



Assured Grounding Programs and Ground Fault Circuit Interrupters

Temporary power systems are a risk for electric shock. Workers who operate power tools should receive training in the systems which safeguard them from electrical hazards.

Government standards pertaining to electrical grounding are strictly enforced, including OSHA standard 29 CFR 1926.404. These standards require that a project use either Ground Fault Circuit Interrupters (GFCI's) or an Assured Grounding Program. GFCI's effectively prevent short circuits by tripping the entire circuit when a short occurs, eliminating the possibility of electrocution.

Difference between an "Assured Equipment Grounding Program" and GFCI:

An *Assured Equipment Grounding Program* is a scheduled system for testing construction site electrical tools and extension cords to assure their proper grounding, polarity and resistance. A *Ground Fault Circuit Interrupter (GFCI)* is equipment that serves as a circuit breaker if it senses a 5 milliamp or greater difference in current between the hot and neutral sides of the circuit.

Assured Grounding Program Components:

- Have the company written policy on file. Our policy is located (where).
- Have a competent person conduct all tests. Our competent person(s) (is/are): (who).
- Test all electrical equipment for proper grounding.
- Remove any defective equipment from use and tag it to prevent future use.
- Color code all equipment tested to insure complete test result. We use the following colors: (winter), (spring), (summer), (fall).
- A color chart is located (where).

Conditions in which Ground Fault Circuit Interrupters (GFCI's) must be used on a worksite:

GFCI's must be used when electrical tools and extension cords are used in connection with the process of construction or alteration. They must also be utilized when 120-volt, single-phase, 15-20 ampere receptacle outlets are used, for they are not part of the structure's permanent wiring.

Conditions in which GFCI's are not required:

GFCI's are not required when the company has an established implemented Assured Grounding Conductor Program that systematically tests for continuous circuitry on electrical tools that are used on the worksite. GFCI's are also not required when employees are instructed not to use any equipment that does not meet the requirements of the Assured Grounding Program.

Conditions in which electrical tools and extension cords must be tested for grounding and continuity of the circuitry:

Electrical tools and extension cords must be tested once every three months. They must also be tested before they are first used, after any possible damage has taken place and when returned to service following repairs.

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Defects workers should continually look for:

Workers should always look for deformed or missing pins, insulation damage and any indication of possible internal damage. Workers should check daily, before each use, for defects.

Assured Grounding two-color coding system identifies:

The Safety Information Book Assured Equipment Grounding Program tested equipment is identified by use of color coding. The first color (usually colored tape applied to the cord) identifies the quarter in which the equipment was last tested. The second color identifies the month, within the quarter, in which the last test occurred. All old tape must be removed prior to installation of new tape.

The test results shall be coded with the following color coding schemes and test results shall be recorded on a Testing Log Form and retained at the job site by the person in charge and at the Facilities Management in accordance with Electrical Shop procedures.

Assured Equipment Grounding Color Coding Scheme		
Month / Quarter	Quarterly	Monthly
January	White	White
February	White	Yellow
March	White	Blue
April	Green	Green
May	Green	Yellow
June	Green	Blue
July	Red	Red
August	Red	Yellow
September	Red	Blue
October	Orange	Orange
November	Orange	Yellow
December	Orange	Blue

Accepted equipment from Assured Grounding tests:

"Double insulated" tools, which are marked and identifiable as a double insulated tool, usually by a "D in a square," are accepted from Assured Grounding tests. These tools should be inspected by workers before each use for cord damage or case damage, and may also be taped for inclusion in the overall program.

Assured Equipment Grounding Program—Types of records and record keepers:

The color coding system must be maintained as part of the company's written safety program. A log of the items inspected and date of the test must be kept by an authorized person who is competent to recognize electrical hazards.

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Persons responsible for the assured grounding or GFCI program:

Subcontractors on a job may use their own individual program, but general and sub-contractors alike are responsible for having a program in place, preferably coordinated. (Good generals insist on a coordinated program to avoid mishaps and cross color-coding, and to help maintain enforcement. The code colors within a "test period" are often displayed in a visible location by the inspector, for all workers to see.)

Unless the general provides GFCI's for central power and all portable power stations at jobsite locations, subcontractors must provide their own GFCIs or Assured Equipment Grounding Program for all temporary power use.

Conditions in which Assured Grounding or GFCI training should be provided to construction workers:

New employees who use electrical tools should receive training or a review, including:

- The purpose of electrical safety measures
- The color code system in operation
- How to identify electrical hazards
- Procedures for reporting electrical hazards
- GFCI uses and limitations
- How to troubleshoot a GFCI "trip"

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