



Weekly Safety Meeting

Your Safety Is Our Business®

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Ground Fault Circuit Interrupters (GFCIs)

Although most portable electric tools have an equipment-grounding conductor and many are double insulated, these methods are not foolproof. A grounding wire could break or a cord could become defective. Using a GFCI overcomes these insulation problems.

The GFCI, as it is commonly called, is simply a fast-acting circuit breaker that will cut off the electricity to a power tool within 1/40th of a second if it detects there is a fault with the grounding system. Faults can occur when there is insulation damage to cords, receptacles, connectors, etc. It may be caused by dragging the cords over rough edges, fastening with nails or staples, overheating, or simply by aging. When these things happen, it allows current to leak out of its normal circuit. The GFCI monitors this current and protects the user from electrocution by interrupting the power before it can do any harm.

One disadvantage of this protection is that it is sometimes overly sensitive to moisture and humidity. On rainy or damp days, the GFCI units will occasionally cause what is called “nuisance” tripping. The temptation then is to by-pass the GFCI to get on with our work. This is not only unwise, but a violation of OSHA standards. OSHA requires GFCI protection on all 120-volt, single-phase, 15- and 20-ampere circuits on construction sites that are not part of the permanent wiring of the building or structure.

What a GFCI Can and Cannot do:

It does provide protection against the grounding fault—which is the most common form of electrical shock hazard. A grounding fault occurs when a “hot” wire comes into contact with a grounded enclosure. If you happen to be in contact with the grounded enclosure of an electrical tool when a ground fault occurs, you will be subject to a shock unless a GFCI device is in use and functioning as intended. The GFCI will not protect you from line-to-line contact hazards (i.e., holding two “hot” wires or a hot and a neutral wire in each hand).

Where GFCIs are needed:

GFCIs are required to provide approved ground-fault circuit interrupters for all 120-volt, single phase, 15- and 20-ampere receptacle outlets being used on construction sites that are not a part of the permanent wiring of the building or structure. Since extension cords are not part of the permanent wiring, any electrical tools or equipment plugged into extension cords must be protected by a GFCI device.

Insulation around flexible extension cord conductors can be damaged through hard usage or excessive wear. If the “hot” wire conductor of the extension cord were to come into contact with the grounding wire conductor, a ground fault would occur.

GFCIs should certainly be used in wet environments. When a cord connector is wet, hazardous current leakage can occur to the grounding conductor and to anyone who picks up that connector if he also provides a path to ground.

An alternative method of protection is the Assured Equipment Grounding Program. This method is achieved by establishing a direct ground for the equipment and doing a continuity check of the equipment and cords being used.



Actions you should take for electrical safety: Always make sure the tools and cords you use are in good working condition and inspect them regularly for any visible damage.

Failure in the insulation or grounding protection of your tools or cords could result in ground faults. Use GFCI devices. Take a little extra care so that you will not have a SHOCKING experience.

Testing and Inspection:

The employee who uses the GFCI must test and inspect it prior to use. Testing includes:

- Visual inspection for obvious defects and broken parts;
- Press the reset button, then the test button to be sure that the device trips;
- Verify that there is no voltage at the outlet (use a volt meter, load device or trouble light); and
- Press reset and verify that power is restored.

If the device fails any of the above steps, don't use it.

- Red tag the item. Report the problem to your supervisor.

Always follow the manufacturer's instructions for testing.

Protect yourself from electric shock...use safety equipment!!



Safety Meeting Sign-In Sheet

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Name (print clearly)	Signature	Comments / Safety Concerns / Training Requests