

ELECTRIC RADIANT FLOOR HEATING MAT – Environ by WarmlyYours

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Electric radiant floor heating mats, installed beneath carpet or floating 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 | F. Section 096000 – Flooring |
| B. Section 014100 – Regulatory Requirements | G. Section 260620.16 – Electrical |
| C. Section 014300 – Quality Assurance | H. Section 260620.23 - Electrical |
| D. Section 017000 – Execution and Closeout | |
| E. Section 061000 – Rough Carpentry | |

1.3 REFERENCES

- A. National Electrical Code (NEC)
- B. Canadian Standards Association (CSA)
- C. Underwriter’s Laboratory (UL)
- D. Radiant Panel Association (RPA)
- E. American National Standards Institute (ANSI)
- F. Carpet and Rug Institute (CRI)
- G. WarmlyYours Environ Floor Heating System Install Manual

1.4 PERFORMANCE REQUIREMENTS

- A. Electric floor heating mat must generate 12 watts per square foot. Mat heaters less than 12 watts per square foot, will not be acceptable for this application.
- B. Mat substrate shall be two layers of aluminum foil laminate with the heating element wire “sandwiched” in-between. Mat thickness shall be 1/16” wafer-thin. Free-form heating cables void of mat substrate will not be acceptable for this application. Heating cables or mats that must be buried in mortar, will not be acceptable for this application.
- C. All heating mats must be standard sizes, and readily available. Each heating mat must include 30 feet of cold lead extension wire. 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 mats for installation 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 PH: 800-875-5285 FX: 800-408-1100
 590 Telser Rd, Suite B
 Lake Zurich, IL 60047
 Web: www.warmlyyours.com Email: info@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 Environ Heating Element consists of a multi/stranded copper conductor alloy resistance wire covered by PVC insulation. The Heating Element is sandwiched between layers of foil. The foil provides each mat heater with ground. Wire spacing is configured at 2" to 3" on center, providing 12 watts per square foot evenly for the length of the Heating Roll. The 3/conductor cold lead return wire (30 ft length) is factory installed (spliced) at the end of the Heating Roll, and must run back to the power supply (thermostat or power module) along the perimeter of the heated space.
- B. The Environ Heating Mat shall be 120 VAC or 240 VAC, be UL Listed, and be backed by a 5-year No-Nonsense Manufacturer's Warranty for under carpet applications and 10-year No-Nonsense Manufacturer's Warranty for under laminate or floating wood floors. Multiple mat systems must be wired in parallel by the installer.

2.3 THERMOSTAT & ACCESSORIES

- A. Warmlyyours nSpiration Series of Controls include an in-floor temperature sensor, with 15 ft extension wire. Thermostat has integral GFCI protection, and has a 15 amp maximum capacity. Adjustable temperature set-points, allow flexibility while programming the unit. Thermostats include a manual override feature. Thermostat shall be dual-voltage (120VAC / 240VAC). Warranty is 3 years.
- B. Cork or ThermalSheet 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). ThermalSheet shall be at least 6mm (1/4") thick, and have a minimum R/ value of 1.5 (at 1/4" (6mm) 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 Carpet and Rug Institute. 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 carpet or wood. 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 testing.
- 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