

Clarification of Requirements for Towing and Mooring Equipment

Object of Amendment

Rules for the Survey and Construction of Steel Ships Parts B, C and CS
Rules for the Survey and Construction of Passenger Ships
Guidance for the Survey and Construction of Steel Ships Parts B, C and CS
Guidance for the Survey and Construction of Passenger Ships

Reason for Amendment

In 2016, IACS conducted a complete review of Unified Requirements (UR) A1 and A2 as well as Recommendation No.10, which are related to towing and mooring equipment. The Society has already incorporated the latest revisions of these into its Rules.

In 2020, the IMO adopted its *Guidelines on the Design of Mooring Arrangements and the Selection of Appropriate Mooring Equipment and Fittings for Safe Mooring* (adopted as MSC.1/Circ.1619) and its *Guidelines for Inspection and Maintenance of Mooring Equipment Including Lines* (adopted as MSC.1/Circ.1620). The Society has also already incorporated these two guidelines into its Rules.

Since some of the Society's requirements were subsequently found to be unclear, the Society reviewed them. Accordingly, relevant requirements are amended to clarify them with respect to towing and mooring equipment based on this review.

Outline of the Amendment

The main amendments are as follows.

- (1) Clarifies requirements related to the selection of replacement mooring lines for "management plans for inspection and maintenance of mooring equipment including mooring lines" that are prepared in accordance with MSC.1/Circ.1620 and are required to be maintained on board from 1 January 2024.
- (2) Clarifies that ships of not less than 500 gross tonnage engaged in international voyages are required to maintain the management plans referred to in (1) above on board.
- (3) Deletes requirements related to the diameter and line design break force (LDBF) of fibre ropes used as mooring or towing in accordance with IACS Recommendation No.10 (Rev.5).

Effective Date and Application

The effective date of this amendment is 26 December 2024.

(This amendment also applies to ships subject to Part C of the Rules for the Survey and Construction of Steel Ships prior to its comprehensive revision.)

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

ID: DX24-08

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment	Original	Remarks
<p align="center">RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p align="center">Part B CLASS SURVEYS</p> <p align="center">Chapter 2 CLASSIFICATION SURVEYS</p> <p>2.1 Classification Survey during Construction</p> <p>2.1.6 Documents to be Maintained On Board*</p> <p>1 At the completion of a classification survey, the Surveyor confirms that the finished versions of the following applicable drawings, plans, manuals, lists, etc., are on board. ((1) is omitted.) (2) Other documents ((a) to (x) are omitted) (y) Management plans for inspection and maintenance of mooring equipment including mooring lines <u>(14.4.5.1, Part 1, Part C or 23.2.10, Part CS)</u></p>	<p align="center">RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p align="center">Part B CLASS SURVEYS</p> <p align="center">Chapter 2 CLASSIFICATION SURVEYS</p> <p>2.1 Classification Survey during Construction</p> <p>2.1.6 Documents to be Maintained On Board*</p> <p>1 At the completion of a classification survey, the Surveyor confirms that the finished versions of the following applicable drawings, plans, manuals, lists, etc., are on board. ((1) is omitted.) (2) Other documents ((a) to (x) are omitted) (y) Management plans for inspection and maintenance of mooring equipment (including mooring lines)</p>	<p>The section number of the provision requiring to maintain on board is added as a reference.</p>

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment	Original	Remarks																								
<p>Chapter 3 ANNUAL SURVEYS</p> <p>3.2 Annual Surveys for Hull, Equipment, Fire Extinction and Fittings</p> <p>3.2.1 Examination of Plans and Documents*</p> <p>1 At Annual Surveys, the management conditions of plans and documents listed in Table B3.1 are to be examined.</p>	<p>Chapter 3 ANNUAL SURVEYS</p> <p>3.2 Annual Surveys for Hull, Equipment, Fire Extinction and Fittings</p> <p>3.2.1 Examination of Plans and Documents*</p> <p>1 At Annual Surveys, the management conditions of plans and documents listed in Table B3.1 are to be examined.</p>																									
<p>Table B3.1 Examination of Plans and Documents</p> <table border="1"> <thead> <tr> <th align="center">Items</th> <th align="center">Examination</th> </tr> </thead> <tbody> <tr> <td>1 Loading Manual</td> <td>(1) For ships required to have the manual on board in accordance with the requirements of 3.8.1.1, Part 1, Part C, and 25.1.1, Part CS, confirmation that the manual is kept on board is to be made.</td> </tr> <tr> <td>2 Stability Information Booklet</td> <td>(1) Confirmation as to whether the booklet is kept on board is to be made.</td> </tr> <tr> <td>3 Damage Control Plan, Booklet and Damage Stability Information</td> <td>(1) For ships required to have the damage control plan on board in accordance with the requirement in 2.3.4, Part 1, Part C, confirmation that the approved plan is exhibited and the booklet containing the information shown in the plan and the damage stability information are kept on board is to be made.</td> </tr> <tr> <td>4 Fire Control Plan</td> <td>(1) Confirmation that the fire control plan is exhibited and properly stored is to be made.</td> </tr> <tr> <td>5 Operating and</td> <td>(1) For ships required to have the</td> </tr> </tbody> </table>	Items	Examination	1 Loading Manual	(1) For ships required to have the manual on board in accordance with the requirements of 3.8.1.1, Part 1, Part C, and 25.1.1, Part CS , confirmation that the manual is kept on board is to be made.	2 Stability Information Booklet	(1) Confirmation as to whether the booklet is kept on board is to be made.	3 Damage Control Plan, Booklet and Damage Stability Information	(1) For ships required to have the damage control plan on board in accordance with the requirement in 2.3.4, Part 1, Part C , confirmation that the approved plan is exhibited and the booklet containing the information shown in the plan and the damage stability information are kept on board is to be made.	4 Fire Control Plan	(1) Confirmation that the fire control plan is exhibited and properly stored is to be made.	5 Operating and	(1) For ships required to have the	<p>Table B3.1 Examination of Plans and Documents</p> <table border="1"> <thead> <tr> <th align="center">Items</th> <th align="center">Examination</th> </tr> </thead> <tbody> <tr> <td>1 Loading Manual</td> <td>(1) For ships required to have the manual on board in accordance with the requirements of 3.8.1.1, Part 1, Part C, and 25.1.1, Part CS, confirmation that the manual is kept on board is to be made.</td> </tr> <tr> <td>2 Stability Information Booklet</td> <td>(1) Confirmation as to whether the booklet is kept on board is to be made.</td> </tr> <tr> <td>3 Damage Control Plan, Booklet and Damage Stability Information</td> <td>(1) For ships required to have the damage control plan on board in accordance with the requirement in 2.3.4, Part 1, Part C, confirmation that the approved plan is exhibited and the booklet containing the information shown in the plan and the damage stability information are kept on board is to be made.</td> </tr> <tr> <td>4 Fire Control Plan</td> <td>(1) Confirmation that the fire control plan is exhibited and properly stored is to be made.</td> </tr> <tr> <td>5 Operating and</td> <td>(1) For ships required to have the</td> </tr> </tbody> </table>	Items	Examination	1 Loading Manual	(1) For ships required to have the manual on board in accordance with the requirements of 3.8.1.1, Part 1, Part C, and 25.1.1, Part CS , confirmation that the manual is kept on board is to be made.	2 Stability Information Booklet	(1) Confirmation as to whether the booklet is kept on board is to be made.	3 Damage Control Plan, Booklet and Damage Stability Information	(1) For ships required to have the damage control plan on board in accordance with the requirement in 2.3.4, Part 1, Part C , confirmation that the approved plan is exhibited and the booklet containing the information shown in the plan and the damage stability information are kept on board is to be made.	4 Fire Control Plan	(1) Confirmation that the fire control plan is exhibited and properly stored is to be made.	5 Operating and	(1) For ships required to have the	
Items	Examination																									
1 Loading Manual	(1) For ships required to have the manual on board in accordance with the requirements of 3.8.1.1, Part 1, Part C, and 25.1.1, Part CS , confirmation that the manual is kept on board is to be made.																									
2 Stability Information Booklet	(1) Confirmation as to whether the booklet is kept on board is to be made.																									
3 Damage Control Plan, Booklet and Damage Stability Information	(1) For ships required to have the damage control plan on board in accordance with the requirement in 2.3.4, Part 1, Part C , confirmation that the approved plan is exhibited and the booklet containing the information shown in the plan and the damage stability information are kept on board is to be made.																									
4 Fire Control Plan	(1) Confirmation that the fire control plan is exhibited and properly stored is to be made.																									
5 Operating and	(1) For ships required to have the																									
Items	Examination																									
1 Loading Manual	(1) For ships required to have the manual on board in accordance with the requirements of 3.8.1.1, Part 1, Part C, and 25.1.1, Part CS , confirmation that the manual is kept on board is to be made.																									
2 Stability Information Booklet	(1) Confirmation as to whether the booklet is kept on board is to be made.																									
3 Damage Control Plan, Booklet and Damage Stability Information	(1) For ships required to have the damage control plan on board in accordance with the requirement in 2.3.4, Part 1, Part C , confirmation that the approved plan is exhibited and the booklet containing the information shown in the plan and the damage stability information are kept on board is to be made.																									
4 Fire Control Plan	(1) Confirmation that the fire control plan is exhibited and properly stored is to be made.																									
5 Operating and	(1) For ships required to have the																									

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment		Original		Remarks
Maintenance Manual for the door and inner door and notices indicating procedures for closing and securing	<p>manual and notices on board in accordance with the requirements in 14.10, Part 1, Part C, and Chapter 21, Part CS;</p> <p>(2) Confirmation that the manual is kept on board is to be made.</p> <p>(3) Confirmation that the board is exhibited is to be made.</p>	Maintenance Manual for the door and inner door and notices indicating procedures for closing and securing	<p>manual and notices on board in accordance with the requirements in 14.10, Part 1, Part C, and Chapter 21, Part CS;</p> <p>(2) Confirmation that the manual is kept on board is to be made.</p> <p>(3) Confirmation that the board is exhibited is to be made.</p>	
6 Instruction Manuals for the Inert Gas System	(1) For ships required to have the manual on board in accordance with the requirements of 4.5.5, Part R , confirmation that the manual is kept on board is to be made.	6 Instruction Manuals for the Inert Gas System	(1) For ships required to have the manual on board in accordance with the requirements of 4.5.5, Part R , confirmation that the manual is kept on board is to be made.	
7 Towing and Mooring Fitting Arrangement Plan	(1) Confirmation that the Towing and Mooring Fitting Arrangement Plan specified in 14.4, Part 1, Part C or 23.2, Part CS is kept on board is to be made.	7 Towing and Mooring Fitting Arrangement Plan	(1) Confirmation that the Towing and Mooring Fitting Arrangement Plan specified in 14.4, Part 1, Part C or 23.2, Part CS is kept on board is to be made.	
8 Ship Structure Access Manual	(1) For ships required to have the manual on board in accordance with the requirements of 14.16.3.6, Part 1, Part C or 26.2.6, Part CS , confirmation that the manual is kept on board and updated as necessary is to be made.	8 Ship Structure Access Manual	(1) For ships required to have the manual on board in accordance with the requirements of 14.16.3.6, Part 1, Part C or 26.2.6, Part CS , confirmation that the manual is kept on board and updated as necessary is to be made.	
9 Documents related to the surveys for bulk carriers, oil tankers and ships carrying dangerous chemicals in bulk with integral tanks	(1) Confirmation that the documents are kept on board is to be made.	9 Documents related to the surveys for bulk carriers, oil tankers and ships carrying dangerous chemicals in bulk with integral tanks	(1) Confirmation that the documents are kept on board is to be made.	
10 Coating Technical File and/or Corrosion Resistant	(1) For ships required to have a Coating Technical File for	10 Coating Technical File and/or Corrosion Resistant	(1) For ships required to have a Coating Technical File for	

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment		Original		Remarks
Steel Technical File	<p>dedicated seawater ballast tanks, etc. on board in accordance with the requirements of 3.3.5.3, Part 1, Part C, 22.4.2, Part CS, 1.2.2 Section 5 Chapter 3, Part CSR-B or 2.1.1.2 Section 6, Part CSR-T, confirmation that the file is kept on board and that maintenance and repair work are properly recorded and kept on the file is to be made.</p> <p>(2) For ships required to have a Coating Technical File and/or a Corrosion Resistant Steel Technical File for cargo oil tanks on board in accordance with the requirements of 3.3.5.4, Part 1, Part C or 22.4.3, Part CS, confirmation that the files are kept on board and that maintenance and repair work are properly recorded and kept on the files is to be made.</p>	Steel Technical File	<p>dedicated seawater ballast tanks, etc. on board in accordance with the requirements of 3.3.5.3, Part 1, Part C, 22.4.2, Part CS, 1.2.2 Section 5 Chapter 3, Part CSR-B or 2.1.1.2 Section 6, Part CSR-T, confirmation that the file is kept on board and that maintenance and repair work are properly recorded and kept on the file is to be made.</p> <p>(2) For ships required to have a Coating Technical File and/or a Corrosion Resistant Steel Technical File for cargo oil tanks on board in accordance with the requirements of 3.3.5.4, Part 1, Part C or 22.4.3, Part CS, confirmation that the files are kept on board and that maintenance and repair work are properly recorded and kept on the files is to be made.</p>	
11 Noise survey report	(1) Confirmation that the report is kept on board	11 Noise survey report	(1) Confirmation that the report is kept on board	
12 Polar Water Operational Manual	(1) For ships required to have the manual on board in accordance with the requirements of 2.3.1, Part I, confirmation that the manual is kept on board is to be made.	12 Polar Water Operational Manual	(1) For ships required to have the manual on board in accordance with the requirements of 2.3.1, Part I, confirmation that the manual is kept on board is to be made.	
13 Drawings indicating critical structural areas, construction monitoring plan and all construction monitoring survey records	(1) For ships affixed with the notation “HCM” or “HCM-GBS”, confirmation that the documents are kept on board is to be made.	13 Drawings indicating critical structural areas, construction monitoring plan and all construction monitoring survey records	(1) For ships affixed with the notation “HCM” or “HCM-GBS”, confirmation that the documents are kept on board is to be made.	
14 Watertight cable	(1) Confirmation that the register is	14 Watertight cable	(1) Confirmation that the register is	

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment		Original		Remarks
	penetration register	kept on board and updated as necessary is to be made.	penetration register	The section number of the provision requiring to maintain on board is added as a reference.
15	Procedures for software and hardware change management and relevant change records	(1) Confirmation that the procedures for software and hardware change management are kept on board in accordance with 3.6.12-1, Part X. (2) Confirmation that the change records are updated in accordance with 3.6.11 and 3.6.12-1, Part X.	15 Procedures for software and hardware change management and relevant change records (1) Confirmation that the procedures for software and hardware change management are kept on board in accordance with 3.6.12-1, Part X. (2) Confirmation that the change records are updated in accordance with 3.6.11 and 3.6.12-1, Part X.	
16	Management plans for inspection and maintenance of mooring equipment (including mooring lines)	(1) <u>For ships required to have the plan on board in accordance with the requirements of 14.4.5.1, Part 1, Part C or 23.2.10, Part CS,</u> confirmation that the plan is kept on board and updated as necessary is to be made.	16 Management plans for inspection and maintenance of mooring equipment (including mooring lines) (1) Confirmation that the plan is kept on board and updated as necessary is to be made.	
EFFECTIVE DATE AND APPLICATION				
1. The effective date of the amendments is 26 December 2024.				

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment	Original	Remarks
<p style="text-align: center;">RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p style="text-align: center;">Part C HULL CONSTRUCTION AND EQUIPMENT</p> <p style="text-align: center;">Part 1 GENERAL HULL REQUIREMENTS</p> <p style="text-align: center;">Chapter 14 EQUIPMENT</p> <p>14.4 Towing and Mooring Arrangement</p> <p>14.4.2 Towing</p> <p>14.4.2.1 Tow Lines</p> <p>Where ships are provided with tow lines, <u>wire ropes</u> and fibre ropes used as tow lines are to comply the requirements in Chapter 4 and Chapter 5, Part L, respectively. The specifications of tow lines (e.g. breaking load, length) and the number of tow lines are to be in accordance with Table 14.3.1-1 according to ship equipment number. However, when calculating the equipment number, the effect of deck cargoes at the ship nominal capacity condition is to be considered with respect to the side-projected area <i>A</i>.</p> <p>(Deleted)</p>	<p style="text-align: center;">RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p style="text-align: center;">Part C HULL CONSTRUCTION AND EQUIPMENT</p> <p style="text-align: center;">Part 1 GENERAL HULL REQUIREMENTS</p> <p style="text-align: center;">Chapter 14 EQUIPMENT</p> <p>14.4 Towing and Mooring Arrangement</p> <p>14.4.2 Towing</p> <p>14.4.2.1 Tow Lines</p> <p>Where ships are provided with tow lines, <u>it is advised that tow lines are to be in accordance with the following (1) and (2).</u></p> <p>(1) <u>Wire ropes</u> and fibre ropes used as tow lines are to comply the requirements in Chapter 4 and Chapter 5, Part L, respectively. The specifications of tow lines (e.g. breaking load, length) and the number of tow lines are to be in accordance with Table 14.3.1-1 according to ship equipment number. However, when calculating the equipment number, the effect of deck cargoes at the ship nominal capacity condition is to be considered with respect to the side-projected area <i>A</i>.</p> <p>(2) <u>Fibre ropes used as tow lines are to be not less than 20</u></p>	

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment	Original	Remarks
<p>14.4.3 Mooring</p> <p>14.4.3.2 Mooring Lines*</p> <p>1 Mooring lines are to be in accordance with the following (1) to (4).</p> <p>(1) Ships are to be provided with mooring lines of which <i>LDBF</i> is more than <i>MBL_{sd}</i>.</p> <p>(2) Wire ropes or synthetic ropes used as mooring lines are to comply with the requirements in Chapter 4 and Chapter 5, Part L, respectively.</p> <p>(Deleted)</p> <p>(3) For mooring lines connected with powered winches where the rope is stored on the drum, steel cored wire ropes of suitable flexible construction may be used instead of fibre cored wire ropes subject to the approval by the Society.</p> <p>(4) The length of individual mooring lines may be reduced by up to 7 % of the lengths required in this section, provided that the actual total length of the stipulated number of mooring lines is not less than the required total length.</p>	<p><u><i>mm</i> in diameter in consideration of rope age degradation and wear. Therefore, the line design break force for such ropes is to be in accordance with the following (a) or (b):</u></p> <p><u>(a) Polyamide ropes: <i>LDBF</i> ≥ 120 % of the minimum breaking load specified in Table 14.3.1-1 according to equipment number.</u></p> <p><u>(b) Other synthetic ropes: <i>LDBF</i> ≥ 110 % of the minimum breaking load specified in Table 14.3.1-1 according to equipment number.</u></p> <p>14.4.3 Mooring</p> <p>14.4.3.2 Mooring Lines*</p> <p>1 Mooring lines are to be in accordance with the following (1) to (5).</p> <p>(1) Ships are to be provided with mooring lines of which <i>LDBF</i> is more than <i>MBL_{sd}</i>.</p> <p>(2) Wire ropes or synthetic ropes used as mooring lines are to comply with the requirements in Chapter 4 and Chapter 5, Part L, respectively.</p> <p>(3) <u>Fibre ropes used for mooring lines are to be not less than 20 <i>mm</i> in diameter.</u></p> <p>(4) For mooring lines connected with powered winches where the rope is stored on the drum, steel cored wire ropes of suitable flexible construction may be used instead of fibre cored wire ropes subject to the approval by the Society.</p> <p>(5) The length of individual mooring lines may be reduced by up to 7 % of the lengths required in this section, provided that the actual total length of the stipulated number of mooring lines is not less than the required total length.</p>	<p>Deleted the provision in 14.4.2.1(2) as IACS Recommendation No. 10 (Rev. 5) 2.3, on which the provision in 14.4.2.1(2) is based, has been deleted.</p> <p>Deleted the provision in 14.4.3.2-1(3) as IACS Recommendation No. 10 (Rev. 5) 2.3, on which the provision in 14.4.3.2-1(3) is based, has been deleted.</p>

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment	Original	Remarks
<p>14.4.3.4 Supporting Hull Structure 3 Allowable stresses of supporting hull structures are not to be more than the following: ((1) to (3) are omitted) (4) The means of finite element analysis are to be in accordance with the requirements in 14.4.2.2-4(4).</p> <p><u>14.4.5 Inspection and Maintenance of Mooring Equipment Including Mooring Lines</u></p> <p><u>14.4.5.1 Management Plans for Inspection and Maintenance of Mooring Equipment Including Mooring Lines</u> <u>Ships of not less than 500 gross tonnage are to have management plans for inspection and maintenance of mooring equipment including mooring lines deemed appropriate by the Society.</u></p> <p align="center">EFFECTIVE DATE AND APPLICATION</p> <ol style="list-style-type: none"> The effective date of the amendments is 26 December 2024. For ships subject to Part C of the Rules for the Survey and Construction of Steel Ships prior to its comprehensive revision by Rule No.62 on 1 July 2022 (hereinafter referred to as “old Part C of the Rules”), this amendment also applies to following requirements. 27.2.2-2, old Part C of the Rules 27.2.5-1, old Part C of the Rules 27.2.11, old Part C of the Rules (New) 	<p>14.4.3.4 Supporting Hull Structure 3 Allowable stresses of supporting hull structures are not to be more than the following: ((1) to (3) are omitted) (4) The means of finite element analysis are to be in accordance with the requirements in 14.4.2.3-4(3).</p> <p>(Newly added)</p>	<p>Correction of reference numbers.</p> <p>Clearly indicates that ships of not less than 500 gross tonnage are to have a management plans for inspection and maintenance of mooring equipment including mooring lines, which is required to be confirmed as available at classification surveys, annual surveys, etc. to be carried out on or after 1 January 2024. Note that this provision applies to ships engaged on international voyages in accordance with An1.3.1-7, Annex 1.1. Part 1, Part C.</p>

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment	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 23 EQUIPMENT</p> <p>23.2 Towing and Mooring Fittings</p> <p>23.2.2 Tow Lines</p> <p>Where ships are provided with tow lines, wire ropes and fibre ropes used as tow lines are to be comply with the requirements in Chapter 4 and Chapter 5, Part L of the Rules, respectively. The specifications of tow lines (e.g. breaking load, length) and the number of tow lines are to be in accordance with Table CS23.1 according to ship equipment numbers. However, when calculating the equipment number, the effect of deck cargoes at the ship nominal capacity condition is to be considered with respect to the side-projected area <i>A</i>.</p> <p>(Deleted)</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 23 EQUIPMENT</p> <p>23.2 Towing and Mooring Fittings</p> <p>23.2.2 Tow Lines</p> <p>Where ships are provided with tow lines, <u>it is advised that such two lines are to be in accordance with the following (1) and (2).</u></p> <p>(1) Wire ropes and fibre ropes used as tow lines are to be comply with the requirements in Chapter 4 and Chapter 5, Part L of the Rules, respectively. The specifications of tow lines (e.g. breaking load, length) and the number of tow lines are to be in accordance with Table CS23.1 according to ship equipment numbers. However, when calculating the equipment number, the effect of deck cargoes at the ship nominal capacity condition is to be considered with respect to the side-projected area <i>A</i>.</p> <p>(2) <u>Fibre ropes used as tow lines are to be not less than 20 mm in diameter in consideration of rope age degradation and wear. Therefore, the line design break force for such ropes is to be in accordance with the following (a) or (b):</u></p>	<p>Deleted the provision in 23.2.2(2) as IACS Recommendation No. 10 (Rev. 5) 2.3, on which</p>

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment	Original	Remarks
<p>23.2.5 Mooring Lines</p> <p>1 General</p> <p>(1) Ships are to be provided with mooring lines of which <i>LDBF</i> is more than <i>MBL_{sd}</i>.</p> <p>(2) Wire ropes or synthetic ropes used as mooring lines are to comply with the requirements in Chapter 4 and Chapter 5, Part L of the Rules, respectively.</p> <p>(Deleted)</p> <p>(3) For mooring lines connected with powered winches where the rope is stored on the drum, steel cord wire ropes of suitable flexible construction may be used instead of fibre cord wire ropes subject to the approval by the Society.</p> <p>(4) The length of individual mooring lines may be reduced by up to 7 % of the lengths required in this section, provided that the actual total length of the stipulated number of mooring lines is not less than the required total length required.</p>	<p>(a) <u>Polyamide ropes: <i>LDBF</i> ≥ 120 % of the minimum breaking load specified in Table CS23.1 according to equipment number.</u></p> <p>(b) <u>Other synthetic ropes: <i>LDBF</i> ≥ 110 % of the minimum breaking load specified in Table CS23.1 according to equipment number.</u></p> <p>23.2.5 Mooring Lines</p> <p>1 General</p> <p>(1) Ships are to be provided with mooring lines of which <i>LDBF</i> is more than <i>MBL_{sd}</i>.</p> <p>(2) Wire ropes or synthetic ropes used as mooring lines are to comply with the requirements in Chapter 4 and Chapter 5, Part L of the Rules, respectively.</p> <p>(3) Fibre ropes used for mooring lines are to be not less than 20 <i>mm</i> in diameter.</p> <p>(a) Polyamide ropes: <i>LDBF</i> ≥ 120 % of <i>MBL_{sd}</i></p> <p>(b) Other synthetic ropes: <i>LDBF</i> ≥ 110 % of <i>MBL_{sd}</i></p> <p>(4) For mooring lines connected with powered winches where the rope is stored on the drum, steel cord wire ropes of suitable flexible construction may be used instead of fibre cord wire ropes subject to the approval by the Society.</p> <p>(5) The length of individual mooring lines may be reduced by up to 7 % of the lengths required in this section, provided that the actual total length of the stipulated number of mooring lines is not less than the required total length required.</p>	<p>the provision in 23.2.2(2) is based, has been deleted.</p> <p>Deleted the provision in 23.2.5-1(3) as IACS Recommendation No. 10 (Rev. 5) 2.3, on which the provision in 23.2.5-1(3) is based, has been deleted.</p>

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment	Original	Remarks
<p><u>23.2.10 Inspection and Maintenance of Mooring Equipment Including Mooring Lines</u> <u>Ships are to have management plans for inspection and maintenance of mooring equipment including mooring lines deemed appropriate by the Society.</u></p> <p align="center">EFFECTIVE DATE AND APPLICATION</p> <p>1. The effective date of the amendments is 26 December 2024.</p>	<p align="center">(Newly added)</p>	<p>Clearly indicates that ships are to have a management plans for inspection and maintenance of mooring equipment including mooring lines, which is required to be confirmed as available at classification surveys, annual surveys, etc. to be carried out on or after 1 January 2024.</p> <p>Note that this provision applies to ships of not less than 500 gross tonnage engaged on international voyages in accordance with 23.2.1-1, Part CS of the Rules and CS1.1.1-4, Part CS of the Guidance.</p>

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment	Original	Remarks
<p align="center">RULES FOR THE SURVEY AND CONSTRUCTION OF PASSENGER SHIPS</p> <p align="center">Part 2 CLASS SURVEY</p> <p align="center">Chapter 2 CLASSIFICATION SURVEYS</p> <p>2.1 Classification Survey during Construction</p> <p>2.1.6 Documents to be Maintained On Board*</p> <p>1 At the completion of a classification survey, the Surveyor confirms that the following drawings, plans, manuals, lists, etc., as applicable, of finished version are on board.</p> <p>(1) is omitted)</p> <p>(2) Other manuals, etc. (a) to (o) are omitted (p) Management plans for inspection and maintenance of mooring equipment including mooring lines <u>(1.1.1-4, Part 3)</u></p> <p>((3) is omitted)</p> <p align="center">EFFECTIVE DATE AND APPLICATION</p> <p>1. The effective date of the amendments is 26 December 2024.</p>	<p align="center">RULES FOR THE SURVEY AND CONSTRUCTION OF PASSENGER SHIPS</p> <p align="center">Part 2 CLASS SURVEY</p> <p align="center">Chapter 2 CLASSIFICATION SURVEYS</p> <p>2.1 Classification Survey during Construction</p> <p>2.1.6 Documents to be Maintained On Board*</p> <p>1 At the completion of a classification survey, the Surveyor confirms that the following drawings, plans, manuals, lists, etc., as applicable, of finished version are on board.</p> <p>(1) is omitted)</p> <p>(2) Other manuals, etc. (a) to (o) are omitted (p) Management plans for inspection and maintenance of mooring equipment (including mooring lines)</p> <p>((3) is omitted)</p>	<p>The section number of the provision requiring to maintain on board is added as a reference.</p>

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment	Original	Remarks
<p style="text-align: center;">GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p style="text-align: center;">Part B CLASS SURVEYS</p> <p style="text-align: center;">B2 CLASSIFICATION SURVEYS</p> <p>B2.1 Classification Survey during Construction</p> <p>B2.1.6 Documents to be Maintained On Board 10 The management plans for inspection and maintenance of mooring equipment including mooring lines specified in 2.1.6-1(2)(y), Part B of the Rules are to be prepared in accordance with <i>MSC.1/Circ.1620</i> and are to include the following (1) to (6).</p> <p>(1) Procedures for mooring equipment including mooring lines operations, inspection and maintenance.</p> <p>(2) Procedures to allow the identification and management of mooring lines, tails and associated attachments.</p> <p>(3) Manufacturer criteria for mooring line replacement.</p> <p>(4) Records of the original mooring design concepts, equipment, arrangements and specifications. For ships the keels of which were laid before 1 January 2007 and which are without appropriate documentation, <i>MBL_{sd}</i> should be established in accordance with the following (a) and (b).</p> <p>(a) <i>MBL_{sd}</i> should be established based on the Safe</p>	<p style="text-align: center;">GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p style="text-align: center;">Part B CLASS SURVEYS</p> <p style="text-align: center;">B2 CLASSIFICATION SURVEYS</p> <p>B2.1 Classification Survey during Construction</p> <p>B2.1.6 Documents to be Maintained On Board 10 The management plans for inspection and maintenance of mooring equipment (including mooring lines) specified in 2.1.6-1(2)(y), Part B of the Rules are to be prepared in accordance with <i>MSC.1/Circ.1620</i> and are to include the following (1) to (6).</p> <p>(1) Procedures for mooring equipment (including mooring lines) operations, inspection and maintenance.</p> <p>(2) Procedures to allow the identification and management of mooring lines, tails and associated attachments.</p> <p>(3) Manufacturer criteria for mooring line replacement.</p> <p>(4) Records of the original mooring design concepts, equipment, arrangements and specifications. For ships the keels of which were laid before 1 January 2007 and which are without appropriate documentation, <i>MBL_{sd}</i> should be established in accordance with the following (a) and (b).</p> <p>(a) <i>MBL_{sd}</i> should be established based on the Safe</p>	

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment	Original	Remarks
<p>Working Load (<i>SWL</i>) of the mooring equipment provided on board.</p> <p>(b) If no safe working load is specified, the strength of the mooring equipment and its supporting hull structure should be checked based on 14.4.3, Part 1, Part C of the Rules and determine MBL_{sd} based on the actual capacity of the equipment on board and its supporting hull structure.</p> <p>(5) Manufacturers' test certificates for mooring lines, joining shackles and synthetic tails</p> <p>(6) Records of mooring equipment inspections and maintenance, and mooring line inspections and replacement. <u>The selection of replacement mooring lines is to be in accordance with the following (a) to (g).</u></p> <p><u>(a) When replacing mooring lines, compatibility with the mooring equipment and fittings on board, as specified in the mooring arrangement plan, is to be taken into account, and a replacement mooring line which meets the designed specification is to be selected.</u></p> <p><u>(b) In cases where (a) above cannot be satisfied, the following i) to vii) properties are to be taken into consideration and the towing and mooring arrangement plan updated accordingly.</u></p> <p><u>i) breaking strength;</u></p> <p><u>ii) environmental conditions to be used (e.g. temperature);</u></p> <p><u>iii) linear density;</u></p> <p><u>iv) tenacity;</u></p> <p><u>v) D/d ratios;</u></p> <p><u>vi) compression fatigue; and</u></p> <p><u>vii) stiffness.</u></p>	<p>Working Load (<i>SWL</i>) of the mooring equipment provided on board.</p> <p>(b) If no safe working load is specified, the strength of the mooring equipment and its supporting hull structure should be checked based on 14.4.3, Part1, Part C of the Rules and determine MBL_{sd} based on the actual capacity of the equipment on board and its supporting hull structure.</p> <p>(5) Manufacturers' test certificates for mooring lines, joining shackles and synthetic tails</p> <p>(6) Records of mooring equipment inspections and maintenance, and mooring line inspections and replacement.</p> <p>(Newly added)</p>	<p>For the management plans for inspection and maintenance of mooring equipment including mooring lines, which is required to be confirmed as available at classification surveys, annual surveys, etc. to be carried out on or after 1 January 2024, clearly indicates the requirements for the selection of replacement mooring lines in</p>

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment	Original	Remarks
<p><u>(c) Any increase in LDBF for the mooring lines above the limits specified, i.e. 100 % to 105 % of the MBLSD, may require a review of the operating parameters and design loads of mooring equipment and fittings, and their associated hull supporting structures.</u></p> <p><u>(d) It is be considered that their strength will decay due to varying environmental conditions and thus the original service life expectations may not be achieved.</u></p> <p><u>(e) For wire ropes, corrosion protection is to be considered.</u></p> <p><u>(f) The acceptable minimum bend radius (D/d ratio) recommended by the manufacturer is to be taken into consideration. The mooring line regularly exposed to below the acceptable minimum bend radius is to be subject to particular attention during inspections, taking into account the possibility that they may need to be replaces before the end of the service life recommended by the manufacturer.</u></p> <p><u>(g) When selecting replacement mooring lines with high stiffness, consideration is to be given to the use of synthetic tails. The effect of the use of synthetic tail on the stored energy and possible snap-back of the high stiffness mooring lines is to also be considered.</u></p>		<p>accordance with MSC.1/Circ.1620, para 5.</p>

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment	Original	Remarks
<p align="center">B3 ANNUAL SURVEYS</p> <p>B3.2 Annual Surveys for Hull, Equipment, Fire Extinction and Fittings</p> <p>B3.2.1 Examination of Plans and Documents <u>8 Confirmation of the management plans for inspection and maintenance of mooring equipment including mooring lines referred to in item 16, Table B3.1, 3.2.1, Part B of the Rules is required from 1 January 2024 and the contents of the plans are to be in accordance with B2.1.6-10.</u></p> <p align="center">EFFECTIVE DATE AND APPLICATION</p> <p>1. The effective date of the amendments is 26 December 2024.</p>	<p align="center">B3 ANNUAL SURVEYS</p> <p>B3.2 Annual Surveys for Hull, Equipment, Fire Extinction and Fittings</p> <p>B3.2.1 Examination of Plans and Documents (Newly added)</p>	

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment	Original	Remarks
<p>GUIDANCE 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>C14 EQUIPMENT</p> <p>C14.4 Towing and Mooring Arrangement</p> <p><u>C14.4.5 Inspection and Maintenance of Mooring Equipment Including Mooring Lines</u></p> <p><u>C14.4.5.1 Management Plans for Inspection and Maintenance of Mooring Equipment Including Mooring Lines</u></p> <p><u>The wording “deemed appropriate by the Society” in 14.4.5.1, Part 1, Part C of the Rules means those which are in accordance with B2.1.6-10, Part B of the Guidance.</u></p> <p>EFFECTIVE DATE AND APPLICATION</p> <p>1. The effective date of the amendments is 26 December 2024.</p>	<p>GUIDANCE 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>C14 EQUIPMENT</p> <p>C14.4 Towing and Mooring Arrangement</p> <p>(Newly added)</p>	

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment	Original	Remarks
<p>2. For ships subject to Part C of the Guidance for the Survey and Construction of Steel Ships prior to its comprehensive revision by Notice No.47 on 1 July 2022 (hereinafter referred to as “old Part C of the Guidance”), this amendment also applies to C27.2.11, old Part C of the Guidance (New).</p>		

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment	Original	Remarks
<p align="center">GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p align="center">Part CS HULL CONSTRUCTION AND EQUIPMENT OF SMALL SHIPS</p> <p align="center">CS23 EQUIPMENT</p> <p align="center">CS23.2 Towing and Mooring Fittings</p> <p><u>CS23.2.10 Inspection and Maintenance of Mooring Equipment Including Mooring Lines</u> <u>The wording “deemed appropriate by the Society” in 23.2.10, Part CS of the Rules means those which are in accordance with B2.1.6-10, Part B of the Guidance.</u></p> <p align="center">EFFECTIVE DATE AND APPLICATION</p> <p>1. The effective date of the amendments is 26 December 2024.</p>	<p align="center">GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p align="center">Part CS HULL CONSTRUCTION AND EQUIPMENT OF SMALL SHIPS</p> <p align="center">CS23 EQUIPMENT</p> <p align="center">CS23.2 Towing and Mooring Fittings</p> <p align="center">(Newly added)</p>	

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment	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 2 CLASSIFICATION SURVEYS</p> <p>2.1 Classification Survey during Construction</p> <p>2.1.6 Documents to be Maintained On Board</p> <p>2 The management plans for inspection and maintenance of mooring equipment (including mooring lines) specified in 2.1.7-1(2)(p), Part 2 of the Rules are to be prepared in accordance with <i>MSC.1/Circ.1620</i> and are to include the following (1) to (6).</p> <p>(1) Procedures for mooring equipment (including mooring lines) operations, inspection and maintenance.</p> <p>(2) Procedures to allow the identification and management of mooring lines, tails and associated attachments.</p> <p>(3) Manufacturer criteria for mooring line replacement.</p> <p>(4) Records of the original mooring design concepts, equipment, arrangements and specifications. For ships the keels of which were laid before 1 January 2007 and which are without appropriate documentation, <i>MBL_{sd}</i> should be established in accordance with the following (a) and (b).</p> <p>(a) <i>MBL_{sd}</i> should be established based on the Safe</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 2 CLASSIFICATION SURVEYS</p> <p>2.1 Classification Survey during Construction</p> <p>2.1.6 Documents to be Maintained On Board</p> <p>2 The management plans for inspection and maintenance of mooring equipment (including mooring lines) specified in 2.1.7-1(2)(p), Part 2 of the Rules are to be prepared in accordance with <i>MSC.1/Circ.1620</i> and are to include the following (1) to (6).</p> <p>(1) Procedures for mooring equipment (including mooring lines) operations, inspection and maintenance.</p> <p>(2) Procedures to allow the identification and management of mooring lines, tails and associated attachments.</p> <p>(3) Manufacturer criteria for mooring line replacement.</p> <p>(4) Records of the original mooring design concepts, equipment, arrangements and specifications. For ships the keels of which were laid before 1 January 2007 and which are without appropriate documentation, <i>MBL_{sd}</i> should be established in accordance with the following (a) and (b).</p> <p>(a) <i>MBL_{sd}</i> should be established based on the Safe</p>	

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment	Original	Remarks
<p>Working Load (<i>SWL</i>) of the mooring equipment provided on board.</p> <p>(b) If no safe working load is specified, the strength of the mooring equipment and its supporting hull structure should be checked based on 14.4.3, Part 1, Part C of the Rules and determine <i>MBL_{sd}</i> based on the actual capacity of the equipment on board and its supporting hull structure.</p> <p>(5) Manufacturers' test certificates for mooring lines, joining shackles and synthetic tails</p> <p>(6) Records of mooring equipment inspections and maintenance, and mooring line inspections and replacement. <u>The selection of replacement mooring lines is to be in accordance with the following (a) to (g).</u></p> <p><u>(a) When replacing mooring lines, compatibility with the mooring equipment and fittings on board, as specified in the mooring arrangement plan, is to be taken into account, and a replacement mooring line which meets the designed specification is to be selected.</u></p> <p><u>(b) In cases where (a) above cannot be satisfied, the following i) to vii) properties are to be taken into consideration and the towing and mooring arrangement plan updated accordingly.</u></p> <p><u>i) breaking strength;</u></p> <p><u>ii) environmental conditions to be used (e.g. temperature);</u></p> <p><u>iii) linear density;</u></p> <p><u>iv) tenacity;</u></p> <p><u>v) D/d ratios;</u></p> <p><u>vi) compression fatigue; and</u></p> <p><u>vii) stiffness.</u></p>	<p>Working Load (<i>SWL</i>) of the mooring equipment provided on board.</p> <p>(b) If no safe working load is specified, the strength of the mooring equipment and its supporting hull structure should be checked based on 14.4.3, Part 1, Part C of the Rules and determine <i>MBL_{sd}</i> based on the actual capacity of the equipment on board and its supporting hull structure.</p> <p>(5) Manufacturers' test certificates for mooring lines, joining shackles and synthetic tails</p> <p>(6) Records of mooring equipment inspections and maintenance, and mooring line inspections and replacement.</p> <p>(Newly added)</p>	<p>Same as in B2.1.6-11, Part B of the Guidance.</p> <p>For the management plans for inspection and maintenance of mooring equipment including mooring lines, which is required to be confirmed as available at classification surveys, annual surveys, etc. to be carried out on or after 1 January 2024, clearly indicates the</p>

Amended-Original Requirements Comparison Table (Clarification of Requirements for Towing and Mooring Equipment)

Amendment	Original	Remarks
<p>(c) <u>Any increase in LDBF for the mooring lines above the limits specified, i.e. 100 % to 105 % of the MBLSD, may require a review of the operating parameters and design loads of mooring equipment and fittings, and their associated hull supporting structures.</u></p> <p>(d) <u>It is be considered that their strength will decay due to varying environmental conditions and thus the original service life expectations may not be achieved.</u></p> <p>(e) <u>For wire ropes, corrosion protection is to be considered.</u></p> <p>(f) <u>The acceptable minimum bend radius (D/d ratio) recommended by the manufacturer is to be taken into consideration. The mooring line regularly exposed to below the acceptable minimum bend radius is to be subject to particular attention during inspections, taking into account the possibility that they may need to be replaces before the end of the service life recommended by the manufacturer.</u></p> <p>(g) <u>When selecting replacement mooring lines with high stiffness, consideration is to be given to the use of synthetic tails. The effect of the use of synthetic tail on the stored energy and possible snap-back of the high stiffness mooring lines is to also be considered.</u></p> <p>EFFECTIVE DATE AND APPLICATION</p> <p>1. The effective date of the amendments is 26 December 2024.</p>		<p>requirements for the selection of replacement mooring lines in accordance with MSC.1/Circ.1620, para 5.</p>