



**RUSSIAN MARITIME REGISTER OF SHIPPING**  
HEAD OFFICE

**CIRCULAR LETTER**

**No. 314-26 - 929c**

dated *23.08* 2016

Re:

Coming into force of IACS Unified Interpretation (UI) GC7 (Rev.1 June 2016) "Carriage of Products Not Covered by the Code".

Item of technical supervision:  
ships under construction

Implementation: 01.07.2016

Valid: till -

Validity period extended till -

Cancels / Amends/ Supplements Circular Letter No. - dated -

Number of pages: 1+2

Appendices: Amendments to the Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk, 2016, ND No. 2-020101-093-E

Technical Director - Head of Classification Directorate Vladimir I. Evenko

Amends Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk, 2016, ND No. 2-020101-093-E

We hereby inform that in connection with the application of a new version of IACS UI GC7 (Rev.1 June 2016) "Carriage of Products Not Covered by the Code" in the RS activity, Sections 2 and 3, Part IV "Cargo Tanks" of the Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk, 2016, ND No. 2-020101-093-E shall be amended as specified in the Appendix to the Circular Letter.

The above amendments shall apply to the ships, the keel of which was laid on or after 1 July 2016.

The original document is posted on the internal RS website in the Section "External Normative Documents", and on the official IACS website: [www.iacs.org.uk](http://www.iacs.org.uk)

The above amendments will be introduced in the Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk at the re-publication.

It is necessary to do the following:

- 1) Apply the provisions of the Circular Letter in the practical activity from 1 July 2016.
- 2) Bring the content of the Circular Letter to the notice of the RS surveyors and all interested organizations and persons in the area of the RS Branch Offices' activity.

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DMS "THESIS"  
No.: 16-198923

**RULES FOR THE CLASSIFICATION AND CONSTRUCTION OF SHIPS  
CARRYING LIQUEFIED GASES IN BULK, 2016, ND No. 2-020101-093-E**

**PART IV. CARGO TANKS**

**2 CARGO TANK TYPES**

**Formula (2.1.3-2)** shall be amended to read:

$$A = 0,00185 \left( \frac{\sigma_m}{\Delta\sigma_A} \right)^2 . "$$

In the explication to Formula (2.1.3-2) the value  $\sigma_m$  shall be amended to read:

" $\sigma_m$  = design primary membrane stress".

New para **2.1.3.1** shall be introduced reading as follows:

**"2.1.3.1** If the carriage of products not covered by the Code and having the relative density above 1,0 is intended, it shall be verified that the double amplitude of the primary membrane stress  $\Delta\sigma_m$  created by the maximum dynamic pressure differential  $\Delta P$  does not exceed the allowable double amplitude of the dynamic membrane stress  $\Delta\sigma_A$ , as specified in 2.1.3, i.e.:

$$\Delta\sigma_m \leq \Delta\sigma_A. \quad (2.1.3.1-1)$$

The dynamic pressure differential  $\Delta P$  , in MPa, shall be determined by the formula

$$\Delta P = \frac{\gamma}{1,02 \cdot 10^5} (\alpha_{\beta 1} Z_{\beta 1} - \alpha_{\beta 2} Z_{\beta 2}) \quad (2.1.3.1-2)$$

where  $\gamma$  = maximum liquid cargo density, in kg/m<sup>3</sup>, at the design temperature;

$\alpha_{\beta}$ ,  $Z_{\beta}$  – refer to 3.2 and Fig. 2.1.3.1;

$\alpha_{\beta 1}$ ,  $Z_{\beta 1}$  are the  $\alpha_{\beta}$ ,  $Z_{\beta}$  values giving the maximum liquid pressure  $(P_{gd})_{max}$ , refer to 3.2.1;

$\alpha_{\beta 2}$ ,  $Z_{\beta 2}$  are the  $\alpha_{\beta}$ ,  $Z_{\beta}$  values giving the minimum liquid pressure  $(P_{gd})_{min}$ , refer to 3.2.1.

In order to evaluate the maximum pressure differential  $\Delta P$ , pressure differentials shall be evaluated over the full range of the acceleration ellipse as shown in the sketch of Fig. 2.1.3.1.

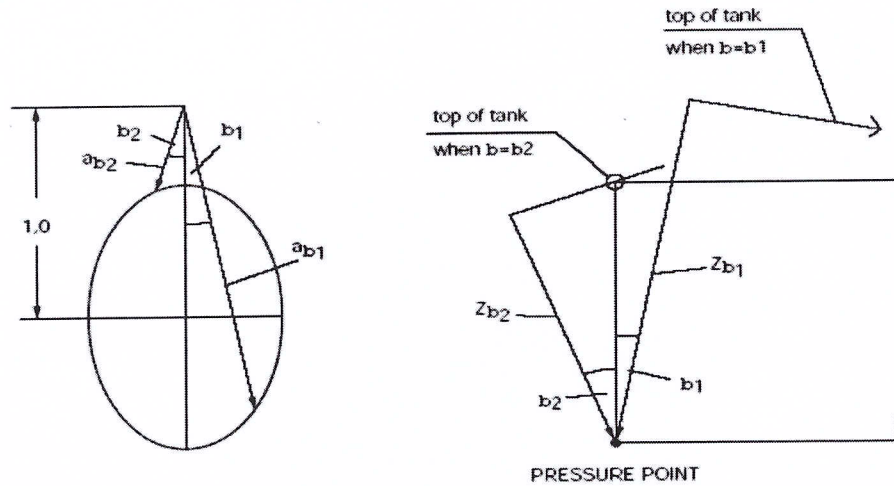


Fig. 2.1.3.1 Sketch for calculating a dynamic pressure differential”.

### 3 DESIGN LOADS

New para 3.2.1 shall be introduced reading as follows:

“3.2.1 The internal liquid pressures is that created by the resulting acceleration of the centre of gravity of the cargo due to the motions of the ship referred to in 3.11. The value of internal liquid pressure  $P_{gd}$ , in MPa, resulting from combined effects of gravity and dynamic accelerations shall be determined by the formula

$$P_{gd} = \alpha_{\beta} Z_{\beta} \frac{\gamma}{1,02 \cdot 10^5} . \quad (3.2.1)$$

Formula (3.2.1) shall apply to full cargo tanks only”.