
**Ships and marine technology —
Fireproof watertight hatch covers**

*Navires et technologie marine — Panneaux d'écouille étanches à
l'eau et ignifuges*

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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 ISO/TC 8, *Ships and marine technology*, Subcommittee SC 8, *Ship design*.

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 — Fireproof watertight hatch covers

1 Scope

This document specifies the classification, flagging, requirements, test methods, inspection rules, markings, packaging, transportation and storage of fireproof watertight hatch covers installed on decks (hereafter referred to as “hatch covers”).

This document applies to the design, manufacture and acceptance of fireproof watertight hatch covers installed on decks of ships where anticipated water pressure by wave is up to 10 m.

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 8501-1, *Preparation of steel substrates before application of paints and related products — Visual assessment of surface cleanliness — Part 1: Rust grades and preparation grades of uncoated steel substrates and of steel substrates after overall removal of previous coatings*

IEC 60529, *Degrees of Protection provided by enclosures (IP Code)*

IMO *International Convention for the Safety of Life at Sea (SOLAS), 1974, and its Protocol of 1988, as amended*

IMO *International Code for Application of Fire Test Procedures, 2010 (2010 FTP Code), Resolution 307(88), as amended*

3 Terms and definitions

No terms and definitions are listed in this document.

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/>

4 Classification and designation

4.1 Types

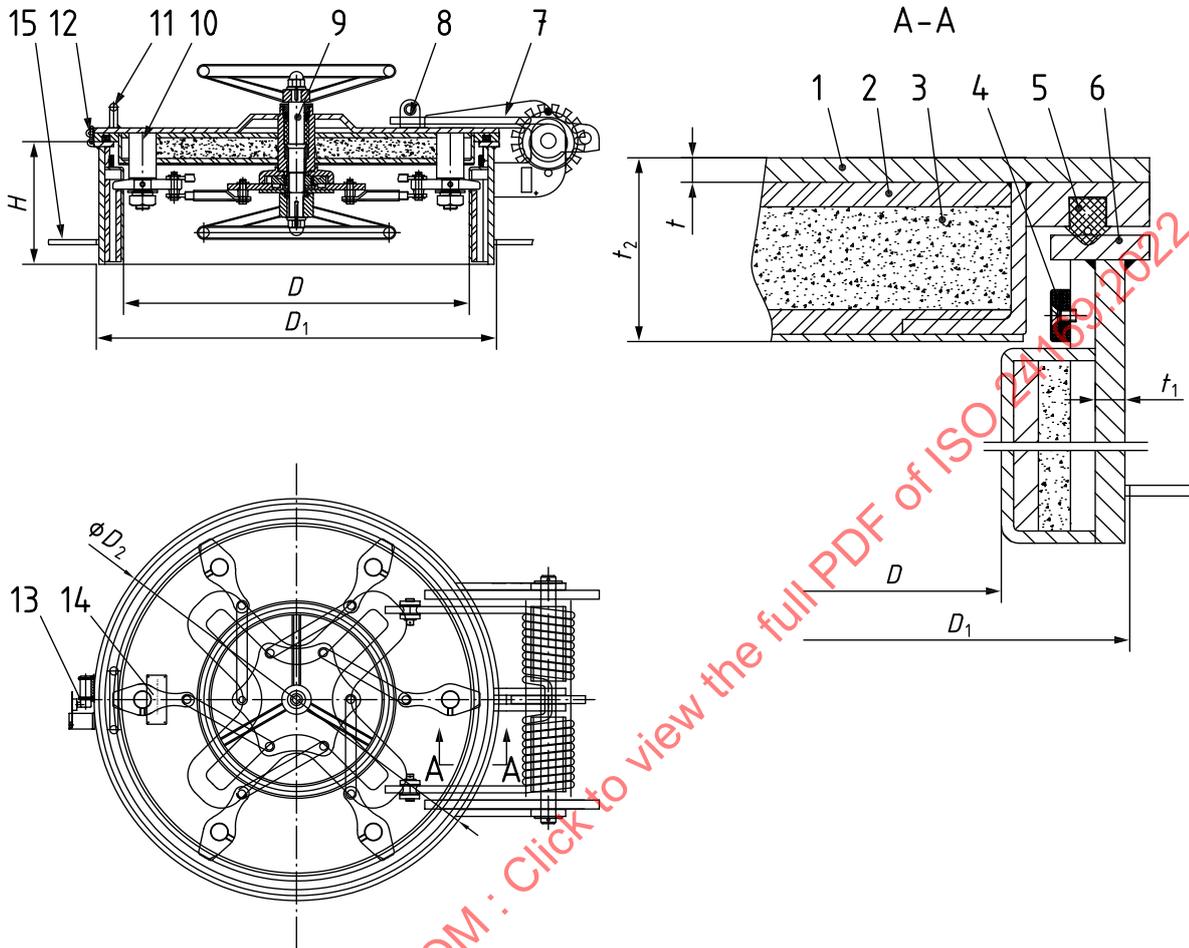
4.1.1 Based on their shape, watertight hatch covers shall be classified into the two following types:

- A-type (round hatch cover);
- B-type (square or rectangular hatch cover).

4.1.2 According to the fire-protection rating, watertight hatch covers shall be classified into three levels: A-60, A-30, and A-0.

4.2 Structure and main dimensions

4.2.1 Examples of the structure and main dimensions of A-type hatch covers are shown in Figure 1 and Table 1.



Key

- | | |
|--------------------|--------------------------|
| 1 cover plate | 9 central opening device |
| 2 insulation plate | 10 dog device |
| 3 insulation | 11 handle |
| 4 fireproof bar | 12 lock catch |
| 5 seal ring | 13 limit switch |
| 6 coaming | 14 warning sign |
| 7 spring hinge | 15 deck |
| 8 link rod | |

H is the height of the hatch cover coaming. H can be designed according to users practice.

t_2 is the thickness of the hatch cover. t_2 shall be no more than 75 mm, and shall be designed based on fire-protection rating.

t is the thickness of cover plate. t can be designed based on water pressure.

Figure 1 — Examples of structure of A-type hatch covers

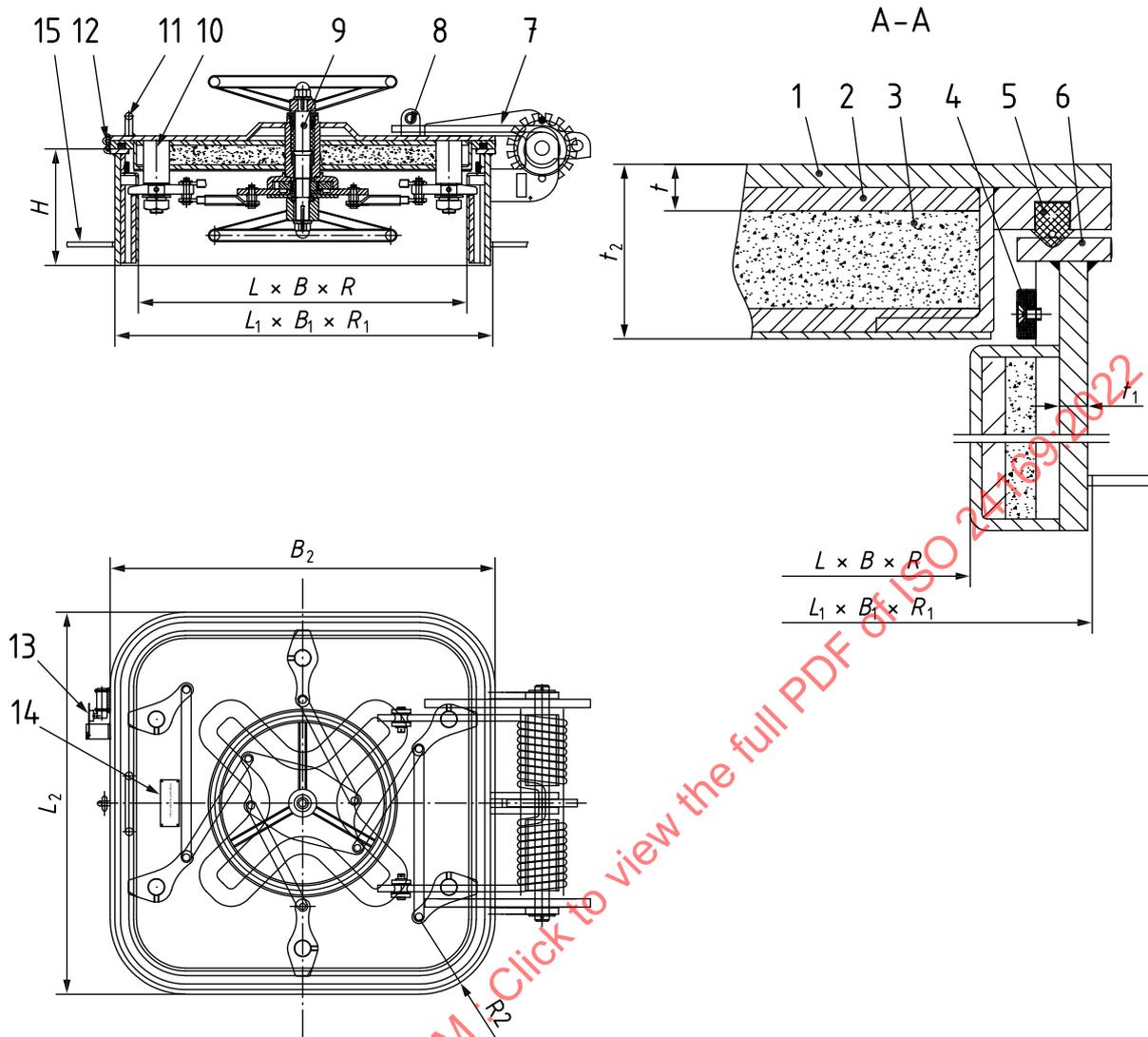
Table 1 — Examples of main dimensions of A-type hatch covers

Dimensions in millimetres

| Nominal size D | Deck opening size D_1 | Cover outer dimension size D_2 |
|---------------------|----------------------------|-------------------------------------|
| ø630 | ø730 | ø750 |
| ø730 | ø830 | ø850 |
| ø830 | ø930 | ø950 |

4.2.2 Examples of the structure and main dimensions of B-type hatch covers are shown in [Figure 2](#) and [Table 2](#).

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- Key**
- | | | | |
|---|------------------|----|------------------------|
| 1 | cover plate | 9 | central opening device |
| 2 | insulation plate | 10 | dog device |
| 3 | insulation | 11 | handle |
| 4 | fireproof bar | 12 | lock catch |
| 5 | seal ring | 13 | limit switch |
| 6 | coaming | 14 | warning sign |
| 7 | spring hinge | 15 | deck |
| 8 | link rod | | |

H is the height of the hatch cover coaming. H can be designed according to users practice.

t_2 is the thickness of the hatch cover. t_2 shall be no more than 75 mm, and shall be designed based on fire-protection rating.

t is the thickness of the cover plate. t can be designed based on water pressure.

Figure 2 — Examples of structure of B-type hatch covers

Table 2 — Examples of main dimensions of B-type hatch covers

Dimensions in millimetres

| Nominal size $L \times B \times R$ | Deck opening size $L_1 \times B_1 \times R_1$ | Cover outer dimension size $L_2 \times B_2 \times R_2$ |
|---------------------------------------|--|---|
| 630 × 630 × 100 | 730 × 730 × 150 | 750 × 750 × 160 |
| 630 × 830 × 100 | 730 × 930 × 150 | 750 × 950 × 160 |
| 830 × 830 × 100 | 930 × 930 × 150 | 950 × 950 × 160 |
| 1 030 × 1 030 × 100 | 1 130 × 1 130 × 150 | 1 150 × 1 150 × 160 |
| 830 × 1 230 × 100 | 930 × 1 330 × 150 | 950 × 1 350 × 160 |
| 1 230 × 1 230 × 100 | 1 330 × 1 330 × 150 | 1 350 × 1 350 × 160 |
| 1 330 × 1 330 × 100 | 1 430 × 1 430 × 150 | 1 450 × 1 450 × 160 |

4.2.3 Fireproof watertight hatch covers conforming to this document shall be designated as follows, in the order given:

- type: hatch cover B or hatch cover A;
- nominal size;
- thickness of the cover plate;
- thickness of coaming;
- height of coaming.

EXAMPLE The designation of a B-type hatch cover with nominal size 830 mm × 830 mm × 100 mm, thickness of the cover plate 8 mm, thickness of coaming 8 mm and height of coaming 250 mm is:

Hatch cover B 830×830×8-8×250

5 Materials

5.1 The cover plate and coaming shall be manufactured from shipbuilding steel with a minimum tensile strength of *340 N/mm², or from materials with an equivalent strength.

5.2 The hinge shall be manufactured from materials with a minimum tensile strength of *340 N/mm².

5.3 Opening devices and hinge pins shall be manufactured from materials with a minimum tensile strength of *350 N/mm².

5.4 For ships adhering to the rules of a classification society, the material marked with (*) shall conform to the requirements of the society.

5.5 Fireproof materials shall be suitable for the marine environment, and shall meet the fire-protection rating requirements in accordance with SOLAS and the IMO FTP Code.

6 Quality of manufacture

6.1 The surface of hatch covers shall be free from burrs, sharp edges, scratches, press marks and other defects, and the welded seam shall be smooth and free from cavities, cracks, slag entrapments, undercuts, incomplete fusion and other defects.