

Ground-fault Circuit Interrupters (GFCI) Assured Equipment Grounding

OAR 437
Division 3/K

Ground-fault Circuit Interrupters

(GFCI)

Assured Equipment Grounding

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Oregon
OSHA

Division 3, Construction, General Requirements

Ground-Fault Circuit Interrupters

OAR 437-003-0404, **Branch Circuits**, requires ground-fault circuit interrupters (GFCIs) on all 125-volt, single-phase, 15-, 20-, and 30-ampere receptacles that are not part of the permanent wiring of a building or structure. If a permanently wired receptacle (not equipped with GFCI protection) is used for temporary electric power in a construction project, GFCI protection must be provided at the user end. Portable plug-in and cord-type GFCIs are probably the most practical devices for construction workers who use cord sets for temporary power when there is no protection at the source.

(Protection is a function or state, not a piece of equipment. If there is effective protection for the worker, the location of the equipment that provides the protection is not important.)

GFCI Protection

GFCIs are life-saving devices that protect people from electrocution. Under normal conditions, electrical current moving through a circuit flows at the same rate (amperage) all along the circuit; amperage flowing away from the electrical source should be the same amperage returning to the source. GFCIs sense imbalances or differences along the electrical circuit and shut it down when needed. For this reason, GFCI can be critical to workers in wet environments. The rule for GFCI does not exempt work with intrinsically safe or double insulated tools.

What Employers Must Do

You must protect employees from electrocution using ground-fault circuit interrupters using one of the following methods: built into the overall circuit, as part of the outlet receptacle, or using protected cord sets or GFCI devices.



Rumor Control

Rumor: Protection must be at the user end of the circuit.

Fact: GFCI protection may be anywhere on the circuit as long as it works effectively to protect the worker. Protection may be for the entire circuit, the outlet receptacle, or the extension cord.

Ground-fault Circuit Interrupters (GFCI) continued

Assured Equipment Grounding

For receptacles with more than 125 volts, single-phase, or more than 30-amp capacity, use GFCI protection **or** have a program that assures equipment is grounded, **OAR 437-003-0404(3)**.

Employers must have a written description of their assured equipment-grounding program at each job site that includes specific procedures. Designate one or more competent persons to run the program. A competent person is someone who is capable of identifying hazards and has authority to promptly correct them. (See 1926.32(f)). Each day inspect all extension cords and equipment (plug connected) for external defects before using them. Conduct periodic tests of all grounding conductors for continuity and test each receptacle or plug to ensure that the grounding conductor is connected to the right terminal.

Required testing:

- Before first use.
- Before first use after repair.
- Before use after any event that could cause damage.
- At least every three months (six months for fixed cords sets and receptacles not exposed to damage)

Record all tests by identifying each cord, receptacle, or piece of equipment and its test date or test interval. Use whatever method you choose for this identification. Keep the test record until a new record replaces it using logs, color coding, or other means. These records must be available on the job site.

Rumor Control

Rumor: Oregon OSHA has a list of approved colors for identifying inspected cords and equipment.

Fact: Color-coding is only one option for compliance and there is no approved color list. Employers are free to design their own system for identifying cords and equipment. The system must be understandable to the users.

Resources

For the full text of Oregon OSHA's electrical rules, refer to **OAR 437, Division 3/K, Electrical**.

Related resource links

- U.S. Consumer Product Safety Commission, www.cpsc.gov
 - *Use a Ground-Fault Circuit Interrupter with Every Power Tool*, CPSC document # 5040
 - *GFCIs Fact Sheet*, CPSC document # 99
- Permits Protect, www.permitsprotect.info
- Oregon State Building Codes Division, www.bcd.oregon.gov

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The Standards and Technical Resources Section of Oregon OSHA produced this fact sheet to highlight our programs, policies, or standards. The information is from the field staff, research by the technical resources staff, and published materials. We urge readers to consult the actual rules as this fact sheet information is not as detailed.