Accessible Signage Guidelines:

Braille, Tactile and Clear Print


Now incorporated in New Zealand Building Code
Accessible Signage Guidelines: Braille, Tactile and Clear Print

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Now incorporated in New Zealand Building Code
Section F8 Signs Acceptable Solution FS/AS1

Cover photo: Photograph of a Unisex Toilet tactile sign. Embossed male and female figures as well as print is above the braille.


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Endorsed by

- Braille Authority of New Zealand Aotearoa Trust (BANZAT)
- Association of Blind Citizens of New Zealand Incorporated (Blind Citizens NZ)
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Introduction
These guidelines recommend best practice for design of signage that is usable by people who are blind, deafblind or have low vision.

This is the third major update since the Royal New Zealand Foundation of the Blind (Blind Foundation) first published them in 2011, and reflects new best practice guidelines around colour contrast. There is also more detail and slight amendments to guidance on braille and tactile print signage.

While there is currently no legislation in New Zealand requiring signage to be accessible to all users of a building or facility, installing accessible signage which complies with these guidelines will help with compliance with section 8 of the New Zealand Building code, where these guidelines are referenced. This also aligns with the New Zealand Disability Strategy 2016-2026 Outcome 5 – Accessibility, which states: "We access all places, services and information with ease and dignity".

New Zealand Standard 4121: 2001 (NZS4121) provides guidance but is not detailed, particularly for tactile signage (braille, embossed print and tactile pictograms). Braille standards have been developed and adopted by BANZAT that reflect the way braille is used in New Zealand. This includes the use of Unified English Braille (UEB) and Te Reo Maori.

The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), ratified by the New Zealand Government in 2008, mentions braille and tactile signage specifically. Article 9(2.(d)) requires our Government to "Provide in buildings and other facilities open to the public, signage in braille and in easy to read and understand forms".

As of 2017, the New Zealand Transport Agency no longer requires taxis to display braille signage. However, following advocacy and consultation with the Blind Foundation, The Association of Blind Citizens of New Zealand (Blind Citizens NZ,) and BANZAT, individual taxi organisations have agreed to continue to maintain or install braille signage in their taxis. This is highly recommended as it aligns with Outcome 5 of the New Zealand Disability Strategy 2016-2026, and increases the safety, independence, confidence and dignity of braille readers who use taxis.

The following guidelines are recommendations from the Blind Foundation for accessible signage in buildings or facilities. To meet the needs of all persons who are blind or have low vision, signage should be provided in large print, embossed (raised) print and braille. Embossed pictograms should also be included where appropriate, such as on signs for toilets, escalators, lifts and stairs. Clear, consistent, logical, contrasting, concise signage benefits everyone who uses the building, and supports wayfinding and access to information. We also fully support the use of audio signage systems, though this is beyond the scope of this document.
These guidelines are based on NZS4121, legislation and standards from Australia, the United States of America and the United Kingdom. This document now also incorporates some guidance from ISO10749 (2013), but does not endorse the braille dimensions in that standard. New Zealand braille standards are outlined in these guidelines. The final guidelines received input from the Blind Foundation, consumer groups and organisations, and individual users of braille and large print. They have been endorsed by the Braille Authority of New Zealand Aotearoa Trust (BANZAT), and Blind Citizens NZ.

(Note that throughout these guidelines, we use the terms blind or low vision, which includes a range of vision impairment as well as those who are deafblind.)

Good design benefits everyone. People who use your building or facility may be blind, deafblind, or have low vision. To access the vital information conveyed by building signage, accessible options including braille, large print, embossed print and pictograms in high contrast is required. The use of pictograms containing standard symbols assists many people, and is consistent with practice in other countries. By following these guidelines, and using signs which contain all these elements, you will ensure the widest possible number of people with varying degrees of vision can read your signs.

(The illustrations are not drawn to scale. They are examples only, and are not intended to represent all possible renderings. Please always refer to the text for exact measurements and specifications.)

Where are accessible signs needed?
Accessible signs should be provided for any features of a building that would normally be given a print sign. NZS4121 states that signs have three functions:

a) **Informative**—Advising about availability of facility or service;
b) **Directional**—Directing to a specific facility;
c) **Locational**—Identifying the place where the facility is provided.

We recommend that braille, high contrast tactile print and large print signage be provided in all public accessed buildings and spaces. These include, but are not limited to:

- Toilets and showers—both general and specifically accessible facilities
- Elevators—controls and floor indicators
- Numbers on stair landing hand rails to allow identification of floors
- Office and hotel room name/number plates
- Emergency doors, routes and exits
- Emergency evacuation instructions
- Cautionary signage
- Floor and building directories
Door controls on public transportation vehicles—emergency and standard
Free telephones in shopping malls
Bus stop, interchanges and train platform numbers
Signage in marae and places of worship
Operating instructions e.g. for vending machines or toilets
Offices and meeting rooms
Libraries
Shopping malls
Reception areas
Entrances to buildings

Where detailed information is provided on a sign, for example emergency evacuation instructions or building directories, consider providing this information separately in alternative formats such as braille with tactile diagrams, large print, accessible electronic text and audio. This allows building users to read and refer to the information when they are not standing directly next to the sign.

Guidelines for accessible signage

1. General
   - [1.1] Signs should be accessible to all users of the building or facility, including people who are blind, have low vision and those with additional learning or cognitive impairments.
   - [1.2] The most accessible sign is one which contains braille, large print, embossed (raised) print and embossed pictograms. Always accompany any pictogram with print and braille text. Some readers will not know what the pictogram means without accompanying text.
   - [1.3] Where possible, braille, print and pictograms should be included on the same sign. Having multiple formats on one sign helps some readers clarify or confirm the meaning and strengthens the sign’s message.
   - [1.4] The braille should convey the same information as the print.
   - [1.5] A building directory board should be located to the left of the entrance at a maximum distance of 2000 mm, or to the right at 2000 mm if it cannot be placed on the left. Where it is not possible to have the directory board at this distance from the entrance, directional accessible signage should indicate where it is located.
   - [1.6] Do not convey information solely through colour or images. Provide information in raised print and braille as well.
2. Placement

- [2.1] Place signs at a consistent height and location throughout a building or facility.
- [2.2] Place tactile signage where it can be reached easily without obstruction.
- [2.3] Place signs logically and as close as possible to the object or destination they are indicating. (e.g. Place "push" near the door opening for easy location).

Illustration 1 caption: "Easy to locate button". Shows an easily to locate sign for a lock button with "Lock" displayed in both embossed text and braille and an arrow pointing to the right to indicate location of the button. The sign is 50 mm from the button.

Illustration 2 caption: "Sign too far away from button to easily locate". Shows the same sign as illustration 1 but placed 150 mm away from the button.

(Note: The illustrations are not drawn to scale.)

- [2.4] Place signs at the entry point to corridors.
- [2.5] In general, where a single sign contains print, embossed print and braille, place vertical signs at a height of 1200–1600 mm from floor level with the top of the upper case of tactile characters at 1600 mm above the floor. This keeps the braille at optimum reading height for most people, especially where sign plates extend below the braille.

- [2.6] Ensure tactile signage is able to be read easily. An acceptable solution to installing tactile signage lower than 1200 mm is mounting it on a plate which is between 15 and 75 degrees from horizontal with a minimum height of 1000 mm to the bottom of the sign from the floor surface.
- [2.7] Within a sign, arrows should be placed/aligned consistently—either at the left or right margin, in descending hierarchy.
- [2.8] If braille is placed on a separate sign, this should be 1200 mm from the finished floor to the bottom of the sign plate.
- [2.9] Always place separate braille sign plates in a consistent location relative to the print sign.
- [2.10] For playgrounds, primary schools, or other facilities where the main population is likely to be children, place the signs at a height of 900–1200 mm from the floor to the bottom line of braille. But remember that signage also needs to be accessible for adults employed or visiting the facility.
• [2.11] Avoid suspended signs—they are very difficult to locate and too high to be read by a person with low vision.

• [2.12] Avoid protruding signs or sandwich boards—they are a health and safety hazard.

• [2.13] If doors are generally left open (e.g. office doors), place the sign on the wall or glass on the latch-side, with the leading edge of the sign between 50 mm and 150 mm from the door frame. If there is insufficient room, the sign can be placed on the hinge side as near to the door as possible, with the leading edge of the sign between 50 mm and 150 mm from the door frame, or on a return wall with the leading edge of the sign between 50 mm and 150 mm. Choose whichever side would be more logical and usable, and be consistent throughout the building.

Illustration 1 caption: "Place signs at a consistent height and location around a building or facility. In this case the signs are to the left of each door." Shows two doors with latches on their left side. The text and braille signs ("Accounts" and "Maintenance") are positioned on the wall above each of the door latches to the left.

Illustration 2 caption: "In this case, both signs are on the hinge-side of each door." Shows two doors side by side, one with a latch on the right side and the other with the latch on the left side. There is limited space in between the two doors to place signage on their latch sides so the signs ("Accounts" and "Maintenance") are positioned on the wall at the hinge side of each door.

• [2.14] It is recommended that signs have a maximum width of 750 mm for maximum readability for braille or tactile print users.
• [2.15] If doors are generally left closed (e.g. hotel room or toilet doors), place the sign on the door itself. Braille should be placed directly underneath pictograms or print numbers if they exist. Always include braille and print text as well as the pictogram. A pictogram alone is not enough.

Illustration: Shows a hotel door with a sign in text and braille positioned around head height in the middle on the door itself.

• [2.16] For elevator controls, place braille and embossed characters to the immediate left of the buttons (as per NZS4121).

Photo: Shows an elevator button with braille and embossed character "1" to the immediate left of the button.

• [2.17] Place tactile elevator floor indicators on the leading edge of an entrance door or landing architrave, at a height of 1200 mm from the ground to the bottom dot of braille) (as per NZS4121).

Illustration: Shows a woman holding a white cane in her right hand and exiting an elevator whilst reading the braille sign with her left hand. The sign is positioned at the leading edge of the elevator landing architrave at a height of 1200 mm which is easy for her to locate.

(Note: The illustrations are not drawn to scale.)
• [2.18] For hand rails, place braille and tactile print parallel to the longitudinal direction of the rail. Place the braille on the area where it can most easily and safely be read by touch. Determine the best place for braille and tactile print based on the handrail’s shape, thickness, surroundings and the method by which the handrail is fixed.
• [2.19] Only place braille on hand rails if the floor surface is flat to allow for safe standing while reading. This means hand rails on stairs should have extensions where braille and tactile print can be placed. We recommend the handrail extensions should be at least 300 mm in length on both ends of the staircase.
• [2.20] Most importantly, be consistent around your entire facility to ensure all users can easily locate your signage.

3. Contrast
• [3.1] Ensure that the sign visually contrasts with its background so that it can be located more easily by people with low vision. For example, on a light coloured wall, use a sign with dark background and light coloured print. If a sign must be placed on a similar coloured wall, use a thick border of contrasting colour to assist with the location.
• [3.2] Embossed and large print should have a minimum 30% luminance contrast to their sign background. This should be measured in all lighting conditions.
• [3.3] The sign itself should contrast 30% with the surface on which it is placed. If this cannot be achieved, a border with minimum width of 5 mm should be included on the sign. This should be wider if the wall surface is patterned or multi-coloured.
• [3.4] For signs placed on glass, ensure that there is enough colour contrast between the sign and its background. A thick border of contrasting colour surrounding the sign may be helpful.
• [3.5] Avoid placing signs on backgrounds which contain a lot of visual clutter—this can include general information such as posters, pictures and pamphlets which do not communicate orientation information.
• [3.6] Ensure the sign is in an area with good lighting. Avoid creating shadows on areas of the sign. Task lighting can assist with location of the sign in poorly lit areas.
• [3.7] Reflective glare will make the sign more difficult to read. Use non reflective surfaces and ensure that lighting does not create glare on the sign.

4. Layout
• [4.1] All text and braille on a sign should be left-aligned and set horizontally.
• [4.2] Where embossed print and braille appear on the same sign plate, place braille a minimum of 10 mm below the corresponding print.
• [4.3] Use simple, consistent and logical layout.
• [4.4] Avoid complicated images. Keep the design simple with a plain background. Avoid too much information on one sign.

5. Durability and Maintenance
• [5.1] As most signage is intended to have a long life, choose durable materials which can be cleaned easily. The material should also be able to withstand heat and sunlight.
• [5.2] Cardboard or adhesive braille label are only suitable for temporary signage which may need to be moved frequently, for example office name plates. These materials can easily be pulled off or fade with time and use.
• [5.3] If tactile elements of your signs have degraded over time, they should be replaced so that the sign remains readable.

6. Braille Signage

Technical Specifications
• [6.1] Braille dots should have a domed or rounded shape—make sure they are not pointed or flat.
• [6.2] Braille dots must be raised from the surface of the sign plate. Engraved braille is impossible to read.
• [6.3] The spherical radius of each dot should be 0.76-0.80 mm.
• [6.4] The base diameter of each dot should be 1.2-1.6 mm.
• [6.5] Each dot should have a height of 0.4-0.9 mm.
• [6.6] Horizontal and vertical spacing within the same cell should be 2.29-2.54 mm.
• [6.7] Spacing between one dot and the corresponding dot in the adjacent cell should be 6.0-7.6 mm.
• [6.8] Empty space between braille cells or words should be preserved or braille will be unreadable.
• [6.9] Vertical spacing (from 1 cell to the cell below) should be 10-10.5 mm.

Illustration caption: "Empty spaces between braille cells should be preserved or braille will be unreadable." Shows a sign underneath a button with text first and then braille under the text that reads "Push for Attention". There is 2.5 mm between the text and the top of the braille. The vertical spacing between one cell and the cell below is 10 mm. The spacing between one dot and the corresponding dot in the adjacent cell is 6 mm. (Note: The illustration is not drawn to scale).
• [6.10] The standard for braille in New Zealand is Unified English Braille.
• [6.11] For braille signs of 10 words or less, use uncontracted braille.
• [6.13] For signs of greater than 10 words, use contracted braille only if the sign consists of sentences such as emergency evacuation instructions. Ensure contracted braille follows Unified English Braille rules.
• [6.15] If text is multi-lined, print and braille should appear in separate blocks. Do not interline the print and braille. Place all the braille a minimum of 10 mm below the entire raised print text.
• [6.16] Where a sign contains a single letter (for example Platform B), a letter sign should not be used in braille.

7. Print Signage

Clear Print: Readability by sight
• [7.1] The size, type and layout of lettering on signs must be clearly legible.
• [7.2] Use a clear, simple sans serif typeface with uniform stroke width, wide horizontal proportions and distinct letter forms including prominent ascenders and descenders and open counterforms. Some examples of suitable typefaces are Arial, Gill Sans, Clearview ADA, Agro Sans, Frutiger and Helvetica.
• [7.3] Avoid using italics, stylised print, underlining and block capitals.
• [7.4] The initial letter of each word should be in upper case. The whole word should not be capitalised. Initial capitals help with letter and word recognition. Example: Female Shower
• [7.5] Always ensure the sign background contrasts with the print. Clear colour combinations include black text on a white background, white on black, yellow on black or black on yellow.
• [7.6] Do not print information over pictures or patterns.
• [7.7] Characters and their background should be non-reflective.
• [7.8] For non-tactile print, the size of the text should be related to the distance at which the information is to be viewed. Letters should have a minimum height of 15 mm. If signs will be viewed from more than 3 m away, the text should have a height of 5 mm for each metre of viewing distance. For example, if a sign is designed to be viewed from a 5 m distance, text should have a height of 25 mm.

Raised or Embossed Print: Readability by Touch
• [7.9] Raised letters should have rounded edges.
• [7.10] Letters should be raised from the surface of the sign plate by at least 1 mm, and a maximum of 1.5 mm.
8. Pictograms

- [8.1] When using pictograms for features like exits or male/female toilets, use internationally recognised symbols (refer to NZ Standard 4121 and ISO 7001).

Illustration: Shows a door to the female toilets with a sign on the door itself. The sign includes text, braille and the internationally recognised symbol of a female to clearly indicate that it is the "Female Toilet".

- [8.2] Make sure pictograms are always accompanied by raised print and braille. The pictogram is not sufficient on its own—some people will not know what the picture means.

- [8.3] If using the International Symbol of Access, make sure it conforms to that shown in Appendix E of NZS4121.

Illustration: Shows the International Symbol of Access—profile of a white figure in a wheelchair on a blue background.

- [8.4] Raised arrows can be used to indicate direction. These should appear either at the beginning of a line of text or directly after the text label. Avoid large spaces between arrows and their labels. Where braille is on a separate sign plate, a
small raised arrow should be horizontally aligned with the braille, either directly before or after the braille text.

- [8.5] Always ensure the sign background contrasts with the pictogram. Clear colour combinations include black text on a white background, white on black, yellow on black or black on yellow. A 30% minimum luminance contrast is recommended.
- [8.6] Raised pictograms should have soft-shouldered edges, and should be raised from the surface of the sign plate by a minimum of 1 mm.
- [8.7] The pictogram should be a minimum height of 60 mm.

9. Te Reo Māori
- [9.1] Te Reo Māori uses the same alphabet as English braille.
- [9.2] We encourage the use of Māori braille on signage alongside English braille.
- [9.3] Use uncontracted braille in all instances except for wh. Wh should be written as dots 1-5-6. You can achieve this by typing a colon : and applying the braille font.

  The symbol should look like this :

- [9.4] If a macron is shown on the print sign then the macron should be shown on the braille sign also. The macron symbol used in New Zealand is dots 4-5-6 directly before the relevant letter. You can achieve this by typing an underline symbol _ and applying the braille font.

  The symbol should look like this _

- [9.5] Please follow all other guidelines regarding placement, spacing and capitalisation.

Sample Words
whare
:are
tuāpāpā
tu_ap_ap_a
Appendix

Producing braille signs
For signs intended to have a long life, such as lift controls, toilet signs, floor directories and hotel room door numbers, we recommend using a signage company that specialises in producing braille signs on various types of material. These signs can be cleaned easily and will be more durable. Signage companies produce these using a variety of processes. Please visit blindfoundation.org.nz/signage for a list of companies we recommend. The Blind Foundation does not produce permanent braille signage.

If your company wishes to produce braille signage, we will gladly work with you to help you get it right. Please email signage@blindfoundation.org.nz

For less permanent signage such as office name plates (where staff change frequently), you can produce the braille using a dymo labeller or Perkins Brailler on adhesive labels. These will not last very long but are suitable in certain circumstances if the sign is of a temporary nature. Please contact the Blind Foundation if you require such temporary signage.

Importing Signs
We encourage you to use New Zealand signage companies who make accessible signage locally. A list of these companies can be found at blindfoundation.org.nz/signage

If you do want to import your signs, you need to be aware that some imported signs fall outside the guidelines in this document. For example, braille signs produced in Japan, Korea, Italy and Sweden use slightly smaller dots and spacing, which can be very difficult to read by those not used to this size of braille. Signs imported from the United States of America may be in contracted braille, which does not comply with our guidelines. Please check the specifications of all imported signs to ensure that they comply with our standards and follow Unified English Braille rules.
Uncontracted versus Contracted braille

Uncontracted braille consists of the alphabet, punctuation, and numbers. One letter of print equals one letter of braille. There are two exceptions to this:

1. Capital letters are formed by putting an extra dot or dots in front of the letter or word being capitalised.
2. A number sign is placed in front of a single number or groups of digits such as a phone number. The letters a to j are used for the numbers 1 to 0, and the number sign tells the reader to interpret them as numbers.

More on Braille Numbers

Braille numbers are made by using a to j with a number sign in front of them. Applying the braille font to a print number will not produce the correct braille result.

Example: 1 should look like #a

Please see our website for more detailed information on braille numbers.

If your automated braille translation software does not have an option for braille numbers, you will need to contact the Blind Foundation so we can produce the correct braille artwork for you.

Contracted braille consists of additional signs which represent commonly-used groups of letters, such as "the" or "er". These save space and speed up reading. New adult braille learners typically learn uncontracted braille first, and may not wish to learn contracted braille. Experienced children and adult braille readers read contracted braille easily.

In New Zealand, the standard for braille is Unified English Braille. If you are using machinery which contains automated braille translation software, it must be set to Unified English Braille uncontracted. If you do need to produce a contracted braille sign plate, set the machine to Unified English Braille contracted (also called grade 2).

If you are not using machinery with automated braille translation software, you will need a PDF containing the braille artwork which you can emboss onto the sign plate. The Blind Foundation can produce this for you. Contact braille@blindfoundation.org.nz

For more detailed information about braille, please contact the Blind Foundation Braille Awareness Coordinator by phoning 0800 24 33 33 or by emailing braille@blindfoundation.org.nz
References

- **Australian Standard AS1428.1—998 Design for access and mobility Part 1: General requirements for access—New building work** (1998), Standards Australia. Australian Braille Authority [brailleaustralia.org](http://brailleaustralia.org)
- **Building Code of Australia (Section D3.6)** (2008), Australian Building Codes Board.
- **Building Sight: A handbook of building and interior design solutions to include the needs of visually impaired people** (1995), Royal National Institute for Blind People.
- **Braille cell dimensions** (2009), Royal National Institute of Blind People.
- **Design Resources DR-11 Text Legibility and Readability of Large Format Signs in Building and Sites** (2010), Centre for Inclusive Design and Environmental Access, University at Buffalo School of Architecture and Planning.
- **Size and Spacing of Braille Characters** (2010), Braille Authority of North America: [brailleauthority.org/sizespacingofbraille](http://brailleauthority.org/sizespacingofbraille)