VersaSet® Economical Thin-Set Mortar

1 Product Name
VersaSet® Economical Thin-Set Mortar

2 Manufacturer
Custom Building Products
Technical Services
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Technical Services: 800-282-8786
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3 Product Description
A high performance, polymer-modified and thin-set mortar that delivers good bond strengths for basic tile and natural stone installations over most common types of surfaces. Meets ANSI A118.4 and A118.11 when mixed with water. No need for additives.

Key Features
- For basic installations
- Bonds to cement and exterior-grade plywood surfaces

Suitable Tile Types
- Vitreous, semi-vitreous or absorptive tile: ceramic, mosaic, quarry and cement
- Impervious porcelain
- Brick and mini brick
- Cement-based precast terrazzo
- Gauged natural stone tile

Suitable Substrates
- Concrete, mortar beds, masonry, Portland cement plaster
- WonderBoard® Lite cement backerboard
- Liquid applied waterproofing membranes such as RedGard® and Custom® 9240
- Crack prevention sheet membranes such as Crack Buster® Pro
- Uncoupling membranes such as RedGard® Uncoupling Mat
- Surfaces treated with MBP Multi-Surface Bonding Primer
- Exterior Grade Plywood (interior residential and light commercial dry areas)
- Gypsum wallboard (interior dry areas)
- Existing ceramic tile (scarified)
- Fully-bonded sheet vinyl flooring (scarified)
- Plastic laminates (scarified)
- Cutback adhesive (see preparation instructions)

Limitations to the Product
- Do not bond directly to hardwood, Luan plywood, particle board, parquet, cushion or sponge-back vinyl flooring, metal, fiberglass, plastic or OSB panels.
- Not recommended for interior and exterior pools and water features. CUSTOM recommends MegaLite® Crack Prevention Mortar, MegaFlex® Crack Prevention Mortar and ProLite® Large Tile and Stone Mortar for the installation of ceramic and porcelain tile in submerged applications. For additional information, contact Custom Technical Services.
- When setting moisture sensitive natural stone, cement or agglomerate tile use EBM-Lite™ Epoxy Bonding Mortar 100% Solids or CEG-Lite™ 100% Solids Commercial Epoxy Grout.
- Do not use to install resin-backed stone; use EBM-Lite™ Epoxy Bonding Mortar 100% Solids, CEG-Lite™ 100% Solids Commercial Epoxy Grout or contact Custom's® Technical Services for recommendations.
- For clear or translucent glass, CUSTOM recommends Glass Tile Premium Thin-Set Mortar. When setting glass tile larger than 6” x 6” (15 x 15 cm), contact Custom’s® Technical Services for recommendations.
- When setting dimensional stone larger than 12” x 12” (30 x 30 cm), contact Custom’s® Technical Services for recommendations regarding subfloor deflection requirements.

Packaging
- 50 lb (22.68 kg) bags
- Gray or white

4 Technical Data
Applicable Standards
American National Standards Institute (ANSI) — ANSI A108.5, A118.4 and A118.11 of the American National Standards for the Installation of Ceramic Tile ASTM International (ASTM)
- ASTM C627 Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester

Published Date: 5/31/2017
Resilient Floor Covering Institute - (RFCI) Recommended Work Practices for Removal of Resilient Floor Coverings
Tile Council of North America (TCNA) - TCNA Handbook for Ceramic Tile Installation, TCNA Method EJ171
ISO 13007-2

Technical Chart

<table>
<thead>
<tr>
<th>Property</th>
<th>Test Method</th>
<th>Requirement</th>
<th>Typical Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pot Life</td>
<td></td>
<td></td>
<td>3 Hours</td>
</tr>
<tr>
<td>Open Time</td>
<td>A118.4</td>
<td>&gt; 20 Minutes</td>
<td>Pass</td>
</tr>
<tr>
<td>4 Week Shear Bond Strength</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glazed Wall Tile</td>
<td>A118.4</td>
<td>&gt; 300 psi</td>
<td>400 - 500 psi</td>
</tr>
<tr>
<td></td>
<td>Section 5.1.5</td>
<td>(28.1 - 35.2 kg/cm²)</td>
<td></td>
</tr>
<tr>
<td>Porcelain Tile</td>
<td>A118.4</td>
<td>&gt; 200 psi</td>
<td>225 - 350 psi</td>
</tr>
<tr>
<td></td>
<td>Section 5.2.4</td>
<td>(15.8 - 24.6 kg/cm²)</td>
<td></td>
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<tr>
<td>Quarry Tile to</td>
<td>A118.11</td>
<td>&gt; 150 psi</td>
<td>150 - 175 psi</td>
</tr>
<tr>
<td>Plywood</td>
<td>Section 4.1.2</td>
<td>(10.5 - 12.3 kg/cm²)</td>
<td></td>
</tr>
</tbody>
</table>

Environmental Consideration

Custom® Building Products is committed to environmental responsibility in both products produced and in manufacturing practices. Use of this product can contribute towards LEED® v3 certification:
- Up to 2 points towards MR Credit 5, Regional Materials
- Up to 2 points towards MR Credit 4, Recycled Content
- Up to 1 point towards IEQ Credit 4.1, Low-Emitting Materials – Adhesives & Sealants

5 Instructions

General Surface Prep

USE CHEMICAL-RESISTANT GLOVES, such as nitrile, when handling product.

Surfaces must be structurally sound. Remove all grease, oil, dirt, curing compounds, sealers, adhesives or any other contaminant that would prevent a good bond. Glossy or painted surfaces must be sanded, or abraded, and stripped of all contaminants. Concrete must be cured 28 days and accept water penetration. Concrete must be free of efflorescence and not subject to hydrostatic pressure. Concrete slabs should have a coarse finish to enhance the bond. Smooth concrete slabs must be mechanically abraded to achieve proper bond.

Bonding to Concrete Surfaces

Concrete or plaster must be fully cured and must accept water penetration. Test by sprinkling water on various areas of the substrate. If water penetrates, then a good bond can be achieved; if water beads, surface contaminants are present, and loss of adhesion may occur. Contaminants should be mechanically removed before installation. Concrete must be free of efflorescence and not subject to hydrostatic pressure. Concrete slabs should have a coarse finish to enhance the bond. Smooth concrete slabs must be mechanically abraded to achieve proper bond.

Bonding to Lightweight Cement and Gypsum Surfaces

Lightweight or gypsum based underlayments must obtain a minimum 2000 psi (13.8 MP) compressive strength. The underlayment must be sufficiently dry and properly cured to the manufacturer's specifications for permanent, non-moisture permeable coverings. Surfaces to be tiled must be structurally sound and subject to deflection not to exceed the current ANSI Standards. Surfaces shall be free of all grease, oil, dirt, dust, curing compounds, waxes, sealers, efflorescence, or any other foreign matter.

All Lightweight cement or Gypsum surfaces should be primed with a properly applied sealer or a primer coat of RedGard, consisting of 1 part RedGard diluted with 4 parts clean, cool water. Mix in a clean bucket at low speed to obtain a lump free solution. The primer can be brushed, rolled or sprayed to achieve an even coat. Apply the primer coat to the floor at a rate of 300 sq. ft.(7.5 sq. m/L). Drying time depends on site conditions, but is normally less than 1 hour. Extremely porous surfaces may require 2 coats. At this point, RedGard can be applied to the primed lightweight or gypsum based surface. Refer to the individual product data sheet or packaging directions for application instructions. Expansion joints must be installed in accordance with local building codes and ANSI/TCNA guidelines. Refer to TCNA EJ171.

Bonding to Plywood Surfaces

Plywood floors, including those under resilient flooring, must be structurally sound and must meet all ANSI A108.01 Part 3.4 requirements. Maximum allowable deflection: L/360 tile L/720 stone. See TCNA F150-13 Tile Installations, TCNA F141-13 and F250-13 for Stone. For questions about proper subfloor installation requirements, call Custom technical services.

Bonding to Backerboards

As an alternative to an additional layer of plywood, WonderBoard backerboard may be installed over plywood subfloors for ceramic tile installations. Refer to TCNA F144-13 tile installations, TCNA F250-13 stone installations. Call Custom technical services when installing natural stone over plywood subfloor.

Bonding to Existing Surfacing Material

Existing Ceramic Tile, Resilient Flooring or Plastic Laminates: Resilient flooring or plastic laminates must be well bonded, as well as clean and free of all contaminants. Roughen the surface by sanding or abrading, then rinse and allow to dry. Expansion joints should never be bridged with setting material. Do not sand flooring materials containing asbestos. Ambient temperature should be maintained above 50° F (10° C) or below 100° F (38° C) for 72 hours to achieve proper bond.
**VersaSet® Economical Thin-Set Mortar**

**Bonding to Cutback Adhesive**

Adhesive layers must be removed, as they reduce mortar bond strength to cement surfaces. Use extreme caution; adhesives may contain asbestos fibers. Do not sand or grind adhesive residue, as harmful dust may result. Never use adhesive removers or solvents, as they soften the adhesive and may cause it to penetrate into the concrete. Adhesive residue must be wet scraped to the finished surface of the concrete, leaving only the transparent staining from the glue. To determine desirable results, do a test bond area before starting. Refer to the RFCI Pamphlet, “Recommended Work Practices for Removal of Resilient Floor Coverings” for further information.

**Movement Joint Placement**

Movement joints are required for perimeters and other changes of plane in all installations. Expansion joints and cold joints, as described in ANSI A108.01, should never be bridged with setting material. They must be brought through the tile work and filled with an appropriate elastomeric sealant, such as Custom’s 100% Silicone. Contact Custom’s Technical Services for the proper treatment of control or saw cut joints. Refer to TCNA EJ171, F125 & F125A.

**Mixing Ratios**

Thoroughly mix 6 quarts (5.68 L) clean, cool water and a 50 lb. (22.68 kg) bag of mortar together to a smooth, paste-like consistency.

**Mixing Procedures**

Mix by hand or use a low 150 – 200 rpm speed 1/2” (13 mm) drill to achieve a smooth, paste-like consistency. Let the mixture slake or stand 5 – 10 minutes; stir again and use. Stir occasionally, but do not add more water. When properly mixed, troweled ridges will stand without slump.

**Application of Product**

**INSTALLATION TO CONFORM TO ANSI A108.5.** Use a properly-sized notch trowel to ensure 100% coverage under tiles. Using flat side of trowel, apply skim coat of mortar to the surface. Apply additional mortar with notched side of trowel held at a 45° angle to the surface, combing in one direction. Press tile firmly into place in a perpendicular motion across ridges, moving back and forth. Perpendicular pressing flattens ridges and closes valleys allowing maximum coverage. With some tile, back-butting is advisable. Adjust tile promptly and beat in with a beating block and rubber mallet. Mortar can be applied up to 1/4” (6 mm) thick after beat in. For thicker applications, use a medium bed mortar. Periodically pull up a tile and check the back to ensure complete coverage with the adhesive. Do not spread more material than can be tiled in 15 minutes or while material has wet tack (sticky to the touch). If material has skinned over (not sticky), recomb with notched trowel. If too dry, remove and replace with fresh material. Material in bucket will remain workable in excess of 4 hours.

**Curing of Product**

Curing time is affected by ambient and surface temperatures and humidity. Use the following as a guideline. Allow 24 hours before grouting and light traffic, and 7-10 days before heavy or vehicular traffic. Before exposure to heavy or vehicular traffic, assure assembly is rated “Heavy or Extra Heavy” per TCNA Service Requirements. As necessary, use plywood or other load distributing protection when moving heavy equipment across tiled assembly.

**Cleaning of equipment**

Clean with water before the material dries.

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**Storage**

Store in a cool dry area.

**Health Precautions**

This product contains Portland cement and free silica. Avoid eye contact or prolonged contact with skin. Wash thoroughly after handling. If eye contact occurs, flush with water for 15 minutes and consult a physician. Do not breathe dust; wear a NIOSH approved respirator.

**Conformance to Building Codes**

Installation must comply with the requirements of all applicable local, state and federal code jurisdictions.

**Availability & Cost**

<table>
<thead>
<tr>
<th>Location</th>
<th>I Item Code</th>
<th>Size</th>
<th>Color</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>VSG50</td>
<td>50 lb (22.68 kg)</td>
<td>Gray</td>
<td>Bag</td>
</tr>
<tr>
<td>USA</td>
<td>VSW50</td>
<td>50 lb (22.68 kg)</td>
<td>White</td>
<td>Bag</td>
</tr>
<tr>
<td>Canada</td>
<td>CVSG50</td>
<td>50 lb (22.68 kg)</td>
<td>Gray</td>
<td>Bag</td>
</tr>
</tbody>
</table>

**Product Warranty**

Custom® Building Products warrants to the original consumer purchaser that its product shall be free from defects in material and workmanship under normal and proper usage for a period of one year following the date of original purchase. Custom's® sole liability under this warranty shall be limited to the replacement of the product. Some states, countries or territories do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty will not extend to any product which has been modified in any way or which has not been used in accordance with Custom's® printed instructions. Custom® makes no other warranties either expressed or implied. This warranty gives you specific legal rights, and you may have other rights that vary from state to state or from one country/territory to another. This warranty is not transferrable.

**Product Maintenance**

Properly installed product requires no special maintenance.

**Technical Services Information**

For technical assistance, contact Custom technical services at 800-282-8786 or visit custombuildingproducts.com.

**Filing System**

Additional product information is available from the manufacturer upon request.

**Expected Wear**

Properly installed tile will last for more than 60 years.

**Related Products**

Polyblend® Sanded Grout
Coverage

SQUARE FOOT COVERAGE PER 50 LB BAG (SQUARE METER PER 22.68 KG)

<table>
<thead>
<tr>
<th>Trowel Size</th>
<th>Min Coverage</th>
<th>Max Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Longest side of tile less than 8” use 1/4” x 1/4” x 1/4” (6 x 6 x 6 mm) Square-Notch</td>
<td>85 sq. ft. (7.9 M²)</td>
<td>90 sq. ft. (8.4 M²)</td>
</tr>
<tr>
<td>Longest side of tile 8” to 15” use 1/4” x 3/8” x 1/4” (6 x 9.5 x 6 mm) Square-Notch</td>
<td>60 sq. ft. (5.6 M²)</td>
<td>67 sq. ft. (6.2 M²)</td>
</tr>
</tbody>
</table>

Recommended minimum coverage (80% for dry areas and 95% for wet areas and exteriors). Back buttering may be necessary.

Note that mortar coverage does not include backbuttering tiles. When backbuttering, consider the tile underside pattern and depth to estimate thickness and usage to add to your estimate.

Chart for estimating purposes. Coverage may vary based on installation practices and jobsite conditions. For more sizes, use the material calculator at CustomBuildingProducts.com or contact CUSTOM Technical Services at 800-282-8786.