
**Ships and marine technology — Windows
and side scuttles for fire-resistant
constructions**

*Navires et technologie maritime — Fenêtres et hublots pour
constructions résistant au feu*

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ISO 5797:2004

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Reference number
ISO 5797:2004(E)

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Published in Switzerland

Foreword

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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 5797 was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 8, *Structures*.

This first edition cancels and replaces ISO 5797-1:1989.

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Ships and marine technology — Windows and side scuttles for fire-resistant constructions

1 Scope

This International Standard provides requirements for windows and side scuttles for fire-resistant constructions for installation in “A” class and “B” class divisions as defined in FTP Code, Part 3 [(IMO Resolution A 754 (18))].

It lays down the requirements for the construction of glass panes and frames, as well as the testing and marking of such windows and side scuttles.

“B” class divisions are required only for inside installations.

2 Normative references

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 614, *Shipbuilding and marine structures — Toughened safety glass panes for rectangular windows and side scuttles — Punch method of non-destructive strength testing*

ISO 1751, *Shipbuilding and marine structures — Ships' side scuttles*

ISO 3903, *Shipbuilding and marine structures — Ships' ordinary rectangular windows*

ISO 5779, *Shipbuilding — Ordinary rectangular windows — Positioning*

ISO 5780, *Shipbuilding — Side scuttles — Positioning*

ISO 21005:—¹⁾, *Ships and marine technology — Thermally toughened safety-glass panes for windows and side scuttles*

IMO ²⁾/MSC Resolution 61(67), *International Code for Application of Fire Test Procedures (FTP Code) adopted 1998*

IMO Resolution A 754 (18), *Recommendation on fire resistance tests for “A”, “B” and “F” class divisions, adopted 4th November 1993*

1) To be published. (Revision of ISO 1095:1989 and ISO 3254:1989)

2) IMO = International Maritime Organization

3 Classification

Windows and side scuttles for fire-resistant constructions in accordance with this International Standard shall meet the requirements of the FTP Code, i.e. for windows and side scuttles for "A" class divisions (A-0, A-15, A-30, A-60) and for "B" class divisions (B-0, B-15, B-30) according to SOLAS 74, Chapter II-2, Regulation 3.

4 Glass panes

4.1 Composition

The composition of panes shall have at least one glass pane of thermally toughened safety glass, in accordance with ISO 21005, of adequate thickness, t_1 , to withstand the design pressure corresponding to the location of the ship's windows and side scuttles, in accordance with ISO 5779 for windows and ISO 5780 for side scuttles. They may be constructed, for example, as described in 4.2 and shown in Figure 1.

4.2 Types

As shown in Figure 1, the following different types of glass panes may be used although other types are acceptable.

- Type T — single: One thermally toughened safety glass pane.
- Type L — laminated: Two or more glass panes glued together with an adhesive interlayer.
- Types MT and ML — separated: Two or more glass panes separated by a gap filled with a non-adhesive medium, such as gas or gel, etc.

4.3 Dimensions

4.3.1 Dimensions, edges, parallelism, flatness and tolerances for each glass pane of the composition shall be in accordance with ISO 21005.

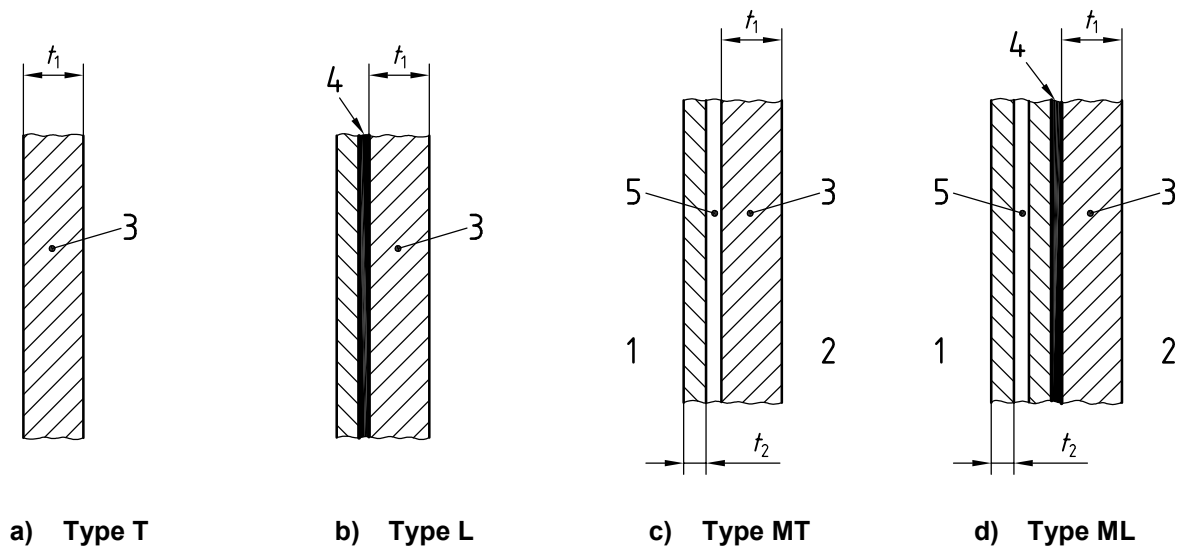
4.3.2 The thickness, t_1 , of the main glass pane is the designation thickness of the glass pane. These are minimum values which shall not be less than the thicknesses given in ISO 21005 in relation to the type and nominal size of windows and side scuttles.

4.3.3 The thicknesses of the other glass panes forming components of glass panes of types L, MT and ML are left to the manufacturer's option.

5 Construction of frame

The frame shall be constructed such that the integrity of the bulkhead in which it is fitted is maintained when tested in accordance with the FTP Code.

The minimum requirements, reference materials and constructions for side scuttles and windows are given in ISO 1751 and ISO 3903, respectively.



Key

- 1 internal face
- 2 external face (faced to the wash of sea)
- 3 thermally toughened safety glass (main glass pane)
- 4 interlayer
- 5 gap
- t_1 thickness of the main glass pane
- t_2 thickness of glass pane

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Figure 1 — Compositions of glass panes

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6 Testing

6.1 General

The tests given in ISO 614, ISO 1751 and ISO 3903 shall be taken into account.

6.2 Prototype testing

6.2.1 The fire test shall be carried out for every prototype with a complete construction of the window or side scuttle.

6.2.2 The manufacturer shall have prototype testing carried out by a test laboratory recognized by the administration.

6.2.3 Each test shall be carried out according to IMO/MSC Resolution 61(67), Annex 1, Part 3, with the window or side scuttle of the maximum nominal size (in terms of both the width and the height) and with the minimum thickness of the main glass pane.

7 Test report

The test report shall be in accordance with IMO/MSC Resolution 61(67), Annex 1, Part 3.

8 Marking

8.1 In addition to the marking indicated in ISO 1751 and ISO 3903, windows and side scuttles for fire-resistant constructions shall be marked with the fire-resistance class.

8.2 The main glass pane shall be marked as indicated in ISO 614. The whole glass pane in the fire-resistant construction shall be marked with the following additional indications readable from the inside and printed along the side-lines and at the lower corner of the triangle:

- the words “FIRE-PROOF” and/or the words “ANTI-FEU”;
- fire-resistance class (“A-0”, “A-15”, “A-30”, “A-60”, “B-0”, “B-15”, “B-30”);
- the word “INSIDE”, and/or the word “INTÉRIEUR” in the case of asymmetrical compositions.

NOTE The word “inside” is not intended to be an indication for the fire-exposed side of the window or side scuttle. For instance, on tankers the outside is expected to be the fire-exposed side.

In the case of hose-stream testing, the window may be marked with the letter “HS” behind the fire-resistance class.

An example of a clear glass pane of thermally toughened safety glass, with a main glass pane of thickness 15 mm for fire-resistance class “A-60” is given in Figure 2.



Figure 2 — Example of marking

9 Designation

Side scuttles for fire-resistant constructions shall be designated in principle in accordance with ISO 1751.

Windows for fire-resistant constructions shall be designated in principle in accordance with ISO 3903.

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