

# MILLER ENGINEERING, INC.

## EXPERTISE AREA:

\*Designing a Warning Label

\*ANSI Z535 Standards

\*Product Information Development

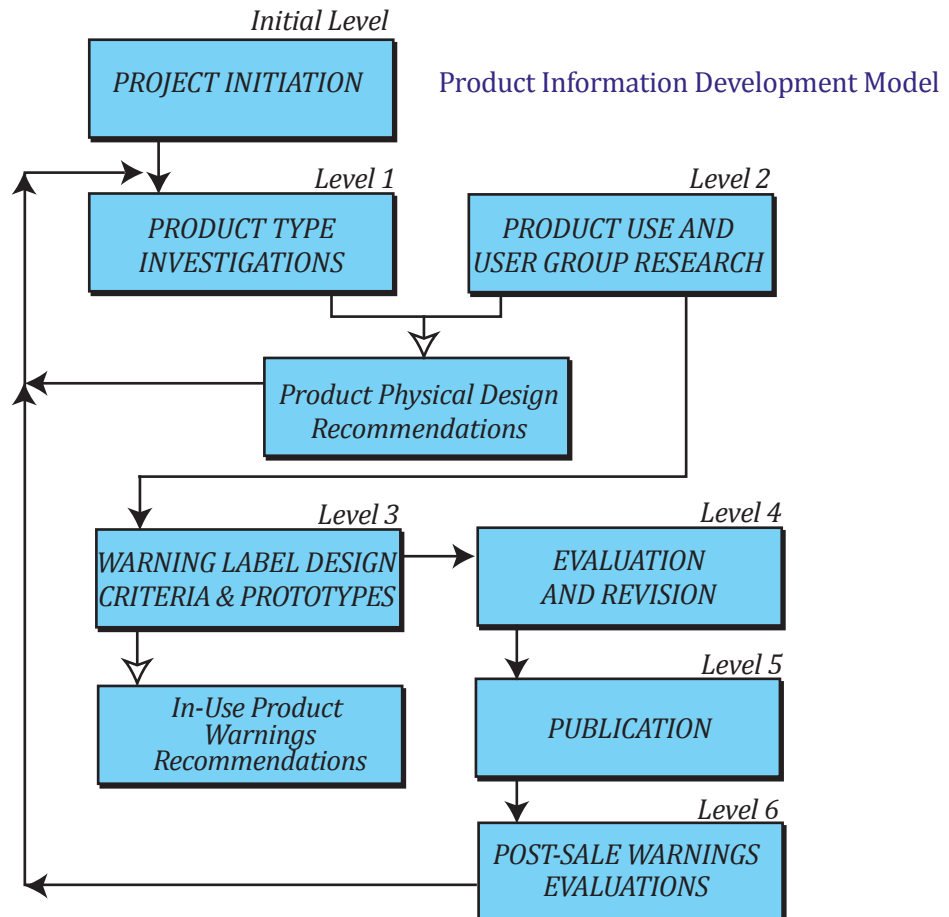
\*Determining Warnings Adequacy

## TECHNICAL BULLETIN: How to Design a Warning Label

### Designing Warning Labels

A number of models & numerous publications have been developed by Dr. Miller and Dr. Lehto to describe an orderly and reasonably rigorous methodology for researching, designing, & testing warnings & other product information. Several of these appear in the books written & edited by current & recent Miller Engineering staff. The first model is the Linear Sequence Determining Warnings Adequacy (reverse). It comes from our first Warnings book:

Lehto, M.R. and Miller, J.M. (1986). *Warnings: Volume 1: Fundamentals, Design and Evaluation Methodologies*. Ann Arbor, MI: Fuller Technical Publishing. A second model, which can be chosen, was developed & first presented at a Human Factors & Ergonomics meeting by Dr. Miller and is called "Product Information Development Model" (abbreviated, below). Lehto, Mark R. & James R. Buck. (2008). *Introduction to Human Factors and Ergonomics for Engineers*. New York: NY. Lawrence Erlbaum Associates.



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## ANSI Z535.6 - Product Safety Information Guidelines

The ANSI Z535 Standards series has become a set of systematic guidelines for designing any type of wordbased hazard communication, whether signs, labels, tags, tapes, manuals, or instructions. Miller Engineering has been analyzing & creating warning labels according to these standards since their inception in 1998.

The most recent Standard in the series, ANSI Z535.6: "American National Standard for Product Safety Information in Product Manuals, Instructions, and Other Collateral Materials," was first published in 2006.

Miller Engineering has since developed a protocol for analyzing product information based on ANSI Z535.6, for which numerous review have been done on products ranging from relief valves to pressure washers to self defense products.



**ATV Label:** This label (left) appears on All Terrain Vehicles sold in the USA in the past few years. It was designed & tested at Miller Engineering through the cooperation of Honda, Yamaha, Polaris, Suzuki, & the Consumer Product Safety Commission (CPSC).

**Excavator Label:** This label (below) was designed for use on an excavator. The icons were selected from or based on hazard description pictorials found in Annex A of ISO 9244:1995(E): Earth Moving Machinery - Safety Signs & Hazard Pictorials - General Principles.



Figure 3.2 From Lehto/Miller Warnings I The Linear Sequence Determining Warnings Adequacy

