ARTICLE

250 GROUNDING AND BONDING

Introduction to Article 250—Grounding and Bonding

No other article can match this one for misapplication, violation, and misinterpretation. The terminology used in Article 250 has been a source of much confusion but has been improved during the last few *NEC* revisions. It is very important for you to understand the difference between grounding and bonding in order to correctly apply the provisions of this article. Pay careful attention to the definitions of important terms located in Article 100 that apply to grounding and bonding. Article 250 covers the grounding requirements for providing a path to the Earth to reduce overvoltage from lightning strikes, and the bonding requirements that establish a low-impedance fault current path back to the source of the electrical supply to facilitate the operation of overcurrent protective devices in the event of a ground fault.

This article is arranged in a logical manner as illustrated in Figure 250.1 in the *NEC*. It may be a good idea for you to just read through the entire article first to get a big picture overview. Then, study Article 250 closely so you understand the details and remember to check Article 100 for the definitions of terms that may be new to you. The illustrations that accompany the text in this textbook will help you better understand the key points.

250.119 Identification of Equipment Grounding Conductors

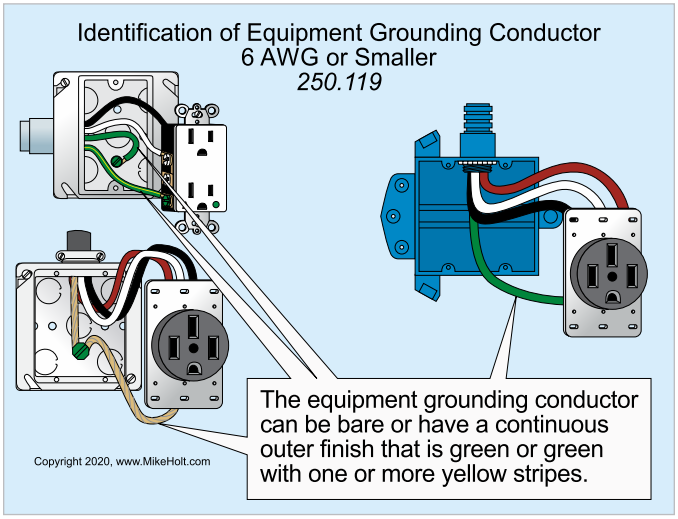
Unless required to be insulated in this *Code*, equipment grounding conductors can be bare or covered.

Insulated equipment grounding conductors 6 AWG and smaller must have a continuous outer finish that is either green or green with one or more yellow stripes. ▸Figure 250–222

Conductors with insulation that is green, or green with one or more yellow stripes, are not permitted to be used for a phase or neutral conductor.

Author's Comment:

- The *NEC* neither requires nor prohibits the use of the color green for the identification of grounding electrode conductors. Figure 250–223



▸Figure 250–222

(A) Conductors 4 AWG and Larger.

(1) Identified Where Accessible. Insulated equipment grounding conductors 4 AWG and larger can be reidentified at the time of installation where the conductor is accessible. ▸Figure 250–224

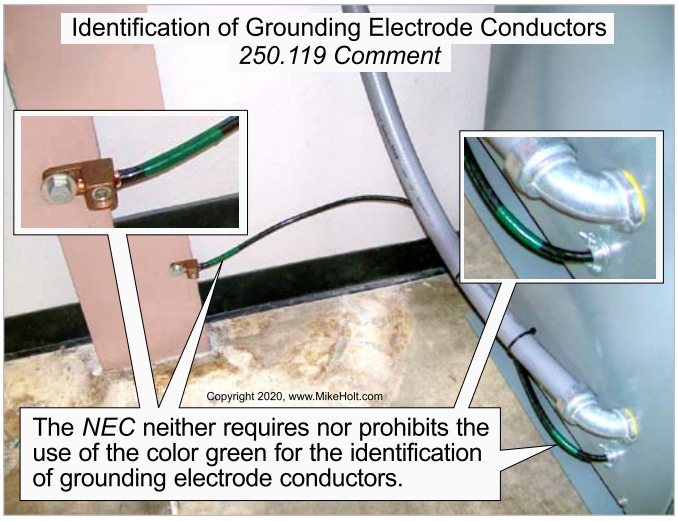


Figure 250–223

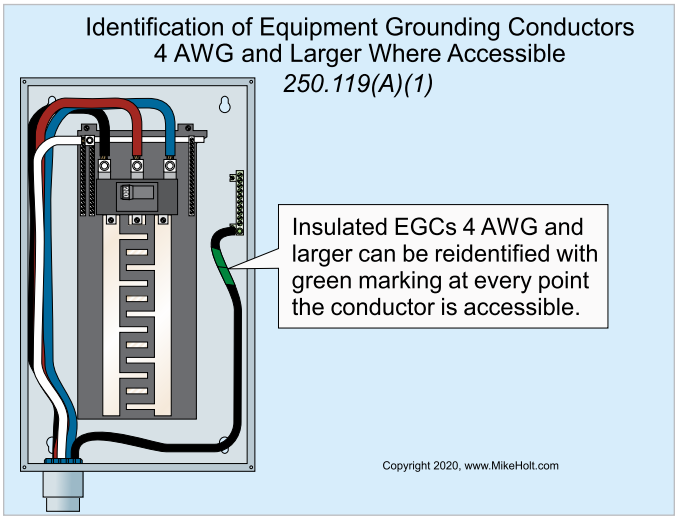


Figure 250–224

(2) Identification Methods. Identification must encircle the conductor and be accomplished by: Figure 250–225

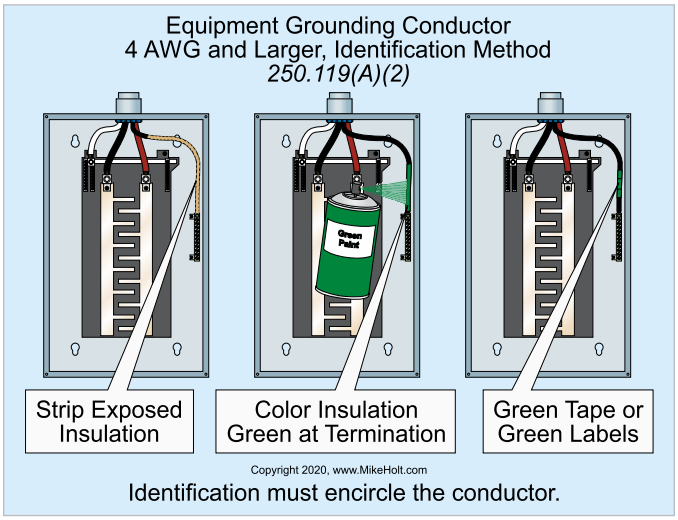


Figure 250–225

a. Removing the conductor insulation

b. Coloring the insulation green at termination

c. Marking the insulation at termination with green tape or green adhesive labels

(B) Multiconductor Cable.

One or more insulated conductors in a multiconductor cable, at the time of installation, are permitted to be permanently identified as equipment grounding conductors at each end and at every point where the conductors are accessible by one of the following means:

(1) Stripping the insulation from the entire exposed length.

(2) Coloring the exposed insulation green.

(3) Marking the exposed insulation with green tape or green adhesive labels. Identification must encircle the conductor.