Amendment on 27 June 2024
Resolved by Technical Committee on 30 January 2024

# Guidelines for the Application of the Finnish-Swedish Ice Class Rules

**Object of Amendment**

Guidance for the Survey and Construction of Steel Ships Part I

**Reason for Amendment**

ClassNK has incorporated the Finnish-Swedish Ice Class Rules (hereinafter referred to as "FSICR"), which are the requirements for ships that can withstand navigation in ice-covered waters (such as the North Baltic Sea) in winter specified by the Finnish Transport Safety Agency, in Chapter 8, Part I of Society's Rules for the Survey and Construction of Steel Ships. In addition, ClassNK has also partially incorporated the Guidelines for the Application of the Finnish-Swedish Ice Class Rules (hereinafter referred to as the "Guidelines"), which was also established by the same agency into Part I of the Guidance for the Rules for the Survey and Construction of Steel Ships.

The above-mentioned Guidelines also contains some recommendations for operations in icy waters and interpretations of the requirements stipulated in the FSICR, and the Society has incorporated the requirements which are necessary for rule implementation into its Rules from the viewpoint of convenience.

Accordingly, to specify the necessary requirements, relevant requirements are revised in reference to the above-mentioned Guidelines.

**Outline of Amendment**

(1) Specify that requirements in the *Guidelines for the Application of the Finnish-Swedish Ice Class Rules* may be applied to ships navigating in the North Baltic Sea.
(2) Specify guidance for ice strengthening parts in ice belts for IA Super or IA as ice class ships.

**Effective Date and Application**

Effective date of this draft amendment is 27 June 2024.

ID: DH23-14

Amended-Original Requirements Comparison Table (Guidelines for the Application of the Finnish-Swedish Ice Class Rules)

| Amended | Original | Remarks |
|---|---|---|
| **GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS**<br><br>**Part I SHIPS OPERATING IN POLAR WATERS, POLAR CLASS SHIPS AND ICE CLASS SHIPS**<br><br>**I8 ICE CLASS SHIPS**<br><br>**I8.1 General**<br><br>**I8.1.1 Application**<br>**1** For ice class ships trading in the Northern Baltic in the winter under the control of the regulation "*Finnish-Swedish Ice Class Rules*", The "*Guidelines for the Application of the Finnish-Swedish Ice Class Rules*" may be applied. Regard needs to be paid to the following as extracted from said guidelines.<br>(1) The Finnish and Swedish administrations provide icebreaker assistance to ships bound for ports in these two countries during the winter season. Depending on the ice conditions, restrictions are enforced with regard to the size and ice class of ships entitled to icebreaker assistance.<br>(2) It should not be assumed that mere compliance with these regulations guarantees a certain degree of capability to advance in ice without icebreaker assistance, or to withstand heavy ice compression in the open sea, where the ice field may move due to high wind speeds.<br>(3) It should be noted that the ice-going capacity of small ships may be somewhat lower than that of larger ships in the | **GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS**<br><br>**Part I SHIPS OPERATING IN POLAR WATERS, POLAR CLASS SHIPS AND ICE CLASS SHIPS**<br><br>**I8 ICE CLASS SHIPS**<br><br>**I8.1 General**<br><br>**I8.1.1 Application**<br>**1** For ice class ships trading in the Northern Baltic in the winter under the control of the regulation "*Finnish-Swedish Ice Class Rules*", regard needs to be paid to the following as extracted from "*Guidelines for the Application of the Finnish-Swedish Ice Class Rules*".<br>(1) The Finnish and Swedish administrations provide icebreaker assistance to ships bound for ports in these two countries during the winter season. Depending on the ice conditions, restrictions are enforced with regard to the size and ice class of ships entitled to icebreaker assistance.<br>(2) It should not be assumed that mere compliance with these regulations guarantees a certain degree of capability to advance in ice without icebreaker assistance, or to withstand heavy ice compression in the open sea, where the ice field may move due to high wind speeds.<br>(3) It should be noted that the ice-going capacity of small ships may be somewhat lower than that of larger ships in the | |

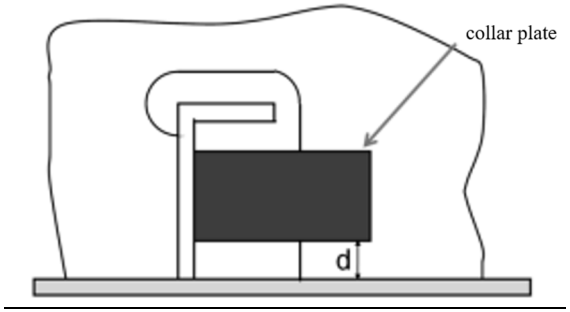
Amended-Original Requirements Comparison Table (Guidelines for the Application of the Finnish-Swedish Ice Class Rules)

| Amended | Original | Remarks |
|---|---|---|
| same ice class.<br>(4) Notch towing is often the most efficient way of assisting ships of moderate size (with a displacement not exceeding 30,000 *tons*).<br>(5) Ice class ships with a bulb protruding more than 2.5*m* forward of the forward perpendicular, ice class ships with too blunt of a bow shape and ice class ships with an ice knife fitted above the bulb are often difficult for notch towing.<br>(6) If the bow is too high in ballast condition, the ship could be trimmed to lower the bow.<br>(7) An ice strengthened ship is assumed to operate in open sea conditions corresponding to a level ice thickness not exceeding $h_0$. The design ice load height ($h$) of the area actually under ice pressure at any particular point of time is, however, assumed to be only a fraction of the ice thickness. The values for $h_0$ and $h$ are given in **Table I8.1.1-1**. | same ice class.<br>(4) Notch towing is often the most efficient way of assisting ships of moderate size (with a displacement not exceeding 30,000 *tons*).<br>(5) Ice class ships with a bulb protruding more than 2.5*m* forward of the forward perpendicular, ice class ships with too blunt of a bow shape and ice class ships with an ice knife fitted above the bulb are often difficult for notch towing.<br>(6) If the bow is too high in ballast condition, the ship could be trimmed to lower the bow.<br>(7) An ice strengthened ship is assumed to operate in open sea conditions corresponding to a level ice thickness not exceeding $h_0$. The design ice load height ($h$) of the area actually under ice pressure at any particular point of time is, however, assumed to be only a fraction of the ice thickness. The values for $h_0$ and $h$ are given in **Table I8.1.1-1**. | |

Amended-Original Requirements Comparison Table (Guidelines for the Application of the Finnish-Swedish Ice Class Rules)

| Amended | Original | Remarks |
|---|---|---|
| **I8.3 Hull Structures and Equipment**<br><br>**I8.3.2 General Requirements for Frames**<br>**1** With respect to the provisions of **8.3.2-2, Part I of the Rules**, where longitudinal frames are running through supporting structures such as web frames or transverse bulkheads, brackets are to be fitted on both sides of the supporting structures. (See **Fig. I8.3.2-1**) Where transverse frames are running through supporting structures such as deck or ice stringers within the ice belt, it is recommended that brackets are also fitted on the above side of the supporting structures. (See **Fig. I8.3.2-2**) The standard arm length of a bracket is not to be less than the depth of a frame web. | **I8.3 Hull Structures and Equipments**<br><br>**I8.3.2 General Requirements for Frames**<br>**1** With respect to the provisions of **8.3.2-2, Part I of the Rules**, where longitudinal frames are running through supporting structures such as web frames or transverse bulkheads, brackets are to be fitted on both sides of the supporting structures. (See **Fig. I8.3.2-1**) Where transverse frames are running through supporting structures such as deck or ice stringers within the ice belt, it is recommended that brackets are also fitted on the above side of the supporting structures. (See **Fig. I8.3.2-2**) The standard arm length of a bracket is not to be less than the depth of a frame web. | |
| **2** For I*A Super* and I*A* ice class ships, it is recommended that the distance *d* between the lower edge of the collar plate and the surface of shell plating at the point where a frame is running through the supporting structure in the ice strengthening area be 0 (see **Fig. I8.3.2-3**). | (Newly added) | Guidelines for the application of the Finnish-Swedish Ice Class Rules 8.3 |
| **3** With respect to **8.3.2-3(4), Part I of the Rules**, if either the angle of the frame inclination or the principal axis of the frame (without attached plating) deviates more than 15° from normal to the plating, support against tripping is required. | (Newly added) | 8.1 |

Amended-Original Requirements Comparison Table (Guidelines for the Application of the Finnish-Swedish Ice Class Rules)

| Amended | Original | Remarks |
|---|---|---|
| Fig.I8.3.2-3 Distance *d* between the lower edge of the collar plate and the surface of shell plating<br>  <br><br>EFFECTIVE DATE AND APPLICATION<br>**1.** The effective date of the amendments is 27 June 2024. | (Newly added) | Fig. 3c |