

EASYHEAT®

Specification Sheet

USA

2 Connecticut South Drive
East Granby CT 06026

Tel 800/537-4732

Fax 574/654-7739

www.easyheat.com

Canada

99 Union Street
Elmira ON N3B 3L7

Tel 519/669-2444

Fax 519/669-6419

Sno*Melter® Mats

Specification for Section 15778

Electric Snow/Ice Melting System

Organized in conformance with 1995 Master Format of Construction Specification Institute.

The Section/Division assignment of these specifications may differ from traditional convention and/or installation trade/discipline. Specifiers shall coordinate in such manner as may best serve the interest of all parties.

SECTION 15778

ELECTRIC SNOW/ICE MELTING SYSTEM

PART 1 GENERAL

- 1.1 Furnish and install automatic snow/ice melting system as shown on the drawings.
- 1.2 System includes
 - A. Electric heat mats
 - B. Snow/ice sensor(s) and associated controls.
 - C. Accessories, such as contactors, junction boxes, splicing materials, etc.
- 1.3 Codes and standards.
 - A. Underwriters laboratories, [Canadian Standards Association]
 - B. National Electrical Code, NFPA-70 (latest edition) – Article 426. [Canadian Electrical Code, Part I, C22.1-940 (latest edition).]
 - C. ASHRAE Handbook 1999 Applications – Chapter 49.
 - D. IEEE Standard 515.1-1995.

Do not request submittals if drawings sufficiently describe the products of this section or if submittals are enumerated in another Section of the Specifications.

- 1.4 Submittals
 - A. Shop Drawings—CAD general arrangement of snow/ice melting mats with tabulation denoting catalog number, physical dimensions, cold lead length and electrical characteristics of all mats.
 - B. Product Data—Data sheets on heat mats, sensor and associated controls and accessory equipment and materials.
 - C. Instructions—Installation and operating instructions.

Coordinate the following requirements with Division 1 and with the responsibility for determining project conditions defined in the Conditions of the Contract.

- 1.5 Project Conditions
 - A. Make field measurements of the snow/ice melting target area.

- B. Determine all pavement finished surface elevations, gradients and crowns to assure proper drainage of melt-off.
- C. Determine the location and extent of all obstructions/interferences (i.e. curbs, drains, manholes, planters, flag poles, etc.).
- D. Determine the locations and extent of all planned pavement expansion and construction joints.
- E. Determine the depth below finished surface of all required reinforcing rod or mesh.

PART 2 PRODUCTS

2.1 Heat Mats

- A. Description: Single copper resistance conductor shall be securely affixed to a substrate of longitudinal polyvinyl chloride carrier strands in a serpentine array, forming a rectangular mat providing a uniform output of [50 (standard)] [40] [60] watts per square foot.
- B. Heat mats shall be designed for operation at [208] [240] [277] [480] volt.
- C. Heat mats shall be factory fabricated to standard widths and in various standard lengths as required by the installation.
- D. Heating cable shall be insulated with extruded 90°C XLPE dielectric with nylon jacket, stranded copper ground braid and an overall jacket of polyvinyl chloride.
- E. Heating cable shall be joined to a cold lead section at both ends by a water-tight factory-made splice. Cold leads shall be stranded copper with polyvinyl chloride insulation, nylon jacket, stranded copper ground braid, overall jacket of polyvinyl chloride and furnished in [20-foot (standard)] [__-foot (5-foot incremental increase)] lengths.
- F. Heat mats shall be constructed and tested to requirements.
- G. Each mat shall be shipped in an individual package with manufacturer's name, catalog number, wattage and supply voltage clearly marked on the outside.
- H. Manufacturer: Easy Heat Inc. [G-Series (standard dimension, output)] [H-Series (custom size, shape power density, etc.)] Sno*Melter.

PART 3 EXECUTION

3.1 Installation

- A. Install heat mats in accordance with manufacturer's instructions.
 1. Unroll mats along a floor or smooth, level surface; avoid twisting or kinking. Do not exert strain on the cold lead splices.
 2. Test each heating conductor for both continuity and insulation resistance to ground in accordance with manufacturer's recommendations.

3. Install mats only after all pavement forming and reinforcing are complete.
4. Do not use metal ties/clips to secure mats in position.
5. Do not route heat mats across pavement expansion or construction joints.
6. Do not overlap mats; maintain uniform spacing of serpentine heating cables on succeeding mats.
7. Maintain uniform minimum depth of heat mats within pavement.
8. Monitor heating cable continuity throughout pavement placement.
9. Heat mats shall not be energized until the concrete has fully cured or the asphalt has cooled to ambient temperature.

- a. Manual system operation for the hold-on period to clear tracked slush and drifted snow.
- b. Manual termination of the hold-on period during time down.
- c. Manual system test operation independent of weather conditions for a fixed one-minute period with a mandatory two-minute cool down time.
4. Control panel shall have individual LEDs to provide indication of power supply, sensor status and heater operation.
5. Control panel shall be capable of providing remote monitor/control via 2-conductor NEC Class 2 wiring.
6. Control panel enclosure shall be suitable for NEMA 1, 2, 3R, 12 and 13 applications and shall incorporate safety barriers to isolate line and low voltage compartments.

PART 4 CONTROLS

4.1 All installed snow/ice melting system branch circuits shall have automatic control.

4.2 Sensors

- A. Snow/ice sensors shall incorporate a microprocessor that, in conjunction with integral ambient air temperature and moisture detectors, will verify presence of moisture at 38°F (3.3°C) and below.

The following requirement is (only) applicable to the SIT-5E Pavement-Mounted Sensor

1. *Sensors controlling snow/ice melting shall function to incrementally ramp pavement temperature to minimize thermal stresses that may contribute to concrete cracking and shall maintain slab temperature at 44°F (6.7°C).*

- B. Sensor design and operation shall effectively eliminate snow/ice bridging phenomenon.
- C. Sensors shall operate at low voltage.
- D. Sensor enclosure shall be non-ferrous metal and shall be constructed to adequately withstand the rigors associated with the intended location.
 1. All electronic components shall be waterproofed with U-L 94-V-0 flame retardant epoxy.
- E. Sensor(s) shall be [CIT-1 for installation in exposed, elevated locations.] [SIT-5E for flush installation in pavement.

4.3 Control Panel

- A. Control panel shall be microprocessor based to provide effective, economical automatic system control.
 1. Control panel shall accommodate up to six snow/ice sensors of various types on the detection loop.
 2. Control panel shall have a user-adjustable timer, providing up to 10 hours of system operation after snowfall ceases for complete melting.
 3. Control panel shall have a manual cycle push-button permitting system operation for the following:
 - a. Manual system operation for the hold-on period to clear tracked slush and drifted snow.
 - b. Manual termination of the hold-on period during time down.
 - c. Manual system test operation independent of weather conditions for a fixed one-minute period with a mandatory two-minute cool down time.

The following requirements are (only) applicable to the APS-3B Control Panel available for either 120V. or 208/240V. ac supply.

7. Control panel shall operate satisfactorily over an ambient temperature range of -40 to 136°F (-40 to 58°C).
8. Control panel shall have a DPDT output relay capable of switching resistive loads up to 24 ampere or directly operating both mechanically and electrically-held remote contactors.

The following requirements are (only) applicable to the APS-4 Control Panel available for either 208/240V. or 480/277V. ac supply.

7. Control panel shall operate satisfactorily over an ambient temperature range of -40 to 140°F (-40 to 60°C).
8. Control panel shall include a 2-pole definite purpose contactor capable of switching heater loads up to 40 ampere.
9. Control panel shall include 30 mA ground-fault equipment protection with companion test switch and LED indicator.
10. Control panel shall be capable of providing networked control of up to ten satellite contactor modules via 2-conductor NEC Class 2 wiring.
- B. Control panel shall be [APS-3B] [APS-4]; supply voltage shall be [120] [208/240] [480/277] volt.
- C. Satellite contactor(s) shall be SC-40; supply voltage shall be [208/240] [480/277] volt.

Disclaimer—
Easy Heat Inc. makes no representation or warranties, either expressed or implied, with respect to the contents of this publication or the products that it describes, and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose. Easy Heat Inc. reserves the right to revise this publication without the obligation to notify any person or organization of such revisions, changes or improvements.