Full Set Plus® Unmodified Thin Set Mortar

1. PRODUCT NAME
TEC® Full Set Plus® Unmodified Thin Set Mortar (380/381)

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
Full Set Plus® mortar is a high strength, quick grab formulation, ideal for wall installations of vitreous and semi-vitreous (non-porous or semi-porous) tile. Also highly recommended for floors.

Key Features and Benefits
• Extended pot life and tile adjustability
• Superior working consistency and handling
• Mixed with water, exceeds ANSI A118.1 specifications. Mixed with TEC® XtraFlex™ additive, exceeds ANSI A118.4 and A118.11 specifications. Mixed with TEC® Acrylbond™ AMA additive, meets ANSI A118.4 and A118.11 specifications.
• Contributes to LEED® project points
• VOC 0

Packaging
50 lb. (22.68 kg) moisture-resistant bags
Gray Product #3300343111
White Product #3300353111

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.

<table>
<thead>
<tr>
<th>Trowel Size</th>
<th>Approximate Coverage per 50 lbs. (22.68 kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4” x 1/4” x 1/4” (6 x 6 x 6 mm) square-notch trowel</td>
<td>95-105 sq. ft. (8.8-9.8 m²)</td>
</tr>
<tr>
<td>1/4” x 3/8” x 1/4” (6 x 9 x 6 mm) square-notch trowel</td>
<td>65-75 sq. ft. (6-7 m²)</td>
</tr>
</tbody>
</table>

* Thin set mortar must be mixed with a TEC® acrylic latex mortar additive for installing impervious porcelain or glass tile.

Suitable Substrates
When properly prepared, acceptable substrates include:
• Cured concrete, cured mortar beds, brick and masonry (Interior and exterior installations subjected to freeze/thaw conditions require use with TEC® acrylic latex mortar additive only)
• APA Grade Trademarked Exposure 1 Plywood [Underlayment grade or better, two layers, 1/16” (28 mm) total minimum thickness, 16” OC (40 cm), interior floors only]. Requires use with TEC® acrylic latex mortar additive.
• Gypsum wallboard (dry interior wall areas only)
• Water resistant gypsum wallboard (e.g.: greenboard, interior walls only, dry to intermittent water exposure only)
• Cementitious backer units (CBU) or coated glass mat backerboard

Existing ceramic tile and natural stone, provided existing flooring is well-bonded to an approved substrate. Use with TEC® acrylic latex mortar additive is highly recommended.
• 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. Requires use with TEC® acrylic latex mortar additive.
• Plastic laminate, provided the counter is structurally sound and level. Requires use with TEC® acrylic latex mortar additive.
• Adhesive residue (except tacky or pressure-sensitive adhesive). Requires use with TEC® acrylic latex mortar additive.

Substrate Preparation
All substrates must be dry, structurally sound with maximum deflection per industry standards of 1/16” for ceramic tile installations and 1/32” 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 installed. Do not apply over single layer wood floors.

Storage
Store in cool, dry location. Do not store open containers.

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

Limitations
• Not for installing green marble, 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 thin set mortars.
• Not for use over rubber, strip wood floors, oriented strand board, particle board, lauan or CDX plywood.
• Do not apply over single layer wood floors.
• Mortar should not be applied when the temperature of the area and substrate to be tiled is below 50°F (10°C), as this delays the curing process.
• Certain natural stone tiles may be affected by mortar shadowing or staining. Test a small area prior to use to determine suitability.

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.
TEC® Full Set Plus® Unmodified Thin Set Mortar

Applicable Standard
Exceeds ANSI A118.4 specifications
ISO 13007: Classification C1

<table>
<thead>
<tr>
<th>ANSI Standard</th>
<th>Test</th>
<th>Section</th>
<th>Test Duration/Conditions</th>
<th>ANSI Specification</th>
<th>Typical Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>A118.1</td>
<td>Open Time</td>
<td>5.3.6</td>
<td>20 minute</td>
<td>75 psi (0.5 MPa) at 20 minutes</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>Glazed Wall Tile Shear Strength</td>
<td>7.1.2</td>
<td>7 day</td>
<td>&gt;200 psi (1.38 MPa)</td>
<td>275</td>
</tr>
<tr>
<td></td>
<td>Porcelain Mosaic Tile Shear Strength</td>
<td>7.2.5</td>
<td>28 day</td>
<td>&gt;150 psi (1.03 MPa)</td>
<td>200</td>
</tr>
</tbody>
</table>

4. TECHNICAL DATA

Physical Properties

<table>
<thead>
<tr>
<th>Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Dry powder</td>
</tr>
<tr>
<td>Color</td>
<td>Available in white and gray</td>
</tr>
<tr>
<td>Pot Life</td>
<td>4 hours</td>
</tr>
<tr>
<td>Initial Cure (at 72°F (22°C))</td>
<td>16 to 24 hours</td>
</tr>
<tr>
<td>Final Cure</td>
<td>21 days</td>
</tr>
<tr>
<td>Foot Traffic Rating (ASTM C627)</td>
<td>Residential to Extra Heavy Commercial (depending on substrate)</td>
</tr>
<tr>
<td>Storage</td>
<td>Store in cool, dry location. Do not store open containers.</td>
</tr>
<tr>
<td>Shelf Life</td>
<td>Maximum 1 year from date of manufacture in properly stored, unopened package.</td>
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5. INSTALLATION INSTRUCTIONS

Mixing—With Water

For best results, maintain all tiling materials, substrates, room and adhesives at 50°-70°F (10-21°C) for 24 hours before and 48 hours after installation. Thoroughly mix 50 lbs. (22.68 kg) Full Set Plus® with 5 to 6 quarts (4.7-5.7 L) clean, cool water. Add powder to liquid for ease of mixing. Mix material to a thick creamy consistency, then allow the mortar to stand for 10 minutes. Remix and apply. Avoid breathing dust and contact with eyes and skin. Avoid using high speed mixing, not to exceed 300 rpm, to prevent entraining air.

Mixing—With Latex Additive

For improved performance in any application, use a TEC® acrylic latex mortar additive in place of water. For installations subjected to freeze/thaw conditions; bonding over most non-cementitious substrates; bonding porcelain and other difficult-to-bond tile; or any ANSI A118.4 or A118.11 latex mortar project, the use of an additive is required.

When using a mortar additive, always follow label directions for detailed mixing and substrate recommendations.

Application

Apply 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 20-30 minutes). Press tiles into setting bed, then push in a direction perpendicular to the notched trowel ridges to achieve optimum coverage. Grouting may be accomplished when tiles are held firmly in place, typically 16 to 24 hours after installation is completed. No traffic is permitted over the tiles prior to grouting. Cold temperatures or high humidity may extend curing time. Unglazed tiles may require sealing prior to grouting so discolorations will not occur. The use of TEC® brand grouts is highly recommended.

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 16 to 24 hours after installation is completed. No traffic is permitted over the tiles prior to grouting. Cold temperatures or high humidity may extend curing time. 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 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 products 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