

(B) Protection. Nonheating power supply leads shall be enclosed in a rigid conduit, intermediate metal conduit, electrical metallic tubing, or other approved means.

426.24 Electrical Connection.

(A) Heating Element Connections. Electrical connections, other than factory connections of heating elements to nonheating elements embedded in concrete, masonry, or asphalt or on exposed surfaces, shall be made with insulated connectors identified for the use.

(B) Circuit Connections. Splices and terminations at the end of the nonheating leads, other than the heating element end, shall be installed in a box or fitting in accordance with 110.14 and 300.15.

426.25 Marking. Each factory-assembled heating unit shall be legibly marked within 75 mm (3 in.) of each end of the nonheating leads with the permanent identification symbol, catalog number, and ratings in volts and watts or in volts and amperes.

426.26 Corrosion Protection. Ferrous and nonferrous metal raceways, cable armor, cable sheaths, boxes, fittings, supports, and support hardware shall be permitted to be installed in concrete or in direct contact with the earth, or in areas subject to severe corrosive influences, where made of material suitable for the condition, or where provided with corrosion protection identified as suitable for the condition.

426.27 Grounding Braid or Sheath. Grounding means, such as copper braid, metal sheath, or other approved means, shall be provided as part of the heated section of the cable, panel, or unit.

Δ 426.28 Ground-Fault Protection. Ground-fault protection shall be provided for fixed outdoor electric deicing and snow-melting equipment. The trip level of ground-fault protection shall be as specified by the manufacturer.

Rather than protecting the entire branch circuit, the ground-fault protection requirement is focused on protecting just the equipment itself. The manufacturer and the user have an option of providing both circuit and equipment protection or just the required equipment protection. This required protection can be accomplished by the use of circuit breakers equipped with equipment ground-fault protection or an integral device supplied as part of the deicing or snow-melting equipment that is sensitive to leakage currents of 6 milliamperes to 50 milliamperes. These protection devices, if applied properly, will substantially reduce the risk of a fire being started by low-level electrical arcing.

Note that the required equipment protection is not the same as a GFCI used for personal protection that trips at 5 milliamperes (± 1 milliamperes).

Part IV. Impedance Heating

426.30 Personnel Protection. Exposed elements of impedance heating systems shall be physically guarded, isolated, or thermally

insulated with a weatherproof jacket to protect against contact by personnel in the area.

426.31 Isolation Transformer. An isolation transformer with a grounded shield between the primary and secondary windings shall be used to isolate the distribution system from the heating system.

426.32 Voltage Limitations. The secondary winding of the isolation transformer connected to the impedance heating elements shall not have an output voltage greater than 30 volts ac.

426.33 Induced Currents. All current-carrying components shall be installed in accordance with 300.20.

Part V. Skin-Effect Heating

426.40 Conductor Ampacity. The current through the electrically insulated conductor inside the ferromagnetic envelope shall be permitted to exceed the ampacity values shown in Table 310.16, provided it is identified as suitable for this use.

426.41 Pull Boxes. Where pull boxes are used, they shall be accessible without excavation by location in suitable vaults or above grade. Outdoor pull boxes shall be of watertight construction.

426.42 Single Conductor in Enclosure. The provisions of 300.20 shall not apply to the installation of a single conductor in a ferromagnetic envelope (metal enclosure).

426.43 Corrosion Protection. Ferromagnetic envelopes, ferrous or nonferrous metal raceways, boxes, fittings, supports, and support hardware shall be permitted to be installed in concrete or in direct contact with the earth, or in areas subjected to severe corrosive influences, where made of material suitable for the condition, or where provided with corrosion protection identified as suitable for the condition. Corrosion protection shall maintain the original wall thickness of the ferromagnetic envelope.

426.44 Equipment Grounding Conductor. The ferromagnetic envelope shall be connected to an equipment grounding conductor at both ends; and, in addition, it shall be permitted to be connected to an equipment grounding conductor at intermediate points as required by its design.

Section 250.30 shall not apply to the installation of skin-effect heating systems.

Part VI. Control and Protection

426.50 Disconnecting Means.

(A) Disconnection. All fixed outdoor deicing and snow-melting equipment shall be provided with a means for simultaneous