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## **RULES FOR THE CONSTRUCTION AND CLASSIFICATION OF ALUMINUM VESSELS 2013**

### **AMENDMENT No.1**

### **January 2014**

#### **CHINA CORPORATION REGISTER OF SHIPPING**

8th Floor, No. 103, Nanking East Road, Section 3

Taipei 10487, Taiwan, Republic of China

Tel. +886 2 25062711 Fax. +886 2 25074722

E-mail: [cr.tp@crclass.org.tw](mailto:cr.tp@crclass.org.tw) <http://www.crclass.org.tw>

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**RULES FOR THE CONSTRUCTION AND  
CLASSIFICATION OF ALUMINUM VESSELS 2013**

**AMENDMENT NO.1**

The following Part has been amended and it's effective date is :

<b>Part</b>	<b>Effective date</b>
2	January 1, 2014

The RULES FOR THE CONSTRUCTION AND CLASSIFICATION OF ALUMINUM VESSELS 2013 is to be read in conjunction with this Amendment.

List of major changes from RULES FOR THE CONSTRUCTION AND  
CLASSIFICATION OF ALUMINUM VESSELS 2013 edition

2.1.9, 2.1.10	Revised	Table II 2-3	Revised
32.1.11	Revised	Table II 2-5	Revised
2.4.5 & 2.4.7	Revised		
2.7.3(b)	Revised		
2.7.7(b)	Revised		
2.7.8	Revised		

AMENDMENT TO THE RULES FOR THE CONSTRUCTION AND CLASSIFICATION OF ALUMINUM VESSELS 2013

Rules for the construction and classification of aluminum vessels 2013 has been partly amended as follows:

**PART II HULL CONSTRUCTION AND EQUIPMENT**

**Chapter 2 Structure**

*Paragraphs 2.1.9, 2.1.10 and 2.1.11 have been added as follows:*

2.1.9 The section modulus and moment of inertia of stiffening members are provided by the member and a portion of the plating to which it is attached. For primary supporting members, the effective width of plating is to be equal to the lesser of either one half the sum of spacing on each side of the member, 0.33 times the unsupported span, or 750 mm. For stiffeners, the effective width of plating is to be equal to either one-half the sum of spacing on each side of the member or the width obtained from the following equation, whichever is less.

$$w = 60t$$

where:

w = effective width of plating, in mm

t = thickness of attached plating, in mm

2.1.10 The primary supporting members are members of the beam, girder or stringer type which provide the overall structural integrity of the hull envelope and tank boundaries, e.g. double bottom floors and girders, transverse side structure, deck transverses, bulkhead stringers and vertical webs on longitudinal bulkheads.

2.1.11 The stiffeners is a collective term for secondary supporting structural members.

*Paragraphs 2.4.5 and 2.4.7 have been amended as follows:*

2.4.5 The pressure acting on enclosed accommodation decks is to be as follows:

$$P_d = 7.05.0 \quad \text{kN/m}^2$$

2.4.7 The pressure acting on the front wall of superstructure and deck house is to be as follows:

$$P_h = 36.0 \quad 24.0 \text{ kN/m}^2 \quad \text{to plating and stiffeners}$$

$$P_h = 24.0 \quad \text{kN/m}^2 \quad \text{to stiffeners}$$

*The Table II 2-3 and Table II 2-5 have been amended as follows:*

**Table II 2-3**

Structural Members	Allowable stress, $\sigma_a$
Bottom and side shell plating – slamming pressure	<del>0.92</del> 0.90 $\sigma_y$
Bottom and side shell plating – sea pressure	<del>0.30</del> 0.55 $\sigma_y$
Deck plating – strength deck	<del>0.30</del> 0.60 $\sigma_y$
Deck plating – lower deck	0.40 0.60 $\sigma_y$
Bulkheads – tank boundary	0.60 $\sigma_y$
Bulkheads – watertight	<del>0.90</del> 0.95 $\sigma_y$

Superstructures and deck houses – front, sides, ends, tops	0.60 $\sigma_y$
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**Table II 2-5**

Structural Members	Allowable stress, $\sigma_a$
Bottom longitudinals	0.65 $\sigma_y$
Side longitudinals	<del>0.30</del> 0.50 $\sigma_y$
Deck longitudinals – strength deck	0.33 $\sigma_y$
Deck longitudinals – other deck	0.40 $\sigma_y$
Bottom transverses	0.80 $\sigma_y$
Side transverses	<del>0.50</del> 0.60 $\sigma_y$
Deck transverses – strength decks	0.75 $\sigma_y$
Deck transverses – other decks	0.75 $\sigma_y$
Watertight bulkheads	<del>0.75</del> 0.85 $\sigma_y$
Deep tank bulkheads	0.60 $\sigma_y$
Superstructure and deckhouse	0.70 $\sigma_y$

*The note below Table II 2-3 has been amended as follows:*

Note:  $\sigma_y$ = yielding strength (N/mm<sup>2</sup>) of welded aluminum

*Paragraph 2.7.3(b) has been amended as follows:*

$\sigma_y$ = yielding strength (N/mm<sup>2</sup>) of welded aluminum

*The note below Table II 2-5 has been amended as follows:*

Note:  $\sigma_y$ = yielding strength (N/mm<sup>2</sup>) of welded aluminum

*Paragraph 2.7.7(b) has been amended as follows:*

$\sigma_y$ = yielding strength (N/mm<sup>2</sup>) of welded aluminum

*Paragraph 2.7.8 has been amended as follows:*

2.7.8 Minimum thickness of stiffener

The thickness of webs and face plates are not to be less than obtained from the following equations:

(a) Webs

$$t = \frac{d_w}{C} \sqrt{\frac{\sigma_y}{\sigma_d}} \quad \text{mm}$$

where:

t = required minimum thickness (mm)

$d_w$  = depth of the web (mm)

C = ~~50~~ 35

$\sigma_y$  = yielding strength (N/mm<sup>2</sup>) of welded aluminum

$\sigma_d$  = 127.6 N/mm<sup>2</sup>

(b) Face bars

$$t = \frac{b_f}{C} \sqrt{\frac{\sigma_y}{\sigma_d}} \quad \text{mm}$$

where:

$\sigma_y, \sigma_d$  = as defined in 2.7.8(a)

$t$  = required minimum thickness (mm)

$b_f$  = width of the face bar (mm) outstanding width of the face bar (mm), see Fig. II 2-4

$C$  = 9



**Fig. II 2-4 Definition of  $b_f$**