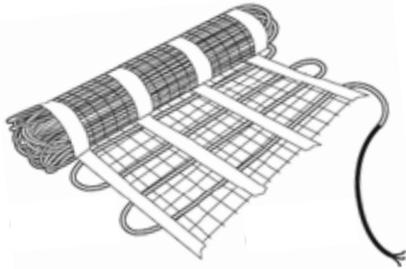


## About SNOW-MAT™

The Britech SNOW-MAT™ is designed to provide sufficient heat to melt snow in residential and commercial applications across Canada. They are constructed of the finest heating cables available, and are bound to a heavy mesh backing that will withstand the rigors of construction site installations.



The Britech SNOW-MAT™ consists of a solid copper, twin conductor cable with a resistance wire element and a return wire, wrapped in a layer of thermoplastic insulation. The insulation element is further protected by a tinned copper grounding shield. The armored heating element is then woven to a 1" open fiber mesh that can be easily formed and adapted to almost any geometrical shape, to suit your walkway, landing or ramp. The mats and heating cables are factory bonded to a 16' (4.9 m) long cold lead for ease of installation. This design utilizes the most advanced materials and is the most easily installed, versatile and reliable snow melting mat available. Suitable for residential or commercial renovation and new construction.

The SNOW-MAT™ is CSA listed for OUTDOOR SNOW MELTING APPLICATIONS. It is warranted to be free from manufacturers defect for 20 years (see written Limited Warranty for details). The mats are maintenance free, safe, silent, energy efficient and once installed, it is totally out-of-sight.

While a variety of controls can be used with the Britech SNOW-MAT™, we strongly recommend using a snow sensor and in slab thermostat with a remote bulb temperature sensor. This form of control affords the greatest comfort, energy efficiency and control of your installation.

The following pages will provide you with an overview of how the Britech SNOW-MAT™ works, how it is installed and maintained. Take a few moments to review this information. If you have further questions, one of our application engineering professionals will be happy to assist you.

## Owner's Information & General Instructions

The electrical connection of the SNOW-MAT™ must be performed by a qualified electrician in accordance with Section 62 CAN/CSAC22.1 part 1, of the Canadian Electrical Code (CEC). The installer has been instructed to provide you with a plan of the system installation. The plan shows where the heating element is installed, the location of the temperature sensor and the electrical description of the system. Keep the plan for your system and a copy of these instructions for future reference. Future homeowners should also receive this information.

The SNOW-MAT™ is designed to operate with a 240 volt system. To optimize the efficiency of the system never bury the mat deeper than 3" (76 mm) in concrete or asphalt. Interlocking stone or bricks should be no more than 3" (76 mm) thick with a 1" (25 mm) thick layer of sand or screening underneath. Make sure your installation is planned to use the mats only in the areas where snow melting is required. Do not install them under lawns or city sidewalks.

### Snow Sensing:

We recommend the use of an automatic snow sensor to sense temperature, freezing rain, and falling or blowing snow. This makes the system fully automatic and will ensure the area will be clean all the time.

### Temperature Control:

A thermostat which monitors and controls the temperature through a remote sensor is mounted in the ramp, driveway or sidewalk at the time of installation. It is required in all installations. The system will not be warranted without this type of temperature controller. The thermostat will also save energy by only providing the amount of heat necessary to melt snow or ice. Britech's Temperature Control comes with a 20 foot (6 metre) capillary to reach into the heated area.

### Maintenance:

Periodically, the listed GFCI (Ground Fault Circuit Interrupter) which is required in all installations should be tested to insure its continued operation. The SNOW-MAT™ has no moving parts, therefore the system is virtually maintenance free. If the system does not appear to be heating properly, refer to the troubleshooting guide or call your installer.

## Installer's Guide to Installation & General Instructions

These instructions must be followed when assembling and installing the SNOW-MAT™ snow melting system. Make them available to the installer working on the project and when finished turn them over to the homeowner for future reference. Failure to follow these instructions may void the warranty on the installed system.

### Important Installation Considerations:

The electrical connection of the heating system and the thermostat should be done only by a qualified electrician in accordance with the Canadian Electrical Code and with local codes. To assure safety, the Britech SNOW-MAT™ must be connected to the electrical service via a listed GFCI (Ground Fault Circuit Interrupter).

The heating system may be installed in concrete, asphalt and under interlock or marble driveways. Do not install in loose gravel.

The mat must be covered by a permanent surface. Do not walk on the unprotected mat. Penetrating fasteners such as nails or screws may not be installed through the areas of the mat or cables.

The mat's heating element should not be laid across expansion joints of ramps. While installing the mat, avoid crimping or bending the heating element wire.

For electrical connections use the correct gauge of wire as listed in the Canadian Electric code. Use 10 gauge wire to connect. A GFCI must be installed on all cables.

**To determine amperage, add up the wattage of each mat and divide by the voltage.**

**Example:** 5200 W / 240 V = 22 Amps

**NOTE: To avoid damage to the heating element during installation, care must be taken that tools with sharp edges or points are not dropped or used carelessly on the element. Do not drive loaders, wheelbarrows, cars or trucks over the cables. These are electric elements. Care must be taken to avoid costly repairs or cancellation of the warranty.**

**IMPORTANT: Cold leads and temperature sensors should be inserted into the electrical box without extensions or splices. Extensions or splices are not permitted. Consult your local representative if extensions or splices are required. All junction boxes must be visible and accessible.**

The Canadian Electrical Code (CEC) requires that cold leads must be protected in a listed conduit when they extend outside the heated area (see also local codes). Plastic bushings should be used where cold leads and sensors enter conduit to protect the wires.

**IMPORTANT: The slab sensor should be secured in the heated area only after heating mats and cables have been secured to the sub-base. This will allow you to place the sensor properly between the heating element wires.**

### Positioning the Mat:

Start to layout the heating mat from an area adjacent to the thermostat or junction box. Ensure cold leads and temperature sensor can reach the flush mounted electrical box where the thermostat will be installed. Heating cables must not cross or overlap at any point. The heating cable length may NOT be cut or altered under any circumstances. This will cause over heating and result in damage to the system.

Cables should be separated from other heat sources such as lights and chimneys.

### Laying Out the Mat:

Make sure the area is completely free of all debris including all nails, sharp metallic objects, wood and construction debris. Start from the location of the power connection box. Roll out the heating mat with cable side up, and secure the mesh onto the sub-base with Clip Strips or U clips. For rebar or grid use plastic zip ties (supplied by the installer). As needed, cut the mesh backing between the heating elements wire to create the desired layout shape (see Figure 1 and 2).

While cutting, be sure to cut only the mesh and to avoid nicking or damaging the heating element wires (see Figure 1).

Ensure the entire element is encased in the sidewalk, ramp or driveway material. Only the cold lead and temperature sensor tube can protrude beyond the heated area.

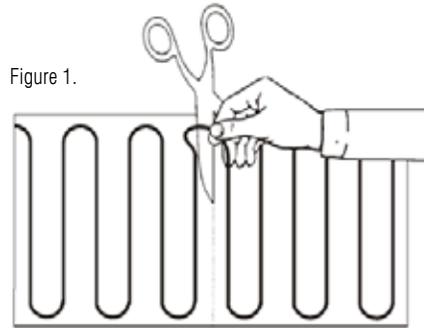


Figure 1.

**IMPORTANT: Be sure to cut only the mesh. At no time may the heating element wire be cut. This will result in damage to the system.**

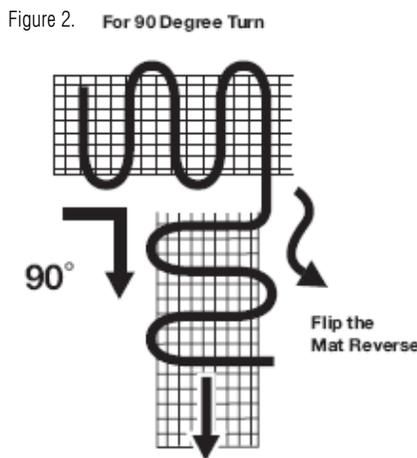
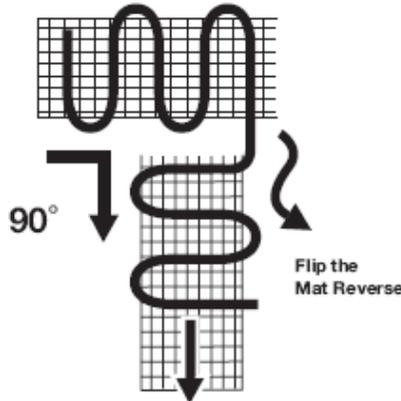
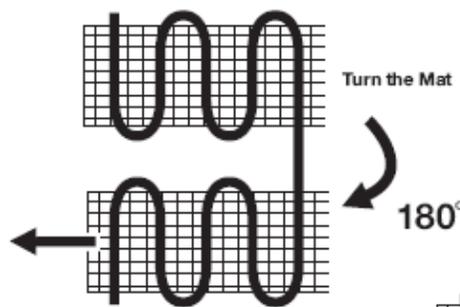


Figure 2.

For 90 Degree Turn



For 180 Degree Turn



**NOTE: For snow melting on stairs or uncommon geometric areas, please contact your Britech representative for information on snow melting cables.**

### Element Spacing:

Refer to Figure 3. Dimension A and B should be equal when possible. Dimension A Should never be less than 60% of dimension B.

**IMPORTANT: The mesh may overlap but the heating element wire must never overlap.**

Minimum bend radius of the cables is 2" (5 cm). Do not install the mat below -15 °C (5 °F).

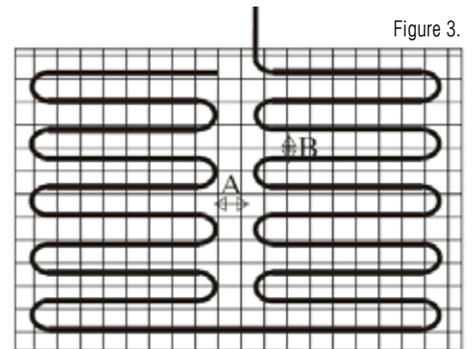
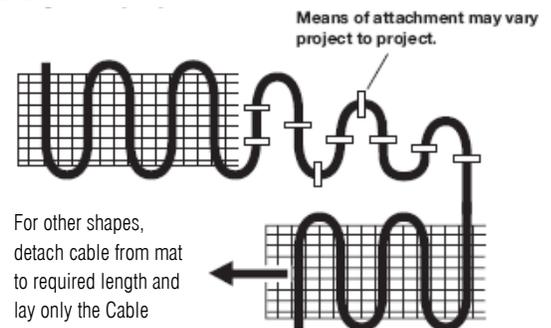


Figure 3.

### Testing the System Resistance:

Before setting the mat, measure the resistance with an Ohmmeter (see resistance 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 mat during installation. Mark the measured resistance on the control 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.**



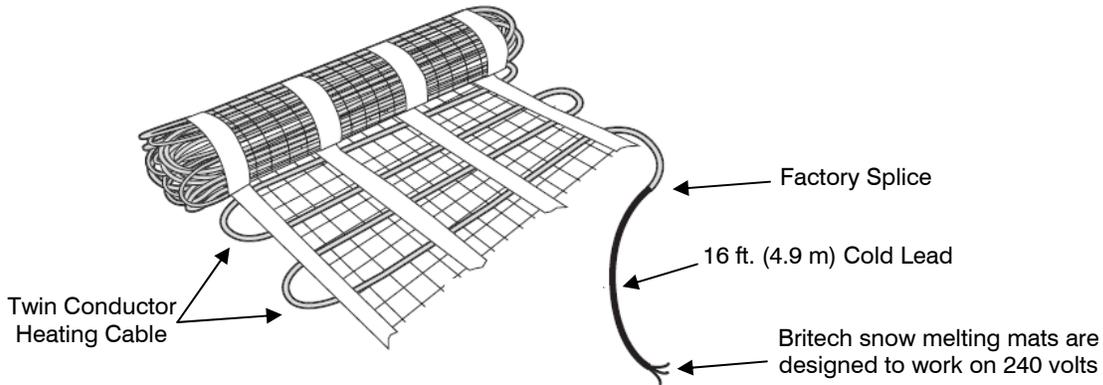
For other shapes, detach cable from mat to required length and lay only the Cable

**Covering the Mat**

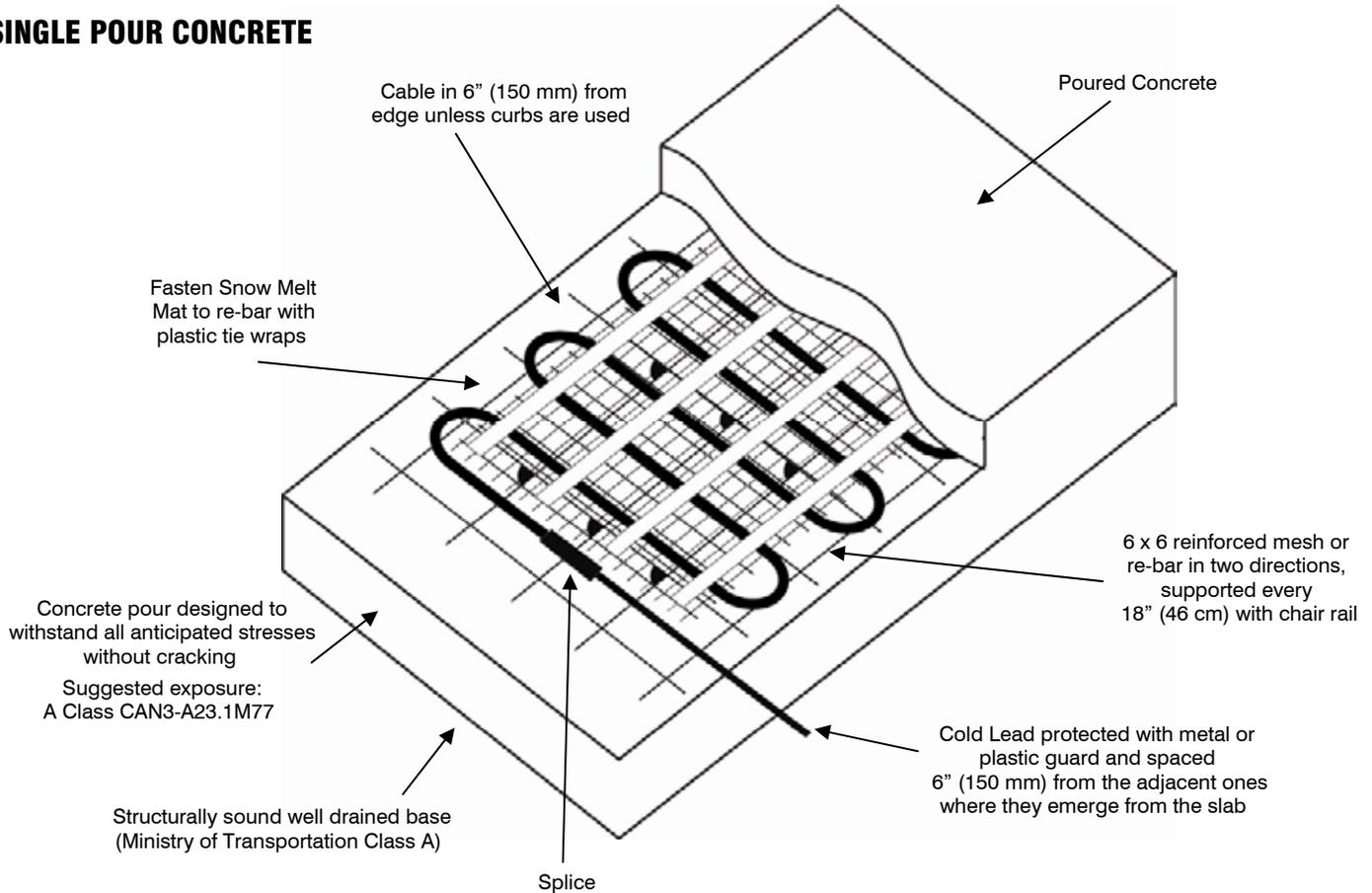
The heating system may be covered with concrete, asphalt or interlock. When covering the system do not move or place heavy loads such as wheel loaders, tampers, wheelbarrows, cars, trucks, skids of brick, stone, or cement or mixers on the mat or cables.

Should access with heavy equipment be required, carefully move the mats and cables away from the path of the heavy loads, cover the furthest area with the surface material and work back towards the road.

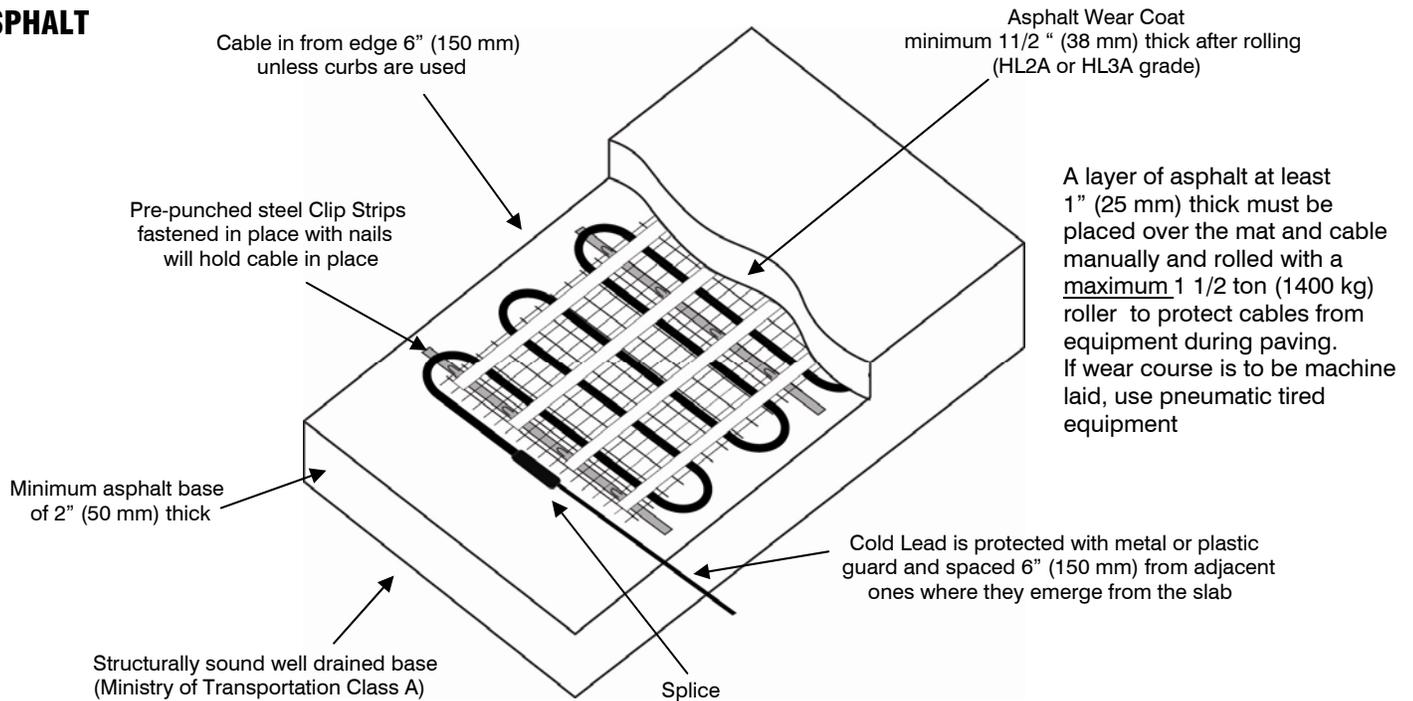
Ensure the entire heating mat, factory splice and thermostat sensor are embedded into the cement, asphalt or sand. Allow a sufficient drying or curing period of the concrete or asphalt before turning on the system, to prevent failure of the system.



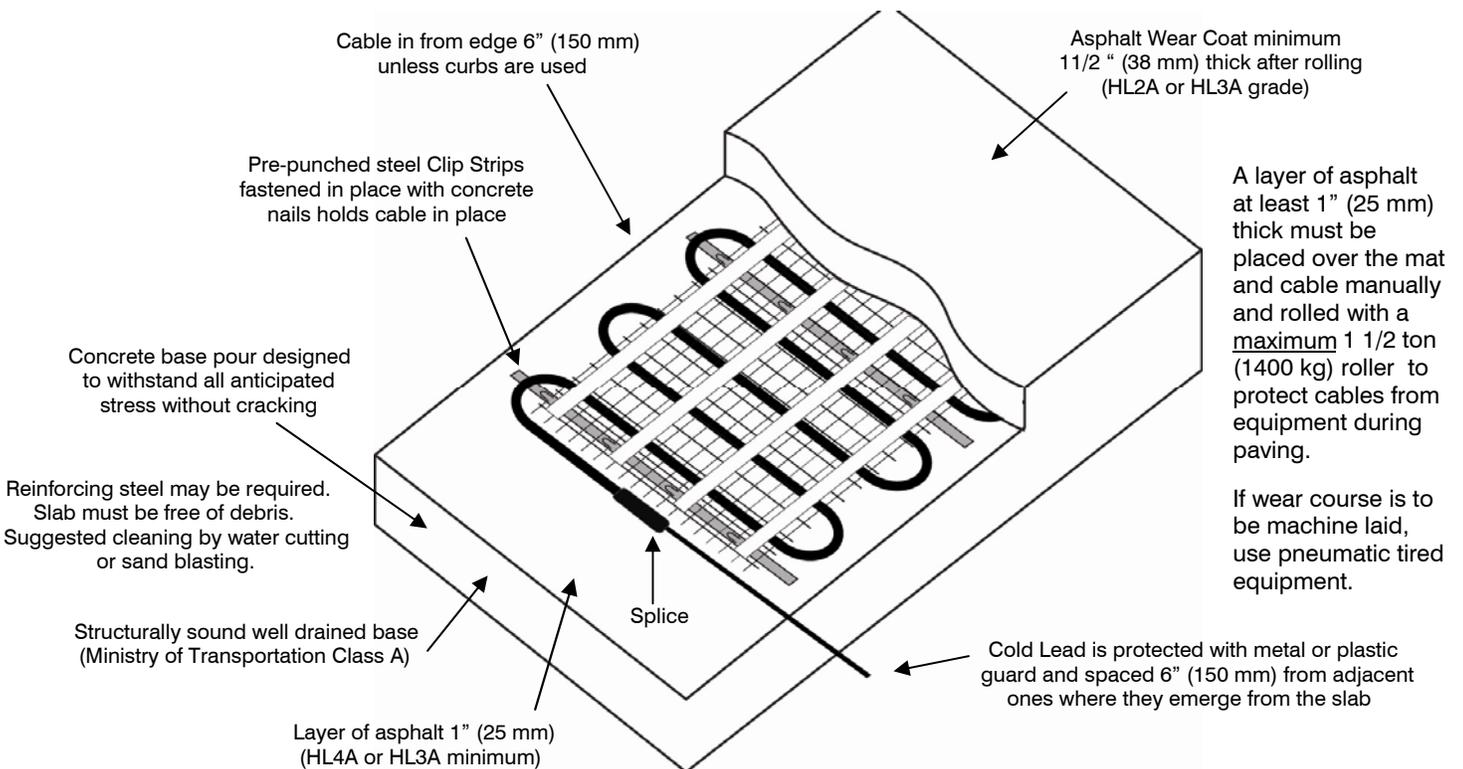
**SINGLE POUR CONCRETE**



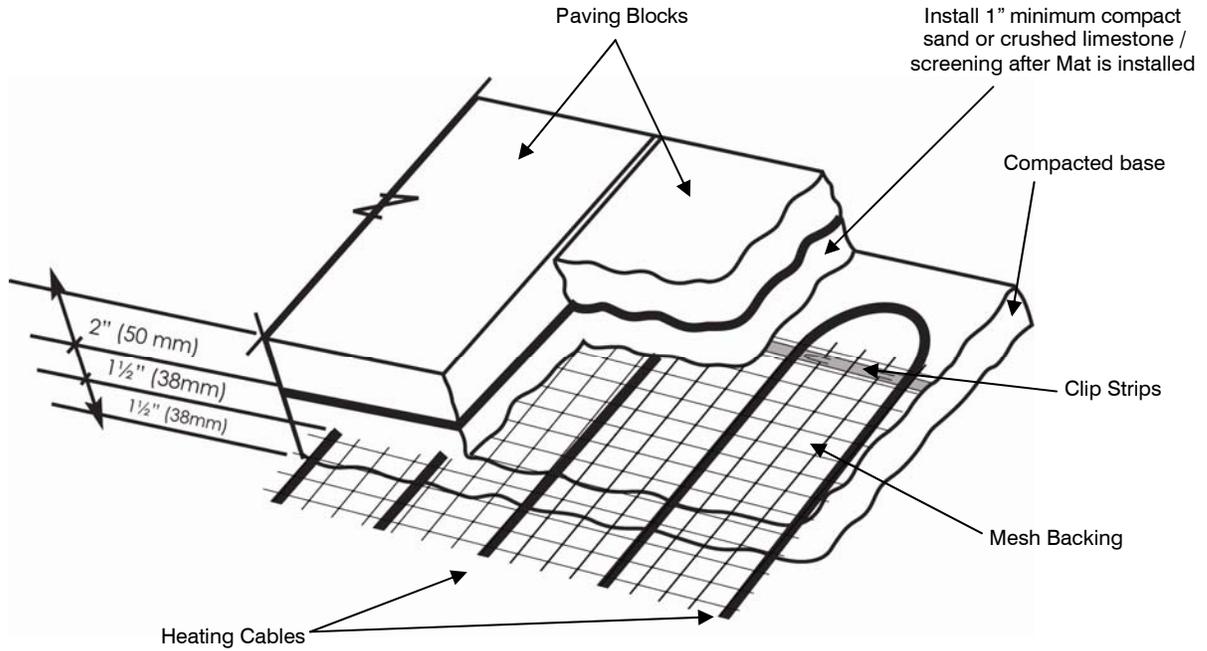
**ASPHALT**



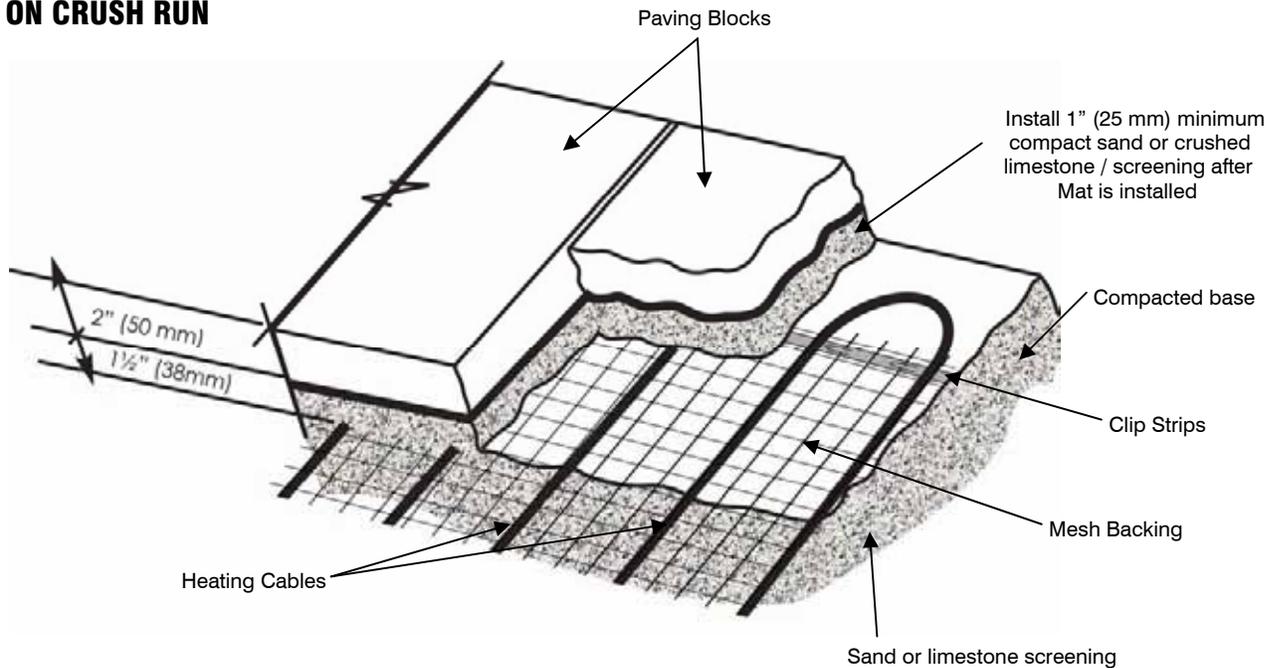
**ASPHALT WITH CONCRETE BASE**



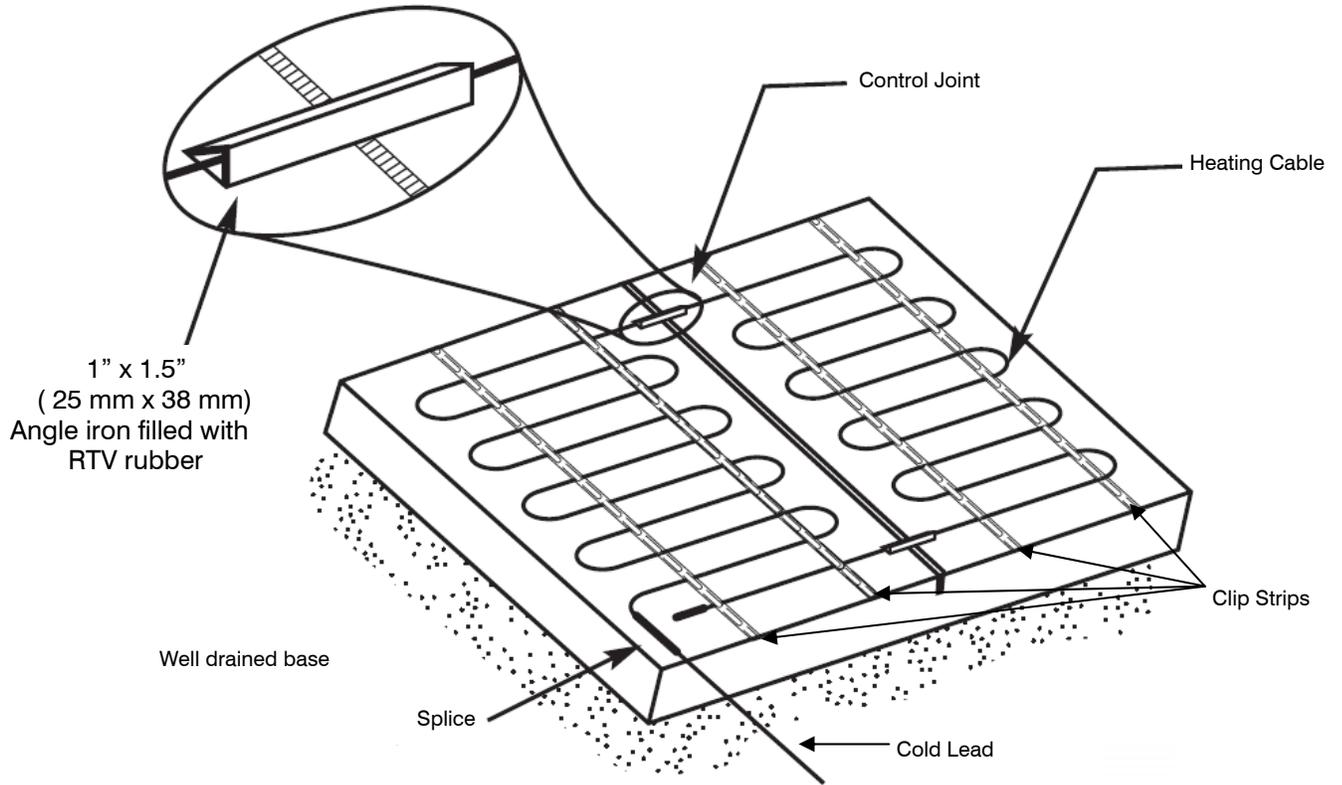
**PAVERS ON CONCRETE**



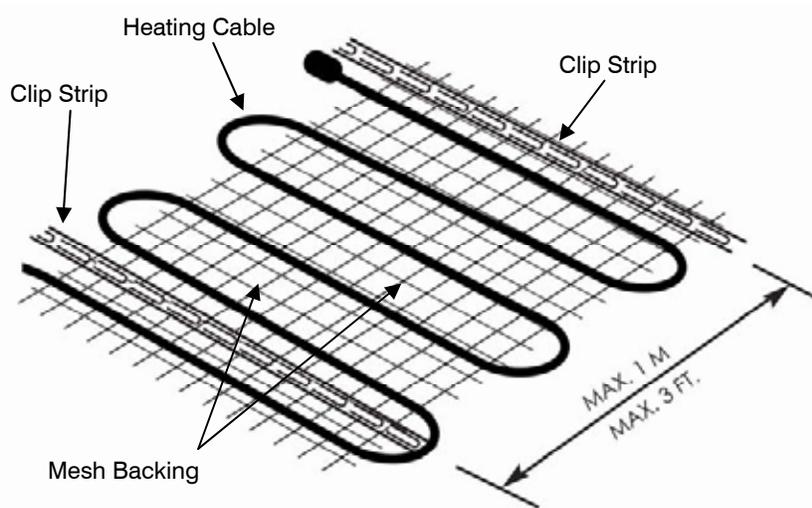
**PAVERS ON CRUSH RUN**



**CONTROL JOINT**



**CLIP STRIP**



**SNOW-MAT SELECTION CHARTS**
**OPERATING VOLTAGE | 240 V | 40 W/FT<sup>2</sup>**

PRODUCT REF. CODE	POWER (WATTS)	LOAD (AMPS)	RESISTANCE (OHMS)	LENGTH OF MAT (FT)	WIDTH OF MAT (FT)	AREA (SQ FT)
SMMT-240-970	970	4.0	59.4	16.0	1.5	24
SMMT-240-1440	1440	6.0	40.0	24.0	1.5	36
SMMT-240-1950	1950	8.1	29.5	32.0	1.5	48
SMMT-240-2160	2160	9.0	26.7	36.0	1.5	54
SMMT-240-2890	2890	12.0	19.9	48.0	1.5	72
SMMT-240-3900	3900	16.3	14.8	65.0	1.5	97.5
SMMT-240-4330	4330	18.0	13.3	36.0	3.0	108
SMMT-240-4870	4870	20.3	11.8	41.0	3.0	123

**OPERATING VOLTAGE | 208 V | 40 W/FT<sup>2</sup>**

PRODUCT REF. CODE	POWER (WATTS)	LOAD (AMPS)	RESISTANCE (OHMS)	LENGTH OF MAT (FT)	WIDTH OF MAT (FT)	AREA (SQ FT)
SMMT-208-960	960	4.6	45.1	16	1.5	24
SMMT-208-1440	1440	6.9	30	24	1.5	36
SMMT-208-1920	1920	9.2	22.5	32	1.5	49
SMMT-208-2160	2160	10.4	20	36	1.5	54
SMMT-208-2880	2880	13.8	15	48	1.5	72
SMMT-208-3900	3900	18.8	11.1	65	1.5	97.5
SMMT-208-4320	4320	20.8	10.0	36	3.0	108
SMMT-208-4920	4920	23.7	8.8	41	3.0	123

**OPERATING VOLTAGE | 600 V | 40 W/FT<sup>2</sup>**

PRODUCT REF. CODE	POWER (WATTS)	LOAD (AMPS)	RESISTANCE (OHMS)	LENGTH OF MAT (FT)	WIDTH OF MAT (FT)	AREA (SQ FT)
SMMT-600-960	960	1.6	375	16	1.5	24
SMMT-600-1440	1440	2.4	250	24	1.5	36
SMMT-600-1920	1920	3.2	187.5	32	1.5	49
SMMT-600-2160	2160	3.6	166.7	36	1.5	54
SMMT-600-2880	2880	4.8	125	48	1.5	72
SMMT-600-3900	3900	6.5	92.3	65	1.5	97
SMMT-600-4320	4320	7.2	83.3	36	3.0	108
SMMT-600-4920	4920	8.2	73.2	41	3.0	123
SMMT-600-6000	6000	10	60	50	3	150

### TROUBLE SHOOTING:

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

1. If the system fails to heat, make sure the Ground Fault Circuit Interrupter (GFCI) has not been tripped. If it has, find the fault and rectify problem.

2. Check for continuity with an Ohmmeter. Compare the reading with the resistance marked on the Output Plate. Lack of or reduced continuity may indicate a break in the system.

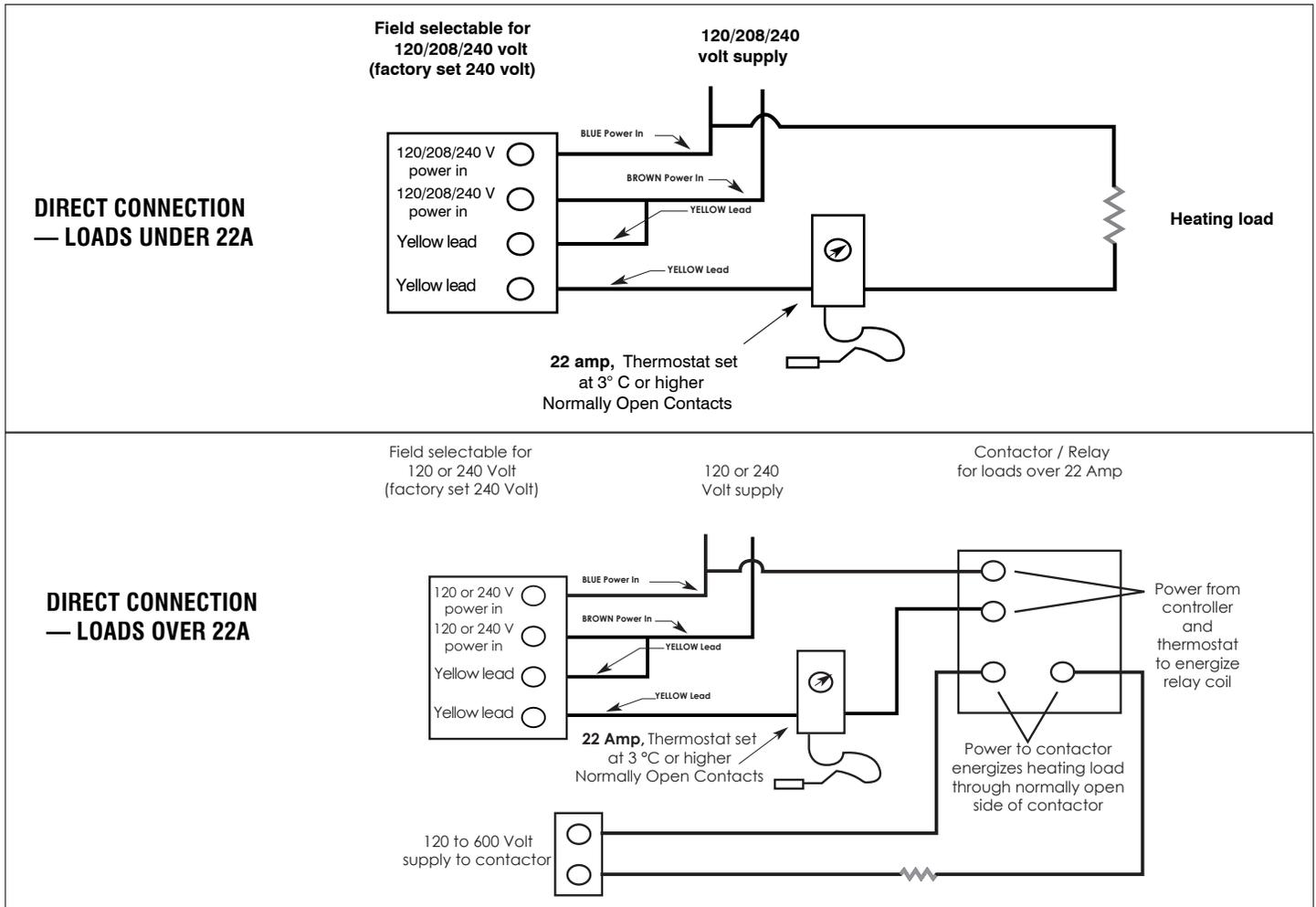
3. Make sure the breaker or fuse is delivering power to the system.

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.

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.

### SNOW MELT CONTROL DS-2C SCHEMATIC — Maximum 22 Amp. 120/208/240 Volts supply to sensor and thermostat



**Note: Failure to accurately set all functions will result in poor performance**

Check instruction manual to ensure the timer, temperature and setting dip switches are set.

- Timer should be set for 90 minutes "ON"
- Temperature switch set to 34-35 °F

#### Dip switches set as follows:

LD:	OFF
LTC:	OFF
DEL:	ON
RAIN:	OFF
SNOW:	ON

**Note: The schematics above are meant as a preliminary guide only. Refer to the instructions provided with the thermostat and sensor controls. All electrical work should be performed by a licensed electrician.**

**Product Name:** \_\_\_\_\_

**Model #:** \_\_\_\_\_ **Watts:** \_\_\_\_\_ **Volts:** \_\_\_\_\_

**Supplier/Purchased from:** \_\_\_\_\_

**APPLICATION:**  FLOOR WARMING  RADIANT HEATING  SNOW MELTING  ROOF DE-ICING  PIPE TRACING  OTHER

**LOCATION :** \_\_\_\_\_

<b>TEST</b>	<b>Before commencing installation</b>	<b>After installation but before final surface</b>	<b>After final surface installation</b>
<b>Continuity</b>			
<b>Resistance of Cable (OHMS)</b>			
<b>Insulation Resistance (M OHMS)</b>			

**Address of Installation:** \_\_\_\_\_

**Date of Installation:** \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ (MM/DD/YY)

**Name of Qualified Electrician:** \_\_\_\_\_

**Signature of Qualified Electrician:** \_\_\_\_\_

**IMPORTANT: The system warranty is not valid without evidence that the system resistance has been tested. Control Card must be completed and given to the property or homeowner upon completion of installation and required testing.**

For assistance with your heating cable product please contact Britech by calling 1-877-335-7790 or email [info@britech.ca](mailto:info@britech.ca)

## WARRANTY POLICY

All products sold in Canada by Britech Corp. carry the original manufacturers warranties. Britech's policy is to exchange any non-performing product with a similar product or product of equal value during its warranty period as outlined in the terms below. Full product warranties can be obtained from the manufacturer online and/or by request.

Britech will administer and promptly process all warranties in accordance with the manufacturer's specific warranty policies and procedures.

Britech will provide technical assistance to assist the end user or installer in the best method of operation, application and installation.

Custom heating cables carry a twenty (20) year warranty. Warranty on custom TXLP cables is provided by Nexans (refer to their warranty statement summary).

For more information regarding warranty terms or for assistance with your heating cable product please contact Britech Corp. at 1-877-335-7790

## Warranty Terms for Heating Cables, Mats & Custom Cable Units:

**BRITECH Terms of Limited Warranty (Summary):** This guarantee applies to the following Britech label products: TECH-MAT™, SNOW-MAT™, SNOW-MELT™ and BRI-THIN™ Cables.

Britech warrants to the original purchaser only, that the product is to be free of any defects in material or workmanship during the first twenty (20) years after the date of purchase under proper and normal use of the system. This guarantee is a material warranty only and does not cover any labor or other installation cost. The warranty does not cover installations made by unauthorized persons or faults caused by incorrect design by others, misuse, damage caused by others, damage in transit, incorrect installation and any other subsequent damage that may occur. Repair and/or replacement will be fully chargeable if damage is result of any of the above reasons.

Britech is under no circumstances liable for any incidental, special, or consequential damages or losses including without limitation the loss or profit arising from any cause whatsoever. To obtain a replacement under this warranty, please send a description of the defect, proof of purchase, and the damaged product, shipping paid to Britech at the address noted below. The warranty is void if there is any payment default and if data is not filled-in on the control card. [www.britech.ca](http://www.britech.ca)

### NEXANS Terms of Limited Warranty (Summary):

Nexans Norway warrants the products manufactured by it to be free from defects in material and workmanship from the date the warranty form attached to the product is correctly and completely filled in and for a period of twenty (20) years thereafter, or a period of twenty-one (21) years after the production date, whichever period ends first, under proper and normal use and service. Nexans Norway's responsibility does not include defects caused by material obtained by the buyer or by constructions specified by it. Nexans Norway further warrants that the products will have passed those performance tests, if any, called for in the applicable specifications.

The buyer must give Nexans Norway written notice of any defect within thirty (30) days following the discovery of the defect, and in no event later than two (2) weeks after the expiry of the warranty period.

[www.nexans.com](http://www.nexans.com)

## Warranty Terms for Controls, Thermostats & Sensors:

### ASE / Automated Systems Engineering Terms of Limited Warranty (Summary):

ASE Products are warranted against defects in workmanship and materials for two (2) years from date of sale. This warranty does not apply to damage resulting from accident, misuse, or alteration nor where connected voltage is more than 5% above the configured operating voltage, nor to equipment improperly installed or wired or maintained in violation of the Owner's Manual. No other written or oral warranty applies. No employee, agent, dealer or other person is authorized to give any warranties on behalf of ASE. The customer shall be responsible for all costs incurred in the removal or reinstallation and shipping of the product for repairs. Within the limitations of this warranty, inoperative units should be returned, freight prepaid, to ASE, and we will repair or replace, at our option, at no charge to you with return freight paid by ASE. It is agreed that such repair or replacement is the exclusive remedy available from ASE and that ASE IS NOT RESPONSIBLE FOR DAMAGES OF ANY KIND, INCLUDING INCIDENTAL AND CONSEQUENTIAL DAMAGE. [www.goase.com](http://www.goase.com)

### BRITECH / HONEYWELL

#### Terms of Limited Warranty (Summary):

Honeywell warrants its products, excluding battery, to be free from defects in the workmanship or materials, under normal use and service, for a period of three (3) years from the date of manufacture. If at any time during the warranty period the product is determined to be defective or malfunctions, Honeywell shall repair or replace it (at Honeywell's option) through Britech.

If product is defective, return it to the following address: Britech Corp., 17 Pullman Court, Toronto, Ontario M1X 1E4 Toll Free: 1-877-335-7790 • Email: [info@britech.ca](mailto:info@britech.ca)

This warranty does not cover removal or reinstallation costs. This warranty shall not apply if it is shown by Honeywell that the defect or malfunction was caused by damage which occurred while the product was in the possession of a consumer. Honeywell's sole responsibility shall be to repair or replace the product within the terms stated above.

[www.honeywell.com](http://www.honeywell.com)

### JOHNSON CONTROLS

#### Terms of Limited Warranty (Summary):

The Company warrants all products manufactured by it to be free from defects in workmanship or materials under normal use and service. If any part of the product herein described, and sold by the Company proves to be defective in workmanship or material, and if such part is within three (3) years from date of sale, returned to the Company transportation charges prepaid and if the same is found by the Company to be defective in workmanship or material, credit based on current prices will be allowed. The date of sale must be established by a receipt showing the purchase date, seller and product sold. If the date of sale cannot be determined, the warranty shall extend for three (3) years from the date of manufacture. [www.jci.com](http://www.jci.com)

### NEXTRON Terms of Limited Warranty (Summary):

The manufacturer warrants each control that it manufactures to be free from defective material or workmanship for a period of 12 months from date of purchase. Under this warranty, the obligation of the manufacturer is limited to repairing or replacing the defective control at its option, when returned to the manufacturer's factory with shipping charges prepaid. If failure has been caused by misuse, incorrect application or alteration of the control, this warranty will be void. UNLESS SPECIFICALLY PROVIDED FOR IN WRITING IN THIS WARRANTY, EACH CONTROL IS PROVIDED WITHOUT ANY WARRANTY OF ANY KIND EITHER EXPRESSED OR IMPLIED. The user shall be made aware that if the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired. [www.nextron.ca](http://www.nextron.ca)

## Warranty Terms for BRI-GFI Ground Fault Interrupter:

### BRITECH Terms of Limited Warranty (Summary):

Britech warrants the BRI-GFI (Ground Fault Interrupter) is manufactured to be free from defective material or workmanship for a period of 12 months from date of purchase. Under this warranty, the obligation of Britech is limited to repairing or replacing the defective control at its option, when returned to the manufacturer's factory with shipping charges prepaid. If failure has been caused by misuse, incorrect application or alteration of the control, this warranty will be void. BRITECH IS UNDER NO CIRCUMSTANCES RESPONSIBLE FOR DAMAGES OF ANY KIND, INCLUDING INCIDENTAL AND CONSEQUENTIAL DAMAGES. This guarantee is a material warranty for components only and does not cover any labor. To obtain a replacement under this warranty, please send a description of the defect, proof of purchase, and the damaged product, shipping paid to Britech at the address noted herein.

## Warranty Terms for Self-Regulating Cables (FT-FREEZE TRACE/ST-SMART TRACE)

### BRITECH Terms of Limited Warranty (Summary):

This guarantee applies to Britech's Self-Regulating Cables: FT (5) five years / ST (2) two years

Britech warrants to the original purchaser only, that the product is to be free of any defects in material or workmanship (during warranty term as noted above) after the date of purchase under proper and normal use of the system. This guarantee is a material warranty only and does not cover any labor or other installation cost. The warranty does not cover installations made by unauthorized persons or faults caused by incorrect design by others, misuse, damage caused by others, damage in transit, incorrect installation and any other subsequent damage that may occur. Repair and/or replacement will be fully chargeable if damage is result of any of the above reasons.

Britech is under no circumstances liable for any incidental, special, or consequential damages or losses including without limitation the loss or profit arising from any cause whatsoever. To obtain a replacement under this warranty, please send a description of the defect, proof of purchase, and the damaged product, shipping paid to Britech at the address noted herein. The warranty is void if there is any payment default and if data is not filled-in on the control card. [www.britech.ca](http://www.britech.ca)