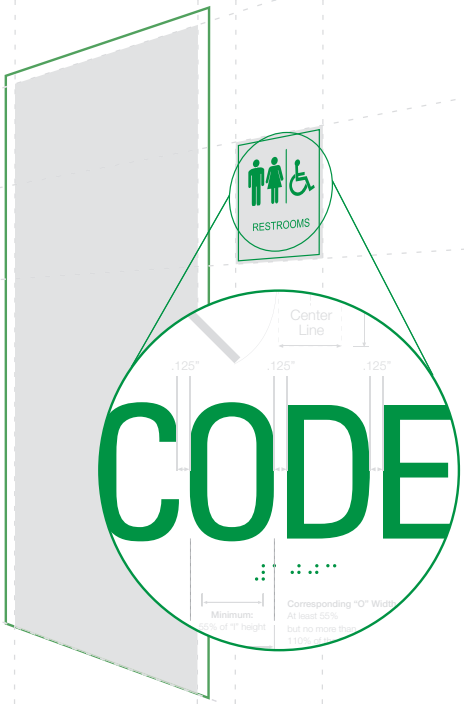
**Typography, Placemaking and Signs**

A Four-Part SFI White Paper Series

*Written By Craig Berger*




## Part III

# Typography and the Code

## – ADA and Egress Codes




# Other Resources:

## Four-Part Typography White Paper Series.

Download the other parts to this Typography White Paper Series.

**www.signs.org/WhitePapers**

## Typography Webinar Series.

Visit the page below to view a calendar of the webinars we currently offer.

**www.signs.org/EducationEvents/ISASignAcademy.aspx**

# Sponsored by:


The Signage Foundation is a not-for-profit committed to expanding the knowledge base on the use and benefits of signage products through peer-reviewed research to facilitate the operation within the marketplace by manufacturers, suppliers and individuals in their efforts to design, build and sell innovative products. For more information, visit thesignagefoundation.org


Nova Polymers is the global leader in the development of materials and processing equipment for the fabrication of Accessible and ADA compliant signage. With a focus on education and the continued development of innovative materials that meet international accessibility guidelines, Nova continues to lead the sign industry and help people with visual disabilities navigate the built environment.
novapolymers.com


Architectural signage solutions for ADA and Wayfinding signage helping people navigate their environment. Dixie Graphics is a solution source for designers and fabricators, offering material and sign choice. We also offer project completions from project management to installation accessorizing. Our goal is to streamline the manufacturing process for you.
dixiegraphics.com


Swell Media Group is a branding and marketing solutions provider focused on lead generation and content creation. We build brands, websites and engaging marketing campaigns by working closely with you to understand your business and your clients.
swellmediagroup.com

Codes and guidelines govern a very large part of what is designed and implemented in the built environment. From federal guidelines that mandate accessibility and design standards to local ordinances that govern the look and feel of our cities and towns, these rules are often unseen but play a significant role in how buildings and public spaces perform. In addition to planning and architecture, codes apply to graphic information including symbols and type. Designers and fabricators who understand the intricacies and overlapping governance behind codes are usually the most effective at completing projects and achieving the most effective solutions.

## Standards, Mandates and Enforcement

There often is a great deal of confusion about where design codes originate and which ones to follow. Instead of springing from local ordinances, codes usually come from three sources:

**STANDARDS BODIES:** These groups, like the International Standards Organization (ISO) or the National Fire Protection Association (NFPA) develop guidelines and standards based on research, best practices, and guidance from professional–and some not so professional– experts and special interest groups.

**FEDERAL MANDATES:** The United States has a system where states have the power to develop and enforce their own laws, based on federal guidance. Many of these mandates from organizations like the Justice Department, Environmental Protection Agency or Federal Highway Administration must be integrated into state laws or face withdrawal of federal money and a lawsuit.

**ENFORCEMENT ORGANIZATIONS:** States and localities are responsible for developing and enforcing codes in their jurisdictions; they play a significant role in interpreting these codes with federal guidance. Sometimes federal agencies also have an enforcement role, particularly involving government buildings.

**ORIENTATION:** When you learn how the message and sign fits into a system of similar messages and signs.

While design codes may seem purely localized, there is a range of research, precedent, best practices and advocacy that serve as a foundation. This knowledge comes in handy when interpreting the intent of local codes. When looking at state disability codes or local fire codes, knowledge of how they were developed by different organizations also can provide guidance in interpretation or resolving conflicts.

## The Americans with Disabilities Act

Before 1991, states developed their own versions of the Americans with Disabilities Act based on guidelines established by the American National Standards Institute (ANSI) in conjunction with the International Code Council (ICC). When the federal government came along with their own Justice Department Guidelines, it based much of it on the guidelines already developed, without

*ADA Accessibility Guidelines (ADAAG)*

| New ADAAG | DOJ Standards for Accessible Design | International Building Code |
|---|---|---|
| **703.2.2 Case.** Characters shall be uppercase. | | **ANSI 703.3.3 Case**. Characters shall be uppercase. |
| **703.2.3 Style.** Characters shall be sans serif. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms. | | **ANSI 703.3.4 Style.** Characters shall be sans serif. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms. |
| **703.2.4 Character Proportions.** Characters shall be selected from fonts where the width of the uppercase letter "O" is 55 percent minimum and 110 percent maximum of the height of the uppercase letter "I". | **4.30.2 Character Proportion.** Letters and numbers on signs shall have a width-to-height ratio between 3:5 and 1:1 and a stroke-width-to-height ratio between 1:5 and 1:10. | **ANSI 703.3.6 Character Width.** The uppercase letter "O" shall be used to determine the allowable width of all characters of a font. The width of the uppercase letter "O" of the font shall be 55 percent minimum and 110 percent maximum of the height of the uppercase "I" of the font. |
| **703.2.5 Character Height.** Character height measured vertically from the baseline of the character shall be 5/8 inch (16 mm) minimum and 2 inches (51 mm) maximum based on the height of the uppercase letter "I". **EXCEPTION:** Where separate raised and visual characters with the same information are provided, raised character height shall be permitted to be 1/2 inch (13 mm) minimum. | **4.30.3 Character Height.** Characters and numbers on signs shall be sized according to the viewing distance from which they are to be read. The minimum height is measured using an upper case X. Lower case characters are permitted.<br>Height Above Finished Floor — Minimum Character Height<br>Suspended or Projected Overhead in compliance with 4.4.2 — 3 in (75 mm) minimum | **ANSI 703.3.5 Character Height.** The uppercase letter "I" shall be used to determine the allowable height of all characters of a font. The height of the uppercase letter "I" of the font, measured vertically from the baseline of the character, shall be 5/8 inch (16 mm) minimum, and 2 inches (51 mm) maximum. **EXCEPTION:** Where separate tactile and visual characters with the same information are provided, the height of the tactile uppercase letter "I" shall be permitted to be 1/2 inch (13 mm) minimum. |
| **703.2.6 Stroke Thickness.** Stroke thickness of the uppercase letter "I" shall be 15 percent maximum of the height of the character. | See **4.30.2** | **ANSI 703.3.7 Stroke Width.** Tactile character stroke width shall comply with Section 703.3.7. The uppercase letter "I" of the font shall be used to determine the allowable stroke width of all characters of a font. |

*Harmonization of the national and international guidelines with the ADA administered by the Justice Department has made interpretation and enforcement much easier, but has made change much slower.*

## "Why can't someone just tell me what laws to follow so I can just focus on my work?"

*– A Texas designer*

a review of their effectiveness. In the 20 years since the ADA was passed, these groups worked to update the code based on a combination of advanced knowledge and ease of interpretation. States updated their codes multiple times based on these guidelines before the federal government was able to update its national code in 2011. This, of course, produced mass confusion with different states and even localities having different standards and enforcement approaches.

Today the national code is "Harmonized" with the International Building Code (IBC), but lingering confusion still exists. Effective accessibility designers are required to manage not only the moving target of the codes, but also their intent and interpretation. While most states must adhere to the national ADA, some places still maintain their own specific code language (California being the most well known); there is still no international consensus on disability codes.

## How Typography Codes in the New ADA Were Developed and Enforced

The new ADA was the result of a number of different organizations hashing out issues that were seen as inefficient or confusing in the first code. The leading controversial areas were:

**San Serif Versus Simple Serif:** The early ADA had a number of issues with unclear language that made for difficult enforcement. The most damaging was language calling for san serif or "simple" serif type. The word "simple" was meant to mean type with few flourishes as opposed to Ye Olde English, but a lack of specificity of the language resulted in the rule being nearly unenforceable. Over the course of a decade, the ANSI committee refined the guidelines to only include san serif for tactile copy and eventually only a specific range of stroke widths, proportions and heights could be used.

**"Domed. I can't believe that one word can shut down my project."**

*– A California designer*

**Dual Signs:** The ADA was originally developed as a one-size-fits-all code, with the needs of the blind and the visually impaired being covered by the same code. Since these two groups had such widely divergent needs, guidelines were developed to address both groups. Tactile letters would have restrictive code with very narrow standards for type selection, height, location and spacing. The visually impaired would have a wide range of serif and san serif typography to choose from as well as flexible location, height and spacing.

This greater flexibility has been a good thing. However many designers and code officials balk at the idea of "dual" signs that duplicate information to meet these standards. Most buildings today still follow the restrictive standards for the blind on all signs even though the new language has made it easier to differentiate between wayfinding, directory and identification signs.


01. Clearview
02. Futura
03. Highway Gothic
04. Highway Sans
05. NPS Rawlinson
06. Transport


09. Frutiger 55 Roman
10. Helvetica Regular
11. Lucida Sans Unicode
12. Myriad Pro-Regular




*There are only a small number of typefaces that can be used on tactile signs based on tight restrictions in character proportions, width and stroke width. These include early san serif type like Franklin Gothic and modern type like Helvetica. While not specifically stated in the code, humanist type that varies stroke thickness like Optima is discouraged and the tight restrictions make almost impossible to use.*

**Rounded or Domed/Edged or Curved:** The simple serif controversy has shown how one small change in language can produce enormous unintended effects. Another issue which is still lingering with us today are standards that allows Braille to be subtly "rounded" at the top and raised letters to be "edged" or sanded at the corners. While both of these standards have a worthwhile goal of making tactile signs easier for blind people to use, they have produced confusion that still exists today.

**"Wouldn't life be much easier if we could just use symbols?"**

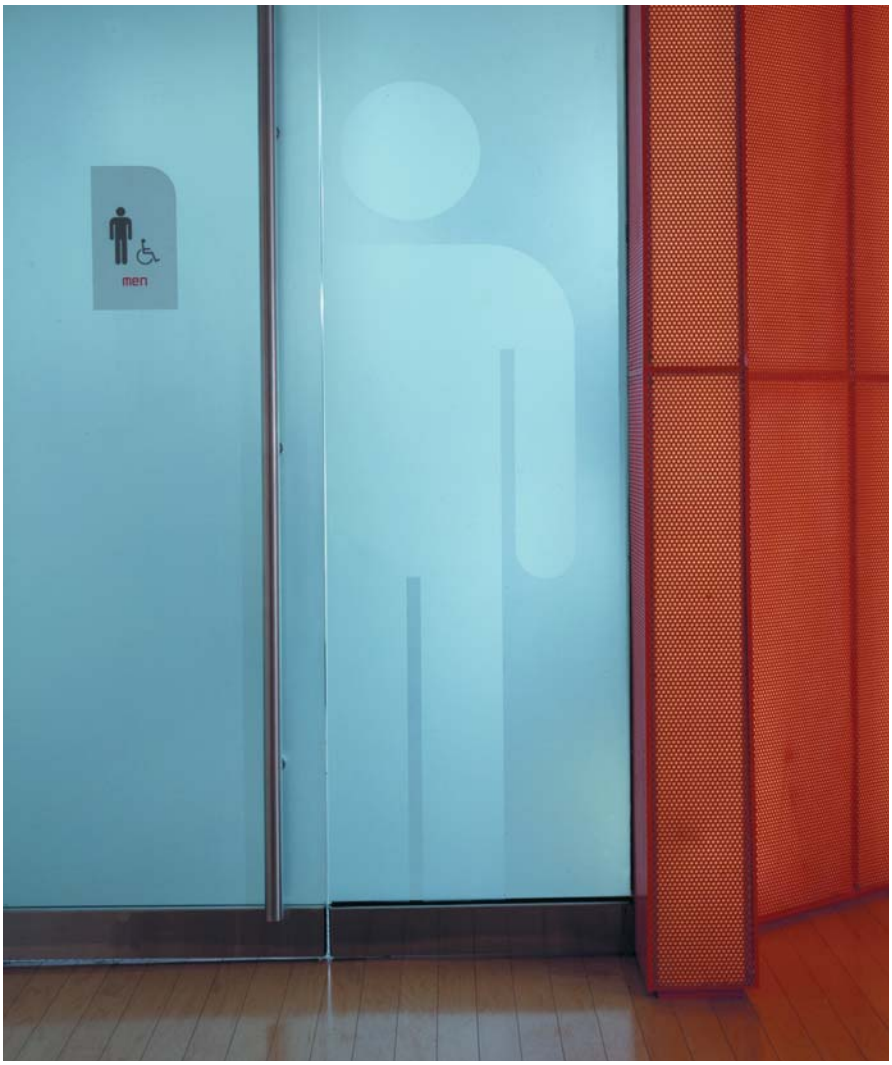
*– A British safety official*

**Color:** The ANSI committee that develops the guidelines for ADA has fought consistently over the last 20 years over the introduction of specific contrast criteria (70% or more contrast between foreground and background). In the most recent reiteration of the ADA, this guideline did not work its way into the final code, but since then ANSI has approved this restrictive contrast guideline. This means that states can slowly integrate the new guideline into their sign codes over the next few years, with activist states like California taking the lead. We do not know yet what impact this will have on enforcement, but if previous controversial issues are any guide, it will most likely result in confusion as code officials deal with issues like measurement procedures, and materials that are difficult to measure.

## Safety and Security

The ADA is perhaps the best-known code standard for signs, but there are in fact a variety of guidelines and code standards governing safety information in the environment. From fire codes to specialized sign safety codes developed for building with specific hazards, they are becoming much more refined and sophisticated. Unlike wayfinding and commercial sign codes, building owners strive to comply with specific standards instead of focusing on creativity and originality. Organizations like the National Fire Protection Agency (NFPA) and the Occupational Health and Safety Administration (OSHA), have responded by focusing on the adoption of globally harmonized standards so that safety information could be consistent around the world. Ironically though, while there is a greater designer desire for consistent standards, there are fewer interpretive and enforcement groups focusing on the requirements. Localities can make their own codes and these can be at odds with international or national guidelines. Egress codes, in particular, have produced a confusing array of guidelines on both the national and state level. This has impacted type standards in numerous ways including:

**Symbol or Type:** Around the world there seems to be one universal standard for EXIT and that is a symbol: a person running through a door. Unfortunately, that standard is not being used in most of the United States which is still holding onto "EXIT" signs producing a great deal of standards confusion. Some innovative cities have compromised by combining the symbol with the word EXIT for a hybrid approach.




*Creative dual signs produce are effective for broad groups (Like this bathroom sign developed by Gensler, and modular system developed by Roger Whitehouse), but have not realized their full potential outside of a small number of innovative design firms.*


**Address Systems:** Any traveler to Europe is often confused by the elevators with the ground floor being called 0 and the floors above it starting with 1(Floors below start at -1). Even more confusing are city codes that require a letter and a number when below ground (B1, B2). This is one area where the design community seeks clarity over diversity.

**The ADA and Egress:** The ADA has very tight standards for signs, but these generally are not related to egress signs which follow their own standards. This has created even greater confusion by trying to determine where the ADA and egress standards meet particularly in regard to maps and stairwell signs.

**Typography Harmonization:** While there is a broad movement toward use of symbols in safety and egress information, there is still a great deal of information that needs to be communicated through word messages. As of yet there is little harmonization of these standards, either through color, type selection, height or location. This will most likely be the next frontier of safety and egress standards.

Safety information relies heavily on symbols, but effective typography is equally important, though difficult to legislate. Leading safety companies like Clarion Safety Systems have responded by combining safety codes with internal best practices.

As the world becomes a more complex and cluttered place, there will continue to be efforts to rationalize signs and messages in the environment, without places becoming too similar and bland. The tension between these two ideals will most likely be the defining issue of 21st century environmental design, with the most creative responses balancing these two often-contradictory needs. ↧

**"Code officials have no understanding of the nuance of the dual sign code. One official required that I have tactile copy on all signs, even overhead directionals! He backed down after I told him that blind people could not jump high enough to read the code under my signs."**

*– A Boston environmental graphic designer*


*Multiple materials and methodologies can be used in the development of ADA signs, but local officials often have issues with this nuance. (etched zinc signs designed by Roll Barresi & Associates)*


*Color Contrast Metrics have been a contentious issue for decades, pitting the needs of the disabled community against the difficulties of enforcement. Issues like measuring contrast with alternate materials still need to be resolved. (Clear photopolymer sign mounted on 3-form substrate fabricated by Acorn Sign Graphics)*

# Great Books and Resources on Typography and Sign Codes

*ADA International White Papers,* **Nova Polymers**
These white papers are available on the website and explore the nuances of accessibility codes between states and countries.
***(http://www.novapolymers.com/resources/white-papers)***

*Resources of the United States Access Board,* **USAB**
The United States Access Board is a government agency dedicated to education and outreach in accessibility. The organization's website has multiple tools and publications on accessibility interpretation and research.
***(http://www.access-board.gov)***

*Research by Lighthouse for the Blind,* **Arlene R. Gordon Research Institute**
This research focuses on the development of visual cues for the blind and includes tactile signage and wayfinding.
***(http://www.lighthouse.org/research)***

*Resources of the National Fire Protection Agency,* **NFPA**
This organization provides a variety of guidelines and educational resources for egress codes.
***(http://www.nfpa.org/codes-and-standards)***

*Safety Signs and Symbols, American National Standards Institute,* **ANSI**
A publication of guidelines for safety signs and graphics.
***(http://www.ansi.org)***

*SEGD ADA White Paper,* **SEGD**
This white paper (now in its third version) provides an overview of leading accessibility issues including typography.
***(http://segd.org/2012-ada-white-paper-update)***