

Design of Propulsion Units for Ice Class Ships

Amended Rules and Guidance

Rules for the Survey and Construction of Steel Ships Part I
Guidance for the Survey and Construction of Steel Ships Part I

Reason for Amendment

Part I of the ClassNK Rules specifies requirements relating to ice classes *IA Super*, *IA*, *IB*, *IC* and *ID* which are applied to ships navigating ice-infested water of the Northern Baltic or Canadian Arctic (hereinafter referred to as “ice class ships”) and specifies requirements relating to the design of propulsion units for ice class *ID* based upon the formula used in the *Finnish-Swedish Ice Class Rules* (hereinafter referred to as “*FSICR*”) 2002.

This formula, however, was deleted as part of a revision made to the *FSICR* 2008, and the designs of propulsion units for ice class *ID* now correspond to the designs for ice class *IC* including FEM analysis.

Accordingly, requirements relating to the designs of propellers and shafting for ice class *ID* are amended in consideration of the fact that ice class *ID* is applied to ships which navigate comparatively less ice-infested waters than ice class *IC* ships are allowed to navigate, and in consideration of the actual service histories, etc. of equivalent ice class ships classified in accordance with the requirements of other classification societies. More specifically, in addition to the above design method, it was specified that the design by simple calculation is permitted.

In addition, relevant requirements were amended in order to clarify the handling when parameters for hulls exceed the standard ranges used in the formulae for calculating the output required for the main propulsion machinery installed in ice class ships.

Outline of Amendment

The main contents of this amendment are as follows:

- (1) Specified requirements related to the design of propulsion units for ice class *ID*.
- (2) Clarified that in cases where parameters for hulls exceed the standard ranges used in formulae for calculating the output required for main propulsion machinery installed on ice class ships, detailed calculations or model tests may be used to obtain the necessary values.

Amended Requirements

Rules for the Survey and Construction of Steel Ships
Part I: 8.4.2, Table I8.13, 8.5, 8.6, 8.8, 8.9
Guidance for the Survey and Construction of Steel Ships
Part I: I8.6