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Ships and marine technology — Ship's mooring and towing fittings — Steel rollers

Navires et technologie maritime — Corps-morts et ferrures de remorquage de navires — Rouleaux en acier

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 13755 was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 4, *Outfitting and deck machinery*.

Introduction

The steel roller is a type of ship's mooring fitting installed on board to lead the mooring rope from the ship's inboard to outboard as shipside roller fairleads and to change the direction of ropes as pedestal fairleads.

Ships and marine technology — Ship's mooring and towing fittings — Steel rollers

1 Scope

This International Standard specifies the design, size and technical requirements for steel rollers installed to lead the mooring rope of a ship.

2 Normative references

The following referenced documents are indispensable for the application 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 13767, *Ships and marine technology — Ship's mooring and towing fittings — Shipside roller fairleads*

ISO 13776, *Ships and marine technology — Ship's mooring and towing fittings — Pedestal fairleads*

IMO Circular MSC/Circ.1175, *Guidance on shipboard towing and mooring equipment*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

safe working load
SWL
maximum load in kN on the rope that should normally be applied in service conditions

4 Classification

4.1 Type

Depending on the construction, steel rollers shall be classified as the following three types:

— type A: made of steel casting without upper dust cover;

— type B: made of steel casting with upper dust cover;

— type C: made of steel plate with dust cover.

4.2 Nominal sizes

The nominal sizes, D_n, of steel rollers are denoted by reference to the outside diameter of the roller in millimetres from a basic series of preferred numbers.

The nominal sizes are: 150, 200, 250, 300, 350, 400, 450 and 500.

5 Dimensions

Steel rollers have dimensions and particulars in accordance with Tables 1, 2, 3 and 4, and Figures 1, 2, 3, 4, 5, 6, 7 and 8.

6 Materials

The materials of the following components shall be used for manufacturing the steel rollers:

— Roller: steel casting having a yield point of not less than 205 N/mm^2 or steel plates having a yield point of not less than 235 N/mm^2.

— Axle: weldable steel casting having a yield point of not less than 350 N/mm^2 or equivalent.

— Bush: brass, bronze or equivalent.

7 Construction

7.1 The rollers of the steel rollers (Type C) shall be constructed from steel tubes or formed from plate.

7.2 The foundation of the steel rollers shall be determined by the manufacturer in accordance with ISO 13767 and ISO 13776. The foundation and welding connections shall be guaranteed reliable transmission of the maximum loading of the steel rollers to hull construction without any plastic deformation or cracks.

8 Manufacturing and inspection

8.1 All surfaces of the steel rollers, including welding, shall be free from any visible flaws or imperfections.

8.2 All surfaces in contact with the ropes shall be free from surface roughness or irregularities likely to cause damage to the ropes by abrasion.

8.3 The steel rollers shall be coated externally with an anti-corrosion protective finish.

8.4 All rotating parts are to be provided with greasing.

9 Marking

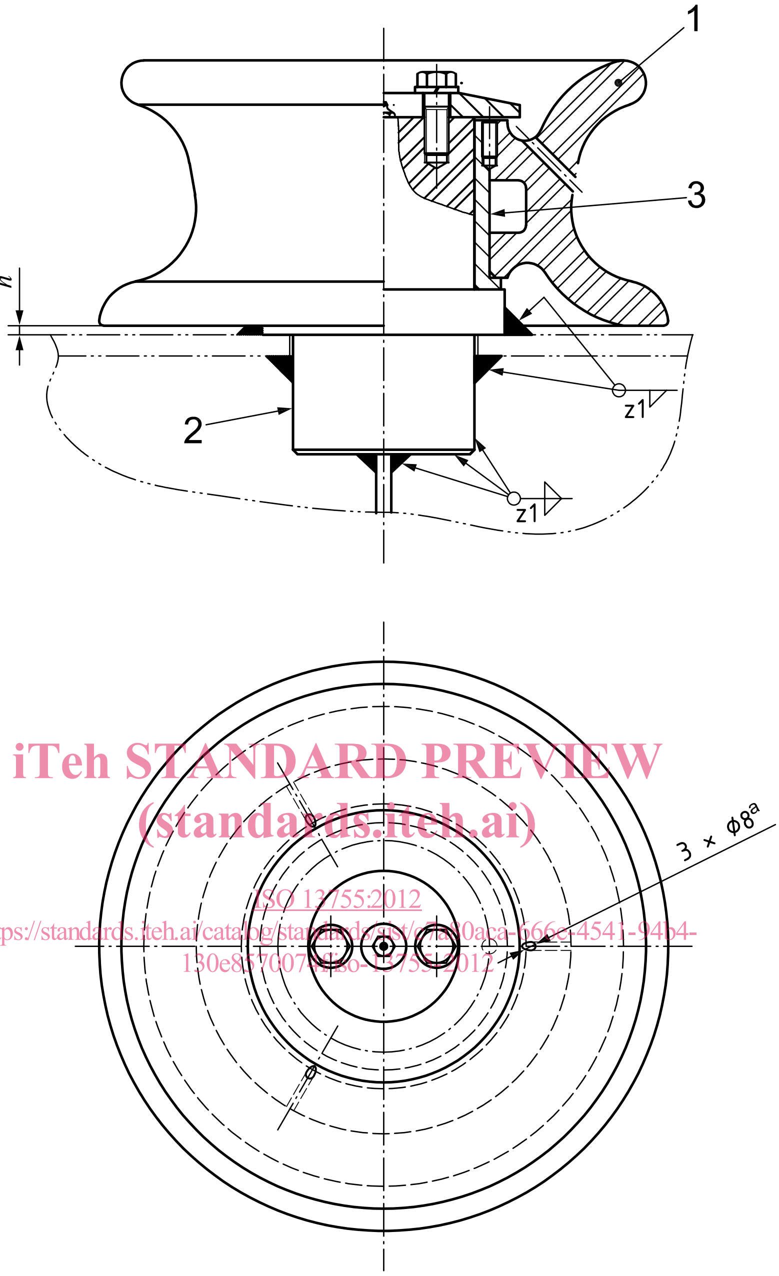
9.1 The safe working load (SWL) for the intended use for the steel rollers shall be noted in the towing and mooring plan available on board for the guidance of the shipmaster as specified in MSC/Circ.1175.

9.2 The actual SWL on board shall be determined by considering the foundation and under deck reinforcement, and it shall be marked on the towing and mooring plan. The actual SWL shall not be over the SWL indicated in this International Standard.

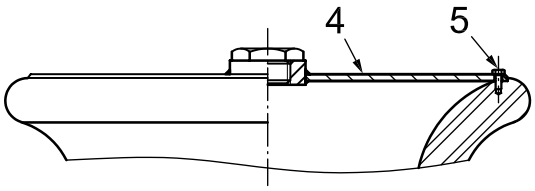
9.3 The steel rollers shall be clearly marked on their seat or foundation with their SWL by weld bead or equivalent. The SWL shall be expressed in tonnes (letter ‘t’) and be placed so that it is not obscured during operation of the fitting.

EXAMPLE SWL XXX t

Dimensions in millimetres



a) Type A



b) Type B

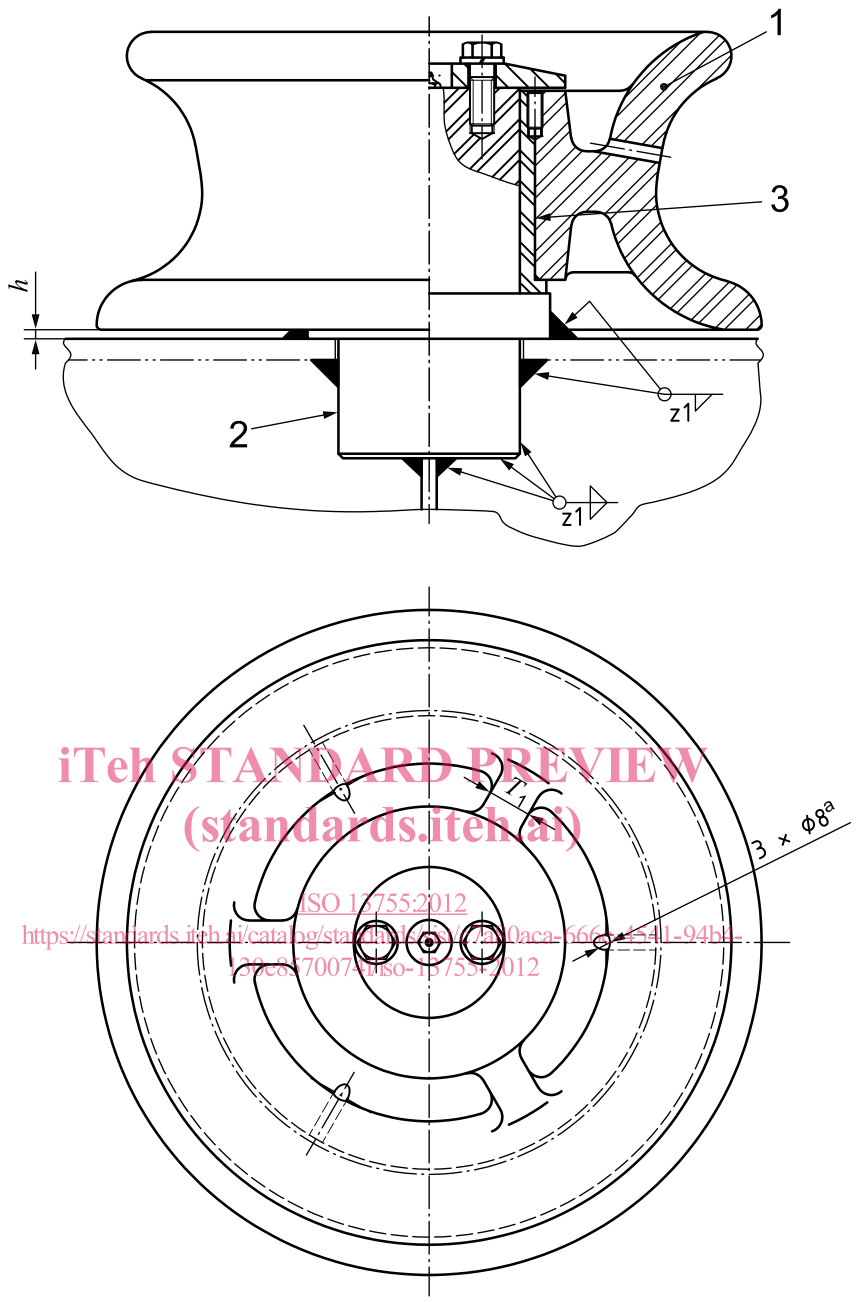
Key

1 roller
2 axle
3 bush
4 dust cover to apply on type B only
5 N-M6 bolt

[a] Drain hole.

Figure 1 — Assembly of steel rollers for nominal sizes 150, 200 and 250 (type A and type B)

Dimensions in millimetres



a) Type A