



# APPLIED SAFETY AND ERGONOMICS, INC.

## Update on ANSI Z535.6:

### A New Standard for Safety Information in Product Manuals, Instructions, and Other Collateral Materials

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A new standard, ANSI Z535.6, *Product Safety Information in Product Manuals, Instructions, and Other Collateral Materials*, has been added to the ANSI Z535 series. To date, the ANSI Z535 Accredited Standards Committee has published five American National Standards:

- ANSI Z535.1: *Safety color code*
- ANSI Z535.2: *Environmental and facility safety signs*
- ANSI Z535.3: *Criteria for safety symbols*
- ANSI Z535.4: *Product safety signs and labels*
- ANSI Z535.5: *Safety tags and barricade tapes (for temporary hazards)*

#### The Need for the New Standard

The five existing Z535 standards contain recommendations regarding the formats, colors, and symbols for safety signs used in environmental and facility applications, product applications, and accident prevention tags/tape, but do not address safety messages in product manuals, instructions, and other collateral materials. The absence of standardized formatting systems, combined with the increased awareness and use of ANSI Z535.4, has led to attempts to apply various aspects of ANSI Z535.4 to safety information in collateral materials. However, ANSI Z535.4 was not intended for and is not well suited to this purpose. Therefore, one purpose of ANSI Z535.6 is to address the applicability of elements of other ANSI Z535 standards to collateral materials.

Different standards are needed for product signs and labels and collateral materials due to the differences between these two types of media. For example, collateral materials typically contain more information than a sign or label, address multiple hazards and contain multiple

safety messages, provide longer and more detailed safety messages, contain multiple pages of information that cannot be viewed simultaneously, and can provide information that would be impractical on product safety signs, such as definitions of the safety alert symbol, signal words, and safety symbols. Also, unlike safety signs and labels, safety information in collateral materials must often be integrated with surrounding, non-safety information. Collateral materials are typically not attached to the product, so issues related to reading conditions, distinctiveness, placement, expected life, and maintenance are different. In addition, the concept of a safe viewing distance is not generally applicable.

#### The New Standard – ANSI Z535.6

To respond to this need, the new standard provides a hazard communication system developed specifically for product safety information in collateral materials. It provides a common design direction intended to provide product safety information in an orderly and visually consistent manner. Certain graphical elements used in the other Z535 standards are included in Z535.6:

- signal words (i.e., DANGER, WARNING, CAUTION, NOTICE)
- the safety alert symbol
- safety colors (i.e., red, orange, yellow)

However, in order to adapt these graphical elements for use in collateral materials, the standard includes some unique features, such as different safety message formats depending on the relationship between the safety message and other information in the document, and provisions for presenting safety messages without safety colors.

The following summarizes, in general terms, the contents of the new standard.

## Scope

The standard sets forth requirements for the design and placement of safety messages in collateral materials. Like existing ANSI Z535 standards, such as Z535.2 and Z535.4, this standard is intended to apply to a broad range of products.

Collateral materials include a variety of documents, such as owner's manuals, instructions, user's guides, maintenance or service manuals, assembly instructions, and safety manuals. Collateral materials may take the form of a single sheet of paper, a multi-page document, instructions on a package or container, or a printable electronic document.

## Signal Words

Many of the safety message formats in the standard use signal words to call attention to the safety message. Signal words are often used with the safety alert symbol to form a signal word panel (Figure 1).



**Figure 1:** Signal word panels (with optional color)

The standard includes signal words that are used in other ANSI Z535 standards: DANGER, WARNING, CAUTION, and NOTICE. As with other Z535 standards, signal words are selected based on degree or level of hazard seriousness, specifically, the probability and severity of harm associated with not following the safety message.

The signal word definitions in all of the ANSI Z535 standards' 2006 editions have been updated. The definitions of "DANGER," "WARNING," and "CAUTION," when used with the safety alert symbol, have been edited for clarity, but the intended meaning has not changed. The definition of "NOTICE" has been updated in all standards, and the signal word has been added to Z535.4 and Z535.6. This signal word replaces "CAUTION" without the safety alert symbol for use with messages not related to personal injury, such as messages related to property damage only.

In addition to the updated definitions, a detailed annex regarding risk assessment and signal word selection has been added to ANSI Z535 standards including Z535.6.

## The Safety Alert Symbol

The proposed standard includes formats that use the safety alert symbol (Figure 2).



**Figure 2:** Example of the safety alert symbol

The safety alert symbol indicates a potential personal injury hazard; it is not used for messages related to property damage only. The safety alert symbol may be used alone or in conjunction with a signal word in a signal word panel.

When presented as a black triangle with yellow fill, a black exclamation mark and, optionally, a yellow border (Figure 3), the safety alert symbol is identical to the general warning sign defined in ISO 7010 – 2003, *Graphical symbols — Safety colours and safety signs — Safety signs used in workplaces and public areas*.



**Figure 3:** Examples of the safety alert symbol when formatted like the ISO general warning sign

This optional form of the safety alert symbol is being added to the ANSI Z535 standards' 2006 editions to allow greater harmonization with ISO standards. For example, ANSI Z535.4 - 2006 will allow the use of this optional yellow and black safety alert symbol in signal word panels. Such a signal word panel is essentially identical to the optional hazard severity panel defined in ISO 3864-2 - 2004, *Graphical symbols - Safety colours and safety signs - Part 2: Design principles for product safety labels*.

While there is no ISO standard that is directly comparable with ANSI Z535.6, inclusion of this optional safety alert symbol allows safety messages in collateral materials to be visually similar to signs, labels, and tags that are

formatted according to other ANSI Z535 standards and also to ISO standards.

## Safety Colors

The use of color is not mandatory. However, if color is used with signal words, the same safety colors that are specified in the other Z535 standards are recommended. ANSI Z535.1 provides specifications for safety colors.

## Types of Safety Messages

Unlike safety messages provided on signs or labels, safety messages in collateral materials can be classified based on their relationship to other information in the document. The standard defines four types of safety messages: supplemental directives, grouped safety messages, section safety messages, and embedded safety messages.

### Supplemental Directives

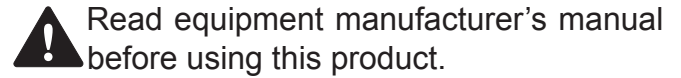
Supplemental directives are messages that refer to other safety messages. They can be used to:

- direct users to new, unique, unusual, or particularly important safety information
- direct users to product safety information in the document, in another document, or in some other source (e.g., product safety signs and labels)
- make users aware of the safety-related nature and importance of an entire document or section within a document (e.g., a section of grouped safety messages)
- reduce the need to repeat consequence information, especially generic consequences (e.g., “severe injury or death”), that may be associated with failure to read the document or refer to other sources of safety information.

Some typical supplemental directives include messages like:

- “read all instructions before use to avoid injury”
- “to avoid serious injury or death, follow the safety information in this document”
- “keep this manual”
- “read all product safety labels”
- “refer to local building codes for installation requirements”

Recommended formats for supplemental directives use the safety alert symbol (Figure 4) and, in cases where hazards and consequences can be determined with enough specificity to assign them, signal words.



**Figure 4:** Example of a supplemental directive with the safety alert symbol

### Grouped Safety Messages

Grouped safety messages are presented in their own separate section or document, for example an “Important Safety Information” chapter in a document or a separate “Safety Manual.” When provided in a section within a document, these messages are typically placed at the beginning of a document, before any procedural information to which they apply. A separate section or document of grouped safety messages must have a title or heading indicating that the information is safety-related. Signal words and the safety alert symbol are often not used with grouped safety messages, since there is no need to distinguish safety messages from other information in an all-safety section or document.

### Section Safety Messages

Section safety messages apply to an entire section of a document. These messages can be used to:

- provide safety information that applies throughout a procedure
- provide safety information that pertains to the topic of a particular section but that is not related to any particular procedural step or message in the section
- avoid unnecessary repetition of information about the hazards, consequences, or avoidance that applies to an entire section, paragraph, procedure, group of procedures, or other unit of text within the body of a document
- allow users to access procedural and other product-use information more easily and efficiently by reducing the extent to which a safety message interrupts or interferes with the access or flow of information

Section safety messages are typically located at the beginning of a section, before the information to which they apply. A signal word panel (Figure 5) or a safety alert symbol (Figure 6) typically precedes these messages.

### Section heading

#### **⚠ WARNING**

This is a section safety message. This is a section safety message.

General text, general text, general text, general text.

**Figure 5:** Example of a section safety message with a signal word panel

### Section heading

**⚠** This is a section safety message. This is a section safety message.

General text, general text, general text, general text.

**Figure 6:** Example of a section safety message with a safety alert symbol only

### Embedded Safety Messages

Embedded safety messages are integrated into procedures or into other non-safety information. Integrating safety messages into procedures can be particularly helpful, as the safety message can be placed at the step in the procedure when it should be followed. A variety of formats are permitted for embedded safety messages in order to allow them to be better integrated with the surrounding information in a particular situation. Formats include use of signal words (Figure 7), the safety alert symbol, consistently applied text treatments (e.g., bold, italics), or, when the content and context of the message make it clear that it has to do with safety, no special formatting.

General text, general text, general text, general text. **WARNING!** This is an embedded safety message. This is an embedded safety message.

**Figure 7:** Example of an embedded safety message with signal word

### Conclusion

Because ANSI Z535.6 provides a completely new scheme for classifying different types of safety messages and a variety of options for formatting safety messages, applying the standard to collateral materials will initially be more complicated than applying ANSI Z535.4 to product safety labels. However, the additional effort required to initially apply the standard can provide valuable benefits. The process of identifying and classifying safety messages provides an opportunity to reevaluate the content and location of safety messages, and to develop a consistent approach regarding when and where warnings are provided, both in collateral materials and via other media. The relative flexibility in formatting safety messages provides an opportunity to develop a custom style that is appropriate for the particular documents and that also is consistent with the new standard. Once this style has been established, developing future collateral materials should be significantly easier.

As many different industries apply the standard to a wide variety of collateral materials over the next few years, areas of the standard in need of modification or refinement will likely be exposed. Users of the standard are encouraged to provide feedback to the Z535 committee and propose changes to improve the next edition of the standard.

*Dr. Frantz is chairperson, Mr. Hall is vice-chairperson, and Dr. Young, Dr. Rhoades, Ms. Isaacson and Mr. Burhans are members of the ANSI Z535.6 subcommittee. Applied Safety and Ergonomics, Inc., is a consulting firm whose services include assisting clients in the development and evaluation of product warnings and manuals, training clients regarding warnings and product safety, and providing technical support in complex litigation involving hazard communication issues. For more information about ANSI Z535.6 or related product safety information issues, contact Mr. Burhans at [cburhans@appliedsafety.com](mailto:cburhans@appliedsafety.com) or 734-994-9400.*

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