Strength of Container Supporting Structures

Object of Amendment

Rules for the Survey and Construction of Steel Ships Part C
Guidance for the Survey and Construction of Steel Ships Part C

Reason for Amendment

Expectations and demands for safety standards and strength assessments of container supporting structures such as hatch covers, container posts, lashing bridges, cell guides and similar structures have increased in the shipbuilding, shipping and related industries. This is in line with recent trends, such as the increase in the volume of freight containers being transported and the interest in ensuring that they are transported safely.

The Society, therefore, conducted a study of design loads and strength assessment methods for container supporting structures and, as a result, is revising the relevant requirements for the strength of container supporting structures.

Outline of the Amendment

(1) Specify requirements for strength of container supporting structures in 14.2.3, Part 2-1.
(2) Specify that reference is to be made to the “Guidelines for Strength Assessment of Lashing Bridges” when strength assessing lashing bridges and container posts.

Effective Date and application

This draft amendment applies to ships for which the date of contract for construction is on or after 1 July 2025. This includes those ships to which Part C of the Rules for the Survey and Construction of Steel Ships applied prior to its comprehensive revision.

ID:DH24-16

Amended-Original Requirements Comparison Table (Strength of Container Supporting Structures)

Amended	Original	Remarks
RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS **Part C HULL CONSTRUCTION AND EQUIPMENT** **Part 2-1 CONTAINER CARRIERS** **Chapter 10 ADDITIONAL STRUCTURAL REQUIREMENTS** **(Deleted)**	**RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS** **Part C HULL CONSTRUCTION AND EQUIPMENT** **Part 2-1 CONTAINER CARRIERS** **Chapter 10 ADDITIONAL STRUCTURAL REQUIREMENTS** **10.6 Container Supporting Arrangements** **10.6.1 General** **10.6.1.1** **1** Container supporting arrangements are to be constructed so as to effectively transmit the loads to the double bottom structure, side structure and transverse bulkheads. **2** The strength of container supporting arrangements is to be sufficient for the loads from the bottom and sides of the ship and the loads due to the containers.	-Relocate 10.6 to 14.2.3.2. - Specify requirements for container support-ing structures from 14.2.3.2 to 14.2.3.4. -Target application of the requirements is “container carriers en-gaged on internation-al voyages” in accordance with 14.2.1.1-1.

Amended-Original Requirements Comparison Table (Strength of Container Supporting Structures)

Amended	Original	Remarks
Chapter 14 EQUIPMENT **14.2 Container Securing Systems** **14.2.3.2Cell Guides** **1** The gross thicknesses of cell guides are not to be less than 12 *mm*. **2** Cell guides and their supporting structures are to be welded in accordance with the following **(1)** through **(3)**. (1) Welding is not to be applied to the free edges of hull structures (decks, bulkheads, hatch coamings, etc.). (2) In addition to **(1)** above, when welding is to be applied to the high stress areas of hull structures (e.g. hatch coamings) using any of KA36, KD36, KE36, KA40, KD40, KE40 and KE47 steel plates having thicknesses of over 50 *mm*, care is to be taken to ensure excessive stress concentrations do not occur. (3) The requirements of **12.2, Part 1** may be applied to the welded joints of cell guides and their supporting structures. In such cases, fillet weld leg lengths are not to be less than *F*2. **3** Cell guides and their supporting structures are to be constructed so as to be effectively loaded by brackets at appropriate intervals or other means. **4** Cell guides and their supporting structures are to be constructed so as to be able to effectively transmit loads to bulkheads or other supporting members by means of backing stiffeners to welds of hull structures (e.g. bulkheads), pad plates, etc. **5** Cell guides and their supporting structures are to be suitably reinforced so as to be able to withstand longitudinal and transverse container loads, and impact loads during cargo loading/unloading.	**Chapter 14 EQUIPMENT** **14.2 Container Securing Systems** **(Newly Added)**	-Specify requirements for the strength of cell guides.

Amended-Original Requirements Comparison Table (Strength of Container Supporting Structures)

Amended	Original	Remarks
14.2.3.3Lashing Bridges and Container Posts **1** Lashing bridges and container posts are to be welded in accordance with the following **(1)** through **(3)**. (1) Deep penetration or full penetration welding is to be applied to upper deck regions (including the tops of hatch coamings) and welding is not to be applied to free edges. (2) In addition to **(1)** above, when welding is to be applied to the high stress areas of upper deck regions (including the tops of hatch coamings) using any of KA36, KD36, KE36, KA40, KD40, KE40 and KE47 steel plates having thicknesses of over 50 *mm*, care is to be taken to ensure excessive stress concentrations do not occur. (3) The requirements of **12.2, Part 1** may be applied to the welded joints of lashing bridges and container posts. In such cases, fillet weld leg lengths are not to be less than *F*2. **2** Strength assessments of lashing bridges and container posts are to be as deemed appropriate by the Society.	**(Newly Added)**	- Specify requirements for strength of lashing bridges and container posts. - Specify requirements for carrying out strength assessments of lashing bridges and container posts with reference to guidance.
14.2.3.4Hatch Covers Hatch covers are to be in accordance with **14.6, Part 1**.	**(Newly Added)**	-Specify requirements for the hatch covers in reference to 14.6, Part 1.

Amended-Original Requirements Comparison Table (Strength of Container Supporting Structures)

Amended	Original	Remarks
GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS **Part C HULL CONSTRUCTION AND EQUIPMENT** **Part 2-1 CONTAINER CARRIERS** **C14 EQUIPMENT** **C14.2 Container Securing Systems** **C14.2.3.3 Lashing Bridges and Container Posts** Where **14.2.3.3-2, Part C of the Rules** is applied, the "**Guidelines for Strength Assessment of Lashing Bridges**" published separately by the Society is also to be applied.	**GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS** **Part C HULL CONSTRUCTION AND EQUIPMENT** **Part 2-1 CONTAINER CARRIERS** **(Newly Added)**	-Specify requirements for strength assess-ments of lashing bridges and container posts in reference to guidelines.
EFFECTIVE DATE AND APPLICATION **1.** The effective date of the amendments is 1 July 2025. **2.** Notwithstanding the amendments to the Amendments, the current requirements apply to ships for which the date of contract for construction* is before the effective date. **3.** For ships subject to Part C of the Rules for the Survey and Construction of Steel Ships and the Guidance for the Survey and Construction of Steel Ships prior to its comprehensive revision by Rule No.62 on 1 July 2022 and Notice No.47 on 1 July 2022 (herein after referred to as "old Part C of the Rules" and "old Part C of the Guidance"), and which the date of contract for construction* is on and after the effective date, this amendment also applies to following requirements. 32.15, old Part C of the Rules (new)		

Amended	Original	Remarks
* "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.		