
**Ships and marine technology — Drain
facilities from oil and water tanks**

*Navires et technologie maritime — Équipement de vidange des
réservoirs d'huile et d'eau*

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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 5483 was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 3, *Piping and machinery*.

This second edition cancels and replaces the first edition (ISO 5483:1977), which has been technically revised.

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Introduction

Throughout this International Standard, the minimum essential criteria are identified by the use of the key word “shall”. Recommended criteria are identified by the use of the key word “should”, and while not mandatory are considered to be of primary importance in providing serviceable, economical and practical designs. Deviations from the recommended criteria should occur only after careful consideration, extensive testing and thorough service evaluation have shown alternative methods to be satisfactory.

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Ships and marine technology — Drain facilities from oil and water tanks

1 Scope

This International Standard specifies dimensions and materials for welding rings and drain screws situated at the bottom of oil and water tanks.

Oil and water tanks occur as:

- built-in tanks, as an integrated part of the hull structure, and,
- detachable tanks, located in appropriate rooms and compartments.

This standard covers facilities for both instances.

2 Normative references

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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 68, *ISO general purpose screw threads — Basic profile*

ISO 261, *ISO general-purpose metric screw threads — General plan*

ISO 683-13, *Heat-treatable steels, alloy steels and free-cutting steels — Part 13: Wrought stainless steels*

ISO 965-1, *ISO general-purpose metric screw threads — Tolerances — Part 1: Principles and basic data*

ISO 965-2, *ISO general purpose metric screw threads — Tolerances — Part 2: Limits of sizes for general purpose external and internal screw — Medium quality*

ISO 965-3, *ISO general purpose metric screw threads — Tolerances — Part 3: Deviations for constructional screw threads*

ISO 2768-1, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*

3 Designation

For the purposes of this International Standard, two types of drain facilities are covered:

Type A, which is universally applicable, especially where flush mounting with the outer surface of hull-plating at any plate thickness is required, and

Type B, which is usable in all other instances where the above-mentioned requirement is not applicable.

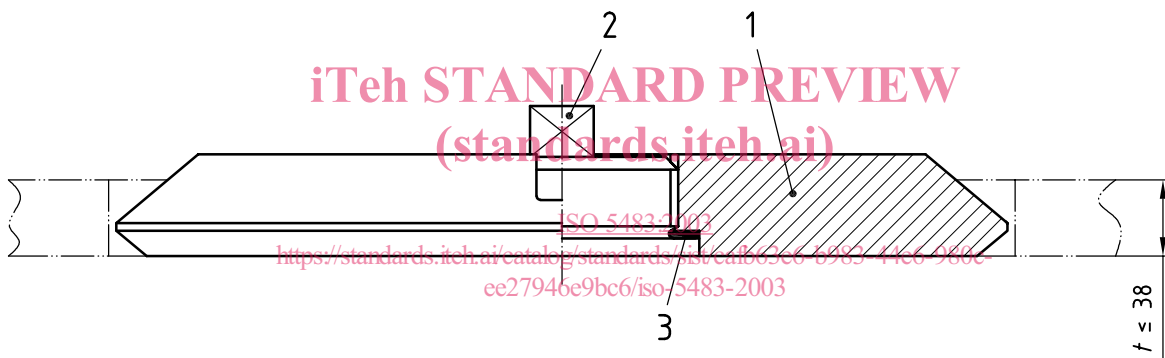
NOTE Both Type A and Type B arrangements are identified by the following two categories of drain plugs:

- square wrench connection for water tanks, and
- hexagonal wrench connection for oil tanks.

4 General assembly arrangement

4.1 Assembly

For Type A, refer to Figure 1 and Table 1. For Type B, refer to Figure 2 and Table 2.

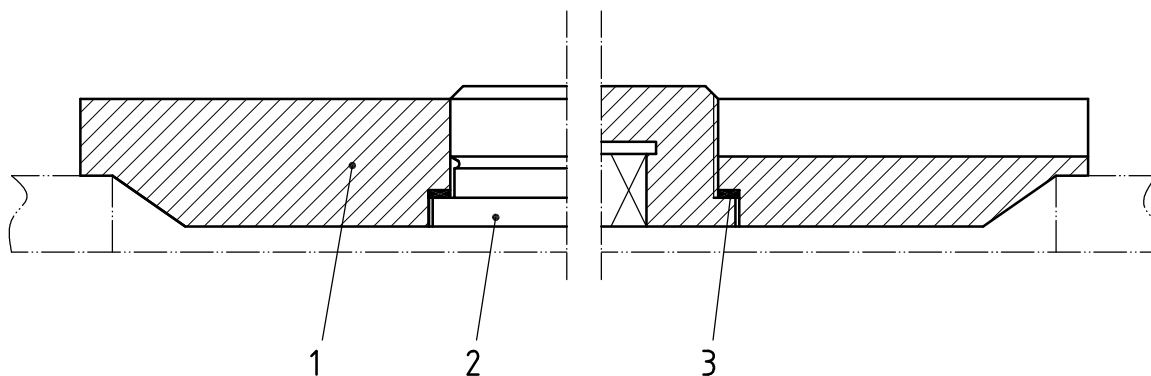


NOTE The extreme left and right sections represent hull plating.

Figure 1 — General arrangement for Type A

Table 1 — Parts list for Type A

Part No.	Part name	Size
1	Welding ring	162 mm
		350 mm
2	Drain screw	M42 × 2
		M72 × 3
3	Gasket	



NOTE The extreme left and right sections represent hull plating.

Figure 2 — General arrangement for Type B

Table 2 — Parts list for Type B

Part No.	Part name	Size
1	Welding ring	8 mm
		15 mm
		22 mm
2	Drain screw	M42 × 2
		M72 × 3
3	Gasket	ISO 5483:2003

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4.2 Threads

For both types, the threads shall be in accordance with ISO 68-1, ISO 261 and ISO 965-1, ISO 965-2 and ISO 965-3.

NOTE A non-toxic anti-seize compound grease may be used on the thread surfaces.

4.3 Materials

The welding ring, drain screw and gasket materials should be as given in Table 3. Other materials shall be of equivalent quality and in all respects suitable for the intended purpose.

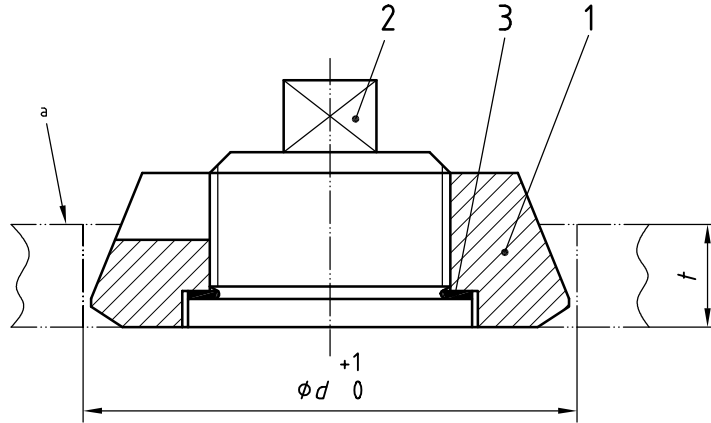
Table 3 — Material list for both types

Component	Material	Designation
Welding ring	Steel. To be of similar quality as surrounding tank bottom steel plating	Shipbuilding steel
Drain screw	Stainless steel	ISO 683-13 Austenitic steel Type 20A
	Copper-aluminium alloy	
Gasket	Hackle flax	
	Lead compound, soft hemp packing or equivalent	

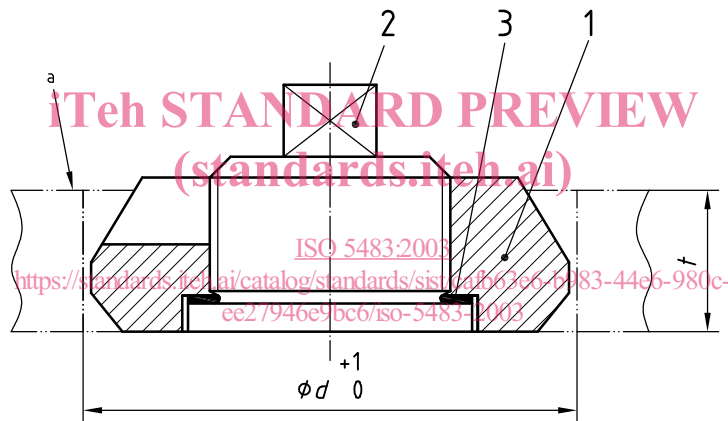
5 Mounting

5.1 Type A

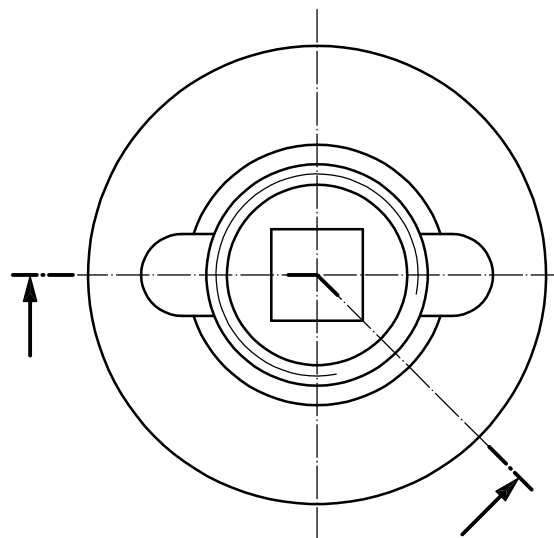
For Type A mountings, see Figures 1, 3, 4 and Table 4. For parts identification, see Table 1.



a) Type A.1 mounting (see Table 4)



b) Type A.2 mounting (see Table 4)



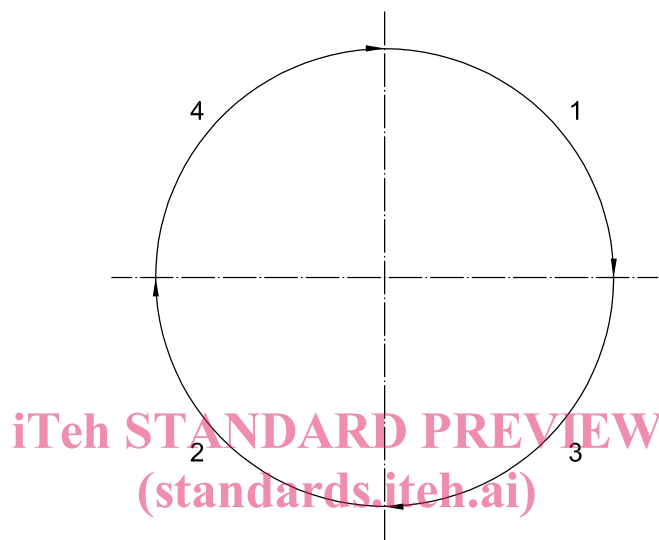
a Inner side of bottom plate

Figure 3 — Type A mounting (see Table 1 for parts identification)

Table 4 — Main dimensions for Type A assembly

Dimensions in millimetres

Size	Type	d	t
162	A-1	165	$\leq 27,5$
350	A-2	353	$\geq 27,5 \leq 38$
NOTE For detailed dimensions, see Figure 8 and Table 6.			



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NOTE 1 Ensure that alternate sections of the circumference are welded in sequence as shown to avoid heat deformation. Weld the 90° shown as "1", skip 90°, then weld section "2." Skip 180° and weld section "3." Skip 90° and weld section "4," the last section.

NOTE 2 Completed welding to be examined for cracks, see 5.3.

Figure 4 — Welding sequence