

perpendicular to the path of travel is easiest for them to notice. People can generally distinguish signage within an angle of 30 degrees to either side of the centerlines of their faces without moving their heads.

**A4.30.2 Character Proportion.** The legibility of printed characters is a function of the viewing distance, character height, the ratio of the stroke width to the height of the character, the contrast of color between character and background, and print font. The size of characters must be based upon the intended viewing distance. A severely nearsighted person may have to be much closer to recognize a character of a given size than a person with normal visual acuity.

**A4.30.4 Raised and Brailled Characters and Pictorial Symbol Signs (Pictograms).** The standard dimensions for literary Braille are as follows:

Dot diameter	.059 in.
Inter-dot spacing	.090 in.
Horizontal separation between cells	.241 in.
Vertical separation between cells	.395 in.

Raised borders around signs containing raised characters may make them confusing to read unless the border is set far away from the characters. Accessible signage with descriptive materials about public buildings, monuments, and objects of cultural interest may not provide sufficiently detailed and meaningful information. Interpretive guides, audio tape devices, or other methods may be more effective in presenting such information.

**A4.30.5 Finish and Contrast.** An eggshell finish (11 to 19 degree gloss on 60 degree glossimeter) is recommended. Research indicates that signs are more legible for persons with low vision when characters contrast with their background by at least 70 percent. Contrast in percent shall be determined by:

$$\text{Contrast} = [(B_1 - B_2) / B_1] \times 100$$

where  $B_1$  = light reflectance value (LRV) of the lighter area  
and  $B_2$  = light reflectance value (LRV) of the darker area.

Note that in any application both white and black are never absolute; thus,  $B_1$  never equals 100 and  $B_2$  is always greater than 0.

The greatest readability is usually achieved through the use of light-colored characters or symbols on a dark background.

**A4.30.7 Symbols of Accessibility for Different Types of Listening Systems.** Paragraph 4 of this section requires signage indicating the availability of an assistive listening system. An appropriate message should be displayed with the international symbol of access for hearing loss since this symbol conveys general accessibility for people with hearing loss. Some suggestions are:

INFRARED  
ASSISTIVE LISTENING SYSTEM  
AVAILABLE  
— PLEASE ASK —

AUDIO LOOP IN USE  
TURN T-SWITCH FOR  
BETTER HEARING  
— OR ASK FOR HELP —

FM  
ASSISTIVE LISTENING  
SYSTEM AVAILABLE  
— PLEASE ASK —

The symbol may be used to notify persons of the availability of other auxiliary aids and services such as: real time captioning, captioned note taking, sign language interpreters, and oral interpreters.

**A4.30.8 Illumination Levels.** Illumination levels on the sign surface shall be in the 100 to 300 lux range (10 to 30 footcandles) and shall be uniform over the sign surface. Signs shall be located such that the illumination level on the surface of the sign is not significantly exceeded by the ambient light or visible bright lighting source behind or in front of the sign.