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Ships and marine technology — Ship's mooring and towing fittings — Recessed bitts (casting type)

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Foreword

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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 13799:2012), which has been technically revised.

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

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

— the mark numbers in Figure 1 have been amended;

— technical information on FEM has been added in A.3.1.

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Introduction

The recessed bitt is a type of ship's towing fitting installed on the side shell of the ship.

Recessed bitts are normally provided to easily attach the towing lines where the height of the mooring deck is too high.

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Ships and marine technology — Ship's mooring and towing fittings — Recessed bitts (casting type)

1 Scope

This document specifies the types, nominal sizes, dimensions and materials, as well as construction, manufacturing and marking requirements, for casting type recessed bitts to meet normal towing requirements.

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*

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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 size and strength of the material, recessed bitts shall be classified as belonging to one of the following six types:

a) Type 75: nominal size 850, casting material having a yield point of not less than 235 N/mm^2;

b) Type 110: nominal size 850, casting material having a yield point of not less than 350 N/mm^2;

c) Type 135: nominal size 850, casting material having a yield point of not less than 430 N/mm^2;

d) Type 100: nominal size 920, casting material having a yield point of not less than 235 N/mm^2;

e) Type 150: nominal size 920, casting material having a yield point of not less than 350 N/mm^2;

f) Type 180: nominal size 920, casting material having a yield point of not less than 430 N/mm^2.

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4.2 Nominal sizes

The nominal sizes of recessed bitts are denoted by reference to the outside diameter of the bitt, in millimetres.

The nominal sizes are 850 and 920.

5 Dimensions

The recessed bitts shall have dimensions and particulars in accordance with Tables 1 and 2, and Figure 1.

6 Materials

The following materials shall be used for manufacturing the recessed bitts:

— Type 75 and type 100: weldable steel casting having a yield point of not less than 235 N/mm^2;

— Type 110 and type 150: weldable steel casting having a yield point of not less than 350 N/mm^2;

— Type 135 and type 180: weldable steel casting having a yield point of not less than 430 N/mm^2.

7 Construction

7.1 The welding connections to the hull shall guarantee a reliable transmission of the maximum loading of the recessed bitts to the hull construction without any plastic deformation or cracks.

7.2 The hull construction on which the recessed bitts are installed shall be reinforced by carlings, stiffeners, etc.

7.3 The recessed bitts shall be considered as a part of the hull side shell construction.

8 Manufacturing and inspection

8.1 All surfaces of the recessed bitts, including welded surfaces, 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 recessed bitts shall be coated externally with an anti-corrosion protective finish.

9 Marking

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

9.2 The actual SWL on board shall be determined by considering the reinforcement around the recessed bitts, and it shall be marked on the towing and mooring plan. The actual SWL shall not be over the SWL indicated in this document.

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9.3 The recessed bitts shall be clearly marked with their SWL by weld bead or equivalent. The SWL shall be expressed in tonnes (symbol 't') and be placed so that it is not obscured during operation of the fitting.

EXAMPLE SWL XXX t

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