Information on ANSI Z535.4-2007

The current American standard for equipment safety labels is *ANSI Z535.4-2007 American National Standard for Product Safety Signs and Labels*. "This standard sets forth performance requirements for the design, application, use, and placement of safety signs and labels intended to identify potential hazards for persons using, operating, servicing, or in proximity to, a wide variety of products."[1]

Equipment safety labels are similar to environmental safety signs (refer to *ANSI Z535.2-2007, American National Standard for Environmental and Facility Safety Signs*) in many respects, but they differ because they "are likely to contain more information within a smaller format, are usually observed at closer distances, and must physically and visually integrate with a wide range of product size, shape, and color characteristics."[1] While a complete equipment safety labels includes an identification of the hazard, the severity of the hazard, how to avoid the hazard, and the consequence of interacting with the hazard, as discussed below, not all components of the label are mandatory.

The goal of ANSI Z535.2-2007 is to "establish a uniform and consistent visual layout" for safety labels, "minimize the proliferation" of safety label designs, and "establish a national uniform system for the recognition of potential personal injury hazards."[1]

The foundation of this standard is a hazard alert system that uses different signal words and colors to distinguish between levels of hazard severity (i.e. Danger, Warning, and Caution) and standardizes label layout through the use of **Signal Word Panels**, **Message Panels**, and **Safety Symbol Panels**.

ANSI Z535-2 Standard Safety Label

Signal Word Panel

The Signal Word Panel is the area at the top of the safety label that identifies the level of hazard severity using the signal words Danger, Warning, or Caution and the safety alert symbol (an equilateral triangle surrounding an exclamation mark). The safety alert symbol is omitted when the hazard is related to property damage only. Which signal word to use (i.e. the level of hazard) is based on an evaluation of the "probability of being injured if the hazard is not avoided, and on the severity of the potential resulting injury."[1] Signal Word Panel graphics and corresponding hazards levels are as follows:

⚠ DANGER

⚠ DANGER

"**DANGER** indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations."[1]

⚠ WARNING

⚠ WARNING

"**WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury."[1]

⚠ CAUTION

⚠ CAUTION

"**CAUTION** indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. "[1]

CAUTION

NOTICE

NOTICE or CAUTION without the safety alert symbol is appropriate for property-damage-only hazards.

Message Panel

The message panel "contains the word messages which identify the hazard, indicate how to avoid the hazard, and advise of the probable consequence of not avoiding the hazard."[1] Both the order in which the messages appear and which of the messages should appear is flexible based on specific situational factors. The order of messages will be a function of the "target audience's degree of prior knowledge of the hazard and the reaction time required to avoid the hazard."* Factors to consider when evaluating whether to omit the hazard identification, hazard avoidance, or hazard consequence message include "whether the message can be inferred from a symbol, other text messages, user training or the context in which the safety label is used."[1]

Generally, the hazard should be identified first when there are a range of avoidance alternatives (refer to Figure 1 for an example). The avoidance message should come first when there are few avoidance options or when avoidance must be immediate to prevent interaction with the hazard (refer to Figure 2 for an example).
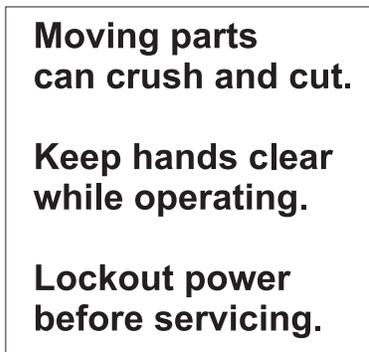
Moving parts
can crush and cut.

Keep hands clear
while operating.

Lockout power
before servicing.

Figure 1

KEEP OUT.

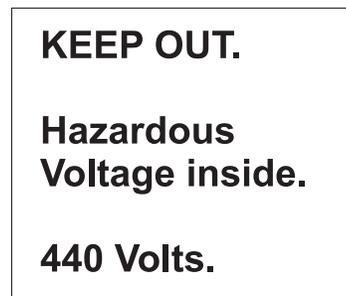Hazardous
Voltage inside.

440 Volts.

Figure 2

Word messages should be concise and readily understood and multiple messages should be spaced to prevent them from visually blending together.

Safety Symbol Panel

The Safety Symbol Panel contains the safety symbol (also referred to as a pictogram). The benefit of a well designed safety symbol is that it can communicate hazards quickly and across language and literacy barriers. *ANSI Z535.3-2007 American National Standard Criteria for Safety Symbols* provides guidance for the design and use of safety symbols. Generally, every safety label should include a Safety Symbol Panel.

Examples of safety symbols with and without the surround shapes follow:

Identify Hazards

Prohibited Action
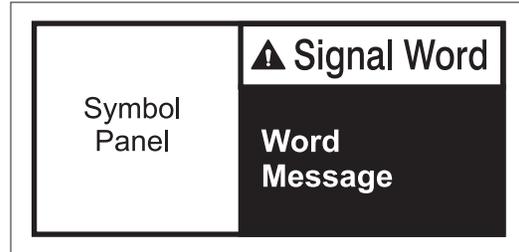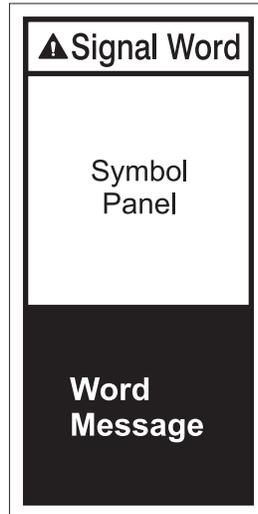**(surround shape required)**

Mandatory Action

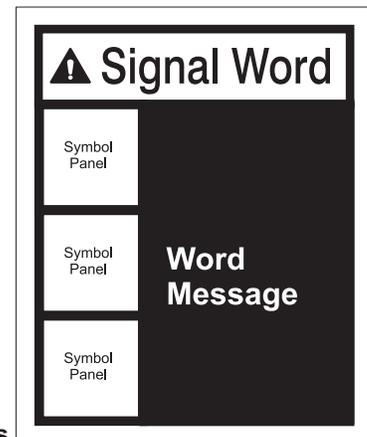## ANSI Z535.4-2002 Safety Label Layouts

A wide range of permissible safety label layouts are established in ANSI Z535.4-2007, including 2-panel, 3-panel, horizontal, vertical, multi-lingual, and multi-hazard layouts. Examples of safety label layouts are provided below.
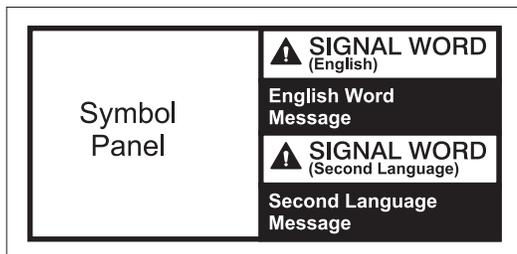
⚠ Signal Word
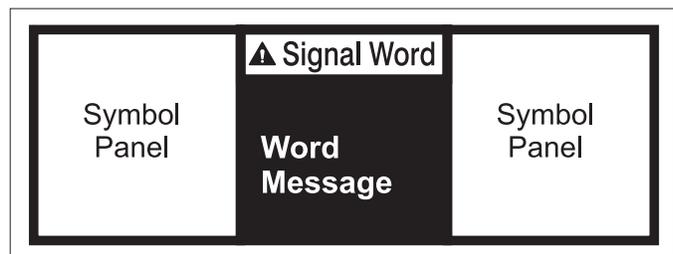
Word
Message

2-Panel Labels

⚠ Signal Word

Symbol
Panel

Word
Message

⚠ Signal Word

Symbol
Panel

Word
Message

3-Panel Labels

Symbol
Panel

⚠ SIGNAL WORD
(English)

English Word
Message

⚠ SIGNAL WORD
(Second Language)

Second Language
Message

Multi-lingual Labels

⚠ Signal Word

Symbol
Panel

Symbol
Panel

Symbol
Panel

Word
Message

Multi-symbol Labels

⚠ Signal Word

Symbol
Panel

Word
Message

Symbol
Panel

For additional information on ANSI Z535 and to begin working on the design for your safety labels, contact Stranco, Inc. customer service.

[1] *American National Standards Institute (ANSI). ANSI Z535.4-2007 American National Standard for Product Safety Signs and Labels.*