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Graphical symbols — Creation and design of public information symbols — Requirements

Symboles graphiques — Création et conception des symboles destinés à l'information du public — Exigences

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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 22727 was prepared by Technical Committee ISO/TC 145, *Graphical symbols*, Subcommittee SC 1, *Public information symbols*.

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Introduction

A graphical symbol is defined as a visually perceptible figure used to transmit information independently of language. Public information symbols are used to convey specific messages, the understanding of which is independent of specialist or occupational training. Consistency in the design of such symbols for use in a particular situation or in similar situations is important, as is comprehensibility. Thus, there is a need to standardize the principles for creating and designing public information symbols to ensure visual clarity, to maintain consistency and thereby to improve recognition.

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Graphical symbols — Creation and design of public information symbols — Requirements

1 Scope

This International Standard specifies requirements for the creation and design of public information symbols. It specifies requirements for the design of public information symbols for submission for registration as approved public information symbols, including line width, the use of graphical symbol elements and how to indicate negation. It also specifies templates to be used in the design of public information symbols.

It is for use by all those involved in the commissioning and the creation and design of public information symbols.

This International Standard is not applicable to safety signs, including fire safety signs, or to traffic signs for use on the public highway.

Examples are given for illustrative purposes only and do not constitute requirements for particular public information symbols.

NOTE 1 Safety signs, including fire safety signs, are covered by ISO 7010.

NOTE 2 Existing public information symbols are specified in ISO 7001.

NOTE 3 The illustrations in this International Standard are as accurate as possible within the limitations of the printing process.

NOTE 4 Recommendations on colour and file format are given in Annex A, additional design guidelines are given in Annex B, Annex C and Annex D, and a checklist for designers is given in Annex E.

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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 7001, *Graphical symbols — Public information symbols*

ISO 17724, *Graphical symbols — Vocabulary*

3 Terms and definitions

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

3.1
graphical symbol
visually perceptible figure with a particular meaning used to transmit information independently of language

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3.2
public information symbol
graphical symbol intended to give information to the general public, the understanding of which is independent of specialist or occupational training

3.3
safety sign
sign giving a general safety message, obtained by a combination of a colour and geometric shape and which, by the addition of a graphical symbol, gives a particular safety message

[ISO 7010:2003, 3.7]

3.4
negation
indication of the absence or opposite of something actual or positive

3.5
graphical symbol element
part of a graphical symbol with a particular meaning

3.6
negation element
graphical symbol element intended to negate a graphical symbol's original intended meaning

3.7
meaning
message that a public information symbol is intended to convey

3.8
function
written description of the purpose of the information to be conveyed by a graphical symbol

3.9
image content
written description of the elements of a graphical symbol

4 Creation procedure

4.1 Preliminary phase

Before design of a new public information symbol is undertaken, the following procedure shall be carried out:

a) verification that what is required is a public information symbol and not a safety sign (see 3.2 and 3.3);

b) identification of the required meaning of the public information symbol;

c) identification of the need for a new public information symbol by determination of whether a public information symbol with the required meaning is given in ISO 7001;

d) assignment of a meaning and a function to the public information symbol in accordance with Clause 5.

4.2 Creation phase

During the design of a new public information symbol, the following procedure shall be carried out:

a) consideration of existing graphical symbol elements with similar meanings which might be used, adapted or combined to form the new public information symbol;

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An analysis should also be carried out of the expected characteristics of the intended user population of the new public information symbol and the context in which it is expected to be used. Factors to be considered are given in Annex E.

b) design of the new symbol in accordance with Clause 6 using the relevant template specified in Clause 7.

After design of the new symbol, it is strongly recommended that an evaluation be carried out of the comprehensibility of the symbol in the context in which it is to be used, in accordance with ISO 9186-1. The public information symbol should then be modified if necessary. This is particularly important if it is intended to submit the public information symbol to ISO/TC 145/SC 1 for registration as an approved public information symbol [1)].

The registration procedure for a public information symbol requires a drawing submitted in the relevant template (see Clause 7) together with a size reduction to 25 %.

5 Assignment of meaning, function and image content to the public information symbol

5.1 Consideration should be given to the category to which the public information symbol belongs, in accordance with ISO 7001, as follows:

a) public facilities;

b) transport facilities;

c) tourism, culture and heritage;

d) sporting activities;

e) commercial facilities;

f) behaviour of the public (excluding public safety).

5.2 Each public information symbol should normally be used to convey only one public information message, and should normally be placed in one category only.

NOTE For the convenience of users, the public information symbols in ISO 7001 have been grouped according to the areas where they are normally expected to be used. However, these groupings are not intended to be exclusive and the use of the public information symbols in other areas, where this is considered appropriate, is encouraged.

5.3 The new public information symbol shall be assigned a meaning and a function. Once the public information symbol is complete, the image content shall be identified (see Figure 1). The assigned meaning and function should be unambiguous.

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1) Details of the registration procedure and an application form, which gives required file formats, can be obtained from http://www.iso.org/tc145/sc1.

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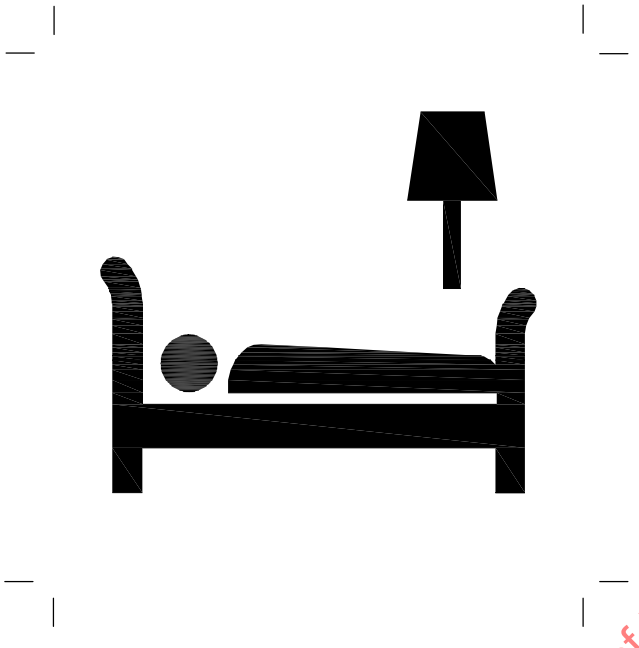

[Symbol reference number: ISO 7001 PI CF 003]

Meaning: Hotel or accommodation.

Function: To indicate the location of accommodation facilities.

Image content: Human figure in bed with lamp.

Figure 1 — Example of assignment of meaning, function and image content to a public information symbol

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6 Design of the graphical symbol

6.1 General

6.1.1 The graphical symbol shall be designed in accordance with 6.2 to 6.8.

6.1.2 The design of a graphical symbol should:

a) be comprehendible (see ISO 9186-1);

b) be readily associated with its intended meaning;

c) be based on objects, activities, etc., or a combination of these, which are reliably identifiable by the target audience;

d) be easily distinguishable from other graphical symbols;

e) contain only those details that contribute to understanding;

f) retain these characteristics when reduced to 25 % of the template height and width (see Figure 2).

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6.1.3 When designing a graphical symbol, the possibility of negation should be born in mind (see 6.8).

6.1.4 The additional design guidelines given in Annex B, Annex C and Annex D should also be followed, as applicable.

6.2 Use of template

The graphical symbol shall be designed within the relevant template given in Clause 7.

The graphical symbol preferably should not extend into the margins within the template, as indicated on the template, but should make full use of the area within the margins of the template.

6.3 Line width

Lines used in a graphical symbol shall be a minimum of 2 mm thick within the relevant template given in Clause 7, except where it is absolutely necessary for lines to be thinner to accurately represent the object, in which case the minimum width can be reduced to 0,5 mm. The spacing between lines shall take into account visual clarity and be a minimum of 1 mm (see Figure 2).

[Symbol reference number: ISO 7001 PI TF 013]

Meaning: Chair lift.

Function: To indicate the location of lifts.

Image content: Side view of human figure seated on a chair suspended from an inclined cable.

Figure 2 — Example of the use of line width and line spacing in a graphical symbol and example of size reduction of a graphical symbol to 25 % of height and width

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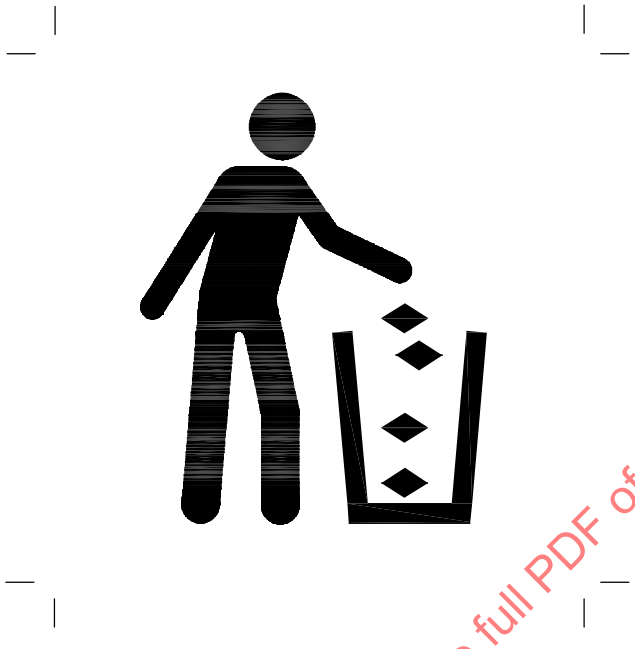
6.4 Image content

Elements in the graphical symbol shall have minimum dimensions of 2,5 mm × 2 mm within the relevant template given in Clause 7 (see Figure 3).



[Symbol reference number: ISO 7001 PI PF 027]

Meaning: Trash box or litter bin or rubbish bin.

Function: To indicate a receptacle for the acceptance of trash or rubbish being thrown away.

Image content: Front view of human figure adjacent to sectional elevation of rubbish/trash receptacle. Four representative articles of rubbish/trash falling into the receptacle.

Figure 3 — Example of use of elements

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6.5 Combination of graphical symbols or graphical symbol elements

If two or more graphical symbols or graphical symbol elements are combined to form a new graphical symbol, the meaning assigned to the new graphical symbol shall be consistent with the meanings of the individual graphical symbols or graphical symbol elements used (see Figure 4).

The new graphical symbol should consist of as few components as possible, while maintaining comprehensibility.

Public information symbols in which two or more graphical symbols or graphical symbol elements have been combined to produce a new graphical symbol shall be considered as new public information symbols.

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[Symbol reference number: ISO 7001 PI PF 022]

Meaning: Slope or ramped access.

Function: To indicate the location of access facilities via a slope or ramp.

Image content: Side view of walking human figure and human figure in wheelchair going up slope.

Figure 4 — Example of a combination of graphical symbols to form a public information symbol

6.6 Standardized representations of symbol elements

Any existing standardized representations of symbol elements shall be used without modification.

NOTE Examples of standardized representations in ISO 7001 include representations of telephones, wheelchairs, cycles, trees and the surface of water; P indicates parking and R indicates reservations.

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[Symbol reference number: ISO 7001 PI TC 002]

Meaning: Campsite or camping.

Function: To indicate the location of public camping facilities.

Image content: "Wigwam" style tent with tree.

Figure 5 — Example of the use of standardized representations

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6.7 Characters

Letters, numbers, punctuation marks, mathematical symbols, and other characters shall be used only as an element of a public information symbol.

NOTE There are existing symbols which do not conform to this but which have become universally accepted, e.g. P for parking, i for information.

6.8 Negation

Public information symbols shall be negated only for comfort or convenience reasons.

NOTE Design criteria for prohibition for safety purposes are given in ISO 3864-3.

Where the whole activity is to be negated, the negation element shall be a diagonal bar running from top left to bottom right as shown in Figure 6. In order to ensure that there is no confusion with safety signs, there shall not be a surrounding circle. The negation bar shall be placed over the graphical symbol. The graphical symbol shall be designed in such a way that when placed in the template specified in 7.2 the negation bar does not interfere with identification of essential graphical symbol elements.

Where only a graphical symbol element in a public information symbol is to be negated to indicate a particular forbidden action, the negation element shall be a cross as shown in Figure 7. The negation cross shall be placed over the graphical symbol element that is being negated.

The negation bar and the negation cross should normally be red.

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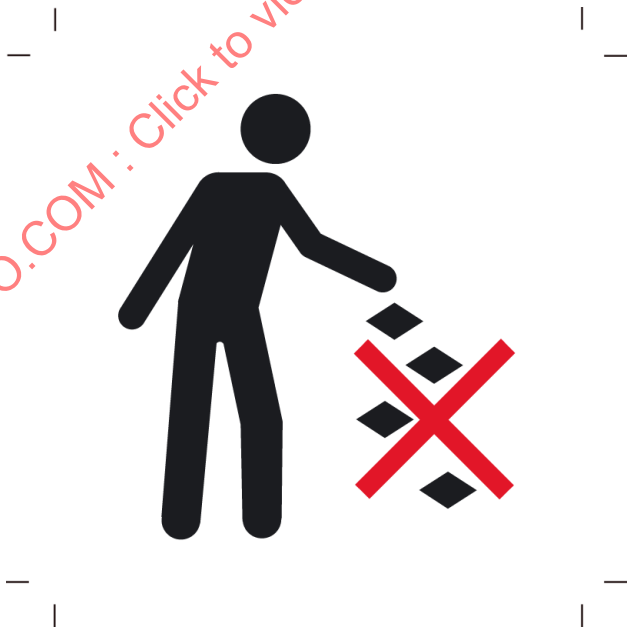
[Negation of symbol reference number: ISO 7001 PI PF 018]

Meaning: No baggage trolleys or carts.

Function: To signify that baggage trolleys or carts are not allowed.

Image content: Side view of piece of baggage on trolley or cart and negation bar.

Figure 6 — Example of the use of a negation bar



Meaning: Do not drop trash or litter or rubbish.

Function: To indicate that people should not drop trash or litter or rubbish.

Image content: Front view of human figure, with four representative articles of trash or litter or rubbish falling from their hand and a negation cross over them.

Figure 7 — Example of the use of a negation cross

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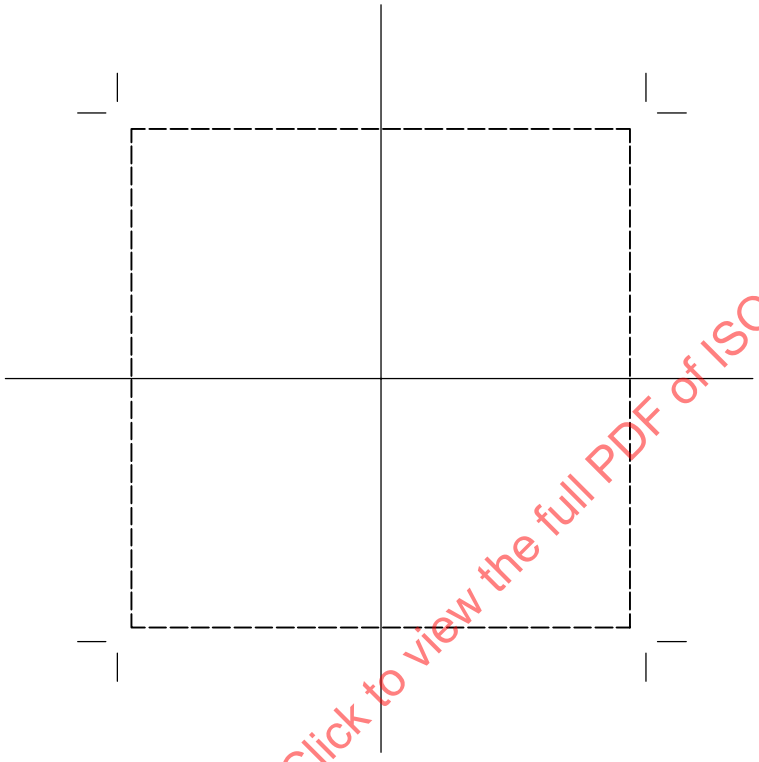
7 Layout of templates

7.1 Public information symbols without negation bar

The template used for design of public information symbols without negation bar shall be as specified and shown in Figure 8.



Shape: A square.

Size: 70 mm to corner marks, 66 mm to boundary of margin.

Margin: A 2 mm margin (0,028 6 of the height of the square) set within the corner marks. Boundary of the margin is shown by a broken black line.

Guidelines: Horizontal and vertical centre lines.

Figure 8 — Template for public information symbols without negation bar

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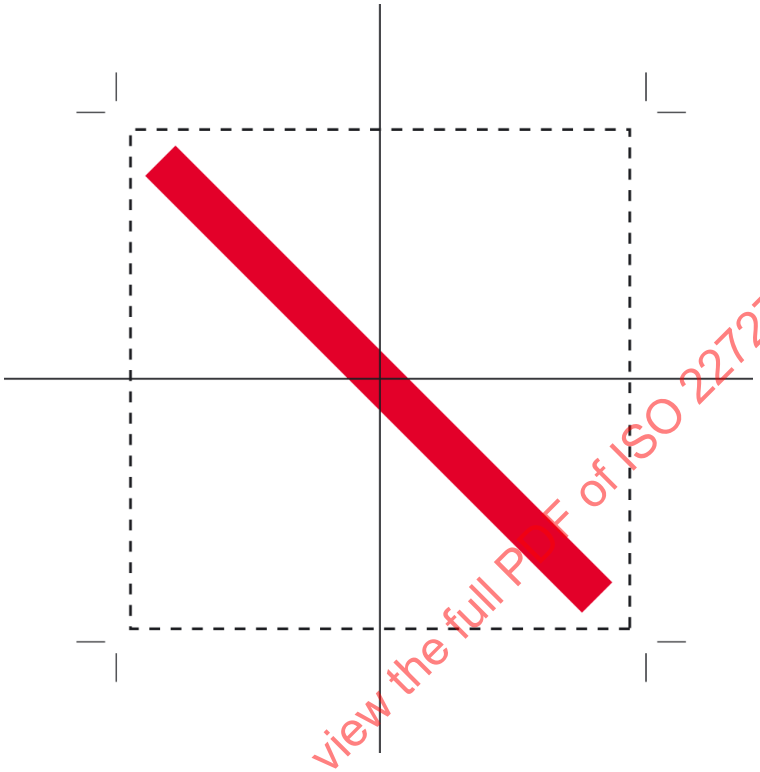
7.2 Public information symbols with negation bar

The template used for design of public information symbols with negation bar shall be as specified and shown in Figure 9.



Shape: A square.

Size: 70 mm to corner marks, 66 mm to boundary of margin.

Negation: A negation bar at 45° descending diagonally from left to right through the centre of the square. Width of negation bar 5,6 mm (0,08 of the height of the square). Length of negation bar 82 mm (1,171 of the height of the square) with centre of bar corresponding to centre of square.

Margin: A 2 mm margin (0,028 6 of the height of the square) set within the outline of the square. Boundary of the margin is shown by a broken black line.

Guidelines: Horizontal and vertical centre lines.

Figure 9 — Template for public information symbols with negation bar

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Annex A
(informative)

Colour and file format

A.1 Colour

It is recommended that, in the design of any new public information symbol intended to be submitted for registration, the colour used should be black, with the negation bar (or negation cross), if used, in 20 % black.

The colour recommended here is for design purposes only. Public information symbols given in this International Standard may be reproduced in any colour. However, the safety colours specified in ISO 3864-1 should be avoided to ensure there is no confusion between public information symbols and safety signs. Adequate contrast between the symbol and its background is essential and the symbols should be given a sufficiently large surrounding area to ensure readability. Contrast between symbol elements is also important.

A.2 File format

A vectorized file format should be used.

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Annex B
(informative)

Additional design guidelines

B.1 Filled areas

Filled areas should be used in preference to outlining as they greatly improve the legibility of the graphical symbol [see Figure B.1 a)].

NOTE Outlining can sometimes be necessary, for example to show a graphical symbol element which has another element in front of it [see Figure B.1 b)].

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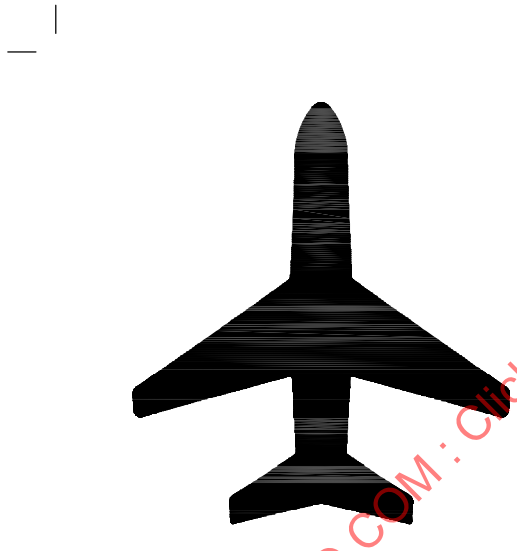


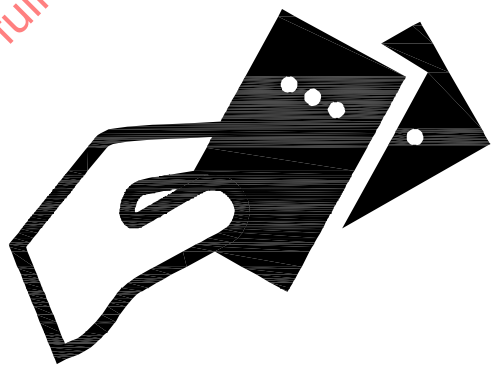
[Symbol reference number: ISO 7001 PI TF 001]

Meaning: Airport or aircraft.

Function: To indicate the location of an airport or aircraft.

Image content: Aircraft in plan view.

a) Example of use of filled areas



[Symbol reference number: ISO 7001 PI PF 010]

Meaning: Tickets or ticket sales.

Function: To indicate the location of a facility where tickets may be obtained.

Image content: Hand holding two tickets.

b) Example of use of outlining

Figure B.1 — Examples of use of filled areas and outlining

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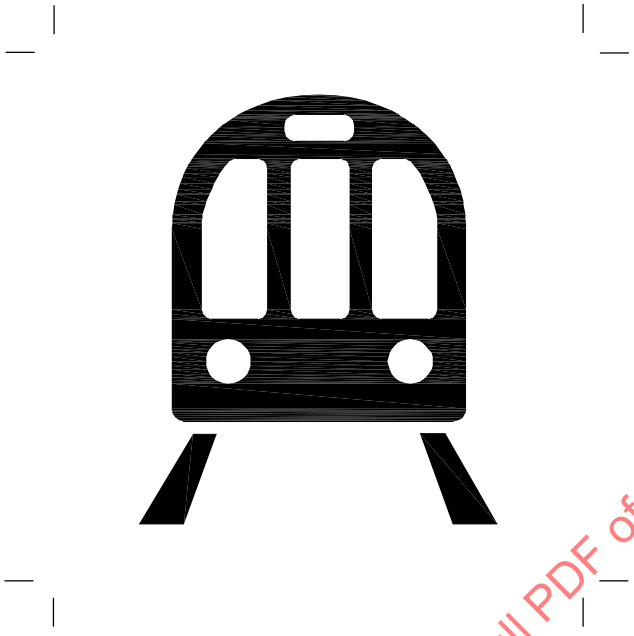
B.2 Symmetry

Graphical symbols should be symmetrical wherever possible (see Figure B.2).



[Symbol reference number: ISO 7001 PI TF 003]

Meaning: Underground or metro railway station or trains.

Function: To indicate the location of underground or metro trains.

Image content: Front view of underground or metro train on railway line.

Figure B.2 — Example of a symmetrical graphical symbol

B.3 Abstract symbols

Abstract symbols should be avoided. However, letters, numerals and punctuation marks may be used as graphical symbol elements.

B.4 Direction arrows

The direction arrow (Symbol reference number: ISO 7001 PI PF 030) should not be used on its own but only in conjunction with another symbol (or a symbol and text) to indicate movement towards an object. An example is shown in Figure B.3. Other types of arrow should not be used.

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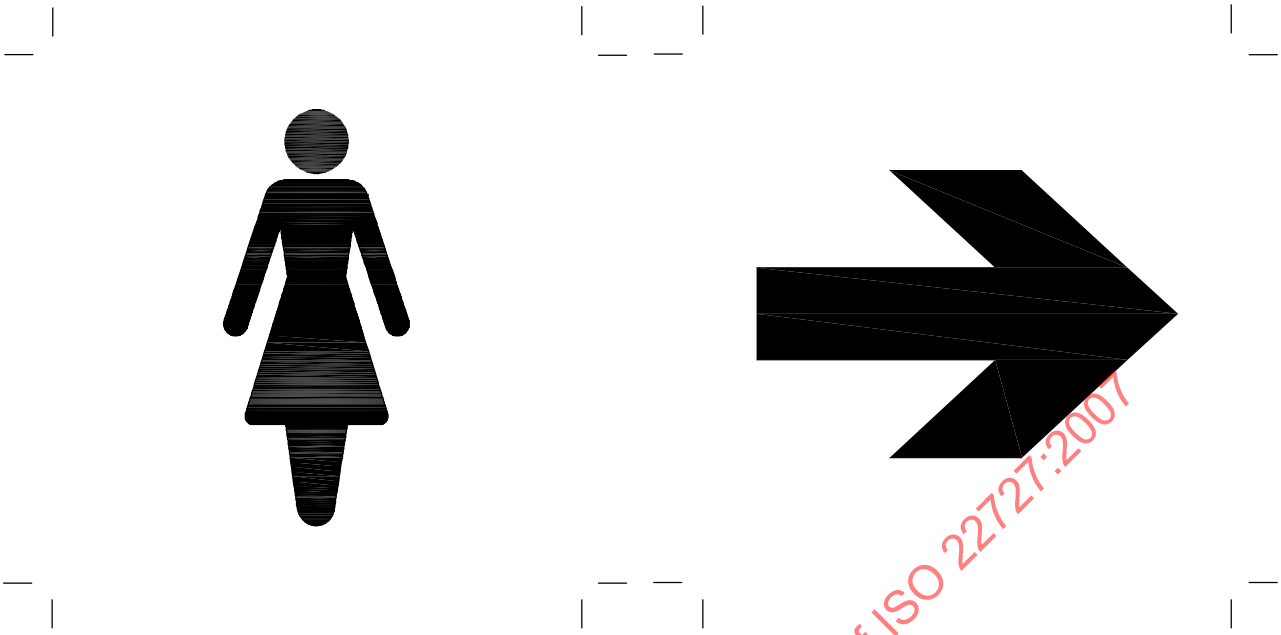

Figure B.3 — Use of the direction arrow with the relevant symbol to indicate ladies' toilet to the right

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Annex C
(informative)

Representation of the human figure

C.1 Examples

The human figure is frequently the main element of a graphical symbol. The front and back views of the human figure should be depicted as shown in Figure C.1. The side view of the human figure should be depicted as shown in Figure C.2.

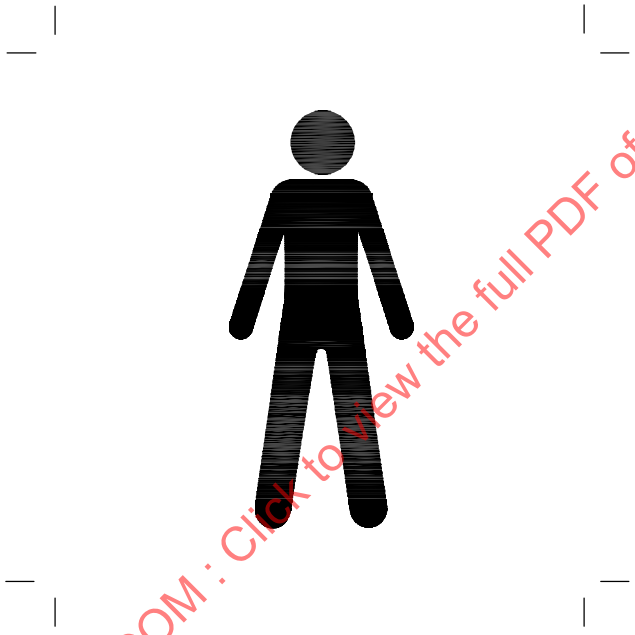

Figure C.1 — Front and back view of human figure

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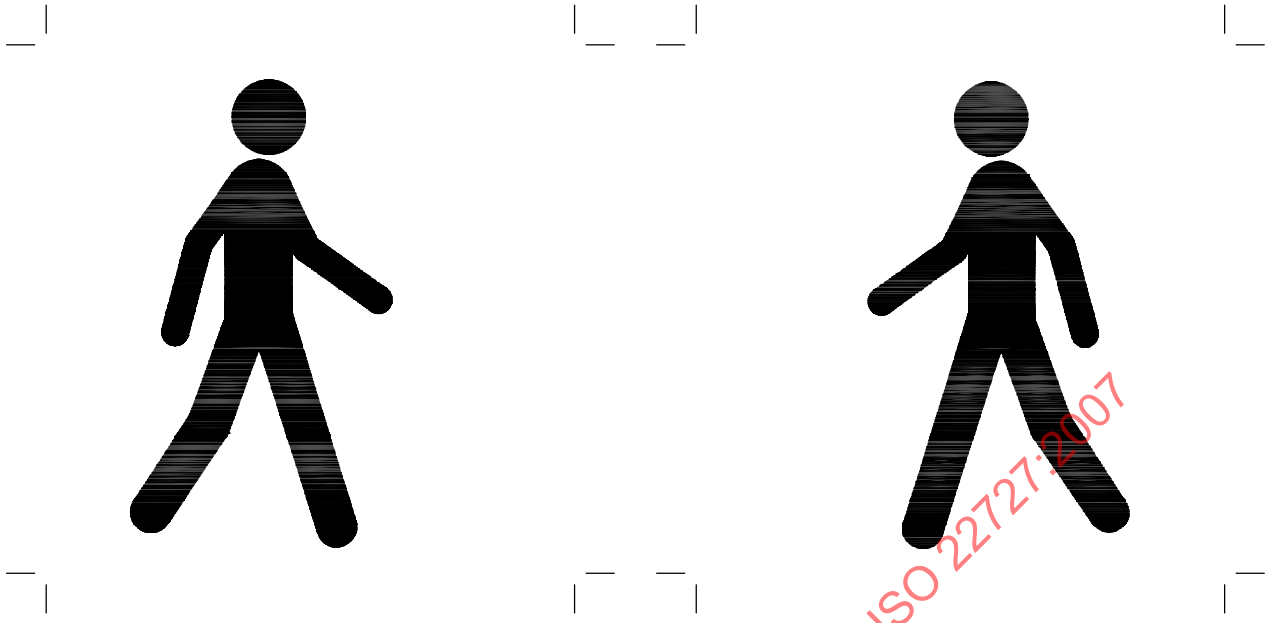

Figure C.2 — Side views of human figure

These representations should be adapted as appropriate to the activity to be conveyed (see Figure C.3).

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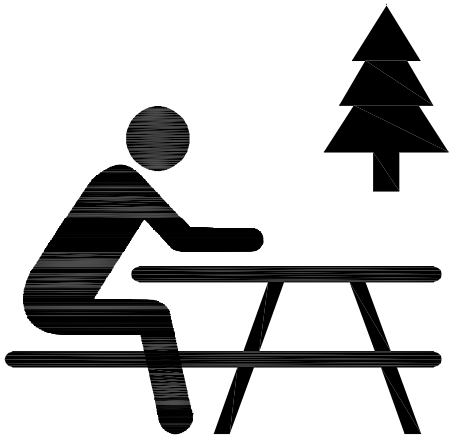

[Symbol reference number: ISO 7001 PI TC 004]

Meaning: Picnic area.

Function: To indicate the location of facilities for picnics.

Image content: Side view of person sitting at a picnic table with tree.

a) Use of seated figure to indicate a picnic area

[Symbol reference number: ISO 7001 PI TF 019]

Meaning: Immigration or passport control/inspection.

Function: To indicate the location of immigration or passport control point.

Image content: Human figure with peaked cap reading passport.

b) Use of a figure wearing a cap and looking at a passport to indicate passport control

Figure C.3 — Examples of the adaptation of the human figure to convey particular activities

In order to ensure comprehension of the public information symbol, the following principles should be applied.

a) Except where outlining is necessary [as in Figure B.1 b)], use a filled graphical representation of the full human figure or of human body elements (see Figure C.4).

b) Regarding activities or actions the following recommendations should be followed.

   1) Be specific in depicting activities or actions.

   2) Use dynamic depictions of activities or actions.

   3) Consider the position the human figure needs to assume in the graphical symbol in relation to the following:

      — the nature of the activity or action;

      — the direction or the orientation of the action;

      — movements or positions involved in the action.

Examples are shown in Figure C.5.

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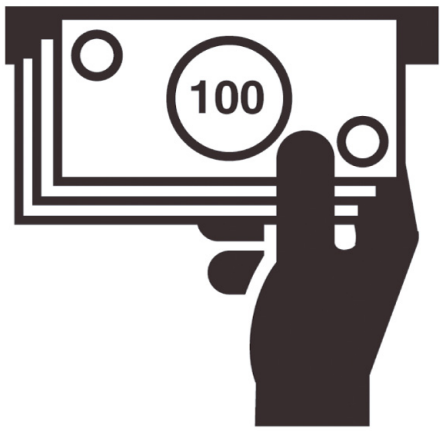

[Symbol reference number: ISO 7001 PI CF 005]

Meaning: Cash service or cash dispenser or ATM (automatic teller machine).

Function: To indicate the location of an automatic machine for dispensing bank notes.

Image content: Hand taking three bank notes from slot.

Figure C.4 — Example of graphical representation of a human body element

[Symbol reference number: ISO 7001 PI PF 021]

Meaning: Stairs.

Function: To indicate the location of stairs.

Image content: Side view of two human figures on stairs, one going up and one going down.

Figure C.5 — Examples of dynamic movement

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