

Arc Flash Labelling Requirements

How to properly label your electrical equipment to comply with 2024 NFPA 70E

WHAT EQUIPMENT REQUIRES AN ARC FLASH LABEL?

According to NFPA 70E, labelling is required for any piece of electrical equipment that may need examination, adjustment, service or maintenance while energized. These labels communicate the electrical hazards an employee may be exposed to, including the potential for an arc flash incident.

Examples of where to put your arc flash labels to stay compliant



▶ Switchboards

Label where un-terminated wires or cables needing superior abrasion and chemical resistance exist.



▶ Panel Boards

Label where terminated or unterminated cables and wires that may be curved or become curved exist.



▶ Industrial Control Panels

Label where terminated cables or wires that may need additional abrasion or chemical resistance exist.



▶ Motor Control Centres

Label where large amounts of data needs to be communicated in a small area, such as fiber optic cables.



▶ Transformers

Label where large amounts of voltage exist, either on the ground or mounted up high in a facility.



▶ Disconnect Switches

Label where multi-conductor cables or bundled wires/cables exist.

EQUIPMENT LABELLING

- ▶ **Old Label Versions** – The recent update allows labels applied prior to the effective date of this edition of the standard to be acceptable if they complied with the requirements for equipment labelling in the standard in effect at the time the labels were applied (unless changes in electrical distribution system render the label inaccurate).

DANGER	
Arc Flash & Shock Hazard Appropriate PPE Required	
FLASH PROTECTION	SHOCK PROTECTION
Arc Flash PPE Category: 2	VAC Shock Hazard When:
Incident Energy (cal/cm²): 1	Limited Approach Boundary: _____
Flash Protection Boundary: _____	Restricted Approach Boundary: _____
PPE: Arc-rated coverall	PPE: Class: _____
- Arc-rated face shield or full face hood	- Veiling: _____
- Hard hat	
- Safety glasses or safety goggles	
- Hearing protection (ear canal inserts)	
- Leather gloves and footwear	
Equipment ID: _____	

WARNING	
Arc Flash & Shock Hazard Appropriate PPE Required	
FLASH PROTECTION	SHOCK PROTECTION
Arc Flash Boundary: _____	Limited Approach Boundary: _____
Arc Flash PPE Category: 4	Restricted Approach Boundary: _____
Incident Energy (cal/cm²): 40	PPE: Class: _____
Flash Protection Boundary: _____	- Veiling: _____
- VAC Shock Hazard When:	
- Minimum Arc Rating of Clothing: _____	
- Nominal System Voltage: _____	
PPE: Arc-rated coverall	
- Arc-rated face shield or full face hood	
- Hard hat	
- Safety glasses or safety goggles	
- Hearing protection (ear canal inserts)	
- Leather gloves and footwear	
Equipment ID: _____	

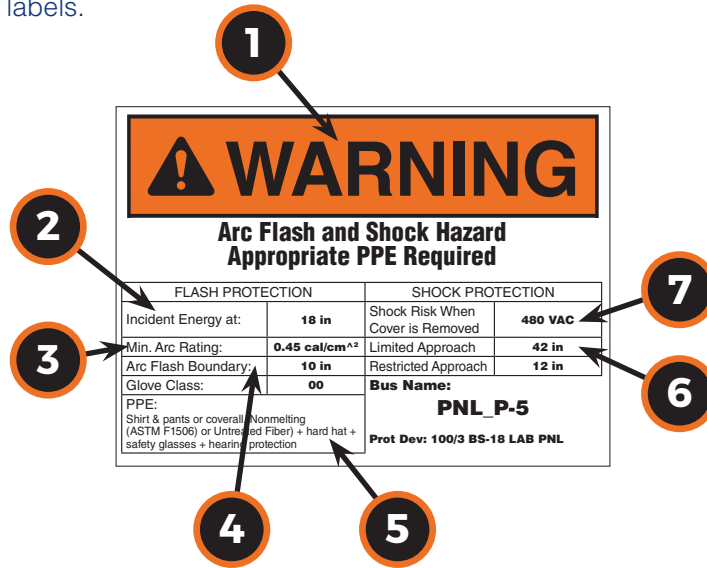
- ▶ **Document and Review** – Document the method of calculating and the data to support the information for the label and review for accuracy at intervals not to exceed 5 years. Where the review of the data identifies a change that renders the label inaccurate, the label shall be updated.

The owner of the electrical equipment shall be responsible for the documentation, installation and maintenance of the marked label.



7 ELEMENTS OF AN ARC FLASH LABEL

Now that you're familiar with the equipment that needs labelling, here are the elements you will need to include in your arc flash labels.



1

Danger or Warning header

A common guideline is to use the “Danger” header when the voltage is over 600 or when the incident energy is over 40 cal/cm². If it is less than this threshold, an orange “Warning” header is typically used.

2

Incident Energy at is the corresponding working distance

The Institute of Electrical and Electronics Engineers (IEEE) defines this as “the dimension between the possible arc point and the head and body of the worker positioned in place to perform the assigned task.”

3

Min. Arc Rating is the incident energy

A measurement in calories/cm² or Joules/cm² of thermal energy at a working distance from an arc fault.

4

Arc Flash Boundary

This is the shortest distance at which a person working at the time of an arc-flash may receive permanent injury (the onset of a second degree burn or worse) if not properly protected by flame-resistant (FR) clothing.

5

Personal Protective Equipment (PPE)

Each hazard risk category requires a different level of protection. Categories range from 1 to 4. Category “0” was removed in the [NFPA 70E 2015 Changes](#).

6

Limited Approach and Restricted Approach fields are related Shock Hazard Approach Boundaries.”

These boundaries are defined in more detail in our [Arc Flash Workplace Safety Guide](#). The “prohibited approach” boundary was removed in the 2015 NFPA 70E edition.

7

Shock Risk When Cover is Removed

The voltage of the equipment.

- ▶ [Read more](#) on Arc Flash Labelling Requirements
- ▶ [A Definitive Guide](#) to the Arc Flash Risk Assessment