# Specification: Raychem® IceStop® Roof and Gutter De-icing System

## 1 General

Furnish and install a complete UL Listed, CSA Certified, and FM Approved system of specified heating cable, components, and controls listed specifically for keeping roof eaves, gutters, and downspouts from being clogged by ice and snow.

## 2 Products

### Heating Cable

The self-regulating heating cable shall consist of two (2) 16 AWG nickel-coated copper bus wires embedded in a self-regulating polymer core that varies its power output to respond to temperature along its length, allowing the cable to be crossed over itself without overheating, to be used with wood, plastic, and asphalt building materials and to be cut-to-length in the field.

The heating cable shall operate on (select 120 or 208-277) volts.

The heating cable shall be IceStop GM-1XT or GM-2XT cable manufactured by Raychem Corporation.

### Components

All heating cable components shall be UL Listed, CSA Certified, or FM Approved for use as part of the system to provide roof and gutter de-icing. Component enclosure shall meet NEMA 4X requirements to prevent water ingress and corrosion.

### Attachment Accessories

The system will be supplied complete with attachment clips for all roof surfaces and valleys, as well as downspout hangers.

## 3 Performance

### Power Output

For sufficient power for roof and gutter de-icing and energy conservation, the self-regulating heating cable shall have a nominal power output of 12 watts per foot in snow and ice and 5 watts per foot in air, per IEEE 515-1997, and a crush resistance of 2000 lb per UL1588-1993.

### Mechanical Toughness

To provide superior abrasion resistance and mechanical impact resistance, the heating-cable outer jacket shall be an abrasion-resistant fluoropolymer. The cable shall have a minimum impact resistance of 10 ft-lb at 0° C installation temperature per IEEE 515-1997, and a crush resistance of 2000 lb per UL1588-1993.

### UV Stability

Cable and components shall be qualified for prolonged exposure to the sun per IEEE 515.1-1995, Section 4.3.2, and UL1588-1993.

### Submersion in Water

The cable and components shall be qualified to withstand continuous submersion in water for 2000 hours per IEEE 515.1-1995, Section 4.3.1.

## 4 Control

### Option 1: Automatic Snow Controller

The system shall be controlled by one or more GIT-1 gutter-mounted sensors along with a CIT aerial-mounted sensor in combination with an APS control panel through an appropriate contactor.

### Option 2: Thermostat

The system shall be controlled by an ambient sensing thermostat (AMC-F5 or AMC-1A) either directly or through and appropriate contactor.

### Option 3: Manual Switch

The system shall be controlled by a manual switch either directly or through an appropriate contactor.

## 5 Electrical

### Contactor

The contactor shall be a three-pole contactor with a rating of 40 or 100 amps per pole in a NEMA-4X enclosure.

### Ground-Fault Circuit Breaker

Per the National Electrical Code, Article 426, the system shall be protected by a 30-mA trip ground-fault circuit breaker.

## 6 System Warranty

The system will have a complete 10-year warranty.

## 7 Execution

### Installation

- The heating cable shall be laid in gutters; shall be suspended in downspouts either as a loop or a single length and held in place by a downspout hanger; and shall be attached to the roof using the appropriate roof clip.
- The heating cable shall be protected from damage and installed according to manufacturer's instructions.

### Tests

After installation, the dielectric jacket's insulation resistance from the conductors to the shield shall be greater than 1000 megohms.





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