



Triple Flex™ Waterproofing, Crack Isolation Membrane and Flexible Mortar

1. PRODUCT NAME

TEC® Triple Flex™ Waterproofing, Crack Isolation Membrane and Flexible Mortar (324)

2. MANUFACTURER

H.B. Fuller Construction Products Inc.
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3. DESCRIPTION

Elastomeric cementitious system for waterproofing and crack isolation prior to the installation of ceramic tile or stone. Will not transfer cracks through tile or stone when subjected to horizontal movement of cracks up to 1/8" (3 mm). May also be used as a flexible bonding mortar. Suitable for interior and exterior use.

Note: To install tile larger than 12" X 12" (300 mm x 300 mm) or white and light colored marble use Triple Flex as a crack isolation membrane first. Allow to cure and install larger tile or marble with suitable white TEC brand latex-modified thin set mortar or TEC AccuColor EFX® Epoxy Grout and Mortar (epoxy for interior only).

Key Features and Benefits

- Multipurpose—3 uses in 1 product
- Trowel applied
- Interior/exterior use
- Meets ANSI A118.10 Specifications for Waterproof Membranes
- Exceeds ANSI A118.12 Specifications for Crack Isolation
- IAPMO approved
- Contributes to LEED® certification
- VOC 0

Packaging

5 gallon (18.92 L) pail kit Product #15035252
 Part A: 114 Fl. Oz. (3.37 L) in a 1 gallon (3.78 L) plastic jug
 Part B: 10 lb. (4.53 kg) PurePak*
 Part C: TEC Waterproofing Mesh, 6 in. x 50 ft. rolls
 (for waterproofing applications only)

*Registered trademark of Excello Corporation.

Individual system components as follows:

Part A	2 gallon (7.56 L) plastic containers	Product #15035251
Part B	22.50 lb. (10.2 kg) moisture-resistant bags	Product #15035304
Part C	TEC Waterproofing Mesh, 6 in. x 50 ft. rolls (for waterproofing applications only)	Product #75000351

Coverage

Actual coverages may vary according to substrate conditions and thickness of applications.

Usage/Tile Size and Recommended Trowel Size	Approximate Coverage	
	2 Gallon (7.56 L) Pt. A with 22.5 lb. (10.2 kg) Pt. B	5 Gallon (18.92 L) Kit
Used as a crack isolation or waterproofing membrane		
3/16" (4.7 mm) V-notch	120-150 sq. ft. at 45 mils (11-14 m ² at 1.14 mm)	53-67 sq. ft. at 45 mils (4.93-6.23 m ² at 1.14 mm)

Usage/Tile Size and Recommended Trowel Size	Approximate Coverage	
	2 Gallon (7.56 L) Pt. A with 22.5 lb. (10.2 kg) Pt. B	5 Gallon (18.92 L) Kit
Used as a bonding mortar		
Small tiles, up to 6" x 6" (150 mm x 150 mm) 3/16" (4.7 mm) V-notch	90-100 sq. ft. (8-9 m ²)	40-45 sq. ft. (3.72-4.19 m ²)
Larger tiles up to 12" x 12" (300 mm x 300 mm) 1/4" x 1/4" x 1/4" (6 x 6 x 6 mm) square-notch	60-75 sq. ft. (5.5-7 m ²)	27-33 sq. ft. (2.51-3.07 m ²)

Suitable Substrates

When properly prepared, suitable substrates include:

- Concrete, cured mortar beds and masonry (interior or exterior)
- Gypsum wallboard (interior)
- Cementitious Backer Units (CBU or cement board, interior or exterior)
- APA Grade Trademarked Exposure 1 Plywood (CDX or better; two layers, 1 1/8" (28 mm) total minimum thickness, interior floors only)
- Existing ceramic tile, VCT or non-cushioned sheetgoods provided they are single layer only and well bonded to a substrate approved for tile (interior)
- Adhesive residue (except tacky or pressure-sensitive adhesive)
- Epoxy terrazzo (interior)
- Gypsum-based underlayments (interior). **Requires priming with TEC Multipurpose Primer (560).**

Substrate Preparation

Surfaces to be patched shall be free from oil, grease, dust, paint, concrete sealers, floor finishes or curing compounds. Surface protrusions shall be removed by sanding, scraping or chipping. After sanding, remove all dust by vacuuming. (While sanding or scarifying surfaces that may contain silica sand, use an approved dust mask. Never sand surfaces containing asbestos.) Do not cover existing building expansion or control joints. Provide control joints where specified. (For waterproofing applications, see **Joint Details**, page 3). Patch and fill holes and voids with an appropriate TEC surface preparation product.

Storage

Store in cool, dry location. Do not store open containers, nor leave containers exposed to sunlight. Keep from freezing.

Shelf Life

Part A Maximum of 18 months from date of manufacture in unopened package.
 Part B Maximum of 12 months from date of manufacture in unopened package.

Limitations

- For exterior wall applications, refer to local building codes for moisture vapor transmission requirements.
- Not for use as a wear surface.
- Do not apply over wet areas.
- Do not apply to stainless steel or other metal surfaces.
- Do not use mastic adhesives over membrane.
- Do not use over dimensionally unstable substrates such as particle board, pressboard, lauan plywood, oriented strand board, waferboard, tempered hardboard, (e.g. Masonite), fiberglass or single layer wood floors.
- Do not use in areas subject to hydrostatic pressure from beneath the membrane.
- Do not use to install high lug backed ceramic tile.

TEC® Triple Flex™ Waterproofing, Crack Isolation Membrane and Flexible Mortar ——— Product Data

Cautions

Read complete cautionary information printed on product container prior to use. For medical emergency information, call 1-888-853-1758.

This Product Data Sheet has been prepared in good faith on the basis of information available at the time of publication. It is intended to provide users with information about and guidelines for the proper use and application of the covered TEC brand product(s) under normal environmental and working conditions. Because each project is different, H.B. Fuller Construction Products Inc. cannot be responsible for the consequences of variations in such conditions, or for unforeseen conditions.

4. TECHNICAL DATA

Applicable Standard

Meets ANSI A118.10 specifications for waterproof membranes.
Exceeds ANSI A118.12 specifications for crack isolation membranes.

Triple Flex Waterproofing, Crack Isolation Membrane and Flexible Mortar (324)

Description	ANSI A118.10 Requirement	Typical Results
Shear Strength		
7-Day	> 50 psi (.34 MPa)	100-125 psi (.68-.86 MPa)
7-Day, Water Immersion	> 50 psi (.34 MPa)	100-125 psi (.68-.86 MPa)
4-Week	> 50 psi (.34 MPa)	150-200 psi (1.03-1.37 MPa)
12-Week	> 50 psi (.34 MPa)	150-200 psi (1.03-1.37 MPa)
100-Day, Water Immersion	> 50 psi (.34 MPa)	100-125 psi (.68-.86 MPa)
Fungus & Micro-organism Resistance	Shall not support mold growth	Passes
Seam Strength	8 lb./inch width	9 lb./inch width
Breaking Strength	Minimum 170 psi (1.16 MPa)	220 psi (0 MPa)
Dimensional Stability	Maximum 0.7% length change	< 0.5% length change

Tested in accordance with American National Standards for Load Bearing, Bonded, Waterproof Membranes for Thin Set Ceramic Tile and Dimension Stone Installations—ANSI A118.10

Waterproofness	No visible water penetration after 48 hours	Passes
Description	ANSI A118.12 Requirement	Typical Results
Point Load	Minimum 1000 lb. load without cracking tile	2300 lbs. (10.2 kN)
Shear Deflection (Movement Before Shear)	Standard Performance Min. 1/16" (1.6 mm) High Performance Min. 1/8" (3 mm)	High Performance
Crack Resistance Test	Standard Performance Min. 1/16" (1.6 mm) High Performance Min. 1/8" (3 mm)	High Performance
Additional Tests	Test Method	Typical Results
Elongation	ASTM D751	> 250%
Bond Strength to Ceramic Tile	ANSI A118.4	> 250 psi (1.71 MPa)
Bond Strength to Ceramic Tile over Exterior Grade Plywood	ANSI A118.11	>150 psi (1.03 MPa)
Water Vapor Transmission	ASTM F1249	< 1 perm (@45 mils)
Tensile Strength	ASTM D751	> 200 psi (1.37 MPa)

Greater than: > Greater than or equal to: ≥ Less than: < Less than or equal to: ≤

Physical Properties

Description	
Physical State	Part A: Acrylic Emulsion Part B: Dry Powder Part C: Non-hazardous Fibrous Mat
Color	Dark Gray
Odor	Cured: None Uncured: Strong ammonia odor
Pot Life [at 70°F (21°C)]	2-4 hours
Tile Installation Time [at 70°F (21°C), used as membrane]	4-8 hours depending on substrate. See CURING section for more information.
Foot Traffic Rating (ASTM C627)	As membrane: Residential to Heavy Commercial (depending on substrate) As Mortar: Residential to Light Commercial
Storage	Store in cool, dry location. Do not store open containers, nor leave containers exposed to sunlight. Keep from freezing.
Shelf Life	Maximum shelf life is from date of manufacture in properly stored, unopened package. Part A: 18 months Part B: 12 months
Freeze/thaw Stability of Liquid (Part A)	None. KEEP FROM FREEZING.

5. INSTALLATION INSTRUCTIONS

INSTALLATION INSTRUCTIONS AS WATERPROOFING MEMBRANE

Mixing

Substrate and material must be maintained at 50°-90°F (10-32°C) for 24 hours before, during and after application. Into a clean, five gallon (18.92 L) pail, pour only $\frac{2}{3}$ the contents of Part A liquid. Add all Part B dry powder. Avoid breathing dust and contact with eyes and skin. Mix thoroughly until lump free (approximately 3 minutes) using low speed mixer to prevent entraining air. Mixture should be thick and pasty. Blend in remaining Part A liquid. Allow to stand for 5 minutes. Remix to achieve a smooth, loose, final working consistency. **Never add water to this product.**

Membrane Application

To achieve waterproofing properties, a continuous membrane of at least 45 mils is required over the entire surface. This can be accomplished using the following technique: 1) Using the flat side of a $\frac{3}{16}$ " (4.7 mm) V-notch trowel, "key in" a thin coat of membrane. 2) Immediately afterwards, apply additional material using the notched side of the trowel held at approximately a 45° angle to the substrate. 3) Again using the flat side of the trowel, flatten the ridges to form a smooth, continuous layer approximately 45-50 mils [$\frac{3}{64}$ " (1.14-1.27 mm)] thick. Make sure there are no voids, bubbles or breaks in the membrane after cured. If any holes appear in the cured membrane, apply a second coat to fill the imperfections. Periodically check membrane with a wet-film gauge to ensure a continuous 45-50 mil [$\frac{3}{64}$ " (1.14-1.27 mm)] thick film is being achieved. Average pot life is 2 to 4 hours.

Allow membrane to cure and install tile using a suitable TEC brand latex-modified thin set mortar or TEC AccuColor EFX Epoxy Grout and Mortar (epoxy for interior only).

Note: If water testing is desired/required prior to tile installation, allow membrane to cure at least 72 hours.

Mesh Application (Flashing) — required for all waterproofing applications

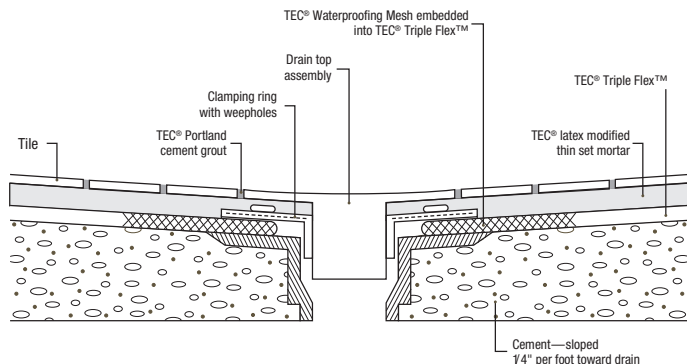
Construction Details: Flashing with TEC Waterproofing Mesh (Part C) is required at all substrate joints; inside corners; outside corners; anywhere vertical surfaces meet horizontal surfaces such as curbs, bench seats, columns, etc.; or anywhere dissimilar materials meet.

To accomplish flashing: First, use Triple Flex membrane compound to pre-coat the substrate intersections 4" (100 mm) on either side. Second, fully embed Part C mesh 3" (76 mm) in both directions into the pre-coated areas. Third, trowel on additional Triple Flex membrane to completely cover and saturate the mesh. The minimum thickness of the flashing shall be $\frac{3}{32}$ " (2.4 mm). Allow the flashing to dry (approximately 20 minutes) before full application of waterproof membrane.

Note: Where two pieces of mesh meet, be sure to overlap the mesh 3" (76 mm) at the ends.

TEC® Triple Flex™ Waterproofing, Crack Isolation Membrane and Flexible Mortar ——— Product Data

Drain Details: Triple Flex membrane must extend to the bottom drain flange, with sufficient coverage to channel all water flow to and down the drain. DO NOT cover weep holes with membrane. The following diagram depicts a typical drain configuration:



Note: This diagram is provided to show a typical drain detail and is not intended to make specific design recommendations.

Install a continuous 45 mil thick membrane to cover the substrate and up to the drain opening, making sure to embed TEC Waterproofing Mesh (Part C) around the drain opening, as shown in the diagram. Once the membrane has dried thoroughly, the flange should then clamp down on the membrane, with the weep holes unobstructed. (See TCA Installation Methods B414 through B418).

Joint Details: Control/expansion joints are designed to experience movement in the structure, and must be carried through subsequent surface finishing materials. In an installation that requires waterproofing, these joints must be sealed, but not bridged by the subsequent tile installation. Ensure proper installation by complying with the following instructions.

Interior Control Joints [typically 1/4" (6 mm) or smaller]—First and foremost, make sure the joint is absolutely clean and free from debris. Next, fill the joint with Triple Flex membrane compound and spread to 4" (100 mm) on either side, embedding the waterproofing mesh over the joint. Install the membrane over the entire surface, ensuring a continuous 45-50 mil [$\frac{3}{64}$ " (1.14-1.27 mm)] film as outlined in the **Membrane Application** section. Place bond breaker tape over the joint and install tile work without bridging the joint. After tile has been installed, caulk the joint with specified sealant.

Exterior Expansion Joints—First and foremost, make sure the joint is absolutely clean and free from debris. Install open or closed cell backer rod into the joint. (See TCA Installation Method EJ171). Next, compress the specified sealant into the joint according to manufacturer's directions, leaving it flush with the surrounding surface. After the sealant has cured, cover the joint with bond breaker tape. Apply Triple Flex membrane as directed, making sure to embed the flashing mat centered over the joint, with a 3" (76 mm) overlap on either side. Place bond breaker tape over the joint and install tile work without bridging the joint. After tile has been installed, caulk the joint with specified sealant.

Water Tests

Allow Triple Flex waterproof membrane to cure for 72 hours prior to test. Plug all drains and dam the floor area to be tested. Flood the area to a meaningful test level, and place a mark at initial water level. Check the area carefully, looking for any signs of leakage (air bubbles rising from leak source). Pay thorough attention to sensitive areas, such as drains, mesh areas and joint details. After 24 hours, check water level against mark(s) made at initial height. If significant loss has occurred, further investigation will be necessary to identify leaks.

Clean-up

Clean tools, hands and excess material, while still fresh, with warm, soapy water. Material that is cured is difficult or impossible to remove.

Curing

Over most substrates, Triple Flex membrane is ready for tile application in 4-8 hours (16-20 hours for non-porous substrates such as existing ceramic tile, VCT or non-cushioned sheetgoods). A good visual check for cure is when the membrane changes to a dark gray color (when cured) as opposed to a light gray when fresh. In all cases, care should always be taken to not gouge or otherwise disturb or damage the integrity of the cured membrane. Install tile using a suitable TEC brand latex-modified thin set mortar or TEC AccuColor EFX Epoxy Grout and Mortar (epoxy for interior only). Cure times based on 70°F (21°C) and 50% RH. Colder temperatures, higher humidity and non-porous substrates will extend cure times.

INSTALLATION INSTRUCTIONS AS CRACK ISOLATION MEMBRANE

Follow instructions under Membrane Application in the section above to achieve a continuous 45-50 mil [$\frac{3}{64}$ " (1.14-1.27 mm)] crack isolation membrane. Allow membrane to cure and install tile using a suitable TEC brand latex-modified thin set mortar or TEC AccuColor EFX Epoxy Grout and Mortar (epoxy for interior only).

Note: Mesh is not required for crack isolation applications.

INSTALLATION INSTRUCTIONS AS FLEXIBLE BONDING MORTAR (WITH CRACK ISOLATION CAPABILITIES)

For tile up to 12" x 12" (300 mm x 300 mm) spread Triple Flex mortar using flat side of trowel to promote better substrate contact. Then, using the recommended notched trowel, comb the mortar uniformly in a ridged pattern. Spread only an area that can be tiled in 20 minutes (or while surface is still tacky). Average pot life is 2 to 4 hours. Immediately wipe mortar from the tile surfaces, as once cured it is extremely difficult to remove. Tile will be ready for grouting in 16 to 20 hours.

Note: To install 1) tile larger than 12" x 12" (300 mm X 300 mm) or 2) white and light-colored marble tile, use Triple Flex as a crack isolation membrane. See the **INSTALLATION INSTRUCTIONS—CRACK ISOLATION MEMBRANE** section.

6. AVAILABILITY

TEC Premium Tile and Stone Installation Products are available nationwide. To locate TEC products in your area, please contact:
Phone: 800-832-9002
Website: tecspecialty.com

7. LIMITED WARRANTY

The product(s) covered by this Product Data Sheet are sold subject to a Limited Warranty and related terms. **H.B. Fuller Construction Products disclaims the implied warranties of merchantability and fitness for a particular purpose and all incidental and consequential damages arising out of the sale, purchase or use of this product.** For Limited Warranty details visit tecspecialty.com. To obtain a hard copy of the Limited Warranty call H.B. Fuller Construction Products at 800-832-9023 or mail a written request to the address in Section 2 of this Product Data Sheet.

8. MAINTENANCE

Not applicable

9. TECHNICAL SERVICES

Technical and safety literature

To acquire technical and safety literature, please visit our website at tecspecialty.com.

10. FILING SYSTEM

Division 9



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