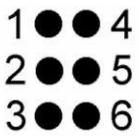
BANA Guidelines for the Creation of Braille Signage

Developed by the
Braille Authority of North America

What is Braille?

Braille is a system of touch reading and writing used by people who are blind.

- Embossed dots are evenly arranged in rectangular spaces, called cells.
- A full cell is three dots high and two dots wide. Each cell may contain up to six dots.



- The six dots of the cell are numbered 1, 2, 3, from top to bottom on the left, and 4, 5, 6, from top to bottom on the right.
- Only 63 different dot combinations can be formed.

A braille character may stand for a single letter of the alphabet, a whole word, a punctuation mark, or other symbols. The meaning and use of the dot combinations that make up braille characters in English follows standard codes developed by the International Council on English Braille (ICEB) and adopted by the Braille Authority of North America (BANA).

English braille is read from left to right and top to bottom, the same way that sighted people read English print.

For more information, see the BANA factsheet Size and Spacing of Braille at www.brailleauthority.org/size-and-spacing-braille-characters

There is little allowable variation in the size and spacing between braille dots and cells on paper. The nature of the materials and fabricating processes used in the production of signs may necessitate some flexibility in the design and layout of the braille dots and cells. Any variations from the standard braille specifications should be reviewed by a qualified braille expert to ensure correctness and readability.

Braille Alphabet

									
A	b	c	d	e	f	g	h	i	j
									
K	l	m	n	o	p	q	r	s	t
									
U	v	w	x	y	z				

Braille Numbers

									
1	2	3	4	5	6	7	8	9	0

Common Braille Indicators

		
capital indicator	numeric indicator	grade 1 symbol indicator

Guideline 1: Uncontracted and Contracted Braille

Paper publications can be produced in either uncontracted or contracted braille, while signs are to be produced using contracted braille only. Unified English Braille (UEB) was adopted in the United States in 2012. English Braille American Edition (EBAE) is no longer an accepted standard for braille signage.

1.1 Uncontracted Braille

1.1.1 Uncontracted braille (sometimes referred to as grade 1 braille) uses braille characters that represent letters of the alphabet, punctuation, and numbers in almost one-for-one correspondence, as well as common braille indicators such as the capital letter indicator and the numeric indicator.

Example 1-1

The word “stairs” in uncontracted braille would use one braille character for each letter, as presented below. As shown in this example, the larger circles represent the dots that are raised.

STAIRS

1.2 Contracted Braille

1.2.1 Contracted braille (sometimes referred to as grade 2 braille) is required for signage by the Americans with Disabilities Act Accessibility Guidelines (**ADAAG**).

1.2.2 Contracted braille comprises all symbols found in uncontracted braille. It also includes 180 contractions and short-form words representing groups of letters or whole words that appear frequently in the language.

1.2.3 In the U.S. and Canada, contracted braille is routinely used in books and magazines.

Example 1-2

STAIRS

Guideline 2: Capitalization

2.1 There are no unique characters for uppercase letters in braille. An uppercase letter is formed by placing a capital indicator (dot 6) before the letters a-z.

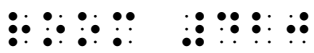
2.2 Often, there is limited space available on signs for raised print characters and braille. This is the reason that the Braille Authority of North America recommends a sign fabricator follow the braille capitalization specifications found in the **ADAAG** for the first word of sentences, proper nouns and names, individual letters of the alphabet, initials, or acronyms where space permits.

Guideline 3: Numbers

3.1 There are no unique characters for numbers. Digits 1-0 are formed by placing the numeric indicator, dots 3-4-5-6, before letters a-j.

Example 3-1

Room 420



3.2 A space terminates the effect of a numeric indicator.

Example 3-2

Building 3 100

3.3 When numbers are followed by letters a-j without a space, a grade 1 symbol indicator (dots 5-6) is required to indicate the change from numbers to letters. If the letter is capitalized, then the grade 1 indicator is not required.

Example 3-3

staircase 3b

staircase 3B

3.4 The grade 1 indicator is not required when the first letter after the number is the letter k-z.

Example 3-4

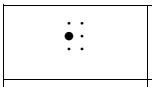
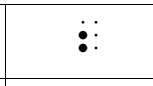
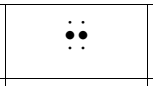
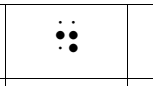
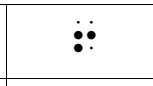
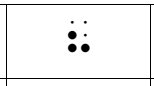
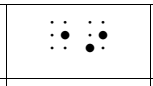
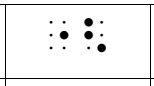
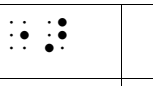
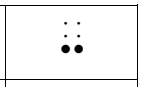
section 4r

section 4R

Guideline 4: Punctuation Marks

Some additional symbols for punctuation marks that may appear in signage are listed below.

Common Punctuation Marks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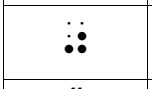	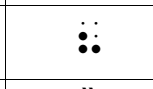	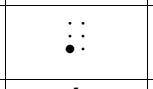	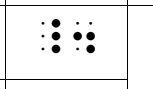
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Guideline 5: Braille Dot Profile

5.1 For comfort and ease of reading, braille dots shall have a domed or rounded shape. They are to be free of sharp edges, burrs, and rough spots.

5.2 Braille dimensions found in the **ADAAG**, including minimum to maximum ranges, are indicated below. *

5.2.1 **Dot base diameter**

The required specification for dot space diameter is: 0.059 (1.5 mm) to 0.063 (1.6 mm)

5.2.2 **Distance between two dots in the same cell.***

The required specification for distance between two dots in the same cell is: 0.090 (2.3 mm) to 0.100 (2.5 mm)

5.2.3 **Distance between corresponding dots in adjacent cells.***

The required specification for distance between corresponding dots in adjacent cells is: 0.241 (6.1 mm) to 0.300 (7.6 mm)

5.2.4 **Dot height**

The required specification for dot height is: 0.025 (0.6 mm) to 0.037 (0.9 mm)

5.2.5 **Distance between corresponding dots from one cell directly below**

The required specification for distance between corresponding dots from one cell directly below is: 0.395 (10 mm) to 0.400 (10.2 mm)

***Denotes measurement from center to center.**

5.3 Dot Position

Braille shall be positioned below the corresponding raised print characters. If raised print characters are multi-lined, braille shall be placed below the entire raised print text. Braille shall be separated 3/8 inch (9.5 mm) minimum from any other raised print characters and 3/8 inch (9.5 mm) minimum from raised borders and decorative elements.

EXCEPTION: Braille provided on elevator car controls shall be separated 3/16 inch (4.8 mm) minimum and shall be located either directly below or adjacent to the corresponding raised print characters or symbols.

Other Considerations

Languages Other Than English

The code for transcribing any language into braille, including English, depends not only on the language itself, but also on the prevailing language and the country where the document is written. For example, Spanish braille is somewhat different when it is written in the United States, Mexico, England, or Spain. Commercial translation software is available for the proper generation of braille in a wide variety of languages and contexts.

Braille Signs in the Environment

People who are blind or have low vision benefit from accessible/braille signs that are placed in convenient and predictable locations. In addition, the braille and corresponding print are to be presented horizontally and clearly separated from the sign's edge, unobscured by the frame, by a minimum of 3/8 inch (9.5 mm). Regulations requiring braille on signs have led to an increased presence of braille information in public areas, raising the expectation that braille will be provided in other useful contexts.

Braille Translation and Proofreading

Good braille copy for signs can be produced with commercial translation software that generates braille text and a suitable font that controls dot sizing and spacing. Although errors are infrequent when using such software, complete accuracy cannot be guaranteed.

Therefore, braille copy should be proofread by qualified persons who know braille codes, and final sizing and spacing should be checked.

Keep software updated to ensure braille code updates are incorporated into braille signage production.

Resources

UNITED STATES

American Council of the Blind
225 Reinekers Lane, Suite 660
Alexandria, VA 22314
202-467-5081 / 800-424-8666
Fax: 703-465-5085
www.acb.org

American Foundation for the Blind Information Center
1101 Wilson Blvd. 6th Floor
Arlington, VA 22209
212-502-7600
www.afb.org

Braille Authority of North America
www.brailleauthority.org

Library of Congress
National Library Service for the Blind and Print Disabled
1291 Taylor Street, NW
Washington, DC 20542
202-707-5100, 800-424-8567
www.loc.gov/nls

National Federation of the Blind
200 E Wells St.
Baltimore, MD 21230
410-659-9314
Fax: 410-685-5653
www.nfb.org

Perkins School for the Blind
Perkins Library Braille Production
175 North Beacon Street
Watertown, MA 02472
617-972-7240
www.perkinslibrary.org

United States Department of Justice
950 Pennsylvania Avenue, NW
Washington, DC 20530-0001
202-514-2000
www.usdoj.gov

U.S. Access Board
1331 F Street NW, Suite 1000
Washington, DC 20004-1111
Voice: 202-272-0080 or 800-872-2253
Fax: (202) 272-0081

CANADA

For guidance on producing braille signage in Canada, please see the Accessible Signage Guidelines developed by Braille Literacy Canada: https://www.brailleliteracycanada.ca/en/braille/standards.

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125 Sussex Drive
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