

WARNING LABEL SPECIFICATION

This Warning Label Specification was designed to be used on all Littelfuse POWR-GARD Services projects where Warning Labels are required. The intent is to utilize a consistent label format that meets customer requirements along with applicable codes and standards.

Minimum Warning Label Requirements

Provide detailed warning labels for each piece of equipment within the scope of the project that conform to the customer's label specification and meet or exceed NEC Article 110.16 and NFPA 70E Article 130.3(C) requirements:

NEC Article 110.16 Flash Protection. Electrical equipment, such as switchboards, panelboards, industrial control panels, meter socket enclosures, and motor control centers, that are in other than dwelling occupancies, and likely to require examination, adjustment, servicing, or maintenance while energized shall be field marked to warn qualified persons of potential electric arc-flash hazards.

NFPA 70E Article 130.3(C) Equipment Labeling. Equipment shall be field marked with a label containing the available incident energy or required level of PPE.

A. Minimum components of the all Arc-Flash warning labels should include:

- I. System Voltage
- II. Hazard/Risk Category
- III. Incident Energy
- IV. Flash Protection Boundary
- V. Shock Approach Boundaries
- VI. Required level of PPE
- VII. Equipment ID
- VIII. Bus / Energy Source (optional)
- IX. Date of Assessment
- X. Littelfuse Name (appropriate logo preferred)

B. Minimum components of all Shock Hazard labels should include:

- I. System Voltage
- II. Shock Approach Boundaries
- III. Required level of PPE
- IV. Equipment ID
- V. Date of Assessment
- VI. Littelfuse Name (appropriate logo preferred)

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- C. Provide Warning Labels that meet ANSI Z535.4, *Product Safety Signs and Labels* requirements
 - I. Label Size (minimum of 3”H x 4”W)
 - II. Label Color
 - 1. Orange – Warning
 - 2. Red – Danger
 - 3. Yellow – Caution (optional)
 - 4. Blue – Notice (optional)
 - III. Font Size
 - IV. Use of appropriate “Signal” words (where required)
 - 1. WARNING for HRC 4 or less
 - 2. DANGER for over HRC 4
 - 3. DANGER for components or equipment that have insufficient AIC for available fault current, or are over-dutied
 - 4. CAUTION – Optional for HRC 2
 - 5. NOTICE – Optional for HRC 0 and 1
 - V. Label Material
 - 1. Self Adhesive, capable of adhering to a variety of material:
 - a. Stainless
 - b. Painted enamel
 - c. Powder coated metal
 - d. Polypropylene
 - e. Textured ABS plastic
 - 2. Glossy polyester material
 - 3. Chemical and oil resistant
 - 4. Approved for indoor use
 - 5. Approved for temperature variations (as required)
 - 6. UV Protected (as required)
 - 7. Approved for outdoor use (as required)
- D. Production of Warning Labels
 - I. Commercially available Engineering software generated
 - II. Pre-printed label stock
 - III. Custom label stock
- E. Provide an electronic file of Warning Label data for reference or to re-print labels if one should be damaged during normal day to day operations.
 - I. PDF file
 - II. Microsoft Excel file
 - III. Engineering Software Report

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Samples of acceptable Warning Labels

Sample label within the limits of NFPA 70E with PPE:



 WARNING	
Arc Flash and Shock Hazard Appropriate PPE Required	
41 Inches	Flash Hazard Boundary
4.05	cal/cm ² Flash Hazard at 18 inches
Category 2	PPE Requirements
480VAC	Shock Hazard (when cover is removed)
Class 00	Glove Class
42 Inches	Limited Approach
12 Inches	Restricted Approach
1 Inch	Prohibited Approach
	
Equipment: High Pressure Air Compressor 3	Date: 10/28/2005
Fed From: MSB-5	

Sample label within the limits of NFPA 70E without PPE:

 WARNING	
Arc Flash and Shock Hazard Appropriate PPE Required	
Arc Flash Hazard and Boundary	
Hazard Risk Category 3	Flash Hazard Boundary
Incident Energy at 18" (cal/cm ²) 22	77 Inches
Shock Hazard and Approach Boundaries	
Limited Approach 60 Inches	Voltage 4160 VAC
Restricted Approach 26 Inches	Glove Class 1
Prohibited Approach 7 Inches	Littelfuse (800) TEC-FUSE
Equipment: Main Switchboard	Date:
Fed From: Service Transformer	December 2008

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Sample label for equipment outside the limits of NFPA 70E:

 DANGER	
Arc Flash and Shock Hazard Appropriate PPE Required	
445 Inches	Flash Hazard Boundary
136 cal/cm ²	Flash Hazard at 18 Inches
Above Category 4	PPE Requirements Exceeds NFPA 70E Table Values
480VAC	Shock Hazard
	(when cover is removed)
Class 00	Glove Class
42 Inches	Limited Approach
12 Inches	Restricted Approach
1 Inch	Prohibited Approach
	
Equipment: LC-1	Date: 26 April 2007

NOTE 1: Any equipment that exceeds the NFPA 70E Hazard/Risk Category of 4 and Incident Energy Level of 40 cal/cm² is considered “DANGEROUS” and shall be labeled as such.

Sample label for equipment outside the limits of NFPA 70E:

 DANGER	
Arc Flash and Shock Hazard Appropriate PPE Required	
Arc Flash Hazard and Boundary	
Hazard Risk Category 4+	Flash Hazard Boundary
Incident Energy at 18" (cal/cm ²) 51.7	158 Inches
Shock Hazard and Approach Boundaries	
Limited Approach 60 Inches	Voltage 4160 VAC
Restricted Approach 26 Inches	Glove Class 1
Prohibited Approach 7 Inches	Littelfuse (800) TEC-FUSE
Equipment: VFD Cabinet 2	Date:
Fed From: VFD Cabinet 1	December 2008

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Sample label for equipment that does not meet OSHA and NEC installation requirements:



NOTE 2: Applying a standard Arc-Flash warning label is NOT sufficient when equipment is underrated. Panels and components with insufficient interrupting ratings are an OSHA violation and hazard that is very different from an Arc-Flash hazard.

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Samples of Optional Warning Labels

Yellow Caution label – sample of Hazard/Risk Category 2

 CAUTION	
Arc Flash and Shock Hazard Appropriate PPE Required	
65 Inches Flash Hazard Boundary	
8 cal/cm ² Flash Hazard at 18 Inches	
Category 2 PPE Requirements	Cotton Underwear + FR Shirt + FR Pants + Safety Glasses + Hard Hat + Leather Gloves + Leather Shoes + Ear Plugs + Face Shield
480VAC Shock Hazard (when cover is removed)	
Class 00 Glove Class	
42 Inches Limited Approach	
12 Inches Restricted Approach	
1 Inch Prohibited Approach	
	
Equipment: Bus Duct 1	Date: 26 April 2007

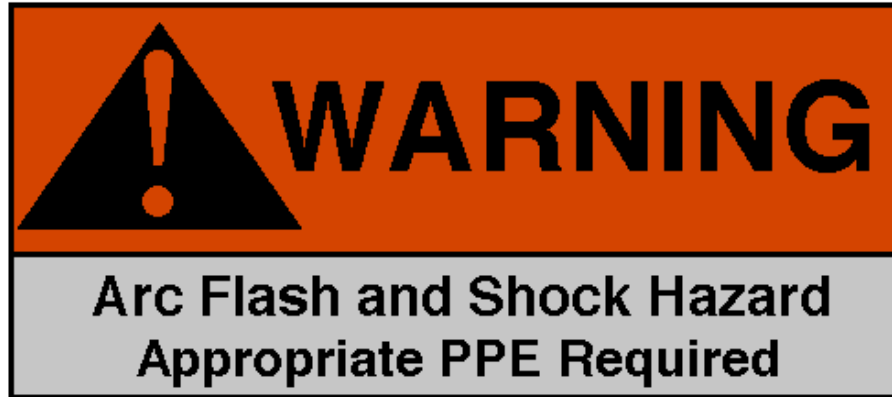
Blue Notice label - sample Hazard/Risk Category 0 & 1

 NOTICE	
Arc Flash and Shock Hazard Appropriate PPE Required	
21 Inches Flash Hazard Boundary	
1.5 cal/cm ² Flash Hazard at 18 Inches	
Category 1 PPE Requirements	FR Shirt + Long Pants + Safety Glasses + Hard Hat
480VAC Shock Hazard (when cover is removed)	
Class 00 Glove Class	
42 Inches Limited Approach	
12 Inches Restricted Approach	
1 Inch Prohibited Approach	
	
Equipment: QC Office Transformer Pri	Date: 26 April 2007

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Samples of Unacceptable Warning Labels

Label meets NEC minimum requirements but not NFPA 70E



Label meets NEC minimum requirements but not NFPA 70E

