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English Version

Tactile lettering - Requirements on the presentation and application of Braille and raised characters

Écriture tactile - Demander à la présentation et fixation de Braille et écriture haute

German title: (Optional) Taktile Schriften und Beschriftungen - Anforderungen an die Darstellung und Anbringung von Braille- und erhabener Profilschrift

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European foreword

This document (prEN 18156:2024) has been prepared by Technical Committee CEN/TC 293 “Assistive products and accessibility”, the secretariat of which is held by Sweden (SIS).

This document is currently submitted to the CEN Enquiry.

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1 Scope

This document specifies requirements and technical specifications for information in tactile lettering in the built environment.

It sets out rules for content, design, arrangement and application of information elements so that blind and partially sighted people are able to locate, identify, fluently read and interpret this information.

This document does not describe technical methods for producing tactile lettering.

This document only applies to permanently installed tactile lettering.

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.

EN 17210:2021, *Accessibility and usability of the built environment - Functional requirements*

ISO 21542, *Building construction — Accessibility and usability of the built environment*

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

blind

people, who primary rely on audible and tactile input, although they might also have a certain amount of visual perception

3.2

braille

writing system consisting of tactile dot combinations to be used by people with a visual impairment

[SOURCE: ISO 24183:2024, 3.9.1.7]

3.3

Marburg spacing convention

defined system of dimensions within and between the Braille cells

Note 1 to entry: The Marburg Medium spacing convention for Braille is recommended in the European Commission Guidance for use for medicinal product labelling.

Note 2 to entry: There are two different Marburg spacing conventions, Marburg Medium and Marburg Large.

[SOURCE: EN ISO 17351:2014, modified – reference to Marburg Medium in term was deleted and the two different options are mentioned in a new Note 2 to entry.]

3.4**multiple senses****principle of multiple senses**

principle of considering various sensory abilities in design decisions to support and enable users to perceive information

Note 1 to entry: Sensory abilities e.g. seeing, hearing, touch.

[SOURCE: EN 17210:2021, definition 3.38 – modified: brackets have been moved to a Note 1 to entry.]

3.5**partially sighted**

people, who primarily use their residual sight

3.6**raised characters**

specially designed raised/embossed characters composing letters and numbers readable by touch

[SOURCE: ISO 19028:2016, definition 3.10]

3.7**tactile lettering**

information provided both in Braille and raised characters

3.8**tactile pictogram**

graphical composition that may include a symbol plus other graphic elements, such as a border, background pattern that is intended to convey specific information recognizable by touch

[SOURCE: ISO 17840-1:2022, 3.15, modified, “tactile” and “recognizable by touch” added, “or colour” removed.]

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3.9**tactile symbol**

sign identifiable and recognizable by touch

[SOURCE: ISO 24503:2011, definition 2.4]

3.10**tactile walking surface indicator****TWSI**

standardized walking surface used for information by blind or partially sighted persons

[SOURCE: ISO 23599:2019, definition 3.16 – modified and partially sighted persons was used instead of vision-impaired.]

3.11**visually impaired**

blind and partially sighted people

4 General considerations

Accessible and usable information via multiple senses is one of the key areas for accessibility and usability of the built environment according to EN 17210. In relation to signage, this means, that written information shall be perceptible by vision and touch in order to be accessible for the widest range of users. Tactile lettering is an element of tactile guidance systems, which also consist of other elements such as tactile walking surface indicators (TWSI).

EN 17210 contains functional requirements and recommendations regarding the areas of application and design principles for tactile information in the built environment, see Annex B for further information. This document provides requirements and technical specifications to comply with these functional requirements. For dimensions and shape of Braille, raised characters, tactile symbols and tactile pictograms see Clause 5. For placement and implementation of tactile information see Clause 6.

Tactile information shall be raised, shall not be engraved.

NOTE 1 People experience great difficulties identifying engraved characters, symbols and pictograms by touch.

Tactile information shall be presented in tactile lettering. It can be complemented by tactile symbols and certain tactile pictograms, which are easily identified and understood.

For the purpose of this document the six dot Braille shall be used, for details see 5.4.

NOTE 2 Braille is a system of six or eight dot patterns.

Raised characters and tactile symbols or pictograms shall be easily detectable by touch and provide a visual contrast in order to be perceptible also by vision. Raised characters and symbols made of lines shall consist of raised triangular shaped relief profiles with slightly rounded upper edges. For details see 5.5 and 5.6.

Tactile lettering used for tactile information shall be short with a limited amount of characters. If more extensive information is to be offered according to the principle of multiple senses, this can be achieved with alternative technologies.

To identify the appropriate information content, it is recommended to consult specialists for accessible design.

5 Design

5.1 General requirements

Written information for use in the public area shall be provided to blind and partially sighted people by tactile lettering. This consists of Braille lettering (5.4) and raised characters (5.5).

Characters or numbers used for visual identification of rooms, building parts, building elements can be read by blind and partially sighted people if they meet the requirements according to 5.5.2 and do not require additional tactile lettering.

For guiding purposes directional arrows should complement tactile lettering (5.6.1).

The use of pictograms should be avoided since most blind people have enormous difficulties to identify them (5.6.2).

5.2 Layout

A free space shall be provided around any tactile lettering, symbol and pictogram. A distance of at least 5 mm shall be provided to:

- the edge of a base plate;
- a frame or raised line;
- any other object.

The distance between Braille, raised characters and associated symbols and pictograms shall be 5 mm to 10 mm.

Tactile lettering should not be placed in a recess. If located in a recess, the depth of the recess shall be maximum 2 mm and a free space of at least 10 mm shall be provided around the tactile lettering.

5.3 Material and finishes

Tactile information shall be designed to withstand the environmental stresses to which they are exposed (indoor/outdoor, temperature, weather, corrosion, frequency of use, danger of vandalism etc.) without losing accuracy.

Material of tactile lettering, symbols and pictograms and if provided their base plate shall be:

- durable;
- colour permanent;
- UV resistant;
- easy to clean;
- non allergic (not triggering allergies).

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For detection and readability the finishes shall be:

- smooth and pleasant to touch, so as not to hinder reading;
- without sharp edges on characters and/or base plate to prevent injuries;
- base plate/background without high-gloss surface;
- with luminance contrast according to the relevant standards complying at least with the minimum requirements in ISO 21542 to achieve optimal readability for partially sighted people.

NOTE 1 On glossy surfaces unfavourable reflections can reduce luminance contrast between symbols and their background.

NOTE 2 Partially sighted people use tactile information, such as on handrails, also by vision.

If the item no longer meets the above requirements, it shall be replaced.

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5.4 Braille

5.4.1 Braille translation

For guidance information and numbers, the six dot Braille code according to Annex C shall be used.

For additional information and longer text, national braille should be applied.

The capital letter indicator should be dropped unless it is absolutely necessary.

Some Braille codes include a contracted variant. This shall not be used for braille in a public environment.

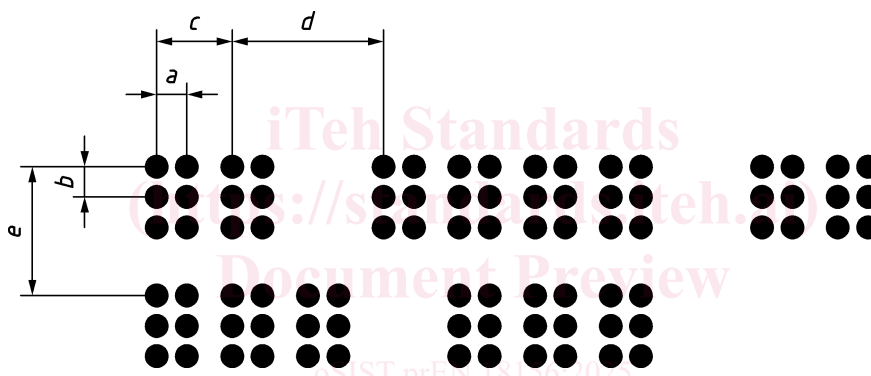
5.4.2 Dimensions

For short guiding information (not longer than 25 characters) the “Marburg Large” according to Table 1 should preferably be used.

For operational elements and longer explanatory text the “Marburg Medium” according to Table 1 shall be used.

For dimensions see Figure 1 and Table 1.

Dimensions in millimetres



Key

- a* horizontal distance between the centres of two dots
- b* vertical distance between the centres of two dots
- c* character width from the centre of dot 1 to the centre of dot 1 of the adjacent character
- d* dimension from the centre of dot 1 of the last character of a word to the centre of dot 1 of the first character of the next word
- e* line height from the centre of dot 1 to the centre of dot 1 of the character of the next line

Figure 1— Measurement system