
BULLETIN 2000-046-EL

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GROUNDING OF CELLULAR COMMUNICATION EQUIPMENT INSTALLED ON BUILDING ROOFS

This bulletin clarifies requirements for the installation of bonding and grounding conductors for cellular communication equipment located on building roofs.

Background

Communication equipment located on the top of tall buildings attracts lightning seeking the easiest path to the ground. Where the air terminals of such equipment are intended to provide lightning protection for buildings, their installation must conform to Standard CAN/CSA-B72 (see City of Vancouver Bulletin 2000-040-EL and contractor's form for the installation of a lightning protection system).

However, there are numerous locations where receiving/transmitting structures and air terminals of cellular and similar communication and community antenna distribution systems are not intended to be used as means of lightning protection for the buildings on which they are installed. In such cases, bonding and grounding of communication equipment installed on roof tops shall comply with all applicable rules of the CEC, Part I and with the following requirements:

Grounding Requirements

1. All non-current-carrying metal parts of communication equipment and structures located on the top of a building shall be connected to grounding conductors not less than No. 2/0 AWG bare or insulated copper.
2. An isolated down grounding conductor not less than No. 2/0 AWG bare or insulated copper shall run directly from the top of the building to the main ground bus of the building's electrical service equipment or via an isolated ground reference bar of the communication system.
3. Where the insulated grounding conductor as described in Item (2) above is installed inside the building without a totally enclosed noncombustible raceway, insulation of the conductor must be marked "FT4" in conformance with flame spread requirements for wiring and cables in noncombustible buildings.
4. If the grounding conductor for the cellular communication equipment is connected to a separate grounding electrode, then the electrode for the communication equipment must be spaced from and interconnected with the grounding electrode of the building electrical system in accordance with the requirements of Rule 10-702 of the CEC, Part I.

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