ADDITIONAL TIPS

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Disclaimer: The following are tips and techniques provided by Watts Radiant, Inc. to assist in discovering and uncovering damage made on-site to an electric radiant heating system product made by this company. Watts Radiant does not, in any way, guarantee the tips presented here nor have any responsibility for damage or other problems incurred by following these tips.

Finding damage within floor warming systems

Experience has shown a few things that can help in troubleshooting the radiant heating cables and tips for the work that follows. Here are a few things to consider when looking for a damage location:

- The power supply leads or heating cable can be penetrated by a nail or screw while installing baseboard trim, sheetrock, or other things that were installed after the wires were put in place. Be aware of all subsequent work done in the area of the heating cable, and consider the possibility that such things may have contributed to the problem you have experienced.
- Plumbers have been known to run the water supply line to a toilet after the tile has been set. Drilling the hole for the water line has been known to cut heating cable wires if they were placed in that area.
- Simply dropping a hammer, or some other heavy object on the heating cable can damage the insulation of the heating cable. The cable might work for quite a while before this kind of damage becomes evident.
- It is important that you exercise extreme caution while removing the mortar or grout around a tile. We do not recommend using a knife or chiseling for this, you could cut a wire.
- On a few occasions, the LoudMouth™ monitoring device has given the installer a false “damage” signal, primarily due to the moisture content of recently applied very wet thin-set mortar, or self-leveling compounds. If your LoudMouth has sounded, but you don’t find any evidence of damage with your digital ohmmeter, call our technical support staff for assistance, 888-432-8932.

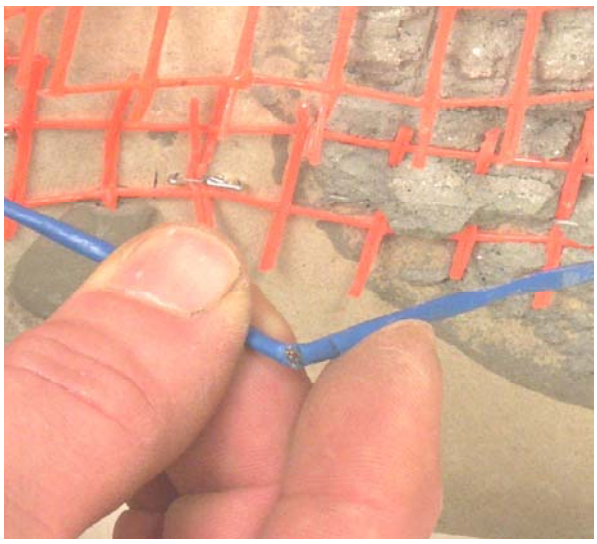
Wire locating equipment

We’ve found the Harris Corporation brand "Cable Fault Finder" works well for our products, but many electricians have used some other brand of “fault finder”. Electricians in your area may have a test instrument in their own bag of tricks that may be helpful in pinpointing the damage in your heating cable. Please let our staff know about any successful damage location methods or tools, so we can pass on that information in the future.

Removing Tile

CAUTION! Power for this circuit must be turned off at the breaker panel before you start to remove tile. Verify that it has been turned off.

- It is important that you exercise extreme caution while removing the mortar or grout around a tile. A knife or chisel is generally not the best tool for removing grout, you could end up cutting a wire.
- The first picture below shows a hand held grout removal tool, use this to remove about half of the grout from the seams. This should reduce the chances of a crack spreading from the tile you are removing, to an adjacent tile.
- Don’t use a chisel, knife, screwdriver or similar tool to pry up the tile(s). The best tool for safely removing ceramic tile over a heating cable is a small hammer, shown in the second picture below. Use it gently, to gradually break up a single tile at a time. Use a "shop-vac" frequently to remove the loose material as you proceed, pic. # 3.
- After you are able to clearly identify the spacing and layout of the heating cable, you will know where you must be extremely careful while you continue to remove the tile and mortar. In the areas between the heating cables you don’t have to be as cautious as when working directly over or around a heating cable.



Spotting the damage

CAUTION! Power for this circuit must be turned off at the breaker panel before you handle the cable. Verify that it has been turned off.

- A lot of the damage that occurs during installation is from the edge of a metal trowel cutting into a cable. This may leave a place of obvious damage where wires are exposed, or it may look like a dent or a crease in the insulation.
- Don't gouge the wire further by probing a "crease" in the blue insulation with a knife or similar tool. Gently bending the cable to see if a crease will "open up" is a much better method of inspection, pictured above, on the right.
- The damaged area of the wire may have rolled to the bottom and may now face the floor, it is important to thoroughly inspect all sides of the cable for damage.
- If the outer blue insulation has been mildly damaged, but the extent of the damage is unknown, leave yourself some kind of marker indicating this point may require further inspection, and then continue to inspect the rest of the heating cable in this area for more significant signs of damage.
- The power supply leads and heating cables have occasionally been punctured by a nail or a screw from installation of sheetrock, shower door hardware, or baseboard trim. Any of these types of materials being installed after the floor heating system has been put in place, have the potential to damage a wire in your system. Pulling that nail or screw may temporarily "fix" the problem, but the wire should be repaired and reinsulated properly with the appropriate splice kit.
- A cable that has been damaged by a penetration from a staple is generally not too difficult to find, though the hole may be very small. Removing the staple will not really fix the damage. You will need to splice the cable at this point with the appropriate splice kit.
- Hammers and other heavy objects have been known to crush heating cables. The damage may look like an abrasion of the outer blue insulation or an abnormally thin or flat spot in the cable. This type of damage also requires the use of the appropriate splice kit.

After the repair has been made

We recommend that the floor coverings not be replaced over the repair location until after the system has been turned back on, and has had a chance to cycle on and off for at least a day or two. This is typically enough time to verify the integrity of your splice connections. If the repair location is in a high traffic area, extra care must be taken to ensure that your repair is not damaged by the traffic, and to ensure that it does not become a trip hazard.