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Ships and marine technology — Ship's mooring and towing fittings — Universal fairleads with upper roller

Navires et technologie maritime — Corps-morts et ferrures de remorquage de navires — Chaumards universels avec rouleau supérieur

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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

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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).

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

This second edition cancels and replaces the first edition (ISO 13733:2012), which has been technically revised.

The main changes compared to the previous edition are as follows:

— technical guidelines have been added in 7.3 and 7.4;

— the definition of SWL (3.1) has been reworded;

— the object lines and mark numbers in Figures 1, 2, 3 and 4 have been amended;

— the values of "t" for the vertical roller, lower horizontal and upper horizontal roller in Table 5 (former Table 3) have been amended;

— the thickness of the bushes and washers have been added in Table 5 (former Table 3);

— the description in Clause A.1 has been amended;

— the dimension line (θ_1) in Figure A.2 has been amended;

— the descriptions in Clause A.3 have been amended;

— technical information on FEM and strength calculation have been added in A.3.2 and A.3.3.

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.

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Introduction

The universal fairlead is a type of ship's mooring fitting installed on board to lead the mooring rope from the ship's inboard to outboard.

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Ships and marine technology — Ship's mooring and towing fittings — Universal fairleads with upper roller

1 Scope

This document specifies the types, nominal sizes, dimensions and materials, as well as construction, manufacturing and marking requirements, for universal fairleads with upper roller(s) installed to lead the mooring rope of a ship.

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.

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.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
safe working load
SWL
safe load limit (maximum permissible load) of the fittings used for mooring and towing

4 Classification

4.1 Type

Depending on the construction, universal fairleads shall be classified as belonging to one of the following four types:

a) Type 4R: with one rope-passing opening;

b) Type 5RL: with one rope-passing opening with an additional guide roller on the left side;

c) Type 5RR: with one rope-passing opening with an additional guide roller on the right side;

d) Type 7R: with two rope-passing openings.

4.2 Nominal sizes

The nominal sizes, D_n, of universal fairleads are denoted by reference to the outside diameter of the main roller, in millimetres, in terms of the nearest number drawn from a basic series of preferred numbers. For the universal fairleads having the same roller diameter, the code, i.e. 4R, 5RL, 5RR or 7R, is followed by the nominal size for the different SWLs.

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