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**Packaging — Accessible design —  
Information and marking**

*Emballages — Conception accessible — Informations et marquage*

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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 documents 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](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on 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 the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html). (standards.iteh.ai)

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## Introduction

In our aging and welfare-oriented society, there is an increasing awareness of full and effective participation of older persons and persons with disabilities in society on an equal basis. A common challenge facing the packaging industry in the world is to develop packages which have clear information and marking necessary for use and purchase that are understandable for the widest possible range of users, including older persons and persons with disabilities.

Information and marking on packaging go beyond ensuring safety and security to also add more value to the packaged products for older persons and persons with disabilities. When designing packaging that is expected to ensure accurate and appropriate information, greater consideration is required for increasing accessibility to the packaged products for older persons and persons with disabilities. Such persons sometimes have difficulties in obtaining and understanding the information conveyed by labelling and other means of information technologies such as a bar code read by a smart phone.

Noting that the degree of comprehension for information and marking can vary widely according to age and human abilities such as sensory and cognitive abilities, this document addresses essential points to enhance the accessibility of information and marking in packaging in the concepts and goals which are expressed in ISO/IEC Guide 71[11] and ISO/TR 22411[8].

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# Packaging — Accessible design — Information and marking

## 1 Scope

This document provides requirements and recommendations concerning accessible design of consumer packaging with regard to information and marking.

This document specifies considerations and methods for designing and presenting information and marking to make consumer packages accessible to people with the widest range of capabilities by considering their sensory and cognitive abilities.

This document applies to all types of information and marking presented on consumer packaging. Specifically excluded from this document are information and marking for medicinal products and medical devices including tamper verification.

The design considerations and methods specified in this document are primarily intended for designers, developers and evaluators of packaging.

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

ISO 8317, *Child-resistant packaging — Requirements and testing procedures for reclosable packages*

ISO 17351, *Packaging — Braille on packaging for medicinal products*

ISO 21067-1, *Packaging — Vocabulary — Part 1: General terms*

ISO 24503, *Ergonomics — Accessible design --Tactile dots and bars on consumer products*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21067-1 and the following apply.

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

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

### 3.1 cognition

extent to which a user can understand the appropriate information as it is intended

[SOURCE: ISO 17480:2015, 3.5]

### 3.2 consumer packaging

packaging, constituting, with its contents, a sales unit to the final user or consumer at the point of retail

[SOURCE: ISO 17480:2015, 3.1]

## 3.3

### **context of use**

combination of specified users, goals and tasks, resources and environment

Note 1 to entry: The environment in a context of use includes the technical, physical, social and organizational environments.

[SOURCE: ISO 9241-11:1998, 3.5 — modified.]

## 3.4

### **instrument-based evaluation**

evaluation that uses measurement instruments to obtain data

## 3.5

### **user-based evaluation**

evaluation that uses a method involving users with or without the use of measurement instruments and provides insight into the user's sensory, physical and cognitive aspects

## 3.6

### **tactile information**

human sensory information generated by touch

Note 1 to entry: There are two types of touch sensing. One is passive and the other active, the latter being called haptic. In this document, tactile information means both types of touch sensing.

## 4 Design considerations for increasing accessibility of information and marking for packaging

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### 4.1 General design consideration

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#### 4.1.1 Considerations of diverse users and diverse contexts of use

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Designing information and marking of packaging shall consider on diverse users and diverse context of use. Diverse users include users with different ages, genders, human abilities (sensory, physical and cognitive), languages, as well as life styles and cultures. Context of use includes different physical environments (lighting, thermal condition), tasks involved in and social and organizational environments.

[Annex A](#) presents disabilities of human sensory, physical and cognitive abilities, and their consequences, as well as aging effects.

#### 4.1.2 Use of alternative or multiple means of presentation

Information and marking on packaging should be presented with at least two different means of presentation for users who are unable to obtain some information due to their disabilities. Whenever possible, multiple means of presentation should be employed to increase accessibility. Different means include different sensory inputs/outputs, different modes of presentation within the same sensory ability, e.g. colours and symbols, and different methods of presentation, e.g. printed letters and audio information.

The following considerations may apply but are not restricted to the following:

- represent some or a whole part of the printed visual information by tactile or auditory information;

EXAMPLE 1 Braille used on medicinal packaging to present some of the printed information (see ISO 17351).

- use colour information additionally to discriminate the different meanings of visual information merely expressed by letters and symbols, or vice versa;



EXAMPLE 2 Marking of opening position by different colour from the background, in addition to letters writing “open here”.

- provide symbols and pictograms in addition to the information merely expressed by letters, or vice versa;

EXAMPLE 3 Marking of opening position by a scissors pictogram, in addition to letters writing “open here”.

- provide ICT information in addition to printed information.

EXAMPLE 4 The bar code or the ICT tag of the package information.

#### 4.1.3 Use of simple and clear information

Information and marking on packaging shall be simple and comprehensive for older people and people with visual and cognitive disabilities to understand the meaning correctly and instinctively. Ambiguous information and marking that cause misunderstanding and misidentification shall not be used.

The following considerations may apply but are not restricted to the following:

- use consistent expressions with common words, phrases, symbols and pictograms;
- select as little information as possible depending on the level of priority of the information;
- use a classification or hierarchy of the information when presenting;
- use graphic symbols or pictograms rather than long and complex wordings.

#### 4.1.4 Highlighting information and marking of importance

Information and marking which are important for correct identification and use shall be clearly shown by highlighting them with different features from the adjacent areas.

The following considerations may apply but are not restricted to the following:

- use different colour from the adjacent areas;
- use different texture from the adjacent areas;
- use different sizes or types of font, symbols and pictograms from the adjacent area;
- use different sizes or types of font, symbols and pictograms from the adjacent areas;

EXAMPLE Sans Serif words or sentences used in the Serif sentences.

- provide notes and/or examples when necessary.

#### 4.1.5 Limited amount of information and marking

The amount of information and marking on packaging should not be too much to read or understand. Important information shall be prioritized. Unnecessary, redundant and repeated information not required shall be omitted.

The following consideration may apply but is not restricted to the following:

- related or a similar type of information is logically grouped and presented in the same area or in the same style but not distributed separately nor in a different format.

#### 4.1.6 Location of information

Appropriate positioning of information and marking shall be considered to avoid users missing or overlooking the information on packaging.

The following considerations may apply but are not restricted to the following:

- information and marking on packaging should be clearly visible and legible;
- important information and markings shall not be lost or destroyed by opening and closing the package (see 4.3.1);
- tactile marking and Braille should be located where users can easily find and touch them.

#### 4.1.7 Additional marking and signage placement

The placement of additional marking and signage shall not reduce the legibility of printed text and graphics for sighted people as well as the legally required statutory information to be labelled on the packaging in the specific country or market.

NOTE 1 This is indicated when, for example, the application of Braille or additional marking corrupts printed text and graphics.

NOTE 2 The manufacturer is encouraged to place the Braille or additional marking away from printed text and graphics, where possible.

## 4.2 Design considerations required from human abilities and characteristics

### 4.2.1 Luminance contrast

Contrast between letters/symbols/pictograms and the background shall be set as high as possible to ensure better visibility. However, too much glare can cause legibility problems.

The following considerations may apply but are not limited to the following:

- use black letters or symbols on white background where high luminance contrast is needed;  
EXAMPLE Luminance contrast above 70 % is recommended (see Annex C).
- avoid glossy background that reduces the luminance contrast with reflected light;
- use negative contrast where symbols and letters are brighter than the background;
- avoid pale or light colour for letters and symbols on light background, and dark and deep colour on dark background;
- estimate correct luminance contrast when coloured letters and symbols are used on coloured background. When blue letters or symbols are used on dark background, the luminance contrast is set larger for older people than that for younger people.

NOTE The method for estimating age-related luminance contrast for coloured lights is given in ISO 24502.

### 4.2.2 Colour and colour combination

Colour and colour combination should be used so that information and marking on packaging are more visible and comprehensive than those not using colour. Selection of colour or colours for a combination shall appropriately consider the user's ability to perceive colour such as visual defects (e.g. colour blindness) or low-light conditions.

The following considerations may apply but are not limited to the following:

- use basic colours for identification and marking;

NOTE 1 Basic colours include red, orange, yellow, green, blue, purple, pink, brown, white, grey and black.

- use colour consistently;

- avoid the red/green combination for users with colour defects;
- avoid blue on dark background for older users;
- avoid yellow on white background for older users;
- provide non-colour associated information such as text, symbols and texture when information only depends on colour (see 4.1.2);
- follow ISO 3864-1 when information and marking are concerned with safety;
- consider the change of colour appearance in a dark environment;

NOTE 2 Red colour, of vivid tone in particular, is hard to see in a dark environment.

- use colours that belong to different basic colour groups to make the combination discriminable.

NOTE 3 The method for creating colour combinations based on basic colours for people at any age is shown in ISO/TR 22411 and ISO 24505.

### 4.2.3 Letters and legibility

Letters, words and sentences on packaging shall be legible for the intended users and intended context of use. Legible types and sizes of font for different, ages as well as for different types of disabilities shall be appropriately selected. Considerations shall be given particularly on luminance level of viewing, viewing distance, luminance contrast between letters and background (see 4.2.4) of the packaging surface, colour of letters and background (see 4.2.3), location of letters, number of letters in one sentence line and spacing between letters, words and lines.

The following considerations may apply but are not limited to the following:

- use relatively larger font sizes for older people in near viewing distance;
- use relatively larger font sizes for darker luminance/illumination condition;
- use Sans Serif fonts rather than Serif fonts for better legibility;
- ensure that the ascenders of lower case characters project above the type height by approximately 20 %;
- ensure that lower case characters with descenders project below the line of text by approximately 20 %;
- avoid cursive text for sentences;
- avoid sentences with capital letters only;
- avoid sentences with italic letters only;
- keep appropriate inter-character spacing and inter-line spacing;
- provide negative polarity fonts (white letters on dark background) for users with low vision;
- provide much larger font sizes (about 10 times) for people with low vision;
- find the minimum legible font size for a combined condition of age, luminance level and viewing distance and use it as a unit of legible font size.

NOTE 1 Information about minimum legible font size is shown in ISO/TR 22411.

NOTE 2 An example of a checklist is given in [Annex C](#).