

RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

Part CS

Hull Construction and Equipment of Small Ships

Rules for the Survey and Construction of Steel Ships

Part CS

2011 AMENDMENT NO.1

Guidance for the Survey and Construction of Steel Ships

Part CS

2011 AMENDMENT NO.1

Rule No.27 / Notice No.41 30th June 2011

Resolved by Technical Committee on 3rd February 2011

Approved by Board of Directors on 25th February 2011

ClassNK
NIPPON KAIJI KYOKAI

RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

Part CS

**Hull Construction and Equipment of
Small Ships**

RULES

2011 AMENDMENT NO.1

Rule No.27 30th June 2011

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Rule No.27 30th June 2011

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 CS HULL CONSTRUCTION AND EQUIPMENT OF SMALL SHIPS

Amendment 1-1

Chapter 21 BULWARKS, GUARDRAILS, FREEING ARRANGEMENTS, CARGO PORTS AND OTHER SIMILAR OPENINGS, SIDE SCUTTLES, RECTANGULAR WINDOWS, VENTILATORS AND GANGWAYS

21.3 Bow Doors and Inner Doors

21.3.10 Operating and Maintenance Manual

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

1 An operating and maintenance manual for the door and inner door which is approved by the Society has to be provided on board and contain information on:

- (1) Main particulars and design drawings
 - (a) Special safety precautions
 - (b) Details of vessel, ~~class, statutory certificates~~
- (Omitted)

21.4 Side Shell Doors and Stern Doors

21.4.9 Operating and Maintenance Manual

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

1 An approved Operating and Maintenance Manual for the doors is to be provided on board and contain necessary information on:

- (1) Main particulars and design drawings
 - (a) Special safety precautions
 - (b) Details of vessel, ~~class, statutory certificates~~
- (Omitted)

EFFECTIVE DATE AND APPLICATION (Amendment 1-1)

- 1.** The effective date of the amendments is 1 July 2011.

Chapter 2 STEMS AND STERN FRAMES

2.2 Stern Frames

2.2.2 Propeller Posts

Sub-paragraph -4 has been amended as follows.

1 Propeller posts of cast steel stern frames and those of plate stern frames are to be of a shape suitable for the stream line at the after part of the hull, and the standard scantlings are given by the formulae and figures in **Fig.CS2.1**. Below the propeller boss, the breadth and thickness of the propeller post are to be gradually increased in order to provide sufficient strength and stiffness in proportion to the shoe pieces.

2 The thickness of the boss of the propeller post is not to be less than that obtained from the following formula:

$$0.9L + 10 \text{ (mm)}$$

3 The propeller posts of cast steel stern frames and those of plate stern frames are to be provided with ribs at a suitable interval. Where the radius of curvature is large, a centre line stiffener is to be provided.

4 For ships with relatively high speed for their length ~~and ships exclusively engaged in towing purposes~~, the scantlings of various parts of propeller posts are to be suitably increased.

Chapter 3 RUDDERS

3.1 General

Sub-paragraph -1 has been deleted and -2 and -3 have been renumbered to -1 and -2 respectively.

3.1.3 Increase in Diameter of Rudder Stock for Special Cases

~~**1** The diameter of rudder stocks of ships exclusively engaged in towing service is not to be less than 1.1 times those required in this Chapter.~~

1 In ships which may be frequently steered at a large helm angle when sailing at their maximum speed, such as fishing vessels, the diameters of rudder stocks and pintles, as well as the section modulus of main pieces, are not to be less than 1.1 *times* those required in this Chapter.

2 In ships which might require quick steering, the diameter of rudder stocks is to be properly increased beyond the requirements in this Chapter.

EFFECTIVE DATE AND APPLICATION (Amendment 1-2)

1. The effective date of the amendments is 30 December 2011.
2. Notwithstanding the amendments to the Rules, the current requirements may 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 application is submitted to the Society before the effective date upon request by the owner.

Chapter 17 DECKS

17.2 General

Paragraph 17.2.4 has been amended as follows.

17.2.4 Compensation for Openings

1 Hatchways or other openings on strength or effective decks are to have well rounded corners, and compensation is to be suitably provided as necessary.

2 Where attachments such as slant plates or protective means are provided on hatch corners of cargo hatchways, such attachments are not to be directly welded onto strength decks.

Chapter 21 BULWARKS, GUARDRAILS, FREEING ARRANGEMENTS, CARGO PORTS AND OTHER SIMILAR OPENINGS, SIDE SCUTTLES, RECTANGULAR WINDOWS, VENTILATORS AND GANGWAYS

21.1 Bulwarks and Guardrails

Paragraph 23.1.3 has been amended as follows.

21.1.3 Construction

1 Bulwarks are to be strongly constructed and effectively stiffened on their upper edges. The thickness of bulwarks on the freeboard deck is generally to be at least *6mm*.

2 Bulwarks are to be supported by stiffened stays connected to the deck in way of beams or at effectively stiffened positions. The spacing of these stays on the freeboard deck is not to be more than *1.8m*.

3 Bulwarks on the decks which are designed to carry timber deck cargoes are to be supported by specially strong stays spaced not more than *1.5m* apart.

4 A bracket type is recommended for the lower connections of bulwark stays (See Fig.CS21.1). In cases where a gusset type is applied for the lower connections of bulwark stays (See Fig.CS21.2), special consideration is to be given.

5 In cases where a bracket type is applied for the lower connections of bulwark stays, the bulwark stays are to be properly stiffened for the prevention of local buckling.

6 Expansion joints are to be provided at appropriate intervals in bulwarks.

Fig. CS21.1 and Fig. CS21.2 have been renumbered to Fig. CS21.3 and Fig. CS21.4 respectively and Fig. CS21.1 and Fig. CS21.2 have been added as follows.

Fig. CS21.1 Example of Bracket Type

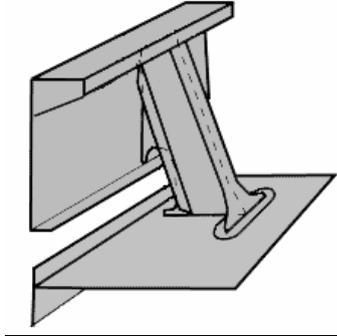
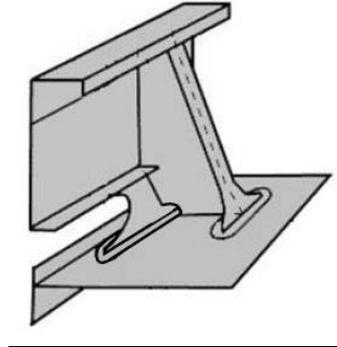


Fig. CS21.2 Example of Gusset Type



21.3 Bow Doors and Inner Doors

21.3.4 Design Loads

Sub-paragraph -1(3) has been amended as follows.

1 Doors

(Omitted)

(3) For visor doors the closing moment M_y under external loads, in $kN-m$, is to be taken as:

$$M_y = F_x a + 10Wc - F_z b$$

W : Mass of the visor door, in ton ,

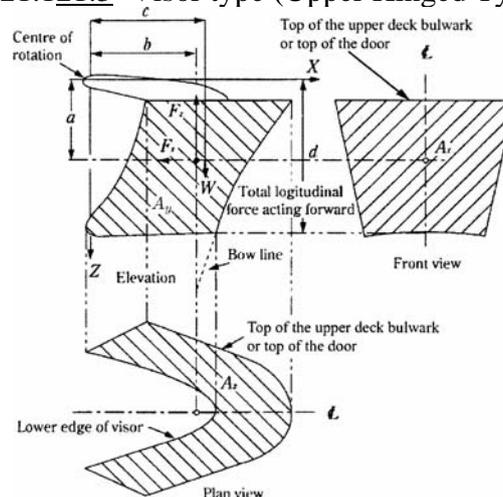
a : Vertical distance, in m , from the visor pivot to the centroid of the transverse vertical projected area of the visor door, as shown in **Fig. CS21.121.3**

b : Horizontal distance, in m , from the visor pivot to the centroid of the projected area of the visor door, as shown in **Fig. CS21.121.3**

c : Horizontal distance, in m , from the visor pivot to the centre of gravity of visor mass, as shown in **Fig. CS21.121.3**

(Omitted)

Fig. CS21.121.3 Visor type (Upper Hinged Type) Door



21.3.7 Securing and Supporting of Doors

Sub-paragraph -2(10) has been amended as follows.

1 General

(Omitted)

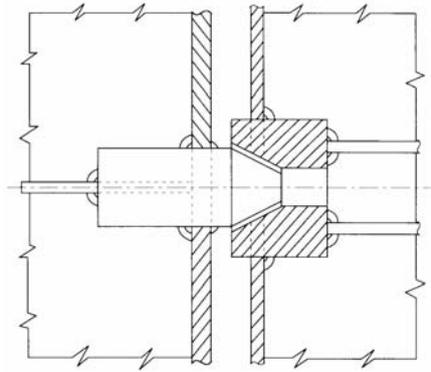
2 Scantlings

(Omitted)

(10) For side-opening doors, the thrust bearing has to be provided in way of girder ends at the closing of the two leaves to prevent one leaf from shifting towards the other one under the effect of unsymmetrical pressure (*See* example of **Fig. CS21-221.4**). Each part of the thrust bearing has to be kept secured on the other part by means of securing devices.

(Omitted)

Fig. ~~CS21-221.4~~ CS21-221.4 Example of Thrust Bearing



EFFECTIVE DATE AND APPLICATION (Amendment 1-3)

1. The effective date of the amendments is 30 December 2011.
2. Notwithstanding the amendments to the Rules, the current requirements may apply to ships for which the date of contract for construction is before the effective date.

GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

Part CS

**Hull Construction and Equipment of
Small Ships**

GUIDANCE

2011 AMENDMENT NO.1

Notice No.41 30th June 2011

Resolved by Technical Committee on 3rd February 2011

Notice No.41 30th June 2011

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 CS HULL CONSTRUCTION AND EQUIPMENT OF SMALL SHIPS

Appendix 1 APPLICATION OF PART C OF THE GUIDANCE

Table CS has been amended as follows.

Table CS Correspondence Table of Guidance between Part CS and Part C

Part CS	Part C	Part CS	Part C	Part CS	Part C
1.1.3	C1.1.3 [See Note 1]	13.3	C13.3	21.1.1	C23.1.1 [See Note 44 15]
1.3.1	C1.1.7 C1.1.11 and C1.1.12	14.1.3	C14.1.3	21.1.2	C23.1.2 [See Note 45 16]
		14.2.3	C14.2.3	21.1.3	C23.1.3 [See Note 17]
		15.1.1	C15.1.1	21.2.1	C23.2.1 [See Note 46 18]
2.1.1	C2.1.1	15.2.1	C15.2.1	21.2.2	C23.2.2 [See Note 47 19]
2.2.2	C2.2.2	15.2.3	C15.2.3	21.2.3	C23.2.3
2.2.3	C2.2.3	15.3	C15.4.1-2	21.3	C23.3
2.2.4	C2.2.4	16.3.3	C16.3.3	21.4	C23.4 [See Note 48 20]
3	C3	16.4.4	C16.4.4	21.5.1	C23.5.1
4	C4	16.5.3	C16.6.1	21.5.3	C23.5.3 [See Note 49 21]
5	C5	16.6.1	C16.7.1	21.5.7	C23.5.7 [See Note 50 22]
6.1.1	C6.1.1-1 and -2	16.6.2	C16.7.2	21.6.5	C23.6.5 [See Note 51 23]
6.6.2-1	C6.4.3-2	17.1.1-1	C10.2.1 [See Note 7]	21.6.7	C23.6.7 [See Note 52 24]
6.7.1	C6.5.1-1 and -4	17.2.1	C17.1.1	21.7.1	C23.7.1 [See Note 53 25]
6.9	C6.8	17.2.2	C17.1.2	21.7.2	C23.7.2
7.5.2	C7.6.2 [See Note 2]	17.2.4	C17.1.4 [See Note 8]	21.8.1	C23.8.1 [See Note 54 26]
7.5.3	C7.6.3 [See Note 3]	17.2.5	C17.1.5	22.2.1	C24.2.1
8.3	C7.5.3	17.3.2	C17.2.2	22.4.1	C25.2.1 [See Note 55 27]
9.1.2	C9.1.2 [See Note 4]	17.3.4	C17.2.4	22.4.2	C25.2.2
9.1.3	C9.1.3	17.3.5	C17.2.5	23.1.2	C27.1.2
10.1.2	C10.1.2	17.4.1	C17.3.1	23.1.5	C27.1.5 and C27.1.6 [See Note 56 28]
10.2.3	C10.3.3 [See Note 5]	17.4.5	C17.3.5		
10.3.2	C10.4.2	18	C18	23.2	C27.2
10.7.1	C10.9.1	19.2.3	C20.2.3 [See Note 59 9]	24.1.1	C29.1.1 [See Note 57 29] [See Note 58 30]
11.1.2	C11.1.2	19.2.4	C20.2.4 [See Note 60 10]		
11.2.1	C11.2.1	19.2.5	C20.2.5 [See Note 61 11]	24.1.2	C29.1.2 [See Note 59 31]
12.1.3	C12.1.3	19.2.6	C20.2.6 [See Note 62 12]	24.3.2	C29.4.2
12.1.4	C12.1.4	19.2.9	C20.2.9 [See Note 63 13]	24.11.5	C29.12.4
12.2.1	C12.2.1 [See Note 6]	19.2.10	C20.2.10	25.1.2	C34.1.2 [See Note 60 32]
13.1.1	C13.1.1	19.3.5	C20.3.5 [See Note 64 14]	26	C35
13.1.4	C13.1.4	19.4.2	C20.4.2	-	-
13.2.3	C13.2.3	20.2.2	C21.2.2	-	-

Notes:

1. In Guidance C1.1.3-2(2)(a), 5.5.2, Part C of the Rules is to read as 5.4.3, Part CS of the Rules.

- In Guidance **C1.1.3-2(2)(c)**, **10.2.1-2, Part C of the Rules** is to read as **17.1.1-2, Part CS of the Rules**.
- In Guidance **C1.1.3-2(2)(g)**, **20.1.2, Part C of the Rules** is to read as **19.1.2, Part CS of the Rules**.
2. In Guidance **C7.6.2, 7.6.2, Part C of the Rules** is to read as **7.5.2, Part CS of the Rules**.
3. In Guidance **C7.6.3, 7.6.2-2, 7.7.1 and 7.8.1, Part C of the Rules** are to read as **7.5.2-1, 7.6.1 and 7.6.3, Part CS of the Rules**.
4. In Guidance **C9.1.2, 9.2.2-2(2), Part C of the Rules** is to read as **9.2.2-5, Part CS of the Rules**.
5. In Guidance **C10.3.3, 10.3.3-1 and 10.3.3-2, Part C of the Rules** is to read as **10.2.3-1 and 10.2.3-2, Part CS of the Rules**.
6. In Guidance **C12.2.1, 12.2.1-1 and 12.2.1-2, Part C of the Rules** is to read as **12.2.1-1 and 12.2.1-2, Part CS of the Rules**.
7. In Guidance **C10.2.1, 10.2.1-1, Part C of the Rules** is to read as **17.1.1-1, Part CS of the Rules**.
8. In Guidance **C17.1.4, 17.1.4-2, Part C of the Rules** is to read as **17.2.4-2, Part CS of the Rules**.
- ~~9.~~ In Guidance **C20.2.3, 20.2.3-1(1)(b) and 20.2.3-1(4)(c), Part C of the Rules** are to read as **19.2.3-1(1)(b) and 19.2.3-1(4)(c), Part CS of the Rules**.
- ~~10.~~ In Guidance **C20.2.4, 20.2.4-2, 20.2.4-3, 20.2.4-4, 20.2.4-6, 20.2.4-6(1)(c), 20.2.4-7 and Table C20.2, Part C of the Rules** are to read as **19.2.4-2, 19.2.4-3, 19.2.4-4, 19.2.4-6, 19.2.4-6(1)(c), 19.2.4-7 and Table CS19.2, Part CS of the Rules**.
- ~~11.~~ In Guidance **C20.2.5, 20.2.4-2, 20.2.4-3 and 20.2.4-4, Part C of the Rules** are to read as **19.2.4-2, 19.2.4-3 and 19.2.4-4, Part CS of the Rules**.
- ~~12.~~ In Guidance **C20.2.6, 20.2.4, 20.2.5 and 20.2, Part C of the Rules** are to read as **19.2.4, 19.2.5 and 19.2, Part CS of the Rules**.
- ~~13.~~ In Guidance **C20.2.9, 20.2.4, 20.2.5, 20.2.6 and 20.2.9, Table C20.4, Part C of the Rules** are to read as **19.2.4, 19.2.5, 19.2.6, 19.2.9, Table CS19.4, Part CS of the Rules**.
- ~~14.~~ In Guidance **C20.3.5, 20.3.5, Part C of the Rules** is to read as **19.3.5, Part CS of the Rules**.
- ~~15.~~ In Guidance **C23.1.1, 23.1.1-2(2), Part C of the Rules** is to read as **21.1.1-2(2), Part CS of the Rules**.
- ~~16.~~ In Guidance **C23.1.2, 23.1.2, Part C of the Rules** is to read as **21.1.2, Part CS of the Rules**.
17. In Guidance **C23.1.3, 23.1.3-4, Part C of the Rules** is to read as **21.1.3-4, Part CS of the Rules**.
- ~~18.~~ In Guidance **C23.2.1, 23.2.1-3, 23.2.1-4 and 23.2.2-4, Part C of the Rules** are to read as **21.2.1-3, 21.2.1-4 and 21.2.2-4, Part CS of the Rules**.
- ~~19.~~ In Guidance **C23.2.2, 23.2.2, 23.2.2-1, 23.2.2-2 and 23.2.2-3, Part C of the Rules** are to read as **21.2.2, 21.2.2-1, 21.2.2-2 and 21.2.2-3, Part CS of the Rules**.
- ~~20.~~ In Guidance **C23.4.5-2, “L’”** is to read as **“L”**. *L* is ship’s length specified in **2.1.2, Part A of the Rules**.
- ~~21.~~ In Guidance **C23.5.3, 23.5.3-5, Part C of the Rules** is to read as **21.5.3-5, Part CS of the Rules**.
- ~~22.~~ In Guidance **C23.5.7, 23.5.7-3, Part C of the Rules** is to read as **21.5.7-3, Part CS of the Rules**.
- ~~23.~~ In Guidance **C23.6.5, 23.6.5 and 23.6.5-1, Part C of the Rules** are to read as **21.6.5 and 21.6.5-1, Part CS of the Rules**.
- ~~24.~~ In Guidance **C23.6.7, 23.6.7 and 23.6.1, Part C of the Rules** are to read as **21.6.7 and 21.6.1, Part CS of the Rules**.
- ~~25.~~ In Guidance **C23.7.1, Chapter 19, 23.1.2-2 and 23.7.1, Part C of the Rules** are to read as **Chapter 18, 21.1.2-2 and 21.7.1, Part CS of the Rules**.
- ~~26.~~ In Guidance **C23.8.1, 23.8.1, Part C of the Rules** is to read as **21.8.1, Part CS of the Rules**.
- ~~27.~~ Ships not engaged on international voyages need not to apply the provisions of **C25.2.1-2**.
- ~~28.~~ The title of Guidance **C27.1.6** is to read as **“Tow Lines”**.
- ~~29.~~ In Guidance **C29.1.1-1(1), Chapter 29, Part C of the Rules** is to read as **Chapter 24, Part CS of the Rules**.
- ~~30.~~ In Guidance **C29.1.1-3(1)(b)i), 29.4, 29.5 and 29.6, Part C of the Rules** are to read as **24.3, 24.4 and 24.7, Part CS of the Rules**.
- ~~31.~~ In Guidance **C29.1.2-4(1), 29.1.2-2, Part C of the Rules** is to read as **24.1.2-2, Part CS of the Rules**.
- ~~32.~~ In Guidance **C34.1.2, 34.1.2-1, Part C of the Rules** is to read as **25.1.2-1, Part CS of the Rules**.

EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 30 December 2011.
2. Notwithstanding the amendments to the Guidance, the current requirements may apply to ships for which the date of contract for construction is before the effective date.