INSTRUCTIONS - Single Conductor Heating Cable Repair Kit - KIT-SP3

Pour la série TXLP1

Warnings and cautions

 ***Risks of electrical shocks and fire*** 

For safe installation and efficient performance of this system, read the instruction manual thoroughly and keep it handy.

- Where applicable, installation must meet requirements of the following codes:
  - Canadian Electrical Code (CSA C22.1 Part 1 et C22.2 no. 130);
  - National Electrical Code (NFPA 70);
  - Any other applicable local and/or national code.

- Where required by law, this product must be installed by a qualified person.

- To prevent any possibility of electrical shocks, the power supply must be turned off before handling the heating cables.

- Always follow the manufacturer's operating instructions for the tools used.

- When using a hot air gun, always keep the tip moving to avoid overheating of the heat shrink tubes and damage components. Components other than heat shrink tubes must never be heated. Vapours created during tube heating heat shrinks can cause irritation; take proper precautions and ventilate the room.

- This repair kit and installation instructions are provided to help repair a damaged cable. There is no guarantee of the good system operation following repair.

- It is strongly recommended that an experienced flooring installer remove the flooring and its adhesive.
  Important: Be very careful when this is done to avoid damaging the heating cables.

- Do not use this repair kit to join the various heating cables together. The kit is only intended to repair a heated cable only. If the heating cable is damaged in more than one place, consider replacing the entire cable.

- Heating cable repair is a specialized procedure.

- Only qualified personnel who have completed the web training (section tools), possessing the necessary skills, are authorized to repair heating cables.

- **The repair must not reduce the original length of the heating cable by more than 1% or by 1% of the original resistance to installation. If this is the case, the heating cable is out of order and must be replaced.**

Two repair methods are possible

Choose the method that is best for the installation.

Jumper splice method:

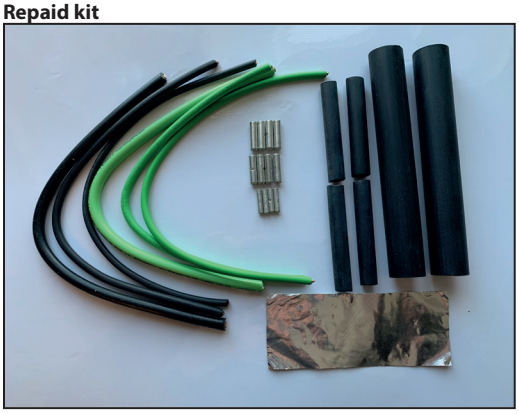
This method is used when the cable is damaged over a longer distance and the direct joint option is not possible.
This also results in a section of cable that will not have heating.

Direct splice:

This method is used when the cable is damaged only for a short distance and both parts of the same heater cable can be joined together.
It also results in the best heating uniformity.

Material and tools needed:

Repaid kit



Content of the repair kit

- 4x #12/14 Mechanical Connector 4 mm X 17 mm (5/32'' x 21/32'')
- 8x #08/10 Mechanical Connector 5.5 mm X 20.5 mm (7/32'' x 13/16'')
- 1x 12" Length of RWU 90 Green 12 AWG Wire
- 1x 12" Length of RWU 90 Black 12 AWG Wire
- 1x 12" Length of RWU 90 Green 10 AWG Wire
- 1x 12" Length of RWU 90 Black 10 AWG Wire
- 1x 12" Length of RWU 90 Green 8 AWG Wire
- 1x 12" Length of RWU 90 Black 8 AWG Wire
- 4x Heat Shrink Tube 12 mm x 76 mm (1/2'' x 3'')
- 2x Heat Shrink Tube 19 mm X 152 mm (3/4'' X 6'')
- 1x Sefl-adhesive aluminum foil

Tools needed

- Side Cutters
- Wire Stripper
- Crimping Tool
- Heat Gun
- Megger type isolation resistance tester
- Multimeter

Choose the appropriate mechanical connector

It is important to use the appropriate mechanical connector and the appropriate jumper splice according to the information of the original resistance at the installation or the amperage of the cable to be repaired.

Amperage	Wire	Mechanical connector
jusqu'à 20A	12 AWG	4 mm X 17 mm (5/32'' x 21/32'')
20A - 30A	10 AWG	5.5 mm X 20.5 mm (7/32'' x 13/16'')
30A - 45A	8 AWG	5.5 mm X 20.5 mm (7/32'' x 13/16'')

Risks of electrical shocks and fire

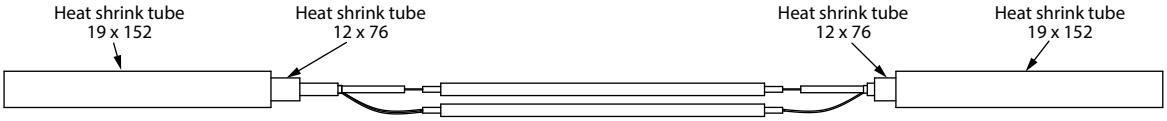
1. Make sure the power is off!

1.1 Before starting the repair, the defect should be localized.

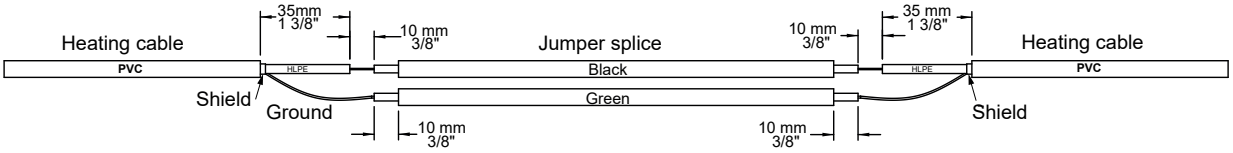
1.2 Following this, the heating cable must be made accessible.
For example: The cable section to repair must be free of concrete, flooring or glue.
The clearance must be large enough to permit repair as per the instruction.

2. Procedure for repair - Jumper splice method.

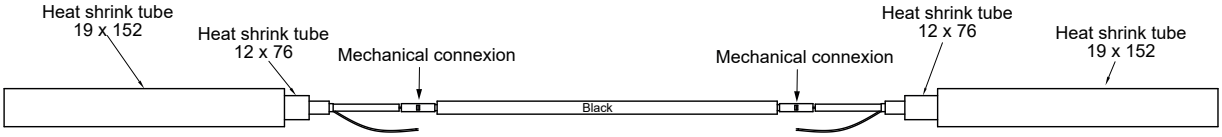
2.1 Cut the damage section and insert the 12 x 76 mm (1/2" x 3") and 19 x 152 mm (3/4" x 6") heat shrink tube over the 2 heating cables.



2.2 Strip the end of the heating cable wires and the end of the jumper splice.

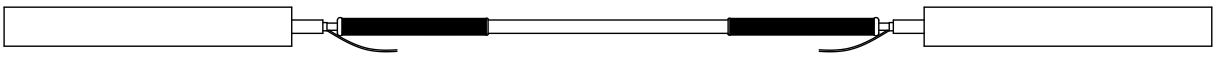


2.3 Insert the mechanical connector over the ends of the 2 heating wires and of the jumper splice and then crimp the mechanical connector to ensure the mechanical connection is tight. It is important to use the appropriate mechanical connector and the appropriate jumper splice to match the amperage of the cable to be repaired.

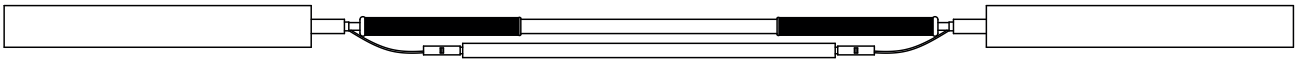


2.4 Fold back the ground wire and insert the 12 x 76 mm (1/2" x 3") heat shrink tube over each of the connections and make sure it is centered to the mechanical connection.

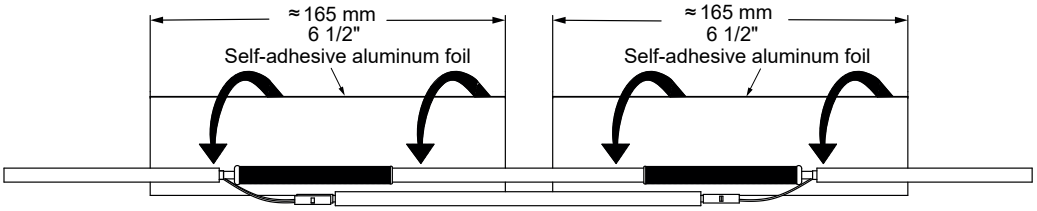
2.5 Heat the tube along its entire length with a hot air gun (do not overheat it), make sure the tube has shrunk enough to see the sealant coming out of both sides.



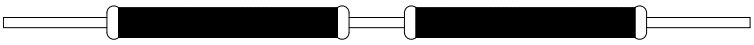
2.6 Let the tube cool down for 1 - 2 minutes and insert the mechanical connector over the 2 ground wires and then crimp the mechanical connector to ensure the mechanical connection is tight.



2.7 Use the self-adhesive aluminum foil and apply it firmly on the repair. It should completely cover the heat shrink tube.



2.8 Insert the 19 x 152 mm (3/4" x 6") heat shrink tube over the connections and make sure it is centered to the mechanical connection. Heat the tube along its entire length with a hot air gun (do not overheat it), make sure the tube has shrunk enough to see the sealant coming out of both sides.

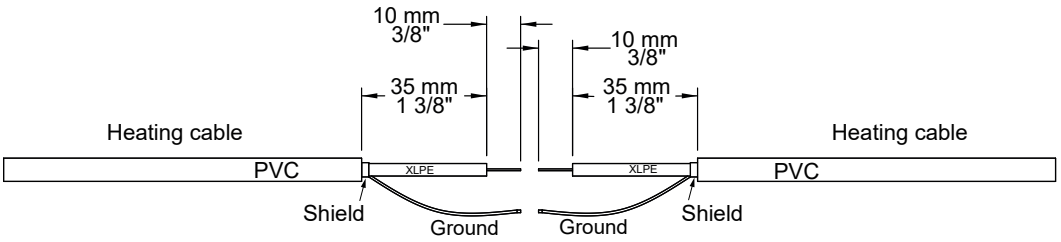


2.9 Allow the repair to cool down for 5 - 10 minutes before testing for continuity.

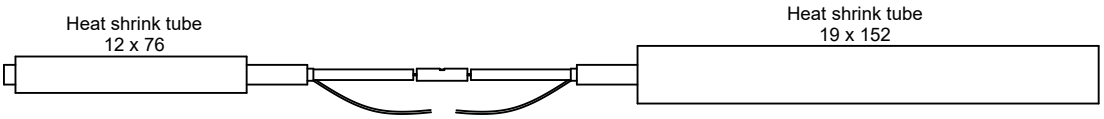
3. Procedure for repair - Direct splice method.

3.1 Cut the damaged section.

3.2 Insert the 12 x 76 mm (1/2" x 3") and 19 x 152 mm (3/4" X 6") heat shrink tube over one of the heating cables. Strip the wires

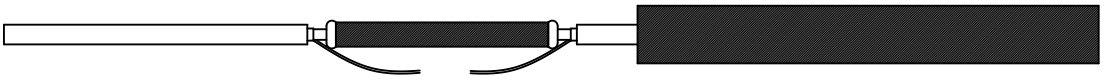


3.3 Insert the mechanical connector over each of the 2 heating wires and then crimp the mechanical connector to ensure that the mechanical connection is tight. It is important to use the appropriate mechanical connector according to the wire gauge (AWG).

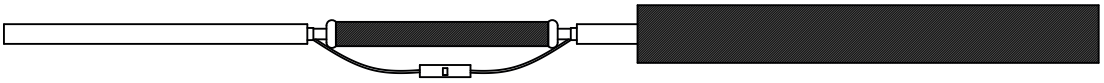


3.4 Insert the 12 x 76 mm (1/2" x 3") heat shrink tube over the connection and make sure it is centered to the mechanical connection.

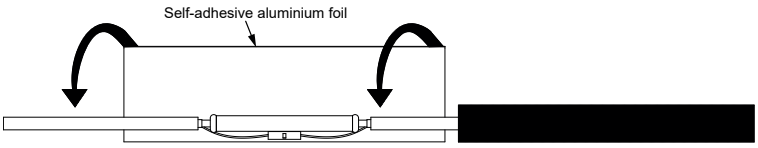
3.5 Heat the tube along its entire length with a hot air gun (do not overheat it), make sure the tube has shrunk enough to see the sealant coming out of both sides.



3.6 Let the tube cool down for 1 - 2 minutes and insert the mechanical connector over the 2 ground wires and then crimp the mechanical connector to ensure the mechanical connection is tight.



3.7 Use the self-adhesive aluminum foil and apply it firmly on the repair. It should completely cover the heat shrink tube.

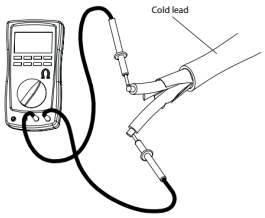


3.8 Insert the 12 x 76 mm (1/2" x 3") heat shrink tube over the connection and make sure it is centered to the mechanical connection. Heat the tube along its entire length with a hot air gun (do not overheat it), make sure the tube has shrunk enough to see the sealant coming out of both sides.

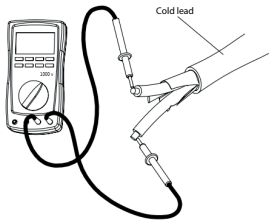
3.9 Allow the repair to cool down for 5 - 10 minutes before testing for continuity.

4. Repair test.

4.1 Use a calibrated digital multimeter to measure the heater resistance.
- Measure the resistance at the strip end of the cold lead between the two power conductors.
- Note the result.



4.2 Check the integrity of the heating cable by comparing the measured value to the value written on the label on the cold lead.
"If the value read is in below 1% of the value on the installation label the cable will need to be rechecked or replaced with a new heating cable."
- Perform a "Megger" type test to verify the insulation resistance of the repair at 1000 Volts DC.
- If the result is less than 50 Mohms either the repair is defective or there is another defect in the system .



CAUTION! Dangerous Test

5. Repair log.

5.1 When the repair is successfully completed, write on the label (included in the kit) the required information.

VEUILLEZ APPOSER CETTE ÉTIQUETTE À CÔTÉ DE L'ÉTIQUETTE SIGNALITIQUE OU SUR LE PANNEAU DE DISTRIBUTION / PLEASE PLACE THIS LABEL NEXT TO THE RATING LABEL OR ON THE DISTRIBUTION PANEL

EMPLACEMENT / LOCATION	
NUMÉRO DE MODÈLE DU CÂBLE / CABLE MODEL NUMBER	
RÉSISTANCE / RESISTANCE (OHMS)	
AMPÉRAGE / AMPERAGE (AMPS)	
NOUVELLE LONGUEUR DU CÂBLE / NEW CABLE LENGTH	
DATE DE LA RÉPARATION / DATE OF REPAIR	
NOM DU TECHNICIEN / TECHNICIAN NAME	
COMPAGNIE / COMPANY	

5.2 Please place this label next to the rating label or on the dsitribution panel of the heating cable that has been repaired.

5.3 It is necessary for the owner to have a repair log in case of future repairs.

5.4 In the repair kit there are 2 labels, if the first one has not been affixed to the distribution panel, it is the owner's responsibility to either have his own repaid log or to apply the 2nd label with his information on the distribution panel of the heating cable that has been repaired.

5.5 After repair, reinstall the floor covering in conformance with the heating cable installation instructions.