1. PRODUCT NAME

TEC® TotalFlex® 150 Universal Polymer-Modified Mortar

2. MANUFACTURER

H.B. Fuller Construction Products Inc.
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Aurora, IL 60504-6451 U.S.A.
800.552.6225 Office
800.832.9023 Technical Support
800.952.2368 Fax
tecspecialty.com

3. DESCRIPTION

TotalFlex 150 Mortar is a high-performance, polymer-modified, A118.15HTE mortar that provides ultra-long open time and extra smooth and creamy troweling. It is ideal for large and heavy tile, standard and mosaic tile, gauged porcelain panels and uncoupling membrane applications. TotalFlex 150 provides robust non-sag/non-slump adhesion for floors, walls, and ceilings and can be used for interior/exterior, submerged applications, and building facades.

Key Features and Benefits

- Universal – Ideal for gauged porcelain panels, LHT installations & Thin-set applications
- Ultra-long open time up to 60 minutes
- Smooth/creamy for exceptionally easy troweling
- Robust non-sag, non-slump adhesion
- Extended coverage in a reduced weight 32 lb bag
- Exceeds ANSI A118.4HTE, A118.11 and A118.15HTE specifications
- Interior/exterior and submerged use
- Highly resistant to freeze/thaw conditions
- Approved for setting and tiling under and over uncoupling membranes
- Silica-free formula – contains no intentionally added silica

Packaging

32 lb. (14.5 kg) moisture-resistant bags
Gray   Product #15030143
White   Product #15036372
32 lb. (14.5 kg) plastic bags
Gray   Product #15030418
White   Product #15030416

Coverage

Coverage will vary with condition of substrate. Required trowel size will vary with the tile size, type and substrate uniformity. Select the trowel size that will ensure 100% coverage. Figures below are presented only as guidelines.

Trowel Size	Approximate Coverage per 32 lbs. (14.5 kg)
¼" x ¼" x ¼" (6 x 6 x 6 mm) square-notch trowel	87-96 sq. ft. (8.1-8.9 m²)
¼" x ⅜" x ¼" (6 x 9 x 6 mm) square-notch trowel	73-79 sq. ft. (6.8-7.3 m²)
½" x ½" x ½" (12 x 12 x 12 mm) square-notch trowel	45-48 sq. ft. (4.2-4.5 m²)
¾" x ⁹⁄₁₆" x ⅜" (19 x 14 x 9 mm) U-notch trowel	29-33 sq. ft. (2.7-3.0 m²)
Euro-notch trowel	28-32 sq. ft. (2.6-3.0 m²)

Suitable Substrates

When properly prepared per TCNA guidelines, suitable substrates include:

- Cured concrete, cured mortar beds, brick and masonry (interior and exterior installations)
- APA Grade Trademarked Exposure 1 Plywood (underlayment grade or better)
- Gypsum wallboard (dry interior wall areas only)
- Water resistant gypsum wallboard (i.e.: greenboard, interior walls only, dry to intermittent water exposure only)
- Cementitious backer units (CBU) or glass mat backerboard
- Existing ceramic tile and natural stone, provided existing flooring is well-bonded to an approved substrate
- Vinyl composition tile, asphalt tile, linoleum, or non-cushioned vinyl sheetgoods provided such surfaces are single layered, well-bonded to an approved substrate and properly prepared
- Adhesive residue (except tacky or pressure-sensitive adhesive). Mechanically remove the adhesive to expose at least 80% of the concrete surface. Random specks of adhesive and the appearance of a brown surface stain are acceptable
- Extruded foam waterproof tile board
- Uncoupling membranes

H.B. Fuller Construction Products Inc. ("HBF-CP") will warrant TotalFlex 150 with the use of ¾" floor-rated underlayment OSB as an approved substrate for the installation of uncoupling membranes.

For gypsum underlayments, TEC® Multipurpose Primer must be applied directly to the gypsum underlayments prior to application of TotalFlex 150 for bonding of the uncoupling membrane. Please see the Multipurpose Primer product data sheet for dilution ratios and application instructions.

Substrate Preparation

All substrates must be dry, structurally sound with maximum deflection per industry standards of $^L/_{360}$ for ceramic tile installations and $^L/_{720}$ for natural stone installations; and free from oil, grease, dust, paint, sealers or concrete curing compounds. All contaminants must be removed prior to installation of tile. Surface protrusions and tile glazes shall be removed by sanding, scraping or scarifying. After preparation, remove all dust by vacuuming.

For gauged porcelain panels installation, reference the TEC Thin Porcelain Panel Installation Guide on tecspecialty.com.

Notes: 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.

Expansion joints must be provided in the tile work over all construction, control and expansion joints in the backing and where backing materials change. Follow ANSI A108.01 Section 3.7 Requirements for Expansion Joints.

Maximum variations in all substrates **must not exceed** $^1/_4$" in 10 ft. (6 mm in 3 m) and $^1/_{16}$" in 1 ft. (1.6 mm in 0.3 m) from the required plane for tile less than 15" (381 mm) on all sides. Maximum variations in all substrates **must not exceed** $^1/_8$" in 10 ft. (3 mm in 3 m) and $^1/_{16}$" in 2 ft. (1.6 mm in 0.6 m) from the required plane for tile 15" (381 mm) or greater on any one side. For large non-level, interior floors use a TEC Self-Leveling Underlayment. For best results over plywood and other suitable porous substrates, wipe the surface clean with a damp sponge just prior to application of mortar.

Glass Tile Installation

TotalFlex 150, with its proprietary formulation, has been tested and approved to be used with glass tile for the following applications:

1. Indoor applications only
2. Wall applications only
3. Intermittent water exposure (not for use with submerged applications).
   Example such as:
   a. Kitchen Backsplash
   b. Shower wall accents

Note: When installing clear glass tile over waterproof membranes, visible mortar shadowing may occur.

The Materials approved are as follows

1. Clear Glass tiles with no backing with maximum area of 16 in²
2. 12" x 12" Matted Mosaic Tiles with clear or painted Mesh backing
3. 12" x 12" Matted Subway Tiles with Mesh backing
4. Glass tiles with painted backing up to 16 in²

NOTE: Not all coatings used to colorize the back of glass tile are compatible with Portland cement based mortars. Please check with the manufacturer to determine if it will be compatible. For any questions on this, please call our Technical Support Hotline at 1-800-832-9023 for additional support.

Also, if you are looking to install a specific tile not listed in the above material list and would like to use TotalFlex 150, please contact our Technical Support Hotline at 800-832-9023 for additional support.

In specifying a setting system for the bonding of glass tile, the following issues must be taken into consideration:

Glass Tile Type: Glass tile can be manufactured in a number of different ways such as clear, translucent with a colored body, or translucent with a colored backing. Each type has a different aesthetic appearance. The color and composition of the mortar can have an effect on the final appearance, especially with clear or translucent tile.

Storage

Store in cool, dry location. Do not store open bags.

Shelf Life

Maximum 1 year from date of manufacture in properly stored, unopened package.

Limitations

- Glass tile may not be suitable over some substrates (such as plywood, or some membranes). Verify substrate with glass tile manufacturer.
- Use only for thin-bed installation of glass tile.
- Only install when the ambient temperature is between 50-90ºF (10-32ºC).
- Not for installing green marble or other moisture-sensitive stone tile; use TEC® AccuColor EFX® Epoxy Grout and Mortar.
- For resin-backed marble see the TEC Technical Bulletin "Installation Of Resin Backed Stone Tiles" at tecspecialty.com.
- Not for use over rubber, strip wood floors, oriented strand board*, particle board, lauan plywood or tempered hardboard (e.g. Masonite).
- Only approved for use over single layer wood floors when using uncoupling membranes per the manufacturer's requirements.
- Temperature of area to be tiled must remain above 50°F (10°C) for 72 hours.
- Certain natural stone tiles may be affected by mortar shadowing or staining. Test a small area prior to use to determine suitability.

*Can be used over OSB with the use of ³/₄" floor-rated underlayment OSB as an approved substrate for the installation of uncoupling membranes

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 A118.4HTE, A118.11, and A118.15HTE specifications
ISO 13007: Classification C2TES1P1

TEC TotalFlex 150 Universal Polymer-Modified Mortar

Tested in accordance with ANSI A118.15HTE Specifications for Latex-Modified Dry Set Mortars

Description	ANSI Requirement	Typical Results
Ceramic Tile Shear Strength 7 Day	> 450 psi (2.70 MPa)	570 psi
Ceramic Tile Shear Strength Heat Aging	> 450 psi (2.70 MPa)	660 psi
Porcelain Mosaic Tile Shear Strength 28 Day	> 400 psi (2.76 MPa)	494 psi
Quarry Tile Shear Strength 28 Day	> 150 psi (1.03 MPa)	425 psi
Sag on Vertical Surfaces (T)	≤ 0.02" (0.5 mm) at 20 Minutes	0.0000
Extended Open Time (E)	> 75 psi (0.5 MPa) at 30 Minutes	317 psi
Lippage Change (H)	<¹/₆₄" (0.4 mm)	Pass

Tested in accordance with ANSI A118.11 Specifications for Latex-Modified Dry Set Mortars over Exterior Grade Plywood

Quarry Tile to Plywood Shear Strength 28 Day	> 150 psi (1.0 MPa)	172 psi

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

Physical Properties

Description	
Physical State	Dry powder
Color	Available in white and gray
Pot Life	3 to 4 hours*
Open Time	Up to 60 minutes*
Initial Cure [at 72°F (22°C)]	9 to 12 hours*
Final Cure	21 days
Foot Traffic Rating (ASTM C627)	Residential to Extra Heavy Commercial (depending on substrate)
Storage	Store in cool, dry location. Do not store open bags.
Shelf Life	Maximum 1 year from date of manufacture in properly stored, unopened package.

*Temperature and humidity will affect pot life, open time, and cure time

5. INSTALLATION INSTRUCTIONS

Mixing

For best results, maintain all tiling materials, substrates, room and mortar at 50°-90°F (10-32°C) for 24 hours before and 72 hours after installation. Refer to the chart below for amount of water to add.

Application	Water
LHT or Wall Applications	6 quarts (5.7 L)
Thin Set Floor Applications	7 quarts (6.6 L)

1. Add clean, cool water to a clean mixing container. Do not over-water.
2. Slowly add entire bag of TotalFlex 150 Mortar to water while mixing at 400-600 rpm.
3. Mix for two (2) minutes to a smooth and creamy consistency. Consistency will loosen during mixing process. Avoid breathing dust and contact with eyes and skin.
4. Allow the mortar to stand (slake) for 8 minutes.
5. Remix for 1 minute and apply.
6. If the mixture becomes thick, remix without adding more water.

Application

Key in mortar using flat side of trowel to promote better substrate contact, then comb in one direction with the notched side of the trowel. Spread only an area that can be tiled while surface is still tacky (typically 20-40 minutes). Press tiles into setting bed, then push in a direction perpendicular to the notched trowel ridges to achieve optimum coverage. Apply mortar in a heavy enough layer so that complete contact (no voids) between mortar and tile is accomplished when tile is positioned. Irregularities in substrate may require "back-buttering" of large tiles to achieve complete coverage and firm support. Periodically remove and check a tile to assure proper coverage. Keep a minimum of ⅔ of the joint depth between tiles for grouting. Open time and tile hand adjustability may vary with job site conditions. Stir occasionally during use to maintain the smooth, creamy consistency of the product. **Do not add additional water.**

For gauged porcelain tile panels installation, reference the TEC Thin Porcelain Panel Installation Guide on tecspecialty.com.

Note: It is the sole responsibility of the installer to determine the suitability and compatibility of the product for the intended application.

Clean-up

Clean tools, hands, and excess materials from face of tile, while mortar is still fresh, with warm soapy water.

Grouting/Curing

Grouting may be accomplished when tiles are held firmly in place, typically 9-12 hours after installation is completed. No traffic is permitted over the tiles prior to grouting. Cold temperatures or high humidity may extend curing time, working time, and pot life. Hot temperatures or low humidity may decrease curing time, working time, and pot life. Unglazed tiles may require sealing prior to grouting so discolorations will not occur. The use of TEC brand grouts is highly recommended.

6. AVAILABILITY

TEC premium surface preparation, tile, stone, carpet, wood and resilient floor covering 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

Conforms with LEED v4 low emitting interiors.
Compliant with (CDPH) Standard Method v1.2 VOC Emissions.

To learn more, visit TECspecialty.com

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