

## GUIDE FOR

# 'SAFEHULL-DYNAMIC LOADING APPROACH' FOR VESSELS

DECEMBER 2006

## NOTICE NO. 2 – October 2015

The following Rule Changes were approved by the ABS Rules Committee on 18 September 2015 and become **EFFECTIVE AS OF 1 OCTOBER 2015**.

(See <http://www.eagle.org> for the consolidated version of the Guide for 'SafeHull-Dynamic Loading Approach' for Vessels, 2006, with all Notices and Corrigenda incorporated.)

*Notes - The date in the parentheses means the date that the Rule becomes effective for new construction based on the contract date for construction. (See 1-1-4/3.3 of the ABS Rules for Conditions of Classification (Part 1).)*

## APPENDIX 2 BUCKLING AND ULTIMATE STRENGTH CRITERIA

### 9 Deep Girders and Webs

#### 9.1 Buckling Criteria

(Revise Subparagraph A2/9.1.1, as follows.)

##### 9.1.1 Web Plate (1 October 2015)

$$(f_L/f_{cL})^2 + (f_b/f_{cb})^2 + (f_{LT}/f_{cLT})^2 \leq S_m$$

where

$f_L$  = calculated uniform compressive stress along the length of the girder, in N/cm<sup>2</sup> (kgf/cm<sup>2</sup>, lbf/in<sup>2</sup>).

$f_b$  = calculated ideal bending stress, in N/cm<sup>2</sup> (kgf/cm<sup>2</sup>, lbf/in<sup>2</sup>).

$f_{LT}$  = calculated total shear stress, including hull girder and local loads where applicable, in N/cm<sup>2</sup> (kgf/cm<sup>2</sup>, lbf/in<sup>2</sup>).

$f_L$ ,  $f_b$  and  $f_{LT}$  are to be calculated for the panel in question under each load case.  $f_L$ ,  $f_b$  and  $f_{LT}$  may be calculated by the relative displacement of four corner nodes of the panel. Care is to be taken where one corner of the panel is located in a high stress concentration area; because stresses calculated by the displacement method tend to be conservative.  $f_L$ ,  $f_b$  and  $f_{LT}$  may also be directly calculated from the component stresses of the elements in the panel, provided sufficient number of elements exists to represent stress distributions in the panel.  $f_{cL}$ ,  $f_{cb}$  and  $f_{cLT}$  are critical buckling stresses with respect to uniform compression, ideal bending and shear, respectively, and may be determined in accordance with 5C-5-A2 of the *Steel Vessel Rules*.

$S_m$  is as defined in A2/3.5.

In the determination of  $f_{cL}$  and  $f_{cLT}$ , the effects of openings are to be appropriately considered.