

## SECTION / 16855 / 238313

### ELECTRIC ROOF, GUTTER, & DOWNSPOUT DEICING CABLE – by WarmlyYours Radiant Heating

#### **PART 1 GENERAL**

##### 1.1 SECTION INCLUDES

- A. Electric heating cable for deicing / ice dam prevention, on roofs, in gutters, and in downspouts ( roof drains ).
- B. Automatic controls, snow sensors, and relay panels ( for load switching ).
- C. Electric roof deicing cable system components, accessories, and install materials.

##### 1.2 RELATED SECTIONS

- |   |                                  |
|---|----------------------------------|
| A. Section 013300 – Submittal Procedures    | G. Section 073100 – Shingles     |
| B. Section 014100 – Regulatory Requirements | H. Section 075000 - Membrane     |
| C. Section 014300 – Quality Assurance       | I. Section 073200 – Roof Tiles   |
| D. Section 017000 – Execution and Closeout  | J. Section 074100 – Roof Panels  |
| E. Section 070150.81 – Roof Replacement     | K. Section 077123 – Gutter Guard |
| F. Section 070150.91 – Roof Restoration     | L. Section 260620 - Electrical   |

##### 1.3 REFERENCES

- A. National Electrical Code ( NEC )
- B. Canadian Standards Association ( CSA )
- C. Underwriter’s Laboratory ( UL )
- D. Radiant Panel Association ( RPA )
- E. WarmlyYours Roof Deicing Installation Manual

##### 1.4 PERFORMANCE REQUIREMENTS

- A. Self-regulating style heating cable must generate approx. 5 watts per foot, when dry at 50 degrees F, and approx. 9 – 10 watts per foot, when cold and wet. Plug-in style constant watt heaters will not be acceptable for this application.
- B. Self-regulating heating cable shall be two-conductor, so the end of the heating cable does not have to make a homerun back to its start point. The conductive core responds to temperature changes, and becomes more conductive in the cold, thereby increasing its heat output. An outer polyolefin jacket allows the heating cable for use in wet applications. One-conductor cables, or cables without the outer jacket are not acceptable for this application.
- C. Self-regulating heating cable allows the installer to cut the heated section to length, in the field, with no cold zones developing throughout the length applied with power. Cable heaters that do not allow for this “cut-to-length” action by the installer are not acceptable for this application.

##### 1.5 SUBMITTALS

- A. Submit under provisions of Section 013300
- B. Provide General Contractor, Architect, MEP Engineer, and Owner with all the Manufacturer’s product data sheets, warranty, and installation instructions.
- C. Provide General Contractor, Architect, MEP Engineer, and Owner with all relevant Shop Drawings, Samples, Mock-Ups, and Electrical Schematics.

## 1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications & Services:
  - 1. 5 years of experience ( minimum ) with electric heating cable deicing systems.
  - 2. Heating cable, controls, sensors, relays, and related items shall be provided by one supplier.
  - 3. Supplier must provide 24/7 technical install support, and free design assistance.
- B. Installer Qualifications:
  - 1. Must have verifiable experience successfully completing projects of similar size, and /or has been trained or certified by a manufacturer's representative.
  - 2. A licensed electrician shall complete all electrical rough-in, and electrical connections required to complete the system installation.
- C. Pre-Installation Meetings:
  - 1. Coordinate work with other trade representatives ( general, electrical, roofing, and other trade contractors ) to verify areas of responsibility ( scope of work ).
  - 2. Review project timeline and construction deadlines to ensure project will comply with all manufacturer's installation instructions and warranty requirements.

## 1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Store materials protected from exposure to harmful site conditions, and in an area protected from vandalism and theft.

## PART 2 PRODUCTS

### 2.1 MANUFACTURER

- A. WarmlyYours PH: 800-875-5285 FX: 800-408-1100  
590 Telsor Rd, Suite B  
Lake Zurich, IL 60047  
Web: [www.warmlyyours.com](http://www.warmlyyours.com) Email: [epasek@warmlyyours.com](mailto:epasek@warmlyyours.com)
- B. Substitution requests must be approved 15 days prior to bid due date.  
Alternative equipment manufacturer must provide all relevant product data sheets, warranty, installation instructions, shop drawings, samples, and electrical schematics.  
Alternative equipment must meet specified material standards.

### 2.2 ELECTRIC ROOF DEICING HEATING CABLE

- A. The self-regulating heating cable shall have two copper bus wires, 18 AWG, and shall include an irradiated cross-linked conductive polymer core with an inner thermoplastic jacket that is extruded and bonded to the core material. A second inner thermoplastic jacket is extruded over the first inner jacket. A tinned copper braid is woven around this 2<sup>nd</sup> jacket, and provides a continuous ground path throughout the heating cable. A final ( 3<sup>rd</sup> ) outer UV stabilized polyolefin overjacket makes this heating cable acceptable for wet applications ( roof, gutter, & downspout deicing ).
- B. The heating cable shall be 120 VAC or 240 VAC rated ( 240 VAC cable may be operated safely at 208 VAC 1-phase, 240 VAC, or 277 VAC ). Multiple cable heater systems must be wired in parallel by the installer. Cable heaters must not be pre-terminated with cold leads or plugs. Cables heaters must include a 2 year warranty ( minimum ).

## 2.3 CONTROLLER, SENSOR & ACCESSORIES

- A. SCP-120 Automatic controller shall be 120 VAC, NEMA 3R enclosure, and features a manual override heater cycle switch, an adjustable hold-on timer, and adjustable high temp cut-off. Control panel shall also include led indicator lights for, power supply, system activation, and snow detection. Controller may handle up to 6 low voltage snow sensors, and be C-UL Listed. Controller shall also include a 2-conductor low voltage probe type high temp limit sensor ( for sensing ambient air temp only ).
- B. AIR-SS aerial mounted low voltage snow sensor detects moisture and ambient air temperature. To prevent false activation, the sensor will prevent activation until the temperature falls below 38 Degs F, and the sensor head detects moisture / precipitation.
- C. GTR-SS gutter mounted snow / ice sensor may be employed for larger systems. This sensor is typically installed on the bottom of the gutter, and is ideal for activating systems when melt-water runoff is present in the gutter. It is low voltage.
- D. RLY series relay panels shall be used for load switching of the heating cables. The relay panel(s) shall have 120 VAC coils, and shall receive the 120 VAC control signal from the SCP-120 control panel. Each relay pole, shall be capable of handling a maximum of 24 amps.

## **PART 3 EXECUTION**

### 3.1 MANUFACTURER'S INSTRUCTIONS

- A. Comply with manufacturer's product data, including product technical bulletins, installation instructions and design drawings.

### 3.2 EXAMINATION & PREPARATION

- A. Installer shall verify field measurements are as shown on Shop Drawings(s).
- B. Any revisions needed to Shop Drawings, or product provided, must be corrected prior to proceeding with the installation.
- C. Installer shall verify that the required power, is available, in proper location, and ready for use.

### 3.3 INSTALLATION

- A. Complete installation must conform to appropriate manufacturer's installation instructions, National Electrical Code, and appropriate local codes.

### 3.4 FIELD QUALITY CONTROL

- A. Test each heating cable for insulation resistance with a 500 VDC Meg-Ohm Meter. Heater cable should have a minimum insulation resistance of 20 megohms. Record these values on the warranty form provided at the end of the WarmlyYours Installation Manual.
- B. Start-up ( first-time activation ) may proceed immediately after the licensed electrician has every component wired up correctly.
- C. During "Start-Up", amps of each heater should be tested by a licensed electrician.
- D. All testing records should be copied, and provided to the Owner.

End of Section