

ELECTRICAL INSPECTION BULLETIN

B-10-400

Equipment Bonding of Raceways and Outlet Boxes for Communication Systems

(Effective 03/01/2007)



A need for clarification has arisen as to what are acceptable wiring methods for bonding communication system raceways and outlet boxes. The definition of a communication system is found in Section "0" of the Canadian Electrical Code, Part 1. It notes that such a system include data, telephone, telegraph, intercommunications paging systems, wired music, and other similar systems.

There are several rules within the Canadian Electrical Code, Part 1 that require enclosures and raceways to be bonded to ground. In particular Rules 10-304, 10-400, 10-402, and 60-302.

The primary question that has been asked is; are short sections of metal raceways used for sleeving or protection, plaster rings and outlet boxes required to be bonded, and if so can the structural steel or metal studs that the boxes or raceways are in contact with be used as a bonding medium?

The following provides direction and outlines the requirements for bonding such systems.

Metal Raceways

Sections of metal raceways used for mechanical protection or sleeving of communication cables shall be bonded to ground. The minimum size bonding conductor shall be # 12 AWG bare or green insulated conductor. The bonding conductor can either be attached to the end of the conduit to a bonding bushing, or the bonding conductor may terminate in the outlet box provided the raceway is in good mechanical contact with the outlet box.

Outlet Boxes and Similar Enclosures

Outlet boxes and similar enclosures shall be required to be bonded to ground. This can be accomplished by means of a minimum # 12 AWG bare or green insulated bonding conductor. The bonding conductor may terminate at the outlet box and extend directly back to where the communication circuits arise which shall be connected to ground, or it may connect to a power outlet box or similar enclosures provided the enclosures are bonded to ground. (See figures 1, 2, & 3)

NOTE: Plaster rings and plates are not required to be bonded to ground.

General

In residential dwelling units communication outlet boxes are not required to be bonded to ground provided the outlet box is mounted on a non conductive surface such as a wooded stud. If box is mounted on a conductive surface such as a metal stud, the box must be bonded to ground as noted above. (See Figure 2)

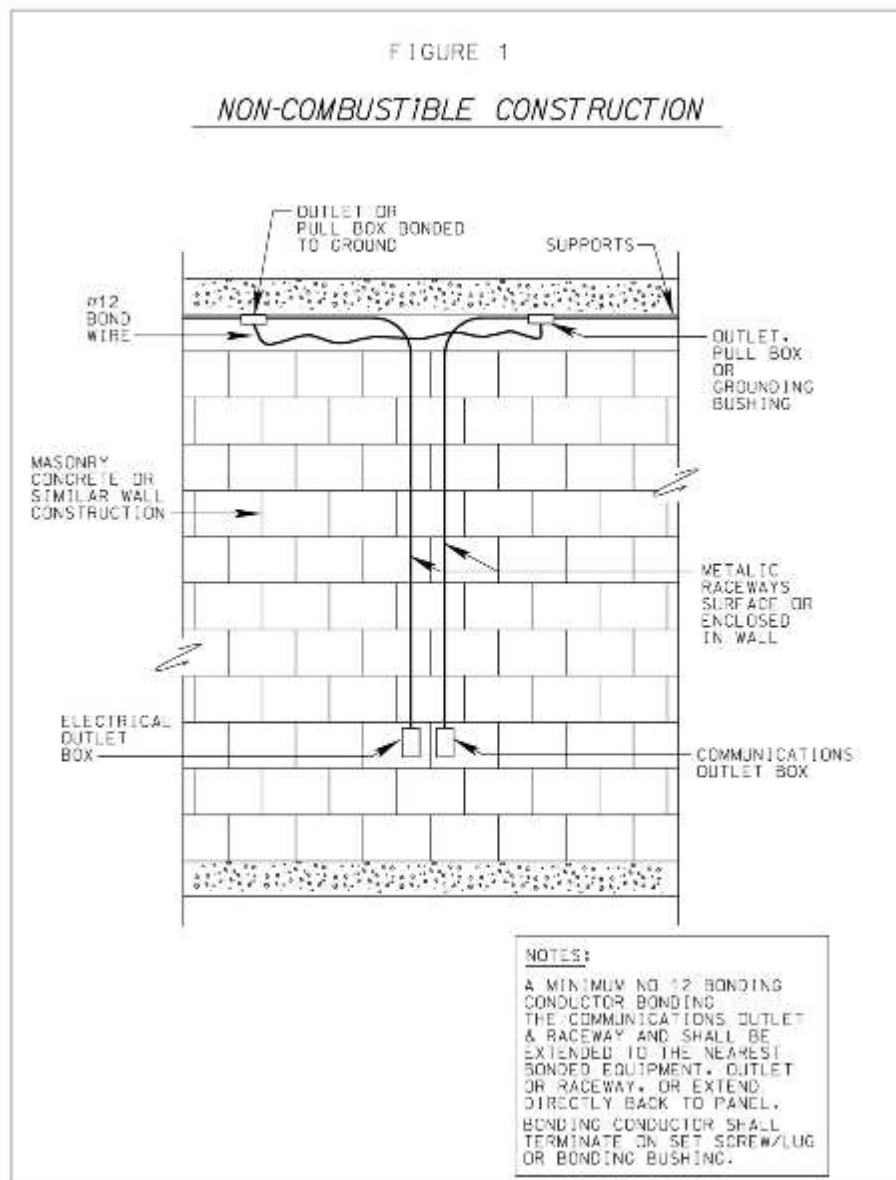
In no case shall the building structure or metal studs be used as a medium for bonding raceways or enclosures. Bonding of communication equipment located in Health Care Facilities shall conform to the requirements outlined in Section 24 of the Canadian Electrical Code, Part 1.

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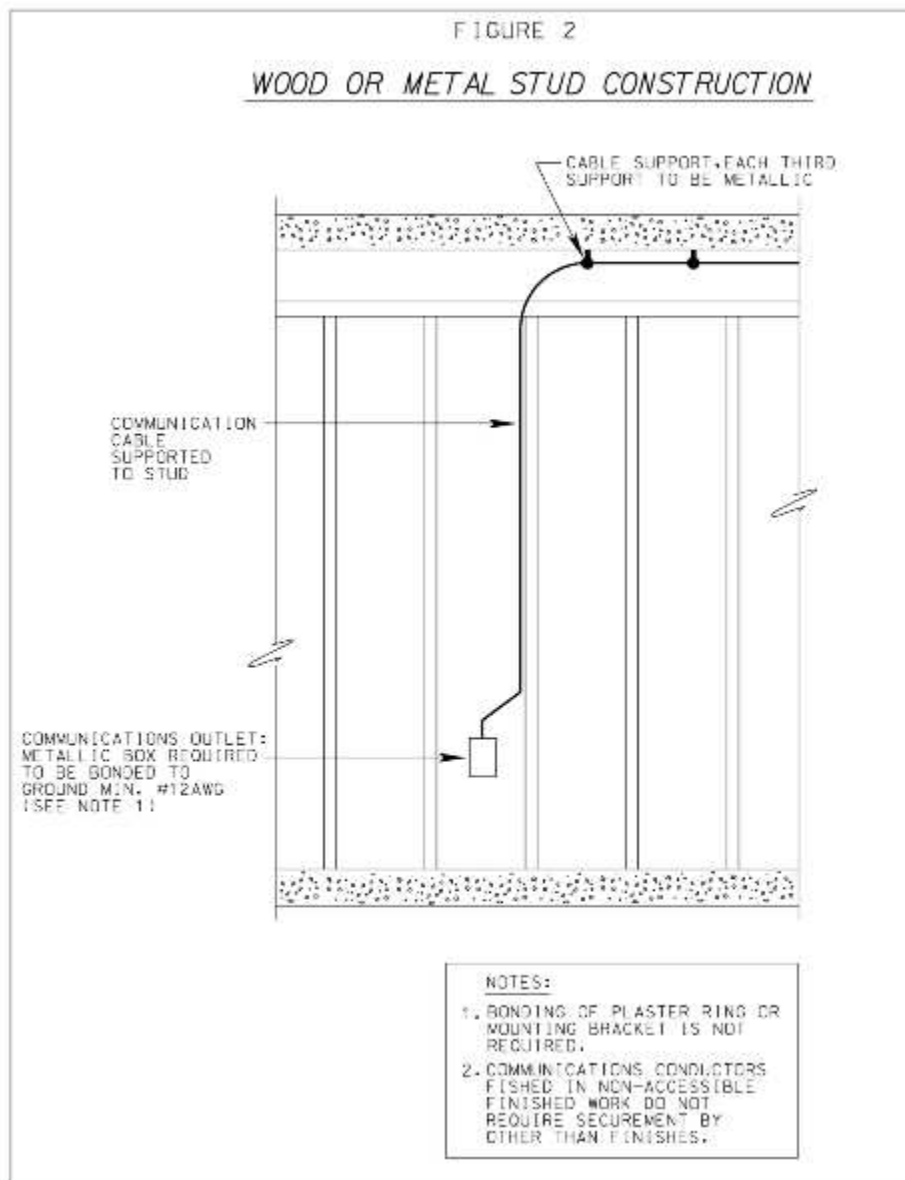


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