

INTERNATIONAL STANDARD

**ISO
24045**

First edition
2021-10

Ships and marine technology — Adjustable roller-type chain stoppers

*Navires et technologie maritime — Bosses de chaînes à rouleaux
ajustables*



Reference number
ISO 24045:2021(E)
Documents
Document Sharing Hub
© ISO 2021



COPYRIGHT PROTECTED DOCUMENT

© ISO 2021

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Design, strength and safety requirements	2
5 Function and operation requirements	2
6 Structure	3
7 Materials	6
8 Acceptance	7
9 Marking	7
Annex A (normative) Strength calculations of adjustable roller-type chain stoppers	8
Annex B (informative) Precautions for manufacturers of adjustable roller-type chain stopper	14

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 ISO/TC 8, *Ships and marine technology*, Subcommittee SC 4, *Outfitting and deck machinery*.

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.

Ships and marine technology — Adjustable roller-type chain stoppers

1 Scope

This document specifies requirements for the design, strength, safety, function and operation of adjustable roller-type chain stoppers. It also specifies their structure, materials, acceptance and marking.

It is applicable to the design, manufacture and acceptance of adjustable roller-type chain stoppers.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1704, *Ships and marine technology — Stud-link anchor chains*

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

ISO 4568, *Shipbuilding — Sea-going vessels — Windlass and anchor capstan*

ISO 6325, *Shipbuilding — Cable stoppers*

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

3 Terms and definitions

For the purpose of this document, the terms and definitions given in ISO 3828 and ISO 4568 and the following apply.

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

adjustable roller-type chain stopper

device fixed to the ship structure, separated from the gypsy wheel and used for fixing the anchor chain and for bearing the anchor tension

Note 1 to entry: After being installed on the ship structure, the position of the lever can be adjusted according to the stowing condition of the anchor chain to achieve a better stowing effect. It can guide the anchor chain. When the anchor chain passes on the chain guide groove and the roller, the anchor chain can be guided.

3.2

right-hand adjustable roller-type chain stopper

adjustable roller-type chain stopper that is opened and fixed on the right-hand side, when viewed from the gypsy wheel to the chain stopper

3.3

left-hand adjustable roller-type chain stopper

adjustable roller-type chain stopper that is opened and fixed on the left-hand side, when viewed from the gypsy wheel to the chain stopper

4 Design, strength and safety requirements

4.1 The adjustable roller-type chain stopper shall be designed and manufactured to withstand a load without permanent deformation in accordance with the requirements of ISO 6325 for Class A cable stoppers. The load shall be 80 % of the nominal breaking load of the anchor chain corresponding diameter.

4.2 The nominal sizes of the anchor chain shall be in accordance with ISO 1704, Grade 3.

4.3 Adjustable roller-type chain stoppers shall meet the general requirements of ISO 7825 for deck machinery and the specific requirements of [4.4](#) and [4.5](#).

4.4 The design stress of the load specified in [4.1](#) shall not exceed the yield stress of the material used. The adjustable roller-type chain stopper shall be designed to prevent the generation of high bending moments in the chain link. The strength calculations for adjustable roller-type chain stoppers shall be according to [Annex A](#).

4.5 The lever of the adjustable roller-type chain stopper shall be able to reliably and effectively prevent itself from gradually moving to the open position when it is at the closed position, to avoid releasing and throwing out the anchor chain. It shall be possible to operate the lever conveniently and to fix it reliably when at the open position.

4.6 Precautions for manufacturers of adjustable roller-type chain stoppers are given in [Annex B](#).

5 Function and operation requirements

5.1 The adjustable roller-type chain stopper shall be installed between the windlass and the hawse pipe, which can effectively control the anchor chain during ship navigation, lock the anchor chain during ship anchoring, and can bear 80 % of the nominal breaking load of the corresponding anchor chain.

5.2 The operation of the adjustable roller-type chain stopper shall be convenient and safe. Locking devices shall be installed on parts that can cause danger to the operator due to unintentional actions.

5.3 Under no load, it shall be possible to manually operate the adjustable roller-type chain stopper. The operating force of an anchor chain with a diameter of less than 84 mm shall not exceed 350 N, and that of an anchor chain with a diameter of 84 mm or above shall not exceed 500 N.