

Roof, Gutter & Drain De-icing Specification

1.0 General

Furnish and install a complete CSA approved system for the roof, gutter and drains de-icing, including heaters, components, controls and associated accessories. The heat tracing system shall be in accordance with IEEE Standard 515.1.

2.0 Products

- 2.1 The heating cable shall be a self-regulating heating cable with a polyolefin or fluoropolymer outer jacket, bonded thermoplastic inner jacket and stranded tin plated Copper Conductors. Both 6CCA and 5FPS self-regulating cables are rugged, industrial grade heaters that have a bonded inner jacket for enhanced moisture and dielectric protection. The heating cables will be cut in the field to the desired length.
For the maximum lengths and quantities, consult the "Maximum segment length vs breaker amps" in the latest version of the HT-552 brochure.
- 2.2 The heating cable shall operate at ____ volts. (120, 208, 240, 277).
- 2.3 All heating cable components shall be UL listed, CSA certified for use as part of the system to provide roof and gutter de-icing.
- 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 Heater design and selection shall be based on the desired heat load and in accordance with the manufacturers published specifications and guidelines.
- 3.2 The system shall provide ____ watts / ft at ____ volts.

4.0 Control Options (select one)

- 4.1 Ambient Sensing Control shall consist of a fixed at 40⁰F (4⁰C) thermostat housed in a NEMA 4X enclosure with the sensing bulb located in ambient air. SBA TLE-4X40 or Nelson TF-4X40 approved equal.
- 4.2 Automatic Snow Sensing Control
- 4.2.1 shall consist of an ice detector that senses both temperature and the presence of moisture. Model SMAS-1 Aerial Snow Sensor with optional model SMGS-1 Gutter Sensor in conjunction with model SMMC-3 Automatic Snow Controller.
- 4.2.2 APS-3C or APS-4C automatic snow/ice melting controller with:
- Up to six (6) ambient or moisture sensor inputs.
Integrated groundfault (APS-4C only), adjustable hold-on timer (0 – 10 hours),
integrated high-limit temperature sensor.
Operating Voltages : APS-3C: 120 V, 208 – 240 V, single phase, 24 A;
APS-4C: 277 V single phase Switching Capacity, 40 A.
The APS-3C or APS-4C is a wall mounted controller with a NEMA 3R rated enclosure and can be mounted indoors or outdoors.

5.0 Installation

- 5.1 Heater installation and electrical design shall conform to the manufacturer's published specifications and guidelines. See the latest version of the HT-552 brochure.
- 5.2 All electrical heat tracing components shall be supplied by the same manufacturer and approved for the application by a certifying agency.
- 5.3 Electrical connections shall be completed by a licensed electrician in conformance to the National Electrical Code.

6.0 Testing

- 6.1 Insulation resistance tests should be performed at the following points of the installation process (refer to the most recent HT-213 "INSTALLATION AND MAINTENANCE MANUAL FOR SELF-REGULATING HEATING CABLES") :
 - a. Upon receipt of the heating cable
 - b. During and after installation.
- 6.2 The heating cable should be tested with at least a 500VDC megger. Do not use a megger with an excess of 2500VDC.
- 6.3 Minimum acceptable readings should be 20 megohms per circuit, regardless of length.
- 6.4 Test documentation shall be maintained of installation and start-up values and retained by responsible personnel to assistance in system maintenance.

7.0 Operation

Energize the cable/control upon arrival of cold weather in the fall and de-energize the cable in spring. Ensure power is removed from heating cable in summer.

8.0 Maintenance

Check the cable annually for damage, such as nicks or cuts possible caused by animals or other activity before energizing the heating cable. Check any ground fault protection devices for proper operation.

9.0 Approvals

ACNOR/ CSA approved for Heat tracing cable De-Icing Systems.