



CIRCULAR

36 Myeongji ocean city 9-ro,
Gangseo-gu, Busan, 618-814
Republic of Korea

Phone : +82-70-8799-8794
Fax : +82-70-8799-8419
E-mail : dgchoi@krs.co.kr
Person in charge : Choi Dae-gon

To : All Surveyors and who it may concern

No : 2023-11-E

Date : 2023.09.18

Subject	9.179 Notice for Amendments to the KR Technical Rules (Part 2 of the Rules) : Test block size of steel castings
Application	Immediately (Applicable retroactively after July 1, 2023)

1. Please be informed that the partial amendments have been made to the "Part 2 of the Rules", as below/attachments and you are kindly requested to apply the amendments on the relevant works.

- Below -

(1) To reserve reflection of 6.3 & 6.4 of IACS UR W8(Rev.3 Mar 2022)

2. Furthermore, please be informed that the amendments will be included in 2024 edition for KR Classification Technical Rules which will be published in the first half of 2024.

Attachments : (A) Amendment for Part 2 of the Rules ----- 1 copy
(The end)

RULES FOR CLASSIFICATION(STEEL SHIPS)

(Part 2 Materials and Welding)

2023.09.



Machinery Rule Development Team

- Main Amendments -

(1) Effective date : Immediately (Applicable retroactively after July 1, 2023)

- Circular -

● To reflect Request for Establishment/Revision of Classification Technical Rules

The relevant industry's opinion that the size of the test block of the steel castings is excessive was received by IACS, and KR decided to reserve 6.3 & 6.4 of IACS URW8(Rev.3).

Present	Amendment
<p style="text-align: center;">CHAPTER 1 MATERIALS</p> <p style="text-align: center;">Section 1 ~ Section 4 <Omitted> Section 5 Castings</p> <p>501. Steel castings</p> <p>1. ~ 6. <Omitted></p> <p>7. Selection of test specimens</p> <p>(1) At least one test block is to be provided for each casting. Unless otherwise agreed these test blocks are to be either integrally cast or gated to the castings. (2023)</p> <p>(2) The size of the test blocks for mechanical testing is to be such that the heat treatment and are to microstructure is representative for the section of the casting with the ruling section, i.e. the section for which the specified mechanical properties apply, see also ISO 683-1:2018 and ISO 683-2:2018, respectively.</p> <p>(A) For C, C-Mn steel castings this is in general to be achieved as follows: The test block shall have a thickness (t_s) of not less than the ruling section of the casting, or 30 mm, whichever is larger.</p> <p>(B) For large thickness castings other than stern tube, stern frame, anchor and rudder horn, t_s normally need not to exceed 150 mm. Length and width of the test block is normally to be at least three times t_s, unless otherwise agreed with the Society, as shown in Fig 2.1.14. (Note that longer or wider test blocks may be necessary in order to accommodate the required test specimens.) For castings for stern tube, stern frame, anchor and rudder horn the test block thickness t_s shall represent the ruling section.</p>	<p style="text-align: center;">CHAPTER 1 MATERIALS</p> <p style="text-align: center;">Section 1 ~ Section 4 <Same as the present Rules> Section 5 Castings</p> <p>501. Steel castings</p> <p>1. ~ 6. <Same as the present Rules></p> <p>7. Selection of test specimens</p> <p>(1) At least one test block is to be provided for each casting. Unless otherwise agreed these test blocks are to be either integrally cast or gated to the castings. <u>One tensile test specimen and one set of impact tests are to be taken from each test block. These test blocks are to have a thickness of not less than 30 mm. Test material, sufficient for the required tests and for possible retest purposes is to be provided for each casting or batch of castings. (2023) (2024)</u></p> <p>(2) ~ (4) <Deleted></p>

Present

Amendment

(C) Shorter width or length may be accepted for test blocks where actual casting width or length (t_A) is in the range between t_S and $3t_S$. See the example below.

(a) **Example 1:** For a general casting with dimensions 140 x 160 x 1250 mm the required test block size would typically be 140 x 160 x 420 mm (that is: $t_S \times t_A \times 3t_S$).

(b) **Example 2:** For a stern tube casting with ruling section $t_S = 170$ mm and width/height/length $t_{A1}/t_{A2}/t_{A3} = 1000/600/1800$ mm, the required test block size would typically be 170 x 510 x 510 mm (that is: $t_S \times 3t_S \times 3t_S$) see **Fig 2.1.15**.

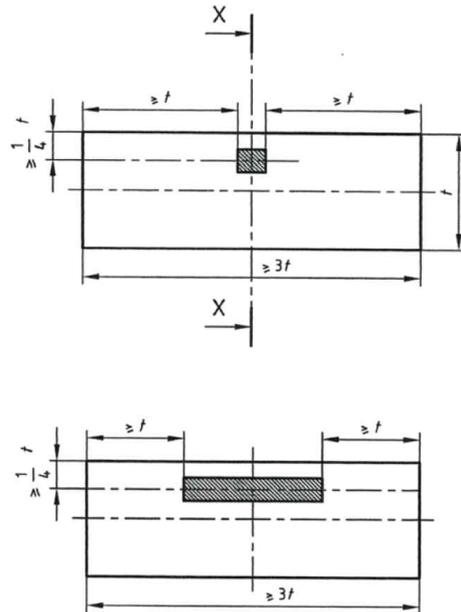


Fig. 2.1.14 Specimen positions relative to the test block in accordance with ISO 4990:2015* (2023)

* The figure taken from ISO 4990:2015, Steel castings — General technical delivery requirements, is reproduced with the permission of the International Organization for Standardization, ISO. This standard can be obtained from any ISO member and from the website of the ISO Central Secretariat at the following address: www.iso.org. Copyright remains with ISO.

(2) ~ (4) <Deleted>

Present

Amendment

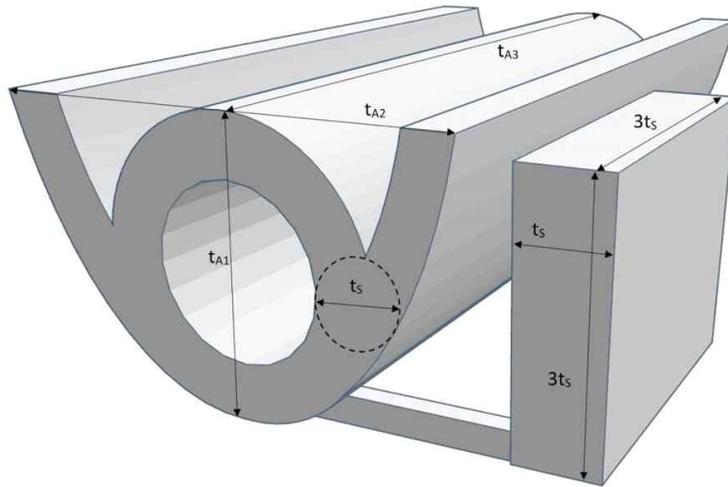


Fig. 2.1.15 Example 2: test block gated to stern tube casting
(2023)

- (3) For alloy steel castings the manufacturer shall propose dimensions for the test block and demonstrate the representative nature of it. (2023)
- (4) For test blocks with thickness ≤ 56 mm, the longitudinal axis of the test specimens is to be located at ≥ 14 mm from the surface in the thickness direction. For test blocks with thickness > 56 mm, the longitudinal axis of the test specimens is to be located at $\geq \frac{1}{4} t_s$ from the surface. Test specimens shall be taken in such a way that no part of the gauge length is machined from material closer than t_s to any of the other surfaces. For impact testing, this requirement shall apply to the complete test specimen - refer to **Fig 2.1.14** for location of test specimens in relation to the test block. (2023)

<hereafter, omitted>

(2) ~ (4) <Deleted>

<hereafter, same as the present Rules>