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# International Standard



# 3876

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## Shipbuilding — Inland vessels — Hand-holes

*Construction navale — Bateaux de navigation intérieure — Trous de main*

Second edition — 1986-12-15

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Descriptors : shipbuilding, inland navigation, inspection openings.

## 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 3876 was prepared by Technical Committee ISO/TC 8, *Shipbuilding and marine structures*.

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This second edition cancels and replaces the first edition (ISO 3876:1977), of which it constitutes a minor revision.

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Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

# Shipbuilding — Inland vessels — Hand-holes

## 1 Scope and field of application

This International Standard specifies the dimensions and designs of watertight and oiltight hand-holes for inland vessels.

## 2 References

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

ISO 630, *Structural steels.*

ISO 657, *Dimensions of hot-rolled steel sections —*

*Part 1 : Equal-leg angles — Metric series — Dimensions and sectional properties.*<sup>1)</sup>

*Part 2 : Unequal-leg angles — Metric series — Dimensions and sectional properties.*<sup>2)</sup>

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## 3 Classification

3.1 Hand-holes are divided into two sizes :

- Size I : hand-holes of  $\phi$  150 mm
- Size II : hand-holes of  $\phi$  250 mm

3.2 Depending on the design, hand-holes are divided into three types :

- Type A : hand-holes with a coaming (see figure 1)

NOTE — Type A hand-holes constitute a danger to the safety of personnel; restrictions should therefore be imposed on the locations where they are installed.

- Type B : hand-holes without a coaming (see figure 2)
- Type C : hand-holes flush with the deck (see figure 3)

## 4 Dimensions

The dimensions of the two sizes of hand-holes of each of the three types shall be as shown in figures 1, 2 and 3.

Dimensions in millimetres  
(Values for size II in parentheses)

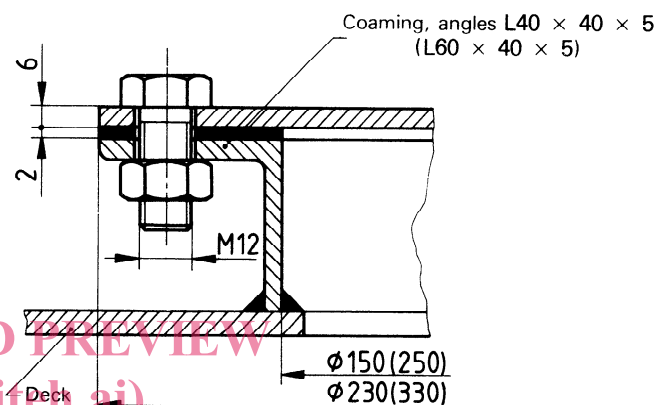


Figure 1 — Type A (hand-hole with coaming)

Dimensions in millimetres  
(Values for size II in parentheses)

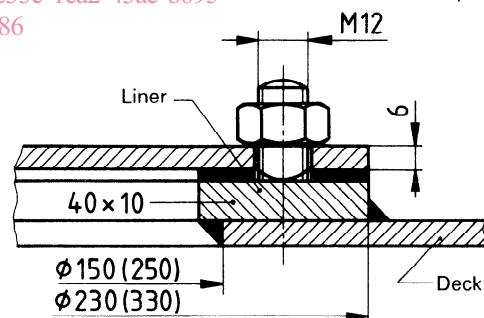


Figure 2 — Type B (hand-hole without coaming)

Dimensions in millimetres  
(Values for size II in parentheses)

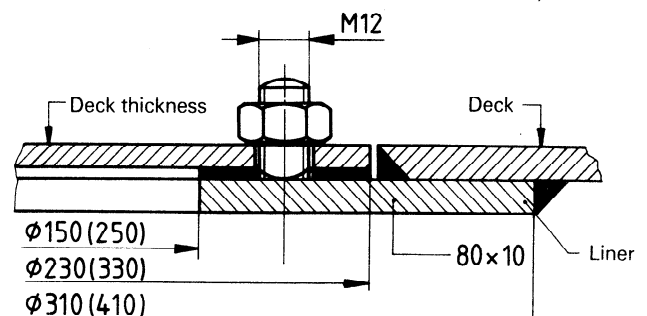


Figure 3 — Type C (hand-hole flush with deck)

1) At present at the stage of draft. (Revision of ISO/R 657/1-1968.)

2) At present at the stage of draft. (Revision of ISO/R 657/2-1968.)

## 5 Cover fixing

Two versions of fixing hand-hole covers are specified :

- Version 1 : with 8 bolts or studs (see figure 4)
- Version 2 : with 12 bolts or studs (see figure 5)

Dimensions in millimetres  
(Values for size II in parentheses)

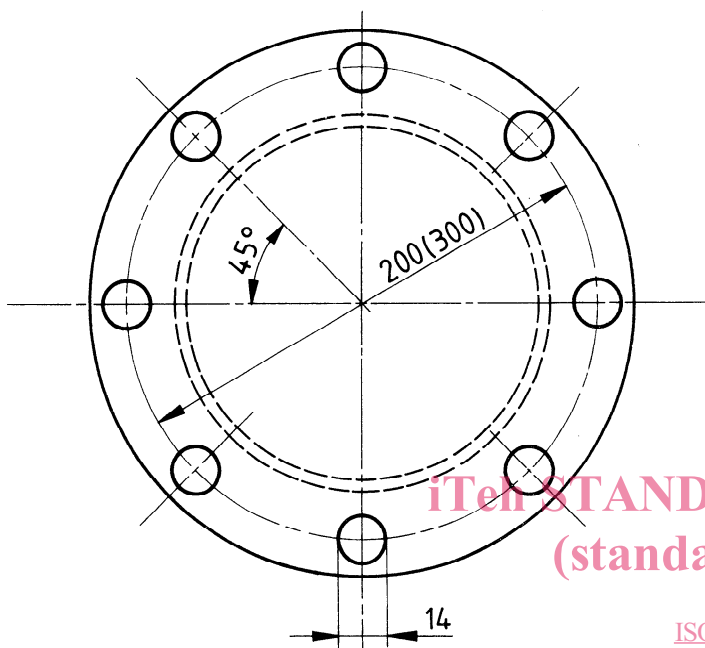


Figure 4 — Version 1 (cover fixed with 8 bolts or studs)

Dimensions in millimetres  
(Values for size II in parentheses)

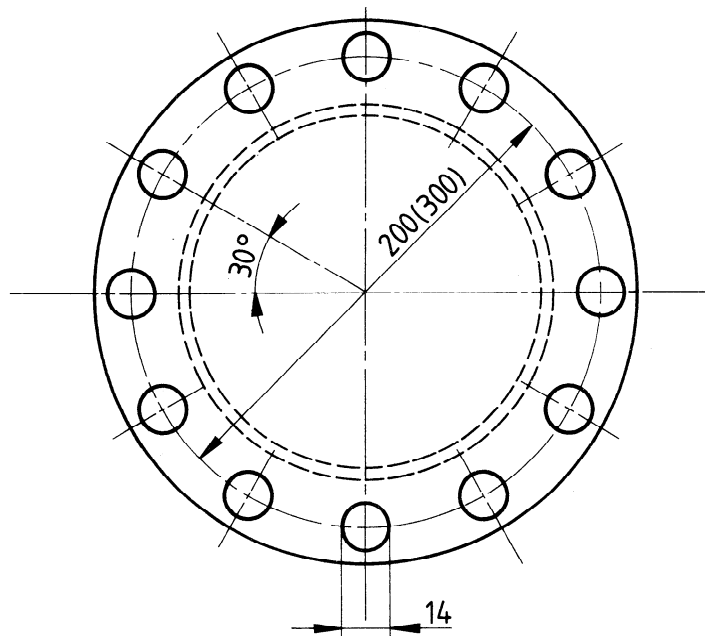


Figure 5 — Version 2 (cover fixed with 12 bolts or studs)

## 6 Designation

Hand-holes that meet the requirements of this International Standard shall be designated as follows :

- name : hand-hole;
- reference to this International Standard : ISO 3876;
- size : figure I or II as appropriate;
- type : letter A, B or C as appropriate;
- version of cover fixing : figure 1 or 2 as appropriate.

Examples :

- a) For a hand-hole size I, type A, version 1 :  
**Hand-hole ISO 3876-I-A-1**
- b) For a hand-hole size II, type C, version 2 :  
**Hand-hole ISO 3876-II-C-2**

NOTES

- 1 Size II hand-holes shall be used only in those cases when access is necessary for the head for visual inspection.
- 2 Other hand-holes required in certain cases are considered to be special constructions and are not standardized.

## 7 Design

7.1 For type A hand-holes (with a coaming), two methods of welding the coaming to the deck are acceptable (see figures 6 and 7).

7.2 For type B hand-holes (without coaming), two methods of welding the liner to the deck are acceptable (see figures 8 and 9).

7.3 The permissible methods of fixing the studs are

- welding, for types B and C (see figure 10);
- threading, for type B only (see figure 11).

## 8 Materials

**Coaming** : Angle complying with ISO 657/1 (for size I) or ISO 657/2 (for size II).

**Cover** : Steel Fe 360D, 6 mm thick, complying with ISO 630.

**Liner** : Steel Fe 360D, 10 mm thick, complying with ISO 630.

**Watertight packing** : 2 mm thick rubber.

**Oiltight packing** : Special asbestos rubber 2 mm thick.

**Fasteners** : Bolts, studs, nuts, with M12 thread complying with ISO 261.

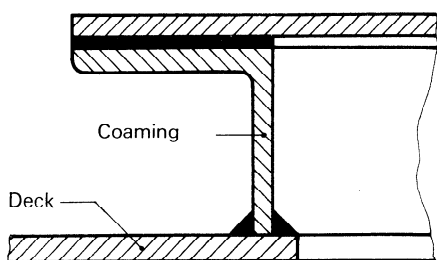


Figure 6 – Installation of coaming on deck

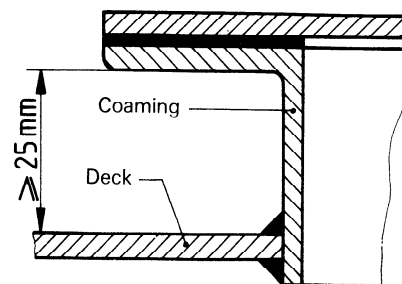


Figure 7 – Installation of coaming in deck cut-out

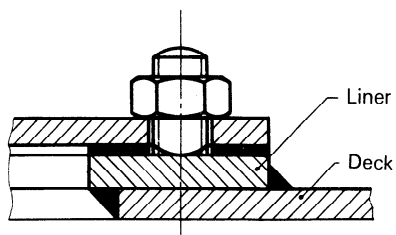


Figure 8 – Inside welding under liner

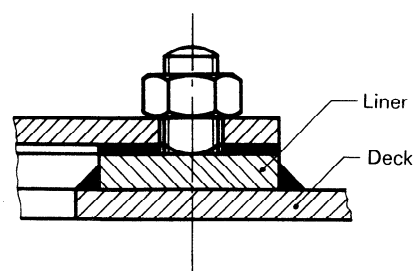


Figure 9 – Inside welding on deck

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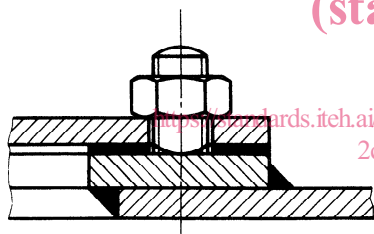


Figure 10 – Threaded stud welded to the hand-hole liner (types B and C)

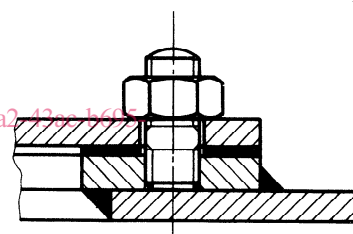


Figure 11 – Threaded stud screwed into the hand-hole liner (type B only)

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