



# HydraFlex™ Waterproofing Crack Isolation Membrane

## 1. PRODUCT NAME

TEC® HydraFlex™ Waterproofing Crack Isolation Membrane (316)

## 2. MANUFACTURER

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Aurora, IL 60504-6451 U.S.A.  
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## 3. DESCRIPTION

Ready-to-use, flexible, mold and mildew resistant waterproofing crack isolation membrane for interior and exterior applications. Forms a smooth, monolithic, watertight surface over walls, floors and ceilings. HydraFlex™ Membrane stops in-plane cracks up to 1/8" (3 mm) or up to 1/4" (6 mm)\* wide at the subfloor from telegraphing through to ceramic and stone tile. For residential to extra heavy commercial applications.

\*Based on application

### Key Features and Benefits

- Exceeds ANSI A118.10 Specifications for Waterproof Membranes
- Exceeds ANSI A118.12 Specifications for Crack Isolation Membranes
- Use for Positive Hydrostatic Pressure Applications
- Fast Drying – ready for tile installation in 1 to 3 hours
- Easy roller, trowel or spray application
- No mesh required (optional for waterproofing applications)
- Apply over new (green) concrete as little as 3 days old
- Isolates cracks up to 1/8" (3 mm) or up to 1/4" (6 mm) based on application
- Membrane resistant to growth of mold and mildew
- IAPMO approved
- Approved over control joints – no need to locate tile or stone field movement joints directly over control joints
- Contributes to LEED® project points
- Low VOC

### Packaging

|   |                     |
|---|---------------------|
| One U.S. gallon plastic pails (3.78 L)  | Product #7002745011 |
| 3.5 U.S. gallon plastic pails (13.24 L) | Product #7002741211 |
| 5 U.S. gallon plastic pails (18.93 L)   | Product #7002741511 |
| TEC® Waterproofing Mesh available in:   |                     |
| 6 in. x 50 ft. rolls (150 mm x 15.24 m) | Product #3317599011 |

### Coverage

| Application   | Required Coats | Wet Film Thickness (mils)  | Approximate Coverage per Gallon    |
|---------------|----------------|--|------------------------------------|
| 1/8" (3 mm)   | 1              | 25 mils [.025" (.6 mm)]  | 100 sq. ft. (9.29 m <sup>2</sup> ) |
| 1/4" (6 mm)   | 1              | 50 mils [.05" (1.27 mm)]   | 50 sq. ft. (4.65 m <sup>2</sup> )  |
| Waterproofing | 2              | 1st Coat - 25 mils [.025" (.6 mm)]<br>2nd Coat - 25 mils [.025" (.6 mm)] | 50 sq. ft. (4.65 m <sup>2</sup> )  |

### Suitable Substrates

When properly prepared, suitable substrates include:

- Concrete (minimum 3 days old), 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]
- Gypsum underlayment (minimum compressive strength 2000 psi)
- 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, interior only)
- Cold rolled steel

### Substrate Preparation

Application surfaces must be free from oil, grease, dust, paint, concrete sealers, floor finishes or curing compounds. New concrete shall be finished with a steel trowel, have a fine broom finish, and must cure a minimum of 3 days. For high moisture vapor emission concrete applications, the maximum acceptable moisture vapor emission rate is 12 pounds per 1000 square feet (5.4 kg per 92.9 m<sup>2</sup>) per 24 hours when evaluated by ASTM F1869 or 90% relative humidity per ASTM F2170. Where required, existing concrete surfaces shall be prepared by mechanical method such as scarifying, grinding, sand blasting or shot blasting. Surface protrusions and tile glazes will be removed by sanding, scraping or scarifying. After preparation, remove all dust by vacuuming. Clean concrete floor from dust with a wet sponge and let the floor dry completely before membrane application. Note: Vinyl asbestos tile or any substrate containing asbestos must not be sanded, scored or scarified because of the potential health hazard of breathing dust. Any substrate containing asbestos must be handled in accordance with existing EPA regulations. Contact your local EPA office. Patch and fill holes and voids with an appropriate TEC® surface preparation product. Treat existing building construction, contraction (control), expansion or isolation joints as required in the following installation instructions. Provide movement joints in the tile where specified.

### Storage

Store in cool, dry location. Do not store open containers, nor leave containers exposed to sunlight. Product must be kept at temperatures of 40°-90°F (4°-32°C). Keep from freezing.

### Shelf Life

Maximum of 1 year from date of manufacture in unopened package.

### Limitations

- Not for use as a wear surface.
- Do not apply over wet areas.
- Do not use over dimensionally unstable substrates such as particle board, pressboard, lauan plywood, waferboard, tempered hardboard (e.g. Masonite) or fiberglass.
- Do not use in areas subject to hydrostatic pressure from beneath the membrane.
- For exterior wall applications, refer to local building codes for moisture vapor transmission requirements.

### 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

Exceeds ANSI A118.10 Specifications for Waterproof Membranes  
Exceeds ANSI A118.12 Specifications for Crack Isolation Membranes

| HydraFlex™ Waterproofing Crack Isolation Membrane (316) |                               |                    |
|---|-------------------------------|--------------------|
| Description   | ANSI A118.10 Requirement      | Typical Results    |
| Shear Strength  |                               |                    |
| 7-Day   | 50 psi (0.34 MPa)             | 238 psi (1.63 MPa) |
| 7-Day, Water Immersion                                  | 50 psi (0.34 MPa)             | 150 psi (1.03 MPa) |
| 4-Week  | 50 psi (0.34 MPa)             | 310 psi (2.12 MPa) |
| 12-Week   | 50 psi (0.34 MPa)             | 330 psi (2.26 MPa) |
| 100-Day, Water Immersion                                | 50 psi (0.34 MPa)             | 125 psi (0.86 MPa) |
| Fungus Resistance                                       | Shall not support mold growth | Passes             |

| Description   | ANSI A118.10 Requirement  | Typical Results                                      |
|---|---|--|
| Seam Strength   | 8 lb./inch width  | > 20 lb./inch width (> 3.6 lg/cm)                    |
| Breaking Strength   | Minimum 170 psi (1.17 MPa)  | 250 psi (1.72 MPa)                                   |
| Dimensional Stability   | Maximum 0.7% length change  | < 0.7% length change                                 |
| Waterproofness<br><i>Tested in accordance with American Standards for Load Bearing, Bonded, Waterproof Membranes for Thin Set Ceramic Tile and Dimension Stone Installations—ANSI A118.10</i> | No visible water penetration after 48 hours                                   | Passes   |
| Description   | ANSI A118.12 Requirement  | Typical Results                                      |
| Point Load  | Minimum 1000 lb. load without cracking tile                                   | Passes   |
| Shear Deflection  | Standard Performance Min. 1/16" (1.6 mm)<br>High Performance Min. 1/8" (3 mm) | High Performance                                     |
| Crack Resistance Test   | Standard Performance Min. 1/16" (1.6 mm)<br>High Performance Min. 1/8" (3 mm) | High Performance                                     |
| Additional Tests  | Test Method   | Typical Results                                      |
| Accelerated Test for Fungal Defacement  | ASTM D5590  | Passed with no growth and 10 mm zone off inhibition. |
| Water Vapor Permeance   | ASTM E96 Procedure B  | 1.5 perms (85.8 ng/PA·s·m²)                          |
| Elongation  | ASTM D751   | 750%   |
| Tensile Strength  | ASTM D751   | 250 psi (1.72 MPa)                                   |

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

**Physical Properties**

| Description                             |  |
|---|--|
| Physical State                          | Liquid: Acrylic Emulsion Modified with a Polyurethane Dispersion<br>Waterproofing Mesh: Non-hazardous Fibrous Mesh       |
| Color                                   | Cured: Purple  |
| Odor                                    | Cured: None    Uncured: Mild Ammonia   |
| Tile Installation Time [at 70°F (21°C)] | 1-3 hours after membrane application. See CURING section for more information.   |
| Foot Traffic Rating (ASTM C627)         | Residential to Extra Heavy Commercial (depending on substrate)   |
| Service Temperature Rating              | -20°F (-29°C) to 320°F (160°C)   |
| VOC (less water)                        | 12 g/L   |
| Storage                                 | Store in cool, dry location. Do not store open containers, nor leave containers exposed to sunlight. Keep from freezing. |
| Shelf Life                              | Maximum 1 year from date of manufacture in properly stored, unopened package.  |
| Freeze/thaw Stability of Liquid         | None. KEEP FROM FREEZING.  |

**5. INSTALLATION INSTRUCTIONS**

**INSTALLATION INSTRUCTIONS AS WATERPROOFING MEMBRANE**

**Application—Waterproofing Membrane**

To achieve waterproofing properties, a continuous membrane (no voids) of at least 46-50 mils [3/64" (1.14-1.27 mm)] wet film thickness is required over the entire surface. Pre-fill all concrete cracks and plywood gaps up to 1/8" (3 mm) wide with membrane prior to application. Treat cracks greater than 1/4" (6 mm) wide as expansion joints (see following section).

Apply membrane to entire surface using a 1/4" to 1/2" (6-12 mm) nap roller, 3/16" (4.7 mm) v-notch trowel, or airless sprayer\*. For waterproofing installations, membrane must be applied in two coats. Apply first coat, measuring membrane periodically with a wet film thickness gage† to ensure a minimum thickness of 25 mils wet. Allow first coat to dry approximately 1 hour, until membrane changes to a semi-transparent color. Then apply second coat at right angles to the first

coat. An additional 25 mils wet film thickness shall be applied to achieve a combined total thickness of 50 mils wet, curing to a dry film thickness of 30 mils.

\* Graco® Electric Airless Sprayer Model 390 or equivalent. Specifications: 0.020 Maximum Nozzle Orifice, Maximum Sprayer Pressure 3,300 psi, flow rate of 0.43 gallons per minute, Contractor FTX11 Gun, RACX 515 Tip & Guard. Graco is a trademark of Graco Inc.

† If a gage is not available, for 25 mils: Insert a dime into the wet Hydraflex™ with Roosevelt's head upside down and facing you. HydraFlex™ should completely cover the outer groove on the edge of the dime. For 50 mils: Lay the dime flat and HydraFlex™ will be the thickness of the dime.

**Application—Mesh (Flashing)**

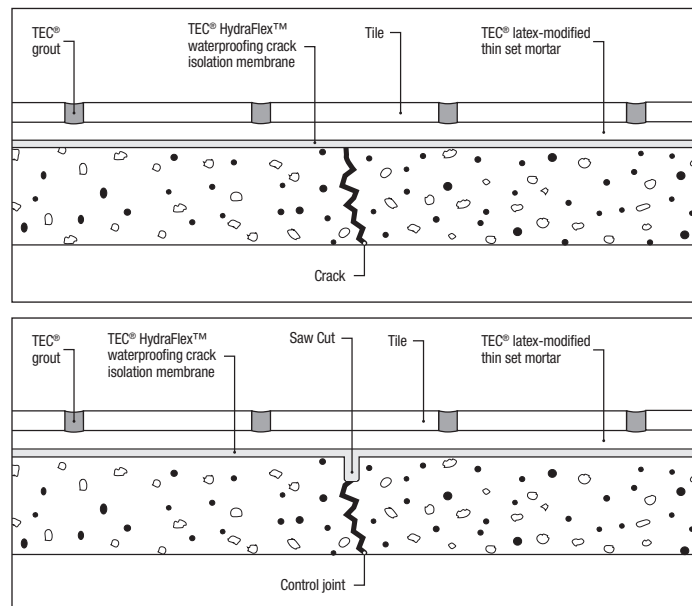
Flashing with TEC® Waterproof Mesh for common problem areas like; inside corners, outside corners, anywhere vertical surfaces meet horizontal surfaces; or anywhere dissimilar materials meet is optional.

To accomplish flashing, first pre-coat the substrate intersections 4" (100 mm) on each side. Then fully embed the 6" (150 mm) wide waterproofing mesh in both directions into the pre-coated areas with a 3" (76 mm) overlap on each side. Allow to dry (approximately 30 to 45 minutes) before full application of membrane.

**Application—Joint Details**

**Cracks or Control Joints [typically 1/4" (6 mm) or smaller]:** Ensure crack or joint is clean and free of all debris. Then fill the crack or joint with membrane. For optional mesh application, spread to 4" (100 mm) on either side, embedding the waterproofing mesh. Install the membrane over the entire surface ensuring a continuous 50 mil wet film thickness. Generic movement joints in the tile should be placed as shown in TCNA EJ171F Movement Joint Guidelines. Place at a frequency of 20' to 25' in each direction for interior installations and 8' to 12' for exterior installations or interior installations with direct sunlight or moisture exposure. Perimeter joints should be placed as shown in EJ171. When HydraFlex™ is applied over the entire substrate, it is not necessary to locate tile or stone field movement joints directly over control joints or cracks as shown in EJ171B. For treatment of cracks or control joints where HydraFlex™ Waterproofing Crack Isolation Membrane is not applied over the entire substrate, see Technical Bulletin "Treatment of INDIVIDUAL Concrete Cracks with TEC® Products" on tecspecialty.com.

**Fig. 1: Treatment of Cracks or Control Joint with TEC® HydraFlex™ Waterproofing Crack Isolation Membrane**



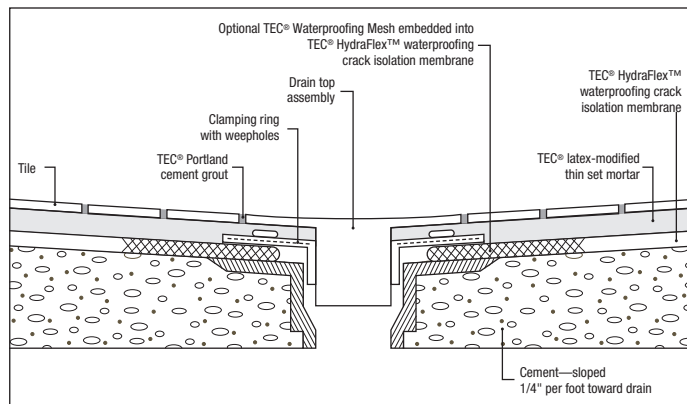
**Expansion, Isolation, and Construction Joints:** Ensure joint is clean and free of all debris. Install compressible backer rod (open or closed cell backer rod) into the joint. Next compress the specified sealant into the joint according to the sealant manufacturer's printed installation instructions, leaving it flush with the surrounding surface. After the sealant has cured, cover the joint with bond breaker tape. Apply membrane as directed. After installing the membrane over the entire surface ensuring a continuous 50 mil wet film thickness and required cure time, place bond breaker tape over the joint and install tile without bridging the joint. After the tile has been installed, caulk the joint with specified sealant.

**Application—Drain Details**

HydraFlex™ must extend to the bottom of the 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:

**Fig. 2: 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 membrane to cover the substrate and up to 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 for shower receptors).

**Clean-up**

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

**Curing/protection**

HydraFlex™ membrane is typically ready for tile application in 1-3 hours. Cure times based on 70°F (21°C) and 50% RH. Colder temperatures, higher humidity or green concrete (not fully cured) will extend cure times. In all cases, care should always be taken to not gouge or otherwise disturb or damage the integrity of the cured membrane.

Inspect cured film to make sure there are no voids, bubbles or breaks in the membrane. Apply additional membrane to fill all voids. If water testing is desired/required prior to tile installation, allow membrane to cure at least 12 hours after application of second coat. Plug all drains and dam the floor area to be tested. Flood the area to a meaningful test level and place a mark at the initial water level. Check the area carefully, looking for any signs of leakage (air bubbles rising from the leak source). 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.

Install tile using a suitable TEC® latex-modified mortar or TEC® AccuColor EFX® Epoxy Grout and Mortar.

**INSTALLATION INSTRUCTIONS AS CRACK ISOLATION MEMBRANE**

Pre-fill all concrete cracks, control joints and plywood gaps up to 1/8" (3 mm) wide with membrane prior to application. For expansion, isolation and construction joints continue joints through the tile installation in accordance with Installation Method EJ171 in the Tile Council of America handbook. Treat dynamic cracks (subject to movement) greater than 1/4" (6 mm) wide for 50 mil wet film thickness, or 1/8" (3 mm) wide for 25 mil wet film thickness as expansion joints. Generic movement joints in the tile should be placed as shown in TCNA EJ171F Movement Joint Guidelines. Place at a frequency of 20' to 25' in each direction for interior installations and 8' to 12' for exterior installations or interior installations with direct sunlight or moisture exposure. Perimeter joints should be placed as shown in EJ171. When HydraFlex™ is applied over the entire substrate, it is not necessary to locate tile or stone field movement joints directly over control joints or cracks as shown in EJ171B. For treatment of cracks or control joints where HydraFlex™ Waterproofing Crack Isolation Membrane is not applied over the entire substrate, see Technical Bulletin "Treatment of INDIVIDUAL Concrete Cracks with TEC® Products" on tecspecialty.com.

**1/8" Crack Isolation Applications:**

Apply membrane to entire surface using a 1/4" to 1/2" (6-12 mm) synthetic nap roller, 3/16" (4.7 mm) V-notch trowel, or airless sprayer\*. Membrane may be applied in one coat. Measure membrane periodically with a wet film thickness gage† to ensure a minimum thickness of 25 mils [.025" (.6 mm)] wet, curing to a dry film thickness of 15 mils [.4 mm].

**1/4" Crack Isolation Applications:**

Membrane may be applied in one coat to entire surface. Measure membrane periodically with a wet film thickness gage† to ensure a minimum thickness of 50 mils wet, curing to a dry film thickness of 30 mils.

Note: When using a V-notch trowel for crack isolation applications, "key in" a thin coat of membrane using the flat side of the trowel. Immediately afterwards, apply additional material using the notched side of the trowel held at approximately a 45 degree angle to the substrate. Again using the flat side of the trowel, flatten the ridges to form a smooth, continuous membrane.

\* Graco® Electric Airless Sprayer Model 390 or equivalent. Specifications: 0.020 Maximum Nozzle Orifice, Maximum Sprayer Pressure 3,300 psi, flow rate of 0.43 gallons per minute, Contractor FTX11 Gun, RACX 515 Tip & Guard. Graco is a trademark of Graco Inc.

† If a gage is not available, for 25 mils: Insert a dime into the wet Hydraflex™ with Roosevelt's head upside down and facing you. HydraFlex™ should completely cover the outer groove on the edge of the dime. For 50 mils: Lay the dime flat and HydraFlex™ will be the thickness of the dime.

**Curing**

Cure for 1-3 hours. Cure times based on 70°F (21°C) and 50% RH. Thicker films, cooler temperatures, higher humidity or green concrete (not fully cured) will extend cure times.

Install tile using a suitable TEC® latex-modified mortar or TEC® AccuColor EFX® Epoxy Grout and Mortar.

**Clean-up**

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

**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. WARRANTY**

For warranty details, see your sales associate or tecspecialty.com.

**8. MAINTENANCE**

Not applicable

**9. TECHNICAL SERVICES**

**Technical assistance**

Information is available by calling the Technical Support Hotline.

Toll Free: 800-832-9023

Fax: 630-952-1235

**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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