

**RULES
FOR THE CLASSIFICATION OF
SHIPS**

*Part 7 – MACHINERY INSTALLATION
January 2020*

*Amendments No. 1
January 2021*

CROATIAN REGISTER OF SHIPPING

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By the decision of the General Committee of Croatian Register of Shipping,

Amendments No. 1 to the
RULES FOR THE CLASSIFICATION OF SHIPS
Part 7 – MACHINERY INSTALLATION

have been adopted on 22nd December 2020 and shall enter into force on 1st January 2021

INTRODUCTORY NOTES

These amendments shall be read together with the requirements in the Rules for the Classification of Ships, Part 7 – Machinery Installation, edition January 2020.

Table 1 contains review of amendments, where items changed or added in relating to previous edition are given, with short description of each modification or addition. All major changes throughout the text are shaded.

This Part of the Rules includes the requirements of the following international Organisations:

International Maritime Organization (IMO)

Conventions: International Convention for the Safety of Life at Sea 1974 (SOLAS 1974) and all subsequent amendments up to and including the 2011 amendments (MSC.317/89).
Protocol of 1988 relating to the International Convention for the Safety of Life at Sea 1974, as amended (SOLAS PROT 1988).

Circulars: MSC.1/Circ 1203 (2006)

International Association of Classification Societies (IACS)

Unified Requirements (UR):

K3 (Corr. 2, 1998), M25 (Rev. 4, 2017), M34 (1980), M40 (1981), M46 (Rev. 2, 2018),
M52 (Rev.2 2019), M62 (2002), M68 (Rev.2, 2015), M69 (2008)

Unified Interpretations (UI):

SC16 (Rev. 2, 2006), SC17 (Rev. 2, 2005), SC95 (1994), SC184 (Rev. 1, 2005),
SC242 (corr. 1, Aug 2011, reinstated)

Recommendations (Rec.):

No. 26 (Rev. 1, 2006), No. 27 (Rev. 1, 2006), No. 28 (Rev. 1, 2006), No. 29 (Rev. 1, 2006),
No. 30 (Rev. 1, 2006)

TABLE 1 – REVIEW OF AMENDMENTS

This review comprises amendments in relation to the Rules for the Classification of Ships, Part 7 – Machinery Installation, edition January 2020.

<i>ITEM</i>	<i>DESCRIPTION OF THE AMENDMENTS</i>
SECTION	
Head 2.6 – Propeller shaft bearings	Existing item 2.6.1 have been amended

2 SHAFTINGS

Head 2.6 PROPELLER SHAFT BEARINGS, has been amended and should be read as follows:

2.6.1 For oil lubricated bearings of white metal the length of white metal lined bearings is to be not less than 2.0 times the rule diameter of the shaft in way of the bearing. The length of the bearing may be less provided the normal bearing pressure is not more than 8 bar as determined by static bearing reaction calculation taking into account shaft and propeller weight which is deemed to be exerted solely on the aft bearing divided by the projected area of the shaft. However, the minimum length is to be not less than 1.5 times the actual diameter.

For bearings of synthetic rubber, reinforced resin or plastics materials which are approved for use as oil lubricated stern bush bearings, the length of the bearing is to be not less than 2.0 times the rule diameter of the shaft in way of the bearing. The length of bearing may be less provided the nominal bearing pressure is not more than 6 bar as determined by static bearing reaction calculation taking into account shaft and propeller weight which is deemed to be exerted solely on the aft bearing divided by the projected area of the shaft. However, the minimum length is to be not less than 1.5 times the actual diameter. Where the material has proven satisfactory testing and operating experience, consideration may be given to an increased bearing pressure. Synthetic materials for application as oil lubricated stern tube bearings are to be Type Approved.

For water lubricated bearings the length of the bearing is to be not less than 4.0 times the rule diameter of the shaft in way of the bearing.

For a bearing of synthetic material, consideration may be given to a bearing length not less than 2.0 times the rule diameter of the shaft in way of the bearing, provided the bearing design and material is substantiated by experiments to the satisfaction of the Register. Synthetic materials for application as water lubricated stern tube bearings are to be Type Approved.

For grease lubricated bearings the length of the bearing is to be not less than 4.0 times the rule diameter of the shaft in way of the bearing.

2.6.2 In case of sea-water lubricated bearings, a valve or a cock shall be fitted on the after peak bulkhead or stern tube to check water inflow. A flow indicator shall be provided on the pipe-line. Provision shall be made for a signalling device to indicate minimum permissible flow.

It is recommended to provide a device protecting stern tube from freezing.

2.6.3 The oil lubricated stern bush shall be provided with means of forced cooling, unless water is continuously maintained in the after peak.

A suitable device shall be provided for measuring the oil or bearing temperature in stern tube.

2.6.4 In the gravity system of lubrication, the gravity tanks shall be located at least 3 m above the waterline of the ship's maximum draught. The oil tanks shall be provided with level indicators and level alarms.

2.6.5 It is recommended that the distance between the centres of adjacent bearings of shaftline, where there are no concentrated masses in the span, meets the condition:

$$5,5\sqrt{d} \leq l \leq \lambda\sqrt{d} \quad (2.6.5)$$

where:

- l – distance between the bearings, [m];
- d – intermediate shaft diameter, [m];
- λ – factor taken:
 - = 14,0 for $n \leq 500$ rpm,
 - = $\frac{300}{\sqrt{n}}$ for $n > 500$ rpm,
- n – the same as in 2.2.1, [rpm].