# International Standard 6325

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

# Shipbuilding — Cable stoppers

*Construction navale — Stoppeurs de chaîne*

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**Descriptors** : shipbuilding, locking devices, chains, ship anchors, specifications, design, operating requirements, safety, designation, marking.

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## Foreword

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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.



International Standard ISO 6325 was developed by Technical Committee ISO/TC 8, *Shipbuilding*, and was circulated to the member bodies in October 1978.



It has been approved by the member bodies of the following countries :



| | | |
|---|---|---|
| Austria | France | Netherlands |
| Belgium | Germany, F. R. | Norway |
| Brazil | India | Poland |
| Bulgaria | Ireland | Romania |
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The member body of the following country expressed disapproval of the document on technical grounds :

Japan



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# 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 in connection with marine windlasses and anchor capstans.

## 2 References

ISO 1704, *Shipbuilding — Anchor chains.*

ISO 3828, *Shipbuilding — Deck machinery — Vocabulary.*

ISO 4568, *Shipbuilding — Marine windlasses and anchor capstans.*



## 3 Definitions

**3.1 cable stopper** : A 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.



NOTE — The stopper can also serve as a guide for the chain cable during operation.

**3.2 nominal size of a cable stopper** : A value derived from the chain cable diameter. (For the full designation and examples, see clause 6).

### 3.3 Classes

**3.3.1 class A cable stopper** : A cable stopper designed and constructed to withstand 80 % of the nominal breaking load of the maximum diameter and highest grade of chain cable for which it is intended.

**3.3.2 class B cable stopper** : A cable stopper designed and constructed to withstand 40 % of the nominal breaking load of the maximum diameter and highest grade of chain cable for which it is intended.

### 3.4 Handing

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

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

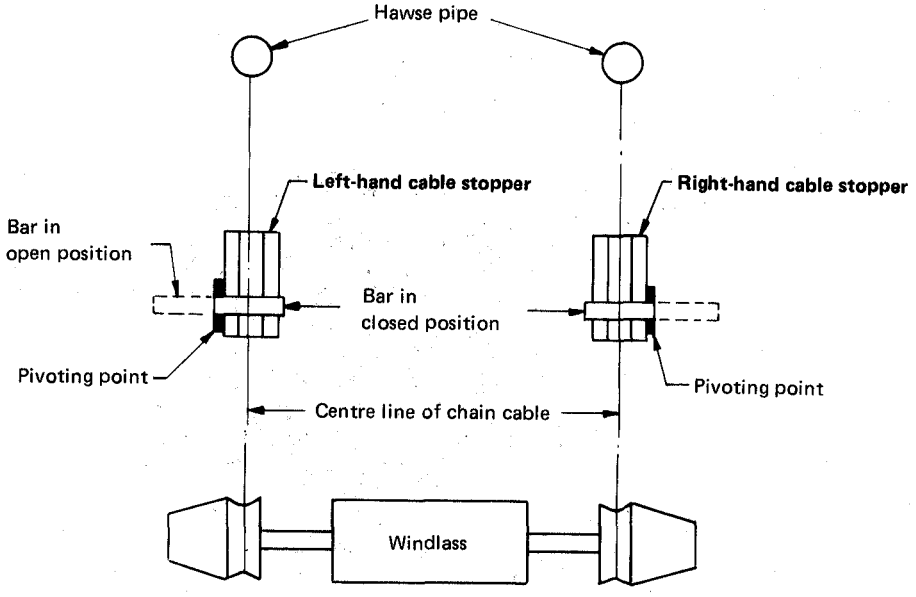


**Figure 1 — Handing of stoppers**

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 used in screw type stoppers) can be used.

### 3.5 Main types (see figure 2)

**3.5.1 track-type stopper** : A cable stopper over which the chain cable passes by sliding. It has a track to guide and keep the chain cable in place.

**3.5.2 roller-type stopper** : A cable stopper fitted with a roller over which the chain cable passes. The roller may have a shape which takes care of the guide function as well as part of the holding function.

**3.5.3 combined track and roller stopper** : A cable stopper in which both the above-mentioned characteristics (3.5.1 and 3.5.2) are incorporated.

## 4 Functional and operational requirements

**4.1** The function of the cable stopper is to lock the chain when the ship is already at anchor. The stopper will thus have to take the full load in the chain cable.

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

**4.2** 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.

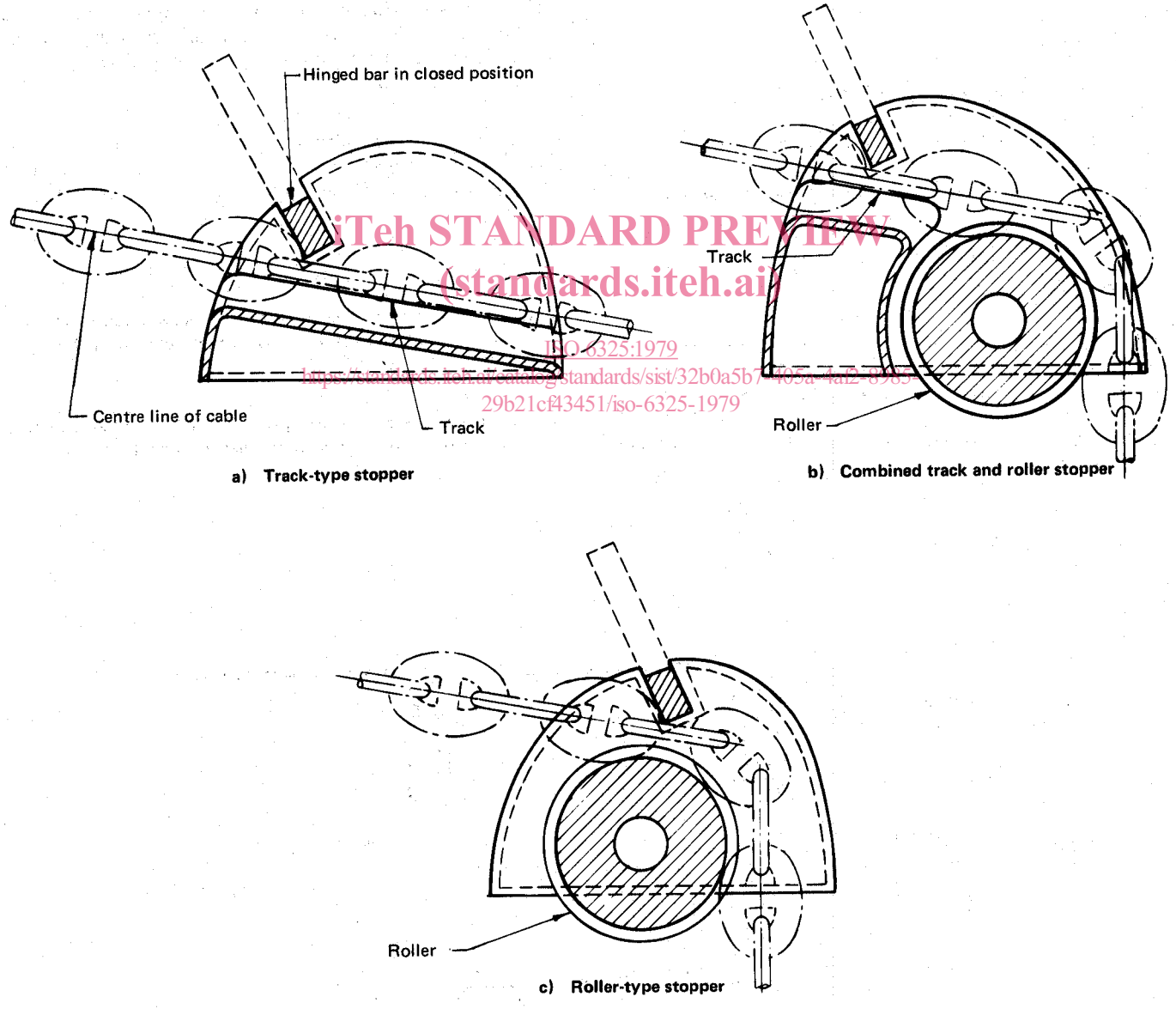




**Figure 2 — Main types of cable stoppers**

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

Manually operated 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.

## 5 Design, construction, strength and safety

**5.1** Design stresses at the appropriate cable load shall not exceed the yield stresses of the materials used.

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

**5.2** Class A cable stoppers shall also be designed and constructed so that the stresses in the chain cable, at the loads specified in 3.3.1 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.

**5.3** 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.

**5.4** On bar-type stoppers, the bar should be arranged, when in the closed position, to prevent the bar from gradually working to the open-position, which would release the chain and allow the cable to pay out.

Locking devices shall be easy to operate. The bar shall also be properly secured in the open position.

The cable stopper may be fitted with a lashing device for holding the anchor tight in its housed position. This lashing shall hold at least a load 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.

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 5.1.

## 6 Designation and marking

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

a) "cable stopper";

b) identification of this International Standard i.e. ISO 6325;

c) class (see 3.3) : A or B;

d) handing (see 3.4) : R (right-hand) or L (left-hand);

e) type (see 3.5) : 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 (see 3.2).

g) grade of chain cable material according to IACS.

Examples :

1 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 :

CABLE STOPPER ISO 6325 A, L, R, 100, 3

2 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.

**6.2** The cable stopper 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.

## 7 Acceptance tests

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

a) correct operation of the bar or pawl;

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 must always be reached when the rules of the relevant classification society require the visual inspection.



* 1 N ≈ 0,1 kgf

# Annex A

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

## Note to manufacturers

**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 purchaser and manufacturer, it may be necessary to verify compliance with 5.2 by a full-scale or model test. The minimum acceptable scale ratio should be 1/10 based on the design load.

# Annex B

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

## Note to shipbuilders

It is recommended that the position of the 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.



# Annex C



(This annex does not form part of the standard.)

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 5.4), then the need to close the stopper in accordance with annex B will no longer be necessary.