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**Ships and marine technology — Design,  
location and use of shipboard safety  
signs, safety-related signs, safety notices  
and safety markings —**

Part 1:

**Design principles**

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*Navires et technologie maritime — Conception, emplacement et  
utilisation des signaux de sécurité, signaux relatifs à la sécurité, notes  
de sécurité et marquages de sécurité à bord des navires —*

ISO 24409-1:2010  
*Partie 1: Principes de conception*

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# Contents

Page

Foreword .....	v
Introduction.....	vi
<b>1 Scope .....</b>	<b>1</b>
<b>2 Normative references .....</b>	<b>1</b>
<b>3 Terms and definitions .....</b>	<b>2</b>
<b>4 Types and use of signs, markings and notices .....</b>	<b>3</b>
4.1 General .....	3
4.2 Safety signs .....	3
4.2.1 Fire-fighting equipment signs (FES) – Use and location of fire-fighting equipment.....	3
4.2.2 Emergency equipment signs (EES) – Use and location of first aid facilities and portable safety equipment.....	3
4.2.3 Life saving systems and appliances signs (LSS) – Use and location of life saving systems and appliances.....	3
4.2.4 Means of escape signs (MES) – Escape route identification.....	3
4.2.5 Prohibition signs (PSS) – Prohibited actions.....	3
4.2.6 Warning signs (WSS) – Identification of hazards.....	3
4.2.7 Mandatory action signs (MSS) – Mandatory notices and instructions.....	3
4.3 Safety-related signs .....	4
4.3.1 Mimic signs (SMS).....	4
4.3.2 Safety and operating instructions for trained personnel (SIS).....	4
<b>5 Design of shipboard safety signs.....</b>	<b>4</b>
5.1 General .....	4
5.2 Safety messages .....	4
5.3 Meaning, function, and image content.....	4
5.4 Colour and geometric shape.....	5
5.4.1 General .....	5
5.4.2 Colour area of the safety sign.....	6
5.5 Graphical symbols .....	6
5.6 Combination of graphical symbols or graphical symbol elements .....	7
5.7 Determinants.....	7
5.8 Prohibition.....	8
5.9 Borders.....	8
5.10 Arrows .....	8
<b>6 Supplementary signs and combination signs.....</b>	<b>8</b>
6.1 General .....	8
6.2 Combination signs .....	8
6.3 Colour of supplementary signs .....	9
6.4 Text for supplementary signs .....	9
6.5 Types of supplementary sign.....	9
<b>7 Layout of combination signs .....</b>	<b>12</b>
7.1 General .....	12
7.2 Borders.....	12
7.3 Arrangements .....	12
<b>8 Multiple signs.....</b>	<b>13</b>
<b>9 Use of arrows .....</b>	<b>14</b>
<b>10 Safety-related signs and safety notices.....</b>	<b>16</b>

11	Safety markings .....	16
12	Illumination and contrast of safety signs, safety-related signs and safety notices .....	17
13	Durability and photometric performance of signs .....	17
14	Marking of signs .....	17
Annex A (informative) Examples of typical mimic signs.....		18
Bibliography .....		21

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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 24409-1 was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 1, *Lifesaving and fire protection*.

ISO 24409 consists of the following parts, under the general title *Ships and marine technology — Design, location and use of shipboard safety signs, safety-related signs, safety notices and safety markings*:

— *Part 1: Design principles*

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The following parts are under preparation:

— *Part 2: Catalogue*

— *Part 3: Code of practice*

## Introduction

The growth of international travel by ship has created a need to provide people travelling and working on board ships with signs and associated systems that communicate consistent and effective safety information. This International Standard specifies a system of safety and safety-related signs on ships and other marine installations that is generally consistent with standardized signs with which many will have gained familiarity in other applications.

As such, this International Standard clarifies and supplements existing requirements set out in SOLAS regulations II-2/13.3.2.5.1, III/9.2.3 and III/11.5 and ISO 17631. However, it is directly applicable to shipboard safety and safety-related signs only, and does not deal with graphical symbols to be used on shipboard plans or documentation.

This part of ISO 24409 spells out general design principles applicable to all types of shipboard safety and safety-related signs. Specific signs will be catalogued in the future ISO 24409-2, and their application on ships will be specified in the future ISO 24409-3.

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# Ships and marine technology — Design, location and use of shipboard safety signs, safety-related signs, safety notices and safety markings —

## Part 1: Design principles

**IMPORTANT** — The colours represented in the electronic file of this document can be neither viewed on screen nor printed as true representations. Although the copies of this document printed by ISO have been produced to correspond (with an acceptable tolerance as judged by the naked eye) to the requirements of ISO 3864-1, it is not intended that these printed copies be used for colour matching. Instead, consult ISO 3864-1, which provides colorimetric and photometric properties, together with, as a guideline, references from colour order systems.

### 1 Scope

This part of ISO 24409 prescribes general design principles for shipboard safety and safety-related signs, markings, and notices intended to communicate safety-related information to persons on board 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.

ISO 3864-1, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs and safety markings*

ISO 3864-3:2006, *Graphical symbols — Safety colours and safety signs — Part 3: Design principles for graphical symbols for use in safety signs*

ISO 3864-4, *Graphical symbols — Safety colours and safety signs — Part 4: Colorimetric and photometric properties of safety sign materials*

ISO 7010, *Graphical symbols — Safety colours and safety signs — Registered safety signs*

ISO 15370, *Ships and marine technology — Low-location lighting (LLL) on passenger ships — Arrangement*

ISO 17398, *Safety colours and safety signs — Classification, performance and durability of safety signs*

ISO 17724, *Graphical symbols — Vocabulary*

ISO 20712-1, *Water safety signs and beach safety flags — Part 1: Specifications for water safety signs used in workplaces and public areas*

IMO, *International Safety Management (ISM) Code*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 17724 and the following apply.

#### 3.1 determinant

graphical symbol used as a common element within a series of graphical symbols (e.g. flames for a fire safety sign)

#### 3.2 graphical symbol

visually perceptible figure with a particular meaning used to transmit information independently of language

#### 3.3 mimic sign

sign which indicates the “you are here” position and incorporates a safety notice listing appropriate actions to be taken in an emergency

NOTE “Mimic sign” has the same meaning as “simple mimic plan” referred to in SOLAS regulation II-2/13.7.2.2, and the cabin placard referred to in IMO Resolution A.752(18).

#### 3.4 photoluminescent sign

sign treated with material incorporating phosphors that, if excited by UV or visible radiation, store energy, which is emitted as light over a period of time

NOTE The term “photoluminescent sign” is used in this part of ISO 24409 for consistency with terminology used in International Maritime Organization (IMO) publications. It has the same meaning as “phosphorescent safety sign” in ISO 3864-4.

#### 3.5 safety marking

marking which adopts the use of safety colours and/or safety contrast colours to convey a safety message or render an object or location conspicuous

#### 3.6 safety notice

sign with written text containing a list of actions to be taken or instructions to be followed in an emergency or for the correct use of equipment

#### 3.7 safety sign

sign which gives a general safety message, obtained by a combination of colour and geometric shape and which, by the addition of a graphical symbol, gives a particular safety message

NOTE Examples of safety signs in this part of ISO 24409 not shown with the ISO 7010 registration number are not currently standardized in ISO 7010.

#### 3.8 safety-related sign

signs, markings and notices, other than **safety signs** (3.7), that convey safety information to passengers and crew

#### 3.9 supplementary sign

sign that is supportive of another sign and the main purpose of which is to provide additional clarification



## 4 Types and use of signs, markings and notices

### 4.1 General

Shipboard safety signs and safety-related signs are intended to communicate safety information to passengers, visitors, associated crew and specialized, trained personnel. The design requirements may differ as a function of the education of the intended audience. However, the objective is that all such signs use similar basic design principles to those in International Standards for safety signs in other public areas and workplaces. The design criteria for specific signs differ according to the type of the sign and the specific context of use. The various categories of signs are described in 4.2.1 to 4.2.7, and in 4.3.1 and 4.3.2. Individual signs in these categories will be catalogued in the future ISO 24409-2.

NOTE The three-letter code following each subclause title relates to the nomenclature in the future ISO 24409-2.

### 4.2 Safety signs

#### 4.2.1 Fire-fighting equipment signs (FES) – Use and location of fire-fighting equipment

Fire-fighting equipment signs are used to indicate the exact location of the fire-fighting equipment, the type of equipment and any instructions for its effective and safe use.

#### 4.2.2 Emergency equipment signs (EES) – Use and location of first aid facilities and portable safety equipment

Emergency equipment signs are safe condition signs used to indicate the exact location of first aid facilities, first aid equipment, or portable safety equipment, the type of facility or equipment and any instructions for its use.

#### 4.2.3 Life saving systems and appliances signs (LSS) – Use and location of life saving systems and appliances

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Life saving systems and appliances signs are safe condition signs used to indicate the exact location or storage of the life-saving equipment, the type of equipment, the identification number and any instructions for its correct use.

#### 4.2.4 Means of escape signs (MES) – Escape route identification

Means of escape signs are safe condition signs used to indicate location within the ship and to provide directional guidance from any area within the ship to a designated assembly station and/or to exits and embarkation stations.

#### 4.2.5 Prohibition signs (PSS) – Prohibited actions

Prohibition signs are used to restrict or prohibit the movement and actions of persons.

#### 4.2.6 Warning signs (WSS) – Identification of hazards

Warning signs are used to warn persons of possible dangerous conditions and hazards and risks that exist on board a ship.

#### 4.2.7 Mandatory action signs (MSS) – Mandatory notices and instructions

Mandatory action signs are used to instruct persons of a specific course of action that shall be followed.

### 4.3 Safety-related signs

#### 4.3.1 Mimic signs (SMS)

Mimic signs are used to inform persons of their exact location and to provide specific safety instructions and indicate escape routes in the case of an emergency.

#### 4.3.2 Safety and operating instructions for trained personnel (SIS)

Safety and operating instructions for trained personnel are used to provide specific information to qualified shipboard and outside personnel on the use of specialized safety and fire protection equipment and lifesaving appliances on board ship. See Clause 10 for further requirements.

## 5 Design of shipboard safety signs

### 5.1 General

**5.1.1** Shipboard safety signs shall communicate the intended safety information by the use of one or more of the principles described in 5.2 to 5.10. Designers shall combine these principles to give the essential details of the specific safety message needed according to the type of safety sign required.

**5.1.2** The colour and shape used for safety signs shall comply with ISO 3864-1 and the safety sign shall meet the design criteria of ISO 3864-3.

**5.1.3** Safety signs that are required to convey specific safety meanings on board ship shall be taken from ISO 24409-2 <sup>[12]</sup> upon its publication. In cases where a needed safety message is not covered by safety signs in ISO 24409-2, designers shall check safety sign catalogues from ISO/TC 145, such as ISO 7010 and ISO 20712-1, for the existence of appropriate signs or symbols before designing a new safety sign.

NOTE Designers of new safety signs are encouraged to seek their inclusion in ISO 7010 by application to ISO/TC 145/SC 2.

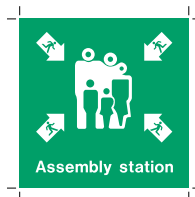
### 5.2 Safety messages

A safety sign shall be used to convey only one safety message as follows:

- a) a prohibition sign shall indicate only what or who is prohibited;
- b) a mandatory sign shall indicate only what action is required;
- c) a warning sign shall indicate only the nature of the warning;
- d) a safe condition sign shall indicate only the safety action, the location of the safety equipment, life-saving appliances, or the first aid facility, or escape routes;
- e) a fire-fighting equipment sign shall indicate only the location of the fire-fighting equipment or the type of fire-fighting equipment or how it should be used.

### 5.3 Meaning, function, and image content

In keeping with the design principles of ISO 3864-3, a safety sign shall be assigned a meaning and a function, and the image content of a graphical symbol used in it shall include sufficient critical details to ensure that the meaning and function are unambiguous (see Figure 1).



**Referent** – Assembly station

**Function** – To signify the location of an assembly station

**Image content** – Assembled group of human silhouettes of various sizes centred on a green square with four white arrows each overlaid with a green walking figure pointing toward the assembled group.

**Figure 1 — Example of assignment of meaning to a safety sign**

## 5.4 Colour and geometric shape

### 5.4.1 General

Shipboard safety signs shall be designed using the safety colours, geometric shapes, and specific safety meanings as specified in ISO 3864-1 and as illustrated in Table 1.

**Table 1 — Geometric shapes, safety colours and contrast colours for safety signs**

Geometric shape	Meaning	Safety colour	Contrast colour	Graphical symbol colour	Examples of use
<p>A circle with diagonal bar</p> <p>a</p>	<p>Prohibition</p>	<p>Red</p>	<p>White</p>	<p>Black</p>	<p>No eating or drinking ISO 7010-P022</p>
<p>A circle</p> <p>a</p>	<p>Mandatory action</p>	<p>Blue</p>	<p>White</p>	<p>White</p>	<p>Release lifeboat falls</p>
<p>An equilateral triangle with radiused outer corners</p> <p>a</p>	<p>Warning</p>	<p>Yellow</p>	<p>Black</p>	<p>Black</p>	<p>Warning: Drop (fall) ISO 7010-W008</p>