

ARTICLE 300

GENERAL REQUIREMENTS FOR WIRING METHODS AND MATERIALS

Introduction to Article 300—General Requirements for Wiring Methods and Materials

Article 300 contains the general requirements for all wiring methods included in the *NEC*. However, it does not apply to twisted-pair cable and coaxial cable (which are covered in Chapters 7 and 8) unless Article 300 is specifically referenced.

This article is primarily concerned with how to install, route, splice, protect, and secure conductors and raceways. How well you understand and apply the requirements of Article 300 will usually be evident in the finished work. Many of its requirements will affect the appearance, longevity, and even the safety of the installation. Imagine your surprise if you are shoveling some soil onto a plant in the garden and your shovel hits an electrical service cable! After studying and learning the rules in this article, you will immediately realize that the burial depth requirements of 300.5 were possibly overlooked or ignored. Even worse, they might not even have been known at the time of installation.

A good understanding of this article will start you on the path to correctly and safely installing the wiring methods included in Chapter 3. Be sure to carefully consider the accompanying illustrations and refer to the definitions in Article 100 as needed.

300.21 Spread of Fire or Products of Combustion

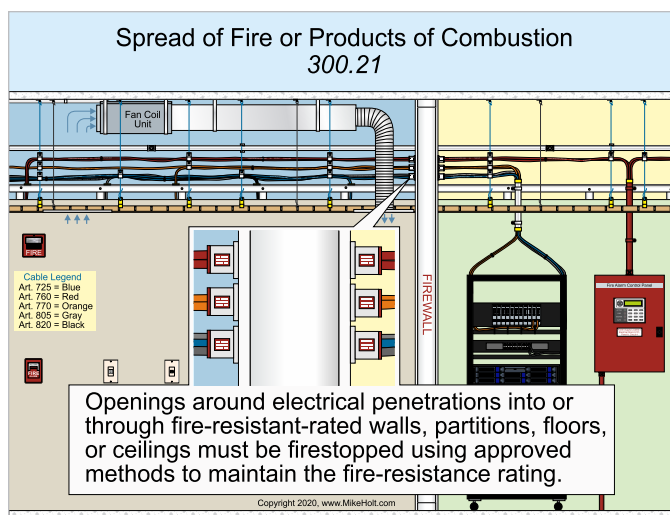


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Electrical circuits and equipment must be installed in such a way that the spread of fire or products of combustion will not be substantially increased. Openings around electrical penetrations into or through fire-resistant-rated walls, partitions, floors, or ceilings must be firestopped using approved methods to maintain the fire-resistance rating. ▶ **Figure 300-86**

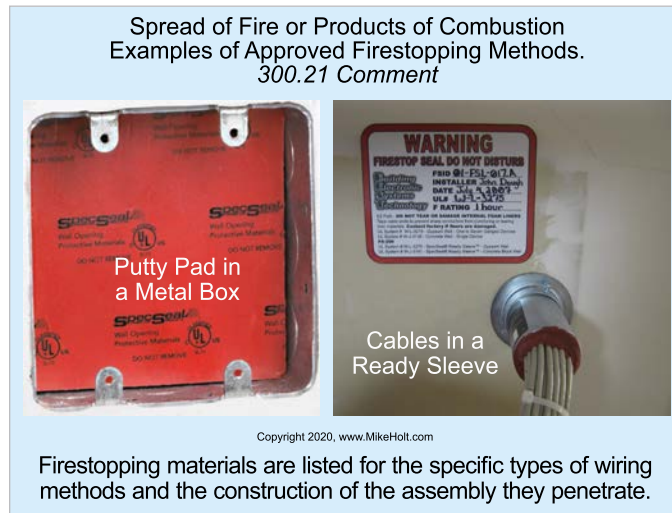
Author's Comment:

- ▶ Fire-stopping materials are listed for the specific types of wiring methods and the construction of the assembly they penetrate. ▶ **Figure 300-87**

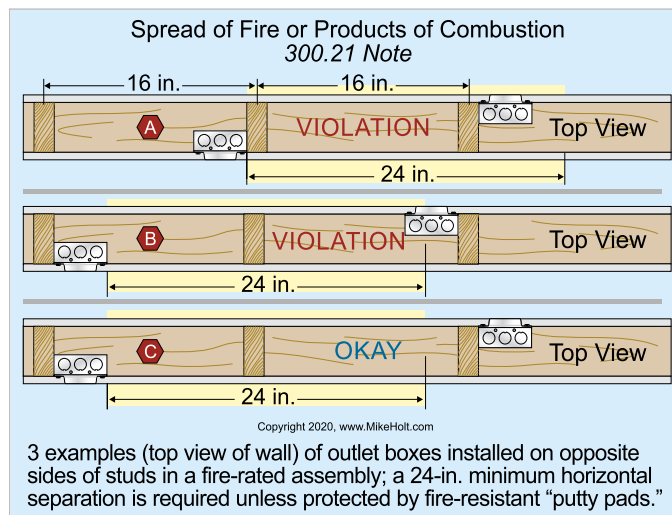


▶ **Figure 300-86**

Note: Directories of electrical construction materials published by recognized testing laboratories contain listing and installation restrictions necessary to maintain the fire-resistive rating of assemblies. Building codes also have restrictions on penetrations on opposite sides of a fire-resistance rated wall. Outlet boxes must have a horizontal separation of not less than 24 in. when installed in a fire-rated assembly, unless an outlet box is listed for closer spacing or protected by fire-resistant “putty pads” in accordance with manufacturer’s instructions. ▶Figure 300-88 and ▶Figure 300-89



▶Figure 300-87



▶Figure 300-88



▶Figure 300-89

Author’s Comment:

- ▶ Boxes installed in fire-resistance rated assemblies must be listed for the purpose. If steel boxes are used, they must be secured to the framing member; cut-in type boxes are not permitted (UL White Book, *Guide Information for Electrical Equipment*).
- ▶ This requirement also applies to control, signaling, and communications cables or raceways.
 - ▶ Communications and Coaxial Cable, 800.26
 - ▶ Control and Signaling, 725.3(B)
 - ▶ Fire Alarms, 760.3(A)
 - ▶ Optical Fiber, 770.26
 - ▶ Sound Systems, 640.3(A)