TRAFICOM
Liikenne- ja viestintävirasto

Regulation
DRAFT ()
TRAFICOM/199559/03.04.01.00/2025

Issued:	Date of entry into force:	In force:
X.X.2025	X.X.2025	until further notice

Legal basis:
Act on the Technical Safety and Safe Operation of Ships (1686/2009), section 23, subsection 1, section 48, subsection 3, section 49, subsection 3, section 50, subsection 3, section 51, subsection 3, section 51a, subsection 4 and section 77, subsection 2

Implementing EU legislation:
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Amendment information:
The regulation repeals the Finnish Transport Safety Agency's Regulation on the Hull Structures of Ships (TRAFI/9321/03.04.01.00/2013).

Hull and equipment of ships

Contents

1 General

1.1 Scope

This Regulation applies to vessels falling within the scope of section 23 of the Act on the Technical Safety and Safe Operation of Ships (1686/2009) (hereinafter also ‘*the Act*’).

Section 6.1 of this Regulation also applies to all vessels falling within the scope of section 77 of the Act.

Section 8 of this Regulation also applies to all vessels falling within the scope of section 52 of the Act.

However, this Regulation does not apply to traditional ships subject to the Finnish Transport and Communications Agency’s regulation on the safety of traditional vessels currently in force, which at the time of the entry into force of this Regulation is Regulation TRAFICOM/49681/03.04.01.00/2019.

By this Regulation, the Finnish Transport and Communications Agency issues technical regulations for the structure and equipment of other vessels referred to in section 23 of the Act. This regulation also lays down the further provisions referred to in section 77, subsection 2 of the Act concerning the making of markings on ships, the position and manner of markings, and the size of markings.

1.2 Definitions

In this Regulation, the definitions given in section 2 of the Act on the Technical Safety and Safe Operation of Ships shall apply.

The ‘Workboat Regulation’ refers to the regulation on the technical requirements for workboats currently in force, which at the time of entry into force of this Regulation is Regulation TRAFICOM/84936/03.04.01.00/2019.

2 General requirements

In order to meet the general safety requirements laid down in section 5 of the Act on the Technical Safety and Safe Operation of Ships, the ship’s structures and equipment shall meet the requirements of this Regulation.

All ships shall be designed, constructed and maintained in such a way that the hull and equipment of the ship provide adequate safety for the ship in all situations in which the ship is intended to be operated.

Ships whose structures and equipment have been approved and whose maintenance is monitored by a recognised classification society shall be subject to the applicable requirements in the rules for classification by the classification society instead of the requirements set out in sections 3 to 5 of this Regulation.

3 Requirements for ships subject to an initial survey

The hull and equipment of ships which, pursuant to sections 48 to 50 of the Act on the Technical Safety and Safe Operation of Ships, shall undergo an initial survey before being put into service as Finnish ships, shall comply with the rules of an approved classification society. The rules of a classification society refer to the design, dimensioning and quality requirements laid down by the classification society concerning the hull and equipment suitable for the type and operation of a ship.

For all ships of less than 24 metres in length, the equivalent requirements laid down in the Workboat Regulation may be applied instead of the classification society's rules.

Ships imported to Finland which have been approved for equivalent use in another Member State of the European Union or a Member State of the European Economic Area in accordance with corresponding rules concerning the hull and equipment of ships shall be considered to meet the requirements set for the hull and equipment of ships subject to an initial survey.

The demonstration of compliance of ships subject to an initial survey is described in Annex 1.

4 Changes to ships

Under section 56 of the Act on the Technical Safety and Safe Operation of Ships, after a survey has been performed, no changes may be made to the ship's structural arrangements, machinery, equipment or other items surveyed without the consent of the Finnish Transport and Communications Agency.

If significant repairs, alterations or modifications are carried out to the hull or equipment of a ship, the ship shall comply with the requirements applicable to ships subject to an initial survey as regards the effects of such alterations. *Significant repairs, alterations or modifications* refer to, at the very least, a change to the ship's deckhouse, main dimensions or intended use.

In accordance with section 43 of the Act, an application for the initial survey of alterations and for the approval of the associated drawings and plans shall be submitted in writing to the Finnish Transport and Communications Agency. In order for the alterations to be approved, plans relating to the alterations and documentation demonstrating compliance with the requirements shall be submitted.

5 Maintenance of ships

5.1 General requirements

This section lays down more specific requirements for the maintenance of the hull and some equipment. However, compliance with these more specific requirements shall not remove the obligation to comply with the general maintenance requirements.

The repair of a ship's structures and equipment shall be carried out in accordance with good shipbuilding practice. Repairs to the hull and equipment of ships shall be at least in accordance with the performance of the original structure or equipment.

The maintenance of a ship's hull and equipment is monitored through surveys, the specific content of which is set out in the hull inspection guidelines currently in force, which at the time of entry into force of this Regulation are guidelines TRAFICOM/74734/03.04.01.01/2026.

5.2 Hull

5.2.1 Steel and aluminium hulls

5.2.1.1 Corrosion

The local scantling of a hull of a ship made of steel or aluminium shall be sufficient to ensure adequate corrosion and wear allowances specific to the structure. The corrosion and wear allowances are determined in accordance with the requirements used in the design and construction of the ship. If the corrosion and wear allowances applicable to the ship are not known, the values in Annex 2 shall be used as the corrosion and wear allowances.

The thickness of the ship's hull plates shall be measured and recorded in connection with the renewal survey carried out at the end of each five-year period for ships that are at least 15 years old. No measurement shall be carried out at the end of two five-year periods following construction, unless the poor condition of the hull provides a special reason for this.

Any fixed ballast shall be arranged on board in such a way that the condition of the hull can be monitored. If the condition of the hull cannot be adequately monitored while the ship is carrying fixed ballast, the fixed ballast must be discharged so that the hull can be inspected in preparation for the renewal survey to be carried out at the end of a five-year period.

5.2.1.2 Deformation

The structure shall not exhibit any significant irreversible deformations. A permanent displacement of the structure that, in terms of the shell plating, exceeds the distance between the girders divided by 12 may be considered to be *a significant irreversible deformation*.

5.2.1.3 Fractures

There shall be no fractures in the structure.

5.2.1.4 Repairs

Repairs which comply with the requirements of Part B of Recommendation 47 of the International Association of Classification Societies (IACS) may be considered a good shipbuilding practice for structural repairs.

The only acceptable permanent repair shall be the replacement of a damaged structural component with a new equivalent one. Temporary repairs such as doubler plates shall be permanently repaired by the time the inspection of the structure is carried out at a shipyard.

5.2.2 Wooden hulls

The wooden structures of wooden-hull ships shall not have rotten or softened parts. Damaged wooden parts shall be replaced. Nails or other fastenings shall not be corroded, and they shall be replaced. The water-tightness of the hull shall be maintained by a method appropriate to the hull, including by caulking.

5.2.3 Composite hulls

The structures of composite-hull ships shall not have damage affecting the load-bearing capacity or water-tightness of the structures. Such damage includes delamination and fibre fractures. In addition, the matrix shall not have severe fractures or fractures that widen under load.

5.3 Rudder

The rudder bearing clearances shall be measured and documented when measuring the propeller shaft clearance.

The clearance shall not exceed five per cent of the original diameter of the pintle or shaft. In a spade rudder, the rudder shaft clearance shall not exceed one per cent of its original diameter.

5.4 Propeller shaft

The ship's propeller shaft bearing clearance shall be measured and documented at least every five years, primarily in connection with the renewal survey carried out at the end of a five-year period. The clearance for each bearing type shall not exceed the values specified in Annex 3.

The propeller shaft of a ship with a propulsion power of more than 375 kW shall be pulled out of the ship for inspection every five years, primarily in connection with the renewal survey carried out at the end of a five-year period. For ships up to 30 years old, an oil-lubricated propeller shaft shall only be pulled out for inspection at the end of every second five-year period.

The above requirement for the regular inspection of the propeller shaft on a ship with a propulsion power of more than 375 kW may be waived if the ship has a plan in place for monitoring the condition of the propeller shaft approved by the Finnish Transport and Communications Agency, and no signs of damage are observed on the propeller shaft.

When the propeller shaft is pulled out, the propeller shall be detached and the shaft fully pulled out or in. The propeller shaft or the components connected to it shall exhibit no damage that endangers the safety of the ship.

5.5 Anchor and anchor chain

Anchor chains shall be fully spread out for inspection every five years. A maximum wear of 10 per cent of the required thickness is permitted on the links of the anchor chain. The wear shall be calculated as the average of the longitudinal and lateral values measured for the same link. There shall be no loose crossbars in the anchor chain. If the required thickness of the anchor chain is not known, the minimum anchor chain thickness indicated in the table in Annex 4 shall be used.

In ships more than 24 metres in length, the anchors or anchor chains shall comply with the requirements set out in Annex 4.

In ships less than 24 metres in length, the requirements set out in the Workboat Regulation or by a classification society regarding the ship’s anchors and anchor chains shall apply.

However, if the equipment number (VN) value determined in accordance with Annex 4 is greater than 200, the ship’s anchors and anchor chains shall always be subject to the rules of the classification society.

A lost anchor shall be replaced with a new one immediately upon discovery of the loss. Ships required to carry two anchors may operate with one anchor until a replacement anchor has been fitted to the ship.

5.6 Documentation of repairs

Repairs to the hull and equipment shall be documented. The documentation of repairs carried out between surveys shall be made available in surveys.

6 Hull markings

6.1 Name, home port and draught of the ship

In accordance with section 77 of the Act on the Technical Safety and Safe Operation of Ships, the markings indicating the ship’s name, home port and draught shall comply with the requirements laid down regarding their position, size and manner of marking.

Draught marks shall be located at the stern and at the bow on both sides of the ship. Draught marks shall be indicated throughout the draught area of the ship and sufficiently beyond it. For draught marks, even decimetres or equivalent markings shall be used. The lowest point of each mark shall correspond to the indicated draught from the keel line. The vertical height of the draught marks shall be 100 mm, and the width of the line shall be 20 mm.

The name and home port of the ship shall be indicated in a visible location on the outer surface of the ship, one below the other. Primarily, these markings shall be made on both sides close to the bow or stern, or on the stern of the ship. The height of the characters indicating the ship’s name shall be at least $5 \times L$ (mm), where L is the ship’s length in metres; however, the height shall always be between 100 mm and 600 mm. The height of the characters indicating the home port shall be at least half the height of those indicating the ship’s name; however, the height shall always be at least 100 mm.

All markings shall be made permanently on the ship using a light paint on a dark hull and a dark paint on a light hull.

6.2 Markings on the bottom

If a hull survey is to be carried out by diving, the underwater hull of the ship must be marked in such a way that it is possible to locate the image taken by the diver and to identify the point of the hull.

7 Documents kept on board

The following up-to-date documents related to hull and equipment shall be kept on board ships engaged on international voyages and ships of 500 gross tonnage and upwards engaged on domestic voyages:

- overview;
- midship section;
- strength calculations (scantling, bending moment and shear forces);
- shell expansion;
- details of the rudder and rudder stock;
- details of the propeller shaft and stern tube;
- details of cargo hatches.

8 Winter navigation

Ships may be approved for winter navigation if they meet the requirements set out in this section.

The hull, propulsion equipment, rudder, steering gear and other underwater equipment of a ship approved for winter navigation shall be of sufficient strength to withstand the stresses caused by ice in accordance with the requirements specified in the table below in this section.

When a ship is put into service for winter navigation for the first time, it shall be demonstrated that the ship complies with the requirements of the table below in this section in accordance with the maximum level ice thickness at which the ship is intended to operate. Ships less than 24 metres in length may only be approved for level ice thicknesses of 0.05 m, 0.1 m or 0.2 m. The ‘Ice Class Regulation’ refers to the regulation on the ice classes currently in force, which at the time of entry into force of this Regulation is Regulation TRAFICOM/68863/03.04.01.00/2021.

Maximum level ice thickness (*m*)	**Requirements to be met**
1	Ice Class Regulation, ice class IA Super
0.8	Ice Class Regulation, ice class IA
0.6	Ice Class Regulation, ice class IB
0.4	Ice Class Regulation, ice class IC
0.2	Workboat Regulation, maritime navigation in winter, dimensioning level 3
0.1	Workboat Regulation, maritime navigation in winter, dimensioning level 2
0.05	Workboat Regulation, maritime navigation in winter, dimensioning level 1

Ships previously approved for winter navigation may be re-approved based on a renewal survey carried out at the end of a five-year period.

9 Entry into force

This regulation shall enter into force on XX XX XXXX.

Signed
Director-General

Signed
Deputy Director-General

Annex 1. Demonstration of compliance of ships subject to an initial survey.

The hull and equipment of ships subject to an initial survey may be demonstrated to comply with the requirements set out in section 3 of this Regulation by presenting one of the following:

1) Documentation demonstrating that the ship has been classified in its current form by a classification society. Such documentation may include a classification certificate and a statement confirming that the ship’s hull components and equipment approved by the classification society have not been altered.
2) Documentation demonstrating that a ship less than 24 metres in length was constructed in accordance with the requirements laid down in the Workboat Regulation. For example, a certificate attesting compliance by a recognised society is sufficient for this purpose.
3) Documentation showing that the ship’s structures and equipment have been approved in another Member State of the European Union or a Member State of the European Economic Area in accordance with corresponding hull and equipment regulations for use corresponding to the use for which the ship is to be surveyed in Finland.
4) Structural and equipment drawings and calculations based on which compliance with requirements and dimensioning specifications can be verified. In this case, either the requirements specified in a classification society’s rules or those set out in the Workboat Regulation shall be applied. The documentation shall include, at a minimum, details of the shell structure, the structure of the watertight bulkheads, the structure of the decks, the structure of the bow and stern, the structure of the propulsion and steering systems, and the anchor and anchor chain.

Annex 2. Corrosion and wear allowances in ships.

The original scantling of the structure is known

Where the original constructed scantling is known, the following shall apply as the maximum acceptable reduction in scantling:

1) For local point corrosion or wear in an area not exposed to high stress concentrations, the values in the following table shall apply, using linear interpolation between values:

Extent of corrosion	Permitted scantling reduction
single point corrosion	35 % reduction of the original
30 % of the surface area	25 % reduction of the original
50 % of the surface area	20 % reduction of the original

2) For local point corrosion or wear in an area exposed to high stress concentrations, or in areas directly associated with them (such as the attachment points of girders and the edges of openings), the maximum acceptable reduction in scantling is 20 per cent of the original scantling.

3) In the shell plating, panelling or parts of girders, the maximum acceptable reduction in scantling is 20 per cent of the original scantling.

The original scantling of the structure is unknown

Where the original constructed scantling is not known, the following formula shall be used for the shell plating to establish the original thickness (t) of the ship’s shell plating:

$$t = 4 + L / 10 \text{ [mm]},$$
where L = length of the ship [m].

The maximum acceptable reduction in scantling is 25 per cent of the thickness of the shell plating calculated using the formula.

Annex 3. Permissible bearing clearances on the propeller shaft.

Standard white metal bearings.

Permitted clearances for stern tube bearings made of white metal, oil lubrication		
Shaft diameter [mm]	Minimum clearance [mm]	Clearance at which the bearing must be replaced [mm]
100	0.4	1.20
200	0.5	1.35
300	0.6	1.50
400	0.7	1.65
500	0.8	1.80
600	0.9	1.95
700	1.0	2.10
800	1.1	2.25

Permitted clearances for stern tube bearings made of lignum vitae and white metal, petroleum jelly/water lubrication		
Shaft diameter [mm]	Minimum clearance [mm]	Clearance at which the bearing must be replaced [mm]
100	0.60	1.10
200	0.71	2.20
300	0.83	3.45
400	0.94	4.45
500	1.06	5.25
600	1.17	5.95

Permitted clearances for stern tube bearings made of white metal and cast iron, petroleum jelly lubrication		
Shaft diameter [mm]	Minimum clearance [mm]	Clearance at which the bearing must be replaced [mm]
50	0.45	1.00
100	0.55	1.30
150	0.65	1.65
200	0.75	2.00
250	0.85	2.35
300	0.95	2.70
350	1.05	3.05
400	1.15	3.40

Water-lubricated rubber bearings.

Permitted clearances for stern tube bearings made of rubber, water lubrication		
Shaft diameter [mm]	Minimum clearance [mm]	Clearance at which the bearing must be replaced [mm]
50	0.20	1.25
100	0.38	1.80
150	0.56	2.35
200	0.74	2.90
250	0.92	3.45
300	1.10	4.00

Pokkenholtz bearings.

Permitted clearances for Pockenholtz stern tube bearings		
Shaft diameter [mm]	Minimum clearance [mm]	Clearance at which the bearing must be replaced [mm]
25	0.25	2.0
50	0.40	2.5
75	0.50	2.8
100	0.55	3.0
125	0.60	3.3
150	0.65	3.5
200	0.75	4.1
250	1.00	4.7
300	1.20	5.5
400	1.35	5.9
500	1.60	7.0

Water-lubricated plastic bearings.

Permitted clearances for stern tube bearings made of plastic, water lubrication		
Shaft diameter [mm]	Minimum clearance [mm]	Clearance at which the bearing must be replaced [mm]
50	0.25	2.75
100	0.35	3.25
150 / 151	0.50/0.70	4.00
200	0.80	4.75
250	0.95	5.50
300	1.05	6.00
350	1.15	6.75
400	1.25	7.50
450	1.40	8.00
500	1.55	8.75
550	1.75	9.40

Annex 4. Anchors and anchor chains.

Ships shall be equipped with two anchors and anchor chains. These shall meet the requirements specified in the table below, in which the weight of the anchors, the length of the anchor chains and the diameter of the anchor chain links are determined by the equipment number (VN). The requirements corresponding to VN values between those indicated in the table shall be determined by linear interpolation.

Anchor chains shall be made of steel and shall not have a tensile strength less than 370 N/mm2.

Dimensioning of the anchor and anchor chain.

VN	Anchor weight [kg]		Anchor chain link diameter [mm]	Anchor chain length [m]	
	First anchor	Second anchor		First anchor	Second anchor
15	14	10	7	50	50
20	20	14	7	50	50
25	27	19	7	50	50
30	32	22	8	50	50
35	41	29	8	60	60
40	50	35	9	70	60
50	68	48	9	80	65
60	92	64	10	90	65
70	116	81	11	100	70
80	137	96	12	110	70
90	155	110	13	110	82.5
100	170	120	14	110	82.5
110	183	128	15	110	82.5
120	196	138	16	110	82.5
130	208	145	17	110	110
140	220	154	18	110	110
150	230	160	19	110	110
160	240	170	20	110	110
170	250	180	20	120	110
180	260	190	20	120	110
190	270	200	22	120	110
200	290	210	22	120	110

The equipment number (VN) is calculated using the following formula:

$$\mathbf{VN = (0.5\ LBD)^{2/3} + 2hB + 0.1A,}$$

where
L = the waterline length at maximum draught [m]
B = the maximum breadth [m]
D = the moulded depth amidships [m]
h = the height amidships measured from the waterline at maximum draught to the highest deck, increased by the height of a superstructure whose breadth is at least 0.25 x B [m]
A = the area of the hull side profile at maximum draught from the waterline to the highest deck, increased by the side profile area of a superstructure whose breadth is at least 0.25 x B [m2].

However, if a high holding power (HHP) anchor is used, the anchor weight indicated in the table may be reduced by 25 per cent. If a super high holding power (SHHP) anchor is used, the anchor weight may be reduced by 50 per cent.

If VN < 15, the ship shall only be required to carry the first anchor specified in the table for VN = 15 and the corresponding anchor chain.

A ship operating exclusively in domestic trading areas I, II or D shall only be required to carry the first anchor specified in the table and the corresponding anchor chain.

Barges shall only be required to carry the first anchor indicated in the table and the corresponding anchor chain. However, no anchor shall be required for barges fitted with support legs or for barges used for dredging.

If the ship operates solely in inland waters, the weight of the anchor in kilograms may be the same as the gross tonnage of the ship.

If VN < 30, the anchor chain may be partly replaced by an equivalent rope. However, there shall be at least 5.0 metres of anchor chain at the anchor end.