

Recommended Specification Electric Radiant Floor Heating

Specifier: Please Select One of The Titles Below:

- SECTION 16855 HEATING CABLES
- SECTION 15773 ELECTRIC HEATING CABLES, MATS, MODULES, PANELS, AND CONTROLS
- SECTION 15770 FLOOR HEATING AND SNOW MELTING EQUIPMENT
This section includes electric heating cables.

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Heating cable.
- B. Temperature controller for heating cable.

1.02 RELATED SECTIONS

- A. Section 03300 - Cast-In-Place Concrete.

1.03 PERFORMANCE REQUIREMENTS

- A. Floor Warming: at least 8 W/sq. ft. and not to exceed 15 W/sq. ft.

1.04 PROJECT RECORD DOCUMENTS

- A. Accurately record actual locations of heating cable and temperature sensor.

1.05 QUALIFICATIONS

- A. Manufacturer: company specializing in manufacturing products specified in this Section having at least 20 years experience with electric heating systems.
- B. All resistance heating cable equipment furnished under this section shall be supplied by a single manufacturer.
- C. Resistance cable and temperature controllers shall be approved by a Nationally Recognized Agency (UL, CSA, etc.).
- D. Self regulating cable is not acceptable for this application.
- E. The temperature controller shall include built in GFCI protection.
- F. The system shall have an embedded temperature sensor.

1.06 COORDINATION

- A. Coordinate installation of heating cable with Electrical Contractor, Concrete Contractor and General Contractor.
- B. Coordinate installation of heating cable with installation of concrete framework and concrete placement.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. System shall be as supplied by Bylin Engineered Systems, 4800 Golden Foothill Parkway, El Dorado Hills, CA 95762. Phone (916) 933-5666, Fax (916) 933-5959.
- B. Substitutions: No Substitutions allowed.

2.02 HEATING CABLE

- A. Heating Cable: Resistance cable
 - 1. Resistance cable heater construction shall consist of high-tensile-strength resistance wire wrapped in Kapton and then encased in silicone rubber for electrical insulation.
 - 2. Insulation shall be rated at 150 degrees Celsius to allow heating cable to produce up to 12 watts per lineal foot.
 - 3. Silicone insulation shall be surrounded by metal braid to provide ground path.
 - 4. Silicone over jacket shall be extruded over metal braid for mechanical protection.
- B. Rating: [120] [240] V.

2.03 ACCESSORIES

- A. Temperature controller:
 - 1. The temperature controller shall include the following features.
 - a. Digital display
 - b. Battery free memory backup
 - c. Early start feature
 - d. Seven day programmable timer
 - e. Integral GFCI for load
 - f. Temperature sensor to be embedded between the heating cable
 - g. Automatic and manual modes
- B. Aluminum tape: 2" wide, for attachment and to create a heat transfer fin.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Installer to verify that the subfloor with cement board or the concrete framework is clean, dust free and ready to receive work.
- B. Installer to verify field measurements are as shown on Drawings.
- C. Installer to verify that required utilities are available, in proper location, and ready for use.
- D. Beginning of installation means installer accepts conditions.

3.02 INSTALLATION

- A. Complete installation shall conform to appropriate local codes and shall be in accordance with manufacturer's specification.
- B. Resistance cable shall be laid out within heated area.
- C. For best design and longest life heating cable should not cross over expansion joints.
- D. Install cable in accordance with installation instructions and detailed layout drawings.
- E. Cable spacing in thin-set, mortar or concrete: shall not be less than 1".
- F. Floor warming temperature sensor shall be embedded in thin-set, mortar or concrete positioned midway between the heating cable runs.
- G. All floor warming cables shall be embedded in thin-set, mortar or concrete.

3.03 FIELD QUALITY CONTROL

- A. Test continuity of heating cable.
- B. Perform insulation resistance (megger) test on each resistance cable heater before, during, and after installation. Minimum acceptable megger reading shall be 10 megohms.
- C. Measure voltage and current at each unit.
- D. Submit written test report to supplier showing values measured on each test for each cable.

END OF SECTION