

Incorporation of Material Factors for High Tensile Steel into Structural Strength Requirements of Floating Docks

Amended Rules

Rules for Floating Docks

Reason for Amendment

Although the current Rules for Floating Docks do, in principle, allow high tensile steels to be used in the construction of floating docks, the Rules do not contain any clearly specified requirements related to such usage. Instead, each floating dock structure using such steels is examined on a case-by-case basis.

In recent years, however, increases in size of floating docks being constructed has led to a corresponding increase in the use of high tensile steels in such structures. Therefore, relevant requirements were amended based upon Part C of the Rules for the Survey and Construction of Steel Ships in order to specify structural requirements related to the use of high tensile steels.

In addition, formula used for the scantling calculations and buckling strength requirements were amended accordingly to take into account the effects of increases in the longitudinal bending stress associated with the use of high tensile steels.

Outline of Amendment

- (1) Incorporated material factors for high tensile steels into formula used for the longitudinal strength calculation as well as the scantling calculations of tank and shell plates, tank stiffeners and frames based upon Part C of the Rules for the Survey and Construction of Steel Ships.
- (2) Incorporated the influence of the longitudinal bending stress into the formula used for the scantling calculations mentioned in (1) based upon Part C of the Rules for the Survey and Construction of Steel Ships.
- (3) Added buckling strength requirements for longitudinal strength members in accordance with Part C of the Rules for the Survey and Construction of Steel Ships. In addition, specifies that the buckling strength of large floating docks was to be assessed using the stresses obtained from direct strength calculations.
- (4) Added requirements related to the grades of high tensile steels in accordance with Part C of the Rules for the Survey and Construction of Steel Ships.

Amended Requirements

Rules for Floating Docks 5.1.1, 5.2.4, 5.2.6, 5.2.7, 5.2.8, 5.2.9, 5.3.4, 5.4