



Oregon

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Building Codes Division Statewide Interpretation

PROGRAM: Electrical Program
SUBJECT: Grounding Electrodes
SOURCE: ABC Electric
REFERENCE: 2005 Oregon Electrical Specialty Code
DATE OF ISSUE: Re-Issue April 1, 2005
PREPARED BY: John Powell
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QUESTION: My company performs service changes and upgrades in older homes. Generally, the grounding electrode conductor is attached to an existing underground water line. Is it required to use the underground water line as the grounding electrode even though we are not certain of the integrity of the water line as an electrode?

ANALYSIS:

250.50 of the 2005 NEC provides the following: If available on the premises at each building or structure served, each item in 250.52(A)(1) through (A)(6) shall be bonded together to form the grounding electrode system. Where none of these electrodes are available, one or more of the electrodes specified in 250.52(A)(4) through (A)(7) shall be installed and used. 250.52(A)(1) provides a metal underground water pipe in direct contact with the earth for 10 ft or more and electrically continuous (or made electrically continuous by bonding around insulating joints or insulating pipe) can be used as a grounding electrode.

DETERMINATION:

The 2005 NEC is a guide for installations in new construction. In existing construction, the NEC provides guidance and code requirements for those elements that can be verified. Unless the metal underground water line is exposed for a minimum of 10 ft and verified as a grounding electrode it shall **not** be used as the grounding electrode and other electrodes allowed under 250.52 shall be used. The exposed interior metal water pipe shall be bonded as required by 250.104(A). If the metal underground water line is verified to be suitable as a grounding electrode an additional electrode shall be required per 250.53(D)(2).