Δ *TABLE 810.52 Size of Outdoor Antenna Conductors*

Material	Minimum Size of Conductors (AWG) If Maximum Open Span Length Is	
	Less Than 45 m (150 ft)	Over 45 m (150 ft)
Hard-drawn copper	14	10
Copper-clad steel, bronze, or other high-strength material	14	12

810.53 Size of Lead-in Conductors. Lead-in conductors for transmitting stations shall, for various maximum span lengths, be of a size at least as great as that of conductors for antennas as specified in 810.52.

810.54 Clearance on Building. Antenna conductors for transmitting stations, attached to buildings, shall be firmly mounted at least 75 mm (3 in.) clear of the surface of the building on nonabsorbent insulating supports, such as treated pins or brackets equipped with insulators having not less than 75-mm (3-in.) creepage and airgap distances. Lead-in conductors attached to buildings shall also comply with these requirements.

Exception: If the lead-in conductors are enclosed in a continuous metal shield that is grounded with a conductor in accordance with 810.58, they shall not be required to comply with these requirements. If grounded, the metal shield shall also be permitted to be used as a conductor.

The term *creepage distance*, as defined in NFPA 791, *Recommended Practice and Procedures for Unlabeled Electrical Equipment Evaluation*, is the shortest distance along the surface of the insulating material between two conductive parts. Creepage distance is measured from the conductor across the face of the supporting insulator to the building surface. Airgap distance is measured from the conductor (at its closest point) across the air space (not necessarily in a straight line) to the surface of the building.

810.55 Entrance to Building. Except where protected with a continuous metallic shield that is grounded with a conductor in accordance with 810.58, lead-in conductors for transmitting stations shall enter buildings by one of the following methods:

(1) Through a rigid, noncombustible, nonabsorbent insulating tube or bushing
(2) Through an opening provided for the purpose in which the entrance conductors are firmly secured so as to provide a clearance of at least 50 mm (2 in.)
(3) Through a drilled window pane

810.56 Protection Against Accidental Contact. Lead-in conductors to radio transmitters shall be located or installed so as to make accidental contact with them difficult.

Δ **810.57 Antenna Discharge Units — Transmitting Stations.** Each lead-in conductor for outdoor antennas shall be provided with an antenna discharge unit or other suitable means that drain static charges from the antenna system.

Exception No. 1: If the lead-in conductor is protected by a continuous metal shield that is grounded with a conductor in accordance with 810.58, an antenna discharge unit or other suitable means shall not be required for the lead-in conductor.

Exception No. 2: If the antenna is grounded or bonded with a conductor in accordance with 810.58, an antenna discharge unit or other suitable means shall not be required.

If an antenna discharge unit is not installed at a transmitting station, protection against lightning can be provided by a switch that connects the lead-in conductors to ground during the times the station is not in operation.

810.58 Bonding Conductors and Grounding Electrode Conductors — Amateur and Citizen Band Transmitting and Receiving Stations. Bonding conductors and grounding electrode conductors shall comply with 810.58(A) through 810.58(C).

(A) Other Sections. All bonding conductors and grounding electrode conductors for amateur and citizen band transmitting and receiving stations shall comply with 810.21(A) through 810.21(C).

(B) Size of Protective Bonding Conductor or Grounding Electrode Conductor. The protective bonding conductor or grounding electrode conductor for transmitting stations shall be as large as the lead-in but not smaller than 10 AWG copper, bronze, or copper-clad steel.

(C) Size of Operating Bonding Conductor or Grounding Electrode Conductor. The operating bonding conductor or grounding electrode conductor for transmitting stations shall not be less than 14 AWG copper or its equivalent.

Part IV. Interior Installation — Transmitting Stations

Δ **810.70 Separation from Other Conductors.** All conductors inside the building shall be separated at least 100 mm (4 in.) from the conductors of any electric light, power, or signaling circuit unless one of the following conditions applies:

(1) The conductors of a permanent audio system are installed in compliance with Parts I and II of Article 640.
(2) The conductors of portable and temporary audio systems are installed in compliance with Parts I and III of Article 640.
(3) The conductors are separated from such other conductors by a continuous and firmly fixed nonconductor.