Nuheat Mat

Shower Installation Instructions

These instructions are an addendum to the Nuheat Mat Installation instructions included with each Nuheat Mat.

Nuheat Mat can be installed in wet environments such as showers, saunas and steam rooms. When installing Nuheat Mats in wet environments the following precautions must be observed:

1. Nuheat recommends using a separate Nuheat Mat for the shower area.
2. Nuheat Mats installed within wet environments cannot be repaired if damaged. The Nuheat Mat must be replaced.

STEP 1

Once the mortar bed has set, dry fit the Nuheat Mat to verify its dimensions and ensure it fits the contours of the shower area.

Conduct insulation & resistance tests. Record readings in Mat Resistance Log found inside Nuheat Mat Installation instructions.

STEP 2

Prepare the acrylic/latex modified thinset. Using at least ¼" x ¼" square notched trowel, spread a coat of thinset over the mortar bed.

Place Nuheat Mat onto the fresh thinset pressing firmly with grout float or lightweight roller. Create 100% contact between the heating mat, the thinset and the mortar bed. Press out any air bubbles or wrinkles. Ensure the slope of the mortar bed is maintained to direct water to the shower drain.

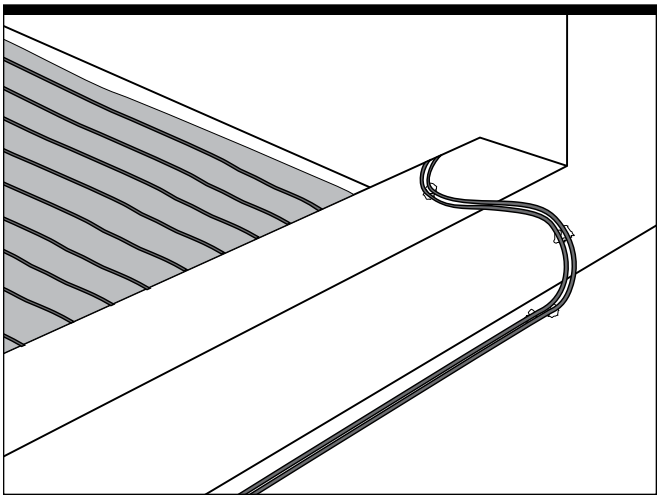
Allow the thinset mortar to set as per manufacturer's instructions.

Conduct insulation & resistance tests. Record readings in Mat Resistance Log found inside Nuheat Mat Installation instructions.

STEP 3

Using hot glue, secure the cold lead to the mortar bed and over the shower curb. To minimize tension on the cold lead, use an "S" formation to bring the cold lead over the shower curb. Do not allow the tip of the hot glue gun to touch the cold lead as it may damage the Nuheat Mat.

Route the supply leads to the junction box.



STEP 4 (OPTIONAL)

Install a secondary waterproofing membrane as per membrane manufacturer's instructions.

A secondary waterproofing membrane will protect the mortar bed from any moisture that may seep through the tile, which could cause mold problems over time.

STEP 5

Install tile flooring as per tile manufacturer's instructions.

Conduct insulation & resistance tests. Record readings in Mat Resistance Log found inside Nuheat Mat Installation instructions.

NOTE:

Before activating Nuheat, allow both the thinset mortar and grout to properly cure according to the manufacturer's instructions (usually 72 hours to one week).

NUHEAT MAT INSTALLATION INSTRUCTIONS

BEFORE YOU START

- **READ THROUGH AND UNDERSTAND THE ENTIRE NUHEAT MAT INSTALLATION INSTRUCTIONS BOOKLET. FOR QUESTIONS, CONTACT THE NUHEAT CUSTOMER CARE TEAM AT 1.800.778.9276**
- **THIS HEATING PRODUCT SHOULD ONLY BE INSTALLED BY QUALIFIED PERSONNEL FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THE APPARATUS AND RISKS INVOLVED.**
- **THE INSTALLATION OF THIS HEATING PRODUCT SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND REGULATIONS OF THE AUTHORITY HAVING JURISDICTION.**
- **DO NOT** connect Nuheat Mat to power when folded.
- **DO NOT** cut Nuheat Mat. Nuheat Mat should not be modified, including cutting or trimming any portion of the mat and will void the product warranty.
- **DO NOT** use sharp tools or power tools to clean grout lines; this may damage Nuheat Mat and will void the product warranty.
- **DO NOT** install Nuheat Mat in direct contact with or within 13mm (0.5") of any combustible surfaces or materials.
- A Class "A" GFCI or GFCI circuit breaker must be used with each Nuheat Mat installation. All Nuheat thermostats or regulators are equipped with a Class "A" GFCI. Only Nuheat thermostats or regulators should be used with Nuheat Mat.
- The metallic braid in the cold lead is the ground wire. Hence, the metallic braid must be connected to ground conductors as per the ELECTRICAL INSTALLATION section in these instructions.
- Nuheat Mat must be installed above 10°C or 50°F or per thinset manufacturer's minimum specified cure temperature for specific applications.
- The heating portion of the Nuheat Mat shall not touch, cross over, or overlap itself.
- The minimum bending radius of the: heating wire is 16mm (0.625"); cold lead is 51mm (2").
- Prepared subfloor in accordance with ANSI specifications.
- Nuheat Mat must be installed on a dedicated 20A circuit.
- Avoid the following activities that may damage Nuheat Mat:
  - Unnecessary folding
  - Walking on the mat (protect with cover such as plywood)
  - Stapling or nailing
  - Dropping heavy objects on the mat
- Nuheat Mat is designed for indoor floor heating applications in general use (–G) areas and wet (–W) areas.

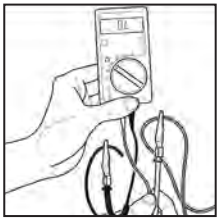
⚠ **First time installers should contact Nuheat's First Time Installer Line at 1.800.778.9276 for valuable installation tips.**

HOW TO TEST NUHEAT MAT

Insulation Test

To ensure Nuheat Mat conductors are fully insulated:

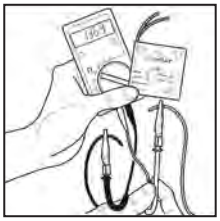
1. Acquire digital ohm/multimeter with alligator clips or equivalent device. Set the ohm/multimeter to measure resistance (ohms).
2. Place one probe clip on the metallic braid (ground wire) and the other probe clip on the conductor inside the white lead.
3. Confirm that the reading is OL or infinity (open circuit).



Resistance Test

To ensure continuity in each Nuheat Mat:

1. Acquire a digital ohm/multimeter with alligator clips or equivalent testing device. Set ohmmeter to appropriate setting. Place one clip probe on conductor in the white lead and other probe clip on the conductor in the black lead.
2. Confirm your ohm reading is within +10% / -5% of the factory reading listed on the mat tag. Record the ohm reading in the Mat Resistance Log (page 4).

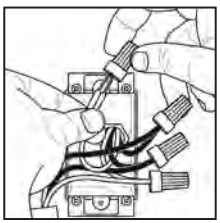


⚠ **Nuheat Mat must be tested before, during and after the installation to validate the warranty.**

ELECTRICAL INSTALLATION

All wiring must follow specifications set out in Part 1 of Canadian Electrical Code, or Article 424 of the National Electrical Code ANSI/NFPA 70, or whichever is applicable to local electrical inspection regulations and authorities. All Nuheat mats must be connected to the electrical service through a Class "A" Ground Fault Circuit Interrupter (GFCI). A GFCI is built into all Nuheat controls. The supply leads of Nuheat Mat may need to be routed inside suitable conduit according to local electrical codes. Check with the local authority having jurisdiction to determine requirements.

1. Connect braided ground wire to electrical box grounded copper conductor using approved wire connectors.
2. Attach corresponding lead wires to junction box using CSA Certified/UL Listed cable fittings. Make electrical connection only after flooring is complete. Nuheat Mat must be connected to minimum 14AWG supply conductors. Supply conductors shall be suitable for residential wiring according to local and national electrical code. In all cases, do not exceed box fill for



conductors. Typically, only 3 Nuheat mats may be connected to a supply conductor in a standard device box.

> ⚠ **WARNING: Risk of electric shock and fire. Damage to supply conductor insulation may occur if conductors are routed less than 2'" (51mm) from heating wire. Refer to installation instructions for recommended means of routing supply conductors.**

3. Affix supplied orange label to panel board beside appropriate circuit indicating branch circuit supplying power to Nuheat Mat.
4. Affix the supplied "Concealed Area Warning" label to adjacent points of access to concealed areas in which installed heating products are accessible.
5. Affix the supplied "Radiant Floor Heating" sticker to the room control for the Nuheat floor heating system.

NUHEAT MAT: INSTALLATION TIPS

- When using multiple Nuheat mats, ensure outside wires of adjacent mats are between 1½" - 2" of one another to keep the wire spacing and heat distribution consistent across the floor.
- There is no up or down side to Nuheat Standard Mat. Mats may be flipped in any direction to place the lead wire as close as possible to the junction box.
- To test bond between Nuheat Mat and subfloor, peel a portion of the mat back from the thinset you have adhered to the subfloor. At least 80% of the underside of the mat should be covered with thinset.
- Floor-sensing probe is included with each Nuheat thermostat.

NUHEAT MAT: POST INSTALLATION

Before activating Nuheat Mat, allow 72 hours to 1 week for thinset or adhesive to cure, or according to manufacturer specifications.

NUHEAT MAT: TROUBLESHOOTING

Should you have any questions or difficulties installing or controlling your Nuheat Mat, please contact Nuheat directly at 1.800.778.9276.

NUHEAT: CONTACT

NUHEAT INDUSTRIES LIMITED
3105 - 6900 Graybar Road
Richmond, BC, V6W 0A5, Canada

PART 1: SECURE NUHEAT MAT TO SUBFLOOR

> ⚠ **WARNING! RISK OF ELECTRIC SHOCK AND FIRE. DAMAGE TO SUPPLY LEAD INSULATION MAY OCCUR IF LEADS ARE NOT ROUTED ACCORDING TO NUHEAT MAT INSTRUCTIONS BELOW.**

1. Ensure subfloor is clean and free of debris. Mark location of supply leads on subfloor. Lay out path of leads to junction box around the perimeter of Nuheat Mat. If leads do not reach designated junction box, connect the leads to an accessible junction box. Run power to this junction box from the designated junction box using suitable electrical wiring. Where possible, connecting leads should be laid in low traffic areas.

> ⚠ **FOR INSTALLATIONS REQUIRING COLD LEAD TRIM OR SPLICE, ELECTRICAL RATINGS LABEL SHALL BE FIXED TO THE COLD LEAD AND VISIBLE AT TERMINAL JUNCTION BOX.**

> ⚠ **Conduct insulation & resistance tests and record reading in the Mat Resistance Log (page 4).**

2. Dry fit Nuheat Mat to ensure it fits room contours and provides proper coverage. If Nuheat Mat does not fit, contact your place of purchase. The mat should be installed a minimum of 2" away from walls.
3. Prepare acrylic/latex modified thinset to adhere Nuheat Mat to subfloor. Dampen any folds in mat to water to assist adhesion.
4. Using at least ¼" x ¼" square notch trowel, spread a minimum 0.25" coat of fresh acrylic/latex modified thinset over the area to be covered by Nuheat Mat. Make your thinset grooves parallel to the mat wires. If laying Nuheat Mat in a large area, make sure to work on one manageable section at a time.

5. Place Nuheat Mat onto the fresh thinset pressing firmly with grout float or lightweight roller. Create 100% contact between heating mat, the thinset and the subfloor. Press out any air bubbles or wrinkles and ensure that the surface is flat.
6. Route supply leads to junction box according to path laid out in Step 1. Ensure leads are flat; temporarily tape down as necessary.

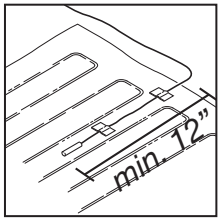
> ⚠ **Conduct insulation & resistance tests and record reading in the Mat Resistance Log (page 4).**

PART 2: INSTALL FLOORING

⚠ **The total combined R-values of all floor coverings over Nuheat Mat must not exceed R 2.5.**

TILE AND STONE

1. Install Nuheat Mat as per PART 1: SECURE NUHEAT MAT TO SUBFLOOR. Ensure insulation & resistance tests have been performed and readings recorded in Mat Resistance Log (pg 4).
2. If installing a Nuheat floor-sensing thermostat with GFCI, ensure that the floor-sensing probe is installed at this point. Ensure the tip of the probe is placed between two heater wires. Ensure the tip of the probe is approximately 12" in from the edge of Nuheat Mat. Secure the probe on top of the Nuheat Mat using duct/electrical tape. Please see floor-sensing thermostat instructions for proper connection procedures.



3. Apply a minimum 0.25" coat of thinset on top of Nuheat Mat according to tile or stone manufacturer's recommended thickness. Install tile or stone on top. Tile must be installed according to requirements of ANSI A108.5.
4. Clean excess thinset from grout lines with a sponge or small brush and water as tile is being laid. The use of sharp objects or power tools to clean grout lines may damage Nuheat Mat and will void the warranty.

⚠ **Conduct insulation & resistance tests and record reading in the Mat Resistance Log (page 4).**

5. After thinset has cured, apply grout.

⚠ **Before activating Nuheat Mat, allow 72 hours to 1 week for thinset or adhesive to cure, or according to manufacturer specifications.**

Control Installation

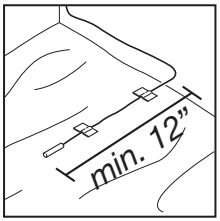
If using a Nuheat programmable floor-sensing thermostat with GFCI, or Regulator with GFCI, please see floor-sensing thermostat instructions for proper installation procedures.

FLOATING LAMINATE & ENGINEERED WOOD

1. Install Nuheat Mat as per PART 1: SECURE NUHEAT MAT TO SUBFLOOR. Ensure insulation & resistance tests have been performed and readings recorded in the Mat Resistance Log (page 4).
2. Using the flat side of the trowel, apply a minimum ¼" thick coat of thinset over Nuheat Mat and supply leads. Ensure the thinset is level and smooth.
3. Allow thinset to cure as per manufacturer's guidelines.

⚠ **Conduct insulation & resistance tests and record reading in the Mat Resistance Log (page 4).**

4. Install vapor barrier, if applicable, and underlay as per manufacturer's instructions and guidelines.
5. If installing a Nuheat floor-sensing thermostat with GFCI, ensure that the floor-sensing probe is installed at this point. Ensure the tip of the probe is approximately 12" in from the edge of Nuheat Mat. Secure the probe on top of the thinset using duct/electrical tape. Please see floor-sensing thermostat instructions for proper connection procedures.



⚠ **Sensor probe MUST be placed above the underlay to avoid compromising performance of Nuheat Mat.**

6. Install laminate/engineered wood floor as per manufacturer's instructions and guidelines.

⚠ **After installation, gradually increase Nuheat Mat temperature to maximum setting (82°F or 28°C) over a 72 hour period or according to flooring manufacturer's guidelines.**

Control Installation

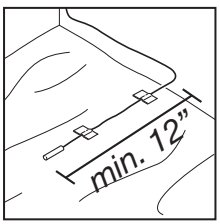
If using a Nuheat programmable floor-sensing thermostat with GFCI, please see floor-sensing thermostat instructions for proper installation procedures.

GLUE DOWN LAMINATE & ENGINEERED WOOD

1. Install Nuheat Mat as per PART 1: SECURE NUHEAT MAT TO SUBFLOOR. Ensure insulation & resistance tests have been performed and readings recorded in the Mat Resistance Log (page 4).
2. Using the flat side of the trowel, apply a minimum ¼" thick coat of thinset over Nuheat Mat and supply leads. Ensure the thinset is level and smooth.
3. Allow thinset to cure as per manufacturer's guidelines.

⚠ **Conduct insulation & resistance tests and record reading in the Mat Resistance Log (page 4).**

4. If installing a Nuheat floor-sensing thermostat with GFCI, ensure the floor-sensing probe is installed at this point. Ensure the tip of the probe is approximately 12" in from the edge of Nuheat Mat. Secure the probe on top of the thinset using duct/electrical tape.



Please see floor-sensing thermostat instructions for proper connection procedures.

5. Apply adhesive and install flooring as per floor the manufacturer's guidelines.

> ⚠ **Before activating Nuheat Mat, allow adhesive to cure according to manufacturer's guidelines.**

Control Installation

If using a Nuheat programmable floor-sensing thermostat with GFCI, please see floor-sensing thermostat instructions for proper installation procedures.

NUHEAT WARRANTY INFORMATION

Nuheat Mat offers a 25-year warranty from manufacturer's defect, applicable when warranty card submitted on-line. Nuheat does not warrant installation of Nuheat Mat or thermostat.

To submit your warranty, go to www.nuheat.com and fill out our online warranty card. NUHEAT MAT RESISTANCE LOG.

Record insulation and resistance test in the log table below. Tests must be conducted and readings recorded before, during and after installation to validate Nuheat Mat warranty.

For questions about Nuheat Mat insulation and resistance tests, contact Nuheat at 1.800.778.9276.

> ⚠ **Ensure Mat Resistance Log remains with the end user for warranty purposes.**

MAT RESISTANCE LOG	
Mat Model Number	
Factory Measured Resistance	
Resistance Test Ohms Reading (Before Installation)	
Resistance Test Ohms Readying (During Installation)	
Resistance Test Ohms Reading (After Installation)	

> ⚠ **The reading between the metallic braid (ground wire) and the conductor inside the white or black wire should read OL or infinity (open circuit).**

> ⚠ **If insulation or resistance test readings do not pass requirements at any point of the installation, halt installation immediately and contact Nuheat Technical Services at 1.800.778.WARM (9276).**