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**Ships and marine technology —  
Drawings for fire protection — Indications  
of fire rating by divisions for ships and  
high-speed craft**

*Navires et technologie maritime — Dessins pour la protection contre  
l'incendie — Indication des cotes au feu des cloisonnements*



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## 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 17338 was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 1, *Lifesaving and fire protection*.

## Introduction

This International Standard provides standard illustrations and methods of preparation for drawings for fire protection of ships and high-speed craft provided by thermal and structural boundaries (divisions). It may be applied equally to drawings for existing ships and high-speed craft, and for ships and high-speed craft under construction. This International Standard is complementary to ISO 17631 <sup>[3]</sup>, which specifies plans primarily for use by ship operators, and shipboard and shore-side fire-fighting personnel, in responding to shipboard emergencies. This International Standard specifies drawings primarily for use by shipbuilders and regulatory authorities to specify and audit the system of thermal and structural boundaries to provide fire protection on a ship or high-speed craft as required by applicable national and international regulations.

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# Ships and marine technology — Drawings for fire protection — Indications of fire rating by divisions for ships and high-speed craft

**IMPORTANT** — The electronic file of this document contains colours which are considered to be useful for the correct understanding of the document. Users should therefore consider printing this document using a colour printer.

## 1 Scope

This International Standard specifies the design and layout of drawings for indicating the fire rating of thermal and structural boundaries (divisions) for fire protection of ships.

## 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.

*IMO International Convention for the Safety of Life at Sea*, 1974 (SOLAS:1974), as amended in 2000

Torremolinos Protocol, 1993, updating, amending and absorbing the *Torremolinos International Convention for the Safety of Fishing Vessels*, 1977

*IMO Code for the Construction and Equipment of Mobile Offshore Drilling Units*, 2001 (MODU Code)

*IMO International Code of Safety for High-speed Craft*, 2000 (HSC Code), as amended in 2008

## 3 Terms and definitions

For the purposes of this International Standard, the following terms and definitions apply.

### 3.1

#### **booklet**

compilation of fire protection drawing(s) for use in maintenance and/or survey, which can be easily checked and maintained

### 3.2

#### **competent authority**

Administration whose flag the ship is entitled to fly, or an organization authorized by an Administration, to perform functions as specified in this International Standard

### 3.3

#### **division**

thermal and structural boundary (such as a bulkhead or deck), ensembles of which confine spaces and have fire protection properties as required by the applicable regulations

## 3.4

**illustration**

use of line drawings or colours for the description of the fire rating of divisions

## 4 General

**4.1** Drawings prepared in accordance with this International Standard shall be made to a scale not smaller than 1:150 with a line thickness according to Table 1.

An example drawing is shown in Annex A illustrating some of the principles outlined in this International Standard.

**Table 1 — Illustrations for indicating the fire rating of divisions**

| Referent <sup>a</sup>                                                                                                 | Illustration                                                                        | Description                                  | Comment on use                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| A-60 class division for main vertical zones                                                                           |    | Continuous wide red line                     | The line may also be coloured black<br>The line thickness shall be 2,5 mm                                                                 |
| A-30 class division for main vertical zones                                                                           |    | Dashed wide red line                         | The line may also be coloured black<br>The line thickness shall be 2,5 mm                                                                 |
| A-15 class division for main vertical zones                                                                           |   | Long-dashed dotted wide red line             | The line may also be coloured black<br>The line thickness shall be 2,5 mm                                                                 |
| A-0 class division for main vertical zones                                                                            |  | Long-dashed double dotted wide red line      | The line may also be coloured black<br>The line thickness shall be 2,5 mm                                                                 |
| 1. A-60 class vertical division<br>2. Vertical fire resisting division with 60 min of structural fire protection time |  | Continuous medium red line                   | The line may also be coloured black<br>The line thickness shall be 1,5 mm                                                                 |
| 1. A-30 class vertical division<br>2. Vertical fire resisting division with 30 min of structural fire protection time |  | Dashed medium red line                       | The line may also be coloured black<br>The line thickness shall be 1,5 mm                                                                 |
| A-15 class vertical division                                                                                          |  | Long-dashed dotted medium red line           | The line may also be coloured black<br>The line thickness shall be 1,5 mm                                                                 |
| 1. A-0 class vertical division<br>2. Vertical fire resisting division with 0 min of structural fire protection time   |  | Long-dashed double dotted medium red line    | The line may also be coloured black<br>The line thickness shall be 1,5 mm                                                                 |
| B-30 class vertical division                                                                                          |  | Dashed medium yellow line with black outline | Grey shading may be used instead of the yellow colour<br>The yellow line thickness shall be 1,0 mm and the black outline thickness 0,1 mm |

Table 1 (continued)

| Referent <sup>a</sup>                                                                                                     | Illustration                                                                        | Description                                                | Comment on use                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| B-15 class vertical division                                                                                              |    | Dashed dotted medium yellow line with black outline        | Grey shading may be used instead of the yellow colour<br>The yellow line thickness shall be 1,0 mm and the black outline thickness 0,1 mm |
| B-0 class vertical division                                                                                               |    | Dashed double dotted medium yellow line with black outline | Grey shading may be used instead of the yellow colour<br>The yellow line thickness shall be 1,0 mm and the black outline thickness 0,1 mm |
| C class vertical fire resisting division                                                                                  |    | Continuous zigzagged narrow blue line                      | Black may be used instead of blue<br>The line thickness shall be 0,5 mm                                                                   |
| 1. F class vertical fire resisting division<br>2. Vertical division made of fire resisting material                       |    | Continuous narrow purple line                              | Grey shading may be used instead of the purple colour<br>The line thickness shall be 0,5 mm                                               |
| 1. A-60 class horizontal division<br>2. Horizontal fire resisting division with 60 min of structural fire protection time |   | Cross-hatched narrow red line                              | Black may be used instead of the red colour<br>The line thickness shall be 0,5 mm                                                         |
| 1. A-30 class horizontal division<br>2. Horizontal fire resisting division with 30 min of structural fire protection time |  | Continuous narrow red line                                 | Black may be used instead of the red colour<br>The line thickness shall be 0,5 mm                                                         |
| A-15 class horizontal division                                                                                            |  | Continuous narrow red line                                 | Black may be used instead of the red colour<br>The line thickness shall be 0,5 mm                                                         |
| 1. A-0 class horizontal division<br>2. Horizontal fire resisting division with 0 min of structural fire protection time   |  | Dashed narrow red lines                                    | Black may be used instead of the red colour<br>The line thickness shall be 0,5 mm                                                         |
| B-15 class horizontal division                                                                                            |  | Continuous narrow yellow lines                             | Grey shading may be used instead of the yellow colour<br>The line thickness shall be 0,5 mm                                               |
| B-0 class horizontal division                                                                                             |  | Continuous narrow yellow lines                             | Grey shading may be used instead of the yellow colour<br>The line thickness shall be 0,5 mm                                               |
| 1. F class horizontal division<br>2. Horizontal division made of fire resisting material                                  |  | Long-dashed dotted narrow purple line                      | Grey shading may be used instead of the purple colour<br>The line thickness shall be 0,5 mm                                               |
| Draught stop                                                                                                              |  | Medium red crosses                                         | Black may be used instead of the red colour                                                                                               |
| <sup>a</sup> Where there are two options: 1 applies to drawings for ships; 2 applies to drawings for high-speed craft.    |                                                                                     |                                                            |                                                                                                                                           |

**4.2** Large drawings may be subdivided for clarity.

**4.3** The drawing shall show:

- a) type of ship and, in case of passenger ships, whether the number of passengers exceeds 36 passengers or not;
- b) names of internal spaces, and fire category as given in SOLAS:1974, Torremolinos Protocol:1993, MODU Code:2001, or HSC Code:2008 as appropriate, shall be indicated. These fire categories shall be placed in a circle for spaces protected by sprinkler or equivalent system(s), and in a square box for spaces not protected by these system(s);
- c) "A", "B", "C" and "F" class divisions, as appropriate;
- d) frame numbers, with a letter point size of 9;
- e) the indication of the various parts of the ship, where the indicated fire rating for A class divisions is obtained by a combination of divisions (e.g., an A class deck in combination with a B class ceiling);
- f) the use of structural core material other than steel, e.g., aluminium alloy;
- g) arrangements of draught stops;
- h) where B class bulkheads are extended from deck to deck, or from deck to a continuous B class ceiling;
- i) notes, if necessary, describing additional features of fire protection based on divisions;
- j) for passenger ships:
  - 1) a longitudinal section in way of the centreline, indicating the main vertical and horizontal zones and relevant numbering; and
  - 2) external view(s) indicating the fire rating of ship's sides in way of the survival craft stowage areas, survival craft embarkation areas, and areas below and adjacent to liferaft and evacuation slide embarkation areas;
- k) for tankers, external view indicating the fire rating of the ship's superstructure facing the cargo area.

Constructional details, such as erection of B class divisions and penetrations at A or B class divisions, may be included on the drawing.

**4.4** The drawing shall be properly legible. Spacing between lines should be adjusted so as to maintain the legibility of basic drawing while clearly identifying divisions involved. Consideration may be given to preparation of separate drawings for high fire risk spaces, e.g. propulsion machinery spaces and boiler rooms.

**4.5** A legend shall be a constituent part of the drawing and contain a list of the graphical symbols and/or illustrations used in the drawing, together with the appropriate explanations. The legend shall be placed at the right side of the drawing. At the discretion of the competent authority, a booklet can be prepared which includes, in some instances, additional special information such as the type of insulation material used. For clarity, preferably only one font type should be used for text in drawings developed in accordance with this International Standard. The letter size shall be appropriate for the drawing scale and shall preferably be 12 point.

**4.6** For specific arrangements, e.g. lift machinery room, stairway flight, and fuel oil tank, additional details (including transverse or longitudinal sections) may be necessary.

**4.7** The information required shall be shown deck by deck.



**4.8** Illustrations shall be positioned in the drawing in such a manner as to clearly indicate the appropriate position on the ship.

**4.9** Texts in drawings and booklets shall be in the language or languages required by the competent authority. Where more than one language is used on drawings, distinguish them by use of different font types.

NOTE Reference can be made to the requirements of the ISM Code<sup>[4]</sup> with regard to working languages of the ship.

**4.10** Drawings shall specify:

- a) the ship's construction date;
- b) the method of construction of fire protection, if applicable:
  - 1) for passenger ships: Method I, II, III with or without sprinklers, etc.,
  - 2) for cargo ships: Method IC, IIC, IIIC, etc.,
  - 3) for fishing vessels: Method IF, IIF, IIIF, etc.;
- c) dates and descriptions of any modifications to the ship which altered its fire safety.

Where more than one method or a combination of methods is used in different locations of the ship, this shall be specified.

**4.11** Where practicable, all decks in drawings and booklets should be sequentially numbered starting with "1" at the lowest deck.

**4.12** Fire rating of horizontal divisions between two spaces shall be indicated on the deck relevant to the lower space.

## **5 Computer-based systems**

Computer-based systems shall comply, as a minimum, with the substantive contents of this International Standard. However, computer-based systems may not replace the drawings or booklets specified in this International Standard.