

ELECTRIC SLAB HEATING CABLE

FOR INDOOR SLAB HEATING

FROST HEAVE PROTECTION

AND THERMAL STORAGE APPLICATION



Electric
Heating System

Warmup

The world's best-selling floor heating brand™

US +1 (888) 927-6333 / CA 1+ (888) 592-7687

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www.warmup.com / www.warmup.ca

Part 1 - General

1.1 Section Includes

- A. Electric radiant slab heating cables embedded in indoor concrete slabs.
- B. Controls, sensors, and relay panels.
- C. Electric radiant slab heating system components, accessories, and associated installation materials.

1.2 Related Sections

- | | |
|-------------------------------------|--|
| A. 013300 – Submittal Procedures | F. 032000 – Concrete Reinforcing |
| B. 014100 – Regulatory Requirements | G. 033900 – Concrete Curing |
| C. 014300 – Quality Assurance | H. 038000 – Concrete Cutting and Boring |
| D. 017000 – Execution and Closeout | I. 260620.16 – Electrical Panel boards |
| E. 033000 – Cast-in-Place Concrete | J. 260620.23 – Electrical Circuit Schedule |

1.3 References

- A. National Electrical Code (NEC)
- B. Canadian Standards Association (CSA)
- C. Underwriter's Laboratory (UL)
- D. American Society of Concrete Contractors (ASCC)
- E. Warmup Slab Heating Installation Manual

1.4 Performance Requirements

- A. Electric slab heating cables must generate 5.5 watts per linear foot at a minimum.
- B. Heating wire must be twin conductor type. Single core slab heating cables will not be suitable for this application.
- C. All mats/cables shall include 16ft cold leads. This connection is factory joined in a water resistant joint assembly. Cold leads must be tagged with a regulatory label (showing ohms, voltage, amps, length).

Part 1 - General (Continued)

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. 20 years of experience (minimum) with electric radiant slab heating systems.
 - 2. Slab heating cables, controls, sensors, relays, and related items shall be provided by one supplier.
 - 3. Must be able to provide onsite field support, 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 Slab Heating Systems
 - 1. Cables for installation in concrete, asphalt, or under pavers shall be Listed to UL 1673, UL 515, ANSI/IEEE 515.1 and CAN/CSA -C22.2 No. 130.
 - 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. Warmup Inc. US +1 (888) 927-6333 / CA 1+ (888) 592-7687
52 Federal Road, Unit 1F, Danbury, CT 06810
www.warmup.com/www.warmup.ca
- 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 Slab Cable

- A. The Warmup Inslab Cable consists of a two-conductor stranded copper alloy resistance wire covered by fluoropolymer insulation. A metal sheath surrounds the primary insulation, and serves as a ground, before a second (final) layer of Zero Halogen Polyolefin jacketing, which serves as the outer shell. The 16ft cold lead return wire is factory installed (spliced) at one end of the cable.
- B. The Warmup Inslab Cable shall be rated 208-277V, producing 5.5W per linear foot (min) and be CSA Listed. Multiple systems must be wired in parallel by the installer. Each cable heater must have a minimum 10 yr manufacturers warranty.

2.3 Controls, Sensors & Accessories

- A. The 4iE control series provide a touch-screen interface and a 7-day programmable thermostat. The 4iE-03 & 4iE-04 models are equipped with a built-in Class A GFCI protection. The 4iE-04 model provides WiFi connectivity to operate the heating system via the MyHeating app, the my.warmup.com portal or third party systems using a Control 4 bridge (provided). All Warmup thermostats are dual voltage and supplied with a 10ft low voltage floor sensor. Each thermostat can switch up to 15Amps of load. Warmup thermostats come with a 3 year warranty.
- B. One “Alligator” tester should be provided with each heater. The device allows continuous monitoring of the cable’s integrity through instant resistance readings.
- C. Test each mat heater for ohms, with the Warmup Alligator before, during and after the installation of the floor covering. Record these values on the warranty form provided at the end of the Warmup Installation Manual.

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