

GRAPHICALLY CONVEYING COMPLEX SAFETY MESSAGES

By Erin Earley

Using the New ISO Wordless Product Safety Label Format and Supplementary Symbols

As the person responsible for your product's safety labels, you might run into this problem: you want to convey your message in "symbol-only" form because your intended audience is global and yet your safety message is fairly complex. This article will show you how new developments in the ISO standard for product safety labels, ISO 3864-2 (2016) can be combined with the creative use of "supplementary safety symbols" to solve this problem.

Before exploring this new solution, let's step back and look at what the ISO and ANSI product safety label standards say about the content of product safety signs and labels. In ISO 3864-2, it says that the purpose of a product safety label is to alert people "to a specific hazard and to identify how the hazard can be avoided." In ANSI Z535.4, it defines a hazard alerting [product safety] sign as "a sign directly related to a hazard that identifies the hazard, the

level of hazard seriousness, the probable consequence of involvement with the hazard, and how the hazard can be avoided." Taken together, these two standards say that the content of your safety label should explain the hazard and tell people how to avoid the hazard.

In Clarion's design experience, we've found that the content of a product safety label can easily become complex when there are several aspects to conveying what the hazard is and how to avoid it. To illustrate a new solution for conveying complex messages, we're going to look at a label design that we recently created as part of our work on ISO Technical Committee 145. This label was developed for the ISO technical committee representing the barbecue grill industry who was writing a new safety standard for this product.

THE HAZARD – AND COMPLEX MESSAGING CHALLENGES

The barbecue grill industry had a need for a safety symbol¹ that would warn people not to use barbecue grills in enclosed spaces like vehicles, houses or tents. Used in an enclosed space, barbecue grills present a carbon monoxide hazard. Many deaths had occurred from people using grills in enclosed spaces as a result of asphyxiation from carbon monoxide, an odorless, colorless gas. With the refugee crisis in the Middle East and Europe, the misuse of grills for cooking and heating inside temporary shelters exposed people to harm. The industry decided that a new safety symbol was needed and they submitted their design to ISO/TC 145 to standardize (see Figure 1).

The ISO committee in charge of safety symbol registration (ISO/TC 145 SC2 WG1) had several key areas of concern about the design:

- The grill image is drawn in too much detail. Per the ISO 3864-3 standard, the allowable minimum line



Figure 1: The initial barbecue grill safety symbol presented to ISO/TC 145.

¹ISO/TC 145 uses the term "sign" when it refers to a graphical symbol of a safety message formatted to ISO design principles. For our readers, we use the term "symbol" to avoid confusion.

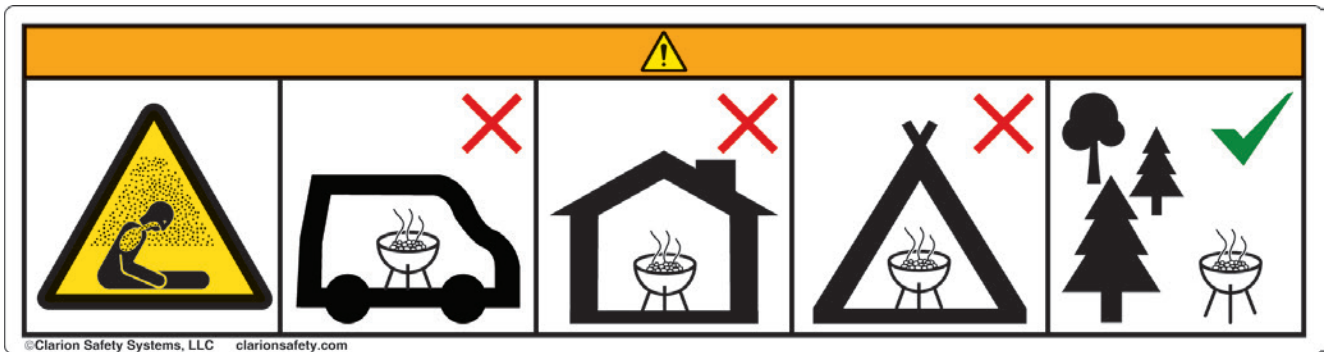


Figure 2: Clarion's design for a wordless barbecue grill safety label that includes a hazard severity level panel, a safety symbol that defines the nature of the hazard, and supplementary safety symbols that indicate "misuse" and "proper use" instructional information to keep people safe from harm.

width for symbol elements is 1 mm except in cases when finer detail needs to be shown, in which case lines may be reduced to .5 mm (given the outer diameter of the prohibition surround shape is 70 mm). The lines used for many of the submitted label's elements were less than .5 mm.

- The diagonal prohibition line goes through only one of the grills in the image, which could lead people to think they can use grills in vehicles and tents – just not in houses.
- The multi-part message of this warning is not suitable for being conveyed in a single prohibition symbol. Because the nature of the hazard (asphyxiation from carbon monoxide) is not readily understood, the committee recommended using a multi-part label that describes both the hazard and how to avoid the hazard. This type of label would be in line with ISO 3864-2's definition of a product safety label's purpose.

THE SOLUTION

Clarion volunteered its design department's skills to the ISO technical committee representing the barbecue grill industry to develop a new label design that would address the areas of concern noted above. Figure 2 illustrates the Clarion label design.

The following are explanations of various aspects of the new label design:

- **Use the new ISO 3864-2:2016 wordless format.** This new label format uses a "hazard severity panel" without a signal word to communicate the level of risk. The ISO 3864-2 color-coding of the hazard severity panel is as follows:
 - Yellow indicates a low level of risk
 - Orange indicates a medium level of risk
 - Red indicates a high level of risk
- **Begin the label's content with a standardized symbol that depicts the hazard.** ISO/TC 145 recently registered a new warning safety symbol to indicate "asphyxiating atmosphere," showing a slumped over human figure breathing in a gaseous atmosphere. This new symbol was incorporated into the barbecue grill's product safety label as its first element, reading from left to right. Human factors experts who study product warnings say conveying the nature of the hazard makes people more motivated to obey an instructional safety message.
- **Use supplementary safety symbols to convey the "how to avoid the hazard" messages.** According to ISO 3864-2, supplementary safety symbols can be used on a product safety label as long as the label has at least one ISO-formatted safety symbol. Supplementary safety symbols do not use ISO-colored surround shapes; typically they are reproduced in black and white. Supplementary symbols can use any line widths as they're not bound by the design rules of ISO 3864-3, making this type of symbol suitable for the images needed to show "do not use the barbecue grill in vehicles, houses or tents."
- **Include both "DO NOT" and "DO" messages.** Clarion's designers felt that viewers would more easily understand the "misuse" symbols if they were able to compare them to a "proper use" symbol. From decades of working in the field of semiotics, they understood that it's often through the juxtaposition of images that people are more able to discern meaning. By using red "X's" on the upper right of the three "what not to do" supplementary safety symbols, and following those

Given that death is a possible outcome of not obeying the label, red or orange was recommended to the barbecue grill industry for the background color of this panel. This "wordless" format is in line with the barbecue grill industry's desire to have a single label that could be used worldwide.

symbols with a final symbol that shows a grill in use under open skies with a green tick mark in the upper right corner, indicating “*what to do*,” our designers felt they were able to clearly convey the safe and unsafe locations for a barbecue grill.²

Much like the step-by-step graphic instructions you might see for removing an emergency exit door on an airplane (Figure 3), this barbecue grill product safety label uses multiple graphics in a progressively illustrated (left-to-right) design to communicate a complex message. As of the writing of this article, the ISO committee representing the barbecue grill industry has accepted this label design for their new safety standard – and it’s expected to be put to use in the near future.

APPLYING THESE CONCEPTS TO YOUR LABELS

When it comes to using these concepts for your product safety labels, the key principles to take away from this example are:


- It’s important to understand the latest version of the applicable standards; both a newly standardized safety symbol and a newly standardized product safety label format were used in this label’s design.

²Although this red X and green tick mark approach has not been standardized by ISO, a new ISO safety sign system guidance standard is being written now that will include this concept for illustrating negative and positive instructions.



Figure 3: Example of step-by-step graphical instructions for an emergency situation on an airplane.

- There can be a benefit to using both standardized safety symbols and supplementary safety symbols to convey a multi-part safety message.
- If possible, always try to explain both what the hazard is and how to avoid it.

It’s also important to note that the ANSI and ISO standards for product safety labels contain multiple options for safety label formats because the standards committees who write these standards and keep them up to date recognize that there’s no single safety label format that is suitable for all types of products and all types of safety messages. The approach shown here is a new one which takes a high degree of illustration skill to accomplish, but if done well, opens up a new world for communicating safety to a global audience. 

Do you have a suggestion for a topic you’d like to see covered in the *On Your Mark* series? Contact the author at earley@clarionsafety.com.

Erin Earley, head of communications at Clarion Safety Systems and a journalist by trade, has researched and written extensively about workplace safety and product safety label trends. Clarion is an active member of the ANSI and ISO standards committees. The company’s CEO, Geoffrey Peckham, is chair of the ANSI Z535 Committee for Safety Signs and Colors and of ANSI’s U.S. TAG to the ISO standards committee responsible for safety signs, labels, colors and symbols (ISO/TC 145). With over 50 million safety signs and labels in use in over 180 industries worldwide, their goal of making the world a safer place is taking shape. Erin can be reached at earley@clarionsafety.com.