



ELECTRICAL SAFETY IN THE WORKPLACE

The risks of shock, electrocution, arc flash, and arc blast are a significant health and safety concern in the workplace. Many electrical incidents could have been prevented through compliance with the latest safety codes and standards. *NFPA 70E*[®], *Standard for Electrical Safety in the Workplace*[®], is a critical document to help provide a working area for employees that is safe from unacceptable risk associated with the use of electricity in the workplace.

With the release of the latest edition for 2021, *NFPA 70E* clearly establishes safety processes that use policies, procedures, and program controls to reduce these risks to an acceptable level. The core objective is practical, accomplishable electrical safety that helps ensure the employee goes home safe at the end of the day.

The risk controls discussed in this standard are intended to be sound, viable, workable applications of safety procedures and policies to be implemented by both the employer and employee. The requirements at the heart of *NFPA 70E* are suitable for use and implementation by agencies and employers charged with the responsibility of electrical safety plan development, implementation, and maintenance.

How NFPA 70E Works with Other Codes and Standards

Following and fostering basic installation safety, maintenance, and prudent work procedure rules is essential to employee safety. This can be accomplished by taking the following actions:

- Installing the electrical system in accordance with *NFPA 70*[®], *National Electrical Code*[®] (*NEC*[®]);
- Maintaining the electrical system in accordance with *NFPA 70B*, *Recommended Practice for Electrical Equipment Maintenance* (in the absence of the specific manufacturer's instructions); and
- Following the safety policies, procedures, and process controls identified in *NFPA 70E*.



When these three key documents are used in concert, and correctly, they help provide for a complete electrical safety cycle. When one or more pieces are missing, it can leave the door open to catastrophic accidents. Whether you are the contracted electrician doing the initial installation, a business owner implementing an electrical safety plan to keep your employees safe, or the plant electrician maintaining equipment, your role is critical for the continued safety of all personnel.

FAQs

What is the relationship between OSHA's standards and NFPA 70E?

NFPA 70E is an internationally accepted American National Standard that defines electrical safety-related work practices. The US Department of Labor's Occupational Safety and Health Administration (OSHA) looks to the prescriptive-based requirements of *NFPA 70E* to fulfill the performance-based requirements included in its standards. *NFPA 70E* fleshes out how the performance-based requirements in the OSHA standards can be met by providing and defining minimum standard industry practices necessary for electrical safety. OSHA is the law, and *NFPA 70E* outlines ways to comply with OSHA's electrical safety requirements. This symbiotic relationship between *NFPA 70E* and OSHA electrical safety standards helps to increase safety in the workplace.

Can NFPA 70E be used worldwide?

NFPA 70E is an internationally applied standard. The electrical safety-related work practices, safety-related maintenance requirements, and other administrative controls in *NFPA 70E* apply to all alternating

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and direct current systems. The requirements in *NFPA 70E* apply to all types of employees, employers, and facilities, including in-house employees, contract employees, contractor employees, general industrial workplaces, and construction workplaces regardless of their location in the world.

Some Major Changes for NFPA 70E 2021 Edition

- **Article 110:** Some requirements in Article 110 have been reorganized for a more logical progression, including moving general principles of lockout/tagout from Section 120.2 and general principles of an electrically safe work condition and energized work requirements from Section 130.2. New subsection 110.5(K) requires that an employer's electrical safety program include a policy on establishing an electrically safe work condition.
- **Article 130:** Sections 130.1 and 130.2 have been rewritten to accommodate the relocation of information from former Sections 130.2(A) to 110.3 and to keep the focus of Article 130 on requirements related to work involving electrical hazards.
- **Table 130.5(C):** Revisions have been made to Table 130.5(C), which can be used to help estimate the likelihood of occurrence of an arc flash incident, including a new entry for the initial circuit breaker or switch operation and again after maintenance, as each has a higher likelihood of an arc-flash event.
- **Section 350.9:** Energy thresholds for electrical equipment and systems in laboratories have been revised to accurately reflect the data in the Informational Note's resource document, and the capacitive circuit threshold has been deleted to prevent duplication and potential confusion with new Article 360.
- **Article 360:** This new article on the safety-related requirements for capacitors has been added.

How does NFPA 70E address the roles of both the employer and the employee regarding electrical safety?

Electrical safety is a shared responsibility between employers and employees. Compliance with safety regulations is not just an employer responsibility—the electrical safety of employees requires a collaborative effort between workers and management. Employers are required to have an electrical safety program (ESP) for employees to follow. And in turn, the employees are required to put into practice the policies and procedures of the ESP, which includes the training to perform their tasks safely and the use of required tools and safety equipment. *NFPA 70E* is not just about the actions an employer took before an incident's investigation—it is about preventing the worker from being injured. Regardless of the employer's ESP, it is the employee who can have the biggest impact on his or her own electrical safety.

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