**DESCRIPTION**

*Modified Mortar Bed* is a pre-blended, cement-based, polymer-modified thick-bed and render mortar that includes a blend of selected aggregates. Rather than requiring the use of a latex additive, it only needs mixing with water to produce a thick bed mortar of exceptional strength.

**FEATURES AND BENEFITS**

- Polymer-modified, with no need for latex additives
- Pumpable formulation
- Pre-blended – no jobsite blending of powders or additives required
- High-strength formula

**INDUSTRY STANDARDS AND APPROVALS**

- ANSI: Meets requirements of ANSI A108.1A
- LEED v4 Points Contribution
- Health Product Declaration (HPD)* Up to 2 points

* Using this product may help contribute to LEED certification of projects in the category shown above. Points are awarded based on contributions of all project materials.

**WHERE TO USE**

- For use as a bonded or non-bonded, conventional thick mortar bed
- For interior/exterior environments for residential and commercial installations in wet and dry areas
- For use as a scratch coat and wall render, or as a concrete patch from 1/4" to 2" (6 mm to 5 cm)

**LIMITATIONS**

- Do not install over substrates containing asbestos
- Install only at temperatures between 45°F and 95°F (7°C and 35°C). Maintain a temperature within this range for at least 72 hours after the installation.
- For direct-bond applications, the surface must be clean and porous with an International Concrete Repair Institute (ICRI) concrete surface profile (CSP) of #3 to #5. The surface must be primed with a slurry bond coat mixture (see “Product Application” section for details).
- Mortar bed installation method TCNA F141 or F145 (or TTMAC 313F-C): Wood-frame floor systems, including the framing system and subfloor panels, over which tile will be installed must conform with the International Residential Code (IRC) for residential applications, the International Building Code (IBC) for commercial applications, or applicable building codes. For calculating suitability for live load or if the suitability of the structure is unclear, consult a structural engineer or design consultant.
- Do not apply over standing water or wet surfaces.

**SUITABLE SUBSTRATES**

- Cured concrete
- Masonry cement block, brick and cement mortar beds
- Cement backer units or CBUs, which should be dampened with water by sponge or spray mist before mortar application. See the manufacturer’s installation guidelines.
- Adequately designed wood-frame floor systems per the handbooks of the Tile Council of North America (TCNA) or Terrazzo, Tile & Marble Association of Canada (TTMAC)
1. Apply a slurry bond coat made from a MAPEI polymer-modified mortar that meets ANSI A118.4, mixed with water to a creamy consistency. Then, while the slurry bond coat is wet, spread Modified Mortar Bed and compact it well.

2. If placing tile while Modified Mortar Bed is still fresh, then apply a slurry bond coat made from a MAPEI polymer-modified mortar to Modified Mortar Bed. While the slurry bond coat is wet, set the tile and beat it in well.

**For use as a floated or unbonded mortar bed**
- Follow ANSI A108.1A industry requirements.

**For use as a scratch coat and wall render (follow methods approved by TCNA or TTMAC)**

**Over masonry or concrete:**

1. Dampen the surface with a sponge.
2. Apply a slurry bond coat made from a MAPEI polymer-modified mortar that meets ANSI A118.4, mixed with water to a creamy consistency. This slurry bond coat should be keyed with pressure into the substrate using the flat side of a 1/4” x 1/4” x 1/4” (6 x 6 x 6 mm) square-notched trowel. Immediately apply Modified Mortar Bed as a scratch coat to the desired thickness with the trowel’s flat side and scratch the coat with an appropriate scratching tool – such as the trowel’s square-notched side – before the coat hardens. The scratch coat should not exceed 3/8” (10 mm) in thickness.
3. After the scratch coat hardens, key Modified Mortar Bed into the scratch coat. Then apply a render coat (also known as a “brown coat” or “float coat”) that does not exceed 5/8” (16 mm) in thickness per lift.
4. Scratch all lifts that will receive additional render coats. Use a standard steel trowel to apply the final render coat and a screed bar to create a plumb and true mortar surface.
5. Allow the completed render coat to cure before tile installation. Allow 24 hours of curing time at an ambient temperature of 70°F (21°C). Temperatures below 70°F (21°C) may require longer curing times. Wait 24 hours per 1/2” (12 mm) in thickness before applying a waterproofing membrane.

**Over cleavage (unbounded) membrane and metal lath attached to studs or to solid backing:**

1. With pressure, apply a scratch coat of Modified Mortar Bed over the metal lath to encapsulate the lath within the mortar bed. The scratch coat should not exceed 3/8” (10 mm) in thickness.
2. Before the coat hardens, scratch it with an appropriate scratching tool.
3. After the scratch coat hardens, key Modified Mortar Bed into the scratch coat. Then apply a render coat (also known as a “brown coat” or “float coat”). A render coat should not exceed 5/8” (16 mm) in thickness per lift.
4. Scratch all lifts that will receive additional render coats. Use a standard steel trowel to apply the final render coat, and use a screed bar to create a plumb and true mortar surface.
5. Allow the completed render coat to cure before tile installation. Allow 24 hours of curing time at an ambient temperature of 70°F (21°C). Temperatures below 70°F (21°C) may require longer curing times. Wait 24 hours per 1/2” (12 mm) in thickness before applying a waterproofing membrane.
**Product Performance Properties** at 73°F (23°C) and 50% relative humidity

<table>
<thead>
<tr>
<th>Laboratory Tests</th>
<th>Results</th>
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<tbody>
<tr>
<td>Application temperature range</td>
<td>45°F to 95°F (7°C to 35°C)</td>
</tr>
<tr>
<td>Compressive strength – ASTM C270</td>
<td>4,000 to 5,000 psi (27.6 to 34.5 MPa)</td>
</tr>
<tr>
<td>Flexural strength – ANSI A118.7.3.7</td>
<td>1,100 to 1,300 psi (7.59 to 8.97 MPa)</td>
</tr>
<tr>
<td>Shrinkage at 28 days' curing – ASTM C157</td>
<td>0.15%</td>
</tr>
<tr>
<td>TCNA service rating – ASTM C627</td>
<td>Extra heavy</td>
</tr>
<tr>
<td>Pull-out rupture at 28 days</td>
<td>200 to 300 psi (1.38 to 2.07 MPa)</td>
</tr>
<tr>
<td>VOCs (Rule #1168 of California’s SCAQMD)</td>
<td>0 g per L</td>
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**Shelf Life and Application Properties**

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Shelf life</td>
<td>1 year when stored in original, unopened packaging at 73°F (23°C)</td>
</tr>
<tr>
<td>Pot life at 70°F (21°C)*</td>
<td>90 to 120 minutes</td>
</tr>
<tr>
<td>Time until foot traffic is permitted</td>
<td>16 hours</td>
</tr>
<tr>
<td>Color</td>
<td>Gray</td>
</tr>
<tr>
<td>Cleanability</td>
<td>With water while fresh</td>
</tr>
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* Pot life varies based on jobsite conditions.

**Packaging**

<table>
<thead>
<tr>
<th>Size</th>
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<tr>
<td>Bag: 60 lbs. (27.2 kg)</td>
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**Approximate Coverage**

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Coverage</th>
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<tbody>
<tr>
<td>1/2” (12 mm)</td>
<td>12 sq. ft. (1.11 m²)</td>
</tr>
<tr>
<td>1” (2.5 cm)</td>
<td>6 sq. ft. (0.56 m²)</td>
</tr>
<tr>
<td>2” (5 cm)</td>
<td>3 sq. ft. (0.28 m²)</td>
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**Notes**

- The setting of Portland-cement mortars is retarded by low temperatures. Protect finished work for an extended period when installations take place in cold weather.
- The evaporation of moisture in Portland-cement mortars is accelerated by hot, dry conditions. When installing in temperatures over 85°F (29°C), dampen substrates, apply Modified Mortar Bed and protect the freshly spread mortar from premature drying using standard concrete protection methods.
- A slurry bond coat should also be applied to the edges of mortar beds installed from previous work periods.
- Previous mortar beds should have squared shoulders.

**Expansion and Control Joints**

- Provide for expansion and control joints as specified per TCNA Method EJ171, or TTMAC Specification Guide 09 30 00, Detail 301MJ.
- Provide expansion and control joints at the perimeter edge of the floor, around columns, curbs and other areas where a change of plane occurs and at the intersection between areas of different substrates.

**Pumping method over masonry, concrete and solid backing with metal lath**:

- If Modified Mortar Bed is pumped, a liquid plasticizer or pump aid should be used. Consult with the pump aid’s manufacturer regarding the equipment’s compatibility with Modified Mortar Bed mixture quantities and mixing ratios. Coverage will vary according to mixing, pumping techniques/equipment, placement, jobsite conditions and “rebound.” Do not exceed 5/8” (16 mm) in thickness per lift/application of pumped render. This pumping method should not be used over clay-based materials.

**For use as a concrete patch**

1. Apply a slurry bond coat of a MAPEI polymer-modified mortar meeting ANSI A118.4 requirements to the concrete surface.
2. Place Modified Mortar Bed while the slurry bond coat is wet and transferable.
3. Compact the mortar surface with a flat trowel, filling all voids from 1/4” to 2” (6 mm to 5 cm). Avoid over-troweling.
• Expansion and control joints in the substrate or placed within the mortar bed should be carried up through any tilework and left as soft joints that are filled with an approved expansive material.
• Do not cover expansion joints with mortar.

CLEANUP
• Clean tools and tile while the mortar is fresh, using only water.

PROTECTION
• Provide for dry, heated storage on site and deliver materials at least 24 hours before work begins.
• Protect the installation from rain, snow, freezing and direct solar heat, which may affect curing and performance properties.
• Maintain a temperature between 45°F and 95°F (7°C and 35°C) for at least 72 hours after the installation.
• Because temperature and humidity (during and after installation of tile) affect the final curing time, allow for extended periods of protection when jobsite temperatures drop below 60°F (16°C) and/or when relative humidity is higher than 70%.
• If Modified Mortar Bed is being used to install tile, first allow it to cure for 24 hours per 1/2” (12 mm) of thickness. Curing time depends upon thickness applied and jobsite conditions.
• When installing per ANSI A108.1B, cover the mortar bed for an initial 24 hours.
• If the installation will be covered with a non-breathable membrane or if a moisture-sensitive stone is the finish, allow an extended period of curing before applying the membrane.

CLEANUP
• Clean tools and tile while the mortar is fresh, using only water.

PROTECTION
• Provide for dry, heated storage on site and deliver materials at least 24 hours before work begins.
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• If the installation will be covered with a non-breathable membrane or if a moisture-sensitive stone is the finish, allow an extended period of curing before applying the membrane.

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