

## SAFETY MATTERS CONSTRUCTION SERIES



**ELECTRICAL  
INCIDENTS**

### Flexible Extension Cords

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.

#### 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

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



#### 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.



#### Grounding

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

Safety Matters Construction Series information is extracted directly from OSHA safety materials. For additional information consult [www.OSHA.gov](http://www.OSHA.gov)

New York State Insurance Fund  
[www.nysif.com](http://www.nysif.com)

