

# UNCOUPLING MEMBRANE

## INSTALLATION GUIDE

UNCOUPLING MEMBRANE INSTALLATION SYSTEM COMPATIBLE  
WITH TRUE COMFORT CABLE





## UNCOUPLING MEMBRANE INSTALLATION SYSTEM

**Floor warming installation system with uncoupling/vapor management/load distribution properties.**

Advances in tile manufacturing in the past few decades have improved the quality and choices available to the consumer. New colors, new materials, larger format, thinner tiles and digital printing have all contributed to a steady growth of the use of tiles as a surface. When compared to other flooring options such as carpeting and wood floors, tiles are normally preferred because they are easy to clean, resilient and hygienic. Unfortunately ceramic tiles and natural stone are cold to the touch. The use of electrical floor heating will minimize the cold but submits the tile assembly to additional stress. However, this stress can be avoided with the uncoupling membrane.

Traditionally, TRUE COMFORT has recommended covering the electrical heating cables with a self-leveling underlayment or a mortar layer before installing the tiles. This process increases time, difficulty, thickness, height differentials, weight and cost of the overall installation.

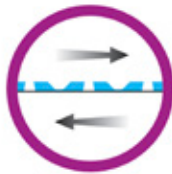




The patented uncoupling membrane combines the benefits of an underlayment membrane with the comfort and convenience of electrical floor heating. The uncoupling membrane can be installed over the entire subfloor as an uncoupling, crack isolating membrane. TRUE COMFORT Cable is then installed in the areas where heat is desired. Once the Cable is installed you can begin tiling immediately, no waiting is necessary.

The membrane is a polypropylene uncoupling, crack isolation membrane with rounded square studs. These studs form a channel specially designed to embed and hold the TRUE COMFORT Cable in place. The membrane has a polypropylene thermo welded woven backside to increase the bond between the subfloor and the membrane.

## THE MEMBRANE ADVANTAGES



### UNCOUPLING

The membrane compensates for the longitudinal movement between the subfloor and the tiles preventing breakage and making it possible to install underfloor electric heating even on problematic substrates such as wood and cracked, but stable, substrates.



### VAPOR MANAGEMENT

The membrane's design allows for air pockets to form between the subfloor and the membrane itself. Excess moisture from the substrate will find its way to these air pockets and create a vapor cycle. This vapor cycle will balance the vapor content of the substrate, protecting the tile from potential damage and making it possible to install underfloor electric heating even on substrates that are not perfectly cured or are moisture sensitive such as wood, concrete, and gypsum based subfloors.



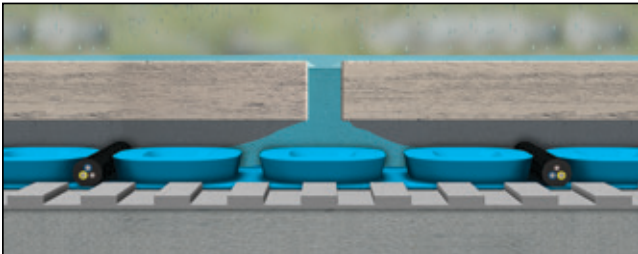
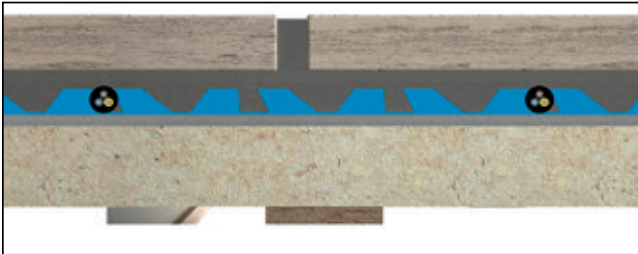
### LOAD DISTRIBUTION

The membrane's design allows loads to be evenly distributed from the tile covering to the subfloor. Each rounded square stud has a central cavity shaped like an inverted pyramid. When filled with mortar this inverted pyramid becomes an incompressible structure. These cavities act like pillars in a building support structure.

TRUE COMFORT's Cable must be installed by qualified and licensed installers in accordance with this manual PLUS local and national codes. ALL connections must be executed by a licensed electrician in accordance with local and national codes.

# THE ADVANTAGES

**OF FLOOR HEATING SYSTEMS HAVE LONG BEEN KNOWN BUT THE UNCOUPLING MEMBRANE HAS GAME CHANGING ADVANTAGES.**



Thanks to the uncoupling and crack isolating properties of the membrane, it's possible to install a floor heating system and tiles over various subfloors such as plywood, cement, etc.

With its low profile design, the height of the membrane is only 5.5 mm (1/4 inch), making it the perfect solution for remodeling projects where the new floor needs to transition over an existing surface.

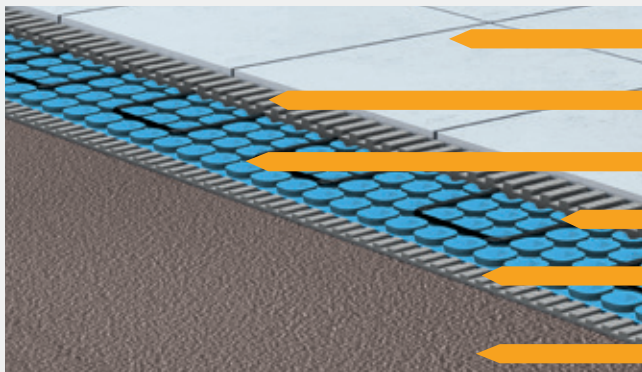
The low overall weight of the system makes it the perfect choice for applications when load bearing capacity of the subfloor is a limitation.

Low thermal inertia. Tiles are installed directly on top of the heating cable. The heat will transfer rapidly and efficiently to the above tiles to provide quicker comfort than with a traditional installation.

Cost effective/time saving installation, coupled with the efficiency and safety of electric floor heating make the membrane the obvious choice.

The membrane does not require any maintenance over time.

## LAYERS OF INSTALLATION WITH THE UNCOUPLING MEMBRANE



- 1 Ceramic, porcelain or natural stone tiles
- 2 Modified (ANSI A118.11) or non-modified (ANSI 118.1) mortars
- 3 Uncoupling membrane
- 4 TRUE COMFORT Cable
- 5 Modified (ANSI A118.11) or non-modified (ANSI 118.1) mortars or fast setting latex modified mortar (ANSI A118.4 - A118.15)
- 6 Subfloor cement, plywood, OSB, etc.

U.S. Patent N.: U.S. 9,416,979 B2 / U.S. 8,176,694 B2 / U.S. 9,188,348 B2 / U.S. 9,518,746 B2 / + patent pending

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# WOOD

## WOOD SUBFLOOR CONSIDERATIONS AND INSTALLATION DETAILS

Wood and its derivatives are commonly used in today's construction. All wood materials expand, contract, bend and flex with changes in temperature, humidity and load in the surrounding environment. These deformations can be seasonal or due to an isolated incident such as a plumbing accident, and will naturally occur over the life of a building structure.



### THE MEMBRANE PROVIDES A SOLUTION FOR THESE CHALLENGES.



#### UNCOUPLING

The membrane will compensate for relative longitudinal movement between the subfloor and the tiles eliminating the major cause of tile cracking and delamination and making it possible to install the TRUE COMFORT Cable on wood substrates. The membrane can eliminate the need for the second layer of plywood with the exception of natural stone tile installations.



#### VAPOR MANAGEMENT

Wood is particularly sensitive to relative moisture changes in its environment. The membrane's design allows for air pockets to form between the subfloor and the membrane itself. These air pockets allow for a vapor cycle to form and balance the vapor content of the subfloor assembly, increasing the mechanical and structural property of the wood subfloor.



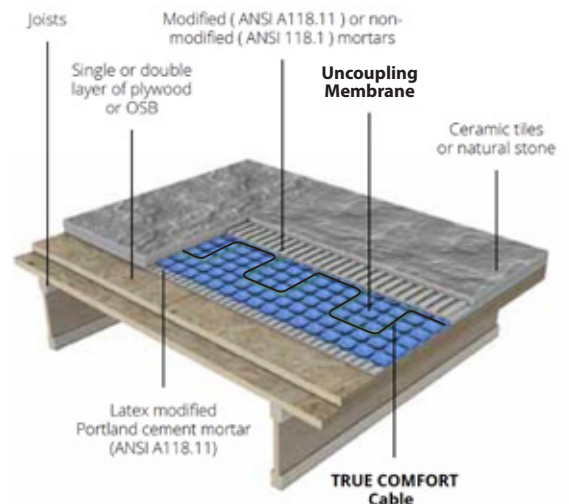
#### LOAD DISTRIBUTION

The membrane's patented design allows loads to be evenly distributed from the tiles to the subfloor. Each rounded square stud has a central cavity shaped like an inverted pyramid. When filled with mortar, this inverted pyramid becomes an incompressible structure. These cavities act like pillars in a building support structure.

## WOOD STRUCTURE

The membrane is laid directly over the entire surface intended for tile installation. TRUE COMFORT Cable is then installed in the areas where heat is desired using the channels formed between the rounded square studs.

It's NOT necessary to use self-leveling underlayment to cover and protect the cable before starting tile installation. This results in significant savings of material, time, cost and overall weight. Tile installation can start immediately after installing the heated cable.



<b>WOOD SUBFLOORS (OSB OR PLYWOOD)</b>				
Joist spacing	OSB/plywood layers	Tile type	Min. Tile size	Minimum subfloor thickness
16.0" OC OSB OR PLYWOOD	Single	Ceramic/porcelain	2" x 2"	19/32" 5/8" Nominal with 1/8" gap
19.2" OC OSB OR PLYWOOD	Single	Ceramic/porcelain	2" x 2"	23/32" or 3/4" Nominal with 1/8" gap
24.0" OC OSB OR PLYWOOD	Double	Ceramic/porcelain	2" x 2"	23/32" or 3/4" Nominal with 1/8" gap
16.0" OC OSB OR PLYWOOD	Double	Natural stone	2" x 2"	19/32" 5/8" Nominal with 1/8" gap
19.2" OC OSB OR PLYWOOD	Double	Natural stone	2" x 2"	23/32" or 3/4" Nominal with 1/8" gap
24.0" OC OSB OR PLYWOOD	Double	Natural stone	2" x 2"	23/32" or 3/4" Nominal with 1/8" gap

- Minimum thickness for additional underlayment 3/8" or 10 mm.
- Underlayment: APA C-C PLUGGED EXTERIOR.
- Additional underlayment is required for Joists/I-beam /Floor trusses spaced more than 19.2" for any type of tile.
- Additional underlayment is required for all types of natural stone regardless of joist/I-beam/floor trusses spacing.
- Underlayment 1/2" (13 mm) or thinner: Fasteners spacing 4" (102 mm) around the perimeter and 6" (152 mm) in the field.
- Underlayment thicker than 1/2" (13 mm): Fasteners spacing 6" (152 mm) around the perimeter and 6" in the field.

<b>TEST PROCEDURE: ASTM C627: "STANDARD TEST METHOD FOR EVALUATING CERAMIC FLOOR TILE INSTALLATION SYSTEMS USING THE ROBINSON-TYPE FLOOR TESTER"</b>				
Report Number	Substrate	Tile	Joist Spacing	Achieved Rating
TCNA-772-14	Concrete	12 x 12 Porcelain Tile	Not Applicable	Extra Heavy
TCNA-773-14	OSB/plywood	12 x 12 Porcelain Tile	19.2"	Extra Heavy

<b>WOOD SUBFLOORS (OSB OR PLYWOOD) SETTING AND GROUTING MATERIALS</b>	
Adhesive to fix the uncoupling membrane to subfloor	Latex Modified Portland Cement Mortar (ANSI A118.11)
Adhesive to fix tiles to the uncoupling membrane	Modified (ANSI A118.11) or non-modified (ANSI 118.1) mortars
GROUT	Polymer-modified cement grout (ANSI A118.3, A118.6, A118.7, A118.8) *

\* Please consult your mortar manufacturer for proper mortar selection and proper curing time for your specific installation.

<b>WOOD SUBFLOORS (OSB OR PLYWOOD) ANSI INSTALLATION SPECIFICATION</b>	
TILE FIXING	ANSI (108.5)
GROUTING	ANSI (A108.6, A108.9, A108.10)

## EXPANSION JOINTS

The uncoupling membrane does NOT eliminate the need for movement joints, including perimeter joints, within the tiled surface. Movement joints must be installed in accordance with industry standards and norms TCNA EJ171, and TTMAC 301 MJ.

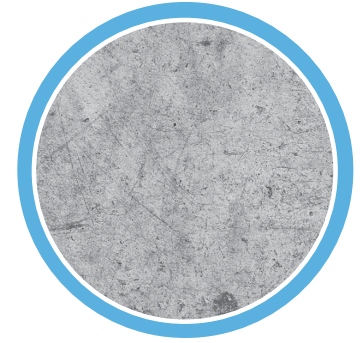
## SUBSTRATE PREPARATION

- Wood panels need to be properly fastened and secured to framing structure.
- Wood panels need to be clean of dust, residue, wax, oil, and grease.
- Wood panels need to be levelled before the installation of the uncoupling membrane.
- Remove all exposed nails, screws, fasteners, and debris.

# CEMENT

## CEMENT BASED SUBFLOOR CONSIDERATIONS AND INSTALLATION DETAILS

Thermal expansion, shrinkage and any other relative movement between a cement based screed and the tiles assembly above will subject the tile assembly to stress. This stress can ultimately cause cracking and delamination.



## THE UNCOUPLING MEMBRANE PROVIDES A SOLUTION FOR THESE CHALLENGES.



### UNCOUPLING

The uncoupling membrane's patented design allows for uncoupling and crack isolation to take place in the tile assembly while embedding the heating cable. The membrane compensates for the longitudinal movement between the subfloor and the tiles preventing breakage and making it possible to install underfloor electric heating even on cracked or not completely cured screeds.



### VAPOR MANAGEMENT

The uncoupling membrane's design allows for air pockets to be formed between the subfloor and the membrane itself. Excess moisture from the substrate will find its way to these pockets and create a vapor cycle. This vapor cycle will balance the vapor content of the substrate protecting the tiled surface and the substrate from undesired damages and making it possible to install the tiles immediately after the slab is ready for foot traffic.



### LOAD DISTRIBUTION

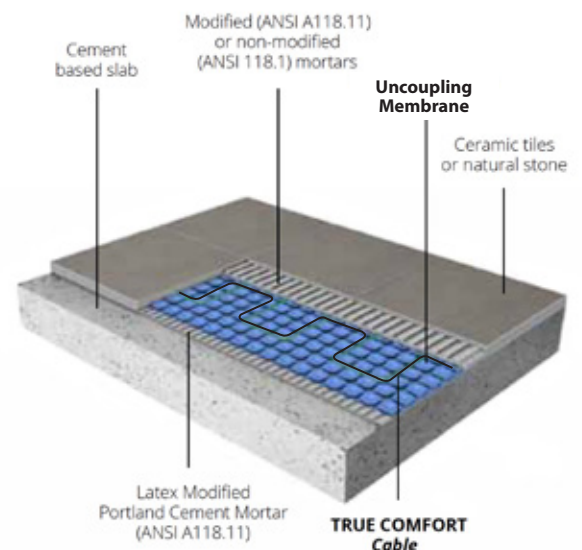
The uncoupling membrane's patented design allows loads to be evenly distributed from the tile covering to the subfloor. Each rounded square stud has a central cavity shaped like an inverted pyramid. When filled with mortar this inverted pyramid becomes an incompressible structure. These cavities act like pillars in a building support structure.

## CEMENT BASED SLAB

The uncoupling membrane is the ideal solution to install ceramic and natural stone tiles on cement slabs even if they are cracked or are not perfectly cured.

The membrane is laid directly over the entire surface intended for tile installation. TRUE COMFORT's Cable is then installed in the areas where heat is desired using the channels formed between the rounded square studs.

It's NOT necessary to use self-leveling underlayment to cover/protect the wire before starting tile installation. This results in saving material/weight/time/cost. Tile installation can start immediately after installing the heated cable.





Installing tiles on a cement based subfloor presents many challenges. The following table illustrates the difference in thermal expansion between a cement subfloor and the tiled surface.

TILE SURFACE MATERIAL	THERMAL EXPANSION RATIO
Ceramic	6 times the thermal expansion of cement
Marble	7 times the thermal expansion of cement
Granite	9 times the thermal expansion of cement

CEMENT SUBFLOOR SETTING AND GROUTING MATERIALS	
Adhesive to fix the uncoupling membrane to subfloor	Latex Modified Portland Cement Mortar (ANSI A118.11)
Adhesive to fix tiles to the uncoupling membrane	Modified (ANSI A118.11) or non-modified (ANSI 118.1) mortars
GROUT	Polymer-modified cement grout (ANSI A118.3 A118.6, A118.7, A118.8) *

\* Please consult your mortar manufacturer for proper mortar selection and proper curing time for your specific installation.

CEMENT SUBFLOOR ANSI INSTALLATION SPECIFICATION	
TILE FIXING	ANSI (108.5)
GROUTING	ANSI (A108.6, A108.9, A108.10)

- Cement Based Substrate must be compact and structurally sound
- Cracks in the substrate need to present only longitudinal movement (NO VERTICAL MOVEMENT)
- Debris, dust, wax, grease, and oil residue must be removed or abraded/scored to offer better bond to the mortar
- Minimum tile size 2" x 2" ( 50mm x 50mm )

## EXPANSION JOINTS

The uncoupling membrane does NOT eliminate the need for movement joints, including perimeter joints, within the tiled surface. Movement joints must be installed in accordance with industry standards and norms TCNA EJ171, and TTMAC 301 MJ.

# GYPSUM BASED UNDERLAYMENT

## MEMBRANE INSTALLED OVER GYPSUM BASED UNDERLAYMENT

Gypsum based underlayment or more properly gypsum based substrate present many advantages, but also a few challenges to the tile installer. CaSO<sub>4</sub> calcium sulfate is the component of gypsum based underlayment and when in contact with water, it can lead to the formation of ettringite (hydrate calcium aluminium sulfate), which can cause an increase in volume. Gypsum based underlayment must be waterproofed against any exposure to water or moisture throughout the life of the installation if possible. Please follow the underlayment manufacturer's direction for proper preparation and primer application before fixing the uncoupling membrane to the gypsum based underlayment. Gypsum based underlayment must be applied to a structural subfloor (Cement based subfloor or wood based subfloor. For subfloor preparation see previous pages.



## THE UNCOUPLING MEMBRANE PROVIDES A SOLUTION FOR THESE CHALLENGES.



### UNCOUPLING

The uncoupling membrane's patented design allows for uncoupling and crack isolation to take place in the tile assembly while embedding the heating cable. The uncoupling membrane compensates for the longitudinal movement between the subfloor and the tile, preventing cracking and delamination even on gypsum based subfloor.



### VAPOR MANAGEMENT

The uncoupling membrane's patented design allows for air pockets to be formed between the subfloor and the membrane itself. Excess moisture from the substrate will find its way to these pockets and create a vapor cycle. This vapor cycle will balance the vapor content of the substrate protecting the tiled surface and the substrate from undesired damages.



### LOAD DISTRIBUTION

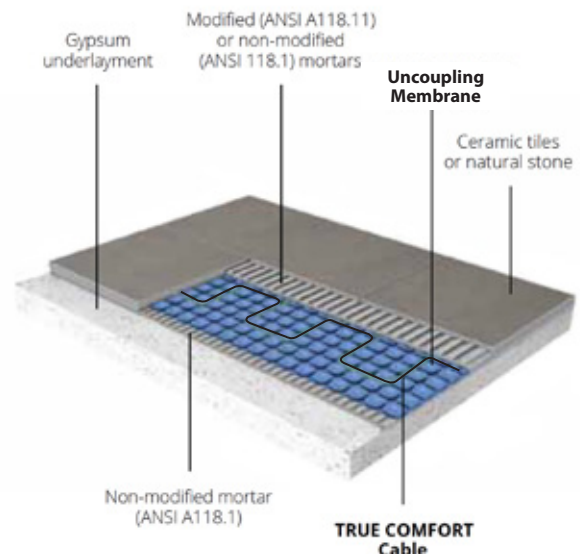
The uncoupling membrane's design allows to evenly distribute load from the floor to the subfloor. Each rounded square stud has a central cavity shaped like an inverted pyramid. When filled with mortar this inverted pyramid becomes an incompressible structure like pillars in a building support structure.

## GYPSUM BASED UNDERLAYMENT

The uncoupling membrane is the ideal solution to install ceramic and natural stone tiles on gypsum based underlayment.

The membrane is laid directly over the entire surface intended for tile installation. TRUE COMFORT's Cable is then installed in the areas where heat is desired using the channels formed between the rounded square studs.

It's NOT necessary to use a self-leveling underlayment to cover/protect the wire before starting a tile installation. This results in saving material/weight/time/cost. Tile installation can start immediately after installing the heated cable.



# EXISTING VINYL FLOOR

## UNCOUPLING MEMBRANE INSTALLED OVER EXISTING VINYL FLOOR

Vinyl floor covering is a non-supporting layer installed over a supporting subfloor typically made of wood or cement. Supporting subfloor preparation and consideration are identical as per application without the vinyl floor.



### ADDITIONAL CONSIDERATIONS INSTALLATION OVER EXISTING VINYL FLOOR:

- Vinyl floor must be flattened and secured over the entire surface.
- Single vinyl floor ONLY. Multiple layers of vinyl floor, if any, must be removed.
- If foam or any under cushioning mat had previously been installed under the vinyl floor the vinyl floor needs to be removed entirely and the uncoupling membrane will be fixed directly to the subfloor.
- Vinyl floor must be free of debris, dust, grease and wax substance.
- Outside perimeter secured or partial vinyl flooring is NOT acceptable for direct installation of the uncoupling membrane as it may cause undesired stress to the tile assembly.
- To adhere the uncoupling membrane to existing vinyl floor please use Fast-setting latex modified mortar. ANSI A118.4 or A118.15.
- The uncoupling membrane does NOT eliminate the need for movement joints, including perimeter joints, within the tiled surface. Movement joints must be installed in accordance with industry standards and norms TCNA EJ171, and TTMAC 301 MJ.

OVER EXISTING VINYL FLOOR SETTING AND GROUTING MATERIALS	
Adhesive to fix the uncoupling membrane to subfloor	Fast Setting Latex Modified mortar (ANSI A118.4 - A118.15)
Adhesive to fix tiles to the uncoupling membrane	Modified (ANSI A118.11) or non-modified (ANSI 118.1) mortars
GROUT	Polymer-modified cement grout (ANSI A118.3 A118.6, A118.7, A118.8) *

\* Please consult your mortar manufacturer for proper mortar selection and proper curing time for your specific installation.

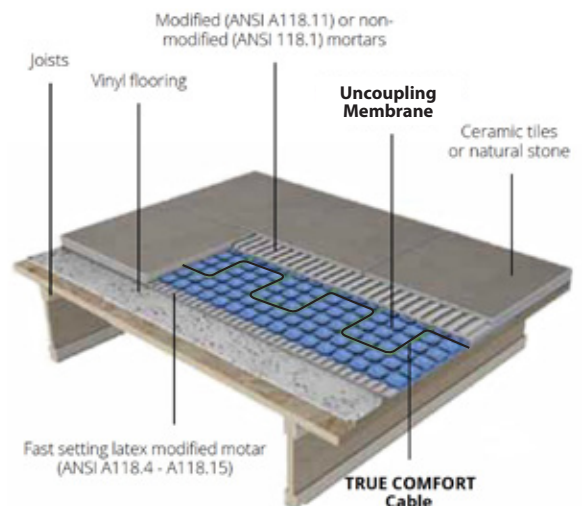
OVER EXISTING VINYL FLOOR ANSI INSTALLATION SPECIFICATION	
TILE FIXING	ANSI (108.5)
GROUTING	ANSI (A108.6 A108.9 A108.10)

## EXISTING VINYL FLOOR

Minimum tile size 2" x 2" (50 mm x 50 mm )

The uncoupling membrane does NOT eliminate the need for movement joints, including perimeter joints, within the tiled surface.

Movement joints must be installed in accordance with industry standards and norms TCNA EJ171, and TTMAC 301 MJ.





# MOVEMENT/ EXPANSION JOINTS

Any tile surface assembly cross section is made of several different materials including tiles, wood, screws, cement, gypsum, adhesives, beams and more. All these different materials contract and expand in different ways when temperature, moisture and load change, causing stress in the overall tile assembly and ultimately cracks and possibly delamination of the tiles.

Ceramic and natural stone tiles are rigid and are not able to compensate for movements. An expansion/ movement joint is the part of the assembly designed to absorb the stress on the assembly by allowing movement. The uncoupling membrane does NOT eliminate the need for expansion/movement joints, including perimeter joints, within the tiled surface.

Movement joints must be installed in accordance with industry standards and norms TCNA EJ171, and TTMAC 301 MJ.



## EXPANSION/MOVEMENT JOINT PLACEMENT

- Perimeter joint must be installed around the entire installation perimeter.
- Surface joint: 16'-20' (4.9 meters - 6.1 meter) in both directions. Reduce separation by 25% if exposed to direct sunlight, heating cable or moisture.
- Surface joint must be installed near any structural element (columns, beams, stairways, doorways).
- Structural joint is needed when 2 separate supporting structures meet under the tiles or the underlayment.
- Areas enclosed within joints should be square or rectangle with the ratio between each dimension not to exceed 1:1.5.

# INSTALLATION

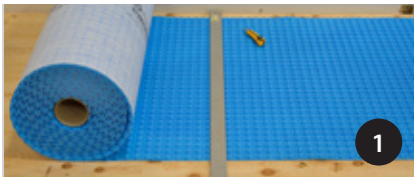
## PREPARATION

- Before laying the uncoupling membrane, make sure that the substrate is load bearing, compact, flat and free of oils, greases and waxes which could prevent proper adhesion.
- Before laying the uncoupling membrane, make sure that the substrate is in accordance with local and national building codes and norms.
- In case of a wood based substrate check that the panels are properly secured.
- In the case of vinyl flooring, make sure that the underlying structure is sound and suitable for the intended use and that the vinyl flooring is securely attached.
- In case of gypsum based underlayment verify that the moisture content is less than 2%.

Mortar required to secure the uncoupling membrane to the substrate.

50 lbs (22.70 Kg) for 80 ft<sup>2</sup> (7.4 m<sup>2</sup>) using 1/4" x 3/8" (6 mm x 10 mm) square or U-notched trowel.

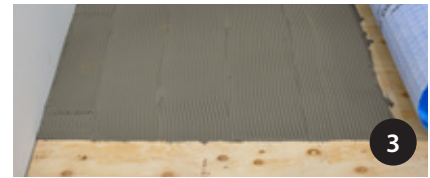
## LAYING THE MEMBRANE



1 Cut the membrane and dry fit to the whole floor.



2 Key in the appropriate thinset mortar to the subfloor using the flat side of a trowel.



3 Make uniform ridges with a 1/4" x 3/8" x 1/4" trowel.



4 Unroll the membrane onto the thinset mortar and apply uniform pressure with a wood trowel.



5 Use a 75 lb roller to achieve 100% thinset mortar transfer to the membrane.



6 Check the thinset mortar transfer to the membrane. In case of partial coverage, increase the amount of adhesive or its fluidity.



7 Lay the next sheets of membrane without overlapping and align square studs. Repeat previous steps until completion.



8 Start the installation of TRUE COMFORT Cable by cutting the membrane to insert the mechanical joint and part of the cold lead.



9 Insert the cable according to the installation guide, making sure not to exceed a maximum output of 15W/ft<sup>2</sup>.



10 Finish the cable's installation by cutting the membrane and inserting the end of the cable.



11 Install the floor sensor between 2 cable runs.



**WARNING:** Drying time is a determining factor in the success of an installation with a membrane. Carefully respect the curing time recommended by thinset manufacturers before grouting the tiles.

# TRUE COMFORT CABLE:

## WARNINGS

Before installation, the user and/or installer must read, understand and adhere strictly to the instructions below as well as TRUE COMFORT's Cable installation guide.

- Any deviation from the instructions below will completely void the TRUE COMFORT's warranty and liability.
- The instructions below are intended to avoid personal injury and/or property damage.
- TRUE COMFORT's Cable must be installed by qualified personnel and all electrical connections must be performed by a qualified electrician according to local and national building codes and norms where required.
- A dedicated circuit for heating must be used to power the heating cable. Dedicated circuit breaker must be clearly identified and labeled on the circuit breaker panel.
- The heating cables must be grounded in accordance with local and national electric codes.
- Any modification or tampering of the heating cable will completely void TRUE COMFORT's warranty and liability.
- Do not energize the cable when on the spool; this could damage the cable and cause a fire.
- The hot section of the heating cable must be installed entirely below the tiles, encapsulated in cement based material including the mechanical joint to the cold lead and the end of the cable.
- Use only the TRUE COMFORT Cable with the uncoupling membrane.
- Compliance with the following standard is mandatory CANADA: CAN/CSA-C22.2 No. 130-03 USA UL 1673 and ANSI/IEEE 515.1-2005.
- Thermostat must be compliant with following standard CANADA: C22.2 No. 24-93 USA UL 873.
- Lay the heating cable alternating 2 and 3 rounded square studs. In no case should the output exceed 15 watts/square foot. Lower spacing may cause a fire or damage the flooring. Installing the cable at less than every two studs may damage the cable and the flooring.
- NEVER use a heating cable designed for 110V/120V with 208V/220V/240V power.
- Never cut/shorten/modify the heating cable; it will change the electrical characteristics of the cables and possibly cause overheating.
- Avoid bending the heating cable with a radius of curvature less than 0.5 inch, otherwise you may damage the insulation and integrity of the wires.
- Do not lay the heating cable under walls.
- The minimum application temperature of TRUE COMFORT's Cable is 5 °C (41 °F).



## LAYING THE TILES

### **WARNING**

Be careful when applying the adhesive to the membrane as to not damage the TRUE COMFORT Cable with the flat/notched trowel.

Mortar required to secure tiles to the uncoupling membrane:

50 lbs (22.70 Kg) for 40/50 ft<sup>2</sup> (3.7 m<sup>2</sup> / 4.6 m<sup>2</sup>) using 1/4" x 3/8" (6 mm x 10 mm) square or U-Notched trowel,

50 lbs (22.70 Kg) for 30/40 ft<sup>2</sup> (2.8 m<sup>2</sup>/ 3.7 m<sup>2</sup>) using 1/2" x 1/2" (12.5 mm x 12.5 mm ) square or U-Notched trowel.



Tiles can be immediately laid after the installation of the heating cables is completed. Using the flat side of the trowel, fill with mortar the cavities of the membrane. Apply more of the same mortar with a notched trowel over according to the tile size. Both modified (ANSI A118.11) or non-modified (ANSI 118.1) mortars can be used when installing tiles to the uncoupling membrane (please consult your mortar manufacturer for proper mortar selection and proper curing time for your specific installation).



Apply the mortar to the back of the tiles with a notched trowel and lay them on the layer of mortar previously applied. Occasionally remove and check some tiles, to ensure full back coverage.



Carefully lay the tiles and press them on the layer of mortar. If a layer of skin has formed on the mortar, remove and apply again. After laying the tiles, repeat all previous tests and record the values obtained on the warranty card.

### **WARNING**

Full back coverage may vary depending on the consistency of the adhesive, the angle of inclination of the notched trowel and the flatness of the substrate. If full back coverage is not achieved, remove the tile and apply new adhesive paying attention to the consistency of the mortar and its application. In case of large format tiles 12" x 12" and larger, it is recommended to double spread each tile before laying them.

