BS ISO 3864-3:2012

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 3864-3:2012. It supersedes BS 5499-6:2002, which is withdrawn.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 secretary.

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INTERNATIONAL STANDARD

ISO 3864-3

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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.

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 3864-3 was prepared by Technical Committee ISO/TC 145, *Graphical symbols*, Subcommittee SC 2, *Safety identification, signs, shapes, symbols and colours*.

This second edition cancels and replaces the first edition (ISO 3864-3:2006), which has been technically revised.

ISO 3864 consists of the following parts, under the general title *Graphical symbols — Safety colours and safety signs*:

— *Part 1: Design principles for safety signs and safety markings*

— *Part 2: Design principles for product safety labels*

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

— *Part 4: Colorimetric and photometric properties of safety sign materials*

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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 forth in this part of ISO 3864 are the design criteria by which graphical symbols are judged for standardization and publication in ISO 7010 and in ISO 20712-1.

Graphical symbols used in safety signs are not always intuitively understood. Often training needs to take place 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, training programme materials, as well as using supplementary text with the safety sign.

NOTE Information on procedures, criteria of acceptability, safety sign templates and application of safety signs is given on the website: http://www.iso.org/tc145/sc2.

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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 part of ISO 3864 can be neither viewed on screen nor printed as true representations. Although the copies of this part of ISO 3864 printed by ISO have been produced to correspond (with an acceptable tolerance as judged by the naked eye) to the requirements of ISO 3864-4, it is not intended that these printed copies be used for colour matching. Instead, consult ISO 3864-4, which provides colorimetric and photometric properties together with, as a guideline, references from colour order systems.

1 Scope

This part of ISO 3864 gives 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 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 3864-1:2011, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs and safety markings*

ISO 3864-2, *Graphical symbols — Safety colours and safety signs — Part 2: Design principles for product safety labels*

ISO 3864-4:2011, *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 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*

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

NOTE For example, the fire determinant which, 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 standards

The designer shall determine:

— whether a safety sign incorporating a graphical symbol conveying the required meaning is specified in ISO 7010 or ISO 20712-1;

— in the case where a safety sign incorporating a graphical symbol conveying the required meaning is not specified in ISO 7010 or ISO 20712-1, whether there is a registered graphical symbol conveying the required meaning;

— whether registered graphical symbols with similar meanings might 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 3864-1:2011:

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

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

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

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

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

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

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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 close as practicable within the applicable geometric shape of the safety sign template. For examples see Figures 2 to 6.

Figure 2 — No thoroughfare (ISO 7010-P004)

A supplementary text sign is required with the general mandatory action sign.

Figure 3 — General mandatory action sign (ISO 7010-M001)

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