

# FLEXMAT HIGH PERFORMANCE UNIVERSAL UNCOUPLING MEMBRANE



## DESCRIPTION

FlexMat is a universal, next generation, high performance uncoupling membrane for use under ceramic tile and stone installations, for both residential and commercial applications. The unique patented design of Flextile FlexMat uncouples the floorcovering from the substrate and prevents the transfer of stresses to the tiled surface, providing Shear Stress Control. Cracks in the substrate are bridged and not transferred to the tile installed.

Its design also allows for installations with both latex-modified and unmodified tile mortars, for proper installation and maximum strength of large format porcelain, tile and stone. It allows for installation over a wide range of substrates, including plywood/OSB, concrete, gypsum, heated floors, etc, and allows for tile applications over single-layer plywood or OSB subfloors with joist spacings up to 488mm (19.2") o.c.

## RECOMMENDED SURFACES

- Installation over concrete, masonry, approved tile backer boards.
- Installation over cement mortar beds or levelling compounds.
- Existing surfaces of properly prepared ceramic tile, stone, or cement terrazzo.
- Exterior Grade Plywood or OSB – in interior dry areas only.
- Green concrete surfaces where vapor emission is a concern. \*
- Existing surfaces of properly prepared non-cushion sheet vinyl flooring, VCT, or cutback adhesive residue. \*
- Gypsum floors. \*
- Heated floors. \*

\* Check with Flextile Ltd. as to acceptability of specific surfaces

## COMPOSITION AND MATERIALS

FlexMat consists of a polypropylene membrane sandwiched between a white polypropylene non woven fabric on the underside to maximize bonding to the subfloor. It also has an interwoven polypropylene netting material adhered to the top surface to provide mechanical bonding properties as well as enhancing the contact surface with the installation mortars used. FlexMat is approximately 3mm (1/8") thick. FlexMat is VOC free and is environmentally safe; therefore it is ideal for use in confined areas. FlexMat will not rot or decay, and will maintain its flexibility properties over the life of the tile or stone installation.

## FEATURES

- Unique profile design plus inter-woven polypropylene netting material works to increase surface area to provide stronger bond to tile and providing Shear Stress Control.
- May be used with all recommended mortars as per installation requirements.
- For both Commercial and Residential use.
- Bridges in plane substrate cracks up to 3 mm (1/8") in thickness.
- Lightweight underlayment for Tile and Stone.
- Offset dimple design to give higher point load.
- One ply fleece does not break apart / does not crush while installing.
- Absorbs deflection in floors within industry standard. (L/360 Tile. L/480 Stone).
- Allows for installation over a wide range of substrates, including plywood/OSB, concrete, gypsum, heated floors, etc.
- VOC free
- Water impermeable

- Equalizes vapour pressure: Air channels beneath tile underlay remain open to allow moisture in substrate to evaporate (joint strip must be used to maintain continuous barrier).
- Rated as suitable for extra heavy service by ASTM C627-70 on concrete and plywood substrates.

## LIMITATIONS

- Suitable for exterior installations over properly prepared concrete decks or balconies over unoccupied areas.
- Not recommended for exterior wood-structure decks or balconies.
- FlexMat is not intended for use as an exposed traffic surface.
- Not recommended for use as a roofing membrane over occupied areas.
- Do not cover existing control or expansion joints.
- Not for use over structural movement cracks, or to cover cracks greater than 3 mm (1/8").
- Use only on surfaces which are maintained above 7°C (45°F), and below 49°C (120°F) during application.
- Not recommended for installations over particle board, hardwood surfaces, Luan, cushion backed vinyl flooring, or other such unstable surfaces.
- The contact surface of FlexMat amounts to approximately 40% of the total surface. This may reduce the load-bearing capacity of construction, which may be limiting for point loads. Select appropriate tile thickness and size to distribute the necessary loads. The tile size should be at least 50mm X 50mm (2" X 2").

## TECHNICAL DATA

Meets or Exceeds ANSI A118.10 and ANSI A118.12 specification requirements.

### Typical Physical Properties

Colour	Blue
Thickness: nominal	0.5 mm (0.02 inch)
Stud Height	3mm (1/8 inch)
Unit Weight	0.645 kg/m <sup>2</sup>
Water Vapour Resistance	160m (525 ft.) equivalent air layer
Air Gap Volume	1.6 L/m <sup>2</sup> (0.0052 ft <sup>3</sup> / ft <sup>2</sup> )
Stud Cavities Volume	1.2 L/m <sup>2</sup> (0.0039 ft <sup>3</sup> / ft <sup>2</sup> ) tile mortar
Storage Temperature	Max 45°C (113°F)
Softening Temperature	160°C (320°F)
Linear Coefficient of Thermal Expansion	0.18mm/m°C (0.004" / ft°F)

Robinson Floor Test ASTM C627	Rating
Concrete Surfaces	Extra Heavy
Plywood Surfaces	Extra Heavy

Industry Standards Guidelines ref. Wood Substrate installations  
TTMAC Specification Guide 09 30 00 Tile Installation Manual: method 313F(Detail D)  
TCNA Handbook for Ceramic Tile : method F147 and F148

Industry Standards Guidelines ref. Concrete Substrate installations  
TTMAC Specification Guide 09 30 00 Tile Installation Manual: method 311F(Detail A, C and D)  
TCNA Handbook for Ceramic Tile : method F128

For job specific installation systems, recommendations, project warranty information, or for assistance with installation specifications, please contact Flextile's technical department.

Toronto, ON – Email: [mzerey@flextile.net](mailto:mzerey@flextile.net)

Toll Free 1-800-699-3623

Tel 1-416-255-1111

Fax 1-416-255-1729

Montreal, QC – Email: [mzerey@flextile.net](mailto:mzerey@flextile.net)

Toll Free 1-800-699-3623

Tel 1-514-345-8666

Fax 1-514-345-8825

Burnaby, BC – Email: [mboldt@flextile.net](mailto:mboldt@flextile.net)

Toll Free 1-888-236-4486

Tel 1-604-420-4914

Fax 1-604-420-0936

[www.flextile.net](http://www.flextile.net)

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09 30 00-DIV 9  
ANSI A118.10 / ANSI A118.12

### TECHNICAL DATA (continued)

#### Chemical Resistance

FlexMat is resistant to most chemicals. Not resistant to aggressive chemicals, solvents during prolonged exposure. For specific applications contact Flextile Technical Services.

Store FlexMat in dry conditions, between temperatures of 10° - 32° C (50° - 90°F).

Do not expose stored material to direct sunlight.

FlexMat should be stored in unbroken packaging and upright, and preferably under cover, when stored over long periods.

#### ESTIMATED THIN-SET COVERAGE:

To bond FlexMat to the substrate: 22.68 kg (50lb) of mortar per 13.0 - 18.6 m<sup>2</sup> (140 - 200 ft<sup>2</sup>).

To bond tile and stone to FlexMat: 22.68 kg (50lb) of mortar, using 1/4" x 3/8" (6 mm x 10 mm) notched trowel, per 3.2m<sup>2</sup> - 4.6m<sup>2</sup> (35 - 50 ft<sup>2</sup>).

### PREPARATORY WORK

All surfaces must be flat, clean, even, dry and free of grease, oil, loose paint, curing compounds or sealers, protruberances that may puncture membrane, or other foreign matter. Existing concrete surfaces which have been shot blasted, ground or sanded to remove contaminants must be thoroughly cleaned of dust, loose concrete, etc. prior to installation. Surfaces should be maintained at a temperature between 10°C (45°F) and 32°C (90°F) when applying membrane. New concrete surfaces must be sufficiently cured for tile installation traffic, dry, finished to a wood float or light broom finish, and be true to within 6 mm (1/4") in 3m (10'). Rough or uneven concrete surfaces should be leveled using Flextile Leveling underlayments.

Interior plywood or OSB surfaces should be designed for maximum deflection of L/360 of span for ceramic tile or L/480 for stone installations.

#### Exterior-grade plywood or OSB :

Minimum construction for interior tiled floors:

For single layer plywood or OSB – 16 mm (5/8") tongue and groove nominal thickness for 406 mm (16") o.c. joist spacing. For single layer plywood or OSB – 19 mm (3/4") tongue and groove nominal thickness for 488 mm (19.2") o.c. joist spacing. For double layer plywood or OSB – subfloor thickness 19 mm (3/4") nominal thickness, tongue and groove minimum underlayment thickness 10 mm (3/8") nominal thickness for 610 mm (24") o.c. just spacing.

Plywood or OSB sheets should be fastened with screw type nails and glued where possible. Leave a 3 mm (1/8") gap between top sheets of plywood and next to all vertical surfaces to allow for expansion.

#### Expansion Joints:

All construction, expansion and isolation joints designed into the

substrate must be carried through the tile installation. Refer to appropriate detail for installation over these joints in current editions of TTMAC or TCNA Ceramic Tile Installation Handbooks.

### INSTALLATION OF FLEXMAT TO SUBSTRATE

Mix and slake the required Flextile mortar, as per mortar requirements. Spread a thin layer of mixed mortar with flat side of trowel to key mortar into the substrate; then apply mortar using a 5mm X 5mm (3/16" X 3/16") V-notch or 6mm X 6mm (1/4" X 1/4") square notch trowel depending on substrate flatness and condition. Spread mortar at a rate that can be sufficiently covered with the FlexMat membrane, and that proper transfer is achieved into the back membrane surface, normally within 15 to 20 minutes of spreading.

Pre-measure and cut FlexMat to required size. Cut mat to appropriate lengths when approaching walls or other objects, and leave approximately 6mm (1/4") between mat and edge of wall or object for movement. Solidly embed the anchoring fibre fabric on the underside of FlexMat, into the mortar so that its entire surface is bonded. Work FlexMat into the mortar, in one direction, using a float or flat trowel. Position FlexMat initially, and then realign by lifting one end, pulling lightly, and then placing the tensioned underlay more precisely. Installation is easier with 2 persons working together. The edges of FlexMat rolls are cut to fit and placed edge to edge. Observe the open time of the mortar.

Tile can be installed over FlexMat immediately; no need to wait for the mortar to cure.

Once installed, FlexMat must be protected against heavy traffic or mechanical loads, which may affect adhesion to the substrate, or other damage, prior to tile installation.

### JOINTS

For potentially high moisture applications, immediately after the installation of FlexMat, the joints are sealed with FlexMat joint strip, using a thin-set mortar bond coat. It is advisable to apply the tile mortar in a single process using a 6mm x 6mm (1/4" x 1/4")-square notched trowel. Install FlexMat joint strip ensuring full coverage of mortar between the surfaces of FlexMat and joint strip. Joint strip is installed edge to edge at junctions and roll ends. Observe the open time of the mortar.

### TILE INSTALLATION

Flextile always recommends the use of an appropriate ANSI A118.4 / A118.11 latex modified mortar when installing porcelain, or other impervious or otherwise difficult to bond to tile/stone. Flextile latex mortars are formulated for use with these types of tiles on all applications, including when installed on impervious membrane surfaces such as FlexMat, etc.

Install tile or stone with appropriate Flextile Mortar: e.g. Flextile 5400, 52, 50, 58, 62, 51/44, or 58XT. Immediately after the installation of FlexMat, the tiles may be installed onto the FlexMat using the appropriate mortar for the tile or stone being installed.

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## **FLEXMAT**

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Fill voids in the FlexMat surface with flat side of the trowel first, keying in the mortar into the substrate properly, and then immediately apply and comb additional mortar to ensure proper thickness and coverage to the back of tile/stone, using the recommended trowel size, as per the Flextile mortar data sheet. Avoid lining up grout joints in tile application with FlexMat joints wherever possible.

#### **WALL/ FLOOR JUNCTION**

Install FlexMat joint strip as wall/floor junction, for proper junction sealing, applying tile mortar as indicated above.

#### **CORNERS**

External and internal corners may be cut to size using the FlexMat Joint Strip. Ensure full coverage with tile mortar. Overlap joint strip where suitable.

#### **CURING AND GROUTING**

Depending upon adhesive mortar used, tile size, tile type and job site conditions, grouting may be done once mortar has cured enough to allow for light foot traffic – FlexMat usually will allow for grouting at 16 – 24 hours.

On exterior or cold weather applications, or when large format tile and stone are installed over FlexMat, extended curing is recommended to ensure that mortar is sufficiently cured prior to grouting. Using Flextile Fast Set Mortars as well as Flextile Fast Set Grouts is recommended where faster turnaround time to regular traffic is required. Do not allow heavy traffic for at least 5 days following installation, and protect installation with 13 mm (1/2") plywood sheets prior to allowing construction equipment such as scissor lifts, etc. for a minimum of 7 days. Grout using Flextile Polymer Modified Grout, Flextile Premium Rapid-Set Polymer-Modified Sanded Grout, Flextile FlexEpoxy100 100% Solids Epoxy Grout, or Flextile ColourMax Plus Pre-Mixed Urethane Grout.

#### **SAFETY**

Refer to Flextile Material Safety Data Sheet for detailed health and safety information.

#### **AVAILABILITY AND COSTS**

FlexMat Uncoupling Membrane is available from Flextile Ltd. and listed distributors in 25m<sup>2</sup> (269 ft<sup>2</sup>) rolls.

#### **Package Size / Coverage**

1 x 25 m (3.28 x 82 ft)  
25 m<sup>2</sup> (269 ft<sup>2</sup>) per roll  
15 kgs (33 lbs) per roll  
9 rolls per pallet  
1 pallet = 135 kgs (297 lbs)

#### **WARRANTY**

Flextile warrants that this product is of merchantable quality and is suitable for the purpose for which it is intended. Flextile's liability under this warranty shall be limited to the replacement of its product found to be defective or, at its option, a refund of the purchase price.

#### **MAINTENANCE**

No maintenance is required except where damages result from unforeseen circumstances. Repair procedures shall be directed by Flextile or its distributors.

#### **TECHNICAL SERVICES**

Flextile maintains a well-equipped laboratory able to test its products in conjunction with the products with which they are used. Technical assistance for use of Flextile products is available upon request.

#### **RELATED REFERENCES**

Current editions of: Ceramic Tile Installation Manual (09 30 00) from the TTMAC & TCNA Ceramic Tile Installation Handbook.

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