

# HAZARD ALERT

CPWR  
THE CENTER FOR CONSTRUCTION  
RESEARCH AND TRAINING

# ELECTRICAL SAFETY FOR NON-ELECTRICIANS



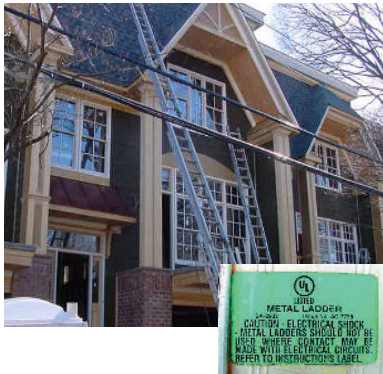
## The risk...

Electrocutions happen in less than a second.

Between 2011 and 2015, 364 construction workers died from electrocutions.\*

**More than 70% of those killed were not electricians.\***

*A painter was electrocuted when a metal ladder he was moving touched an overhead power line.*



## Overhead power lines are the main killers.

You can be killed instantly if you are using the following equipment and it comes in contact with an overhead power line:

- ▶ Aluminum extension pole for paint rollers
- ▶ Backhoes and cranes
- ▶ Concrete pumps
- ▶ Long-handled cement finishing floats
- ▶ Metal ladders
- ▶ Raised dump truck beds
- ▶ Scaffolding

## Electrical hazards are also in your work area and underground:

- ▶ Power tools with bad wiring
- ▶ Buried electrical lines
- ▶ Bad insulation on wiring
- ▶ Cords missing grounding prongs
- ▶ Cords damaged by wear

\*Source: CPWR Third Quarterly Data Report, 2017, <https://bit.ly/2S3F48L>.

## To learn more visit:

- ▶ OSHA's resource for electrical safety <https://bit.ly/2MFS0z9>
- ▶ NIOSH's resource for electrical safety <https://bit.ly/2MGf0QG>

## Find out more about construction hazards.

To receive copies of this Hazard Alert and cards on other topics

call 301-578-8500 or  
email [cpwr-r2p@cpwr.com](mailto:cpwr-r2p@cpwr.com)

**If you think you are in danger:**

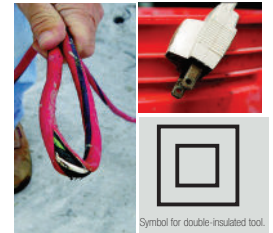
Contact your supervisor. Contact your union. Call OSHA  
**1-800-321-OSHA**

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## Before beginning work...

### 1 Inspect equipment and cords for damage

Cords and tools with exposed, frayed, or spliced wiring, a missing prong, or cracked casing should be removed and tagged "Do Not Use." Use cords that are rated for hard or extra-hard usage (examples of codes found on cords include: S, ST, SO, STO), and use double-insulated tools marked with the symbol to the right.



Symbol for double-insulated tool.

### 2 Ask if GFCIs, tools, and cords are tested

Ground fault circuit interrupters (GFCIs) save lives on job sites. The Occupational Safety and Health Administration (OSHA) requires employers to have GFCIs on all temporary wiring, and to assign a competent person to test the GFCIs and all cords on tools and equipment to make sure they are safe. You should hit the "test" and "reset" buttons on GFCIs to make sure they are working.



Competent person testing extension cord.

### 3 Check with your supervisor

OSHA requires your employer to check to see if there are any live electrical circuits where you will be working – overhead or underground power lines, or circuits in walls where, for example, you might drill. If there are, your employer must tell you and your co-workers where the hazards are and how to work safely.



## Once you are working...

### ▶ Speak up if you're not sure.

Ask your employer if the electrical systems are grounded. Your employer must check all electrical systems, including wiring and switches, to be sure the path to the ground is continuous.

### Asking a question can save a life.

### ▶ Steer clear of water and metal.

If working in wet or damp areas, use only tools or equipment designed and labeled for that use. Use ladders with nonconductive side rails if working near energized electrical equipment.



Testing a GFCI outlet to make sure it was wired correctly.

PHOTO COURTESY OF JERRY RIVERA