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Shipbuilding — Cable stoppers

Construction navale — Stoppeurs de chaîne

Reference number
ISO 6325 : 1987 (E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 6325 was prepared by Technical Committee ISO/TC 8, *Shipbuilding and marine structures.*

This second edition cancels and replaces the first edition (ISO 6325 : 1979), of which it constitutes a minor revision.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Shipbuilding — Cable stoppers

1 Scope and field of application

This International Standard specifies requirements for the function, operation, design, construction, safety and strength of cable stoppers for use with marine windlasses and anchor capstans (as defined in ISO 4568).

2 References

ISO 1704, *Shipbuilding — Anchor chains.*

ISO 3828, *Shipbuilding and marine structures — Deck machinery — Vocabulary.*

ISO 4568, *Shipbuilding — Sea-going vessels — Windlasses and anchor capstans.*

ISO 7825, *Shipbuilding — Deck machinery — General requirements.*

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 3828 and the following definitions apply.

3.1 cable stopper: Device which is secured to the ship's structure separate from the cable lifter, for the purpose of securing a chain cable against the tension from the anchor.

The stopper also serves as a guide for the chain cable during operation.

3.2 Classes

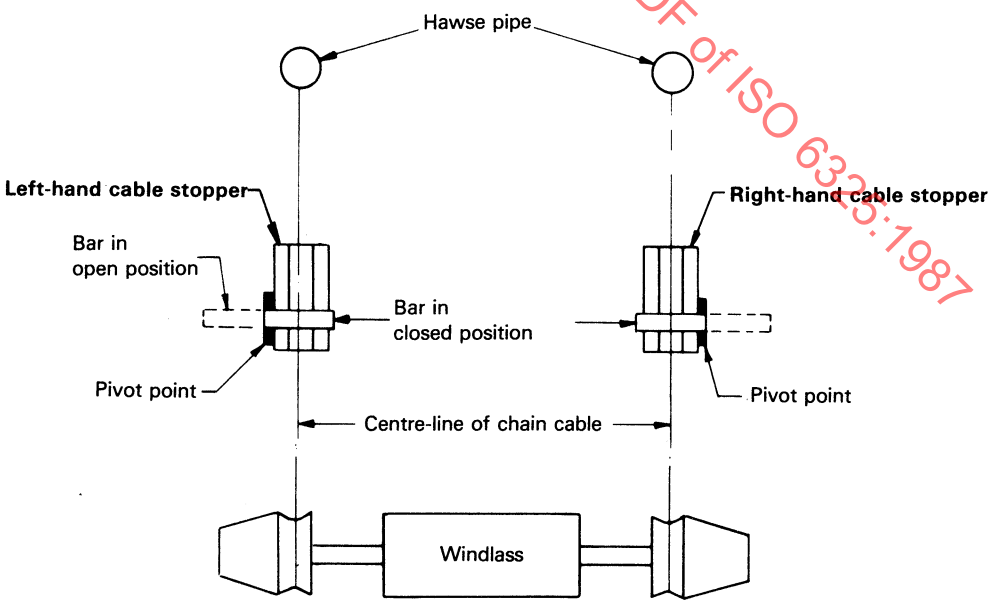
3.2.1 class A cable stopper: Cable stopper designed and constructed to withstand without permanent deformation 80 % of the nominal breaking load of the maximum diameter and highest grade of chain cable for which it is intended.

3.2.2 class B cable stopper: Cable stopper designed and constructed to withstand without permanent deformation 40 % of the nominal breaking load of the maximum diameter and highest grade of chain cable for which it is intended.

3.3 Cable stopper side

3.3.1 right-hand cable stopper: Cable stopper which is operated from the right-hand side when seen from the cable lifter. (See figure 1.)

3.3.2 left-hand cable stopper: Cable stopper which is operated from the left-hand side when seen from the cable lifter. (See figure 1.)



NOTE — Figure 1 is included for information only. It does not imply that the bar is the only possible means of blocking. Other means (for example those in screw-type stoppers) can be used.

Figure 1 — Cable stopper side

3.4 Main types

3.4.1 track-type stopper: Cable stopper over which the chain cable passes by sliding. It has a track to guide and keep the chain cable in place. [See figure 2a).]

3.4.2 roller-type stopper: Cable stopper fitted with a roller over which the chain cable passes. The roller may be shaped for guiding and holding functions. [See figure 2b).]

3.4.3 combined track and roller stopper: Cable stopper in which both the characteristics defined in 3.4.1 and 3.4.2 are incorporated. [See figure 2c).]

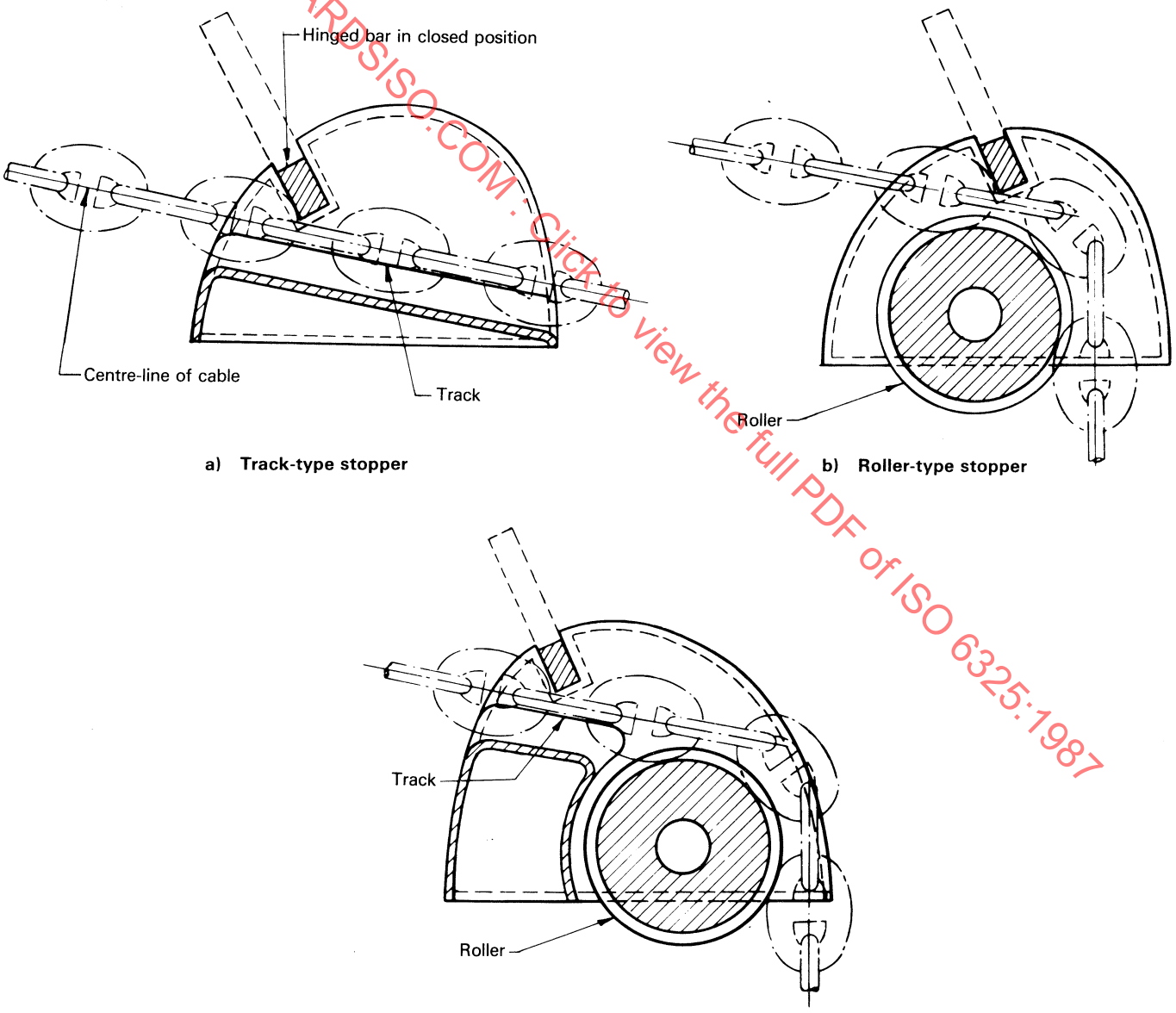
4 Design, construction, strength and safety

Cable stoppers shall meet the general requirements for deck equipment in ISO 7825 and the specific requirements given in 4.1 to 4.5.

4.1 Design stresses at the load defined in 3.2 shall not exceed the yield stresses of the materials used.

NOTE — The International Association of Classification Societies (IACS) recommends that class A cable stoppers should be used for bow anchors on ships.

4.2 Class A cable stoppers shall also be designed and constructed so that the stresses in the chain cable, at the loads



a) **Track-type stopper**

b) **Roller-type stopper**

c) **Combined track and roller stopper**

NOTE — Figure 2 is included for information only and should not be used for design purposes; in addition, blocking means other than bars can be used.

Figure 2 — Main types of cable stoppers

specified in 3.2.1, do not exceed the yield stress of the cable material.

Class B cable stoppers shall also be designed to avoid high stresses in the chain cable, at the load defined in 3.2.2.

4.3 Roller-type stoppers may have cylindrical rollers or rollers of any suitable design.

These stoppers shall be so designed as to prevent high bending moments in the cable links.

4.4 The stopping device shall be arranged, when in the closed position, to prevent it from gradually working to the open position, which would release the chain and allow the cable to pay out.

Stopping devices shall be easy to operate and, in the open position, shall be properly secured.

4.5 The cable stopper may be fitted with a lashing device for holding the anchor tight in its housed position. This lashing shall hold a load at least equal to twice the anchor weight plus 10 m of chain cable.

If a lashing device is considered part of a chain stopper, the stresses in the lashing device shall not exceed 0,4 of the yield stress of the material, under the conditions specified in 4.1 to 4.4.

The stress in the chain cable, when lashed, shall not exceed 0,2 of the breaking strength of the chain cable used under the conditions described in 4.1.

5 Functional and operational requirements

5.1 The function of the cable stopper is to lock the chain when the ship is already at anchor. The stopper shall thus take the load, as defined in 3.2, in the chain cable.

The cable stopper is normally fitted between the cable lifter and the hawse pipe, or the fairlead.

5.2 The operation of the cable stopper shall be easily understandable. The stopper shall be easy to operate and safe for the operator. Parts which may cause danger to the operator by unintended movements shall be fitted with locking devices.

Manually operated cable stoppers shall not require a manual force greater than 350 N* for chain cable diameters below 80 mm, or 500 N for cable diameters of 80 mm and above on the unloaded cable stopper (see ISO 1704).

6 Acceptance tests

All cable stoppers shall be subject to a visual inspection at the place of manufacture, to ensure:

a) correct operation of the stopping device;

b) freedom of rotation of the roller (if fitted);

c) quality of workmanship.

The factory inspection shall be performed by the manufacturer and, when agreed between the purchaser and manufacturer, witnessed by a classification society representative.

NOTE — This agreement should always be reached when the rules of the relevant classification society require the visual inspection.

7 Designation

Cable stoppers conforming to this International Standard shall be designated by the following indications, in the order given:

a) denomination: cable stopper;

b) number of this International Standard: ISO 6325;

c) class (see 3.2): A or B;

d) right- or left-hand cable stopper (R or L) (see 3.3);

e) type (see 3.4): T (track-type) or C (combined track and roller stopper) or R (roller-type);

f) chain cable diameter for which the cable stopper is intended;

g) grade of chain cable according to IACS;

h) wrap angle of chain cable on the roller, if applicable.

Examples:

a) Example for the designation of a cable stopper according to ISO 6325, class A, left-hand, roller-type, for 100 mm chain cable IACS grade 3, wrap angle 80°:

Cable stopper ISO 6325 - A - L - R - 100 - 3 - 80°

b) Example for the designation of a cable stopper according to ISO 6325, class B, right-hand, track-type, for 95 mm chain cable IACS grade 2:

Cable stopper ISO 6325 - B - R - T - 95 - 2

NOTE — A stopper designated grade 3 cable would also be suitable for grade 2 and grade 1 cable. A stopper designated for grade 2 cable would also be suitable for grade 1 cable.

8 Marking

Cable stoppers shall be marked accordingly, in a permanent manner, with the International Standard number, class, chain size(s) and grade.

NOTE — Chain cable diameter(s) marking: cable stoppers may be marked with the diameter range of the chain cable for which they are intended by the manufacturer when tendering, instead of the single chain cable diameter supplied by the purchaser with the enquiry.

* 1 N ≈ 0,1 kgf

Annex A

Note to manufacturers

(This annex forms an integral part of the Standard.)

A.1 Certain national authorities or classification societies may require a higher strength than provided by class A cable stoppers, and individual requirements should be observed.

A.2 If specially agreed between manufacturer and purchaser, it may be necessary to verify compliance with 4.2 by a full-scale or model test. The minimum acceptable scale ratio should be 1 : 10 based on the design load.

Annex B

Note to shipbuilders

(This annex forms an integral part of the Standard.)

It is recommended that the position of the cable stopper should be adjustable to permit it to be closed when the anchor is fully housed and secured by the lashing device. It should be noted that the position adopted for new chain cable may have to be altered as the chain cable becomes worn in use.

NOTE — If the lashing device for holding the anchor tight is of sufficient strength to keep the anchor fully housed in all possible conditions (i.e. if it is of significantly greater strength than the minimum required by 4.4), then the need to close the stopper in accordance with this annex will no longer be necessary.