Maintenance Surveys 1 For the application of the requirements of 1.1.3-3, Part 2 of the Rules, in addition to the requirements specified in B1.1.3-3 (except for (22)), Part B of the Guidance for the Survey and Construction of Steel Ships, occasional surveys are to be in accordance with those specified in (1) to (7) below: ((1) to (7) are omitted.) (8) <u>For ships engaged on international voyages which had been at the beginning stage of construction before 1 January 2026, a survey is to be carried out for verification of the compliance with the requirements of Regulations 20.4.1.6, 20.4.4.1, 20.4.4.2 and 20.6.2.3, Chapter II-2, SOLAS Convention adopted by the Maritime Safety Committee of the International Maritime Organization by the Resolution MSC.550(108), by the</u></p>	<p align="center">GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF PASSENGER SHIPS</p> <p align="center">Part 2 CLASS SURVEY</p> <p align="center">Chapter 1 GENERAL</p> <p>1.1 Surveys</p> <p>1.1.3 Intervals of Class Maintenance Surveys 1 For the application of the requirements of 1.1.3-3, Part 2 of the Rules, in addition to the requirements specified in B1.1.3-3 (except for (22)), Part B of the Guidance for the Survey and Construction of Steel Ships, occasional surveys are to be in accordance with those specified in (1) to (7) below: ((1) to (7) are omitted.) (Newly added)</p>	

Amended-Original Requirements Comparison Table
(Fire Safety Measures for the Vehicle Spaces, Special Category Spaces and RO-RO Spaces of RO-RO Passenger Ships and Cargo Ships)

Amended	Original	Remarks
<u>first survey of the ships on or after 1 January 2028.</u>		
The effective date of the amendment is according to EFFECTIVE DATE AND APPLICATION (B)		
EFFECTIVE DATE AND APPLICATION (A)		
<ol style="list-style-type: none"> 1. The effective date of the amendments is 1 January 2026. 2. Notwithstanding the amendments, the current requirements may apply to ships the keel of which were laid or which were at a similar stage of construction before the effective date. (Note) The term “a similar stage of construction” means the stage at which the construction identifiable with a specific ship begins and the assembly of that ship has commenced comprising at least 50 <i>tonnes</i> or 1% of the estimated mass of all structural material, whichever is the less. 		
EFFECTIVE DATE AND APPLICATION (B)		
<ol style="list-style-type: none"> 1. The effective date of the amendments is 1 January 2026. 		