08-391

RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

Part CSR-B Common Structural Rules for Bulk Carriers

Rules for the Survey and Construction of Steel Ships
Part CSR-B 2008 AMENDMENT NO.3

Rule No.36 29th May 2008
Resolved by Technical Committee on 31st March 2008
Approved by Board of Directors on 22nd April 2008

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Rule No.36 29th May 2008
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 CSR-B Common Structural Rules for Bulk Carriers

Chapter 3 STRUCTURAL DESIGN PRINCIPLES

Section 6 STRUCTURAL ARRANGEMENT PRINCIPLES

9. Deck structure

9.5 Hatch supporting structures

Paragraph 9.5.2 has been amended as follows.

9.5.2

~~Clear of openings, adequate continuity of strength of longitudinal hatch coamings is to be ensured by underdeck girders.~~

The connection of hatch end beams to ~~longitudinal girders and~~ web frames is to be ensured. Hatch end beams are to be aligned with transverse web frames in topside tanks.

Paragraph 9.5.3 has been amended as follows.

9.5.3

Clear of openings, adequate continuity of strength of longitudinal hatch coamings is to be ensured by underdeck girders.

At hatchway corners, ~~the face plate of hatch coamings and longitudinal~~ deck girders or their extension parts provided under deck in line with hatch coamings and ~~the face plates of~~ hatch end ~~girders on both sides~~ beams are to be effectively connected so as to maintain the continuity in strength.

9.6 Openings in the strength deck

Paragraph 9.6.3 has been amended as follows.

9.6.3 Corner of hatchways

For hatchways located within the cargo area, insert plates, whose thickness is to be determined according to the formula given after, are generally to be fitted in way of corners where the plating cut-out has a circular profile.

The radius of circular corners is to be not less than 5% of the hatch width, where a continuous longitudinal deck girder is fitted below the hatch coaming.

Corner radius, in the case of the arrangement of two or more hatchways athwartship, is considered by the Society on a case by case basis.

For hatchways located within the cargo area, insert plates are, in general, not required in way of corners where the plating cut-out has an elliptical or parabolic profile and the half axes of elliptical openings, or the half lengths of the parabolic arch, are not less than:

- 1/20 of the hatchway width or 600 *mm*, whichever is the lesser, in the transverse direction
- twice the transverse dimension, in the fore and aft direction.

Where insert plates are required, their net thickness is to be obtained, in *mm*, from the following formula:

$$t_{INS} = (0.8 + 0.4\ell / b)\, t$$

without being taken less than t or greater than $1.6t$

where:

ℓ : Width, in *m*, in way of the corner considered, of the cross deck strip between two consecutive hatchways, measured in the longitudinal direction (see **Fig. 23**)

b : Width, in *m*, of the hatchway considered, measured in the transverse direction (see **Fig. 23**)

t : Actual net thickness, in *mm*, of the deck at the side of the hatchways.

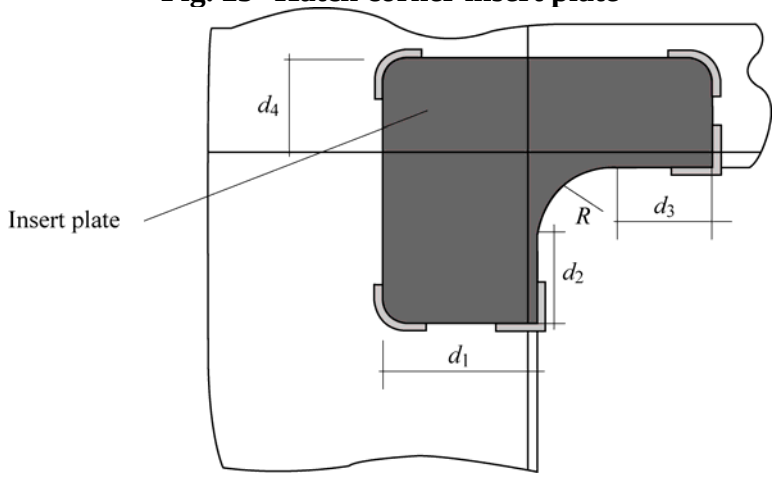
For the extreme corners of end hatchways, the thickness of insert plates is to be 60% greater than the actual thickness of the adjacent deck plating. A lower thickness may be accepted by the Society on the basis of calculations showing that stresses at hatch corners are lower than permissible values.

Where insert plates are required, the arrangement is shown in **Fig. 25**, in which d_1, d_2, d_3 and d_4 are to be greater than the ordinary stiffener spacing.

For hatchways located outside the cargo area, a reduction in the thickness of the insert plates in way of corners may be considered by the Society on a case by case basis.

For ships having length L of 150 *m* or above, the corner radius, the thickness and the extent of insert plate may be determined by the results of a direct strength assessment according to **Ch 7, Sec 2** and **Sec 3**, including buckling check and fatigue strength assessment of hatch corners according to **Ch 8, Sec 5.**

Fig. 25 Hatch corner insert plate



Chapter 4 DESIGN LOADS

Section 3 HULL GIRDER LOADS

2. Still water loads

2.1 General

Paragraph 2.1.2 has been amended as follows.

2.1.2 Partially filled ballast tanks in ballast loading conditions

Ballast loading conditions involving partially filled peak and/or other ballast tanks at departure, arrival or during intermediate conditions are not permitted to be used as design conditions unless:

- design stress limits are satisfied for all filling levels between empty and full, and
- for *BC-A* and *BC-B* ships, longitudinal strength of hull girder in flooded condition according to **Ch 5**, **Sec 1**, **2.1.3** is complied with for all filling levels between empty and full.

~~However, for the purpose of design, it is acceptable if, in each condition at departure, arrival and, where required by **2.1.1**, any intermediate condition, the tanks intended to be partially filled are assumed to be empty and full. In addition, the specified partly filled level in the intended condition is to be considered.~~

To demonstrate compliance with all filling levels between empty and full, it will be acceptable if, in each condition at departure, arrival, and where required by **2.1.1**, any intermediate condition, the tanks intended to be partially filled are assumed to be:

- empty
- full
- partially filled at intended level

Where multiple tanks are intended to be partially filled, all combinations of empty, full or partially filled at intended level for those tanks are to be investigated.

Paragraph 2.1.4 has been added as follows.

2.1.4 Sequential ballast water exchange

Requirements of **2.1.2** and **2.1.3** are not applicable to ballast water exchange using the sequential method.

Chapter 9 OTHER STRUCTURES

Section 2 AFT PART

5. Connection of hull structures with the rudder horn

5.1 Connection of aft peak structures with the rudder horn

Paragraph 5.1.3 has been amended as follows.

5.1.3 Hull structures

~~Between the horn intersection with the shell and the peak tank top, the vertical extension of the hull structures is to be not less than the horn height, defined as the distance from the horn intersection with the shell to the mid-point of the lower horn gudgeon.~~

The vertical extension of hull structure to support the rudder horn between the horn intersection with the shell and the peak tank top is in accordance with the requirements of **Ch 10, Sec 1, 9.2.6** and **9.2.7**.

The thickness of the structures adjacent to the rudder horn, such as shell plating, floors, platforms and side girders, the centreline bulkhead and any other structures, is to be adequately increased in relation to the horn scantlings.

Section 4 SUPERSTRUCTURES AND DECKHOUSES

Title of 5. has been amended as follow.

5. ~~Superstructure end bulkheads and deckhouse walls~~ End bulkheads of superstructure and deckhouse

5.1 Application

Paragraph 5.1.1 has been amended as follows.

5.1.1

The requirements in **5.2** and **5.3** apply to ~~superstructure end bulkheads and deckhouse walls~~ end bulkheads of superstructure and deckhouse forming the only protection for openings, as required by *ILLC* as amended, and for accommodations.

5.3 Scantlings

Paragraph 5.3.1 has been amended as follows.

5.3.1 Stiffeners

The section modulus w, in cm^3, ~~and the shear area A_{sh}, in cm^2~~, of the stiffeners is not to be less than the value obtained from the following formula:

$$w = 0.35kp_A s\ell^2$$

Chapter 13 SHIPS IN OPERATION, RENEWAL CRITERIA

Section 1 MAINTENANCE OF CLASS

1. General

1.2 Definitions

Paragraph 1.2.2 has been amended as follows.

1.2.2 Substantial corrosion

Substantial corrosion is an extent of corrosion such that assessment of the corrosion pattern indicates a ~~wastage in excess of 75% of allowable margins but within acceptable limits.~~ gauged (or measured) thickness between $t_{renewal}$ and $t_{renewal} + t_{reserve}$.

~~The allowable margin is the total corrosion addition t_c, as defined in **Ch.3, Sec.3.**~~

EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 1 July 2008.

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, upon request by the owner of a ship, to ships for which the date of contract for construction* is before the effective date.

*"contract for construction" is defined in IACS Procedural Requirement(PR) No.29 (Rev.4).

IACS PR No.29 (Rev.4)

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.

Notes:

1. This Procedural Requirement applies to all IACS Members and Associates.
2. This Procedural Requirement is effective for ships "contracted for construction" on or after 1 January 2005.
3. Revision 2 of this Procedural Requirement is effective for ships "contracted for construction" on or after 1 April 2006.
4. Revision 3 of this Procedural Requirement was approved on 5 January 2007 with immediate effect.
5. Revision 4 of this Procedural Requirement was adopted on 21 June 2007 with immediate effect.