

Subject:

Allowable under thickness
tolerances of steel plates
and wide flats

NK TECHNICAL INFORMATION

No. 110

Date: 1 March 1993

To Shipowners, Shipbuilders and Steel Manufacturers concerned,

The Council of IACS(International Association of Classification Societies) at its 26th Meeting held in November 1992 revised IACS Unified Requirements(UR) W13 "Allowable under thickness tolerances of steel plates and wide flats" and approved it. The full text of the Revised UR W13 is attached hereto, and the brief summary of it is given below for quick reference.

Please take account of it when designing ships using hull structural plates and wide flats in future. NK has taken the necessary step to amend its rules according to the revision.

The Summary of the Revision

1. The maximum permissible under thickness tolerances for hull structural plates and wide flats for both normal and high strength steels, regardless of their thicknesses, is -0.3mm .
2. The revised requirement applies to new shipbuilding whose application for Classification Survey is submitted to the Society on and after 1st January 1994.

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W13 Allowable under thickness tolerances of steel plates and wide flats

(1981)
(Rev. 1
1989)
(Rev. 2
1992)

W13.1 Scope

W13.1.1 These requirements apply to the allowable under thickness tolerances of steel plates and wide flats with thicknesses of 5 mm and over, covering the following steel grades:

- (i) Normal and high strength hull structural steels according to W11, W19, W20 and W21.
- (ii) Steels for machinery structures in accordance with the individual Rules of Classification Societies.

The allowable under thickness tolerances for thicknesses below 5 mm may be specially agreed.

W13.1.2 These requirements do not cover plates and wide flats intended for the construction of boilers, pressure vessels and independent tanks, e.g. for the transportation of liquefied gases or chemicals.

NOTE:

Tolerances for length, width, flatness and over thickness may be taken from national or international standards.

W13.2 Manufacturers responsibility

W13.2.1 The responsibility for maintaining the required tolerances rests with the manufacturer, who is to carry out the necessary measurements. Occasional checking by the Surveyor does not absolve the manufacturer from this responsibility.

W13.3 Allowable under thickness tolerances

W13.3.1 The maximum permissible under thickness tolerance for hull structural plates and wide flats for both normal and high strength steels is -0,3mm.

Note:

The attention of shipbuilders and shipowners is to be drawn to the fact that when thickness gauging is carried out during the ship's life, estimation of the diminution of hull plating and structure will be based on the nominal thickness, this being the original approved thickness for the item of structure under consideration.

The under thickness tolerance acceptable for Classification is to be considered as the lower limit of a "plus-minus" range of thickness tolerance which could be found in the normal production of a conventional rolling mill manufacturing material, on average, to the nominal thickness.

With modern rolling mills, however, it may be possible to produce plates within a narrow range of thickness tolerance thus permitting the consistent production of material having a thickness less than the nominal thickness whilst at the same time satisfying the under thickness tolerance given.

In such cases, the time for the material to reach the maximum allowable diminution may be reduced.

It is therefore a matter for the shipbuilder and shipowner to mutually agree in individual cases as to whether, for commercial reasons, they wish to specify a more stringent under thickness tolerance than that given.

W13

W13.3.2 The tolerances for plates and wide flats for machinery structures are to be in accordance with Table 1.

Table 1

Nominal thickness (mm)	Under thickness tolerance (mm)
$\geq 5 - < 8$	- 0,4
$\geq 8 - < 15$	- 0,5
$\geq 15 - < 25$	- 0,6
$\geq 25 - < 40$	- 0,8
≥ 40	- 1,0

W13.4 Thickness measurements

W13.4.1 The thickness is to be measured at random locations whose distance from an edge shall be at least 25 mm. Local surface depressions resulting from imperfections and ground areas resulting from the elimination of defects may be disregarded provided the imperfections or grinding is in accordance with national or international standards.