18-380

RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

Part B Class Surveys

Rules for the Survey and Construction of Steel Ships
Part B 2018 AMENDMENT NO.3
Guidance for the Survey and Construction of Steel Ships
Part B 2018 AMENDMENT NO.2

Rule No.134 / Notice No.103 25 December 2018
Resolved by Technical Committee on 1 August 2018

ClassNK
NIPPON KAIJI KYOKAI

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

RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

RULES

Part B Class Surveys

2018 AMENDMENT NO.3

Rule No.134 25 December 2018

Resolved by Technical Committee on 1 August 2018

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

Rule No.134 25 December 2018
AMENDMENT TO THE RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

"Rules for the survey and construction of steel ships" has been partly amended as follows:

Part B CLASS SURVEYS

Amendment 3-1

Chapter 2 CLASSIFICATION SURVEYS

2.1 Classification Survey during Construction

2.1.2 Submission of Plans and Documents for Approval*

Sub-paragraph -1(2) has been amended as follows.

1 When it is intended to build a ship for classification by the Society, the following plans and documents are to be submitted for the approval by the Society before the work is commenced. The plans and documents may be submitted for examination by the Society prior to making an application for the classification of the ship as stipulated otherwise by the Society.

(1) (Omitted)
(2) Machinery
  (a) (Omitted)
  (b) Main and auxiliary engines (including their attachments):
    Plans and data specified in **2.1.3-1(1)**, **3.1.2(1)** and **4.1.2(1), Part D** in relation to the kind of engine as well as documents showing specifications of louvers for emergency generator rooms and closing appliances of ventilators fitted to the rooms (if they are of a power-operated type.)
  (c) Power transmission gears, shafting and propellers:
    Plans and data specified in **5.1.2**, **6.1.2(1)**, **7.1.2** and **8.1.2, Part D**
  ((d) to (f) are omitted.)
  (g) Automatic and remote controls:
    Plans and data specified in **18.1.3(1), Part D**
  (h) Spare parts:
    List of spare parts specified in ~~**Chapter**~~ **21.1.2, Part D**
  (i) (Omitted)
((3) to (7) are omitted.)

2.1.3 Submission of Other Plans and Documents

Sub-paragraph -1(7) has been amended as follows.

1 When it is intended to build a ship to the classification with the Society the following plans and documents are to be submitted, in addition to those required in **2.1.2**:

((1) to (6) are omitted.)

(7) The following plans and documents related to machinery:

(a) Main and auxiliary engines (including their attachments):
Plans and data specified in **2.1.3-1(2)** and **(3)**, **3.1.2(2)** and **4.1.2(2), Part D**

(b) Power transmission gears, shafting and propellers:
Plans and data specified in **6.1.2(2), Part D**

(~~a~~c) Auxiliary machinery and piping:
Plans and data specified in **16.2.2(2)**, **Part D**

(d) Automatic and remote controls:
Plans and data specified in **18.1.3(2), Part D**

((8) to (14) are omitted.)

EFFECTIVE DATE AND APPLICATION (Amendment 3-1)

1. The effective date of the amendments is 25 December 2018.

2. Notwithstanding the amendments to the Rules, the current requirements apply to ships for which the date of contract for construction* is before the effective date.

3. Notwithstanding the provision of preceding **2.**, the amendments to the Rules may apply to ships for which the date of contract for construction* is before the effective date upon request by the owner or the manufacturer.

* "contract for construction" is defined in the latest version of IACS Procedural Requirement (PR) No.29.

IACS PR No.29 (Rev.0, July 2009)

1. The date of "contract for construction" of a vessel is the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. This date and the construction numbers (i.e. hull numbers) of all the vessels included in the contract are to be declared to the classification society by the party applying for the assignment of class to a newbuilding.

2. The date of "contract for construction" of a series of vessels, including specified optional vessels for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the prospective owner and the shipbuilder.
For the purpose of this Procedural Requirement, vessels built under a single contract for construction are considered a "series of vessels" if they are built to the same approved plans for classification purposes. However, vessels within a series may have design alterations from the original design provided:
(1) such alterations do not affect matters related to classification, or
(2) If the alterations are subject to classification requirements, these alterations are to comply with the classification requirements in effect on the date on which the alterations are contracted between the prospective owner and the shipbuilder or, in the absence of the alteration contract, comply with the classification requirements in effect on the date on which the alterations are submitted to the Society for approval.
The optional vessels will be considered part of the same series of vessels if the option is exercised not later than 1 year after the contract to build the series was signed.

3. If a contract for construction is later amended to include additional vessels or additional options, the date of "contract for construction" for such vessels is the date on which the amendment to the contract, is signed between the prospective owner and the shipbuilder. The amendment to the contract is to be considered as a "new contract" to which **1.** and **2.** above apply.

4. If a contract for construction is amended to change the ship type, the date of "contract for construction" of this modified vessel, or vessels, is the date on which revised contract or new contract is signed between the Owner, or Owners, and the shipbuilder.

Note:
This Procedural Requirement applies from 1 July 2009.

Amendment 3-2

Chapter 2 CLASSIFICATION SURVEYS

2.1 Classification Survey during Construction

2.1.2 Submission of Plans and Documents for Approval*

Sub-paragraph -14 has been added as follows.

14 For ships subject to *SOLAS Chapter II-1 Regulation 3-10*, which are contracted for construction on or after 1 January 2018, drawings showing areas requiring special attention throughout the ship's life, including critical structural areas, are to be submitted for approval by the Society.

EFFECTIVE DATE AND APPLICATION (Amendment 3-2)

1. The effective date of the amendments is 25 December 2018.

Amendment 3-3

Chapter 1 GENERAL

1.1 Surveys

Paragraph 1.1.11 has been added as follows.

1.1.11 General Dry Cargo Ships

For general dry cargo ships with hybrid cargo hold arrangements, e.g. with some cargo holds of single-side skin and others of double-side skin, the requirements of general dry cargo ships are to be applied only to structure in way of the single-side skin cargo hold region.

Chapter 4 INTERMEDIATE SURVEYS

Section 4.7 has been added as follows.

4.7 Special Requirements for Bulk Carriers and Oil Tankers

4.7.1 General

In addition to the requirements of **4.2** and **4.3**, the requirements of **4.7** apply to the Intermediate Surveys of bulk carriers and oil tankers subject to *SOLAS Chapter II-1 Regulation 3-10*.

4.7.2 Surveys

In cases where considered necessary by the Surveyor, examinations are to be carried out on the ship's structure, taking into account areas identified in the Ship Construction File as needing special attention.

Chapter 5 SPECIAL SURVEYS

5.2 Special Surveys for Hull, Equipment, Fire Extinction and Fittings

5.2.4 Internal Examinations of Spaces and Tanks*

Sub-paragraph -4 has been added as follows.

4 At Special Survey No. 3 and subsequent special surveys, in addition to **-1** to **-3**, structural downflooding ducts and structural ventilation ducts are to be internally examined.

5.2.5 Close-up Surveys*

2 At Special Surveys for oil tankers and ships carrying dangerous chemical in bulk with integral tanks, notwithstanding the provision of **-1** above, a Close-up Survey is to be carried out for structural members listed in **Table B5.5-1**.

Table B5.5-1 has been amended as follows.

Table B5.5-1 Requirements of Close-up Surveys for Oil Tankers and Ships Carrying Dangerous Chemicals in Bulk with integral tanks

Special Survey	Structural members subject to the Close-up Survey
Requirements for Tankers and Ships Carrying Dangerous Chemicals in bulk without Double Hull Structure	
(Omitted)	
Requirements for Tankers and Ships Carrying Dangerous Chemicals in bulk having Double Hull Structure	
Special Survey for ships up to 5 *years* of age (Special Survey No.1)	1. One Web Frame (A) - in a ballast double hull tank[*2] 2. One Deck Transverse (B) - in a cargo tank or on deck 3. One Transverse Bulkhead (C) - in a ballast double hull tank[*2] 4. The lower part of one Transverse Bulkhead (D) - in a cargo wing tank[*3] 5. The lower part of one Transverse Bulkhead (D) - in a cargo centre tank
Special Survey for ships over 5 *years* and up to 10 *years* of age (Special Survey No.2)	1. All Web Frames (A) - in a ballast double hull tank[*2] 2. The knuckle area and the top part of one Web Frame (G) - in each remaining ballast tank 3. One Deck Transverse (B) - in or on two cargo tanks 4. One Transverse Bulkhead (C) - in all ballast double hull tanks[*2] 5. The lower part of one Transverse Bulkhead (D) - in a cargo wing tank[*3] 6. The lower part of one Transverse Bulkhead (D) - in two cargo centre tanks
Special Survey for ships over 10 *years* and up to 15 *years* of age (Special Survey No.3)	1. All Web Frames (A) - in all ballast tanks 2. All Web Frames (A) - in a cargo wing tank (or a cargo tank for oil tankers) 3. One Web Frame (A) - in each remaining cargo tank 4. All Transverse Bulkheads (C) - in all cargo and ballast tanks
Special Survey for ships over 15 *years* of age (Special Survey No.4 and subsequent Special Surveys)	As Special Survey No.3. Additional transverses included as deemed necessary by the Surveyor.

Notes:

Letters in this table mean:

(A): Cross ties and complete transverse web frame ring including adjacent structural members such as shell plating, longitudinal bulkheads, longitudinal stiffeners, and brackets

(B): Including deck structural members adjacent to deck transverses such as deck plating, longitudinal stiffeners, and

brackets

(C) and (D): Including vertical and horizontal girders and structural members adjacent to transverse bulkheads such as longitudinal bulkheads, inner bottom plating, hopper plating, bottom girders, brackets, and stiffeners; and internal structure of lower and upper stools, where fitted

(E): Including structural members adjacent to deck and bottom transverses such as deck plating, bottom plating, and longitudinal stiffeners

(F): Additional complete transverse web frame ring including adjacent structural members listed in A

(G): The knuckle area includes the slope hopper plating and where it connects to the inner hull bulkhead and inner bottom plating; up to 2 *meters* from the corners along the bulkhead and double bottom; and adjacent structural members
The top part includes the top 5 *meters* (3 *meters* for ships carrying dangerous chemicals in bulk) of the web frame and adjacent structural members

*1: The 30% is to be rounded up to the next whole integer

*2: "Ballast double hull tank" means ~~all ballast tanks consisting of the double bottom tank, double side tank, and double deck tank, as applicable, even though these tanks are separate~~ the following, apart from the fore and aft peak tanks:

(a): all ballast compartments (hopper tank, side tank and double-deck tank, if separate from double-bottom tank) located on one side, i.e. portside or starboard side, and additionally double-bottom tank on portside plus starboard side, when the longitudinal central girder is not watertight and, therefore, the double bottom tank is a unique compartment from portside to starboard side; or

(b): all ballast compartments (double-bottom tank, hopper tank, side tank and double-deck tank) located on one side, i.e. portside or starboard side, when the longitudinal central girder is watertight and, therefore, the portside double-bottom tank separate from the starboard-side double-bottom tank.

*3: For double hull that have no centre cargo tanks (as in the case of tanks with a centre longitudinal bulkhead), transverse bulkheads in wing tanks are to be surveyed

Section 5.7 has been added as follows.

5.7 Special Requirements for Bulk Carriers and Oil Tankers

5.7.1 General

In addition to the requirements of **5.2** and **5.3**, the requirements of **5.7** apply to the Special Surveys of bulk carriers and oil tankers subject to *SOLAS Chapter II-1 Regulation 3-10*.

5.7.2 Surveys

In cases where considered necessary by the Surveyor, examinations are to be carried out on the ship's structure, taking into account areas identified in the Ship Construction File as needing special attention.

Fig. B5.7 to Fig. B5.10 have been amended as follows.

Fig. B5.7 Example of Locations subject to Thickness Measurements in Transverse Sections (Double Hull Oil Tankers)

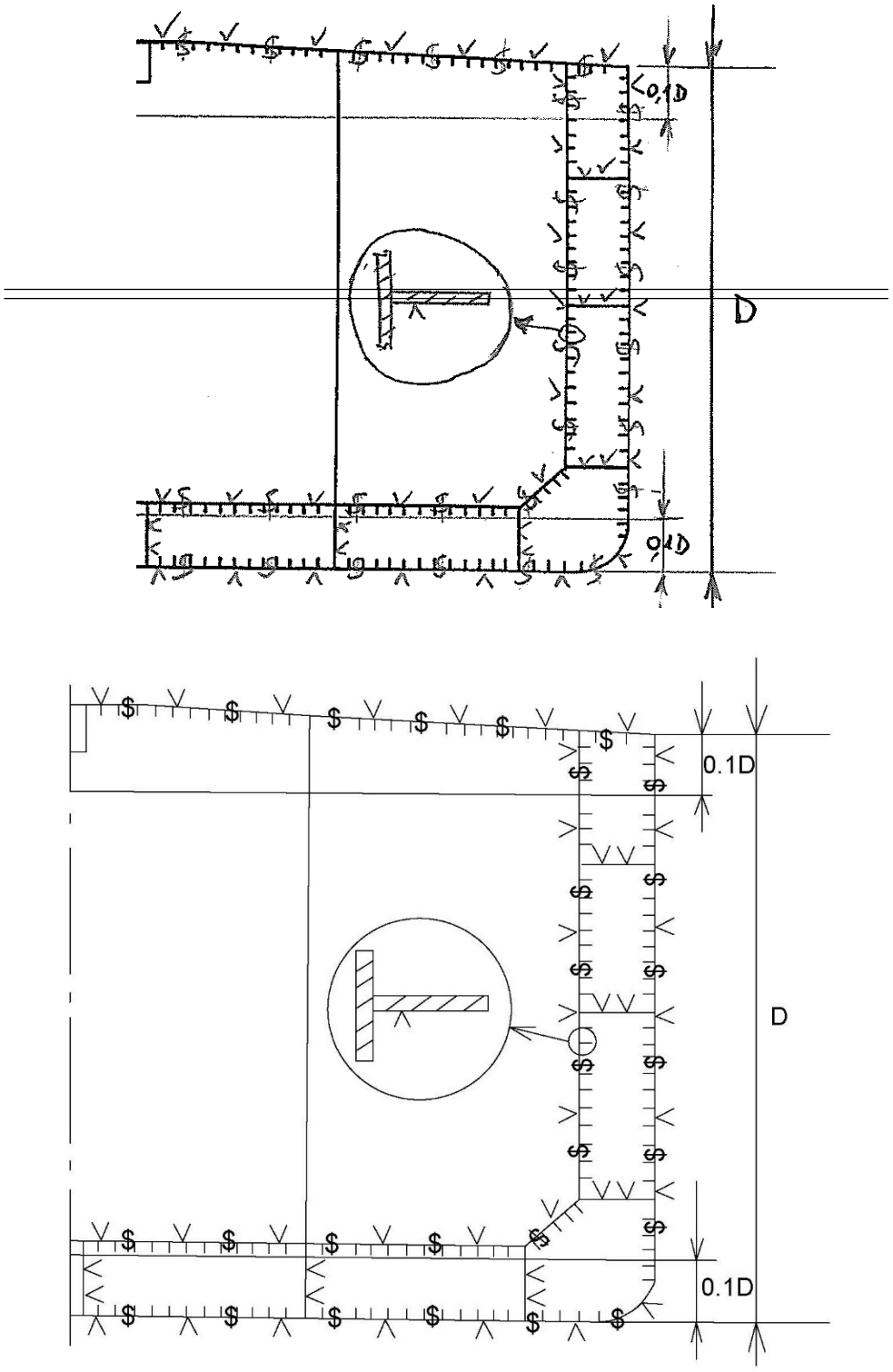
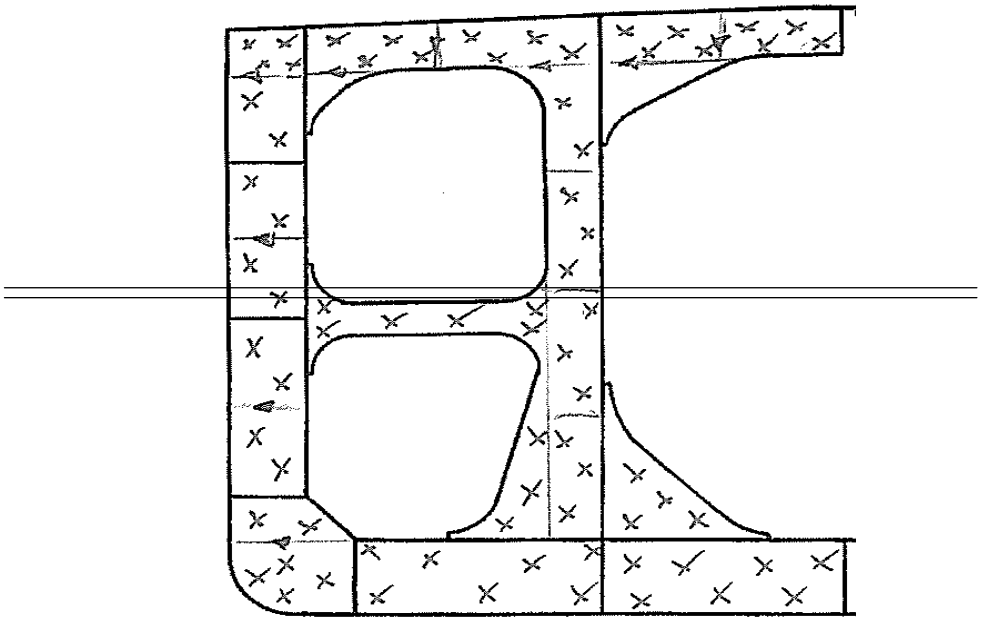


Fig. B5.8 Example of Locations subject to Thickness Measurements on Transverse Rings in Cargo and Ballast Tanks (Double Hull Oil Tankers)



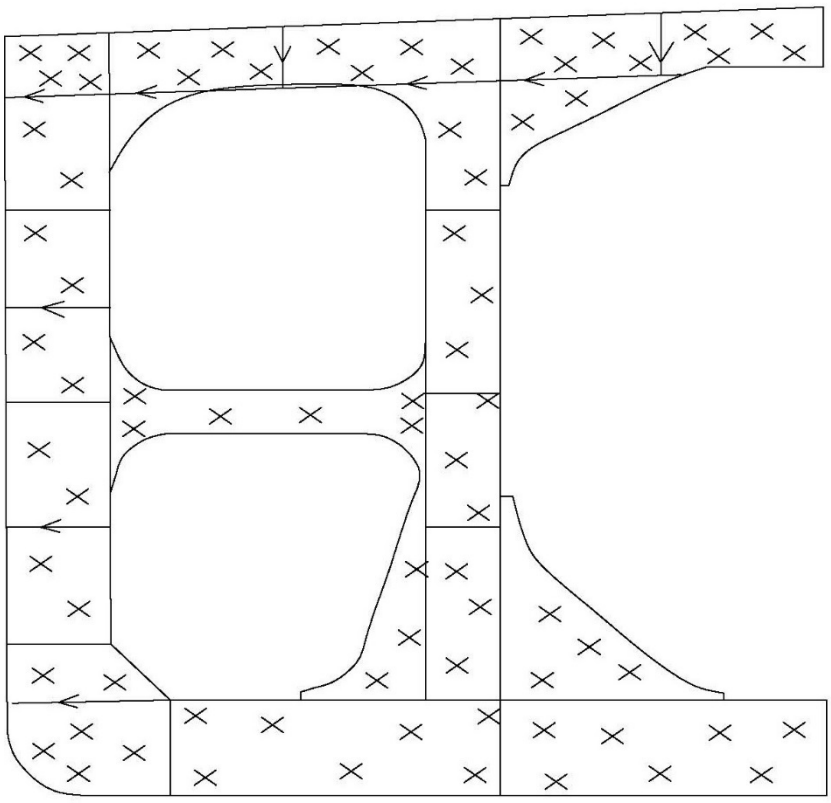
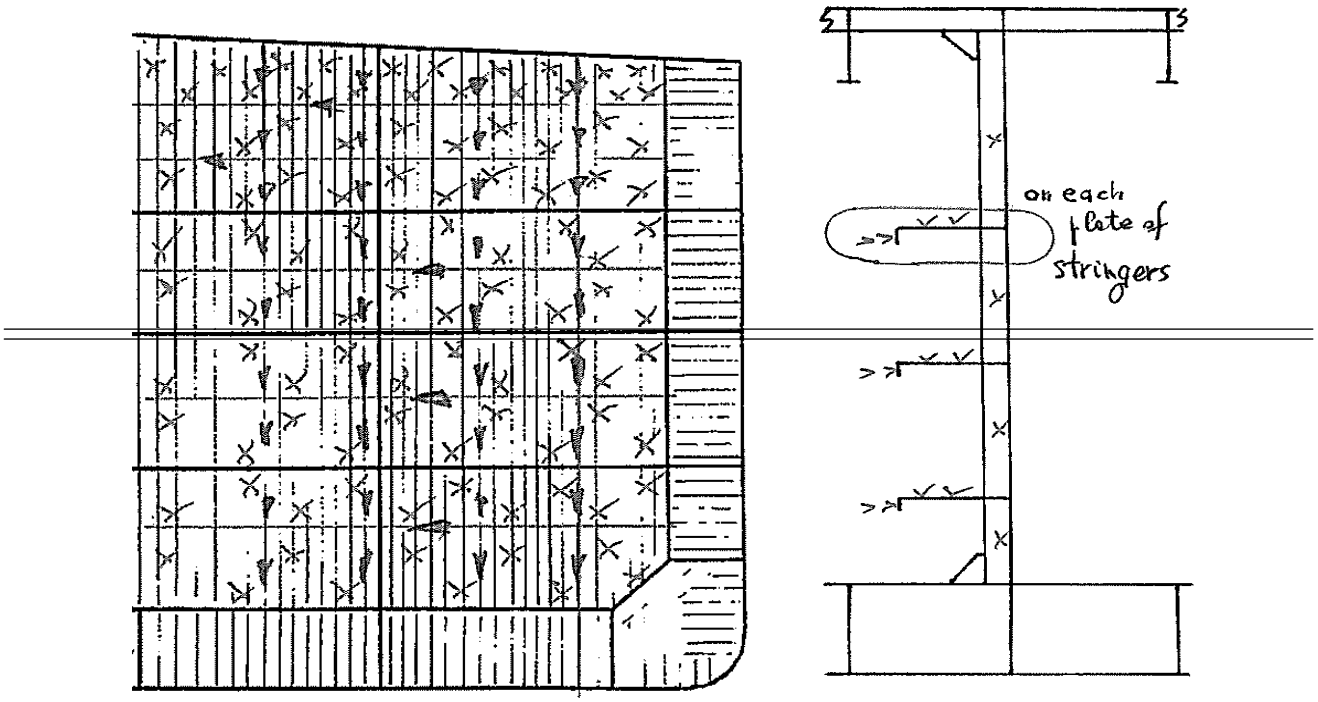


Fig. B5.9 Example of Locations subject to Thickness Measurements on Transverse Bulkheads in Cargo Tanks (Double Hull Oil Tankers)



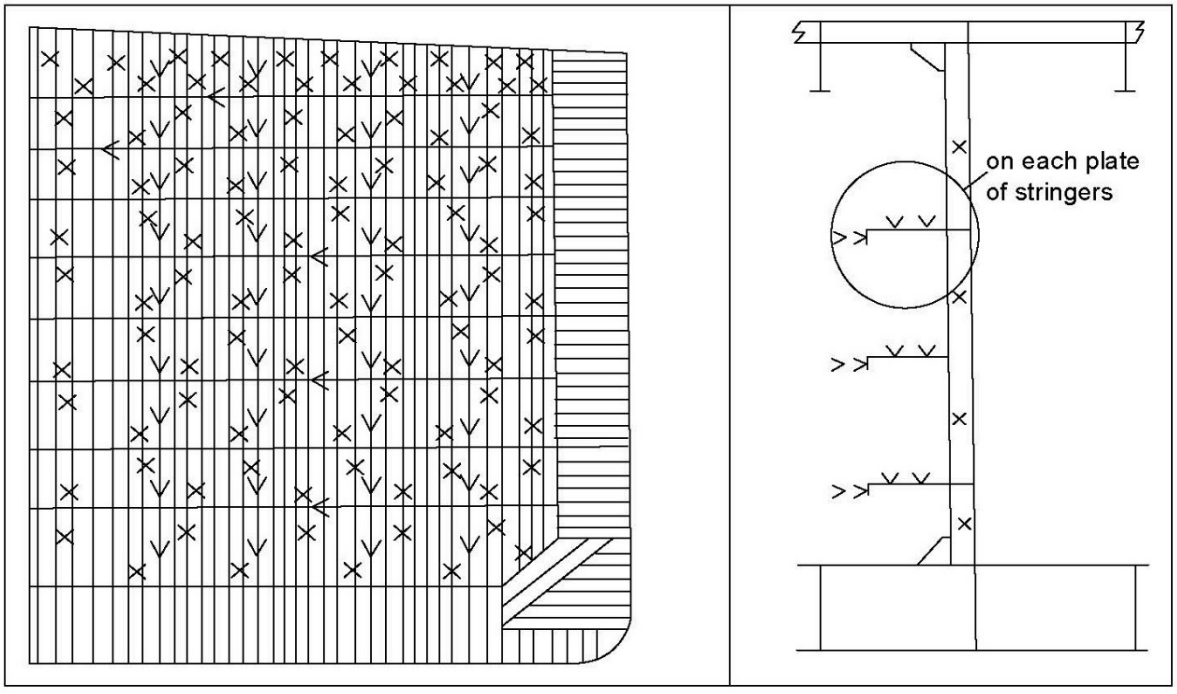
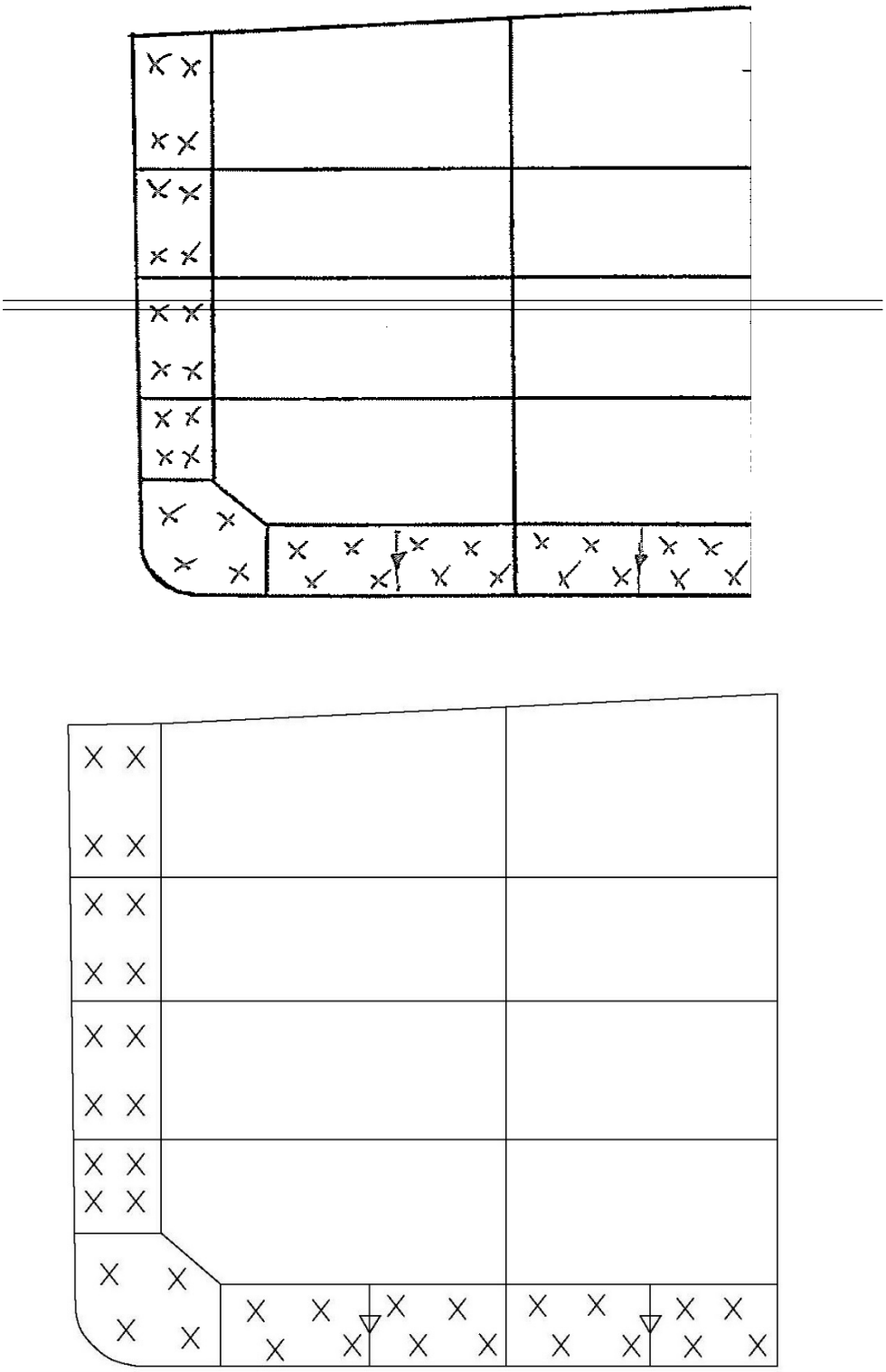


Fig. B5.10 Example of Locations subject to Thickness Measurements on Transverse Bulkhead in Ballast Tanks (Double Hull Oil Tankers)



EFFECTIVE DATE AND APPLICATION (Amendment 3-3)

1. The effective date of the amendments is 1 January 2019.

2. Notwithstanding the amendments to the Rules, the current requirements apply to the surveys for which the application is submitted to the Society before the effective date.

Amendment 3-4

Chapter 1 GENERAL

1.3 Definitions

1.3.1 Terms*

Sub-paragraph (26) has been added as follows.

(26) "Remote inspection techniques" is a means of survey that enables examination of any part of the structure without the need for direct physical access of the surveyor.

1.4 Preparation for Survey and Other Items

1.4.6 Firms Engaged in Inspections, Measurements and Maintenance*

Sub-paragraph -1 has been amended as follows.

1 Unless otherwise specified, third parties engaged in thickness measurements, in-water surveys by divers or remote operated vehicles, close-up surveys using remote inspection techniques, or tightness testing of closing appliances such as hatches, doors, etc., with ultrasonic equipment are to be firms deemed appropriate by the Society.

1.5 Others

Paragraph 1.5.2 has been added as follows.

1.5.2 Remote Inspection Techniques (RIT)

1 For surveys using RIT, inspection plans are to be submitted to the Society for approval prior to the surveys being carried out.

2 For surveys using RIT, the information normally obtained from a survey is to be provided.

3 Surveys using RIT are to be in accordance with *IACS* Recommendation No.42 in addition to the requirements specified in **1.5.2**.

4 The equipment and procedures for observing and reporting the surveys using RIT are to be discussed and agreed with the parties involved prior to the survey, and suitable time is to be allowed to set-up, calibrate and test all equipment beforehand.

5 The structure to be examined using RIT is to be sufficiently clean to permit meaningful examination and visibility is to be sufficient to allow for a meaningful examination. The method of orientation on the structure is to be at the discretion of the Society.

6 The method of data presentation including pictorial representation is to be at the discretion of the Society. Good two-way communication between the surveyor and RIT operator is to be provided.

7 If the RIT reveals damage or deterioration that requires attention, the surveyor may require a traditional survey to be undertaken without the use of RIT.

Chapter 3 ANNUAL SURVEYS

3.2 Annual Surveys for Hull, Equipment, Fire Extinction and Fittings

Paragraph 3.2.5 has been amended as follows.

3.2.5 Close-up Surveys

1 At Annual Surveys, close-up surveys listed in **Table B3.5** are to be carried out.

2 Close-up surveys using remote inspection techniques (RIT) may be accepted subject to prior special consideration by the surveyor.

3 When thickness measurements of structures subject to close-up surveys using RIT are required, temporary means of access for the corresponding thickness measurements is to be provided unless such remote inspection techniques are also able to carry out the required thickness measurements.

Chapter 4 INTERMEDIATE SURVEYS

4.2 Intermediate Surveys for Hull, Equipment, Fire Extinction and Fittings

Paragraph 4.2.5 has been amended as follows.

4.2.5 Close-up Surveys

1 At Intermediate Surveys, close-up surveys listed in **Table B4.3** are to be carried out.

2 Close-up surveys using remote inspection techniques (RIT) may be accepted subject to prior special consideration by the surveyor.

3 When thickness measurements of structures subject to close-up surveys using RIT are required, temporary means of access for the corresponding thickness measurements is to be provided unless such remote inspection techniques are also able to carry out the required thickness measurements.

Chapter 5 SPECIAL SURVEYS

5.2 Special Surveys for Hull, Equipment, Fire Extinction and Fittings

5.2.5 Close-up Surveys*

Sub-paragraphs -6 and -7 have been added as follows.

6 Close-up surveys using remote inspection techniques (RIT) may be accepted subject to prior special consideration by the surveyor.
7 When thickness measurements of structures subject to close-up surveys using RIT are required, temporary means of access for the corresponding thickness measurements is to be provided unless such remote inspection techniques are also able to carry out the required thickness measurements.

Chapter 6 DOCKING SURVEYS

6.1 Docking Surveys

6.1.2 In-water Surveys*

Sub-paragraph -4(7) has been amended as follows.

4 Ships intended to be subjected to the In-water Survey are to comply with the following. Where the documents specified in **-3(3)** above are submitted, special consideration may be given to **(1)** or **(4)** below.
((1) to (6) are omitted.)
(7) Markings indicating the position of longitudinal and transverse bulkheads and the names of interior spaces on the hull below the load water line, so that the diver ~~is~~or Remotely Operated Vehicle is able to orient his/her/its position relative to the ship

EFFECTIVE DATE AND APPLICATION (Amendment 3-4)

1. The effective date of the amendments is 1 January 2019.
2. Notwithstanding the amendments to the Rules, the current requirements apply to the surveys for which the application is submitted to the Society before the effective date.
3. Notwithstanding the provision of preceding **2.**, the amendments to the Rules may apply to the surveys for which the application is submitted to the Society before the effective date upon request of the owner.

Amendment 3-5

Chapter 3 ANNUAL SURVEYS

3.6 Special Requirements for Ships Using Low-flashpoint Fuels

3.6.2 Examinations*

At Annual Surveys of ships using low-flashpoint fuels, the examinations of spaces, structures and facilities, etc. specified in **Table B3.11** are to be carried out in order to ascertain them being in good order. The extent of the survey may be increased to include additional performance testing, operational testing or open-up examinations in cases where deemed necessary by the attending surveyor.

Table B3.11 has been amended as follows.

Table B3.11 Special Requirements for Ships Using Low-flashpoint Fuels

Items	Examinations
(Omitted)	
3 Bunkering systems and fuel supply systems for low-flashpoint fuels*1	The following (a) to (c) are to be carried out, so far as applicable. (a) Examination of bunkering stations and the fuel bunkering system, including liquid level gauges, high level alarms and valves associated with emergency shutdown systems (b) Examination of the fuel supply system~~,~~ (including fuel heat exchangers, vaporizers, pumps and compressors)~~,~~ ~~during~~ under its working condition as far as practicable (c) Examination of automatic and manual stopping devices for fuel pumps and compressors
(Omitted)	
5 Control, Monitoring and Safety Systems	(a) General examinations and performance testing of those specified in the following i) to iii) are to be carried out. Simulation testing or other suitable methods may be used in cases where it is difficult to carry out testing under actual operating conditions. (i) to iii) are omitted.) (b) The following i) to v) are to be carried out. i) Gas detection equipment, including both fixed and portable instruments, and other leakage detection equipment in compartments containing fuel storage, fuel bunkering, and fuel supply equipment or components or associated systems, including indicators and alarms, is to be confirmed in satisfactory operating condition. Recalibration of the gas detection systems is to be verified in accordance with the manufacturers' recommendations. ii) Verification of the satisfactory operation of the control, monitoring and shutdown systems, including automatic shutdown systems, of the fuel supply and bunkering systems is to be carried out. General examinations and performance testing, simulation testing or other suitable methods in cases where it is difficult to carry out performance testing under actual operating conditions for liquid level gauges, high level alarms and valves associated with emergency shutdown systems for bunkering are to be carried out. iii) Testing of the remote and local closing of the installed main tank valve is to be carried out. iv) Testing of the remote and local closing of the master fuel valve for each engine compartment and verification of satisfactory operation of the fuel supply system control, monitoring and shut-down systems are to be carried out with the fuel supply system operating under its ~~during~~ working condition as far as practicable. v) Operational test, as far as practicable, of the shutdown of *ESD* protected machinery spaces is to be carried out.

Chapter 5 SPECIAL SURVEYS

5.6 Special Requirements for Ships Using Low-flashpoint Fuels

5.6.2 Examinations*

At Special Surveys of ships using low-flashpoint fuels, the examinations specified in **Table B5.29** are to be carried out thoroughly in order to ascertain them being in good order, in addition to the examinations specified in **4.6.2**.

Table B5.29 has been amended as follows.

Table B5.29 Special Requirements for Ships Using Low-flashpoint Fuels

Items	Examinations
(Omitted)	
3 Venting systems for fuel containment systems	・ The pressure relief valves for the fuel storage tanks are to be opened for examination, adjusted, function tested and sealed.*6 If the tanks are equipped with relief valves with non-metallic membranes in the main or pilot valves, such non-metallic membranes are to be replaced. ・ The pressure/vacuum relief valves, rupture disc and other pressure relief devices for interbarrier spaces and fuel storage hold spaces are to be opened, examined, tested and readjusted as necessary, depending on their design.*7 ・ The vacuum protection systems for fuel storage tanks are to be overhauled and tested appropriately for the design.*8
4 Fuel piping and process piping systems, etc.	The following examinations and testing are to be carried out. (a) All piping for fuel storage, fuel bunkering, and fuel supply such as venting, compressing, refrigerating, liquefying, heating, storing, burning or otherwise handling the fuel and liquid nitrogen installations are to be examined. Removal of thermal insulation from the piping and opening for examination may be required where deemed necessary by the Surveyor. (b) Where deemed suspect by the Surveyor during (a) above, a hydrostatic test to 1.25 times the *MARVS* for the pipeline is to be carried out. After reassembly, the complete piping is to be tested for leaks. Where water cannot be tolerated and the piping cannot be dried prior to putting the system into service, the Surveyor may accept alternative testing fluids or alternative means of testing. (c) ~~A random selection of p~~Pressure relief valves for the fuel supply and bunkering piping is to be opened for examination, adjusted, and function tested and sealed. Where a proper record of continuous overhaul and retesting of individually identifiable relief valves is maintained, consideration will be given to acceptance on the basis of opening, internal examination, and testing of a representative sampling of valves, including each size and type of liquefied gas or vapor relief valve in use, provided there is logbook evidence that the remaining valves have been overhauled and tested since crediting of the previous Special Survey. (d) All emergency shut-down valves, check valves, block and bleed valves, master gas valves, remote operating valves, isolating valves for pressure relief valves in the fuel storage, fuel bunkering, and fuel supply piping systems are to be examined and proven operable. A random selection of valves is to be opened for examination. (e) Leakage testing of the emergency shut-down valves opened in accordance with **(d)** above is to be carried out.
(Omitted)	

Notes:

((*1) to (*5) are omitted.)

(*6) In cases where it is confirmed through the examination of records that the pressure relief valves have been opened for examination, adjusted, function tested and sealed at an interval not exceeding five *years*, general examinations of the

pressure relief valves need only be carried out at Special Surveys.

(*7) In cases where it is confirmed through the examination of records that the pressure/vacuum relief valves, rupture disc or other pressure relief devices have been opened, examined, tested and readjusted at an interval not exceeding five *years*, respective general examinations of the pressure/vacuum relief valves, rupture disc or other pressure relief devices need only be carried out.

((*8) and (*9) are omitted.)

EFFECTIVE DATE AND APPLICATION (Amendment 3-5)

1. The effective date of the amendments is 1 January 2019.

GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

Part B Class Surveys

GUIDANCE

2018 AMENDMENT NO.2

Notice No.103 25 December 2018
Resolved by Technical Committee on 1 August 2018

Notice No.103 25 December 2018
AMENDMENT TO THE GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

"Guidance for the survey and construction of steel ships" has been partly amended as follows:

Part B CLASS SURVEYS

Amendment 2-1

B1 GENERAL

B1.3 Definitions

B1.3.1 Terms

Sub-paragraph -3(4) has been amended as follows.

3 "Hatch covers and hatch coamings for cargo holds of ships stipulated otherwise by the Society" in **1.3.1(6)(b), Part B of the Rules** is as specified in the following **(1)** to **(4)**.

(1) Hatch covers located forward of 0.25 L_1 from the forward end of L_1 of bulk carriers which are contracted for construction on or after 1 July 1998 and prior to 1 January 2004 and are at a beginning stage of construction prior to 1 January 2005
Renewal thickness ($t_{renewal}$) is given by the following formula. If a voluntary addition is included in the as built thickness, the value may be at the discretion of the Society. L_1 is the length of ship specified in **2.1.2, Part A of the Rules** or 0.97 *times* the length of ship on the designed maximum load line, whichever is smaller (*m*).
$t_{renewal} = t_{as\text{-}built} - t_c + 0.5$ (*mm*)
$t_{as\text{-}built}$: as built thickness (*mm*)
t_c: Corrosion addition specified in **Table B1.3.1-1(a)**

Table B1.3.1-1(a)

		Corrosion addition t_c (*mm*)	
Steel Hatch Cover	Type of structure	For top, side and bottom plating	For internal structures
	Single plating type	2.0	
	Double plating type	2.0	1.5

(2) Hatch covers and hatch coamings of bulk carriers not complying with the provisions of **Part CSR-B** or **CSR-B&T of the Rules,** and which are contracted for construction on or after 1 January 2004 or are at the beginning stage of construction on or after 1 January 2005; or ships other than bulk carries which are at the beginning stage of construction on or after 1 January 2005 and that have the application for Classification Survey during Construction submitted to the Society prior to 10 June 2005
Renewal thickness ($t_{renewal}$) is given by the following formula. If a voluntary addition is included in the as built thickness, the value may be at the discretion of the Society.

$t_{renewal} = t_{as\text{-}built} - t_c + 0.5\ (mm)$
$t_{as\text{-}built}$: as built thickness (*mm*)
t_c: Corrosion addition specified in **Table B1.3.1-1(b)**

Table B1.3.1-1(b)

		Corrosion addition t_c (*mm*)	
Steel Hatch Cover	Type of structure	For top, side and bottom plating	For internal structures
	Single plating type	2.0	
	Double plating type	2.0	1.5
Hatch Coaming		1.5	

(3) Hatch covers and hatch coamings of ships other than bulk carriers that have the application for Classification Survey during Construction submitted to the Society on or after 10 June 2005
Renewal thickness ($t_{renewal}$) is given by the following formula. If a voluntary addition is included in the as built thickness, the value may be at the discretion of the Society.
$t_{renewal} = t_{as\text{-}built} - t_c + 0.5\ (mm)$
$t_{as\text{-}built}$: as built thickness (*mm*)
t_c: Corrosion addition specified in **Table B1.3.1-1(c)**
Where corrosion addition t_c is 1.0 (*mm*), renewal thickness may be given by the formula $t_{renewal} = t_{as\text{-}built} - t_c\ (mm)$

Table B1.3.1-1(c)

		Corrosion addition t_c (*mm*)	
Steel Hatch Cover	Type of structure	For top, side and bottom plating	For internal structures
	Single plating type	2.0(*1)	
	Double plating type	1.5(*1)	1.0
Hatch Coaming		1.5	

(*1) For steel hatch covers in way of cellular cargo holds: 1.0(*mm*)

(4) ~~Hatch covers and hatch coamings of ships that have the application for Classification Survey during Construction submitted to the Society on or after 1 July 2007~~
~~Renewal thickness ($t_{renewal}$) is given by the value indicated in the structural drawings in accordance with the requirements in **20.1.3, Part C of the Rules** and **19.1.3, Part CS of the Rules.**~~
Hatch covers and hatch coamings of ships complying with the requirements in **20.2, Part C of the Rules** or **19.2, Part CS of the Rules,** and ships which are contracted for construction on or after 1 July 2012
Renewal thickness ($t_{renewal}$) is given by the following formula. If a voluntary addition is included in the as built thickness, the value may be at the discretion of the Society.
$t_{renewal} = t_{as\text{-}built} - t_c + 0.5\ (mm)$
$t_{as\text{-}built}$: as built thickness (*mm*)
t_c: Corrosion addition specified in **Table B1.3.1-1(d)**
Where corrosion addition t_c is 1.0 (*mm*), renewal thickness may be given by the formula $t_{renewal} = t_{as\text{-}built} - t_c\ (mm)$

Table B1.3.1-1(d) has been added as follows.

Table B1.3.1-1(d)

Type of ship	Type of structural member		Corrosion addition t_c (*mm*)
Container carriers and car carriers	Steel hatch cover		1.0
	Hatch coaming		1.5
Ships other than those specified above	Single plating type hatch cover		2.0
	Double plating type hatch cover	Top, side and bottom plating	1.5
		Internal structures	1.0
	Hatch coaming, hatch coaming stay and stiffeners		1.5

B2 CLASSIFICATION SURVEYS

B2.1 Classification Survey during Construction

B2.1.2 Submission of Plans and Documents for Approval

Sub-paragraph -1(1) has been amended as follows.

1 The plans required to be submitted for approval in **2.1.2, Part B of the Rules** are to indicate the following items.

(1) Hull structural drawings are to include scantling details, material details, location of butts and seams, cross section details as necessary, details of welding such as sizes and proportions applicable to the ship, and other necessary information unless specified otherwise. For hull structures subject to the requirements of ~~**20.1.3, Part C,**~~ **31A.3.6, Part C**, **Part CSR-B**, **Part CSR-T** or **Part CSR-B&T of the Rules**, renewal thicknesses are to be indicated in the relevant drawings. In addition, for structural members of ships subject to *SOLAS Chapter II-1 Regulation 3-10*, net (renewal) scantlings, as built scantlings and voluntary addition thickness are to be indicated.

((2) to (6) are omitted.)

EFFECTIVE DATE AND APPLICATION (Amendment 2-1)

1. The effective date of the amendments is 25 December 2018.

2. Notwithstanding the amendments to the Guidance, the current requirements apply to the surveys for which the application is submitted to the Society before the effective date.

Amendment 2-2

B2 CLASSIFICATION SURVEYS

B2.1 Classification Survey during Construction

B2.1.2 Submission of Plans and Documents for Approval

Sub-paragraph -10 has been added as follows.

10 The "areas requiring special attention throughout the ship's life, including critical structural areas" referred to in **2.1.2-14, Part B of the Rules** are to be consistent with information included in the Ship Construction File specified in **2.1.6-3(13), Part B of the Rules.** In addition, drawings are to include the critical structural areas indicated in the ship structural access manuals specified in **35.2.6, Part C of the Rules.**

EFFECTIVE DATE AND APPLICATION (Amendment 2-2)

1. The effective date of the amendments is 25 December 2018.

Amendment 2-3

B1 GENERAL

B1.1 Surveys

B1.1.7 Bulk Carriers

2 The thickness measurements required in **1.1.7-1, Part B of the Rules** subject to compliance with **31B.5, Part C of the Rules** are to be carried out as follows.

((1) is omitted.)

(2) Thickness measurement methodology

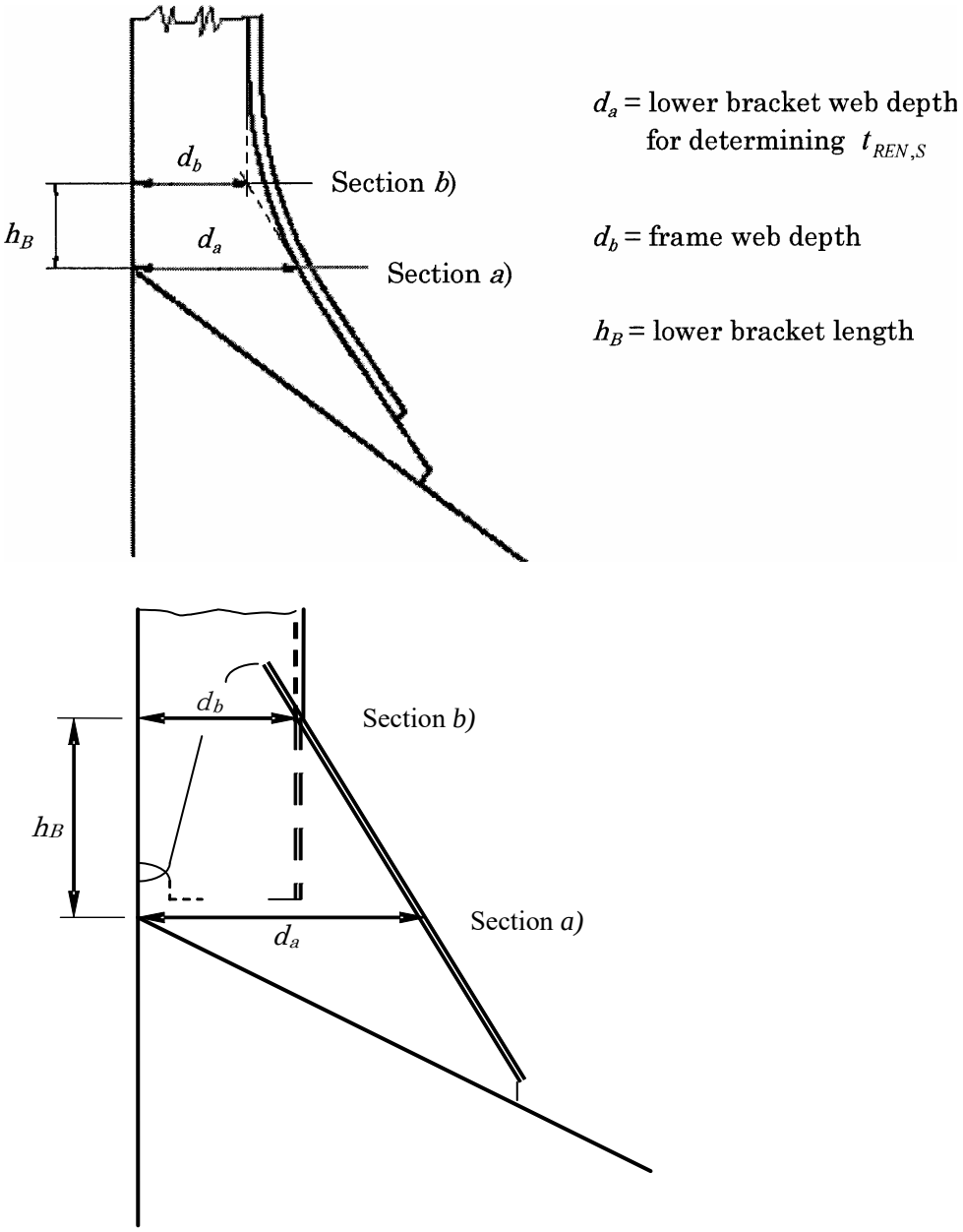
((a) to (e) are omitted.)

(f) Where the calculation of the actual section modulus of the brackets and side frames at sections *a*) and *b*) is required in accordance with **31B.5.3-5(1), Part C of the Rules**, at least 2 readings on the flange/faceplate are to be taken in way of each section and, at least one reading of the attached shell plating is to be taken on each side of the frame (i.e. fore and aft) in way of each section. See **Fig. B1.1.7-4**. If bulb plate has been used, then the web of the bulb plate is to be measured in the normal manner and special consideration needs to be given to the sectional modulus.

((3) is omitted)

Fig. B1.1.7-4 has been amended as follows.

Fig. B1.1.7-4 Sections *a*) and *b*)



B1.4 Preparation for Survey and Other Items

B1.4.2 Preparation for Surveys

Sub-paragraph -10(3) has been amended as follows.

10 "Provisions of an easy and safe access" referred to in **1.4.2-1, Part B of the Rules** are as specified in **(1)** through **(3)**.
((1) and (2) are omitted.)
(3) For close-up surveys of the cargo hold shell frames of bulk carriers of 100,000 DWT or more:
  (a) For Annual surveys, Intermediate surveys (ships under 10 years of age) and Special survey No.1:
    i) Permanent staging and passages through structures
    ii) Temporary staging and passages through structures
    iii) Hydraulic arm vehicles such as conventional cherry pickers, lifts and movable platforms
    iv) Boats or rafts provided the structural capacity of the hold (used for ballast) is sufficient to withstand static loads at all levels of water
    v) Other equivalent means

    Notwithstanding the above, the use of a portable ladder fitted with a mechanical device to secure the upper end of the ladder is acceptable for the close-up survey of side frames at Annual surveys. However, it is not acceptable for the close-up survey of suspect areas identified at the previous or current survey.
  (b) For Subsequent Intermediate Surveys (ships not less than 10 years of age) and Special surveys:
    i) Permanent staging and passages through structures
    ii) Temporary staging and passages through structures
    iii) Hydraulic arm vehicles such as conventional cherry pickers for surveys of lower and middle parts of side frames <u>(However, the use of hydraulic arm vehicles or aerial lifts may be accepted by the attending surveyor for the close-up surveys of the upper parts of side shell frames or other structures in all cases where the maximum working height is not more than 17 *m*.)</u>
    iv) Lifts and movable platforms
    v) Boats or rafts provided the structural capacity of the hold (used for ballast) is sufficient to withstand static loads at all levels of water
    vi) Other equivalent means

B3 ANNUAL SURVEYS

B3.2 Annual Surveys for Hull, Equipment, Fire Extinction and Fittings

B3.2.2 General Examination

Sub-paragraph -1 has been amended as follows.

1 The General examination of "closing appliances of hatchways" stipulated in item 3 of **Table B3.2, Part B of the Rules** is to confirm that the items specified in **(1)** to **(45)** below are in good condition.

(1) Where controlled atmosphere systems are installed on board, examination of controlled atmosphere zones in **D17.3(1)(a), Part D of the Guidance**

(2) All hatch cover plating, hatch coaming plating, and structural members (e.g. stiffeners)

(3) Stowage and securing in open condition, and proper fit and efficiency of sealing in closed condition for mechanically operated hatch covers. In addition, items **(a)** to **(k)** below of mechanically operated hatch covers
   (a) Tightness devices of longitudinal, transverse and intermediate cross junctions (gaskets, gasket lips, compression bars, drainage channels)
   (b) Clamping devices, retaining bars, and cleating
   (c) Closed cover locating devices
   (d) Chain or rope pulleys
   (e) Guides
   (f) Guide rails and track wheels
   (g) Stoppers and other similar devices
   (h) Wires, chains, gypsies, tensioning devices
   (i) Hydraulic systems essential to closing and securing
   (j) Safety locks and retaining devices
   (k) End and internal hinges, pins and stools

(4) Items through **(a)** to **(h)** below of portable hatch covers, wooden or steel pontoons
   (a) Wooden covers and portable beams, carriers or sockets for portable beam, and their securing devices
   (b) Steel pontoons
   (c) Tarpaulins
   (d) Cleats, battens and wedges
   (e) Hatch securing bars and their securing devices
   (f) Loading pads or bars and the side plate edge
   (g) Guide plates and chocks
   (h) Compression bars, drainage channels and drain pipes

(5) For bulk carriers, where hatch covers or hatch coamings undergo substantial repairs, the strength of securing devices is to be upgraded to comply with **7.3, Section 5, Chapter 1, Part 2, Part CSR-B&T of the Rules.**

B5 SPECIAL SURVEYS

B5.2 Special Surveys for Hull, Equipment, Fire Extinction and Fittings

B5.2.6 Thickness Measurements

Sub-paragraph -1 has been amended as follows.

1 The thickness measurement record specified in **5.2.6-1(4), Part B of the Rules** is to give the position of each measuring point, the thickness measured as well as the corresponding original thickness, the allowable diminution, and extent of use of high tensile steels, if used. Furthermore, the record is to give the date when the measurement was carried out, the type of measuring equipment used, and names of the personnel and their qualifications with their signatures. In oil tankers, bulk carriers, double hull oil tankers built under **Part CSR-T of the Rules** or **Part CSR-B&T of the Rules**, bulk carriers built under **Part CSR-B of the Rules** or **Part CSR-B&T of the Rules** and ships carrying dangerous chemicals in bulk with integral tanks, the record is to be made in the approved format. The surveyor verifies and countersigns the thickness measurement record.

EFFECTIVE DATE AND APPLICATION (Amendment 2-3)

1. The effective date of the amendments is 1 January 2019.
2. Notwithstanding the amendments to the Guidance, the current requirements apply to the surveys for which the application is submitted to the Society before the effective date.

Amendment 2-4

B1 GENERAL

B1.4 Preparation for Survey and Other Items

B1.4.2 Preparation for Surveys

Sub-paragraph -10 has been amended as follows.

10 "Provisions of an easy and safe access" referred to in **1.4.2-1, Part B of the Rules** are as specified in **(1)** through **(~~3~~4)**.
((1) to (3) are omitted.)
(4) For close-up surveys using remote inspection techniques:
(a) Unmanned robot arms
(b) Remotely Operated Vehicles
(c) Unmanned Aerial Vehicles / Drones
(d) Other means acceptable to the Society

B1.4.6 Firms Engaged in Inspections, Measurements and Maintenance

Sub-paragraph -1 has been amended as follows.

1 The wording "firm deemed appropriate by the Society" in **1.4.6-1, Part B of the Rules** refers to firms complying with the requirements of **Chapter 2**, **3**, ~~**or**~~ **8**~~,~~or **16** **Part 3 of the Rules for Approval of Manufacturers and Service Suppliers** and approved by the Society.

B6 DOCKING SURVEYS

B6.1 Docking Surveys

B6.1.2 In-water Surveys

Sub-paragraph -1(2) has been amended as follows.

1 The approval of application for the In-water Survey specified in **6.1.2-1, Part B of the Rules** is subject to the following conditions in **(1)** and **(2)**.

(1) Application
In principle, In-water Surveys are applicable to ships under 15 *years* of age.

(2) Survey Conditions
The In-water Survey is to be carried out under the following conditions in **(a)** through **(c)** to ensure that the information obtained is as reliable as that obtained by surveys in a dry dock or on slipway.

(a) The ship is at its lightest possible draught and is in sheltered waters. The in-water visibility and the cleanliness of the hull below the waterline are to be good enough to permit a meaningful examination which allows the Surveyor and diver to determine the condition of the plating, appendages and welding, and the Surveyor is present.

(b) Diving and in-water survey operations are to be carried out by a company approved by the Society under the **Rules for Approval of Manufacturers and Service Suppliers** which is separately specified. The services of a diver well-experienced in using underwater cameras (still and live) in in-water surveying operations or Remotely Operated Vehicle are to be available.

(c) The Surveyor is to have access to a video display unit for viewing live footage and a means to keep good communication with the underwater diver or Remotely Operated Vehicle. Means for taking colour photographs is to be provided.

EFFECTIVE DATE AND APPLICATION (Amendment 2-4)

1. The effective date of the amendments is 1 January 2019.

2. Notwithstanding the amendments to the Guidance, the current requirements apply to the surveys for which the application is submitted to the Society before the effective date.

3. Notwithstanding the provision of preceding **2.**, the amendments to the Guidance may apply to the surveys for which the application is submitted to the Society before the effective date upon request of the owner.