

# LOW VOLTAGE IN-FLOOR HEATING SYSTEM



# **INSTALLATION AND OPERATION INSTRUCTIONS**

For use under floating laminate, engineered wood, hardwood, vinul and tile flooring

#### **CAUTIONS:**

THIS EQUIPMENT SHALL BE INSTALLED ONLY BY QUALIFIED PERSONNEL WHO ARE FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THE APPARATUS AND THE RISKS INVOLVED.

THE INSTALLATION OF THIS HEATING PRODUCT SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE REGULATIONS OF THE AUTHORITY HAVING JURISDICTION.

Truly A Smarter Way To Heat



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Truly A Smarter Way To Heat

#### INTRODUCTION

Thank you for your purchase! You are now ready to enjoy the many benefits of the TruHeat system such as comfort, low energy consumption, added safety and ease of installation.

The TruHeat system is a next generation low voltage in-floor heating system designed to offer minimal energy consumption yet offer exceptional versatility when it comes to floor heating. The TruHeat system in-floor heating system is a ready-made, comprehensive solution for heating homes, apartments, industrial and commercial buildings. The system can be put under most types of floors and can be installed with minimal work. What makes the TruHeat system so special is the system's patented "TruHeat Tape" which is a flexible aluminum alloy heating strip. Not only is the TruHeat tape much more durable than copper wires which are used in traditional electric in-floor heating systems, it also covers more of the floor surface. In fact, the tape covers up to 65% of the heated area allowing the user to enjoy the heat significantly faster. Furthermore, this also allows the system to use significantly less energy which means the system can be effective at a lower working temperature than other high voltage systems. While wire based systems reach extreme temperatures of 90°C (194°F), the TruHeat tape works effectively at a temperature of  $28-30^{\circ}$ C ( $82^{\circ}$ F- $86^{\circ}$ F). And more importantly it enables to significantly reduce the heat loss and energy consumption of the system. All these features make the TruHeat system one of the most efficient, durable and comfortable solutions for heating your home or any other facility.

#### **FEATURES**

- 7 Watts/Sqft
- Easy to install
- Operates on low voltage system
- 120V or 240V input
- · Thermostat controlled
- Warranted to be free of defects in manufacture for a period of 20 years



#### **CAUTION:**

Read and follow all the installation instructions in this manual before attempting to install the TruHeat System. Improper installation procedures or techniques can cause potentially unsafe conditions, including overheating and shock hazards. Failure to comply with the instructions in this manual can void the manufacturer's warranty. Electrical connections should only be made by licensed contractors.



#### NOTE:

Upon removing the TruHeat tape from the box, it is important to check for any damage/tear on the tape and check for continuity using a multimeter. To check continuity place one end of the meter on one of the ends of the tape and the second end of the tester on the second send of the tape. If there is no continuity, call the technical support hotline at 1-833-999-HEAT (4328).

#### LIMITED WARRANTY

TruHeat System warrants that, at the time of shipment to the customer who directly purchases the Product from TruHeat System, the product will be free of defects in workmanship and materials and will conform in all material respects to any written specification that TruHeat System provided to that customer before the purchase. If that customer believes that a shipment of product fails to satisfy the above warranty, that customer must (A) contact TruHeat System in writing within 20 years after that customer receives the shipment, including a detailed explanation of the alleged nonconformity and (B) return the shipment to TruHeat System postage prepaid. If TruHeat System reasonably determines through examination of the returned shipment that the shipment did not satisfy the above warranty, then AS TRUHEAT SYSTEM EXCLUSIVE LIABILITY AND THE CUSTOMER'S SOLE REMEDY, TRUHEAT SYSTEM WILL, WITHIN A REASONABLE PERIOD OF TIME, REPAIR THE PRODUCT, REPLACE THE PRODUCT WITH THE SAME OR SIMILAR PRODUCT, OR CREDIT THE CUSTOMER'S ACCOUNT WITH THE PURCHASE PRICE, WHICHEVER TRUHEAT SYSTEM MAY ELECT IN ITS SOLE DISCRETION.

This warranty does not apply if TruHeat System reasonably determines that the product has been cut, added to or otherwise altered, stored improperly, misused, damaged, or installed not in accordance with the instruction manual supplied by TruHeat System. TruHeat System requires that this product be used ONLY with approved control devices. Use of any other control device will render the provisions of this warranty null and void. This warranty covers only components manufactured by TruHeat System. Components such as attaching hardware, connecting parts, wire, tape, and other items included in kits or assemblies that are not manufactured by TruHeat System are excluded from the provisions of this warranty. Except as expressly provided in this Limited Warranty, the customer is responsible for the cost of labour, service calls, insurance, shipping, installation costs and any other expense or damage incurred. The warranty does not cover the low voltage transformer and thermostat for 20 years. The transformer and thermostat is covered for 5 years from the time of the purchase of the system.

THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER REPRESENTATIONS, WARRANTIES, OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, AND OF ANY OTHER OBLIGATION OR LIABILITY ON THE PART OF TruHeat System WHETHER BY STATUTE, CONTRACT, STRICT LIABILITY, TORT OR OTHERWISE.

TRUHEAT SYSTEM IS NOT RESPONSIBLE FOR ANY INCIDENTAL, CONSEQUENTIAL, MULTIPLE, PUNITIVE OR INDIRECT DAMAGES OR LOSS, LOSS OR DAMAGE TO OR LOSS OF USE OF FACILITIES OR OTHER PROPERTY, OR FOR LOST PROFITS OR LOST REVENUE, WHETHER BASED UPON WARRANTY, STATUTE, CONTRACT, STRICT LIABILITY, TORT OR OTHERWISE. TruHeat System SHALL IN NO EVENT BE LIABLE FOR THE PERFORMANCE OF, OR COST OF PERFORMING, THE REMOVAL OR INSTALLATION OF THE PRODUCT OR ANY PRODUCT OR MATERIAL INTO WHICH IT IS INSTALLED, INCORPORATED OR ADDED. THE CUSTOMER IS RESPONSIBLE FOR THE COST OF LABOR, SERVICE CALLS, INSURANCE, SHIPPING, INSTALLATION COSTS AND ANY OTHER EXPENSE OR DAMAGE INCURRED.

IN NO EVENT SHALL TRUHEAT SYSTEM'S MAXIMUM LIABILITY EXCEED THE PURCHASE PRICE FOR THE RELEVANT SHIPMENT OF PRODUCT, EXCEPT TO THE EXTENT MADE MANDATORY BY LAW.

#### SAFETY INFORMATION

Throughout the manual you will see Cautions and Notes. These notices highlight conditions, procedures, or other information that require special attention to prevent damage to the system, to your flooring, or possible injury. For a safe and functional installation of the TruHeat System, read and follow these important safety precautions. Failure to comply with these items may result in injury or damage to the system. This information must be read and understood by all technicians who will be working in the area of an installed TruHeat system or main electrical systems. Failure to follow these guidelines may result in a risk of electric shock or fire hazard.



Indicates an item that you should pay special attention to. For example, notes are used to highlight installation tips.



Indicates precautions or procedures that should be followed to prevent the possibility of electrical shock.



Indicates precautions or procedures that should be followed to prevent the possibility of fire.

#### CONTENTS OF HEATING KIT

- TruHeat underfloor heating system includes:
- Built in wall mounted system unit (built in transformer and control unit)
- Wall mounted thermostat with LCD display
- TruHeat tape (length varies from kit to kit)
- Terminals for fastening TruHeat tape with transformer (2 pcs.)
- Installation and operating manual

#### **VOLTAGE SPECIFICATIONS**

Heating element – Low-voltage aluminum plasticized strip

Kit No.	№ 1	Nº 2	Nº 3	Nº 4	№ 5	№ 6	№ 7	
Maximum transformer power (W)	500	750	1000	1500	2000	2500	3000	
Secondary operating voltage (Volt)	5 – 42 Volt							
Resistance (Ohm)	0.5 – 0.8							
Central unit power supply (Volt)	North America (120 – 240, 60 Hz) / Europe (220 – 230 v, 50-60 Hz)							

# Before the installation process...



#### **NEVER Do the Following:**

- Do not cut or lengthen the TruHeat tane
- Never connect the TruHeat tape to the electrical power source while the tape is rolled up.
- Never walk on the heating strip during its installation. If necessary, use clean shoes with a soft bottom.

#### **ALWAYS Do the Following:**

 Protect the circuit supplying power to the TruHeat system with a ground fault circuit interrupter (GFCI).

#### **INSTALLATION PLANNING**

# CAUTION

- Make sure that there are no sharp items (nails, clamping irons, etc.) on the floor surface, as well as other barriers that could damage the heat tape. Do not install the system if the room temperature is below 5°C (41°F).
- During installation process, the TruHeat system or its separate components shall not be exposed to oil, grease or other chemically aggressive substances.

# CAUTION

Prevent children from accessing the system! It is prohibited to open, disassemble the
built-in control and transformer unit, as well as to replace parts or make your own
repairs unless advised by the manufacturer for troubleshooting reasons.

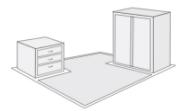
# CAUTION 🙈

- Flooring materials must be rated for use with low voltage floor warming system.
- Flooring subfloor heat-threshold should be 28°C (82°F) or greater (check with your flooring manufacturer).
- Avoid excessive flattening of network and central system unit wires.
- Protect the circuit supplying power to the TruHeat system with a ground fault circuit interrupter (GFCI). NOT SUPPLIED

# **Area Planning**

Determine the heated area (deduct location of any fixed furniture, furniture without legs, household appliances, etc. from the total area of the room, but if you plan further furniture rearrangements, for more comfort we recommend placing the heat tape on the entire premise, while doing that the furniture must meet

the safety requirements listed below. The TruHeat tape is installed 15 cm (6") away from each wall (this requirement does not apply to bathrooms).



# CAUTION 🙈

- The base of the furniture items placed above the heated area should be at a height of at least 8 cm (3") above the floor level to ensure air circulation.
- Never place futons, beanbag chairs, or similar furniture with no legs on heated floors.

# CAUTION /

It is not recommended to walk on the heating strip during its installation. If necessary, use clean shoes with a soft bottom.

# CAUTION

 Make sure to follow the recommended laying distance for each kit when laying the tape (see page 5). Separating the laying distance by more than the recommended distance will hinder the performance of the heating system.



 Touching the tape lengths with each other or having minimal space between the tape will cause the tape's length to shorten and overheating will occur. Tape can only make contact with itself when it is folded to change directions. Always follow the recommended spacing shown in the table below.

	DISTANCE BETWEEN TAPE INTERVALS						
Kit No.	TruHeat Tape Width	Indoors	Indoors Outdoors		Greenhouses		
1	5 cm	4-6 cm	3 cm	8 cm	10 cm		
2	5 cm	4-5 cm	3 cm	8 cm	11 cm		
3	8 cm	5-7 cm	4 cm	11 cm	14 cm		
4	8 cm	6-7 cm	4 cm	13 cm	17 cm		
5	10 cm	6-8 cm	5.5 cm	14 cm	18 cm		
6	12 cm	7-9 cm	6 cm	15 cm	20 cm		
7	12 cm	11-13 cm	10 cm	21 cm	26 cm		

# Placing the transformer unit

Select a central location for the transformer unit where the end of the tape can be brought back to the box without any difficulty. The transformer unit is to be placed inside the wall at a height of 10 cm (4") above the floor level. Allow for a 10 cm (4") deep cut-out into the wall for the transformer unit to achieve a flushed placement into the wall.

# **NOTE**

- When laying out the tape it is important to remember that the tape starts at the transformer unit and ends at the transformer unit.
- In case of over measured tape, place it in the highest traffic area with a smaller distance between the tape when laying it down. If there is a shortage, lay the tape with a longer gap between the lines of the tape in the areas with the least amount of traffic.

# **CAUTION**

- Do not block the transformer unit's cover as the transformer will generate some heat. Blocking the vent will prevent the heat from being exhausted.
- The transformer box may be placed inside cabinets but make sure to have air vents in place to exhaust the heat from the transformer.

# Placing the thermostat

The thermostat should normally be installed in the same vicinity as the transformer box at a height of 152 cm (60") above the floor. However the thermostat can also be placed in other places by simply replacing the provided cable (18/2 gauge). The ideal location for the thermostat should be in the centre of the room where it can get a more accurate temperature reading. Note that the thermostat is a thermometer and measures the temperature of the air in the room where it is located. The system operated by measure the air temperature reading to turn on and off.

#### Floor construction

The TruHeat system can be installed on any standard sub-floor, as long as it is flat, smooth, and free from protrusions such a nails, screws, etc.

# **NOTE**

 Although the TruHeat system can function without a thermal insulation layer under the tape, however it is highly recommended some thermal insulation is used under the tape to prevent heat from spreading downwards. Lack of proper thermal insulation results in forcing the system to work longer than necessary with high heat loss and higher running cost.

#### Recommended thermal underlayment & subfloors:

- Amvic Thermoquiet (for laminate/vinyl plank with 6mm or higher thickness)
- Wedi building panels (used when thinset layer is required on top of the system)
- DRICORE R+ subfloor

#### INSTALLATION

## WHAT YOU WILL NEED

- TruHeat kit (includes: TruHeat tape, thermostat, transformer unit)
- GFCI circuit breaker (not provided)
- Thermal insulation below tape (not provided)
- Duct tape, Tuck tape or Gaffer tape
- Necessary tools to place transformer unit into wall
- Necessary tools to install thermostat

# Transformer unit installation

Once the ideal location for the transformer unit and thermostat has been determined, start by installing the transformer unit into the wall cavity.

# CAUTION

- DO NOT connect the transformer unit to the main power supply at this point.
- The transformer unit is to be placed inside the wall at a height of 10 cm (4") above the floor level. Allow for a 10 cm (4") deep cut-out into the wall for the transformer unit to achieve a flushed placement into the wall.
- Under the transformer unit leave a 5 cm (2") deep groove in the wall for the heat tape to fed from the bottom of the transformer unit and be covered up after installation.
- 3. Install transformer unit into wall cavity.
- 4. Bring the wire from the transformer unit to the thermostat. The thermostat should be at a height of 152 cm (60") from the floor. If the cable is too long, fold up the extra cable, put it behind wall cut-out or leave it in the concrete wall groove and apply the plaster. If the cable is shorter than you require, replace it with a similar cable (18/2 gauge), connect in the same order and make sure that connection is secure.
- 5. Do not connect the thermostat wires to the thermostat as this step will be completed when the electrical connections are made.



# TruHeat tape installation

Once the transformer unit has been placed inside the wall, the heat tape can be laid in the desired area. Although there is no set method on laying the tape, a few simple steps need to be followed:

- 1. Make sure to follow the recommended laying distance for each kit when laying the tape. Separating the laying distance by more than the recommended distance will hinder the performance of the system. (See page 5)
- 2. Feed the tape inside the transformer box from the bottom and connect it to the connection terminal as shown in figure 1.
- 3. Start to lay the tape in an up and down format as shown in the figure 2. To go in different directions fold the tape as shown in figure 3.
- 4. Hold the tape in place over the folds using duct tape or gaffer tape. (See figure 4)
- 5. Finish off the laying by bringing the second end of the tape to the second connection terminal.

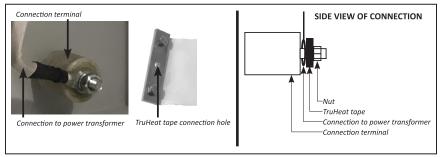
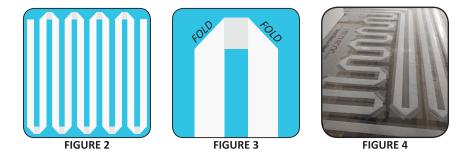


Figure 1



# **NOTE**

• In case of over measured tape, place it in the highest traffic area with a smaller distance between the tape. Incase of shortage, lay the tape with a larger gap between the tape lines in the areas with the least amount of traffic.

#### Electrical connection

- Each TruHeat kit shall be connected to a dedicated 15A GFCI circuit breaker.
- Check to see if available electric circuit wiring in the object has additional power connection. The nominal power of each kit is given in the voltage specifications section mentioned on page 3.
- Take into account additional electrical devices which can be connected to the same network. Also check the permissible current of the safety devices (automatic circuit breaker).

# CAUTION /

All electrical connections are to be made by a licensed electrician.

# CAUTION (

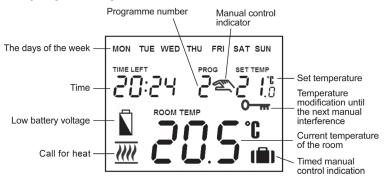
- Before making any electrical connections makes sure the power is turned off at the power supply.
- 1. Make sure to switch off the circuit breaker and make sure that prepared power wires are not under voltage.
- 2. Use the provided cables inside the transformer unit to connect them to the main power supply.
- The connection is to be made in the standard order (Brown=Live wire, Blue=Neutral, Green-Yellow=Ground). With the 240V system the blue wire is the second hot wire.
- 4. Close the cover of the transformer unit using the 4 provided screws.
- Proceed ahead to connect the 2 thermostat wires to the thermostat in terminal 1 & 2 of the thermostat (See thermostat instructions below).
- 6. Switch on the power supply at the circuit breaker.
- Test the system by setting the desired temperature on the thermostat to a higher temperature so thermostat calls for heat which will activate the transformer and heat will be provided to the heating tape.
- 8. If tape is providing heat then proceed to laying the finished floor on top of the tape (See finished floor installation recommendations on page 12).

### THERMOSTAT INSTRUCTIONS

The thermostat can be programmed according to the user requirements so that the heating system heats the space to the required temperature at the dates and times specified by the user, to reduce energy costs while maintaining comfort. Separate temperature programs can be prepared for each day of the week. For each day, beside 1 fixed switching time (PROG  $\square$ ), 6 adjustable switching times (PROG  $\square$  – PROG  $\square$ ) can be set (at 10-minute intervals) and a different temperature (in 0.5°C increments) can be assigned to all 7 switching times.

The switching sensitivity of the thermostat can be set to  $\pm 0.1^{\circ}$ C,  $\pm 0.2^{\circ}$ C (default setting) or  $\pm 0.3^{\circ}$ C. This figure means the temperature difference between the adjusted value and the actual temperature measured during the switching process. In case of the  $\pm 0.2^{\circ}$ C switching sensitivity and heating mode for example, if the set temperature is  $20^{\circ}$ C, then the device switches the system on at  $19.8^{\circ}$ C or below, and switches it off at  $20.2^{\circ}$ C or above.

# LCD display identification



# Thermostat set-up

Pressing the lock on the upper side of the housing of the thermostat, remove the back cover of the thermostat as shown in the image. With the help of the provided screws and some tools fasten the rear panel of the device to the wall. Using a small screwdriver, remove the cover of the terminal block from the inner side of the rear panel. The thermostat controls the heating system through a potential-free alternating relay that has the following connection points:



**No. 1** (NO); **No. 2** (COM) and **No. 3** (NC). These connection points are located under an inner cover on the inner side of the rear panel. Connect the two wires for the thermostat to terminals **No. 1** (NO) and **No. 2** (COM).



# CAUTION

 To prevent electric shock, replace the inner cover removed for the connection of wires after the assembling process has been completed.

# Thermostat operation

#### Insert batteries

Start by inserting the 2 AA batteries provided with the thermostat. The battery compartment is located in the inner side of the front panel of the housing. After the batteries have been inserted, the display flashes the day, time and program number as well as the adjusted and measured temperatures. (If this information fails to appear on the display, press the "RESET" button located on the main panel of the thermostat. After the batteries have been inserted, snap the front panel of the device into the rear panel and press the "SET" button. After the "SET" button is pressed, the display stops flashing, the thermostat goes to the main screen and the setting process can be started.

#### Setting current day and time

Press the "SET" button to go to the main screen, then press the "DAY" button. At this time only the first three letters of the current day will flash on the display of the thermostat and the hour and minute values can be seen.

Using the large + and - buttons on the front panel of the device, set the current day (Monday: MON; Tuesday: TUE; Wednesday: WED, etc.). Press the "DAY" button again. At this time the abbreviation indicating the day stops flashing and becomes visible continuously while the numbers indicating the hour will flash on the display. Using the + and - buttons on the front panel of the device, set the hour value of the current time. Press the "DAY" button again. At this time the numbers that indicate the hour will stop flashing and become visible continuously, while the numbers indicating the minute will begin flashing. Using the + and - buttons once again set the minute value of the current time.

When you wish to continue modifying the settings, please press the "**DAY**" button again. If you wish to finish settings, confirm them by pressing the "**SET**" button. At this point adjusted data are recorded and the device goes back to the main screen (if no buttons are pressed for at least 15 seconds, the settings are automatically confirmed and the device goes back to the main screen).

#### Setting the switching sensitivity (accuracy)

The switching sensitivity means the temperature difference between the adjusted value and the actual temperature measured during the switching process. A smaller switching sensitivity results in steadier room temperature and therefore in higher comfort. The heat loss of the room (building) does not depend on the switching sensitivity. If higher comfort is needed, the switching sensitivity should be set so that it provides a steadier room temperature. On the other hand, please also take into account that the heating system should not switch on and off multiple times in an hour's time except at low outside temperatures (e.g.  $-10^{\circ}$ C), since the frequent on and off switches of the heating system reduces its efficiency and hence increases the energy consumption. We recommend using the  $\pm 0.1^{\circ}$ C switching sensitivity.

To change the switching sensitivity, first press the "SET" button to go to the main screen. Then press the "DAY" and "COPY" buttons one after the other. Following this, select the desired switching sensitivity using the large + and - buttons. The notices "5:!", "5:2" and "5:3" indicate  $\pm 0.1$ °C,  $\pm 0.2$ °C and  $\pm 0.3$ °C, respectively. Finally, confirm the setting by pressing the "SET" button (if no buttons are pressed for at least 15 seconds, the setting is automatically confirmed). After this confirmation, the device goes back to the main screen.

#### Thermostat programming

Programming means the setting of switching times and selection of accompanying temperature levels. The device can be programmed for a one-week period. Its operation is automatic, and it will cyclically repeat the programs that have been keyed in. For each day, beside 1 fixed (PROG []) switching time, 6 adjustable (PROG []—PROG []) switching times can be set. For all switching times a different temperature can be assigned between 5 and 35°C, in 0.5°C increments. The temperature set for a given switch will remain valid until the start time of the next switch. Accordingly, the thermostat will keep the temperature set for switching time PROG [] until switching time PROG [] is reached. After switching time PROG [] the temperature selected to switch PROG [] will be valid until the time of the next switch (PROG []).

The start time of switch PROG  $\square$  is  $\square\square:\square$  , which cannot be changed, only its temperature can be adjusted. So under the factory default settings, the thermostat performs only one switch (PROG  $\square$ ) every day, which is in effect from  $\square\square:\square$  until  $\square:\square$  the next day.

# NOTE /

Setting just one switch for a day (factory default setting) is reasonable only if a constant temperature is needed all day. (For example, if for every weekday a constant 16°C, and for every weekend a constant 22°C is needed.) Otherwise, from both a comfort and an energy-efficiency point of view, it is recommended to activate more than one switch for each day. Furthermore, it is advised that a comfort temperature is used only those times, when the room or building is in use, since every 1°C decrease of temperature saves approximately 6% energy during a heating season. As opposed to common belief, keeping a flat warm requires more energy than heating it up. Example: When using a stove, more gas is needed to keep a pan of water boiling than to just keep it warm.

The PROG I – PROG 5 switches are deactivated by factory default (their start time is --:--), but they can be activated at need. Their start time can be freely set between IIII and 23:50 at 10-minute intervals given the constraint, that their start time should be in increasing order and a difference of at least 10 minutes should be between them. This minimum 10-minute difference is going to be preserved even if a previously activated switch is modified, in order to avoid co-occurring or overlapping switches. In such a case, the device automatically increases the start time of the affected switches until a difference of at least 10 minutes between them is reached. If the start time of a switch would be later than 23:50 because of this automatic modification, then that switch is deactivated instead.

In order to enter the programming mode, press the "SET" button and hold it down and press the "PROG" button, too. During the programming the values being adjusted are flashing on the display. The modification of these values can always be done using the large + and - buttons. The confirmation of a value is always done by pressing the "PROG" button, after which the next value can be adjusted. The program can be saved by pressing the "SET" button.

If there are days, for which the same program is needed, than it is sufficient to create that program only once, since it can be easily copied to another day using the "COPY" button. If the same program is needed for every day, then there is also a possibility to create the program of all the days together (by selecting MON TUE WED THU FRI SAT SUN together during the selection of days). But be aware: if the program of all the days are created together, than their program can only be modified together. Therefore, if a different program is needed for at least one day, then the program of the days should be created separately, and the repeated programs should be copied using the "COPY" button.

#### Resetting the thermostat to factory default settings

By pressing the "RESET" button located on the main panel of the thermostat, the thermostat can be reset to its factory default settings. This results in deleting the day, exact time, basic settings and the set program. After resetting the device, adjust the basic settings of the thermostat again and create the new program by following the steps mentioned above.

#### FLOORING INSTALLATION RECOMMENDATIONS

# CAUTION 🙈

- Flooring materials must be rated for use with low voltage floor warming system.
- Flooring subfloor heat threshold should be 28°C (82°F) or greater (check with your flooring manufacturer.

#### **Ceramic / Stone Tiles**

- 1. Concrete layer
- 2. Rigid thermal insulation
- Concrete slab
- 4. TruHeat tape
- 5. Fiberglass mesh
- 6. Tile mortar
- 7. Ceramic/Stone flooring

# CAUTION /

Steel mesh is prohibited as it will ruin the electrical connectivity of the TruHeat tape. Ensure no metal is placed on top of the TruHeat tape as it will also create an electrical interruption with the TruHeat tape.

#### **Laminate Floors / Vinyl Floors**

- 1. Floor joists
- 2. OSB / Plywood subfloor
- 3. Reflective film or thermal underlay
- 4. TruHeat tape
- 5. Foam underpad for laminate floors
- 6. Laminate/Vinyl flooring

# 6 5 432 0

#### **Wood Floors**

- 1. Concrete layer
- 2. Rigid thermal insulation
- 3. TruHeat tape
- 4. Fiberglass mesh
- Thin concrete layer
- 6. Wood flooring



Although a concrete layer is recommended to create a heat sink, it is not mandatory in case raising the floor height is an issue. Hardwood flooring can be installed on top of the heat tape.

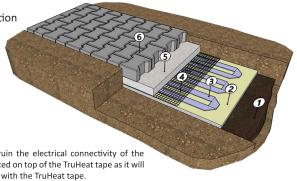
CAUTION /

Steel mesh is prohibited as it will ruin the electrical connectivity of the TruHeat tape. Ensure no metal is placed on top of the TruHeat tape as it will also create an electrical interruption with the TruHeat tape.



#### Driveways / Pathways

- 1. Well compacted soil
- 2. 10 cm rigid foam insulation
- 3. TruHeat tape
- 4. Fiberglass mesh
- 5. Concrete screed
- 6. Stone or asphalt

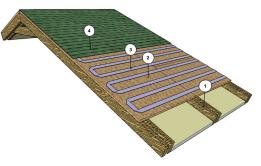


CAUTION

Steel mesh is prohibited as it will ruin the electrical connectivity of the TruHeat tape. Ensure no metal is placed on top of the TruHeat tape as it will also create an electrical interruption with the TruHeat tape.

#### Roofs

- 1. Joists with insulation layer
- 2. Decking (OSB panels or similar)
- 3. TruHeat tape
- 4. **Shingles**



# BASIC TROUBLESHOOTING METHODS

If your system is not functioning after making all the connections. Try the following methods below. If these troubleshooting methods do not result in making the system work, then please give us a call: 1-833-999-4328

#### Step 1

Check the voltage on the transformer wires (use tester)

#### Step 2

Disconnect the tape from the connection terminals and then using a voltage tester to check continuity of the tape.

#### Step 3

If there is a change in the continuity of the tape, that means that the tape connection was shortened with another object. Common examples include: mounting of metal door sills with the use of metal screws through the heating tape, this does not damage the tape, but makes a new connection, like if the tape was shortened. As a result, the tape resistance changes and the tape doesn't work, because the transformer is made for specific tape resistance. In this case, the door sill has to be adjusted to avoid the heat tape.

#### Thermostat issues

If the thermostat is having any issues, one simple troubleshooting method is to change the batteries in the thermostat. This step usually fixes most of the issues.