SCScertified™
MINIMUM 77% RECYCLED CONTENT
PRE-CONSUMER

SCScertified™
INDOOR AIR QUALITY
Indoor Advantage Gold Building Materials

Think Green!
CERTIFIED RECYCLED AND
HEALTHIER INDOOR AIR QUALITY

QuietWarmth® FIBER

Radiant Heat Underlayment

INSTALLATION INSTRUCTIONS

For Use Under Laminate, Wood and Tile Floors

- Made with Thermosoft® FiberThermics® Heating Elements
- Operated by a Digital or Programmable thermostats

ThermoSoft® INTERNATIONAL CORPORATION US Patent #US 6,563,094 B2

CAUTION: For 120 Volt Installation ONLY!

Padding Size	Padding Sq. Ft.	Watts per Sq.Ft.*	AC Voltage	Amp. Draw
3' x 5'	15	8.8	120	1.1
3' x 10'	30	8.8	120	2.2

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 LOCAL AND NATIONAL CODES.

IN CANADA,THE INSTALLATION SHALL BE MADE ACCORDING TO THE PROVISIONS OF SECTION 62 OF THE CANADIAN ELECTRICAL CODE, PART 1.

WARNING - AS DESCRIBED IN THESE INSTRUCTIONS, LEAD WIRES ARE NOT TO BE ROUTED OVER PADS OR COME INTO CONTACT WITH THE HEATING ELEMENTS AS DAMAGE TO SUPPLY CONDUCTOR INSULATION MAY OCCUR IF CONDUCTORS ARE ROUTED TO CONTACT HEATING ELEMENTS. REFER TO INSTALLATION INSTRUCTIONS FOR RECOMMENDED MEANS OF ROUTING SUPPLY CONDUCTORS.

THE TYPE AND THICKNESS OF FLOOR COVERING MATERIALS USED WITH THIS PRODUCT MUST NOT EXCEED A THERMAL INSULATION "R" VALUE OF 2.0.

CAUTION: USE COPPER ONLY AS SUPPLY CONDUCTORS. THERE ARE NO SPECIAL CRIMPING TOOLS REQUIRED FOR THIS PRODUCT.

MP global products L.L.C.

www.quietwarmth.com

NALFA North American Laminate Flooring Association · Member National Wood Flooring Association · RFA Retail Floral Association · wfca · TCNA

Overview:

QuietWarmth® may be used in hard surface flooring applications only:

1. **Laminate and bamboo floors***
2. **Engineered wood and solid wood floors***
3. **SnapStone, Avaire, Eclipse and ZipTile Floating Porcelain Tile***
4. **Traditional ceramic and porcelain tile*.** (Be sure to follow our instructions for proper setting and grout materials)
   - **Do not install *QuietWarmth*® under carpet, vinyl floors or natural stone tiles.**
   - **Do not install with tiles less than 8" in length or width**
   - **Do not install *QuietWarmth*® in walls.**
   - **For Installations not covered in these directions, consult MP Global Products, L.L.C. before installation.**
   - **Installations not performed within the manner stated in our installation instructions may void the warranty.** See our complete warranty at www.QuietWarmth.com, or call us at 888-379-9695 to request a copy.

*** Refer to the your Floor Covering Manufacturer's specification or instructions for the compatibility of their product over any radiant heat before installation. Do not override your Floor Covering Manufacturer's recommendation for a maximum allowable temperature. Set the thermostat for QuietWarmth to stay within their guidelines**

Helpful Hints:

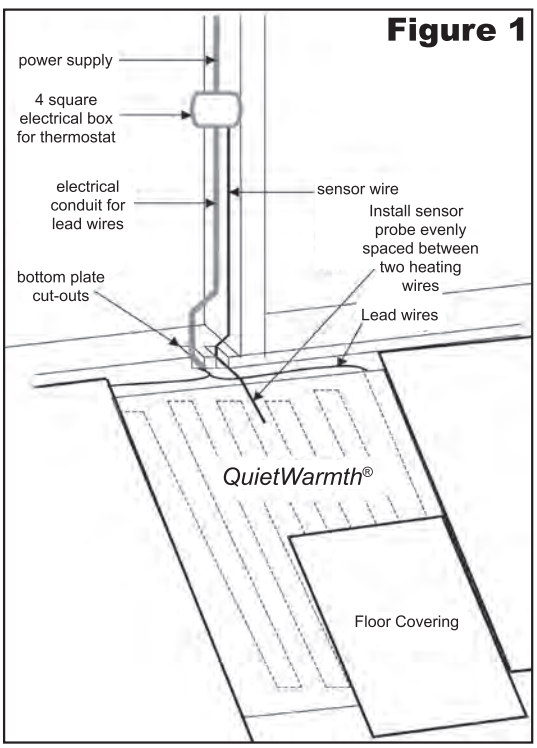
- **Please read the Installation instructions for QuietWarmth and the installation instructions for our Thermostat BEFORE starting the installation.**
- **The thermostat includes a floor probe that MUST be installed BEFORE the flooring is installed.**
- **Thermostat probe wire may be extended up to 50' using same type and same gauge wire and a waterproof connection.**
- **QuietWarmth lead wires may be extended up to 50' using same type and same gauge wire and a waterproof connection.**
- **It is imperative for the life of your QUIETWARMTH panels that you create an air gap under any solid bottom furniture, fixtures or other items with the use of legs or spacers to avoid excessive heat buildup.** (Example: bookcases, trunks, etc.)

1. FLOATING HARD SURFACE FLOORS (including laminate, wood, bamboo and floating porcelain tile)

1-A Electrical Rough-In **This system operates on a maximum of 120 volts, do NOT hook up system to higher voltage**

Install GFCI Breaker – (Over-current Protection)

1. *QuietWarmth*® must be installed with a ground fault circuit interrupter (GFCI). We recommend installing *QuietWarmth*® with thermostat with a built in GFCI. If you are not using a thermostatic control having a GFCI already built-in, then install a dedicated, indicating-type GFCI. This GFCI serves as a local disconnect. The thermostatic control must be purchased separately.
   - Note: Follow all local building and electrical codes.
   - It is possible to branch from an existing circuit, but this is not recommended.
   - Please consult with a qualified electrician to determine if the circuit can handle the load and if the circuit is GFCI-protected. The size of the breaker is determined by the total square footage of heated padding. (Depending on local codes, you may need multiple breakers, multiple thermostats or a relay for systems larger than 15 Amps).



Install Electrical Boxes

2. Thermostats are usually located near the power leads. However, they can be located almost anywhere, because the power leads and the sensor wire can be routed to electrical junction boxes and extended to a location outside the heated room (such as a utility room).
3. For the thermostat, install a 4" electrical box with a 1-gang mud ring. Electrical boxes should be located on interior walls typically 60" from the floor, according to NEC or other local code requirements.
4. The floor sensor wire can be extended up to 50' (maximum) if necessary.

Bottom Plate Work

5. Drill or saw holes at the bottom plate (See Fig 1.) One hole is for routing the power leads and the other hole is for routing the thermostat sensor wire. These holes should be directly below the electrical box(es).
6. Power lead conduit: Remove one of the knock-outs in the 4" box to route the lead.
7. Install 1/2" minimum conduit from the bottom plate up to the electrical box. Install 3/4" conduit if necessary to make room for more lead wires when using multiple *QuietWarmth*® heated underlayment pads. (See Fig 1.) Close one end of conduit to junction box enclosure with appropriate fitting/locknut. Close bottom end of the conduit flush with the wall and fit with insulated bushings to prevent chafing of wire on exposed edge.
8. The thermostat (purchased separately) comes with a floor sensor. The floor sensor can be installed in a conduit separate from the power lead wire conduit although installation of the sensor in conduit is not necessary. Check the resistance of the sensor wire to be sure it is near 14.8 kOhms at 68° F.
9. Open a second knock-out in the bottom of the thermostat box. Feed the sensor through the knock-out down through the cut-out in the bottom plate, and out into the floor area where the *QuietWarmth*® heated underlayment will be installed.

Rough-in Wiring

11. Install appropriate electrical wire (conductor) from the power source and GFCI protection to the thermostat following all codes. Leave extra wire at the thermostat box for making connections. Refer to the Typical Wiring Diagrams **(Fig.4 on page 4)** for help.

Installing a Relay (Contactor)

12. Depending on the Amperage requirements of multiple *QuietWarmth*® heated underlayment pads, a relay may be required. Consult with an electrician to determine the type and size of relay required.

1-B Planning & Preparation

1. Plan the heated area of the floor so that the desired traffic areas can be heated with a combination of the two available mat sizes (3'x5' and 3'x10'). When planning your heated floor area, keep the following important points in mind:
   - Non-heated areas of the floor must be covered with *Insulayment* (for ceramic, porcelain, or glued down wood) or *QuietWalk* underlayment (for laminate, bamboo, or floating wood). Cut the proper underlayment to fit the areas of the floor that cannot be covered by *QuietWarmth* heated underlayment. This will keep your floor level.
   - Do not cut *QuietWarmth*® heated underlayment.
   - Do not cut or pierce *QuietWarmth*'s heating wires.
   - Do not overlap *QuietWarmth*® heated underlayment.
   - Do not duct tape over *QuietWarmth*'s heating wires.
   - Lead wires should run along the end of the mats to the nearest wall and electrical junction box. Check local and national codes regarding the use of conduit from the floor to the junction box. A licensed electrician must make all electrical connections.
   - Do not run lead wires over or under mats.
   - Do not install *QuietWarmth*® heaters under cabinets, built-ins or furniture with a solid surface base. Excessive heat will accumulate under these items and may damage *QuietWarmth*'s heating elements. IT IS IMPERATIVE FOR THE LIFE OF YOUR QUIETWARMTH PANELS THAT YOU CREATE AN AIR GAP UNDER ANY SOLID BOTTOM FURNITURE, FIXTURES OR OTHER ITEMS WITH THE USE OF LEGS OR SPACERS TO AVOID EXCESSIVE HEAT BUILDUP. (Example: bookcases, trunks, etc.)
2. With all approved floor types, be sure the subfloor surface is clean and dry*. The floor must be completely swept of all debris including all nails, dirt, wood and other construction debris. Make absolutely sure there are no objects on the floor that might damage the *QuietWarmth*® wires.

   **In geographic areas where concrete slabs are subject to excessive moisture, a calcium chloride moisture test is recommended. Vapor emission readings in excess of 3 lbs. per 1,000 square feet in 24 hours may require additional protection such as a concrete sealant or polyethylene sheeting.*
3. Before starting, remove the *QuietWarmth*® heated underlayment from the box. Attach both lead wires to a high quality digital ohmmeter to measure the resistance. Compare the resistance you measured to the resistance range recorded by the factory on the label attached to the padding. If the resistance is not within the range of the factory recorded resistance, call our customer service number for assistance. Damage may have occurred during shipping. Do not proceed with the installation. Keep a record of resistance measures as they will be needed for warranty purposes.
4. Leave the factory labels attached to the padding and the lead wires for later inspection. Save warning label #1, it must be placed near or on the face of the thermostatic control.

1-C QuietWarmth® Installation


Photo 1


Photo 2


Photo 3

1. Lay *QuietWarmth*® underlayment over the subfloor with the heating wires facing up. (Photo 1)
2. Layout lead wires so they run to the nearest wall with an electrical box. (See Fig. 2 on page 3.) Connections will be made later. (Photo 2)
3. Allow approximately 1" of floor space between the wall and *QuietWarmth*® to run the lead wires to the conduit. Use thin strips of duct tape to hold lead wires in place – DO NOT STAPLE.
4. Padding should be completely flat, butted together flush, do not overlap the pad.
5. Tape the seams with duct tape or other water and tear resistant, utility-grade, poly-coated cloth backed tape that has a very aggressive adhesive. (Photo 3)

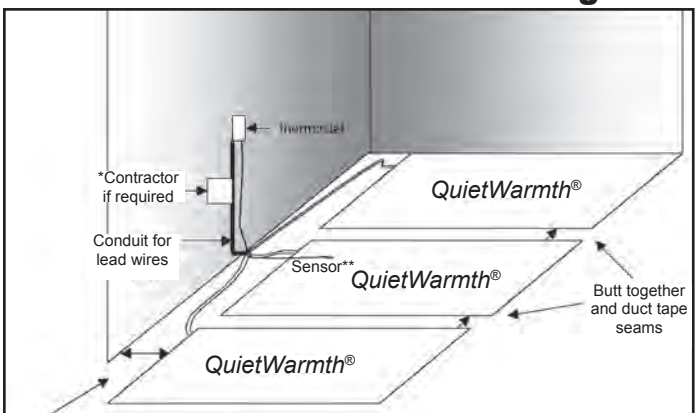
***Do not tape over QuietWarmth's heating wires.**

6. The thermostat sensor wire should be installed on top of the *QuietWarmth*® heated underlayment and routed up the wall to the thermostat electrical box. Place the sensor wire evenly spaced between two QuietWarmth® heating wires extending about 6"-12" into the *QuietWarmth*® heated underlayment. (Refer to Fig. 3 Sensor Wire Location on page 3.) It is acceptable to use a utility knife to notch out a piece of the padding material to imbed the sensor wire (DO NOT CUT THE HEATING WIRE). You can tape the sensor wire in place but do not tape over the sensor probe as this will cause heat to build up causing the thermostatic control to reduce power to *QuietWarmth*®. Do not tape over *QuietWarmth*® heating elements.

1-D Floor Covering Installation

1. When installing the floor, be careful not to damage *QuietWarmth*'s heating elements. If the floor covering is not immediately installed, protect *QuietWarmth*® heated underlayment with corrugated box material or plywood.
   - Keep traffic to a minimum on installed *QuietWarmth*® heated underlayment prior to floor covering installation.
   - Avoid dropping, rolling or dragging objects or tools over the heating elements.
   - Be careful that nails, screws or other fasteners do not penetrate the floor in the area of *QuietWarmth*®. *QuietWarmth*'s heating elements can be damaged by fasteners penetrating the floor.
   - Do not attempt to repair damaged heating elements.
2. Install the floating laminate or floating wood floor as per manufacturers instructions.

Figure 2

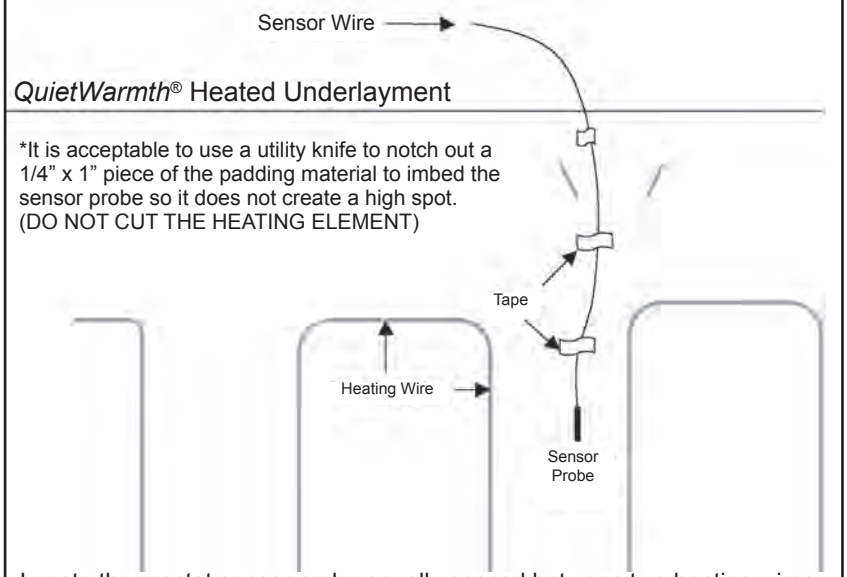


Leave 1/2" to 3/4" space from the wall to run lead wires. Small gaps like this do not need to be covered by regular (non-heated) underlayment.

* A contactor may be required for large installations. Consult an electrician.

** Sensor can be run down the wall or in a separate conduit from the power leads.

Figure 3 Sensor Wire Location



Locate thermostat sensor probe equally spaced between two heating wires. Tape wire in place.
Do not tape over sensor

1-E Final Wiring & Connections

120 volts only. Higher voltage will damage mats and void the warranty

1. After installing your floor, use the ohmmeter to record the final resistance measurement of the *QuietWarmth*® heated underlayment. The resistance must be within the range of the factory recorded resistance. If not, call our customer service number for assistance. Damage may have occurred during floor installation. Keep a record of all three resistance measures as they will be needed for warranty purposes (See Resistance Measures Chart, pg. 7).
2. Install the floor sensing thermostat in the 4" square electrical box according to the installation instructions provided with the thermostat. Connect the power mat leads, floor sensor, and power supply wiring as shown in the thermostat instructions and as diagramed on the back of the thermostat. For general wiring diagrams, reference, Fig.4 – Control Wiring Diagram on page 4.
3. Route *QuietWarmth*® lead elements up through the electrical conduit and into the 4" square thermostat box. Wire the leads in parallel (not series) black-black and white-white. Then wire a short "pig-tail" (of correctly sized wire for the load) over to the thermostat. The number of conductors per connection must not exceed the amperage rating of the circuit or local or national codes. Field wiring must be 14 gauge, Type THHN as provided with the product.
4. Use the appropriate size cover ring to mount the thermostat to the electrical box.
5. Indicate which branch circuits supply the *QuietWarmth*® heated underlayment and retain the ETL labels for each *QuietWarmth*® pad in a convenient location, ie., taped to the circuit breaker box, for reference by the electrical inspector or homeowner. Leave one ETL label attached to the *QuietWarmth*® pad. Attached warning label #1 in a convenient location (e.g., inside of thermostat control door) in the room where *QuietWarmth*® is installed.
6. After all thermostatic controls are installed, power up the system to briefly test operation of all components.
7. Refer to instructions provided with the thermostatic controls for proper setting. Keep instructions in a safe place for future reference.

2. GLUED-DOWN ENGINEERED AND SOLID WOOD FLOORS

2-A Electrical Rough-In: See section 1-A. **2-B Planning & Preparation:** See section 1-B.

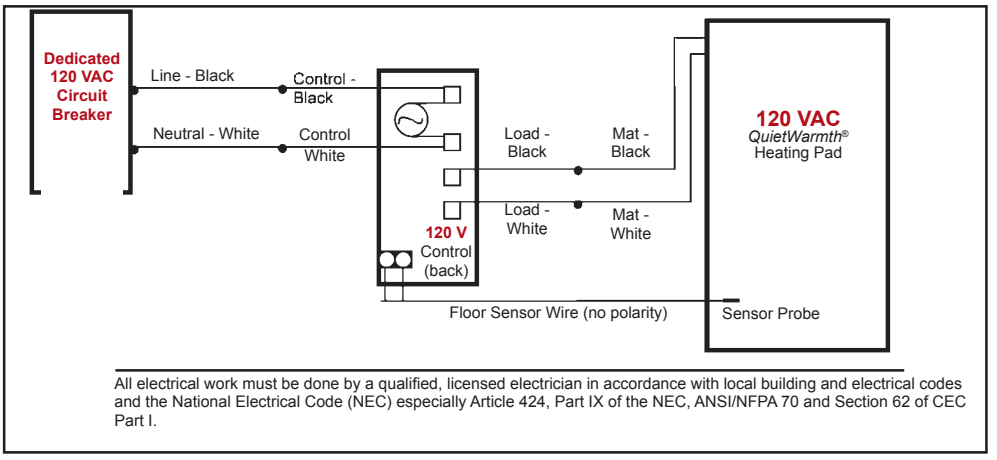
2-C QuietWarmth® Installation

Approved Surfaces for Applications: Plywood, wood, hardboard underlayment, association grade particleboard, concrete above grade in the absence of excessive moisture and/or excessive alkali, and well-bonded VCT* and sheet vinyl* (non-embossed and non-cushioned). Sub-floor must meet NWFA (National Hardwood Flooring Association) and local building code standards for quality, thickness, and maximum deflection.

*Sheet Vinyl or VCT:

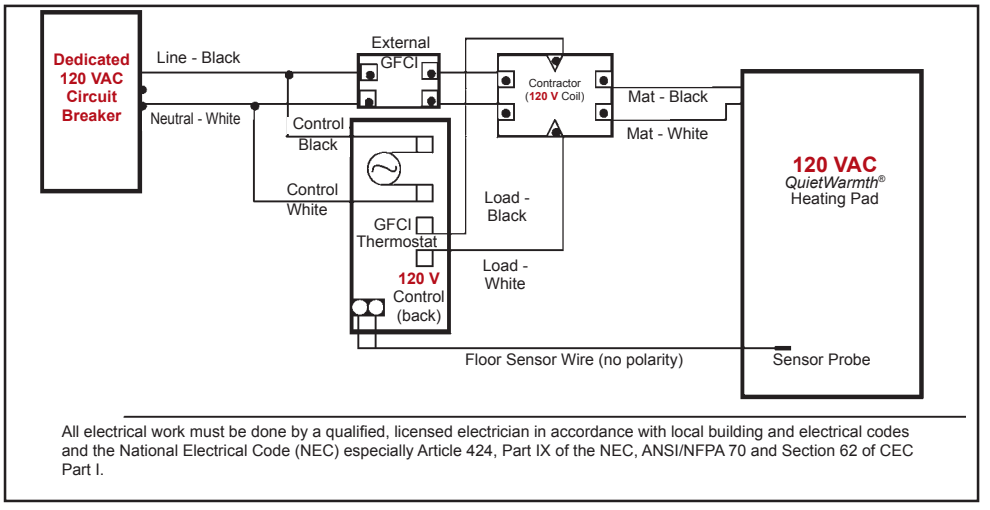
- If at all possible, remove the old sheet vinyl or VCT. It is almost always a better choice to install over the original sub-floor surface.
- Wood sub-floors that are structurally suitable for vinyl, may not be suitable for ceramic tile or wood floors. Double-check the sub-floor requirements.
- If not removed, the vinyl must be well adhered to the sub-floor throughout the entire floor.
- If installing on top of vinyl, make sure the adhesive is approved for use on vinyl.
- Allow additional drying or "set" time (at least twice the manufacturer's recommendation) for the setting material used in each phase of the installation.

Figure 4 Control Wiring Diagrams



Refer to Instructions that came with your specific thermostat Typical Electrical Wiring Diagram w/thermostat control (**120V**)

Typical Electrical Wiring Diagram w/Relay (Contactor) & thermostat (120V)



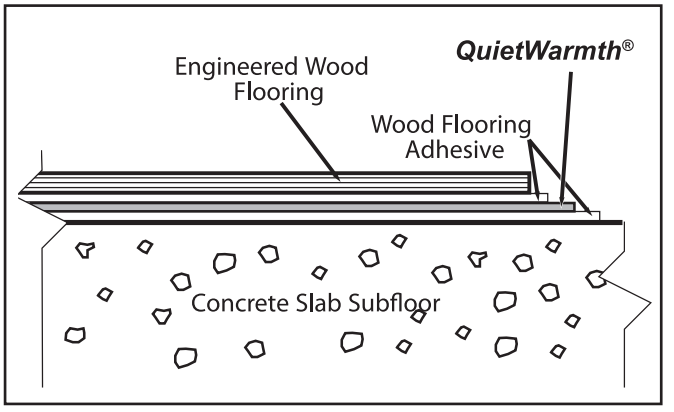
Note: if installing a programmable thermostat, do not install an external timer. The timer will disrupt the programming.

If interfacing with a building energy management system, use a non-programmable control.

Installation Methods:

Glued-Down Wood Method #2-1

Glue Down Wood Method #2-1



Setting Material:
Use only wood flooring adhesive approved by the flooring material manufacturer below and above the *QuietWarmth*®.

Trowel Size:
3/16"x 3/16" Square-notch or U-notch (Use plastic trowel for heating element side if available)

Sub-floor Requirements:
- Maximum 1/4" variance in 10'.
- Must be properly prepared per NWFA specifications.
- All cracks in excess of 1/16" must be filled.
- Surface must be clean, dry and free of contaminants and sealers.

Installing QuietWarmth®
1. Lay out the *QuietWarmth*® heated underlayment.
2. Except for approximately 1" of space between the walls and *QuietWarmth*® to run the lead wires, be sure to run *QuietWarmth*® to the edges of the perimeter leaving no gaps. Where necessary, use *Insulayment*® underlayment padding to fill in the gaps. *Insulayment*® (NOT *QuietWarmth*®) can be cut to size using a sharp utility knife and a straight edge. Duct tape all seams. Do not tape over heating wire.
3. Pull back the *QuietWarmth*® heated underlayment.
4. Apply adhesive to the subfloor as per manufacturer's instructions.
5. Lay the *QuietWarmth*® back into the adhesive.
6. Immediately (within 10 minutes) roll the *QuietWarmth*® with a 35 lb roller in diagonal directions.
7. Do not walk on the rolled areas.
8. Seams should be butted together, leaving no gaps or overlaps.
9. Allow set time as per adhesive manufacturers instructions.
10. Install wood floor as per manufacturers instructions. Take care not to damage heating element.

Technical Question Hotline 888-WARM PAD

GLUED-DOWN WOOD METHOD #2-2

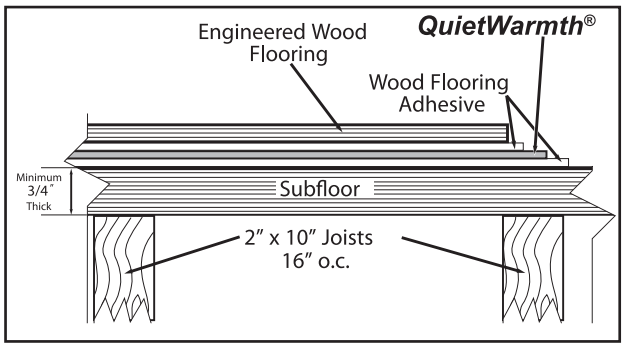
Setting Material: (Same as Method #2-1)

Trowel Size: (Same as Method #2-1)

Sub-floor Requirements:
- Must comply with NWFA sub-floor requirements.
- Sub-floor must be structurally sound and free from contaminants & sealers.
- Minimum variation of 1/4" in 10', with a 16" on center joist system.

Installing QuietWarmth®: (Same as Method #2-1)

Glue Down Wood Method #2-2



2-D Floor Covering Installation:
Install flooring material as per flooring manufacturers and NWFA recommendations.

2-E Final Wiring & Connections: See section 1-E.

3. CERAMIC OR PORCELAIN TILE
3-A Electrical Rough-In: See section 1-A **3-B Planning & Preparation:** See section 1-B

3-C QuietWarmth® Installation
QuietWarmth® is approved for indoor, dry area tile applications. Do not use in shower pan applications or areas exposed to excessive moisture. Kitchen and bath areas that receive incidental moisture are acceptable.

Conditioning:
The underlayment must be conditioned at 70 degrees Fahrenheit with the relative humidity between 25 and 65% for at least 24 hrs before and 72 hrs after installation.

Approved Surfaces for Applications:
Clean, structurally sound, underlayment grade plywood, backer board, concrete in the absence of excess moisture and/or excessive alkali, and well bonded VCT* or sheet vinyl* (non-embossed and non-cushioned). All sub-floor structures must meet or exceed the American National Standard Specifications (ANSI) standards for quality, thickness, and maximum deflection. The sub-floor must also comply with any local building code standards.

Unsuitable substrates:
The following is a list of sub-floor surfaces NOT suitable for tile installations, masonite, all grades of lauan plywood, expanded polystyrene (styrofoam) insulation board, particle board, paneling, stripwood floors, grease-saturated concrete, vertically displaced concrete, sheathing and/or other oriented strand board, pressure-treated plywood, fire-resistant plywood, curing compounds, felt paper and scribing felt.

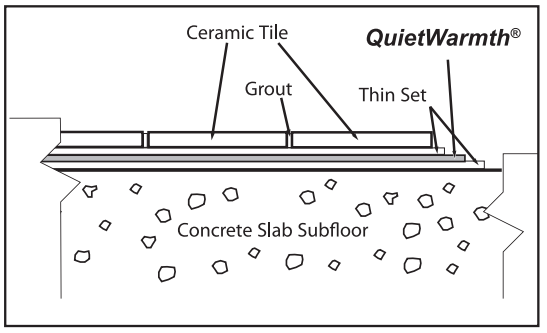
*Sheet Vinyl or VCT:
- If at all possible, remove the old sheet vinyl or VCT. It is almost always a better choice to install over the original sub-floor surface.
- Wood sub-floors that are structurally suitable for vinyl, may not be suitable for ceramic tile or wood floors. Double-check the sub-floor requirements. Verify that wood floor assembly meets or exceeds requirements for ceramic tile installation under TCNA (Tile Council of North America) and ANSI (American National Standards Institute) guidelines.
- If not removed, the vinyl must be well adhered to the sub-floor throughout the entire floor.
- If installing on top of vinyl, make sure the mortar or adhesive is approved for use on vinyl.
- Allow additional drying or "set" time (at least twice the manufacturer's recommendation) for the setting material used in each phase of the installation.

Surface preparation:
Floor must be clean, smooth, dry and free of foreign matter that would interfere with a good bond. Fill all cracks and depressions with a suitable floor patch. If adhesive removal chemicals have been used, make sure the floor has been properly rinsed and all chemical residues are removed. All existing cracks in excess of 1/16 inch must be properly repaired with appropriate materials.

Moisture:
All sub-floor assemblies should be tested for moisture vapor emission rates by utilizing anhydrous calcium chloride test kits for concrete. Do not install flooring material when in excess of flooring manufacturer's recommendations for moisture vapor emissions.

Installation Methods:

CERAMIC TILE METHOD #3-1: CERAMIC FLOOR TILE (8" or larger) ON CONCRETE SUB-FLOOR



Ceramic Tile Method #3-1

Setting Materials:

- Use Latex Portland cement mortar that conforms to test requirements found in ANSI A118.4 or 118.11.
- Hydrate (mix with water) according to the bag recommendations.
- Use a slow mixer (300 rpm or less) or mix by hand.
- Allow mixture to slake per manufacturer's instructions and then lightly remix.
- Mix epoxy grout as per manufacturers instructions.
- Use epoxy grout as per ANSI A108.4.3.0 or ANSI A108.6.3.0 or ANSI A108.9.3.0.

Trowel Size: *(Use plastic trowel for heating element side if available)*

- QuietWarmth® to sub-floor: 1/4"x1/4"x1/4" Square or "U" notch.
- Tile to *QuietWarmth*®: Use a square or "U" notch trowel with notch size appropriate for the size and type of tile installed and required to achieve 95% coverage. (Minimum 1/4"x3/8"x1/4")

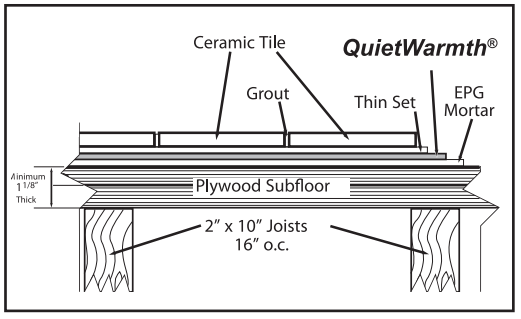
Concrete Requirements:

- Maximum variation of 1/4" in 10'-0". Deflection is not to exceed 1/360 of span.
- All cracks in excess of 1/16" must be repaired with appropriate materials.
- Surface must be clean, dry and free of contaminants and sealers.
- Lightweight concrete surfaces must comply with manufacturer's specifications for tile installations including minimum compression strength and application of primer/sealer.

Installing QuietWarmth®

1. Lay out the *QuietWarmth*® heated underlayment.
2. Except for approximately 1" of space between the walls and *QuietWarmth*® to run the lead wires, be sure to run *QuietWarmth*® to the edges of the perimeter leaving no gaps. Where necessary, use *Insulayment*® underlayment padding to fill in the gaps. Insulayment® (NOT *QuietWarmth*®) can be cut to size using a sharp utility knife and a straight edge.
3. Pull back the *QuietWarmth*® heated underlayment.
4. **Dampen, but do not saturate, the concrete floor with a sponge or a mist sprayer.**
5. Key the thin-set mortar into the sub-floor with the flat side of a 1/4"x1/4" square or "U" notch trowel and then comb it with the notched side using a left to right motion.
6. Apply the thin-set mortar only as far ahead as will allow installation of the *QuietWarmth*® prior to the mortar beginning to set or "skin over".
7. Lay the *QuietWarmth*® and lead wires back into the thin-set.
8. Immediately (within 10 minutes) roll the *QuietWarmth*® with a 75lb roller in diagonal directions.
9. Do not walk on the rolled areas for at least 16 hrs. Allowing traffic on the installed *QuietWarmth*® prior to full set may cause indentations resulting in weak areas and hollow spots.
10. Make sure there is at least 95% transfer of the thinset.
11. Seams should be butted together, leaving no gaps or overlaps.
12. Allow the *QuietWarmth*® to set for at least 16 hrs.

CERAMIC TILE METHOD #3-2: CERAMIC FLOOR TILE (8" or larger) ON PLYWOOD SUB-FLOOR



Ceramic Tile Method #3-2

Setting Materials:

- For *QuietWarmth*® to sub-floor: use EGP (Exterior Glue Plywood) Latex Portland Cement Mortar that conforms to ANSI A118.11.
- For Tile to *QuietWarmth*®: use Latex Portland Cement Mortar that conforms to ANSI A118.4 or A118.11.
- Use epoxy grout as per ANSI A118.3.

Trowel Size: *(Use plastic trowel for heating element side if available)*

- *QuietWarmth*® pad to sub-floor: 1/4" x 1/4" x 1/4" Square or "U" notch.
- Tile to *QuietWarmth*®: Use a square or "U" notch trowel with notch size appropriate for the size and type of tile installed and required to achieve 95% coverage. (Minimum 1/4"x3/8"x1/4")

Sub-Floor Requirements:

- Sub-floor assembly must comply with ANSI requirements.
- 16"oc, 2"x10" minimum joist: total sub-floor thickness – 3/4" with clean structurally sound underlayment grade T&G plywood as the top surface.
- 24"oc truss or I-joist: total sub-floor thickness – 1 1/2" with clean structurally sound underlayment grade T&G plywood as the top surface.
- Must be free of all sealers and contaminants.
- Maximum variation of 1/4" in 10'-0".
- Deflection is not to exceed 1/360 of span when measured under 300lb concentrated load (see ASTM C627).

Installing QuietWarmth® (Same as Installation Method #3-1)

3-D Floor Covering Installation

Setting Tile:

1. Dampen, but do not saturate, the QuietWarmth® with a sponge or mist sprayer prior to thin-set application.
2. Use a square or "U" notch trowel (Use plastic trowel if available) that is sized appropriately for the size of tile and required to achieve 95% coverage. (Minimum 1/4" x 3/8" x 1/4").
3. Use Latex Portland cement mortar that conforms to test requirements found in ANSI A118.4 or 118.11.
4. Key the thin-set into the QuietWarmth® with the flat side of the trowel and then comb it with the notched side in the same direction as the QuietWarmth® heating elements, taking care not to damage the heating element.
5. Press the tile into the thin-set using a front to back motion perpendicular to the spread of the thin-set for maximum transfer of the thin-set onto the tile.
6. Mortar average coverage per tile shall comply with ANSI A108.5.3.3.3, which requires:
   a) The back buttering of each tile b) At least 95% thinset coverage on each tile.
7. Minimum grout joint width is 3/16".
8. **Allow no traffic on the tiled surface for at least 16hrs.**
9. Use epoxy grout as per manufacturers instructions.

3-E Final Wiring & Connections

QuietWarmth is for 120V Installations ONLY! See section 1-E.

Resistance Measure Chart*

Factory Information (From ETL label)	Resistance Measure #1 (Out of the box)	Resistance Measure #2 (After laying QuietWarmth®)	Resistance Measure #3 (After laying floor covering)
Serial number_____ Pad Size_____ Volts _____ Factory Resistance____Ohms	_____ (Ohms)	_____ (Ohms)	_____ (Ohms)
Serial number_____ Pad Size_____ Volts _____ Factory Resistance____Ohms	_____ (Ohms)	_____ (Ohms)	_____ (Ohms)
Serial number_____ Pad Size_____ Volts _____ Factory Resistance____Ohms	_____ (Ohms)	_____ (Ohms)	_____ (Ohms)
Serial number_____ Pad Size_____ Volts _____ Factory Resistance____Ohms	_____ (Ohms)	_____ (Ohms)	_____ (Ohms)

***For each QuietWarmth® pad, use this convenient worksheet to record resistance measures. Retain this record for warranty purposes.**

Technical Question Hotline 888-WARM PAD

QuietWarmth is covered by a 10-Year Limited Warranty. See our complete warranty at **www.QuietWarmth.com**, or call us at **888-379-9695** to request a copy

MP global products L.L.C.

Your **SUSTAINABLE** Underlayment Specialists!

(888)379-9695 • Fax (402)379-9737 • www.mpglobalproducts.com

2500 Old Hadar Road • P.O. Box 2283 • Norfolk, NE 68702-2283

Technical Question Hotline 888-WARM PAD