

LABEL EXPECTED LIFE, MAINTENANCE AND REPLACEMENT

By Erin Earley

Considerations for Safety Labels that are Visible Throughout the Lifecycle of Your Equipment and Products

So often in these ‘On Your Mark’ columns, we focus on product safety label design, like the intricacy of details surrounding symbols, language, comprehension and color. But there’s a basic, physical element to consider that can have a large effect on both user safety and product liability exposure: the materials used to print your label. Even the best designed label is inadequate if it isn’t durable. A safety label must be seen – and seen clearly – in order to be understood. This article will explore safety label expected life, maintenance and replacement, for labels that are visible throughout the lifecycle of your equipment and products.

GUIDELINES FROM ANSI Z535

The ANSI Z535.4 Standard for Product Safety Signs and Labels, part of the overarching consensus standards that define today’s best practices in the field of visual safety communication in the U.S., includes a section on “Expected life and maintenance” to help guide product manufacturers. ANSI Z535.4 states the following regarding product safety labels:

- On **“Expected life”**: *“...shall have a reasonable expected life with good color stability, symbol legibility, and word message legibility”. Reasonable expected life should take into consideration whether the label “...is permanent or temporary, the expected life of the product, and the foreseeable environment of use.”*
[ANSI Z535.4, Section 10.1]
- On **“Maintenance”**: *“...should be periodically inspected and cleaned by the product user as necessary to maintain good legibility for safe viewing distance...”*
[ANSI Z535.4, Section 10.2.1]
- On **“Replacement”**: *“...should be replaced by the product user when they no longer meet the legibility requirements for safe viewing distance...In cases where products have an extensive expected life or where exposed to extreme conditions, the product user should contact either the product*

manufacturer or another source to determine a means for obtaining replacement signs or labels.”

[ANSI Z535.4, Section 10.2.2]

- On **“Product user instructions”**: *“The manufacturer should include information on maintenance or replacement of safety signs or labels...”* as detailed in the sections of the standard noted above. [ANSI Z535.4, Section 10.2]

YOUR PRODUCT’S LIFECYCLE – AND HOW RISK ASSESSMENT FACTORS IN

A key area to focus on from ANSI Z535.4 is that the expected life of the label should take into consideration



Figure 1: Example of a safety label that did not hold up to the life of the product and its environment of use

the product's expected environment of use and lifecycle. If a label is faded or missing altogether, its warning, safety message or instructions are compromised. See Figure 1. Degradation can occur at any point over the product's lifespan. This is where your risk assessment process comes into play.

A thorough risk assessment will identify potential hazards and control actions related to them to protect those who interact with your product during its anticipated lifecycle: from delivery, installation, use and service to decommissioning and disposal. The durability and visibility of a label is directly related to the life of your product.

KEY CONSIDERATIONS FOR MAINTAINING LABEL INTEGRITY

When it comes to the real-world application of following today's best practices to ensure that your labels are visible throughout the lifecycle of your equipment and products, it's helpful to focus on three key areas:

- **Conduct a thorough risk assessment.** Accounting for the products' entire lifecycle, as noted above, will help to identify and determine specific label material needs. The key to choosing the right materials for your labels revolves around knowing the expected environment of use, the anticipated lifespan of the product, and the space restrictions and characteristics of the surface it's mounted on. Once these variables have been defined, a selection of materials can be tested for use.
- **Give thoughtful consideration to quality materials for the application at hand.** A typical label has numerous layers, all of which must be compatible with one another – and mindful of the application environment and exposure to foreseeable damage, which can occur from abrasion or wash-down procedures – to ensure a long life. See Figure 2. Common problems associated with labels include fading inks, degrading overlaminates, and use of the wrong adhesives. With electrical products, heat is often a concern as is corrosive chemicals – two of the main culprits behind destruction of a label's

materials and adhesive. To achieve your durability objectives, an understanding of environmental and surface conditions, as well as the latest high-quality material options available, is needed.

- **Plan for maintenance and replacement.** Once your label or system of labels has been created, plan for continued durability maintenance. For product manufacturers, that means including information on maintenance, replacement, and installation of labels in collateral material provided with the product. That way, the end user can follow your recommended procedures for regular label reviews, and replacement as needed. It's not unusual for an end user to have personnel or third parties tasked with reviewing labels 'in the field' to identify and replace those with issues; your documentation can help account for key considerations and streamline the review and replacement process.

Remember, visibility is the first and last component of a legally "adequate" warning. Ultimately, your product user's safety, and your company's liability, depend on the durability and maintenance of your safety labels. 

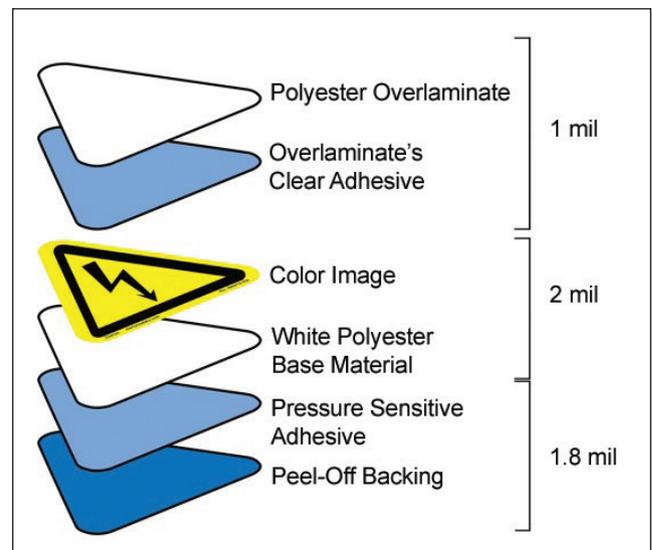


Figure 2: Diagram of the material elements of a typical, high quality product safety label

Erin Earley, head of communications at Clarion Safety Systems, shares her company's passion for safer products and workplaces. She's written extensively about best practices for product safety labels and facility safety signs. Clarion is a member of the ANSI Z535 Committee for Safety Signs and Colors, the U.S. TAG to ISO/TC 145, and the U.S. TAG to ISO 45001. Erin can be reached at earley@clarionsafety.com.