

# PORCELAIN TILE FORTIFIED THIN-SET MORTAR

## 1. Product Name

Porcelain Tile Fortified Thin-Set Mortar

## 2. Manufacturer

Custom Building Products

13001 Seal Beach Blvd.

Seal Beach, CA 90740-2757

800-272-8786

562-598-8808

Fax: 800-200-7765

Email: [contactus@cbpmail.net](mailto:contactus@cbpmail.net)

[www.custombuildingproducts.com](http://www.custombuildingproducts.com)

## 3. Product Description

Porcelain Tile Fortified Thin-Set Mortar is designed to provide superior bonding of porcelain tile to concrete surfaces, backerboards and self-leveling underlayments. Polymer-modified Porcelain Tile Fortified Thin-Set Mortar also excels for large modular tiles and radiant heating system installations. Use it for interior or exterior floors, walls or countertops.

Porcelain Tile Fortified Thin-Set Mortar can be used with the following tile types:

- Vitreous, semi-vitreous or non-vitreous tile: ceramic, mosaic, quarry, cement body tile
- Impervious porcelain and glass tile
- Brick and thin brick
- Precast terrazzo
- Natural stone tile

Porcelain Tile Fortified Thin-Set Mortar can be used with the following substrates:

- Concrete, mortar beds, masonry, Portland cement plaster
- WonderBoard®, cement backerboards
- Exterior grade plywood (interior residential and light commercial dry areas)
- Gypsum wallboard (interior dry areas)
- Waterproofing membranes, such as RedGard® and Custom 9240®, liquid applied and Crack Buster® Pro sheet membrane
- Existing ceramic tile
- Fully bonded sheet vinyl flooring
- Plastic laminates
- Cutback adhesive

## COMPOSITION & MATERIALS

Porcelain Tile Fortified Thin-Set Mortar is a dry, proprietary Portland cement based mixture that includes vinyl copolymers, inorganic aggregates and chemicals.

## PACKAGING

- 50 lb (22.68 kg) bag
- Gray or white

## BENEFITS

- Superior bonding of porcelain to concrete, backerboard, & cement self-leveling underlayments
- Excellent for glass tile
- Excellent for radiant heating system installations
- Exceeds ANSI A118.4 and A118.11 standards without the need for additives

## LIMITATIONS

- Do not bond directly to hardwood, lauan plywood, particle board, parquet, cushion or sponge back vinyl flooring, metal, fiberglass, plastic or OSB panels.
- When setting moisture sensitive natural stone, cement or agglomerate tile, check with Custom Building Products; use EBM-Lite™ Epoxy Bonding Mortar—100% Solids, CEG-2000™ 100% Solids Commercial Epoxy Grout or CEG-Lite™ 100% Solids Commercial Epoxy Grout.
- Do not use to install resin backed stone or marble; use EBM-Lite™ Epoxy Bonding Mortar—100% Solids, CEG-2000™ 100% Solids Commercial Epoxy Grout or CEG-Lite™ 100% Solids Commercial Epoxy Grout.
- When setting glass tile larger than 6" x 6" (15 x 15 cm), contact Custom Building Products for recommendations.
- When setting dimensional stone larger than 12" x 12" (30 x 30 cm), contact Custom Building Products for recommendations regarding subfloor deflection requirements.

## 4. Technical Data

### APPLICABLE STANDARDS

American National Standards Institute (ANSI) — ANSI A108.5, A1184 & A118.11 of the American National Standards for the Installation of Ceramic Tile

### ASTM International (ASTM)

- ASTM C109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)
- ASTM C627 Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester

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

TECHNICAL PROPERTIES

Results based on applicable ANSI test specifications

Property	Results
Pot life	2 hours
Open time	50 minutes
Adjustment time	30 – 35 minutes
Shear bond @ 28 days	
Bisque tile	535 – 565 psi (37.6 – 39.7 kg/cm <sup>2</sup> )
Porcelain Tile	435 – 465 psi (30.6 – 32.7 kg/cm <sup>2</sup> )
Quarry tile to plywood	175 – 205 psi (12.3 – 14.4 kg/cm <sup>2</sup> )

ENVIRONMENTAL CONSIDERATIONS

Custom Building Products is committed to environmental responsibility in both products produced and in manufacturing practices.

Use of Porcelain Tile Fortified Thin-Set Mortar can contribute to LEED® certification.

5. Installation

PREPARATORY WORK

General Surface Preparation:

Surfaces must be structurally sound, clean, dry and free from grease, oil, dirt, curing compounds, sealers, adhesives and other contaminants that would prevent a good bond. Glossy or painted surfaces must be sanded, stripped and cleaned of waxes, dirt and other contaminants. Ambient temperature, surfaces and materials should be 50 – 100° F (10 – 38° C) for 72 hours.

Cementitious 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 broomed or brushed finish to enhance the bond. Smooth concrete slabs must be mechanically abraded to ensure a good bond.

Lightweight, Gypsum Based Underlayments:

Lightweight or gypsum based underlayments must first be treated with RedGard® Waterproofing and Crack Prevention Membrane and must obtain a minimum 2000 psi (13.8 MPa) compressive strength at the recommended cure time. 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.

All lightweight concrete and gypsum based underlayment surfaces to receive RedGard must be primed with 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 ft<sup>2</sup>/gal (7.5 m<sup>2</sup>/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.

Plywood Substrates:

Plywood floors, including those under resilient flooring, must be structurally sound and must meet all ANSI 3.4 requirements. See TCNA F150. For questions about proper subfloor installation, call Custom Building Products.

WonderBoard Backerboard:

As an alternative to an additional layer of plywood, WonderBoard backerboard may be installed over plywood subfloors. See TCNA F144.

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 contaminates. Roughen the surface by sanding or scarifying; rinse and allow to dry. Do not sand flooring that contains asbestos. For existing well bonded ceramic tile, mechanically abrade the surface. Rinse and allow to dry. When sanding, an approved respirator should be used.

Cutback Adhesive Over Concrete:

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.

Expansion Joints:

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.

Contact Custom Building Products for the proper treatment of control or saw cut joints. Refer to TCNA EJ171, F125 & F125A.

**METHODS****Mixing**

Mix 6 qts (5.67 L) clean water per 50 lb (22.68 kg) bag of mortar.

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**

Installation must conform to ANSI A108.5. Use a properly sized notch trowel to ensure proper coverage under tiles.

Using the flat side of the trowel, apply a skim coat of mortar to the surface. With the notch side of the trowel held at a 45° angle, apply additional mortar to the surface, combing in one direction.

Press the tile firmly into place in a perpendicular motion across ridges, moving back and forth. The perpendicular motion flattens ridges and closes valleys, allowing maximum coverage. With some tile, back buttering is advisable. Adjust the tile promptly and beat it in with a block and rubber mallet.

For thicker applications, use a medium bed mortar; periodically pull up a tile and check the back to ensure proper adhesive coverage. If the material has skinned over (not sticky to the touch), re-comb with the notched trowel; if too dry, remove and replace the dry material with fresh material.

**Coverage**

- 90 – 100 ft<sup>2</sup> (8.4 – 9.3 m<sup>2</sup>) per bag when applied with a 1/4" × 1/4" × 1/4" (6 × 6 × 6 mm) square-notch trowel
- 63 – 70 ft<sup>2</sup> (5.8 – 6.5 m<sup>2</sup>) per bag when applied with a 1/4" × 3/8" × 1/4" (6 × 9.5 × 6 mm) square-notch trowel
- 45 – 50 ft<sup>2</sup> (4.2 – 4.6 m<sup>2</sup>) per bag when applied with a 1/2" × 1/2" × 1/2" (13 × 13 × 13 mm) square-notch trowel

**Curing**

Curing time is affected by ambient and surface temperatures and humidity. Use the following as a guideline.

Allow 24 hours before grouting or light traffic.

**Cleaning**

Clean with water before the material dries.

**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

**BUILDING CODES**

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

**6. Availability & Cost**

Contact the manufacturer or visit the [www.custombuildingproducts.com](http://www.custombuildingproducts.com) website for information about product cost and availability.

**7. Warranty**

This product is eligible for Custom Building Products 10 Year Installation Systems Warranty.

Custom Building Products ("Custom") 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 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 express or implied. This warranty gives you specific legal rights, and you may have other rights that vary from state to state.

For details and complete warranty information, contact Custom Building Products or visit the Custom Building Products website: [www.custombuildingproducts.com](http://www.custombuildingproducts.com).

**8. Maintenance**

Properly installed product requires no special maintenance.

**9. Technical Services**

For technical assistance, contact Custom Building Products or visit the website: [www.custombuildingproducts.com](http://www.custombuildingproducts.com).

**10. Filing Systems**

Additional product information is available from the manufacturer upon request.

LEED is a Registered Trademark of U.S.G.B.C.