

Safety Signs as Risk Communication

A Brief History of the ANSI Z535 Standards

By Geoffrey Peckham



Geoffrey Peckham

Safety signs, labels and tags. You may not think of them as sophisticated systems of risk communication, but that is exactly what they are when safety professionals use the latest ANSI Z535 standards for their design.

To understand this concept, step back for a moment and imagine looking at a sign. It is black and white and only contains text in a language you cannot read (Figure 1). You are completely unaware whether the sign's message is an advertisement, a safety message or some other type of information. If the sign were a safety message meant to protect you from injury, you would have a serious issue.

That is why the ANSI Z535 standards were written: to provide up-to-date guidance on best practices related to visually conveying safety information so that safety signs, labels and tags stand out from all of the other visual stimuli people receive on a daily basis. But the ANSI Z535 standards were not invented out of thin air; their history goes back many years and they continue to evolve.

The Evolution of Sign Standards

The idea of standardizing ways in which safety messages can be visually communicated had its origins in three standards: ASA Z35.1, Specifications for Industrial Accident Prevention Signs (1941), ANSI Z53.1, Safety Color Code (1945) and ASA Z35.2, Specifications for Accident Prevention Tags (1968). (ASA is the former name of ANSI.) Figure 2 shows signs and tags designed to these more than 50-year-old standards. The messages on these signs and tags were simple, either briefly describing the hazard, or how to avoid a hazard, but rarely both. Their risk-level signal words

were generally limited to *danger* and *caution*. They almost never used symbols. When OSHA wrote its first workplace safety standards in the 1970s, it cited the 1960s versions of these three American national standards whenever safety signs, colors or tags were referenced.

In 1979, the ANSI Z53 Safety Color Committee and Z35 Accident Prevention Sign Committee were combined to form the ANSI

FIGURE 1
Foreign Sign



Z535 Committee on Safety Signs and Colors. The new committee began its work in the 1980s by setting out to revise the sign, tag and color standards. Spurred on by manufacturers' need to codify a set of best practice product safety label formats, the Z535 committee undertook writing a new standard on this subject. It also elected to develop a new standard to outline best practices for the design of safety symbols.

In 1991, the new and revised standards were ready for publication:

- ANSI Z535.1, Safety Color Code (as of 2011, titled "Standard for Safety Colors");
- ANSI Z535.2, Standard for Environmental and Facility Safety Signs;
- ANSI Z535.3, Standard for Criteria for Safety Symbols;
- ANSI Z535.4, Standard for Product Safety Signs and Labels;
- ANSI Z535.5, Standard for Safety Tags and Barricade Tapes (for Temporary Hazards).

In 2006, a sixth standard was published:

- ANSI Z535.6 Standard for Product Safety Information in Product Manuals, Instructions and Other Collateral Materials.

Taken together, the latest versions of these six standards establish current best practices in the field of safety communication in the U.S. (Figure 3). For hazard alerting purposes, these standards define a system of elements that typically convey a more substantial safety message when compared

Hotlinks

ANSI American National Standards Institute www.ansi.org

ASSE American Society of Safety Engineers www.asse.org

NEMA National Electrical Manufacturers Association www.nema.org

OSHA Occupational Safety and Health Administration www.osha.gov

Geoffrey Peckham, CEO of Clarion Safety Systems, chairs the ANSI Z535 Committee on Safety Signs and Colors. Also, since its formation in 1996, Peckham has chaired the U.S. Technical Advisory Group for ANSI to the ISO committee (ISO/TC 145) in charge of global standards for these same subjects. In these roles, Peckham has helped define the state-of-the-art for visual risk communication. He can be reached at gmpeckham@clarionsafety.com.

to the signs, labels and tags designed to meet the older standards.

The Value of Content-Rich Signs

More content-rich messages are possible because the current versions of the ANSI Z535 standards have decades of human factors research and court case precedents on which to base the proper definition for each component of a safety sign, label or tag. Furthermore, ANSI Z535 standards are now routinely held up in U.S. courts as the bar that product manufacturers and premise owners need to meet to provide people with an adequate warning.

The ANSI Z535 standards use a full range of signal words, color-coding, text panels and symbols to create a visual system that conveys safety messages in a consistent, well-defined manner. The result is in line with current U.S. legal theories surrounding the duty to warn and is consistent with the most up-to-date risk assessment methodologies safety professionals use to identify hazards and reduce risk.

ANSI Z535 standards are voluntary; compliance with them is not the law. Looking back on when the ANSI Z535.4 standard was first published in 1991 until today, product manufacturers have overwhelmingly adopted it for their on-product warnings. The facility safety sign standard, ANSI Z535.2, has seen slower adoption because OSHA only referenced the outdated 1960s-era safety

sign, tag and color standards. But this changed in 2013 when OSHA realized that the newer standards offered companies the ability to better communicate safety.

In 2013, OSHA referenced the newer ANSI Z535 standards alongside the older safety sign, tag and color standards' citations. The result is that an employer can choose to use 50-year-old safety sign technology or 21st-century-standards-based safety sign technology. As a result, many forward-thinking, safety-conscious professionals in various industries are switching to the newer, more substantial ANSI Z535 formats because they want to utilize best practices in risk communication.

It will not be long until the old signage has been replaced and the goal of the ANSI Z535 committee is realized: a national, uniform system for visually conveying safety information wherever it appears—in workplaces, in public areas and on products.

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FIGURE 2
Signs With No Symbols



FIGURE 3
Content-Rich Messages

