

CustomBlend® Economical Non-Modified Thin-Set Mortar

1 Product Name

CustomBlend® Economical Non-Modified Thin-Set Mortar

2 Manufacturer

Custom Building Products
 Technical Services
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3 Product Description

Offers economy with good bond strength for most tile projects and is recommended for floor installations. Good for setting Saltillo and other similar clay pavers. Offers good working time to apply and adjust tiles. For increased performance, use Custom® Building Products' Thin-Set Mortar Admix when bonding dense tiles (porcelain and glass) or setting over Exterior Grade Plywood (EGP), existing tile and for exterior applications. Meets ANSI A118.1 without additives. Meets ANSI A118.4 and A118.11 when mixed with Thin-Set Mortar Admix.

Key Features

- For installations over concrete floors
- Mix with Thin-Set Mortar Admix for higher bond strengths

Suitable Tile Types

- Vitreous, semi-vitreous or non-vitreous tile: ceramic, mosaic, quarry, cement body tile
- Impervious porcelain and glass tile
- Brick and stone veneer
- Cement-based precast terrazzo
- Natural stone tile

Suitable Substrates

When Mixed with Water ANSI A118.1 Specifications:

- Interior floors, walls, countertops
- Concrete, mortar beds, masonry, Portland cement plaster
- Gypsum wallboard (dry areas)
- Water-resistant wallboard
- WonderBoard® Lite, cement backerboards

Mix with Thin-Set Mortar Admix ANSI A118.4 and A118.11 Specifications:

- Interior and exterior floors, walls, countertops
- Areas subject to freeze-thaw cycles
- Exterior Grade Plywood (interior residential and light commercial dry areas)
- Existing ceramic tile
- Sheet vinyl flooring, VCT
- Plastic laminates
- Cutback adhesive



Composition of Product

Proprietary blend of Portland cement, inorganic aggregates and chemicals.

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.
- 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.
- 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.
- Not for use in submerged installations.

Packaging

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

4 Technical Data

Applicable Standards

American National Standards Institute (ANSI) - ANSI A108.5, A118.1, A118.4 and 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



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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 Chart

Property	Test Method	Requirement	Typical Results
Pot Life			
Open Time	A118.1 Section 5.3	> 20 Minutes	Pass
4 Week Shear Bond Strength			
Mixed with Water			
Glazed Wall Tile	A118.1 Section 7.1	> 200 psi	225 - 300 psi (15.8 - 21.1 kg/cm ²)
Porcelain Tile	A118.1 Section 7.2	> 150 psi	150 - 225 psi (10.5 - 15.8 kg/cm ²)
Mixed with Thin-Set Admix			
Glazed Wall Tile	A118.4 Section 5.1.5	> 300 psi	300 - 400 psi (21.1 - 28.1 kg/cm ²)
Porcelain Tile	A118.4 Section 5.2.4	> 200 psi	200 - 300 psi (14.1 - 21.1 kg/cm ²)
Quarry Tile to Plywood	A118.11 Section 4.1.2	> 150 psi	150 - 200 psi (10.5 - 14.1 kg/cm ²)

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, clean, dry and free from grease, oil, dirt, curing compounds, sealers, adhesives or any other contaminant that would prevent a good bond. Glossy or painted surfaces must be sanded, stripped and cleaned of waxes, dirt or any 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 broomed or brushed finish to enhance the bond. Plywood flooring including those under resilient flooring must be structurally sound and meet all ANSI and deflection requirements. For questions about proper subfloor installation, call Technical Services. Smooth concrete surfaces, existing glazed tile, terrazzo, or polished stone should be roughened or scarified. Sheet vinyl must be well-bonded and stripped of old finish. Roughen the surface by sanding or scarifying, rinse and allow to dry. Expansion joints should never be bridged with setting material. Do not sand flooring materials containing asbestos. Ambient temperature, surfaces and materials should be maintained at a temperature above 50° F (10° C) or below 100° F (38° C) for 72 hours.

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

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. See TCNA F150 tile installations, TCNA F141 and F250 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. Refer to TCNA F144 tile installations, TCNA F250 for stone. 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 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.

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. Install joints or space at perimeters and changes of plane. Refer to TCNA EJ171, F125 and F125A.



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Mixing Ratios

For installations requiring an ANSI A118.1 mortar, thoroughly mix 6 quarts (5.7 L) clean, cool water and a 50 lb (22.68 kg) bag of CustomBlend® together to a smooth, paste-like consistency. For mortar meeting A118.4 or A118.11 requirements, use 6 quarts (5.7 L) of Thin-Set Mortar Admix in place of water or 4.5 quarts (4.3 L) of water and 1.5 quarts (1.4 L) of Thin-Set Admix Concentrate.

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 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 beating block and rubber mallet. 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), recomb with the notch trowel; if too dry, remove and replace the dry material with fresh material. Thin-set mortar should not be used to fill low spots in the flooring. For large format tile and uneven flooring, use mortars designed for medium bed applications. Mortar thickness should be less than 1/4" thick.

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.

Storage

Protect from freezing. 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.

6 Availability & Cost

Location	Item Code	Size	Color	Package
USA	CBTSG50	50 lb (22.68 kg)	Gray	Bag
USA	CBTSW50	50 lb (22.68 kg)	White	Bag
Canada	CCBTSG50	50 lb (22.68 kg)	Gray	Bag

7 Product Warranty

Obtain the applicable **LIMITED PRODUCT WARRANTY** at www.custombuildingproducts.com/product-warranty or send a written request to Custom Building Products, Inc., Five Concourse Parkway, Atlanta, GA 30328, USA. Manufactured under the authority of Custom Building Products, Inc. © 2017 Quikrete International, Inc.

8 Product Maintenance

Properly installed product requires no special maintenance.

9 Technical Services Information

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

10 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

Thin-Set & Mortar Admix

Polyblend® Sanded Grout



CUSTOM®

CustomBlend® Economical Non-Modified Thin-Set Mortar

Coverage

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

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

Trowel Size	Min Coverage	Max Coverage
1/4" x 1/4" x 1/4" (6 x 6 x 6 mm) Square-Notch	85 sq. ft. (8.8 M ²)	95 sq. ft. (8.8 M ²)
1/4" x 3/8" x 1/4" (6 x 9.5 x 6 mm) Square-Notch	60 sq. ft. (5.6 M ²)	67 sq. ft. (6.2 M ²)

Mortar coverage between the substrate and tile underside is required to be ≥80% for dry areas and ≥95% for wet areas and exteriors with all tile edges properly supported with mortar and in a minimum of 3/32" (2.38 mm) and a maximum of 1/4" (6mm) for mortars without an ANSI "H" rating. Note: Larger tiles, tiles with deep underside patterns and ungauged natural stone tiles may require larger notch sizes and may need to be flat back-troweled (formerly back buttered) or notched-back troweled to achieve proper coverage and mortar support. CUSTOM recommends testing to confirm adequate bonding mortar coverage.

When back troweling, consider the tile's underside pattern and depth to estimate thickness and usage to add to your estimate. For achieving proper mortar coverage see the following video: [Trowel & Error](#). (Also available in Spanish and Russian.) For information

For achieving proper mortar coverage see the following video: [Trowel & Error](#). (Also available in Spanish and Russian.) For information regarding back troweling, refer to The National Tile Contractors Association / Reference Manual & [Flat Back & Notched Back - Troweling \(TileTVS3 22 08\)](#).

