BS ISO 3864-3:2024

BSI Standards Publication

# Graphical symbols — Safety colours and safety signs

Part 3: Design principles for graphical symbols for use in safety signs

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# National foreword

This British Standard is the UK implementation of ISO 3864-3:2024. It supersedes BS ISO 3864-3:2012, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PH/8/1, Graphical Symbols - Safety Signs.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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International Standard

# ISO 3864-3

Third edition
2024-05

# Graphical symbols — Safety colours and safety signs —

## Part 3: Design principles for graphical symbols for use in safety signs

*Symboles graphiques — Couleurs de sécurité et signaux de sécurité —*

*Partie 3: Principes de conception pour les symboles graphiques utilisés dans les signaux de sécurité*

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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 document 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 145, *Graphical symbols*, Subcommittee SC 2, *Safety identification, signs, shapes, symbols and colours*.

This third edition cancels and replaces the second edition (ISO 3864-3:2012), which has been technically revised.

The main changes are as follows:

— references have been added in the Introduction to the list of translations of referents and to the ISO Online Browsing Platform;

— normative references have been updated;

— exclusion zone for warning signs in 7.4.4 has been clarified.

A list of all parts in the ISO 3864 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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# Introduction

Graphical symbols in safety signs are used for a wide range of purposes. There is a need to standardize the principles for creating these graphical symbols to ensure visual clarity, to maintain consistency and thereby to improve recognition and comprehension. The principles set out in this document specify the design criteria by which graphical symbols are judged for standardization and publication in ISO 7010.

Graphical symbols used in safety signs are not always intuitively understood. Often training can be necessary to inform people about the meaning of a graphical symbol. Such training can take place by including the meaning of a graphical symbol in operation manuals, company bulletins and training programme materials, as well as by using supplementary text with the safety sign.

NOTE 1 Information on procedures, criteria of acceptability, safety sign templates and application of safety signs, as well as translations of the referents, can be found at https://www.iso.org/tc145/sc2.

NOTE 2 All safety signs are available on the ISO Online Browsing Platform at https://www.iso.org/obp.

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# Graphical symbols — Safety colours and safety signs —

# Part 3: Design principles for graphical symbols for use in safety signs

**IMPORTANT — The colours represented in the electronic file of this document can be neither viewed on screen nor printed as true representations. For the purposes of colour matching see ISO 3864-4, which provides colorimetric and photometric properties together with, as a guideline, references from colour order systems.**

## 1 Scope

This document provides principles, criteria and guidance for the design of graphical symbols for use in safety signs as defined in ISO 3864-1, and for the safety sign element of product safety labels as defined in ISO 3864-2.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 3864-1:2011, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs and safety markings*

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*

## 3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

**3.1**
**determinant**
graphical symbol used as a common element within a series of graphical symbols

EXAMPLE The fire determinant, when used with the graphical symbol for a hose reel, conveys the meaning “fire hose reel”; see Figure 17.

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## 4 Designing graphical symbols for use in safety signs

Before designing a graphical symbol the designer shall:

— develop a clear and unambiguous description of the hazard that the graphical symbol is intended to address;

— confirm that a new graphical symbol for use in a safety sign is required (i.e. confirm that a suitable graphical symbol does not already exist; see Clause 5);

— identify the safety message that the safety sign is intended to convey;

— define the characteristics of the target group, including their general skill and ability to understand the information that the particular safety sign is intended to convey, and design the graphical symbol for that group;

— assign a meaning and function to the safety sign in accordance with Clause 6;

— identify the type of the safety sign required in accordance with 7.1.

Consideration should be given as to the types of safety sign for which the graphical symbol can be appropriate and to the design implications such multiple applicability can have. For example, a graphical symbol for use in a mandatory action sign can be adversely affected by the diagonal bar of a prohibition sign. Also, the restricted space within the triangle of a warning sign can adversely affect the graphical symbol originally designed for a prohibition sign.

During the creation process, the designer shall follow the criteria given in Clause 7.

Designers are strongly recommended to use the guidelines set out in Annex A.

## 5 Review of existing International Standards

The designer shall determine:

— whether a safety sign incorporating a graphical symbol conveying the required meaning is specified in ISO 7010;

— in cases where a safety sign incorporating a graphical symbol conveying the required meaning is not specified in ISO 7010, whether there is a registered graphical symbol conveying the required meaning;

— whether registered graphical symbols with similar meanings can be adapted or combined to form the graphical symbol for the new safety sign;

— whether there are standardized determinants appropriate for use with the graphical symbol for the new safety sign (see 7.8).

If specific graphical elements are borrowed from existing graphical symbols, they should convey the same meaning as that described in the existing graphical symbol.

## 6 Assignment of meaning, function, image content and hazard to the safety sign

Each safety sign shall be used to convey only one safety message in accordance with ISO 3864-1.

The new safety sign shall be assigned a meaning and a function. The hazard shall be described. Once the safety sign original is complete, the image content shall be identified. An example is shown in Figure 1.

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**Meaning:** No smoking
**Function:** To prohibit smoking
**Image content:** Cigarette (profile, outlined) with two wavy lines
**Hazard:** Fire or explosion caused by lit cigarettes or other smoking materials or harm from the smoke

**Figure 1 — Example of assignment of meaning, function, image content and hazard to a safety sign (ISO 7010-P002)**

# 7 Design criteria

## 7.1 Geometric shapes and colours of safety signs

The graphical symbol shall be designed within the appropriate safety sign template. The safety sign templates used by the designer shall conform to the geometrical shapes and colours given in ISO 3864-1:

— for prohibition: see ISO 3864-1:2011, Figure 1;

— for mandatory action: see ISO 3864-1:2011, Figure 2;

— for warning: see ISO 3864-1:2011, Figure 3;

— for safe condition: see ISO 3864-1:2011, Figure 4;

— for fire equipment: see ISO 3864-1:2011, Figure 5.

For safety signs, the colorimetric and photometric properties of the colours shall be in accordance with ISO 3864-4.

## 7.2 Size and position of the graphical symbol

The graphical symbol shall make full use of the central area up to the boundary of the exclusion zone of the applicable safety sign template (see 7.4) and shall be centred as closely as practicable within the applicable geometric shape of the safety sign template. For examples see Figures 2 to 6.

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