

Purpose:

This kit is intended to repair one (1) damaged section of heating cable on a TempZone™ radiant heating mat.

Cautions:

- It is strongly recommended that only licensed electricians or those individuals familiar with wire measurement tools and procedures conduct these repairs.
- Ensure power to the cold lead/ mat is disconnected, at the breaker, during repair and testing and that the mat leads are disconnected from the thermostat.
- Use care when applying heat to shrink tubing and connectors, excessive heating can damage the heating cable and/or shrink tubing material.
- Do not allow loose strands of wire to extend past the crimp connectors as they may pierce the heatshrinks and result in electrical shorting.
- Repaired heating cable sections must be embedded in mortar only and must not be left uncovered or placed inside wall cavities.

Kit Contents:

- Insulated Jumper Cable (2)
- Heatshrink (3 large, 3 small)
- Parallel Splice Connector (3) (metal)
- Butt Splice Connector (3) (blue)
- Jumper Braid (2)
- Foil Tape (1)

Tools Required:

- Digital Ohmmeter
- Megger (Insulation Resistance Tester) capable of 500VDC
- Side Cutting Pliers
- Wire Stripping Pliers suitable for 26AWG insulated wire
- Crimping Pliers suitable for use on 14-16AWG metal splice connectors and blue insulated connectors
- Heat Gun

Preparation:

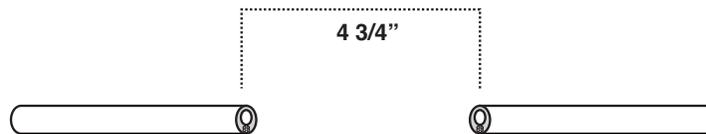
Prior to beginning the heating cable repair ensure the damaged section has been precisely located and any surface covering material and mortar have been carefully removed to expose the heating cable. Repair may require up to 16" of heating cable be exposed.

Procedure: A – Heating Cable to Heating Cable Repair

1. Disconnect both mat leads from the thermostat.
2. Ensure there is approximately 6" - 8" of heating cable exposed on both sides of the damaged section.



3. Cut the heating cable from each side of the damaged section such that there is a 4-3/4" gap between the heating cables.



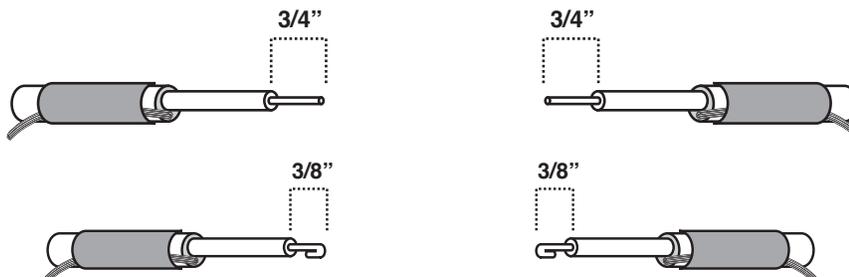
4. Excavate a 1/2" groove in the floor below the repair area, this ensures that upon completion the repaired section will sit flush with the covering mortar.
5. Unbraid the ground braid 2" on each side of the heating cable and twist into pigtails.



6. Fold the pigtails back and slide one small and one large heatshrink over each side of the heating cable.



7. Trim 3/4" of the insulation from the end of each exposed heating wire then carefully fold the heating wire back for an overall length of 3/8".



Procedure: A – Heating Cable to Heating Cable Repair

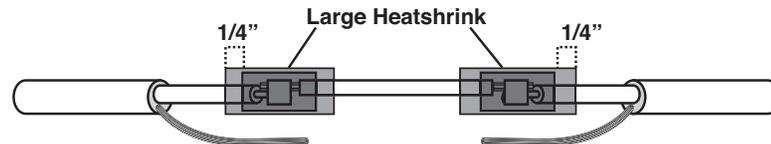
8. Using the parallel splice connector, crimp the replacement insulated jumper cable to one side of the exposed heating cable, repeat on the other side of the exposed heating cable. Ensure the heating wires are overlapped inside the connector.



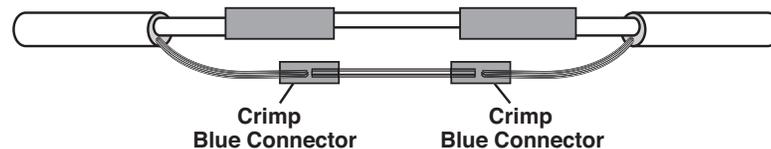
9. Slide the small heatshrinks over the connectors such that they extend a minimum of 1/4" beyond the edges and carefully heat to shrink them into place (the glue from the heatshrink will start to seep out of the end when shrinking is near completion) and then allow to cool to room temperature.



10. Slide the large heatshrinks over the small heatshrinks such that they extend a minimum of 1/4" beyond the edges and carefully heat to shrink them into place (the glue from the heatshrink will start to seep out of the end when shrinking is near completion) and then allow to cool to room temperature



11. Using the blue connector, crimp (in 2 spots for each connector) the braid jumper in place to one side of the braid, repeat on the other side of the jumper.



12. Completely cover the repaired section by wrapping with the foil tape (remove tape liner).
13. Conduct electrical tests as noted in "B".
14. Cover repaired section with mortar.

B - Electrical Testing (done at the electrical junction box).**Resistance Test**

Set the ohmmeter for resistance testing and connect the tester leads to the mat lead conductors, the resistance value measured should be +/- 10% of the resistance value on the mat rating label.

Insulation Resistance

Connect one of the tester leads to the mat ground braid. Twist both mat lead conductors together and then connect to the other tester lead. Set the meter for 500VDC resistance testing. Insulation resistance should be 5 meg-ohms or greater.