



ELECTRICAL SAFETY

Did you know?

Approximately 350 electrical-related fatalities occur each year

Working with electricity can be dangerous. Engineers, electricians, and other professionals work with electricity directly, including working on overhead lines, cable harnesses, and circuit assemblies. Others, such as office workers and sales people, work with electricity indirectly and may also be exposed to electrical hazards.

Electricity has long been recognized as a serious workplace hazard. OSHA's electrical standards are designed to protect employees exposed to dangers such as electric shock, electrocution, fires, and explosions.

<https://www.osha.gov/SLTC/electrical/>

With the wide use of power tools on construction sites, flexible extension cords often are necessary. Because they are exposed, flexible, and unsecured, they are more susceptible to damage than is fixed wiring. Hazards are created when cords, cord connectors, receptacles, and cord- and plug-connected equipment are improperly used and maintained.

<https://www.osha.gov/SLTC/electrical/hazards/flexiblecords.html>



STRAIN RELIEF:

_To reduce hazards, flexible cords must connect to devices and to fittings in ways that prevent tension at joints and terminal screws. Flexible cords are finely stranded for flexibility, so straining a cord can cause the strands of one conductor to loosen from under terminal screws and touch another conductor.

CORD DAMAGE

A flexible cord may be damaged by door or window edges, by staples and fastenings, by abrasion from adjacent materials, or simply by aging. If the electrical conductors become exposed, there is a danger of shocks, burns, or fire.



DURABILITY:

_The OSHA construction standard requires flexible cords to be rated for hard or extra-hard usage. These ratings are derived from the National Electrical Code, and are required to be indelibly marked approximately every foot along the length of the cord. Examples of these codes are: S, ST, SO, and STO for hard service, and SJ, SJO, SJT, and SJTO for junior hard service.

GROUNDING:

Extension cords must be 3-wire type so they may be grounded, and to permit grounding of any tools or equipment connected to them.



WET CONDITIONS:

When a cord connector is wet, electric current can leak to the equipment grounding conductor, and to humans who pick up that connector if they provide a path to ground. Such leakage can occur not just on the face of the connector, but at any wetted portion. Limit exposure of connectors and tools to excessive moisture by using watertight or sealable connectors.

ELECTRICAL FIRES:

Over 25% of all fires are linked to a malfunction of either a piece of electrical equipment, wiring, or both. Electricity is a common source of ignition for major fires. One way to avoid problems with electrical fires is to establish an electrical safety program.

All employees should be thoroughly familiar with the safety procedures for their particular jobs. To maximize his or her own safety, an employee should always use tools and equipment properly. Extension cords must be inspected before use, and those found questionable, removed from service and properly tagged. Damage or inadequate maintenance can cause equipment to deteriorate, resulting in unsafe conditions.

