



## INSTALLATION INSTRUCTIONS

**SPEEDHEAT WOOD-BE-WARMER ELECTRIC RADIANT HEATING  
PANELS UNDER FLOATING WOOD FLOORS**





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## **1.0 PRECAUTIONS**

### **1.1. REGULATIONS**

- 1.1.1 THIS EQUIPMENT IS AN ELECTRICAL FIXTURE AND SHALL ONLY BE INSTALLED BY QUALIFIED PERSONNEL WHO ARE FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THE APPARATUS AND THE HAZARDS INVOLVED.**
- 1.1.2 INSTALLATION OF THIS HEATING SYSTEM SHALL BE IN ACCORDANCE WITH THE REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION.**
- 1.1.3 DO NOT DRAW COLD LEAD WIRES INTO WALL CAVITIES UNLESS THEY ARE DOUBLE INSULATED OR ARE ENCLOSED WITHIN ELECTRICAL CONDUIT.**

### **1.2. DAMAGE AND REPAIRS**

#### **DO NOT**

- 1.2.1 install the heating panel if the continuity test fails.
- 1.2.2 cut, shorten or lengthen the heating element.
- 1.2.3 attempt to repair the heating element, connection block or cold wire leads if they are damaged during or after installation.



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## **1.0 PRECAUTIONS continued**

### **1.3. POSITIONING**

#### **DO NOT**

- 1.3.1 install one heating panel on top of another or overlap the panel on itself as it may cause dangerous overheating.
- 1.3.2 install heating panels under cabinets or other built-in units especially in kitchens and bathrooms.
- 1.3.3 install heating panels closer than 8 inches to heating supply ducts, other heating panels or other heating appliances or heat sources.
- 1.3.4 install the heating panel over floor expansion joints.
- 1.3.5 install the heating panel over rough and uneven floors.
- 1.3.6 install the heating element over protruding screws, nails, staples.
- 1.3.7 install a single heating panel (or combination) that exceeds 90% of the available floor space in the room or adjoining rooms to be heated, after accounting for planned permanent floor-mounted cabinets and other built-in units.
- 1.3.8 install the heating panel under ANY insulating or water-proofing underlayment.



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## **2.0 PREPARATION**

### **2.1. INITIAL INSPECTION AND TESTING OF THE HEATING PANEL.**

- 2.1.1 Before opening, check the labels on the outer shipping box to ensure the heating panels received correspond with those ordered. Calculate the area of the heating panels (L x W) and ensure that the maximum of 90% floor coverage rule will not be exceeded.
- 2.1.2 **Carefully** open one end of the shipping box. Remove the heating panel from the box.
- 2.1.3 Note the voltage, model number, serial number and factory rated resistance shown on the identity label. **DO NOT** remove the label.
- 2.1.4 Clearly identify whether the unit is 120V or 240V. This is shown on the identity label.
- 2.1.5 Unroll the panel to expose the cold lead.
- 2.1.6 To check continuity of the heating panel, insert the attached GFCI plug into a grounded electrical outlet and press the top button on the plug. An orange LED will light up if the panel is intact.

**If the orange LED does not light up, DO NOT proceed with the installation. Please call 1 888-927-6356 for further instructions.**



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## **2.0 PREPARATION (continued)**

### **2.2. WALL AND FLOOR POSITIONING CONSIDERATIONS**

- 2.2.1 An appropriate wall position must be selected for electrical fixtures **prior** to planning the floor layout for heating elements. The following requirements should be considered:
- 2.2.1.1 The cold lead from each electric heating panel will be inserted through a hole 3 inches above floor level.
  - 2.2.1.2 This hole must be adjacent to a vertical wall stud.
  - 2.2.1.3 The cold lead will ultimately be drawn up through the wall cavity to be terminated with an appropriate temperature control device fixed into the wall.
  - 2.2.1.4 The control device should be in a convenient position for safe and easy access by occupants of the room; preferably on an internal wall away from direct sunlight and drafts.
- 2.2.2 The following flooring criteria must be considered:
- 2.2.2.1 Generally the heating element must **not** be installed directly onto the plywood sub-floor. **Backer board or a decoupler must be installed first. Only if** the floor covering is to be installed directly onto the plywood sub-floor, may the heating element also be installed on the sub-floor.
  - 2.2.2.2 Elements may be installed directly onto concrete floors.



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## **2.0 PREPARATION (continued)**

### **2.2. WALL AND FLOOR POSITIONING CONSIDERATIONS (continued)**

#### **2.2.3 PLANNING THE INSTALLATION**

**Before permanently securing the heating panel to the sub-floor**, perform a "dry-run" of the installation layout to ensure the following minimum requirements are met:

- 2.2.3.1 The heating panel *must* be positioned over areas where occupants of the room will walk, stand or rest their feet while sitting.
- 2.2.3.2 The heating panel must *not* be positioned where it will be permanently covered by cabinets or other built-in units especially in kitchens and bathrooms.
- 2.2.3.3 The heating panel *must* be positioned so that it is at least 9 inches from each wall, except:
  - 2.2.3.3.1 where the cold lead ends
  - 2.2.3.3.2 when this would leave an area unheated as required in 2.2.3.1.
- 2.2.3.4 The cold leads of the heating panel/s must terminate in the correct position as determined in Section 2.2.1 above. The hot tails provide sufficient flexibility to ensure that this can be achieved without running cold leads under the floor surface or adding additional height to the floor.
- 2.2.3.5 The entire area of the heating panel must be taken up over the available floor area without any overlapping. If this is not possible, a smaller heating panel must be used.

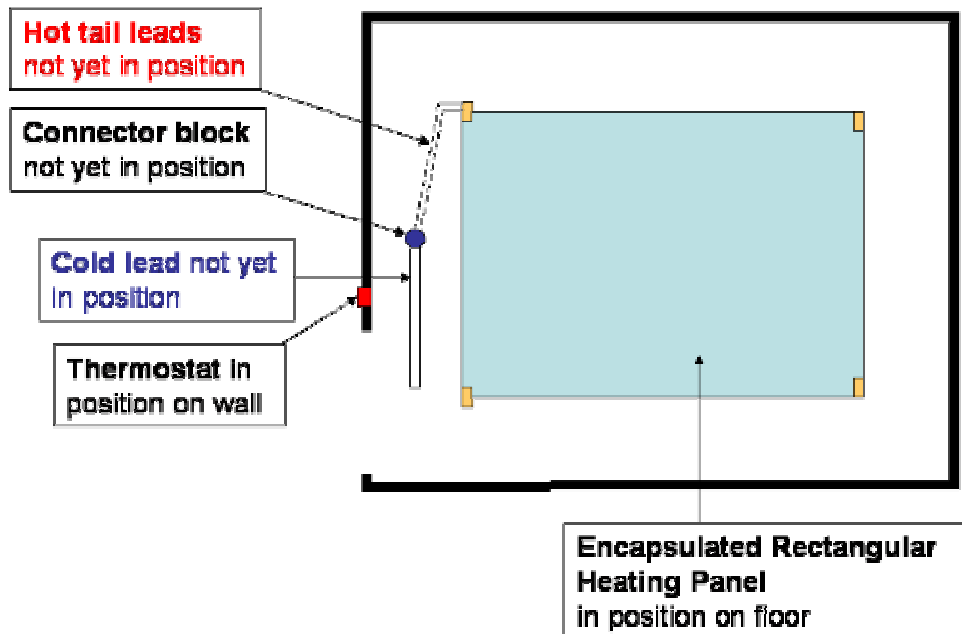


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## 2.0 PREPARATION (continued)

### 2.2. WALL AND FLOOR POSITIONING CONSIDERATIONS (continued)

#### 2.2.3 PLANNING THE INSTALLATION



#### **Step One**

Decide on suitable position for thermostat and heating mat **before** positioning the hot and cold tail leads



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## **3.0 PLACEMENT**

### **3.1. CUT ACCESS HOLES IN DRY WALL**

- 3.1.1 Locate the position of a vertical stud in the dry-wall below and close to the intended position of the temperature control device. Make a pencil mark 3" above the plywood sub-floor in line with the inside edge of the vertical stud.



- 3.1.2 Commencing from the pencil mark, cut a rectangular hole in the dry-wall 3" down and 2" across. The horizontal stud attached to the sub-floor and the vertical stud should both be visible through the hole.



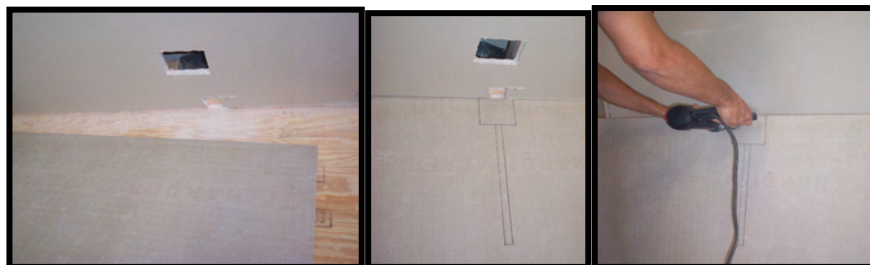


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## **3.0 PLACEMENT (continued)**

### **3.2. BACKER BOARD CUT-OUTS AND INSTALLATION (If installed)**

- 3.2.1 Once backer board has been secured to the plywood sub-floor, draw a 6" square pencil outline commencing at the edge of the board opposite the holes in the dry-wall and also draw a 16" long x  $\frac{3}{4}$ " wide channel outline commencing at the center of the 6" square outline. Cut out the area marked on the backer board.



- 3.2.2 Clean out the thinset from the cut-outs. Apply sufficient adhesive tape over the 16" channel to prevent moisture ingress.



- 3.2.3 In concrete floors, the hole and channel must be chiseled  $\frac{1}{2}$ " deep.



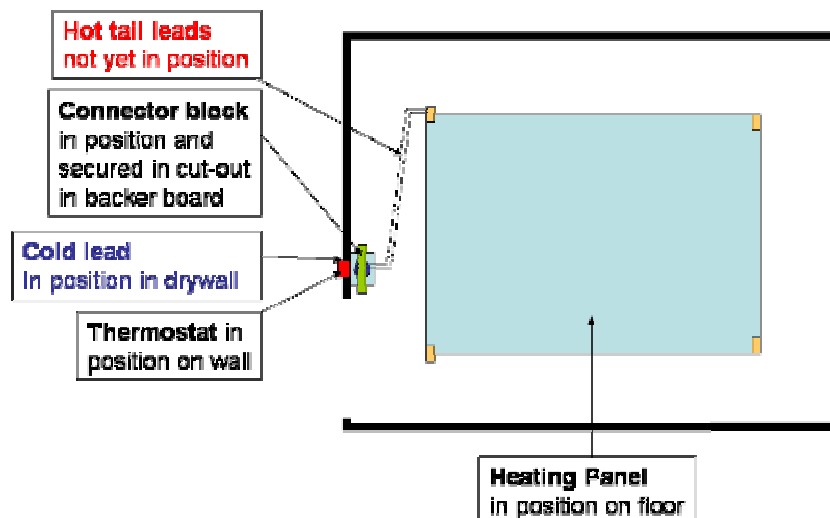
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## 3.0 PLACEMENT (continued)

### 3.3. INSTALLATION OF THE HEATING PANEL

#### 3.3.1 DRY-RUN

- 3.3.1.1 Unroll the panel and place it on the backer board in the pre-determined position.
- 3.3.1.2 The connector block should be secured in the 6" cut-out in the backer board or sub-floor with adhesive tape.
- 3.3.1.3 Ensure that the hot tails lie flat on the backer board between the connector block and the heating panel. This will make it easier to secure them to the backer board later.



#### **Step Two**

Position and secure the "connector block" in a 6"x6"x1/4" cut-out in the backer board (or concrete slab) and insert cold tail leads into hole in drywall at floor level, ready for connection to thermostat.



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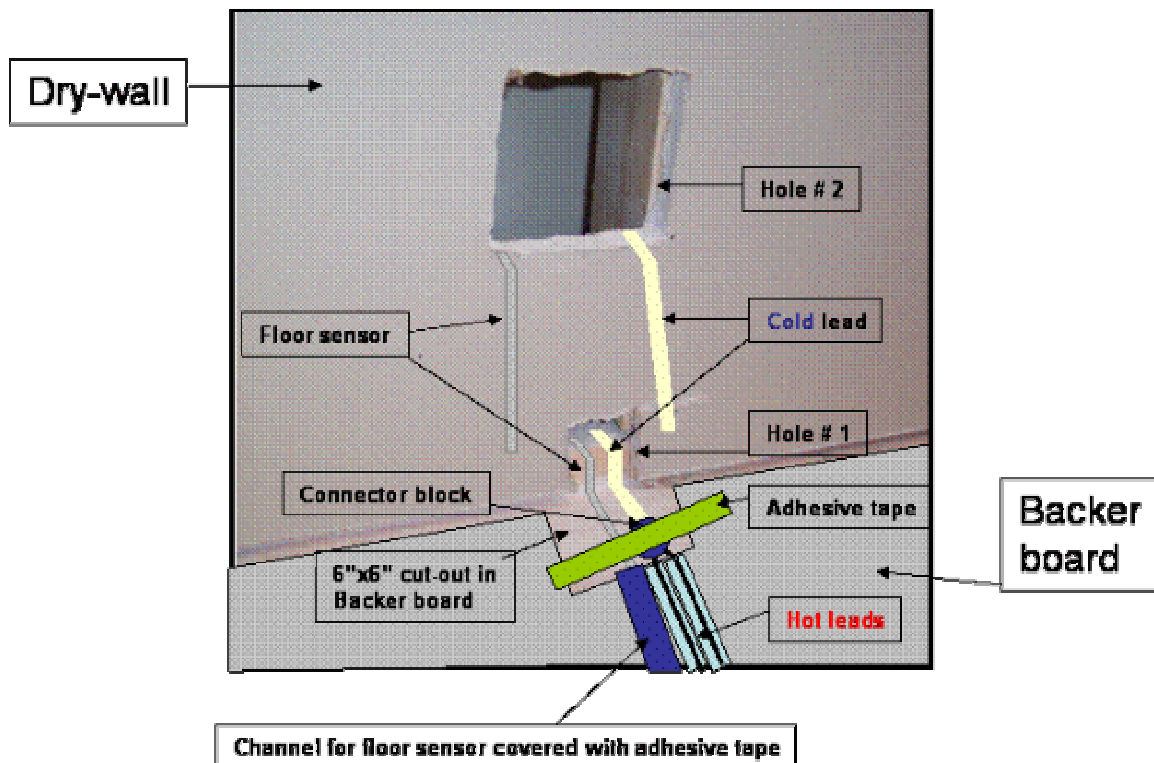
## **3.0 PLACEMENT (continued)**

### **3.3. INSTALLATION OF THE HEATING PANEL**

#### **3.3.1 DRY-RUN (continued)**

3.3.1.3 Insert cold lead into hole#1 and draw up to thermostat.

3.3.1.4 Insert the capped end of the floor sensor into the 16" channel. Insert the other end through Hole#1 and draw the full extent of the sensor cable up to thermostat.





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## 3.0 PLACEMENT (continued)

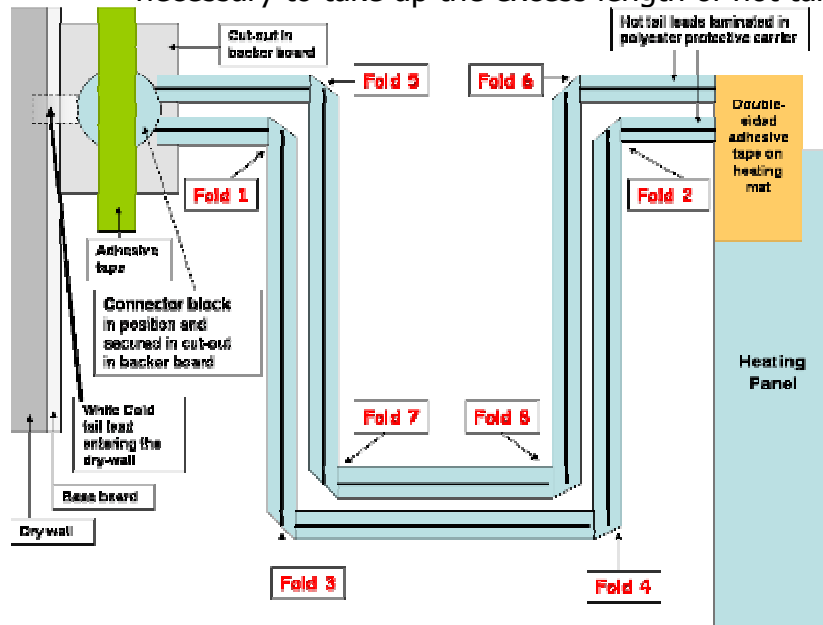
### 3.3. INSTALLATION OF THE HEATING PANEL

#### 3.3.2 SECURING THE HOT TAILS TO THE SUB-FLOOR

3.3.2.1 Once the heating panel has been secured in place within the thinset, the two hot tails may be positioned and secured to the backer board.

3.3.2.2 The two hot tails must not cross over each other and should be kept at least 1 1/2in. apart

3.3.2.3 Follow the diagram below to complete the 8 folds that are necessary to take up the excess length of hot tails.





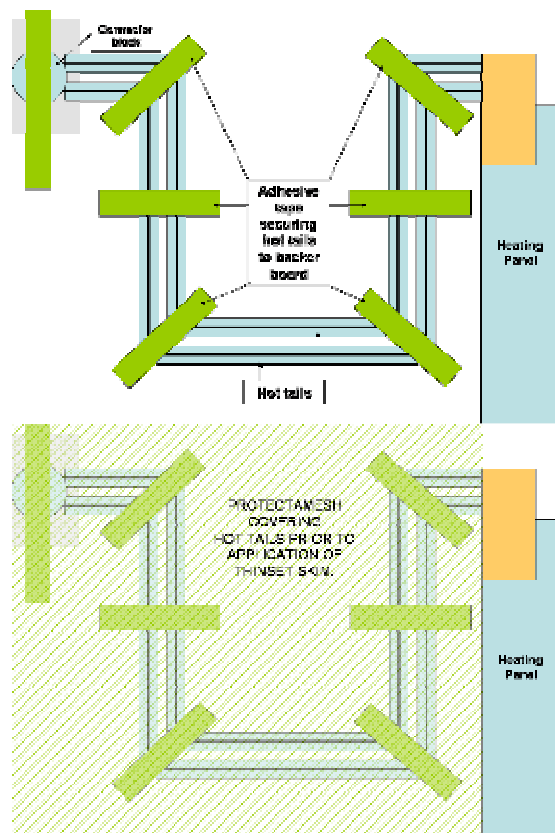
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## **3.0 PLACEMENT (continued)**

### **3.3. INSTALLATION OF THE HEATING PANEL**

#### **3.3.2 SECURING THE HOT TAILS TO THE BACKER BOARD**

3.3.2.4 Secure the hot tails to the backer board with adhesive tape.





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## **4.0 FLOOR COVERING INSTALLATION**

### **4.1 FLOATING LAMINATE AND HARDWOOD FLOORING**

- 4.1.1 Where the flooring manufacturer provides specific instructions for installation over electric radiant heating, ensure that these instructions are followed so that your flooring warranty remains valid. These instructions generally refer to curing times for any cement covering over the element as well as temperature settings before, during and after installation of the floor.
- 4.1.2 SPEEDHEAT elements are to be installed on top of moisture barriers, but beneath sound absorbing underlayment.
- 4.1.3 If the stability of a plywood sub-floor is in question, backer board must be installed over the sub-floor before installing the panels.
- 4.1.4 Under floating floors, it is not necessary to embed the encapsulated heating panel in thinset. Simply secure the panel to the sub-floor with strong adhesive tape or very carefully with staples. Installation of the floating wood floor may therefore commence immediately after securing the panel to the backer board or stable sub-floor.
- 4.1.5 If however, there will be a delay between installing the heating elements and the floor covering, it is advisable to give further protection to the element by covering it with a skim of latex modified thinset. The flooring manufacturer's requirements for curing of this thinset skim must be followed.
- 4.1.6 Complete floor installation according to manufacturer's instructions.
- 4.1.7 Exercise special care while installing transitions at floor edges.
- 4.1.8 A FLOOR TEMPERATURE SENSOR WITH LIMITER **MUST** BE INSTALLED BENEATH THE FLOATING LAMINATE AND HARDWOOD SURFACE TO ENSURE THAT THE FLOOR TEMPERATURE DOES NOT EXCEED THE LIMIT SET BY THE FLOORING MANUFACTURER.



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## **5.0 ELECTRICAL**

**IMPORTANT – THIS HEATING ELEMENT MAY ONLY BE CONNECTED TO AN ELECTRICAL POWER SUPPLY VIA A TIME OR TEMPERATURE CONTROL DEVICE THAT IS PROTECTED BY A GROUND FAULT CIRCUIT INTERRUPTER.**

**5.1. RECOMMENDED TIMER/TEMPERATURE CONTROL DEVICE**

In order to achieve maximum efficiency of this electric radiant heating system, SPEEDHEAT recommends the use of a dual function GFCI protected thermostat that controls both ambient and floor temperature and incorporates a time control feature.

**5.2. QUALIFIED ELECTRICIAN TO INSTALL THIS DEVICE**

- 5.2.1 In terms of NEC regulations, only a qualified electrician may connect a time/temperature control device to an electrical fixture.
- 5.2.2 The SPEEDHEAT installation methodology reduces the time required of the electrician to an absolute minimum.
- 5.2.3 The Electrician is presented with a partial installation which can be easily checked for electrical integrity and compliance with all authorities having jurisdiction.



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## **5.0 ELECTRICAL (continued)**

**IMPORTANT – BEFORE MAKING ANY ELECTRICAL CONNECTIONS TO THIS HEATING ELEMENT, ENSURE THAT THE ELECTRICAL POWER SUPPLY HAS BEEN CUT TO THE CIRCUIT BEING USED.**

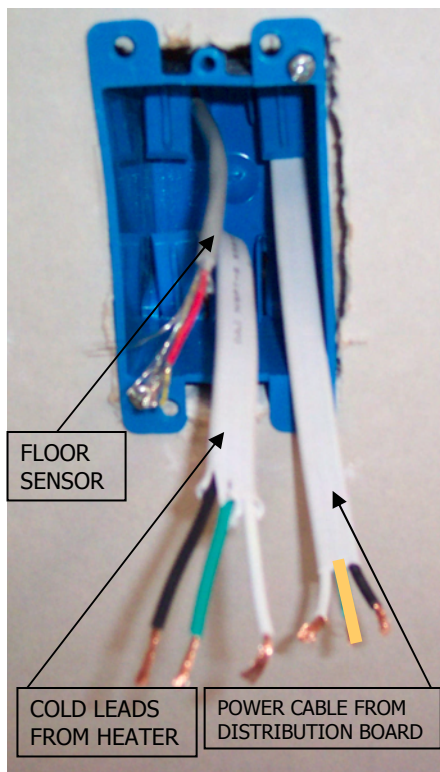
### **5.3. ELECTRICAL CONNECTION**

- 5.3.1 Cut A Hole in the dry-wall, the size of a standard single gang switchbox, at the desired thermostat location.
- 5.3.2 If only one heater is being installed, a single gang switch box may be used to house the thermostat and make the necessary electrical connections. A double gang switch box with reducer to single gang size where it exits the dry wall should be used when more than one heater is to be connected to one thermostat.
- 5.3.3 Connect electrical conduit to the switch box and feed it through the dry wall down to hole #1. Use ½" conduit for one heater, ¾" for up to 2 heaters and use 2 or more conduits for 3 or more heaters.



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**5.0 ELECTRICAL (continued)**



- 5.3.5 Secure the bottom of the electrical conduit to the horizontal stud.
- 5.3.6 Electrical Power can be supplied to the thermostat as a separate circuit directly from the main distribution board. For 120 Volt heaters, electrical power may be supplied from an adjacent outlet (provided certain load rules are observed).



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## **5.0 ELECTRICAL (continued)**

### **5.4. CONNECTING THE TIMER/THERMOSTAT**

- 5.4.1 Feed the isolated power supply cable through the top knockout of the single or double gang switch box and trim to the correct length.
- 5.4.2 Trim the cold lead wires of the heater to the correct length
- 5.4.3 Trim the floor sensor cable to the correct length.
- 5.4.4 Connect the cold lead wires to the timer/thermostat.
- 5.4.5 Connect the isolated power cable to the timer/thermostat.
- 5.4.5 Ground (green) leads must be connected to the house ground.
- 5.4.7 Fit the floor sensor cable into the terminals marked for the sensor.
- 5.4.8 Secure the switch box to the dry-wall.
- 5.4.9 Secure the thermostat within the single gang switch box.
- 5.4.10 Restore electrical power to the circuit and set up the timer/thermostat according to the manufacturer's instructions.

