TECHNICAL REPORT 7239

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Development and principles for application of public information symbols

Élaboration et principes de mise en œuvre des pictogrammes destinés à l'information du public

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.

The main task of ISO technical committees is to prepare International Standards. In exceptional circumstances a technical committee may propose the publication of a technical report of one of the following types :

— type 1, when the necessary support within the technical committee cannot be obtained for the publication of an International Standard, despite repeated efforts;

— type 2, when the subject is still under technical development requiring wider exposure;

— type 3, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example).

Technical reports are accepted for publication directly by ISO Council. Technical reports types 1 and 2 are subject to review within three years of publication, to decide if they can be transformed into International Standards. Technical reports type 3 do not necessarily have to be reviewed until the data they provide is considered no longer valid or useful.

ISO/TR 7239 was prepared by Technical Committee ISO/TC 145, *Graphical symbols*.

The reasons which led to the decision to publish this document in the form of a technical report type 3 are explained in the Introduction.

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0 Introduction

This Technical Report has been developed by ISO/TC 145/SC 1 following the publication of ISO 7001. It was originally intended that this would form part of that International Standard, but it was decided that separate, subsequent publication of the Technical Report was advisable in order to expedite publication of ISO 7001. Its content will be reviewed over the next three years with a view to its incorporation in ISO 3461/4.

Since the subject of this Technical Report is still under development, constructive criticism of it and of its practical use with public information symbols is welcomed. Such comments, and notification of any new research results pertinent to public information symbols, will assist ISO/TC 145/SC1 in reviewing the technical content.

Symbols for public information set two requirements: first, comprehension of the symbol's message, and second, its visual impact or conspicuity and legibility, as regards size, detail, surroundings and position in relation to the viewer.

ISO 7001 consists of single sheets, each relating to one particular symbol. It contains an explanation of each symbol and its application, a verbal description of the image content and a guideline example for the symbol. ISO 7001 standardizes the image content with its verbal description; the pictorial guideline examples are specimen designs which show how the image content may be presented graphically but are not intended to be binding (see annex A).

This Technical Report is intended to assist the managers of organizations and their designers in the use of ISO 7001 and to provide an understanding of the intentions of ISO/TC 145/SC 1.

1 Scope and field of application

This Technical Report provides a set of recommended procedures to be followed and sets forth the essential technical criteria which should be taken into account when developing or considering the use of graphical symbols as a means of visual pictorial communication.

The field of application is mainly in public areas, but the recommendations of this Technical Report concerning visual design criteria can equally be applicable to perception problems in other areas where graphical symbols are used as the means of communication.

2 References

ISO 3461, *Graphic symbols — General principles for presentation.*

ISO 3864, *Safety colours and safety signs.*

ISO 4196, *Graphic symbols — Use of arrows.*

ISO 7000, *Graphical symbols for use on equipment — Index and synopsis.*

ISO 7001, *Public information symbols.*

3 Abbreviations and definitions

3.1 Algebraic symbols

The meanings of the symbols used in the formulae adopted in this Technical Report are as follows:

m_d represents the linear dimension of the smallest significant detail in the graphical symbol (see 5.8)

m_l represents the minimum line thickness for the representation of detail in a symbol (see 5.8.1)

d_{is} represents the distance between the symbol and the internal edge of the symbol enclosure (see 6.1)

s represents the linear dimension of the symbol as defined by the corner marks in the guideline example of ISO 7001 (see annex A)

d_e represents the internal dimension of one side of a diamond enclosure (see 6.2.1)

d represents the internal diameter of a circular enclosure (see 6.2.2)

b represents the internal base dimension of an equilateral triangular enclosure (see 6.2.3)

D represents the viewing distance (i.e. the distance it is anticipated the viewer will be away from the sign) (see 6.4)

X represents the displacement of the centre of the sign from the central line of vision, measured at right angles to the central line of vision (see 6.4.1)

3.2 Definitions

For the purposes of this Technical Report the following definitions apply.

3.2.1 apparent size: Enclosures or symbols which have different geometric dimensions but which nevertheless are perceived by the eye as being of the same size.

3.2.2 appropriateness ranking test: A procedure for placing symbols, designed for a given referent, in descending order of merit according to their considered appropriateness.

3.2.3 background: That part of a sign immediately behind a symbol or word (see annex B).

3.2.4 colour code: Colours used symbolically to represent particular meanings (see ISO 3864).

3.2.5 comprehension test: A procedure for eliciting a response from the public which enables measurement of the degree of comprehension of the proposed symbols.

3.2.6 conspicuity: The capability of one entity in the visual field to be more easily noticed than any surrounding information.

3.2.7 detection: The ability of the visual system to pick out stimuli in the visual field.

3.2.8 displacement: Distance between the centre of a symbol located in a public place and the central line of the normal direction of vision of the user, measured at a right angle to that central line of vision (see 6.4).

3.2.9 enclosure: That part of the sign which encloses the symbol (see annex B).

3.2.10 field of application: The context in which the use of a symbol to convey a message is appropriate.

3.2.11 function: The purpose of the symbol.

3.2.12 guideline example: A selected graphical interpretation of the standard image content in the form of a symbol as published in ISO 7001.