Snow Melting Electric Heat Tracing

General Specification

1.0 General

Furnish and install a complete CSA approved system for the snow melting of outdoor concrete or asphalt surfaces, including heaters, components, controls and associated accessories. The heat tracing system shall be in accordance with IEEE Standard 515.1-1995.

2.0 Products

2.1 The heating cable shall be a series resistance, mineral insulated cable with either one or two solid conductors, magnesium oxide dielectric, an Alloy 825 outer sheath and a standard 7-foot cold lead. Heating cable shall be factory fabricated.

2.2 The heating cable shall operate at ____ volts. (480, 277, 240, 208, 120) Surge suppression shall be provided for systems operating at voltages above 240VAC.

2.3 Acceptable products Mineral Insulated Cable as supplied by Serge Baril Heat Tracing Systems.

2.4 The heat tracing cable shall be warranted against manufacturing defects for a period of 10 years from date of shipment.

3.0 System Performance

3.1 Heat requirements shall be determined from recommendations in the 1999 ASHRAE Handbook and/or IEEE Standard 515.1-1995. Heater design and selection shall be based on the desired heat load and in accordance with the manufacturers published specifications and guidelines.

3.2 System power output shall conform to ASHRAE/IEEE 515.1-1995 recommendations under steady-state conditions. Short-term inrush values are not acceptable.

3.3 The system shall provide ____ watts / ft^2 at ____ volts.

4.0 Control Options (select one)

4.1 Slab Sensing Control shall consist of a 25-325ºF adjustable bulb and capillary thermostat housed in a NEMA 4X enclosure with the stainless steel sensing bulb located in the paving material. SBA TL-4X325 / Nelson TH4X325 or approved equal.

4.2 Ambient Sensing Control shall consist of a 15-140ºF adjustable bulb and capillary thermostat housed in a NEMA 4X enclosure with the stainless steel sensing bulb located in ambient air. SBA TE-4X140 / Nelson TA4X140 or approved equal.

4.3 Automatic Snow Sensing Control shall consist of a snow detector that senses both temperature and the presence of moisture. Model SMAS-1 Aerial Snow Sensor with optional model SMPS-1 Pavement Snow Sensor in conjunction with model SMMC-3 Automatic Snow Controller.

5.0 Manufacturer

4.1 Manufacturer's Quality Assurance Program shall be certified to the ISO 9001 Standard.

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6.0 Installation

6.1 Heater installation and electrical design shall conform to the manufacturer's published specifications and guidelines.
6.2 All electrical heat tracing components shall be supplied by the same manufacturer and approved for the application by a certifying agency.
6.3 Electrical connections shall be completed by a licensed electrician in conformance to the National Electrical Code.

7.0 Testing

7.1 Insulation resistance tests should be performed at the following points of the installation process:
  a. Upon receipt of the heating cable
  b. After installation before the pouring operation begins
  c. During and immediately after pouring operation is complete
7.2 The heating cable should be tested with at least a 500VDC megger. Do not use a megger with an excess of 2500VDC.
7.3 Minimum acceptable readings should be 20 megohms per circuit, regardless of length.
7.4 Test documentation shall be maintained of installation and start-up values and retained by responsible personnel to assistance in system maintenance.

8.0 Approvals

8.1 CSA approved for De-Icing and Snow-Melting Equipment.
8.2 IEEE Standard 515.1-1995.