

ARC FLASH LABELING GUIDE

A GUIDE TO PROPERLY LABELING ARC FLASH HAZARDS ACCORDING TO NFPA 70E®

2012 NFPA 70E®: Standard for Electrical Safety in the Workplace®

OSHA requires safe work practices, but it is the *NFPA 70E®: Standard for Electrical Safety in the Workplace®* that specifies safe work practices for arc flash. NFPA 70E Article 130.5(C) requires arc flash warning labels to be posted on each piece of electrical equipment that may be worked on while energized, or when verifying power is off.

Minimum label requirements:

1) At least one of the following:

- a) Available incident energy and the corresponding working distance
- b) Minimum arc rating of clothing
- c) Required level of PPE
- d) Highest Hazard/Risk Category (HRC) for the equipment

2) Nominal system voltage

3) Arc flash boundary

In addition, the method of calculating and data to support the information for the label shall be documented.

Exception: Labels applied prior to September 30, 2011, are acceptable if they contain the available incident energy or required level of PPE.

Unfortunately, putting only the minimum required information on the label can leave workers without essential information. It makes more sense to include all of the information, including incident energy, hazard risk category, required level of PPE and the specific PPE items required. In addition, it is good practice to include shock and arc flash boundaries, available fault current, voltage level and assessment date.

Arc Flash Boundary

Arc Flash Boundary is an approach limit at a distance from exposed live parts within which a person could receive a second degree burn if an electric arc flash were to occur.

Required PPE (Personal Protective Equipment)

Employees working in areas where electrical hazards are present are to be provided with and use Arc-Rated (AR) protective equipment that is designed and constructed for the specific part of the body to be protected and for the work to be performed.

Hazard Risk Category

The Hazard Risk Category level is determined by ATPV (Arc Thermal Performance Value). ATPV is the measure (in cal/cm²) of how much heat can be exposed to a flame resistant garment before a second degree burn injury is expected to occur. HRC is based on specific job tasks and ranges from HRC 0 (which is low risk and allows for 100% untreated cotton), up to HRC 4 (which is high risk and requires Arc-Rated clothing with a minimum arc rating of 40).

Incident Energy

Incident Energy is a measure of thermal energy at a working distance from an arc fault (measured in cal/cm²). The working distance is the distance from where the worker stands to the flash location (commonly 18 inches). The incident energy is a function of system voltage, available short-circuit current, arc current, and the time required for circuit protective devices to open.

Glove Class

Electrical safety gloves are categorized by the level of voltage protection they provide and whether or not they're resistant to ozone. Voltage protection is broken down into six classes. Class 00 is the least protective, while class 4 provides the most protection.



WARNING

Arc Flash & Shock Hazard

Appropriate PPE Required

ARC FLASH PROTECTION BOUNDARY AND REQUIRED PPE

Flash Hazard Boundary: 89 inch	Hazard Risk Category: Class 3
Incident Energy at 18" (cal/cm ²): 16.4	Glove Class: 00
Required PPE: Cotton Underwear + AR Shirt & Pants + AR Coverall + Hearing Protection	

SHOCK HAZARD PROTECTION BOUNDARIES

Shock Hazard: 480 VAC		
Limited Approach: 42 inch	Restricted Approach: 42 inch	Prohibited Approach: 1 inch
Equipment ID: Bus: C-H Prot: MCB C-H	Assessment Date: 6/12/11	

Sample Arc Flash Hazard Label

Shock Hazard

Shock Hazard, measured in VAC, is a dangerous electrical condition associated with the possible release of energy caused by contact or approach to energized parts.

Limited Approach

The limited approach boundary should be entered only by qualified persons or unqualified persons that have been advised and are escorted by a qualified person.

Restricted Approach

The restricted approach boundary should be entered only by qualified persons. Requires the use of shock protection techniques and PPE

Prohibited Approach

The prohibited approach boundary should be entered only by qualified persons. Requires same protection as if in direct contact with live part.

Assessment Date

Arc flash hazard assessment must be reviewed at least every 3 years or when a major modification occurs. This means that the label should include a documented date.

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LabelTac 4 Arc Flash Package

Easily print your own Arc Flash Hazard Labels, in house. The LabelTac 4 Arc Flash Hazard Package has everything you need to get started printing your Arc Flash Labels today.

Package Contains:

- 1ea - LabelTac 4 PRO Printer
- 1ea - Arc Flash 3.2 Analysis Software*
- 2ea - 4" Orange Label Supply
- 2ea - 4"x6" Die-Cut Orange Header
- 1ea - Black Ribbon

*Arc Flash 3.2 Analysis Software helps you calculate and evaluate your facility electrical systems. Use the simple calculator interface, then print directly to the LabelTac industrial thermal label printer for an NFPA 70E compliant Arc Flash label.



Arc Flash Supplies for LabelTac 4 and LabelTac 4 PRO



LabelTac 4 Arc Flash Label Supplies*

We carry a variety of label stock for creating your own, custom Arc Flash Hazard labels. Use with the LabelTac 4 or LabelTac 4 PRO for fast, professional Arc Flash Hazard labels.

- UV, chemical, weather, water, and wear resistant
- Won't fade or smear over time
- For indoor or outdoor applications
- Continuous supply allows labels up to 40" long
- Supplies are easy to load

*LabelTac supply is available in a variety of colors and sizes for other labeling applications.

Print Custom Labels and Signs

LabelTac 4 Industrial Thermal Printer

LabelTac Industrial Thermal Printers are the easiest way to print all of your Arc Flash, NFPA, Pipe Marking, GHS, 5S, Lean, and other labels in-house!

- Print labels 1/2" to 4" tall, and 40" long
- 300 dpi print head
- ROHS Compliant + ISO9001 + ISO14001 Compliant
- Thousands of pre-made templates and safety symbols included
- No special software needed
- 4 Year Warranty



- \$50/week
- Week-to-Week
- No Maintenance
- Free Product Support
- Unlimited Usage*
- Rent-to-Own Option

*Customer is responsible for purchasing media

