# RULES 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 2006 AMENDMENT NO.3**

Rule No.55 3rd October 2006
Resolved by Technical Committee on 6th July 2006
Approved by Board of Directors on 25th July 2006

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NIPPON KAIJI KYOKAI

Rule No.55 3rd October 2006
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 STEEL SHIPS

Amendment 3-1

## Chapter 26 MEANS OF ACCESS

### 26.2 Special Requirements for Oil Tankers

#### 26.2.3 Means of Access to Spaces

Sub-paragraphs -4(2), (4) and (5) have been amended as follows.

(2) Where as specified in **(1)** above, for ladders not required to be of inclined ladder, vertical ladder may be used. In such a case where the vertical distance is more than 6 *m*, vertical ladders are to comprise one or more ladder linking platforms spaced, in general, not more than 6 *m* apart vertically and displaced to one side of the ladder. The uppermost entrance section from deck of the ladder is to be in accordance with the provisions of **-3** above.

(4) In double hull spaces of less than 2.5 *m* width, the access to the space may be by means of vertical ladders that comprise of one or more ladder linking platforms spaced, in general, not more than 6 *m* apart vertically and displaced to one side of the ladder. Adjacent sections of ladder are to be laterally offset from each other by at least the width of the ladder. The uppermost entrance section from deck of the ladder is to be in accordance with the provisions of **-3** above.

(5) Access from deck to a double bottom space may be by means of vertical ladders through a trunk. The vertical distance from deck to a resting platform, between resting platforms or a resting platform and the tank bottom is, in general, not be more than 6 *m* unless otherwise approved by the Society.

EFFECTIVE DATE AND APPLICATION (Amendment 3-1)

**1.** The effective date of the amendments is 3 October 2006.

Amendment 3-2

# Chapter 6 DOUBLE BOTTOMS

## 6.1 General

### 6.1.1 Application

Sub-paragraph -6 has been amended as follows.

**6** Double bottom structure of hold is to be subjected to special consideration when the hold is intended to carry heavy cargoes or where cargo loads can not be treated as even distributed loads.

# Chapter 10 BEAMS

Section 10.8 has been newly added as follows.

## 10.8 Beams on Deck carrying Unusual Cargoes

### 10.8.1 Section Modulus of Beams

The section modulus of beams on deck subjected to cargo loads which can not be treated as even distributed loads is to be determined taking account of load distribution for particular cargoes.

# Chapter 11 PILLARS

## 11.2 Scantlings

### 11.2.2 Deck Load supported by Pillars

Sub-paragraph -4 has been added as follows.

**4** Where a deck carrying cargoes which loads can not be treated as even distributed loads, deck load supported by a pillar is to be determined taking account of load distribution for particular cargoes. Where cargo loads can be treated as concentrated loads acting on specific points, the provisions of **-1** and **-2** above may be applied so that such concentrated loads are treated as deck loads supported by the upper tween deck pillar ($w_0$).

# Chapter 12 DECK GIRDERS

## 12.2 Longitudinal Deck Girders

### 12.2.1 Section Modulus of Girders

Sub-paragraph -4 has been added as follows.

**4** Where a deck carrying cargoes which loads can not be treated as even distributed loads, deck load supported by a pillar is to be determined taking account of load distribution for particular cargoes. Where cargo loads can be treated as concentrated loads acting on specific points, the provisions of **-1** to **-3** above may be applied so that such concentrated loads are treated as deck loads supported by the upper tween deck pillar ($w$).

## 12.3 Transverse Deck Girders

### 12.3.1 Section Modulus of Girders

Exiting text has been numbered to sub-paragraph -1, and Sub-paragraph -2 has been added as follows.

**2** Where a deck carrying cargoes which loads can not be treated as even distributed loads, deck load supported by a pillar is to be determined taking account of load distribution for particular cargoes. Where cargo loads can be treated as concentrated loads acting on specific points, the provisions of **-1** above may be applied so that such concentrated loads are treated as deck loads supported by the upper tween deck pillar ($w$).

# Chapter 17 DECKS

## 17.4 Deck Plating

Paragraph 17.4.6 has been amended as follows.

### 17.4.6 Deck Plating carrying Unusual Cargoes

The thickness of deck plating subjected to cargo loads which can not be treated as even distributed loads is to be determined taking account of load distribution for particular cargoes.

EFFECTIVE DATE AND APPLICATION (Amendment 3-2)

**1.** The effective date of the amendments is 3 October 2006.

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

Amendment 3-3

# Chapter 23 EQUIPMENT

## 23.1 Anchors, Chain Cables and Ropes

### 23.1.2 Equipment Numbers

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

(2) $A$ is the value obtained from the following formula :
$fL_1 + \Sigma h'' l$
$f$ :Value specified in **(1)**.
$L_1$ :Length of ship specified in **15.2.1-1**. ($m$)
$\Sigma h'' l$ :Summing up of the products of the height $h''$ ($m$) and length $l$ ($m$) of superstructures, deckhouses or trunks which are located above the uppermost continuous deck within the $L_1$ and also have a breadth greater than $B$/4 and a height greater than 1.5 $m$.

Section **23.2** has been amended as follows:

## 23.2 Towing and Mooring Fittings

### 23.2.1 General

**1** The requirements in this **23.2** apply to ships of not less than 500 *gross tonnage*. The requirements in this **23.2** apply to shipboard fittings used for the normal towing and the normal mooring (hereinafter referred to as 'towing fittings' and 'mooring fittings' in this **23.2**), and their supporting hull structures (hereinafter referred to as 'supporting structures' in this **23.2**).

**2** Ships are to be adequately provided with towing and mooring fittings.

**3** The scantlings of supporting structures are to be built at least with the gross scantlings obtained by adding the corrosion addition specified in **23.2.2.-5** and **23.2.3.-5** to the net scantlings obtained by applying the criteria specified in this section.

**4** The scantlings of supporting structures are to be in accordance with the relevant chapters or sections in addition to this section.

### 23.2.2 Towing Fittings

**1** Arrangement of Towing Fittings

(1) Towing fittings are to be located on longitudinals, beams or girders, which are parts of the deck construction so as to facilitate efficient distribution of the towing load.

(2) When the towing fittings can not be located as specified in **(1)**, towing fittings are to be arranged on the reinforced members.

**2** Design Load

Design load for towing fittings and their supporting structures (hereinafter referred to as "design load on fitting" (see **Fig.CS23.1**) in this paragraph) are to be specified in **(1)** to **(6)** as below:

(1) For normal towing operations (e.g. harbour/manouvring), design load on line (see **Fig.CS23.1**) is to be 1.25 times the intended maximum towing load.
(2) For other towing service (e.g. escort), design load on line (see **Fig.CS23.1**) is to be the breaking strength of towing line specified in **Table CS23.1** according to **23.1.2** for the ship's corresponding equipment number.
(3) The method of application of the design load on fitting to towing fittings and supporting structures is to be taken into account all acting load.
(4) The acting point of the towing force on towing fittings is to be taken at the attachment point of towing line or at a change in its direction.
(5) Design load on fitting for towing fittings and their supporting structures are to be taken into account the total load of the design load on line (see **Fig.CS23.1**), but need not to be more than twice the design load on line.
(6) For towing fittings and their supporting structures used for towing operation specified in **(2)**, if design load on fitting specified in **(2)** to **(5)** is less than the intended towing load which is expected to be specified in the construction specification, the design load on fitting is to be not less than the intended towing load.

**3** Selection of Towing Fittings
Towing fittings are generally to be specified according to standards approved by the society.

**4** Allowable Stresses of Supporting Structure
Allowable stresses of supporting structure are not to be more than below:
(1) Normal stress : 100% of the specified yield point for the material used
(2) Shearing stress : 60% of the specified yield point for the material used

**5** Corrosion Addition of Supporting Structures
For the corrosion addition of supporting structures, the value will be considered by the Society, but not to be less than 2*mm*.

**6** Safe Working Load (*SWL*)
(1) For towing fittings and their supporting structures used for towing operation specified in **-2(1)**, the *SWL* is not to exceed 80% of the design load on fitting specified in **-2(1)** and **-2(3)** to **(5)**.
(2) For towing fittings and their supporting structures used for towing operation specified in **-2(2)**, the *SWL* is not to exceed the design load on fitting specified in **-2(2)** to **(6)**.
(3) For towing fittings and their supporting structures used for towing operations specified in both **-2(1)** and **-2(2)**, the *SWL* is not to exceed the one for the greater of the design load of the both operations.
(4) The *SWL* of each fitting is to be marked by weld bead or equivalent on the fitting.

### 23.2.3 Mooring Fittings

**1** Arrangement of Mooring Fittings
(1) Mooring fittings are to be located on longitudinals, beams or girders, which are parts of the deck construction so as to facilitate efficient distribution of the mooring load.
(2) When the mooring fittings can not be located as specified in **(1)**, mooring fittings are to be arranged on the reinforced members.

**2** Design Load
Design load for mooring fittings and their supporting structures (hereinafter referred to as "design load on fitting" (see **Fig.CS23.1**) in this paragraph) are to be specified in **(1)** to **(7)** as below:
(1) Design load on line (see **Fig.CS23.1**) is to be 1.25 times the breaking strength of the mooring line specified in **Table CS23.1** according to **23.1.2** for the ship's corresponding equipment number.

(2) The method of application of the design load on fitting to mooring fittings and supporting structures is to be taken into account all acting load.
(3) The acting point of the mooring force on mooring fittings is to be taken at the attachment point of mooring line or at a change in its direction.
(4) Design load on fitting for mooring fittings and their supporting structures are to be taken into account the total load of the design load on line (see **Fig.CS23.1**), but need not to be more than twice the design load on line.
(5) If design load on fitting specified in **(1)** to **(4)** is less than the intended mooring load which is expected to be specified in the construction specification, the design load on the fitting is to be not less than the intended mooring load.
(6) The design load applied to supporting hull structures for mooring winches, etc. is to be 1.25 times the intended maximum brake holding load.
(7) The design load applied to supporting hull structures for capstans is to be 1.25 times the intended maximum hauling-in force.

**3** Selection of mooring Fittings
Mooring fittings are generally to be specified according to standards approved by the society.

**4** Allowable Stresses of Supporting Structure
Allowable stresses of supporting structure are not to be more than below:
(1) Normal stress : 100% of the specified yield point for the material used
(2) Shearing stress : 60% of the specified yield point for the material used

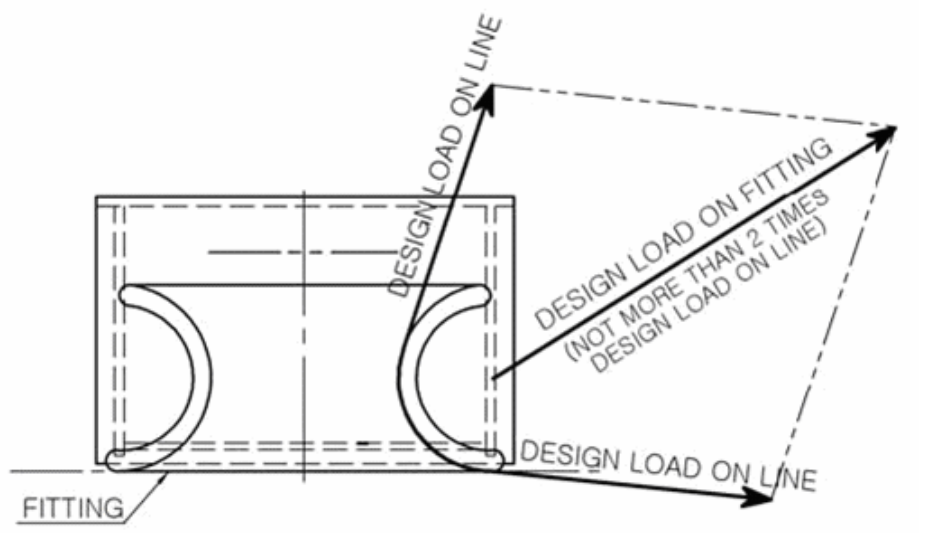
**5** Corrosion Addition of Supporting Structures
For the corrosion addition of supporting structures, the value will be considered by the Society, but not to be less than 2*mm*.

**6** Safe Working Load (*SWL*)
(1) The *SWL* is not to exceed 80% of the design load on fitting specified in **-2(1) to (5)** or the design load specified in **-2(6)** or **(7)** in **-2**.
(2) The *SWL* of each fitting, excluding mooring winches and capstan, is to be marked by weld bead or equivalent on the fitting.

### 23.2.4 Towing and Mooring Fitting Arrangement Plan

Ships are to be provided Towing and Mooring Fitting Arrangement Plan noted below:
(1) Approved standard and referenced No. of towing and mooring fittings
(2) For each towing and mooring fitting, location on the ship, purpose(mooring, harbour towing, escort towing etc.), *SWL* and manner of applying towing or mooring line load including limiting fleet angles

**Fig.CS23.1 Design Load**



# Chapter 27 SHIPS TO BE CLASSED FOR RESTRICTED SERVICE

## 27.4 Non-conventional Ships

### 27.4.1 Reduction for Non-conventional Ships

Main sentence has been numbered to -1, and new sub-paragraph -2 has been added as follows:

**2** For non-conventional ships, the requirements in **27.2, Part C** and **23.2** need not to be applied.

EFFECTIVE DATE AND APPLICATION (Amendment 3-3)

**1.** The effective date of the amendments is 1 January 2007.

**2.** Notwithstanding the amendments to the Rules, the current requirements may apply to ships the keels of which were laid or which were at *a similar stage of construction* before the effective date.
(Note) The term "*a similar stage of construction*" means the stage at which the construction identifiable with a specific ship begins and the assembly of that ship has commenced comprising at least 50 *tonnes* or 1% of the estimated mass of all structural material, whichever is the less.