

Figure 5

**Testing the System Resistance:**

Before setting the Tech-Mat, measure the resistance with an Ohmmeter (see attached chart) and note the value on the system installation sticker that should be attached to the distribution panel. After completing the heating system installation, measure the system's resistance again with the Ohmmeter. Compare the new reading with the first measurement to assure they are identical and no damage has occurred to the Tech-Mat during installation. Mark the measured resistance on the attached card and fasten to the circuit breaker box (distribution panel).

**IMPORTANT: The system warranty is not valid without evidence that the system resistance has been tested.**

**Securing the Tech-Mat**

Follow the Tile Council of America recommendations when planning how you will secure the Tech-Mat. Selected adhesives (tile setting mortar) should be applied to the floor according to the manufacturer's instructions. The heating mat should be laid, strip by strip, with its sticky side down. While laying the Tech-Mat, take note of where you will position the floor sensor.

The system's cold lead wires, as well as the wire from the remote sensor, are run to the junction box either through a groove prepared in the sub-floor or through listed conduits (as local electrical code requires).

**NOTE: Be sure the cold leads neither cross nor touch the heating element wires.**

After securing the Tech-Mat to the sub-floor, measure the system's resistance again with the Ohmmeter. Compare the new reading with the first measurement to assure they are identical and no damage has occurred to the Tech-Mat during installation.

**Never cut or alter the length of the cable. This will void warranty and may cause fire!**

When the installation is complete, the tile or stone surface can be laid directly over the protective layer without further preparation, using any TCA approved setting mortar.

When applying the various layers be sure to follow the manufacturer's directions for the mortar product.

**NOTE: Be sure to observe recommended cure times for your installation. Ceramic tile installation may require 10 to 14 days to cure before the TECH-Series Tech-Mat may be operated.**

**Choice of Floor Covering:**

The TECH-Series Tech-Mat system is specially designed to be used with hard floors such as ceramic tile, marble or other stone floorings. Discuss its use with any other floor coverings with your TECH-Series representative.

**Recording the Installation Readings:**

After completing the TECH-Series Tech-Mat warming system installation, it is recommended to record the final measured resistance and mark the mat location on the installation plan which should be kept by the homeowner with the homeowner instructions and installation manual.

**System Control Options**

Wall mounted thermostat (line voltage) with remote sensor or a wall mounted thermostat with a remote sensor, which can be mounted in the floor (see figure 6), offers the best way to regulate your system. The sensor should be installed at least 8" (20cm) into the heating sheet's width, while ensuring that it does not cross any of the heating wires. By controlling the actual floor temperature, the system can be adjusted to the temperature which is the most

comfortable for the situation.

Through this method, the floor temperature can be controlled as desired with little variation. The line voltage thermostat connects to the junction box, as marked in figure 7.

Should multiple mats be installed observe total amps, Do not connect load greater than thermostat capacity. Do not connect in series. Connect in parallel only.

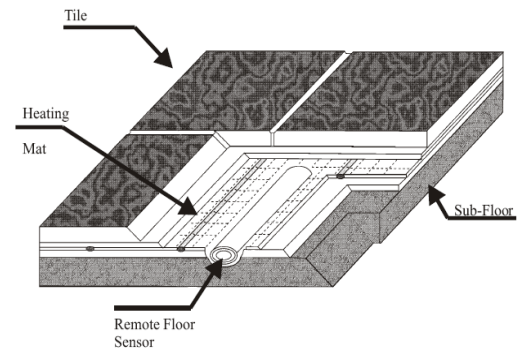
Heating mat must be fully installed in the room, do not run through thresholds or into adjacent areas.

**Troubleshooting**

**CAUTION: TURN OFF ELECTRICITY BEFORE TROUBLESHOOTING SYSTEM**

1. If the system fails to heat, make sure the GFCI (Ground Fault Circuit Interrupter) has not been tripped. If it has, find the fault and rectify.
2. Check for continuity with an Ohmmeter. Compare the reading with the final resistance readings previously recorded. Lack of, or reduced, continuity may indicate a break in the system.
3. Make sure the breaker or fuse is delivering power to the system. If your system fails to heat after these checks call your installer. Be sure to tell the installer the Model Number of your system. This will be found on the warranty card attached to the circuit breaker box door.

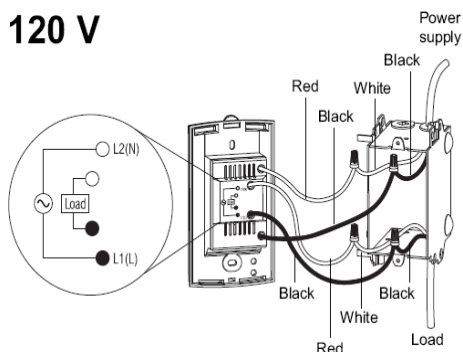
**Floor Layers**



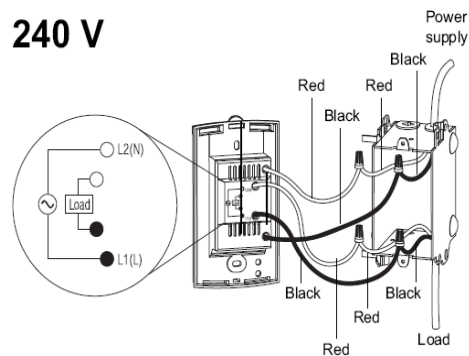
**Thermostat  
With Integral  
GFCI**



**120 V**



**240 V**



**Figure 7**

This schematic is meant as a preliminary guide only. Refer to the instructions provided with the thermostat / GFCI. All electrical work should be performed by a licensed electrician.

**WARNING**

THE TECH-MAT IS DESIGNED AND RECOMMENDED TO BE INSTALLED USING GFCI PROTECTION. Failure to do so may result in injury. This system may not be energized unless the system is installed according to the enclosed instructions. The installation must meet or exceed all local and national electrical codes.

**NOTE:** The thermostat requires a listed single gang box with a minimum width of 2.25" ( 63.5mm) (available from your local electrical wholesaler or other supply center locations).

**TECH-Series Tech-Mat**

All Mats come with 10 ft Cold Lead

**Operating Wattage 120V (Standard wattage 12 watts per sq ft)**

PRODUCT	WATTS	LOAD (Amps.)	LENGTH (ft) of Mat	WIDTH (ft) of Mat	Coverage (sq ft)	RESISTANCE (ohms)
FHM120- 60	60	0.5	3.3	1.5	5	240.0
FHM120- 120	120	1	6.7	1.5	10	120.0
FHM120- 180	180	1.5	10.0	1.5	15	80.0
FHM120- 240	240	2	13.3	1.5	20	60.0
FHM120- 300	300	2.5	16.7	1.5	25	48.0
FHM120- 360	360	3	20.0	1.5	30	40.0
FHM120- 420	420	3.5	23.3	1.5	35	34.3
FHM120- 480	480	4	26.7	1.5	40	30.0
FHM120- 540	540	4.5	30.0	1.5	45	26.7
FHM120- 600	600	5	33.3	1.5	50	24.0
FHM120- 720	720	6	40.0	1.5	60	20.0
FHM120- 840	840	7	46.7	1.5	70	17.1
FHM120- 960	960	8	53.3	1.5	80	15.0

**Operating Wattage 240V (Standard wattage 12 watts per sq ft)**

FHM240- 120	120	0.5	6.7	1.5	10	480.0
FHM240- 240	240	1	13.3	1.5	20	240.0
FHM240- 360	360	1.5	20.0	1.5	30	160.0
FHM240- 480	480	2	26.7	1.5	40	120.0
FHM240- 600	600	2.5	33.3	1.5	50	96.0
FHM240- 720	720	3	40.0	1.5	60	80.0
FHM240- 840	840	3.5	46.7	1.5	70	68.6
FHM240- 960	960	4	53.3	1.5	80	60.0
FHM240- 1080	1080	4.5	60.0	1.5	90	53.3
FHM240- 1200	1200	5	66.7	1.5	100	48.0
FHM240- 1400	1440	6	80.0	1.5	120	40.0