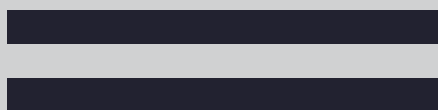


# SVENSK STANDARD

## SS-ISO 13795:2020

**Ships and marine technology – Ship's mooring and towing fittings – Welded steel bollards for sea-going vessels (ISO 13795:2020, IDT)**

**Ships and marine technology – Ship's mooring and towing fittings – Welded steel bollards for sea-going vessels (ISO 13795:2020, IDT)**



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Den internationella standarden ISO 13795:2020 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av ISO 13795:2020.

The International Standard ISO 13795:2020 has the status of a Swedish Standard. This document contains the official English version of ISO 13795:2020.

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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](http://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](http://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](http://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 13795:2012), which has been technically revised.

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

- technical guidelines have been added in [7.4](#) and [7.5](#);
- the definition of SWL ([3.1](#)) has been reworded;
- the mark numbers and extension numbers in [Figures 1](#) and [2](#) have been amended;
- the values in [Table 1](#) and [Table 2](#) have been amended;
- the text in [Clause A.5](#) has been amended.

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](http://www.iso.org/members.html).

## **Introduction**

A bollard is a type of ship's mooring and towing fitting installed on board to belay the mooring and towing rope.

# Ships and marine technology — Ship's mooring and towing fittings — Welded steel bollards for sea-going vessels

## 1 Scope

This document specifies the types, nominal sizes, dimensions and materials, as well as construction, manufacturing and marking requirements, for welded steel bollards suitable for installation on sea-going vessels to meet normal mooring and 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*

## 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

### 3.2

#### TOW

safe load limit (maximum permissible load) of the fittings used for normal and other towing operations

## 4 Classification

### 4.1 Type

Depending on the construction, welded steel bollards shall be classified as belonging to one of the following two types:

- a) Type A: with compact base plate;
- b) Type B: with wide base plate.

### 4.2 Nominal sizes

The nominal sizes,  $D_n$ , of bollards are denoted by reference to the outside diameter of the post, in millimetres, in terms of the nearest number drawn from a basic series of preferred numbers. For the bollards having the same post diameter, the letter of the alphabet, i.e. A or B, is followed by the nominal size for the different safe working loads (SWL).

The nominal sizes are: 150, 200, 250A, 250B, 300A, 300B, 350A, 350B, 400A, 400B, 450A, 450B, 500A, 500B, 550A, 550B and 600.

## 5 Dimensions

The bollards shall have dimensions and particulars in accordance with [Tables 1, 2, 3 and 4](#), and [Figures 1 and 2](#).

## 6 Materials

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

- base plates: weldable steel plates having a yield point of not less than 235 N/mm<sup>2</sup>;
- posts: weldable steel plates having a yield point of not less than 235 N/mm<sup>2</sup> or equivalent steel tubes.

## 7 Construction

7.1 The posts of the bollards shall be constructed from steel pipes or formed from plate.

7.2 Fins shall be installed to keep the ropes as low as possible so as to reduce the loads to the bollard posts from the mooring/towing ropes.

7.3 An eye plate for tying the stopping-off rope or chain shall be provided.

7.4 The selection of ship's mooring fittings and mooring lines should take into account the diameter,  $D$ , of surfaces of mooring fittings that are in contact with the mooring line diameter,  $d$ , ( $D/d$  ratio) to reduce or mitigate bend loss of strength.

7.5 The tensile strength of mooring rope may be reduced depending on bend radius ( $D/d$  ratio) through the mooring fittings, in accordance with the rope manufacturer's guidelines.

## 8 Manufacturing and inspection

8.1 All surfaces of the bollards, 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 bollards shall be coated externally with an anti-corrosion protective finish.

8.4 A low-friction surface coating is not recommended so as to increase the holding force of the mooring ropes under figure-of-eight belay.

## 9 Marking

9.1 The safe working load (SWL) for the intended use of the bollards 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 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 document.



**9.3** The bollards 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.

**9.4** In case the bollard is used both for mooring and towing, both the SWL and the TOW for mooring and/or towing purposes shall be marked.

EXAMPLE 1 SWL XXX t.

EXAMPLE 2 TOW XXX t.



**Table 1 — Dimensions for Type A bollards**

Dimensions in millimetres

<b>Nominal size</b> $D_n$	$D_1$	$D_2$	$D_3$	$D_4$	$H_1$	$H_2$	$H_3$	$H_4$	$b$	$L$	$E$	$t$	$t_1$	$t_2$	$R$
150	165,2	185	—	80	330	90	70	60	155	400	—	8,0	6	6	40
200	216,3	240	—	130	395	115	70	60	205	500	—	8,0	6	6	50
250A	267,4	290	—	160	505	135	90	75	250	630	—	12,0	9	8	60
250B	267,4	290	—	160	505	135	90	75	250	630	—	10,0	8	7	60
300A	318,5	340	150	185	600	150	110	85	290	800	300	21,5	16	9	70
300B	318,5	340	150	185	600	150	110	85	290	800	300	12,0	9	9	70
350A	355,6	380	170	200	685	175	130	105	340	890	350	26,0	19	11	80
350B	355,6	380	170	220	685	175	130	105	340	890	350	14,0	10	9	80
400A	406,4	430	190	230	730	185	145	115	380	1 000	380	28,0	20	13	85
400B	406,4	430	190	250	730	185	145	115	380	1 000	380	15,0	11	11	85
450A	457,2	480	210	265	770	195	160	120	425	1 100	410	29,0	21	14	90
450B	457,2	480	210	285	770	195	160	120	425	1 100	410	14,5	11	11	90
500A	508,0	530	235	295	830	230	200	150	480	1 250	460	32,0	23	16	100
500B	508,0	530	235	320	830	230	200	150	480	1 250	460	14,5	11	11	100
550A	558,8	580	255	330	900	270	200	180	520	1 380	540	31,0	22	16	110
550B	558,8	580	255	350	900	270	200	180	520	1 380	540	21,0	16	11	110
600	609,4	630	280	365	950	300	200	200	560	1 550	600	33,0	23	16	120