
**Ships and marine technology —
Vocabulary on inland navigation
vessels —**

**Part 2:
Ship's shaftings**

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee 8, *Ships and marine technology*, Subcommittee SC 7, *Inland navigation vessels*.

A list of all parts in the ISO 7496 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Shafting lines are available on the vast majority of self-propelled inland navigation vessels. They mechanically connect the engine and the propulsion unit of the vessel. Shafting lines transfer power and moment between the elements of the power plant and the propulsion complex of the vessel in the direction from the engine to the propulsion unit. Shafting is one of the most important devices on a ship, critical to the safe operation of the ship.

Inland navigation vessels are outside the competence of the IMO. Therefore, ISO standards are an effective way to implement best practices for inland waterways and inland navigation vessels.

The standardization of the terms related to the shafting of inland navigation vessels provides an unambiguous understanding of information materials on this topic. This is especially important for international cooperation in anticipation of the introduction of smart (machine-understandable) standards, including those applicable to ships and marine technologies.

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Ships and marine technology — Vocabulary on inland navigation vessels —

Part 2: Ship's shaftings

1 Scope

This document specifies terms and definitions relating to inland navigation vessels shaftings, with the aim of providing clear definitions which can be understood by all specialists.

This document is applicable only to equipment which is used for the vessels being used for the inland navigation.

The terms specified in this document are intended to be used in documentation of all kinds. Certain standardized terms are also given with their abridged version; these can be used in cases where no possibility of misinterpretation can arise.

A combination of terms is allowed in application.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 Terms related to general concepts applicable to ship shafting

3.1.1

ship shafting

structurally complex element, physically connecting the main engine with the propulsor and designed to transmit torque and axial loads arising from the operation of the ship propulsion system (hereinafter the propulsion system), of which it is a component

3.1.2

ship shafting element

integral part of a *ship shafting* (3.1.1), manufactured as an independent product in the form of a separate part or assembly unit and to be installed on a ship to perform interrelated functions

3.2 Terms related to ship shafting gear subgears and devices

3.2.1

gross shaft line

linear system of shafts, rigidly or elastically interconnected

3.2.2

stern tube gear

set of *ship shafting elements* (3.1.2) designed to accommodate supports, lubrication, cooling gears and protection of the propeller shaft passing through it and to prevent the overflow of water into the ship's hull

Note 1 to entry: A stern tube gear consists of a stern tube, bearings, *sealing gears* (3.2.3) and a cooling and lubrication system.

3.2.3

sealing gear

element of a ship shaft line, installed coaxially with a shaft being sealed, designed to prevent the overflow of water inside the ship's hull, between its watertight compartments or lubricating oil from stern-tube oil-lubricated gears

Note 1 to entry: A sealing gear consists of a cylindrical body, end or pressure cover, sealing and locking elements.

3.2.4

braking device

element of a *ship shafting* (3.1.1), designed for frictional locking of the shafting and installed on the ship's foundation with the coaxial arrangement of friction elements relative to the brake discs, which can be used as flange connections

3.2.5

current collecting device

element of a *ship shafting* (3.1.1), made in the form of a contact-brush device, designed for electrical closure of the shafting with the ship's hull in order to protect it from electrochemical corrosion

3.2.6

shaft-turning gear

element of the propulsion system, built into the main engine or gearbox, or installed on a separate foundation, designed to turn or move the moving elements and parts of the propulsion system when preparing it for operation during long lay time and repair

3.2.7

tachometer

device for measuring the frequency of rotation of the shaft line of a propulsion plant

Note 1 to entry: A tachometer consists of a transducer, display instruments and communication lines between them.

3.2.8

torsionometer

device for measuring the average torque transmitted by a *torsion shaft* (3.3.8)

3.3 Terms related to ship shaft line and elements thereof

3.3.1

ship shaft

ship shafting element (3.1.2) designed to transmit torques and axial loads

Note 1 to entry: A ship shaft is made in the form of a beam of round solid or hollow cross-section with a neck at the place where the bearing and seal are installed.

3.3.2

propulsive unit shaft

propeller shaft

ship shaft (3.3.1) directly connected to the propeller (or other type of propulsive unit)

3.3.3**thrust shaft**

ship shaft (3.3.1) mounted in a *thrust bearing* (3.6.3) and designed to transmit the axial force, or thrust, created by the propeller, to the ship's hull

3.3.4**thrust propulsive unit shaft**

thrust propeller shaft

ship shaft (3.3.1) that is both propulsor unit shaft and *thrust shaft* (3.3.3)

3.3.5**torsion thrust shaft**

ship shaft (3.3.1) consisting of two coaxially located shafts, of which the inner shaft is loaded only with torque, and the outer shaft only transfers the stop

3.3.6**intermediate shaft**

ship shaft (3.3.1) built into the shaft line of the shafting in cases where the total length of the thrust and propeller shafts is insufficient for the kinematic connection of the engine with the propeller

3.3.7**cardan shaft**

ship shaft (3.3.1) with articulated ends, designed to transmit torsional load

3.3.8**torsion shaft**

ship shaft (3.3.1) built into the shaft line, pre-calibrated and designed to directly measure the torque transmitted by it

3.3.9**spacer shaft**

ship shaft (3.3.1) with a length allowance built into the shaft line when assembled and adjusted to fit during shafting assembly

3.3.10**connection of the shaft line**

shafting elements or their connecting assemblies connecting the main engine, gearbox, shafts and propeller into a single propulsion system

3.4 Terms related to ship stern tube gear and elements thereof**3.4.1****stern tube**

element of the *stern tube gear* (3.2.2), which serves to pass the propeller shaft

3.4.2**built-in stern tube gear**

stern tube gear (3.2.2) with *stern tube* (3.4.1) located inside the ship's hull

3.4.3**suspended stern tube gear**

stern tube gear (3.2.2) with *stern tube* (3.4.1), the bow of which is built into the hull of the vessel, and the stern of which is located outside the hull on the bracket

3.4.4**shaft strut**

element of a *ship shafting* (3.1.1), connected by one or two legs to the hull of the ship in its stern underwater part and designed to support the cantilevered part of the propeller shaft or the *suspended stern tube gear* (3.4.2)

3.5 Terms related to ship stern tube sealing gear and elements of it

3.5.1

aft side stern tube seal

sealing gear (3.2.3) included in the *stern tube gear* (3.2.2) and installed on the side of the propeller coaxially with the propeller shaft

3.5.2

fore side stern tube seal

sealing gear (3.2.3) included in the *stern tube gear* (3.2.2) and installed on the engine side coaxially with the propeller shaft

3.5.3

bulkhead seal

sealing gear (3.2.3) installed on a watertight bulkhead inside the hull coaxially with the shaft line passing through it

3.6 Terms related to ship shafting bearings

3.6.1

shafting bearing

element of *ship shafting* (3.1.1) installed on a ship's foundation or built into a *stern tube gear* (3.2.2) and a bracket designed to absorb the load arising from the installation and operation of the shafting

3.6.2

support bearing

shafting bearing (3.6.1) designed for transverse loads

3.6.3

thrust bearing

shafting bearing (3.6.1) designed to transfer the axial force created by the propeller to the ship's hull

3.6.4

stern tube bearing

support bearing (3.6.2) integrated in the *stern tube* (3.4.1)

3.6.5

external bearing

propeller shaft *support bearing* (3.6.2) on the foundation outside the *stern tube* (3.4.1) on the engine side

3.6.6

bracket bearing

propeller shaft *support bearing* (3.6.2) integrated in the shafting bracket

3.6.7

shoulder radial bearing

radial *shafting bearing* (3.6.1) designed for use as a temporary support when installing shaft lines