

**Summary of Comments and Agency Decisions**  
**Title: Division 2 Sub-division S Electrical (GFCI)**  
**Administrative Order Number: 3-2009**  
**Adopted Date: April 6, 2009**  
**Effective Date: April 17, 2009.**

Summary: The Oregon Occupational Safety and Health Administration revised its electrical installation standard for general industry on August 15, 2007. This document clarifies the scope of one provision in the final standard and addresses some questions raised by federal stakeholders on the application of the provision. This also corrects two typographical errors located elsewhere in the final rule.

Summary of the change:  
1910.303 General

Amend Table S-3 by correcting “2.81” and “9.01,” the first entries under the column heads “m” and “ft,” to read “2.8” and “9.0,” respectively.

1910.304 Wiring Design and Protection

Revise the introductory text to 1910.304 (b) (3) (ii) to read as follows:  
*The following requirements apply to temporary wiring installations that are used during construction-like activities, including certain maintenance, remodeling, or repair activities, involving buildings, structures, or equipment.*

Supplementary Information: On February 14, 2007, Federal OSHA published a revision of its electrical installation standard for general industry found in 29 CFR part 1910, subpart S. Oregon OSHA’s final rule went into effect on August 15, 2007. Since the final rule was promulgated, Federal OSHA received some questions from the public regarding one provision, 29 CFR 1910.304 (b) (3) (ii).

In this notice, both Federal OSHA and Oregon OSHA address these questions and make one change to the regulatory text of the provision in order to clarify the intent regarding its scope. This change does not alter the substantive obligations of affected parties. Additionally, we are correcting two typographical errors located in Table S-3 of the final rule.

Clarification:

What is the application of 1910.304(b) (3)(ii)?

As originally published, 1910.304 (b) (3) (ii) read as follows:

*The following requirements apply to temporary wiring installations that are used during maintenance, remodeling, or repair of buildings, structures, or equipment or during similar construction-like activities.*

Some stakeholders raised questions regarding the meaning of this provision. Some of the questions stem from the structure of the text of the provision, which is changing in this notice to better match the intent of the rule. Other questions relate to the meaning of the terms “construction-like” activities and “temporary wiring installations.”

Paragraph (b) (3) (ii) was taken from Section 2-2.4.2 of the 2000 edition of NFPA 70E, which reads, in relevant part, as follows:

*Ground-fault protection for personnel for all temporary wiring installations shall be provided to comply with 2-2.4.2.1 or 2-2.4.2.2. This section shall apply only to temporary wiring installations used to supply temporary power to equipment used by personnel during construction, remodeling, maintenance, repair, or demolition of buildings, structures, equipment or similar activities.*

The final rule and NFPA 70E are intended to apply to temporary wiring installations used during work on buildings, structures, and equipment. Those activities include construction, remodeling, demolition, maintenance, or repair. The intent of the rule may not be readily apparent from the text, because most of 1910 does not apply to construction. Federal OSHA originally removed “construction” from the list of activities specifically mentioned in NFPA 70E and changed “similar activities” to “similar construction-like activities.”

1910.304 (b) (3) (ii)

The following requirements apply to temporary wiring installations that are used during construction-like activities, including remodeling, demolition, and certain maintenance or repair activities, involving buildings, structures, or equipment.

When determining whether the provisions of 1910.304(b) (3) (ii) apply, employers must determine whether a particular activity is considered construction, which by definition includes demolition, remodeling, or repair to buildings, structures, or equipment. Construction activities are covered by the construction standards in 1926. Those activities that are maintenance or repairs to building, structures, or equipment are covered by the general industry standards in 1910.

It should be noted that the GFCI language in the construction standards is essentially the same as the language in subpart S of Division 2 (General Occupational Safety and Health) rules. The construction standard (437-003-0404) applies its GFCI criteria to receptacle outlets that are not part of the permanent wiring, regardless if they are used with a temporary wiring installation. Thus, under the construction standard, a GFCI is required for an extension cord set plugged into a permanent 120-volt, 15- 20-or 30 ampere receptacle outlet.

Oregon rules for GFCI use for both construction and general industry are intended to be similar, if not the same. Simply stated if a worker is doing construction work and uses an extension cord to accomplish the work, GFCI devices or receptacles are required, assuming the electrical system is a nominal 120 volt system using a 15, 20, or 30 amp service. The same applies to general industry employers when an employee repairs or maintains buildings, structures, or equipment using an extension cord for temporary electrical power.

Rather than applying the GFCI requirement to all employees at fixed locations, the provisions of 1910.304(b) (3) (ii) are intended to apply to employees that use extension cords to do maintenance or repair to the company's buildings, structures, or equipment. Federal OSHA clarified "temporary power" as a cord connector on an extension cord. The extension cord is considered a receptacle outlet if the cord set is used for temporary electric power.

Paragraph (b) (3) (ii) applies only to temporary wiring installations. A single extension cord set connected to a permanent receptacle outlet is a temporary wiring installation. Extension cords are typically used to extend the length of the power supply cord on a tool or device to reach a nearby receptacle outlet. Oregon OSHA considers the extension cord set to be a temporary wiring installation.

Some additional activities intended to be covered under subpart S fall into a category of construction-like activities. This category includes "maintenance or repair activities involving buildings, structures, or equipment". In this respect, Oregon OSHA intends the term "construction-like" to apply to activities that involve some of the hazards that are typically found in construction work. The emphasis is on hazards resulting from more severe use or environmental conditions. Examples of such activities include: damage to a cord set (commonly known as an extension cord) from rough use; exposure to wet, damp, or conductive conditions, often encountered when working outside; and frequent reconfiguration and rearrangement of the electric equipment.

Some examples of this type of construction-like activity were given in the federal preamble to the final rule, including clean-up and disaster remediation. To illustrate, if a storm blew over a tree on a factory's premises and temporary wiring was employed to power a saw or other clean-up equipment, such remediation activity would be subject to 1910.304(b)(3)(ii).

Another example: employees are engaged in a minor building repair using an extension cord. The conditions are damp or an electric cord set is being used and is subjected to rough use or abuse.

Maintenance activities, such as floor polishing and vacuuming and drilling holes to hang pictures on walls are some common examples of activities that do not involve electrical hazards similar to those found in construction are not "construction-like" and therefore are not subject to 1910.304(b)(3)(ii).

Some activities that are large in scale, complex, or require significant time, materials, and tools to complete could be considered actual construction work instead of construction-like. As such, these activities would be subject to the construction standards instead of subpart S. To illustrate, the stripping and repainting of a bridge would not be subject to subpart S, because it would be considered construction.

One additional question regarding the GFCI requirement was, “does the standard recognize all forms of ground-fault protection devices or only GFCI approved by nationally recognized testing laboratories (NRTL)?”

The standard requires GFCI for personnel protection in 1910.304 (b) (3) (ii) (A). As electric equipment, these GFCIs must be NRTL approved. These devices have trip levels of approximately 5 milliamperes and trip in as little as 0.025 seconds. Devices such as ground-fault protection for equipment, earth-leakage detectors, and similar equipment are not acceptable substitutes. These devices, which may also be NRTL approved, interrupt the circuit at higher trip levels and, in some cases, do not function to trip the circuit automatically.