

SECTION 15770 / 16855 / 238313.16

ELECTRIC RADIANT FLOOR HEATING MAT – TEMPZONE by WarmlyYours Radiant Heating

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Electric radiant floor heating mats embedded in latex modified mortar, cement, or self-leveling compound buried beneath tile, stone, or wood floor covering(s).
- B. Digital thermostat with probe type thermistor sensor.
- C. Electric radiant floor heating system components, accessories, and associated installation materials.

1.2 RELATED SECTIONS

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| A. Section 013300 – Submittal Procedures | G. Section 093100 – Thin-Set |
| B. Section 014100 – Regulatory Requirements | H. Section 096000 – Flooring |
| C. Section 014300 – Quality Assurance | I. Section 260620.16 – Electrical |
| D. Section 017000 – Execution and Closeout | J. Section 260620.23 - Electrical |
| E. Section 040513 – Masonry Mortaring | K. Section 262200 – Low Voltage |
| F. Section 061000 – Rough Carpentry | |

1.3 REFERENCES

- A. National Electrical Code (NEC)
- B. Canadian Standards Association (CSA)
- C. Underwriter’s Laboratory (UL)
- D. Tile Council of North America (TCNA)
- E. Radiant Panel Association (RPA)
- F. American National Standards Institute (ANSI)
- G. WarmlyYours TempZone Floor Heating System Installation Manual and Install Video

1.4 PERFORMANCE REQUIREMENTS

- A. Electric floor heating mat must generate 15 watts per square foot. Mat heaters less than 15 watts per square foot, will not be acceptable for this application.
- B. Mat substrate material must be open cell type, allowing adhering mortar through the open mesh to make a direct bond to the sub-floor, facilitating floor preparation. Free-form heating cables void of mat substrate will not be acceptable for this application.
- C. Heating wire must be 3/16” in diameter or smaller, 1 conductor type. Heating wires with larger diameters will not be acceptable for this application.
- D. All heating mats must be standard sizes, and readily available. Custom mat sizes will not be 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. 10 years of experience (minimum) with electric radiant floor heating systems.
 - 2. Floor heating mats, thermostats, sensors, relays, and related items shall be provided by one manufacturer.

3. Must provide 24/7 technical installation 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. Regulatory Requirements and Approvals - Electric Radiant Floor Heating System. Provide a radiant floor heating system that complies with the following requirements:
 1. Heating cables for manufacture in mat form or loose cable form, shall be recognized to UL 758.
 2. Heating mats for installation in cement-based mortar or over wood subfloors shall be listed to UL 1673 and CSA- C22.2 No. 130-03.
- D. Pre-Installation Meetings:
 1. Coordinate work with other trade representatives (general, electrical, flooring, 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 Radiant Heating PH: 800-875-5285 FX: 800-408-1100
2 Corporate Drive, Suite 100
Long Grove, IL 60047
Web: www.warmlyyours.com Email: gjazwinski@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 RADIANT FLOOR HEATING MAT

- A. The TempZone Heating Element consists of a copper alloy resistance wire covered by Teflon insulation. A braided metal surrounds the primary Teflon insulation, and serves as a ground sheath, before a second (final) layer of Teflon insulation, which serves as the outer shell. The Heating Element is sewn in a serpentine pattern to a flexible Fiberglass Mesh with a poly-blend thread. The Fiberglass Mesh is designed to keep the Heating Element evenly spaced (at 2" o.c.) throughout the roll. The two cold lead return wires are factory installed (spliced) at each end of the Heating Roll, and must run back to the power supply along the perimeter of the heated space.
- B. The TempZone Heating Mat shall be 120 VAC or 240 VAC, produce 15 watts per square foot and be UL Listed. Multiple mat systems must be wired in parallel by the installer.
Each TempZone Heating Mat, includes at least 13 Ft of cold lead wire, and comes with a 25 year No-Nonsense warranty.

2.3 THERMOSTAT & ACCESSORIES

- A. TH115 Series SmartStat shall be 7-day Programmable, with a backlit digital display. SmartStats include an in-floor temperature sensor, with 15 ft of extension wire. Thermostat has integral GFCI protection, and has a 15 amp maximum capacity. Two adjustable temperature set-points, allow flexibility while programming the unit. The SmartStat includes a manual override feature. Thermostat shall be dual-voltage (120 VAC / 240 VAC), except when larger floor heating systems need Power Modules to switch the amp load (amps exceed 15 amps).

Systems with Power Modules, require a Master Thermostat that is low voltage (12 V). Warranty is 3 years.

- B. One Circuit Check shall be provided for each mat heater. This device sounds an audible alarm if damage occurs to the Heating Element.
- C. Cork or Cerazorb insulation may be provided to prevent heat losses under the zone from: concrete slab sub-floors, unheated crawl spaces, unheated garages, etc. Cork shall be at least ¼” thick (6mm), and must be tested for thermal resistance in accordance with ASTM C 177-85 and have a minimum R value of .72 (at ¼” thickness). Cerazorb shall be at least 3/16” thick (5mm), and have a minimum R value of 1.5 (at 3/16” thickness). May not be appropriate for commercial or industrial applications.

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. Prepare your subfloor, as per the standard guidelines set forth by the Tile Council of America. Remove any nails, staples, or other sharp objects, that may damage the heating mat.
- D. 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 mat heater for ohms, with a digital ohms meter before and after the installation of the mortar and tile. Record these values on the warranty form provided at the end of the WarmlyYours Installation Manual.
- B. Start-up (first-time activation) must wait for the mortar to be fully cured. This time can range from 3 – 28 days (deferring to the manufacturer of the mortar).
- C. During “Start-Up”, voltage and amps should be tested by a licensed electrician.
- D. All testing records should be copied, and provided to the Owner.

END OF SECTION