

Amendment on 27 June 2024
Resolved by Technical Committee on 30 January 2024

Closing Appliances for Internal and External Openings in Cargo Ships

Object of Amendment

Rules for the Survey and Construction of Steel Ships Parts C and CS

Reason for Amendment

Chapter II-1 of SOLAS specifies requirements for the closing appliances of internal and external openings for which watertightness is required for damage stability purposes, and IACS Unified Interpretation (UI) SC156(Rev.2) further specifies detailed requirements for watertight doors. The above-mentioned requirements have already been incorporated into the NK Rules.

Some of the requirements in the NK Rules for the closing appliances of external openings are, however, unclear with respect to the handling of such appliances during voyage and the locations of devices indicating their open/closed status.

Accordingly, relevant requirements are amended based on Chapter II-1 of SOLAS and IACS UI SC156(Rev.2).

Outline of Amendment

Clarifies requirements for internal and external opening closing appliances that are required to be watertight.

Effective Date and Application

Effective date of this amendment is 27 June 2024.

ID: DX23-10

Amended-Original Requirements Comparison Table (Closing Appliances for Internal and External Openings in Cargo Ships)

Amended	Original	Remarks																																				
<p>RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p>Part C HULL CONSTRUCTION AND EQUIPMENT</p> <p>Part 1 GENERAL HULL REQUIREMENTS</p> <p>Chapter 2 GENERAL ARRANGEMENT DESIGN</p> <p>2.2 Subdivision Arrangement</p> <p>2.2.2 Watertight Door</p>	<p>RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p>Part C HULL CONSTRUCTION AND EQUIPMENT</p> <p>Part 1 GENERAL HULL REQUIREMENTS</p> <p>Chapter 2 GENERAL ARRANGEMENT DESIGN</p> <p>2.2 Subdivision Arrangement</p> <p>2.2.2 Watertight Door</p>	<p>This is a amended Table. Strikethrough part is delieted. Underlined part is added.</p> <p>IACS UI SC156(Rev.2) 3.4.1</p> <p>IACS UI SC156(Rev.2) Note 2. of Table 1 B.</p>																																				
<p>2.2.2.1 General</p> <p align="center">Table 2.2.2-2 Requirements for Watertight Doors for External Openings</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:10%;">Position relative to bulkhead or freeboard deck</th> <th style="width:20%;">Referenced requirement</th> <th style="width:15%;">Frequency of use at sea</th> <th style="width:15%;">Type of door</th> <th style="width:5%;">Remote closure</th> <th style="width:5%;">Open/close indicators</th> <th style="width:5%;">Audible or visual alarms</th> <th style="width:5%;">Notices</th> <th style="width:5%;">Notes</th> </tr> </thead> <tbody> <tr> <td align="center">Below</td> <td><u>2.2.2.5, 2.2.2.8-2, 2.2.3.2-2 and 2.2.3.2-3</u></td> <td align="center">Permanently Closed</td> <td align="center">Sliding, rolling or hinged door</td> <td align="center">No</td> <td align="center">Yes</td> <td align="center">No</td> <td align="center">Yes</td> <td align="center">*2, *3, *5</td> </tr> <tr> <td align="center">At or above</td> <td><u>2.2.2.5-1, 2.2.2.8-1 and 2.2.3.2-2</u></td> <td align="center">Normally Closed</td> <td align="center">Sliding, rolling or hinged door</td> <td align="center">No</td> <td align="center">Yes</td> <td align="center">No</td> <td align="center">Yes</td> <td align="center">*1,4</td> </tr> <tr> <td align="center">At or above</td> <td><u>2.2.2.5, 2.2.2.8-2 and 2.2.3.2-2</u></td> <td align="center">Permanently Closed</td> <td align="center">Sliding, rolling or hinged door</td> <td align="center">No</td> <td align="center">Yes</td> <td align="center">No</td> <td align="center">Yes</td> <td align="center">*2, *3, *5</td> </tr> </tbody> </table> <p>*1: If hinged, this door is to be of a single-action type. *2: The time of opening such doors in port and closing them before the ship leaves port is to be entered into the log-book in the case of doors in watertight bulkheads subdividing cargo regions. *3: Doors are to be fitted with devices that prevent unauthorised opening. *4: Notices are to state “<i>To be kept closed at sea</i>”. *5: Notices are to state “<i>Not to be opened at sea</i>”.</p>			Position relative to bulkhead or freeboard deck	Referenced requirement	Frequency of use at sea	Type of door	Remote closure	Open/close indicators	Audible or visual alarms	Notices	Notes	Below	<u>2.2.2.5, 2.2.2.8-2, 2.2.3.2-2 and 2.2.3.2-3</u>	Permanently Closed	Sliding, rolling or hinged door	No	Yes	No	Yes	*2, *3, *5	At or above	<u>2.2.2.5-1, 2.2.2.8-1 and 2.2.3.2-2</u>	Normally Closed	Sliding, rolling or hinged door	No	Yes	No	Yes	*1,4	At or above	<u>2.2.2.5, 2.2.2.8-2 and 2.2.3.2-2</u>	Permanently Closed	Sliding, rolling or hinged door	No	Yes	No	Yes	*2, *3, *5
Position relative to bulkhead or freeboard deck	Referenced requirement	Frequency of use at sea	Type of door	Remote closure	Open/close indicators	Audible or visual alarms	Notices	Notes																														
Below	<u>2.2.2.5, 2.2.2.8-2, 2.2.3.2-2 and 2.2.3.2-3</u>	Permanently Closed	Sliding, rolling or hinged door	No	Yes	No	Yes	*2, *3, *5																														
At or above	<u>2.2.2.5-1, 2.2.2.8-1 and 2.2.3.2-2</u>	Normally Closed	Sliding, rolling or hinged door	No	Yes	No	Yes	*1,4																														
At or above	<u>2.2.2.5, 2.2.2.8-2 and 2.2.3.2-2</u>	Permanently Closed	Sliding, rolling or hinged door	No	Yes	No	Yes	*2, *3, *5																														

Amended-Original Requirements Comparison Table (Closing Appliances for Internal and External Openings in Cargo Ships)

Amended	Original	Remarks
<p>2.2.2.3 Strength and Watertightness</p> <p>1 (Omitted)</p> <p>2 Where hydraulic tests are carried out as specified in -1 above, the following are to be complied with:</p> <p>(1) The head of water used for the hydraulic test is to correspond at least to the head measured from the lower edge of the door opening (at the location in which the door is to be fitted in the ship) to 1 <i>m</i> above the freeboard deck. However, for watertight doors subject to 2.2.3.1 and 2.2.3.2, the head is not to be less than the height of the final damage waterline or the intermediate waterline, whichever is greater.</p> <p>((2) and (3) are omitted.)</p> <p>3 (Omitted)</p> <p>2.2.3 Openings</p> <p>2.2.3.1 Internal Openings (-1 and -2 are omitted.) (Deleted)</p> <p>3 (Omitted)</p> <p>4 (Omitted)</p> <p>5 Watertight doors for internal openings required to be watertight are to comply with 2.2.2, unless otherwise provided in -2 above.</p>	<p>2.2.2.3 Strength and Watertightness</p> <p>1 (Omitted)</p> <p>2 Where hydraulic tests are carried out as specified in -1 above, the following are to be complied with:</p> <p>(1) The head of water used for the hydraulic test is to correspond at least to the head measured from the lower edge of the door opening (at the location in which the door is to be fitted in the ship) to 1 <i>m</i> above the freeboard deck. However, for watertight doors subject to 2.2.3.1, the head is not to be less than the height of the final damage waterline or the intermediate waterline, whichever is greater.</p> <p>((2) and (3) are omitted.)</p> <p>3 (Omitted)</p> <p>2.2.3 Openings</p> <p>2.2.3.1 Internal Openings (-1 and -2 are omitted.)</p> <p>3 <u>Details of the functions and specifications for the power, controls, indicators, alarms, notices, etc., for watertight doors specified in -2 above are to be in accordance with 2.2.2.</u></p> <p>4 (Omitted)</p> <p>5 (Omitted)</p> <p>6 Watertight doors for internal openings required to be watertight <u>under the requirement of -1 above</u> are to comply with <u>the requirements of 2.2.2</u>, unless otherwise provided in -2 above.</p>	<p>Chapter II-1 of SOLAS regulation 16.2</p> <p>IACS UI SC156(Rev.2) 5.1</p>

Amended-Original Requirements Comparison Table (Closing Appliances for Internal and External Openings in Cargo Ships)

Amended	Original	Remarks
<p>2.2.3.2 External Openings</p> <p>1 (Omitted)</p> <p>2 The watertight doors for external openings required to be watertight under -1 above are to comply with the following (1) to (4).</p> <p>(1) (Omitted)</p> <p>(2) Indicators showing whether the watertight doors are open or closed are to be provided on the bridge <u>and at all operating positions</u>. Such indicators are to be operable in the event of main power failure. However, such indicators are not required for cargo hatch covers, fixed side scuttles and bolted manholes.</p> <p>(3) Watertight doors are to be provided with a notice <u>shown as (a) or (b)</u> affixed at their operating positions. However, such notices are not required for cargo hold hatch covers, fixed side scuttles and bolted manholes.</p> <p><u>(a) Doors which are normally closed at sea are to have notices stating, “To be kept closed at sea”.</u></p> <p><u>(b) Doors which are to be permanently closed at sea are to have notices stating, “Not to be opened at sea”.</u></p> <p>(4) Watertight doors for external openings in the shell plating below the bulkhead deck are to be <u>permanently closed at sea. Such doors are to be fitted with a device that prevents unauthorised opening if they are accessible during voyage</u>, except where specially approved by the Society.</p> <p>3 Watertight doors for external openings above the equilibrium/intermediate waterplane but below the bulkhead deck</p>	<p>2.2.3.2 External Openings</p> <p>1 (Omitted)</p> <p>2 The watertight doors for external openings required to be watertight under <u>the requirements of -1 above are to be permanently closed at sea, and are to comply with the following requirements (1) to (4). The “bridge” meant here refers to the place where the watch officer is always present and normally implies the navigation bridge deckhouse.</u></p> <p>(1) (Omitted)</p> <p>(2) Indicators showing whether the watertight doors are open or closed are to be provided on the bridge. Such indicators are to be operable in the event of main power failure. However, such indicators are not required for cargo hatch covers, fixed side scuttles and bolted manholes.</p> <p>(3) Watertight doors are to be provided with a notice affixed at their operating positions <u>stating, “To be kept closed at sea”</u>. However, such notices are not required for cargo hold hatch covers, fixed side scuttles and bolted manholes.</p> <p>(4) Watertight doors for external openings in the shell plating below the bulkhead deck <u>accessible during the voyage</u> are to be fitted with a device that prevents unauthorised opening, except where specially approved by the Society.</p> <p>3 Watertight doors for external openings above the equilibrium/intermediate waterplane but below the bulkhead deck</p>	<p>IACS UI SC156(Rev.2) 3.4.1</p> <p>Chapter II-1 of SOLAS regulation 13-1.3</p> <p>IACS UI SC156(Rev.2) 3.6</p> <p>IACS UI SC156(Rev.2) Table 1 B</p> <p>IACS UI SC156(Rev.2) Table 1 B</p>

Amended-Original Requirements Comparison Table (Closing Appliances for Internal and External Openings in Cargo Ships)

Amended	Original	Remarks
<p>are to be <u>permanently</u> closed at sea, and are to comply with the following requirements (1) to (3):</p> <p>(Deleted)</p> <p>(1) Indicators showing whether the watertight doors are open or closed are to be provided on the bridge <u>and at all operating positions</u>. Such indicators are to be operable in the event of main power failure. However, such notices are not required for fixed side scuttles.</p> <p>(2) Watertight doors are to be provided with a notice affixed at their operating positions stating, “Not to be opened at sea”. However, such notices are not required for fixed side scuttles.</p> <p>(3) (Omitted) (Deleted)</p> <p><u>4</u> Watertight doors for external openings required to be watertight are to comply with 2.2.2, unless otherwise provided in -2 and -3 above.</p>	<p>are to be <u>normally</u> closed at sea, and are to comply with the following requirements (1) to (4):</p> <p>(1) <u>Watertight doors other than those permanently closed at sea are to be capable of being opened and closed by hand locally, from both their sides with the ship listed 30 degrees to either side. If hinged, it is to be of the quick-acting or single-action type.</u></p> <p>(2) Indicators showing whether the watertight doors are open or closed are to be provided on the bridge. Such indicators are to be operable in the event of main power failure. However, such notices are not required for fixed side scuttles.</p> <p>(3) Watertight doors are to be provided with a notice affixed at their operating positions stating, “<u>To be kept closed at sea</u>”. <u>Those permanently closed at sea are to be provided with a notice stating, “Not to be opened at sea”.</u> However, such notices are not required for fixed side scuttles.</p> <p>(4) (Omitted)</p> <p><u>4</u> <u>Details of indicators for the watertight doors specified in -2 and -3 above are to be in accordance with 2.2.2.5.</u></p> <p><u>5</u> <u>Watertight doors for external openings required to be watertight under the requirement of -1 above are to comply with the requirements of 2.2.2, unless otherwise provided in -2 and -3 above.</u></p>	<p>IACS UI SC156(Rev.2) 3.4.1</p>

Amended-Original Requirements Comparison Table (Closing Appliances for Internal and External Openings in Cargo Ships)

Amended	Original	Remarks
<p align="center">EFFECTIVE DATE AND APPLICATION</p> <p>1. The effective date of the amendments is 27 June 2024.</p> <p>2. For ships subject to Part C of the Rules and Guidance for the Survey and Construction of Steel Ships prior to its comprehensive revision by Rule No.62 on 1 July 2022 (herein after referred to as “old Part C of the Rules”) and Notice No.47 on 1 July 2022 (herein after referred to as “old Part C of the Guidance”), this amendment also applies to following requirements.</p> <p> 4.3.1, old Part C of the Rules</p> <p> 4.3.2, old Part C of the Rules</p> <p> Table C4.3.1-2, old Part C of the Guidance</p> <p> C13.3.3-2(1), old Part C of the Guidance</p>		

Amended-Original Requirements Comparison Table (Closing Appliances for Internal and External Openings in Cargo Ships)

Amended	Original	Remarks
<p style="text-align: center;">RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p style="text-align: center;">Part CS HULL CONSTRUCTION AND EQUIPMENT OF SMALL SHIPS</p> <p style="text-align: center;">Chapter 4 SUBDIVISIONS</p> <p>4.3 Openings</p> <p>4.3.2 External Openings</p> <p>1 (Omitted)</p> <p>2 The closing appliances for external openings required to be watertight under the requirements of -1 above are to comply with the following (1) to (4).</p> <p>(1) (Omitted)</p> <p>(2) Indicators showing whether the doors are open or closed are to be provided on the bridge <u>and at all operating positions</u>. Such indicators are to be operable in the event of main power failure. However, such indicators are not required for cargo hatch covers, fixed side scuttles and bolted manholes.</p> <p>(3) Closing appliances are to be provided with a notice <u>shown as (a) or (b)</u> affixed at their operating positions. However, such notices are not required for cargo hatch covers, fixed side scuttles and bolted manholes.</p> <p>(a) <u>Closing appliances which are normally closed at sea are to have notices stating, “To be kept closed at sea”.</u></p> <p>(b) <u>Closing appliances are to be permanently closed at sea</u></p>	<p style="text-align: center;">RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p style="text-align: center;">Part CS HULL CONSTRUCTION AND EQUIPMENT OF SMALL SHIPS</p> <p style="text-align: center;">Chapter 4 SUBDIVISIONS</p> <p>4.3 Openings</p> <p>4.3.2 External Openings</p> <p>1 (Omitted)</p> <p>2 The closing appliances for external openings required to be watertight under <u>the requirements of -1 above are to be permanently closed at sea, and</u> are to comply with the following (1) to (4).</p> <p>(1) (Omitted)</p> <p>(2) Indicators showing whether the doors are open or closed are to be provided on the bridge. Such indicators are to be operable in the event of main power failure. However, such indicators are not required for cargo hatch covers, fixed side scuttles and bolted manholes.</p> <p>(3) Closing appliances are to be provided with a notice affixed at their operating positions <u>stating, “To be kept closed at sea”.</u> However, such notices are not required for cargo hatch covers, fixed side scuttles and bolted manholes.</p>	<p>IACS UI SC156(Rev.2) 3.4.1</p> <p>Chapter II-1 of SOLAS regulation 13-1.3</p> <p>IACS UI SC156(Rev.2) 3.6</p>

Amended-Original Requirements Comparison Table (Closing Appliances for Internal and External Openings in Cargo Ships)

Amended	Original	Remarks
<p><u>are to have notices stating, “Not to be opened at sea”.</u></p> <p>(4) Closing appliances for openings in the shell plating below the bulkhead deck are to be <u>permanently closed at sea</u>. <u>Such closing appliances are to be fitted with a device which prevents unauthorized opening if they are accessible during voyage</u>, except where specially approved by the Society.</p> <p>3 Closing appliances for external openings above the equilibrium/intermediate waterplane but below the bulkhead deck are to be <u>permanently</u> closed at sea and are to comply with the following (1) to (3).</p> <p>(Deleted)</p> <p>(1) Indicators showing whether the doors are open or closed are to be provided on the bridge <u>and at all operating positions</u>. Such indicators are to be operable in the event of main power failure. However, such indicators are not required for fixed side scuttles.</p> <p>(2) Closing appliances are to be provided with a notice affixed at their operating positions stating, “Not to be opened at sea”. However, such notices are not required for fixed side scuttles.</p> <p>(3) (Omitted)</p>	<p>(4) Closing appliances for openings in the shell plating below the bulkhead deck <u>accessible during the voyage</u> are to be fitted with a device which prevents unauthorized opening, except where specially approved by the Society.</p> <p>3 Closing appliances for external openings above the equilibrium/intermediate waterplane but below the bulkhead deck are to be <u>normally</u> closed at sea, and are to comply with the following (1) to (4).</p> <p>(1) <u>Closing appliances other than those permanently closed at sea are to be capable of being opened and closed by hand locally, from both sides of the opening with the ship listed 30 degrees to either side. If hinged, it is to be of a quick acting or single action type.</u></p> <p>(2) Indicators showing whether the doors are open or closed are to be provided on the bridge. Such indicators are to be operable in the event of main power failure. However, such indicators are not required for fixed side scuttles.</p> <p>(3) Closing appliances are to be provided with a notice affixed at their operating positions stating, “<u>To be kept closed at sea</u>”. <u>Closing appliances permanently closed at sea are to be provided with a notice stating “Not to be opened at sea”.</u> However, such notices are not required for fixed side scuttles.</p> <p>(4) (Omitted)</p>	<p>IACS UI SC156(Rev.2) Table 1 B</p> <p>IACS UI SC156(Rev.2) Table 1 B</p> <p>IACS UI SC156(Rev.2) 3.4.1</p>

Amended-Original Requirements Comparison Table (Closing Appliances for Internal and External Openings in Cargo Ships)

Amended	Original	Remarks
<p>Chapter 13 WATERTIGHT BULKHEADS</p> <p>13.3 Watertight Doors</p> <p>13.3.4 Control</p> <p>1 (Omitted)</p> <p>2 In addition to -1 above, watertight doors which are used at sea or normally open at sea, are to be capable of being remotely closed by power from the navigation bridge. <u>In this context, “bridge” refers to a place where a watch officer is always present and normally implies the navigation bridge.</u></p> <p>3 (Omitted)</p> <p>EFFECTIVE DATE AND APPLICATION</p> <p>1. The effective date of the amendments is 27 June 2024</p>	<p>Chapter 13 WATERTIGHT BULKHEADS</p> <p>13.3 Watertight Doors</p> <p>13.3.4 Control</p> <p>1 (Omitted)</p> <p>2 In addition to <u>the requirements of -1</u> above, watertight doors which are used at sea or normally open at sea, are to be capable of being remotely closed by power from the navigation bridge.</p> <p>3 (Omitted)</p>	<p>Add the definition of "bridge"</p>