

Amendment on 27 June 2024

Resolved by Technical Committee on 30 January 2024

Explosion-Proof Electrical Equipment for Water Level Detection and Alarm Systems and Exemption of their Installation for Ships Not Engaged in International Voyages

Object of Amendment

Rules for the Survey and Construction of Steel Ships Part D

Guidance for the Survey and Construction of Steel Ships Parts B and D

Reason for Amendment

Triggered by the 2015 sinking of a cargo ship, the installation of water level detection and alarm systems will become mandatory from 1 January 2024 to install the water level detection and alarm systems for multiple-hold cargo ships (excluding bulk carriers and tankers).

IMO unified interpretation MSC./Circ.1572/Rev.1 specifies the performance standards for water level detection and alarm systems, and includes requirements related to explosion-proof electrical equipment; these requirements, however, are not consistent with other IMO resolutions for water level detection and alarm systems and their correspondence was unclear.

For this above reason, IACS developed draft amendments to MSC.1/Circ.1572/Rev.1 to clarify the requirements for explosion proof apparatus. The draft amendments were agreed upon by the SDC at its 10th Session (SDC10) held in January 2024, and received final approval as MSC.1/Circ.1572/Rev.2 at 108th session of IMO Maritime Safety Committee (MSC108) held in May 2024.

Accordingly, relevant requirements are amended at this time in anticipation of the approval of MSC.1/Circ.1572/Rev.2.

In addition, relevant requirements are amended to exempt multiple-hold cargo ships not engaged in international voyages or less than 500 *gross tonnage* from requirements related to the installation of water level detection and alarm systems.

Outline of the Amendment

- (1) Clarifies the requirements for explosion proof apparatus of water level detection and alarm systems.
- (2) Specifies that multiple-hold cargo ships of less than 500 *gross tonnage* or not engaged in international voyages are exempt from requirements related to the installation of water level detection and alarm systems.

Effective Date and application

- (1) Rules for the Survey and Construction of Steel Ships Part D (25.2.1-4 and 25.2.3-3) and Guidance for the Survey and Construction of Steel Ships Part B (B3.2.3-6)
This draft amendment applies to ships that fall under the following:

- i) which the building contract is placed on or after 1 January 2024;
 - ii) in the absence of a building contract, the keels of which are laid or which are at a similar stage of construction on or after 1 July 2024; or
 - iii) those for which the delivery of which is on or after 1 January 2028.
- (2) Guidance for the Survey and Construction of Steel Ships Part D (D13.8.5-3)
- This draft amendment applies to water level detection and alarm systems that fall under the following:
- i) those systems installed on ships for which (1) above applies
 - ii) those systems installed for replacement or other reasons after the date of delivery of ships for which (1) above does not apply.

ID: DX23-17

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

Amended-Original Requirements Comparison Table (Explosion-Proof Electrical Equipment for Water Level Detection and Alarm Systems and Exemption of their Installation for Ships Not Engaged in International Voyages)

Amended	Original	Remarks
<p align="center">RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p align="center">Part D MACHINERY INSTALLATIONS</p> <p>Chapter 25 SPECIAL REQUIREMENTS FOR MACHINERY INSTALLED IN SHIPS WITH RESTRICTED AREA OF SERVICE AND SMALL SHIPS</p> <p>25.2 Modified Requirements</p> <p>25.2.1 Ships with Class Notation “Coasting Service” or Equivalent</p> <p>4 For ships with the Class Notation “Coasting Service” or equivalent, which are not engaged in international voyages, or whose gross tonnage is less than 500 tons, the following requirements may be applied in addition to -1 to -3 above.</p> <p>((1) to (5) are omitted.)</p> <p>(6) The requirements specified in 13.5.10, 13.6.1-5, 13.8.5, 13.8.7, 13.9.1-5 and 13.9.1-6 need not apply.</p> <p>((7) to (17) are omitted.)</p> <p>25.2.3 Ships with a Gross Tonnage less than 500 Tons, etc.</p> <p>3 For ships which are not engaged on international voyages and whose gross tonnage is not less than 500 tons, where deemed appropriate by the Society taking account of various conditions of</p>	<p align="center">RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p align="center">Part D MACHINERY INSTALLATIONS</p> <p>Chapter 25 SPECIAL REQUIREMENTS FOR MACHINERY INSTALLED IN SHIPS WITH RESTRICTED AREA OF SERVICE AND SMALL SHIPS</p> <p>25.2 Modified Requirements</p> <p>25.2.1 Ships with Class Notation “Coasting Service” or Equivalent</p> <p>4 For ships with the Class Notation “Coasting Service” or equivalent, which are not engaged in international voyages, or whose gross tonnage is less than 500 tons, the following requirements may be applied in addition to <u>the requirements given in</u> -1 to -3 above.</p> <p>((1) to (5) are omitted.)</p> <p>(6) The requirements specified in 13.5.10, 13.6.1-5, 13.8.5, 13.9.1-5 and 13.9.1-6 need not apply.</p> <p>((7) to (17) are omitted.)</p> <p>25.2.3 Ships with a Gross Tonnage less than 500 Tons, etc.</p> <p>3 For ships which are not engaged on international voyages and whose gross tonnage is not less than 500 tons, where deemed appropriate by the Society taking account of various conditions of</p>	

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Amended	Original	Remarks
<p>such ships related to the navigation, <u>13.8.5</u> and <u>13.8.7</u> need not apply.</p> <p align="center">EFFECTIVE DATE AND APPLICATION</p> <ol style="list-style-type: none"> 1. The effective date of the amendments is 1 July 2024. 2. Notwithstanding the amendments to the Rules, the current requirements apply to ships other than ships that fall under the following: <ol style="list-style-type: none"> (1) for which the contract for construction is placed on or after 1 January 2024; or (2) in the absence of a contract for construction, the keels of which are laid or which are at <i>a similar stage of construction</i> on or after 1 July 2024; or (3) the delivery of which is on or after 1 January 2028. <p>(Note) The term “<i>a similar stage of construction</i>” 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.</p>	<p>such ships related to the navigation, <u>the requirements specified in 13.8.5</u> need not apply.</p>	

Amended-Original Requirements Comparison Table (Explosion-Proof Electrical Equipment for Water Level Detection and Alarm Systems and Exemption of their Installation for Ships Not Engaged in International Voyages)

Amended	Original	Remarks
<p align="center">GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p align="center">Part B CLASS SURVEYS</p> <p align="center">B3 ANNUAL SURVEYS</p> <p>B3.2 Annual Surveys for Hull, Equipment, Fire Extinction and Fittings</p> <p>B3.2.3 Performance Tests</p> <p>6 Inspection of water level detection and alarm systems (refer to 13.8.5, 13.8.6 and 13.8.7, Part D of the Rules) specified in item 9 of Table B3.3, Part B of the Rules is to be carried out on the items installed on the following ships.</p> <p>(1) Cargo ships of 500 <i>gross tonnage</i> and above engaged on international voyages, which have a single cargo hold below the freeboard deck or cargo holds below the freeboard deck which are not separated by at least one bulkhead made watertight up to that deck and specified in the following (a) or (b):</p> <p>(a) Cargo ships having a length (L_f) of less than 100 <i>m</i>, which had been at the beginning stage of construction before 1 July 1998</p> <p>(b) Cargo ships having a length (L_f) of less than 80 <i>m</i>, which had been at the beginning stage of construction on and after 1 July 1998</p>	<p align="center">GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p align="center">Part B CLASS SURVEYS</p> <p align="center">B3 ANNUAL SURVEYS</p> <p>B3.2 Annual Surveys for Hull, Equipment, Fire Extinction and Fittings</p> <p>B3.2.3 Performance Tests</p> <p>6 Inspection of water level detection and alarm systems (refer to 13.8.5, 13.8.6 and 13.8.7, Part D of the Rules) specified in item 9 of Table B3.3, Part B of the Rules is to be carried out on the items installed on the following ships.</p> <p>(1) Cargo ships of 500 <i>gross tonnage</i> and above engaged on international voyages, which have a single cargo hold below the freeboard deck or cargo holds below the freeboard deck which are not separated by at least one bulkhead made watertight up to that deck and specified in the following (a) or (b):</p> <p>(a) Cargo ships having a length (L_f) of less than 100 <i>m</i>, which had been at the beginning stage of construction before 1 July 1998</p> <p>(b) Cargo ships having a length (L_f) of less than 80 <i>m</i>, which had been at the beginning stage of construction on and after 1 July 1998</p>	

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Amended	Original	Remarks
<p>(2) Cargo ships of 500 <i>gross tonnage</i> and above engaged on international voyages and specified in the following (a) or (b):</p> <p>(a) Bulk carriers defined in 1.3.1(13), Part B of the Rules, which had been at the beginning stage of construction before 1 July 2006</p> <p>(b) Bulk carriers defined in 31A.1.2-1(1), Part C of the Rules, which had been at the beginning stage of construction on or after 1 July 2006</p> <p>(3) Cargo ships <u>of 500 <i>gross tonnage</i> and above engaged on international voyages, which have multiple cargo holds</u> (excluding bulk carriers defined in Annex 1.1 An1.2.1(1), Part 2-2, Part C of the Rules and tankers) that fall under any of the following.</p> <p>(a) for which the building contract is placed on or after 1 January 2024;</p> <p>(b) in the absence of a building contract, the keels of which are laid or which are at a similar stage of construction on or after 1 July 2024; or</p> <p>(c) the delivery of which is on or after 1 January 2028</p>	<p>(2) Cargo ships of 500 <i>gross tonnage</i> and above engaged on international voyages and specified in the following (a) or (b):</p> <p>(a) Bulk carriers defined in 1.3.1(13), Part B of the Rules, which had been at the beginning stage of construction before 1 July 2006</p> <p>(b) Bulk carriers defined in 31A.1.2-1(1), Part C of the Rules, which had been at the beginning stage of construction on or after 1 July 2006</p> <p>(3) Cargo ships <u>having</u> multiple cargo holds (excluding bulk carriers defined in Annex 1.1 An1.2.1(1), Part 2-2, Part C of the Rules and tankers) that fall under any of the following.</p> <p>(a) for which the building contract is placed on or after 1 January 2024;</p> <p>(b) in the absence of a building contract, the keels of which are laid or which are at a similar stage of construction on or after 1 July 2024; or</p> <p>(c) the delivery of which is on or after 1 January 2028</p>	

Amended-Original Requirements Comparison Table (Explosion-Proof Electrical Equipment for Water Level Detection and Alarm Systems and Exemption of their Installation for Ships Not Engaged in International Voyages)

Amended	Original	Remarks
<p align="center">EFFECTIVE DATE AND APPLICATION</p> <ol style="list-style-type: none"> 1. The effective date of the amendments is 1 July 2024. 2. Notwithstanding the amendments to the Rules, the current requirements apply to ships other than ships that fall under the following: <ol style="list-style-type: none"> (1) for which the contract for construction is placed on or after 1 January 2024; or (2) in the absence of a contract for construction, the keels of which are laid or which are at <i>a similar stage of construction</i> on or after 1 July 2024; or (3) the delivery of which is on or after 1 January 2028. <p>(Note) The term “<i>a similar stage of construction</i>” 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.</p>		

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Amended	Original	Remarks
<p align="center">GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p align="center">Part D MACHINERY INSTALLATIONS</p> <p align="center">D13 PIPING SYSTEMS</p> <p>D13.8 Sounding Pipes</p> <p>D13.8.5 Water Level Detection and Alarm Systems for Bulk Carriers, etc.</p> <p>3 The wording “the systems to have constructions and functions deemed appropriate by the Society” in 13.8.5-1(4), Part D of the Rules means those systems complying with the following requirements and being of a type approved by the Society in accordance with Chapter 5, Part 7 of the Approval and Type Approval of Materials and Equipment for Marine Use or those systems approved by an organization deemed appropriate by the Society in accordance with the Resolution <i>MSC.188(79)</i>. ((1) and (2) are omitted.) (3) Electrical installations for the systems installed in the following areas are to be of an intrinsically safe type or safe type of an appropriate apparatus group and temperature class suitable for <u>the explosive gas atmosphere and/or combustible dust that can be present, depending on the cargo carried, and hazardous area comparable with Zone 1 as defined in IEC 60092-506, Clause 3.1.</u> Where the</p>	<p align="center">GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p align="center">Part D MACHINERY INSTALLATIONS</p> <p align="center">D13 PIPING SYSTEMS</p> <p>D13.8 Sounding Pipes</p> <p>D13.8.5 Water Level Detection and Alarm Systems for Bulk Carriers, etc.</p> <p>3 The wording “the systems to have constructions and functions deemed appropriate by the Society” in 13.8.5-1(4), Part D of the Rules means those systems complying with the following requirements and being of a type approved by the Society in accordance with <u>the provisions of Chapter 5, Part 7 of the Approval and Type Approval of Materials and Equipment for Marine Use</u> or those systems approved by an organization deemed appropriate by the Society in accordance with the Resolution <i>MSC.188(79)</i>. ((1) and (2) are omitted.) (3) Electrical installations for the systems installed in the following areas are to be of an intrinsically safe type or safe type of an appropriate apparatus group and temperature class suitable for the cargo carried, and <u>the maximum surface temperature of the installations is not to exceed 85 °C, except electrical installations installed in ships designed only to</u></p>	

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<p>characteristics of the cargo carried are unknown, <u>temperature class T6, gas group IIC and/or either dust group IIC or IP5X are to be used</u>, except electrical installations installed in ships designed only to carry cargo which <u>does not cause</u> combustible or explosive atmosphere. In addition, in cases where a ship is designed to carry only limited kinds of cargo, the maximum surface temperature may be appropriately relaxed depending on the kind of cargo. In this case, such limitations relating to cargo are to be documented in booklets for cargo operations. Finally, those electric installations installed at the edges of the following areas are to be approved at the discretion of the Society with due consideration being given to their design with respect to gas-tightness, etc.</p> <p>(a) Cargo holds</p> <p>(b) Enclosed spaces adjacent to cargo holds having openings without a gas-tight or watertight door/hatch and the like into a hold</p> <p>(c) Areas within 3 m of any cargo hold mechanical exhaust ventilation outlet</p> <p>((4) to (8) are omitted.)</p>	<p>carry cargo which are not combustible or explosive atmosphere. In addition, in cases where a ship is designed to carry only limited kinds of cargo, the maximum surface temperature may be appropriately relaxed depending on the kind of cargo. In this case, such limitations relating to cargo <u>are</u> to be documented in booklets for cargo operations. Finally, those electric installations installed at the edges of the following areas are to be approved at the discretion of the Society with due consideration being given to their design with respect to gas-tightness, etc.</p> <p>(a) Cargo holds</p> <p>(b) Enclosed spaces adjacent to cargo holds having openings without a gas-tight or watertight door/hatch and the like into a hold</p> <p>(c) Areas within 3 m of any cargo hold mechanical exhaust ventilation outlet</p> <p>((4) to (8) are omitted.)</p>	

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Amended	Original	Remarks
<p align="center">EFFECTIVE DATE AND APPLICATION</p> <ol style="list-style-type: none"> 1. The effective date of the amendments is 1 July 2024. 2. Notwithstanding the amendments to the Guidance, the current requirements apply to water level detection and alarm systems installed on ships other than ones that fall under the following. The amended requirements, however, do apply to replacement water level detection and alarm systems installed on such ships after their delivery. <ol style="list-style-type: none"> (1) for which the contract for construction is placed on or after 1 January 2024; or (2) in the absence of a contract for construction, the keels of which are laid or which are at <i>a similar stage of construction</i> on or after 1 July 2024; or (3) the delivery of which is on or after 1 January 2028. <p>(Note) The term “<i>a similar stage of construction</i>” 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.</p>		