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To attain CCS Branches including Europe Center, Hongkong Branch, Osaka Branch, Pushan Office, related Steel manufacturers, Shipowners, Shipyards, Ship Designers

## **Notice on Implementation of IACS UR W13 Thickness tolerance of steel plates and wide flats**

International Association of Classification Societies (IACS) has modified the Unified Requirements(UR) W13 “Thickness tolerances of steel plates and wide flats” , and it will become effective on 1<sup>st</sup> January 2011. The newest UR W13 (Rev. 4 Oct. 2009) please see attached document.

The requirements of minus tolerance of hull structural steel plates was revised in the newest version UR W13 (Rev. 4 Oct. 2009), which is to be applied to ships contracted for construction on or after 1<sup>st</sup> January 2011 and when the application for certification of hull structural steel plates is dated on or after 1<sup>st</sup> January 2011.

The main revisions are as follows,

1. minus tolerance of hull structural steel plates is still -0.3mm(see attached document W13.3.2), but average thickness of plates must be measured and the measured result is not less than the nominal thickness(see attached document W13.4.2). The plus tolerances on nominal thickness are to be accordance with a recognized national standard.
2. Thickness measurements see W13.5 and ANNEX of W13.
3. When plus tolerance control used for all hull structural steel plates, the above 2

mentioned stipulations in Para 2 and average thickness measurement may not be required.

China Classification Society will implement the UR W13(Rev. 4 Oct. 2009) on 1<sup>st</sup> January 2011 for survey of hull structural steel plates.

All steel manufacturers, shipyards should be aware of the changes in UR W13, and adjust measuring method properly for the implementation of new UR W13.

If any questions raised, please feel free to contact the New Building Dept. of CCS Headquarters.

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# W13 Thickness tolerances of steel plates and wide flats

(1981)  
(Rev.1  
1989)  
(Rev.2  
1992)  
(Rev.3  
1995)  
(Rev.4  
Oct  
2009)

## W13.1 Scope

W13.1.1 These requirements apply to the tolerance on thickness of steel plates and wide flats (hereinafter referred to as: product or products) with thicknesses of 5 mm and over, covering the following steel grades:

- (i) Normal and higher strength hull structural steels according to W11
- (ii) High strength quenched and tempered steels for welded structure according to UR W16
- (iii) Steels for machinery structures in accordance with the individual Rules of Classification Societies

The thickness tolerances for products below 5 mm may be specially agreed.

W13.1.2 These requirements do not apply to products 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.

W13.1.3 Where Class C of ISO 7452 is applied in lieu of W13.3, the requirements in W13.4 and W13.5 may not be applied.

## W13.2 Responsibility

W13.2.1 The responsibility for verification and maintenance of the production within the required tolerances rests with the manufacturer. The Surveyor may require to witness some measurements.

W13.2.2 The responsibility for storage and maintenance of the delivered product(s) with acceptable level of surface conditions rests with the shipyard before the products are used in fabrication.

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### Note:

1. Rev.4 of this UR is to be uniformly implemented by IACS Societies on ships contracted for construction on or after 1 January 2011 and when the application for certification of steel plates is dated on or after 1 January 2011.
2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

## W13 (cont)

### W13.3 Thickness tolerances

W13.3.1 The tolerances on thickness of a given product are defined as:

- Minus tolerance is the lower limit of the acceptable range below the nominal thickness.
- Plus tolerance is the upper limit of the acceptable range above the nominal thickness.

NOTE:

Nominal thickness is defined by the purchaser at the time of enquiry and order.

W13.3.2 The minus tolerance on thickness of products in accordance with UR W11 and UR W16 is 0.3 mm irrespective of nominal thickness.

W13.3.3 The minus tolerances for products for machinery structures are to be in accordance with Table 1.

**Table 1**

| Nominal thickness (t) (mm) | Tolerance (mm) |
|----------------------------|----------------|
| $5 \leq t < 8$             | -0.4           |
| $8 \leq t < 15$            | -0.5           |
| $15 \leq t < 25$           | -0.6           |
| $25 \leq t < 40$           | -0.8           |
| $t \geq 40$                | -1.0           |

W13.3.4 The tolerances on nominal thickness are not applicable to areas repaired by grinding which are to be in accordance with a recognized standard. The IACS recommendation No.12 may be used for this purpose.

W13.3.5 The plus tolerances on nominal thickness are to be in accordance with a recognized national or international standard.

### W13.4 Average thickness

W13.4.1 The average thickness of a product or products is defined as the arithmetic mean of the measurements made in accordance with the requirements of W13.5.

W13.4.2 The average thickness of a product or products in accordance with URs W11 or W16 is not to be less than the nominal thickness.

### W13.5 Thickness measurements

W13.5.1 The thickness is to be measured at locations of a product or products as defined in Annex.

W13.5.2 Automated method or manual method is applied to the thickness measurements.

W13.5.3 The procedure and the records of measurements are to be made available to the Surveyor and copies provided on request.

# W13

(cont)

## ANNEX: Thickness Measuring Locations

### A.1 Scope of application

This Annex applies to the thickness measuring locations for the thickness tolerance and the average thickness of the product.

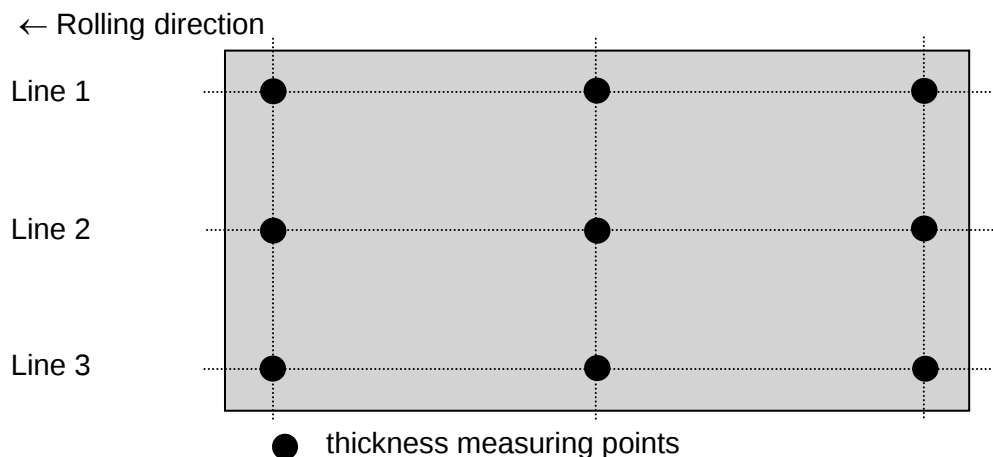
### A.2 Measuring locations

At least two lines among Line 1, Line 2 or Line 3 as shown in Figure A.1, are to be selected for the thickness measurements and at least three points on each selected line as shown in Figure A.1 are to be selected for thickness measurement. If more than three points are taken on each line the number of points shall be equal on each line.

For automated methods, the measuring points at sides are to be located not less than 10 mm but not greater than 300 mm from the transverse or longitudinal edges of the product.

For manual methods, the measuring points at sides are to be located not less than 10 mm but not greater than 100 mm from the transverse or longitudinal edges of the product.

**Figure A.1 - Locations of Thickness Measuring Points**



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