



Fast Set 3N1® Performance Mortar

Updated October 2024

1. PRODUCT NAME

TEC® Fast Set 3N1® Performance Mortar
(517/518)

2. MANUFACTURER

H.B. Fuller Construction Products Inc.
1105 South Frontenac Street
Aurora, IL 60504-6451 U.S.A.
800.552.6225 Office
800.832.9023 Technical Support
800.952.2368 Fax
tecspecialty.com

3. DESCRIPTION

TEC exclusive nanotechnology formula with microspheres and patented bonding technology provides three in one functionality—polymer-modified, LHT, and non-sag/slump—all in one without sacrificing performance in any installation.

Key Features and Benefits

- Easiest troweling mortar—smooth, non-porous, ceramic microspheres roll over each other creating a ball bearing effect that improves workability and reduces tile setter fatigue
- Superior bonds for porcelain tile applications
- Approved for setting under and tiling over uncoupling membranes
- Exceeds ANSI A118.4HTF, A118.11 and A118.15HTF specifications
- Non-slump for heavy tile and stone floor applications
- Non-slip for large tile and stone weighing up to 6 pounds per square foot used in wall applications
- Light Weight—30 pound bag provides same coverage as 50 pounds of traditional latex modified mortar.
- Fast curing formula
- Zero VOC
- Contains recycled materials*

* Gray formula contains 7% pre-consumer recycled material. White formula contains 7% pre-consumer recycled material.

Packaging

30 lb. (13.6 kg) moisture-resistant bags
Gray

Product #15035494

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 30 lbs. (13.6 kg)
¼" x ¼" x ¼" (6 x 6 x 6 mm) square-notch trowel	80-90 sq. ft. (7.4-8.4 m ²)
¼" x ¾" x ¼" (6 x 9 x 6 mm) square-notch trowel	55-65 sq. ft. (5.1-6 m ²)
¾" slant notch trowel	40-50 sq. ft. (3.7-4.6 m ²)
¾" (19 mm) rounded-notch trowel	30-40 sq. ft. (2.8-3.7 m ²)

In an effort to improve coverage achieved by installers, H.B. Fuller is not recommending the use of a ½" x ½" notch trowel due to the challenges in fully collapsing the ridges. In place, a ¾" slant notch can be used. If using a ½" x ½" notch trowel, the coverage for a ¾" slant notch is similar for material calculations.

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 sheet goods provided such surfaces are single layered, well-bonded to an approved substrate and properly prepared.
- Adhesive residue (except tacky or pressure-sensitive adhesive) scraped down to a thin semi-transparent layer.
- Extruded foam waterproof tile board
- Uncoupling membranes

Some uncoupling membrane manufacturers list gypsum underlayment and oriented strand board (OSB) as suitable substrates for their uncoupling membranes. H.B. Fuller Construction Products Inc. ("HBF-CP") does not recommend direct application of Fast Set 3N1® to either of these materials. TEC® Multipurpose Primer must be applied directly to gypsum underlayments or OSB prior to application of Fast Set 3N1® 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 1/360 for ceramic tile installations and 1/720 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.

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 non-level, interior floors use an approved 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.

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

- Only install when the temperature is between 50°F (10°C) - 90°F (32°C).
- Not for installing green marble and other moisture-sensitive stone tile or resin-backed marble; use TEC® AccuColor EFX® Epoxy Grout and Mortar.
- For non-green marble tile applications, use white Fast Set 3N1® Performance Mortar.
- Not for use over rubber, strip wood floors, oriented strand board, particle board, tempered hardboard (e.g. Masonite), lauan plywood.
- Do not apply over single layer wood floors.
- Substrate temperature should be a minimum of 43°F (6°C) during application and air temperature maintained above 50°F (10°C) during installation and for 72 hours after installation.
- Certain natural stone tiles may be affected by mortar shadowing or staining. Test a small area prior to use to determine suitability.

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

Exceeds ANSI A118.4HTF, A118.11 and A118.15HTF specifications

Fast Set 3N1 Performance Mortar, (517/518)

Description	ANSI Requirement	Typical Results
28 Day Shear Strength Ceramic	> 300 psi (2.1 MPa)	650-700 psi (4.48-4.83 MPa)
Porcelain	> 200 psi (1.4 MPa)	366-407 psi (2.52-2.81 MPa)
Quarry Tile	> 150 psi (1.0 MPa)	375-425 psi (2.57-2.93 MPa)
28 Day Shear Strength Quarry Tile to Plywood	150 psi (1.0 MPa)	155-170 psi (1.07-1.17 MPa)

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	50 minutes*
Initial Cure [at 72°F (22°C)]	3 to 4 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 mortars at 50°-70°F (10-21°C) for 24 hours before and 48 hours after installation. In a clean mixing container, pour 5½-6 quarts (5.2-5.7 L) clean, cool water. Add ½ bag of Fast Set 3N1 Performance Mortar and mix until all powder is consumed. Add ¼ bag and mix until powder is consumed. Add final ¼ bag and mix to a thick creamy consistency. Avoid breathing dust and contact with eyes and skin.

Avoid using high speed mixing, not to exceed 300 rpm, to prevent entraining air. DO NOT SLAKE. **Use immediately.**

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 10-15 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. It may be necessary to “back-butter” 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.**

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 3 to 4 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. Some 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



To learn more, visit TECSpecialty.com



H.B. Fuller Construction Products Inc. | 1105 South Frontenac Street Aurora, IL 60504-6451



@TECInstallationSystems



tecinstallationsystems



TECInstallationSystems



TEC Installation Systems