

## **EXHIBIT F**

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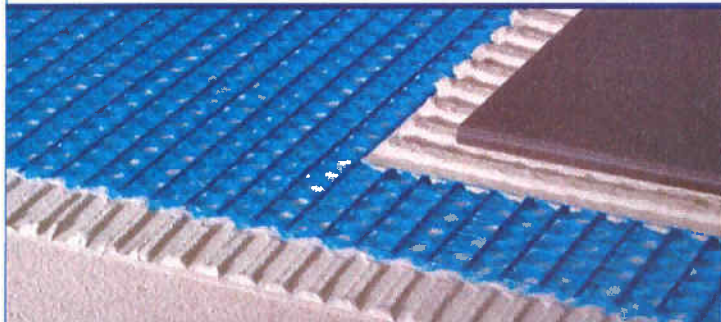
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FUNCTION. DESIGN. QUALITY.

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## Waterproofing and Multifunctional Underlayment Systems

### Blanke•PERMAT

The Blanke•PERMAT is an innovative uncoupling underlayment that offers all the labor saving benefits of the old plastic roll systems. The Blanke•PERMAT also adds support to wood substrates thereby reducing deflection and provides greater compression and tensile strength than plastic roll products. The Blanke•PERMAT is stable to walk on during installation and does not require additional curing time when installing porcelain with latex modified thinset.

### Why Blanke•PERMAT?

For stone tile installations, Blanke•PERMAT offers amazing crack isolation protection, superior compression and tensile strength. The Blanke•PERMAT reinforced mesh panel design adds major support to wood subfloors, greatly reducing vertical subfloor movement (deflection). And in many cases, using Blanke•PERMAT actually replaces the need for a second layer of plywood to reinforce a floor to be tiled with stone! That means there is no significant increase in the height of the stone installation if Blanke•PERMAT is used!

### 10 Year Warranty

Importantly, Blanke•PERMAT has a 10-year warranty against damage caused by excessive vertical subfloor movement (deflection), the only such warranty in the industry. Whether installing stone on wood or cement subfloors, homeowners who include Blanke•PERMAT in their stone tile installations can rest assured their subfloors will indeed support the installation.

### Advantages

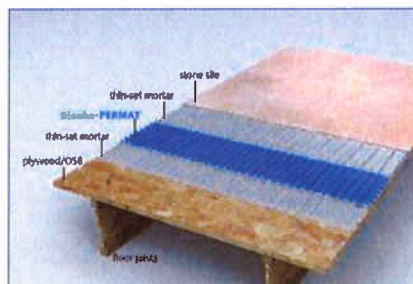
- Strengthens wood substrates
- Reduces vertical subfloor movement (deflection)
- Superior compressive strength
- Crack isolation properties (uncoupling)
- Superior resistance to delamination during installation
- Lightweight; easy to install
- Self-seaming panels prevent substrate movement stress from transmitting to tiled surface

### Minimize Transition Heights With Blanke•PERMAT

Blanke•PERMAT installation with no increase in height of stone installation!

[Product information](#)
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## Suitable Subfloors / Natural Stone



Click for enlargement please.

### Technical Data

**Top Mesh:** Extruded twisted strands of highly alkali resistant glass fiber heat welded to the lower layer of high density polyethylene (HDPE) mesh.

**Bottom Mesh:** Extruded twisted strands of alkali resistant HDPE

**Fabric material:** Polypropylene fleece

**Thickness:** Approx. 3.3 mm (nominal 1/8 inch)

**Size:** 1 panel: 2' x 3.2' (6.5 sq.ft.)

30 panels/carton (195 sq.ft.)

### Floors Interior

#### Plywood or OSB Subfloors:

Joists spaced 16" o.c. and 19.2" o.c.: Minimum one layer 3/4" thick subfloor.

Joists spaced 24" o.c.: Minimum 3/4" thick subfloor plus second layer of 3/8" thick plywood or OSB.

#### Cement Subfloors:

Blanke•PERMAT provides excellent protection



# Surface Protection from the Ground Up

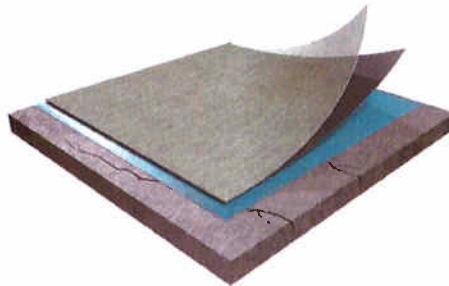
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## ECB GREEN ANTI-FRACTURE & WATERPROOF MEMBRANE



**ECB GREEN MEMBRANE** is a self-bonding, sheet applied elastomeric membrane. It consists of a base layer of polymer modified elastomers, permanently laminated to a recycled plastic "stress flex" fiber sheet. Together they form a single 40 mil (1/16") high strength, self-bonding membrane that is easily applied. ECB GREEN MEMBRANE is designed for use in LEED certified projects under floor tile surfaces that require

protection from structural movement. ECB Green MEMBRANE adheres permanently to the sub-floor, remains flexible and will last the life of the flooring surface. [Click here](#) for more information about how ECB GREEN and other NAC products contributes to LEED points.

### Certification:



ECB Green is certified to have a minimum recycled content of 12% through Scientific Certification Systems. For more information about recycled content or on LEED, please contact Nick Duve' at ext 207.

### How It Works:

**ECB GREEN MEMBRANE** bridges all existing and future movement of the sub-floor. The key to ECB GREEN's effectiveness is its two component patent pending design. The elastomeric base layer functions as a buffer, absorbing the thermal and structural movement of the sub-floor, while its recycled "stress flex" fiber sheet creates a new flooring surface which will accommodate most mortars, organic adhesives and epoxy setting materials meeting ANSI A118.4. ECB GREEN MEMBRANE protects tile from structural movement, live and dead loads (bounce and reverberation), movement of cracks and shrinkage (creep). The adhesion and integrity of the tile floor are preserved by the "anti-fracture" action of ECB GREEN MEMBRANE.

### Features And Benefits:

- Contributes to LEED projects
- Protects tile floors from reflective cracking and delamination
- Reduces live and dead load failures on suspended floors
- Safely covers dangerous asbestos flooring
- Tile floors stay warmer, drier and quieter
- Eliminates cutting tile to meet control/cold joints
- No need to remove old floors or recess new ones
- Replaces mud beds, concrete backer boards, plywood and other thick sub-floor materials
- Heavy duty, high impact load rating





- Self-bonding, easy to apply with conventional tools
- No down time, can be walked on and tiled immediately after installation
- Compatible with most tile installation materials
- Waterproof/Vapor Barrier

### Recommended Uses:

ECB GREEN MEMBRANE is cost effective as a sub-floor over wood, concrete, terrazzo, pre-cast panels, light weight concrete, radiant heated floors, vinyl composition and vinyl asbestos tile, metal and other existing hard surface flooring, providing they are structurally sound. ECB GREEN MEMBRANE can be used in LEED projects, malls, airports, commercial buildings, department stores, office buildings, restaurants, apartments, condominiums, residential homes or anywhere sub-floor problems threaten the integrity of the tile floor. Because ECB GREEN MEMBRANE is only 40 mil thick (1/16"), it can be used in new or remodel construction where height restrictions exist; mud beds, concrete backer boards, plywood, and other sub-floor systems cannot. ECB MEMBRANE is also an insulator, helping floors stay warmer, drier and quieter. ECB GREEN MEMBRANE is recommended for thin-bed installation of ceramic tile, quarry tile, marble, pavers, stone, agglomerate tile, and commercial grade vinyl composition tile and is an effective vapor barrier under wood and carpet.

[Technical Literature](#)

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**SPIDERWEB™ UNCOUPLING MAT**

SpiderWeb™ Uncoupling Mat is a waterproof, vaporproof uncoupling membrane that can be used for crack-suppression in most tile, porcelain or natural stone installations, and can be applied over challenging substrates such as installation over green concrete (young) and single ply 19.2" (49 cm) supported floors. SpiderWeb is designed differently than bonded membranes, with a sacrificial layer of fabric that shears away, or "uncouples", when exposed to excessive substrate movement, absorbing stress and preserving the surface and integrity of the tile. SpiderWeb's mesh layer has reinforced strands which lock mortar into the mat, ensuring strong, reliable installations.

**Uses**

SpiderWeb Uncoupling Mat is elastic, rot proof and resistant to aggressive substances and liquids such as alkalis, solvents and oils. SpiderWeb bridges cracks, uncouples floor coverings from their substrates, and is suitable as an underlayment for all floor tiles. When used with a qualifying mortar, SpiderWeb is protected by a 7 or 10 year system warranty based on the mortar selected. 7 year warranties require a qualifying polymer-modified mortar to be used when installing tile. 10 year warranty requires the use of SpiderWeb Mortar which has been specifically formulated for use in this system.

**Tile Types**

Ceramic tile, all types including impervious porcelain, natural stone, precast terrazzo tile

**Areas of Use**

- Interior and exterior applications
- Green concrete
- Concrete, mortar beds, masonry
- Lightweight concrete and/or air entrained concrete
- Primed gypsum underlayment (minimum 2000 PSI cured)
- Post-tension concrete
- Exterior Grade Plywood
- Primed OSB
- Exterior decks
- Ceramic tile
- Resilient flooring
- Cutback adhesive

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# 170 Sound & Crack Isolation

DS-170.0-0310



## 1. PRODUCT NAME

LATICRETE® 170 Sound & Crack Isolation Mat

## 2. MANUFACTURER

LATICRETE International, Inc.  
1 LATICRETE Park North  
Bethany, CT 06524-3423 USA

Telephone: +1.203.393.0010, ext. 235  
Toll Free: 1.800.243.4788, ext. 235  
Fax: +1.203.393.1684  
Internet: [www.laticrete.com](http://www.laticrete.com)

## 3. PRODUCT DESCRIPTION

LATICRETE 170 Sound & Crack Isolation Mat is a high performance acoustical underlayment system that muffles impact noises through ceramic tiles, stone and other hard surfacing materials. It also minimizes the transmission of cracks from the substrate to the tile installation up to 1/8" (3 mm), non movement cracks. LATICRETE 170 Sound & Crack Isolation Mat is a 3 mm thick rubberized membrane comprised of 88.5% post consumer recycled materials.

### Uses

- Designed to be used under thin-bed adhesive for interior floor installations of ceramic tile, marble, stone, and brick to eliminate the transmission of impact noise from one floor to the floor below.
- Eliminates the transmission of stresses from the concrete base slab to the tile installation.
- Use as a thermal barrier under LATICRETE Floor HEAT installations. Refer to DS 605.0, LATICRETE Floor HEAT Mat for installation instructions.
- Combines low installed weight with minimal "above substrate" thickness.
- To eliminate cracks in tile work and reduce noise transmission, LATICRETE 170 Sound & Crack Isolation Mat should be applied to the entire substrate prior to the installation of ceramic tile, marble, stone, terrazzo and brick.

### Advantages

- Eliminates transmission of substrate cracks of up to 1/8" (3 mm) from transferring to the finished floor
  - ΔIIC rating of 20 per ASTM E2179 (See PHYSICAL PROPERTIES)
  - IIC rating of 65 per ASTM E492/ E989
  - Load bearing - "Light" service rating per ASTM C627/TCA
  - Meets ANSI A118.12 specifications\*
  - Easy and fast to install with standard tools
- \* Interior dry applications only

### Suitable Substrates (Interior Use Only)

- Concrete
- Mortar beds
- Exterior glue plywood
- Cement backer board
- Cement terrazzo
- Ceramic tile and stone

### Packaging

LATICRETE 170 Sound & Crack Isolation Mat:  
(13.9 m<sup>2</sup>) roll, 20 rolls per pallet

### Coverage

LATICRETE 170 Sound & Crack Isolation Mat  
Approximate 150 ft<sup>2</sup> (13.9 m<sup>2</sup>) per roll

### Shelf Life

Factory sealed containers of this product are guaranteed to be of first quality for two (2) years if stored at temperatures >32°F (0°C) and <110°F (43°C).

### Limitations

- DO NOT bond to particle board, OSB, luan, Masonite® or hardwood surfaces.
- For horizontal use over suitable interior substrates only.
- DO NOT double stack pallets.
- Not for use over expansion joints or structural movement cracks.
- LATICRETE 170 Sound & Crack Isolation Mat is not intended for use as a waterproofing membrane.
- Adhesives/mastics, mortars and grouts for ceramic tile, pavers, brick and stone are not replacements for waterproofing membranes. When a waterproofing membrane is required, use a LATICRETE Waterproofing Membrane (see Section 10 FILING SYSTEMS).
- **Note:** Surfaces must be structurally sound, stable and rigid enough to support ceramic/stone tile, thin brick and similar finishes. Substrate deflection under all live, dead and impact loads, including concentrated loads, must not exceed L/360 for thin bed ceramic tile/brick installations or L/480 for thin bed stone installations where L = span length.