
**Ships and marine technology —
Weathertight single-leaf steel doors**

*Navires et technologie maritime — Portes en acier à un seul battant,
étanches aux intempéries*

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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
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).

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).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#).

The committee responsible for this document is ISO/TC 8, *Ships and marine technology*, Subcommittee SC 8, *Ship design*.

This third edition cancels and replaces the second edition (ISO 6042:1998), which has been technically revised.

Ships and marine technology — Weathertight single-leaf steel doors

1 Scope

This International Standard specifies the main dimensions, materials, quality and conditions of manufacture for weathertight single-leaf steel doors for application on board ships, in order to ensure interchangeability of the steel doors. The remaining dimensions, welding, and other details are left to the manufacturer.

These doors generally conform to the requirements of the International Convention on Load Lines 1966 (ICLL66). The possibility for application of the doors to position 1 and position 2 has to be considered for each situation and, where necessary, the doors shall be provided with additional stiffening (see also [Table 1](#)).

Users of this International Standard should note that while observing the requirements of this International Standard they should, at the same time, ensure compliance with such statutory requirements, rules, and regulations as may be applicable to the individual ship concerned.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

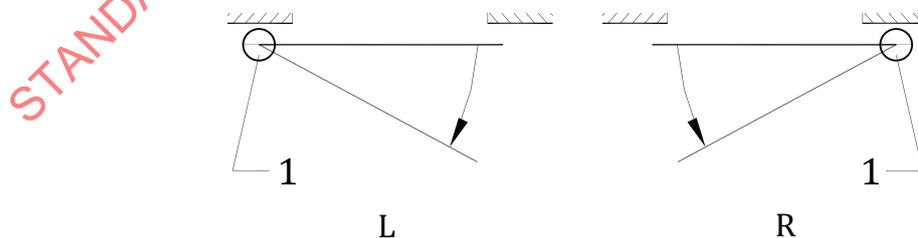
ISO 3796, *Ships and marine technology — Clear openings for external single-leaf doors*

3 Doors, door frames, door plates, and accessories

3.1 Opening direction

For the definitions of left-hand door and right-hand door, see [Figure 1](#).

Doors in accordance with this International Standard can be used for both opening directions (left-hand or right-hand) before they are installed in bulkhead plates.



Key

- 1 hinge
- L left-hand
- R right-hand

Figure 1 — Opening direction

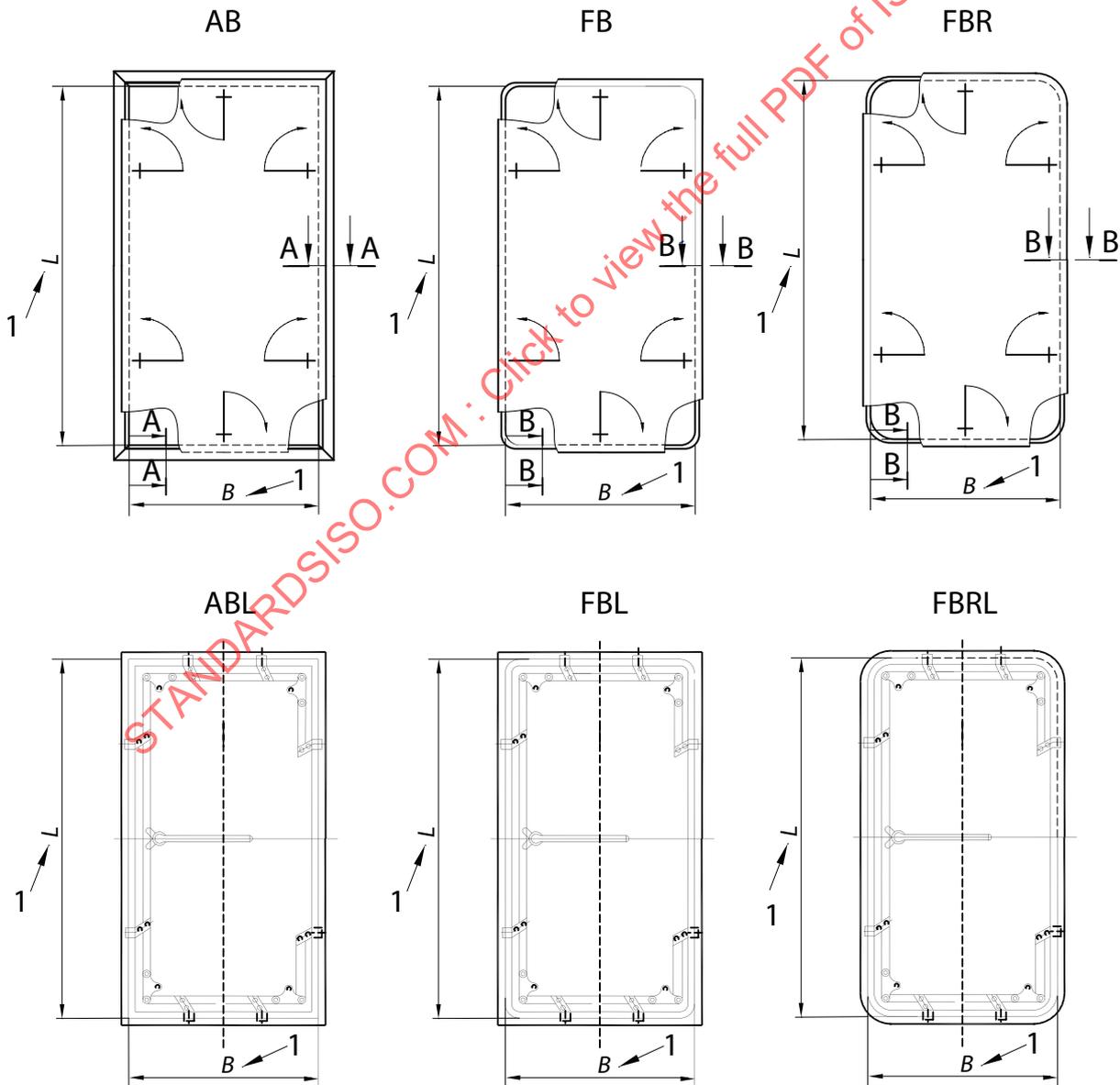
3.2 Door types

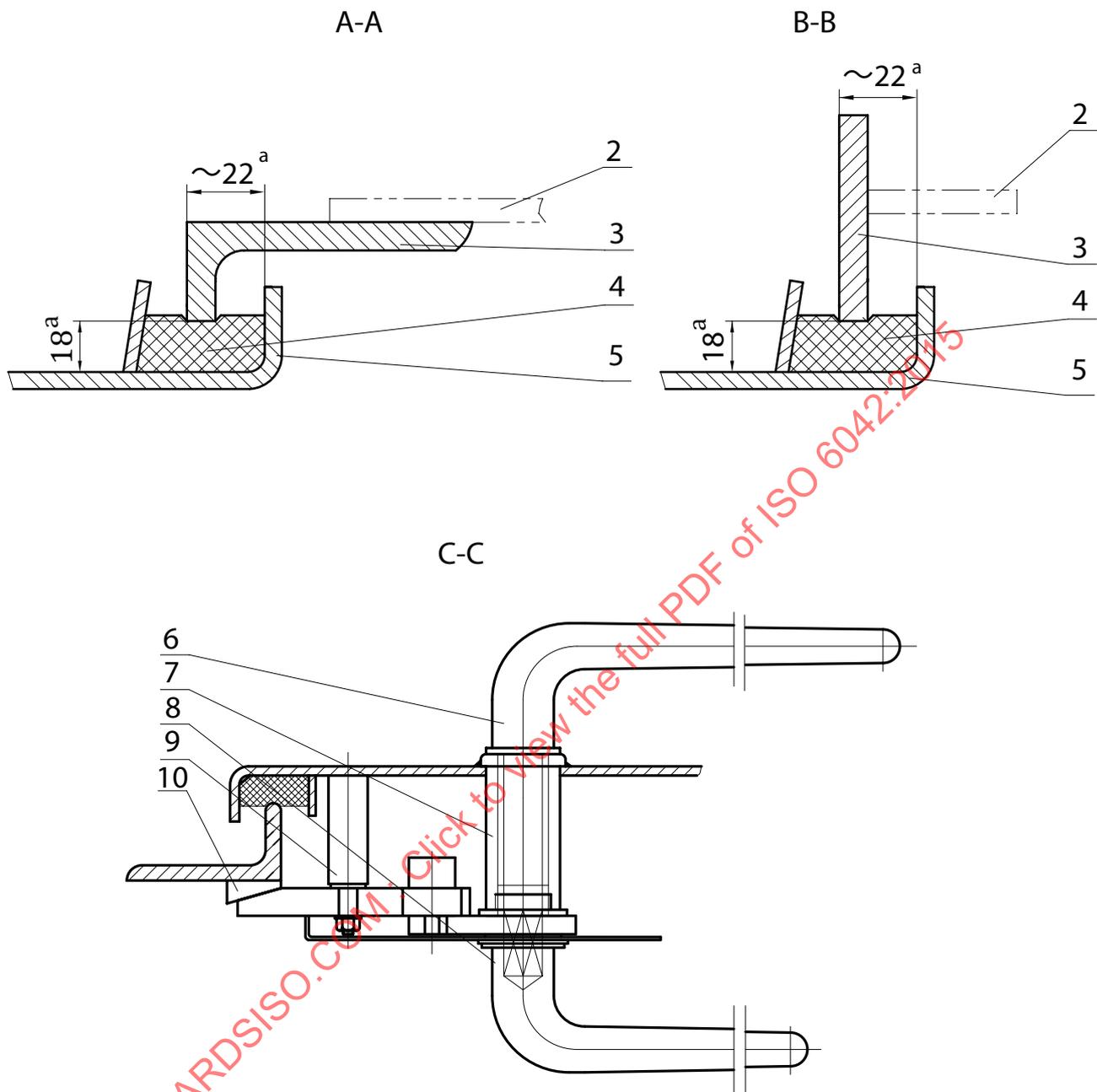
The types of doors shall conform to the detail of Table 1 and Figure 2. The nominal sizes (height $L \times$ width B) given in Table 2 are in accordance with ISO 3796. The assignment of door types to door frames and door plates is shown in Table 3.

Table 1 — Types of doors

Types	Definition
AB	Multi-handles door using angle bar frame
FB	Multi-handles door using flat bar frame (radius of 31 mm)
FBR	Multi-handles door using flat bar frame (radius of 100 mm)
ABL	Single-handle with interlock clips door using angle bar frame
FBL	Single-handle with interlock clips door using flat bar frame (radius of 31 mm)
FBRL	Single-handle with interlock clips door using flat bar frame (radius of 100 mm)

Dimensions in millimetres





Key

- | | |
|------------------|---|
| 1 clear opening | 7 sleeve |
| 2 bulkhead plate | 8 inside handle |
| 3 door frame | 9 interlock |
| 4 door seal | 10 inclined wedge |
| 5 door plate | 11 total thickness of door |
| 6 door handle | a When the seal is compressed by 2 mm, door plate shall be positioned centrally within the frame. |

NOTE 1 Six clips and single-handle design with interlock clips.

NOTE 2 For four clips design and eight clips design, see 3.5.1 and Figure 5.

Figure 2 — Types of doors

Table 2 — Doors, nominal sizes, and application

Dimensions in millimetres

Door Nominal size <i>L × B</i>	Application in accordance with ICLL66 in position (s)
1 200 × 600	1 and 2
1 400 × 600	
1 400 × 750	
1 400 × 900	
1 500 × 600	2 only
1 500 × 750	
1 500 × 900	
1 600 × 600	
1 600 × 750	
1 600 × 900	
1 700 × 600	
1 700 × 750	
1 700 × 900	
1 800 × 600	
1 800 × 750	
1 800 × 900	

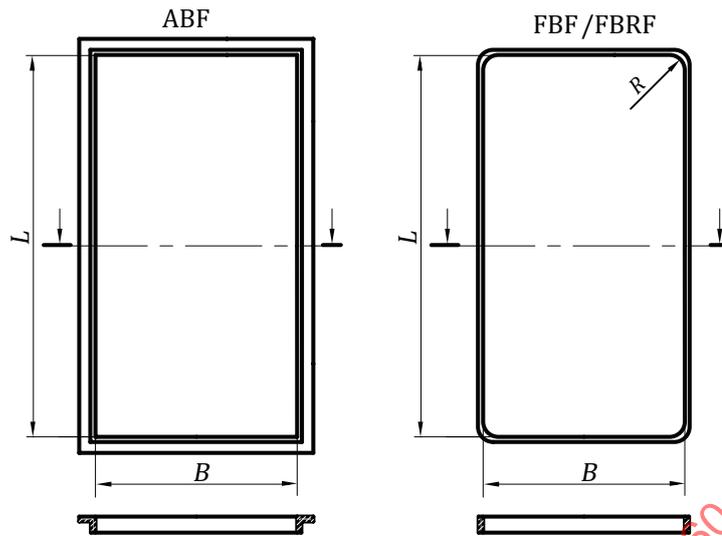
Table 3 — Assignment of door type to door frames and door plates

Door type	Associated type of	
	door frame (according to 3.3)	door plate (according to 3.4)
AB	ABF	SP
FB	FBF	SP
FBR	FBRF	RP
ABL	ABF	SP
FBL	FBF	SP
FBRL	FBRF	RP

3.3 Door frames (see [Figure 3](#))

In order to prevent damage to the door seal, the edges of the upper part of the door frame shall be rounded or chamfered.

The dimensions of door frames are given in [Table 4](#).



NOTE Angle bar 75 × 50 × 7^a; Flat bar 70 × 8^a.

^a Other sections may be used, provided that the interchangeability of dimensions is maintained.

Figure 3 — Types of door frames

Table 4 — Dimensions of door frames

Dimensions in millimetres

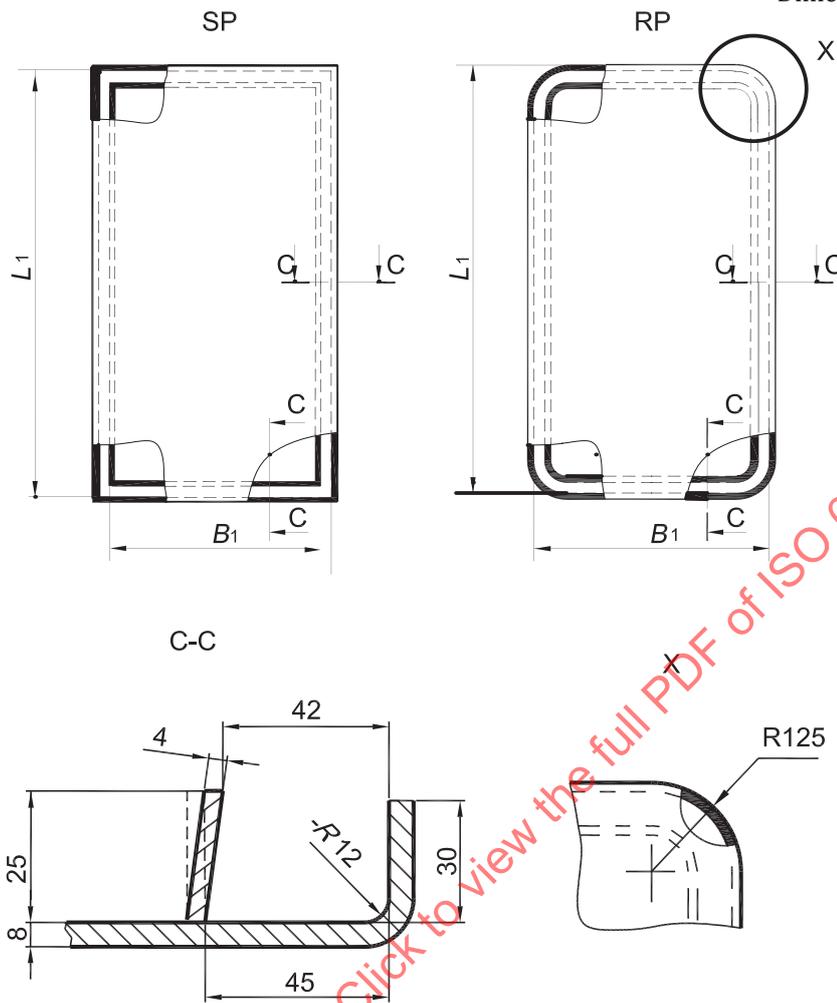
Nominal size	L 0 -2	B 0 -2	R for type	
			FBF	FBRF
1 200 × 600	1 200	600	31 ± 1	100 ± 1,5
1 400 × 600	1 400	600		
1 400 × 750	1 400	750		
1 400 × 900	1 400	900		
1 500 × 600	1 500	600		
1 500 × 750	1 500	750		
1 500 × 900	1 500	900		
1 600 × 600	1 600	600		
1 600 × 750	1 600	750		
1 600 × 900	1 600	900		
1 700 × 600	1 700	600		
1 700 × 750	1 700	750		
1 700 × 900	1 700	900		
1 800 × 600	1 800	600		
1 800 × 750	1 800	750		
1 800 × 900	1 800	900		

3.4 Door plates

The door-seal retaining bar can be placed in inclined or vertical position, as indicated in [Figure 4](#).

The dimensions (height, *L* and width, *B*) of door plates are given in [Table 5](#).

Dimensions in millimetres



Key
 L_1, B_1 inside dimension of door plate

Figure 4 — Types of door plates

Table 5 — Dimensions of door plates

Dimensions in millimetres

Nominal size	L_1 ± 2	B_1 ± 2
1 200 × 600	1 244	644
1 400 × 600	1 444	644
1 400 × 750	1 444	794
1 400 × 900	1 444	944
1 500 × 600	1 544	644
1 500 × 750	1 544	794
1 500 × 900	1 544	944
1 600 × 600	1 644	644
1 600 × 750	1 644	794
1 600 × 900	1 644	944

Table 5 (continued)

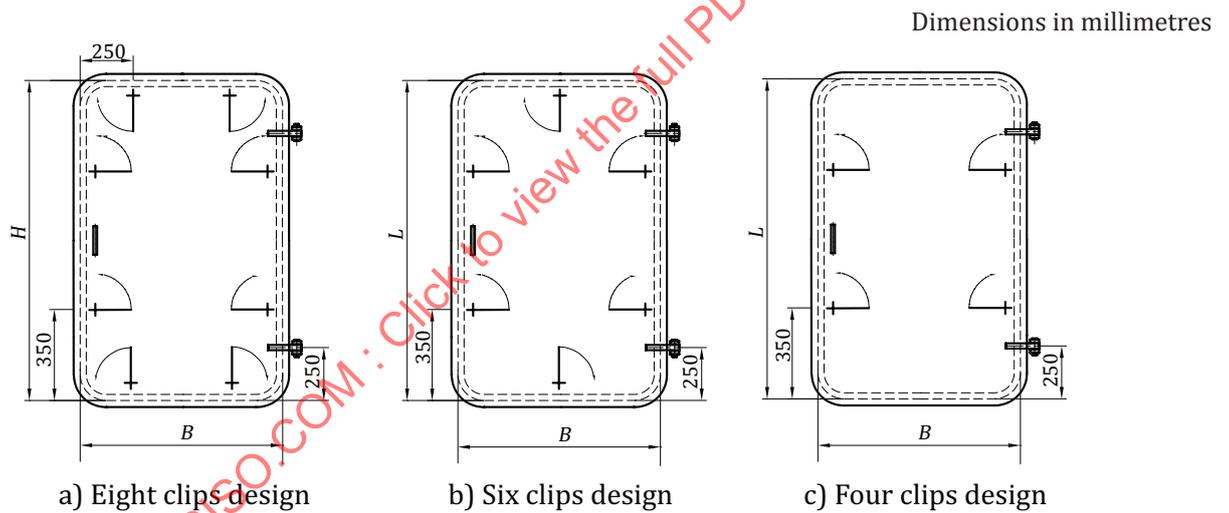
Nominal size	L_1 ± 2	B_1 ± 2
1 700 × 600	1 744	644
1 700 × 750	1 744	794
1 700 × 900	1 744	944
1 800 × 600	1 844	644
1 800 × 750	1 844	794
1 800 × 900	1 844	944

3.5 Fittings

3.5.1 Location of door clips and hinges

Regarding all values given in [Figure 5](#), for the centre lines of door clips and hinges, refer to the clear opening (see [Figure 2](#)).

[Table 6](#) shows the number of clips for each nominal size.



Key

H/L height/length of the door

Figure 5 — Location of fittings

Table 6 — Number of clips

Dimensions in millimetres

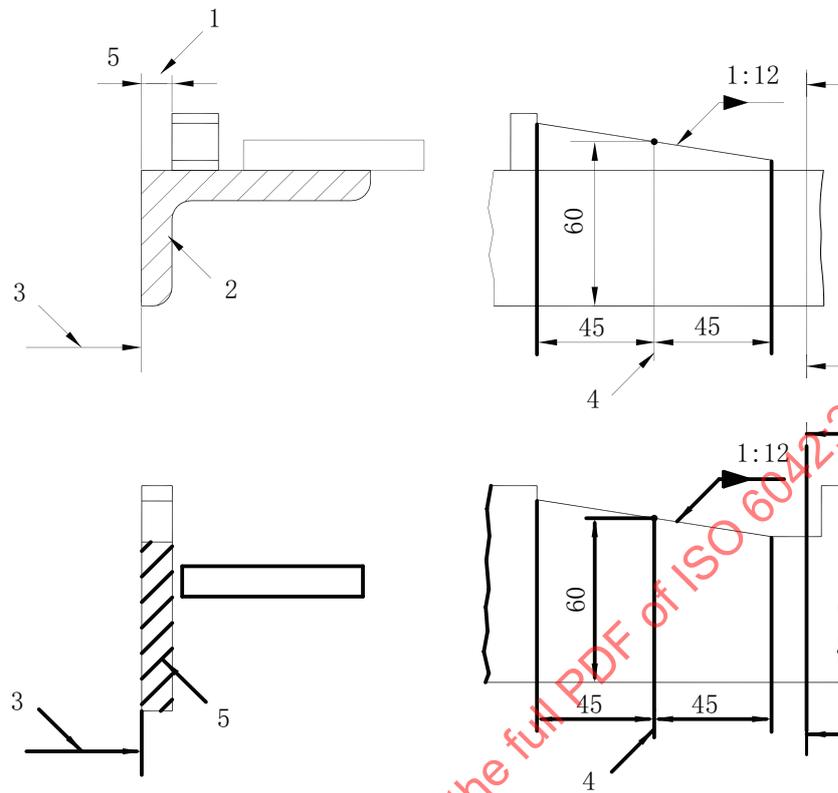
Nominal size	Number of clips
1 200 × 600	6
1 400 × 600	6
1 400 × 750	6
1 400 × 900	6
1 500 × 600	4
1 500 × 750	4
1 500 × 900	4
1 600 × 600	4
1 600 × 750	4
1 600 × 900	6
1 700 × 600	6
1 700 × 750	6
1 700 × 900	8
1 800 × 600	6
1 800 × 750	6
1 800 × 900	8

3.5.2 Wedges (see [Figure 6](#))

Wedges shall be arranged on the frames to align with the centre lines of each clip. A slope of 1:12 is recommended. The direction of the slope of the wedge shall correspond to the required closing direction of the clips, as shown in [Figure 2](#).

For a correct fit of the frame edge with the packing material, a final adjustment of clip wedges may be added.

Dimensions in millimetres



Key

- 1 maximum offset of wedge from clear opening
- 2 door frame Type ABF
- 3 clear opening
- 4 centre line of clip
- 5 door frame Type FBF or FBRF

Figure 6 — Location of fittings

3.5.3 Hinges (see [Figure 7](#))

Two hinges shall be fitted to each door. Each hinge shall be provided with an oval eye hole, in order to allow clips to compress the door seal uniformly.

Dimensions in millimetres

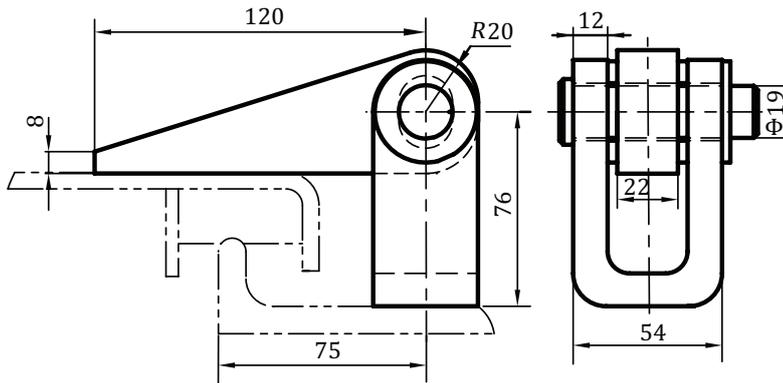


Figure 7 — Hinges

3.5.4 Door seal

The door seal shall have a cross-section as shown in Figure 8.

In order to increase the elasticity, a hole may be added at the longitudinal centre line of the door seal.

The size of the chamfer will depend on the radius of the door panel.

The door seal shall be fitted to the door as indicated in Figure 7 and shall be secured by a retaining bar. The seal shall be bonded to the door plate by an adhesive suitable for marine conditions.

It shall be ensured, by a depth stop positioned on the centre line of each clip, that the door seal cannot be compressed to less than 16 mm.

Dimensions in millimetres

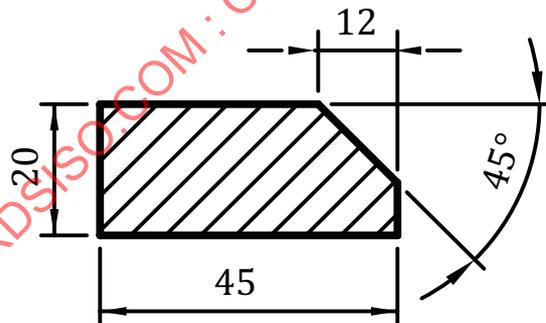


Figure 8 — Door seal cross-section