

# MultiSet Modified Thin-Set Mortar

## 1 Product Name

MultiSet Modified Thin-Set Mortar

## 2 Manufacturer

Custom Building Products  
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## 3 Product Description

Good bond strength for tile installations over most surfaces. Apply over concrete, cement backerboards and existing ceramic tile. Meets ANSI A118.4 without the need for additives. Meets ANSI A118.11 when Thin-Set Admix Concentrate is added at the required 5:1 mix ratio.

### Key Features

- Economical modified mortar for floor and wall tile installations

### Suitable Tile Types

- Vitreous, semi-vitreous or absorptive tile: ceramic, mosaic, quarry, cement and porcelain
- Brick and mini brick
- Cement-based precast terrazzo
- Natural stone

### 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 [SpiderWeb II](#)
- 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)

### Benefits of Product in the Installation

Add to 100% Solids Epoxy Grout on vertical installations of ceramic tile and stone.

- Vitreous, semi-vitreous or absorptive tile: ceramic, mosaic, quarry, cement
- Impervious porcelain and glass tile
- Brick and mini brick
- Cement-based precast terrazzo
- Natural stone tile including moisture sensitive green and black marble and granite
- Resin-backed stone



### 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™ 100% Solids Epoxy Bonding Mortar](#), [CEG-IG 100% Solids Industrial Grade Epoxy Grout](#) or [CEG-Lite™ 100% Solids Commercial Epoxy Grout](#).
- Do not use to install resin-backed stone; use [EBM-Lite™ 100% Solids Epoxy Bonding Mortar](#), [CEG-IG 100% Solids Industrial Grade Epoxy Grout](#), [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)



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- 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
- ISO 13007-2

## Technical Chart

Property	Test Method	Requirement	Typical Results
Pot Life			2 Hours
Open Time	A118.4 Section 4.4	> 50 Minutes	50 - 55 Minutes
Adjustment Time	A118.4 Section 4.5	> 30 Minutes	30 - 35 Minutes
<b>4 Week Shear Bond Strength</b>			
<b>Mixed with Water</b>			
Glazed Wall Tile	A118.4 Section 5.1.5	> 300 psi	275 - 325 psi (19.3 - 22.8 kg/cm <sup>2</sup> )
Porcelain Tile	A118.4 Section 5.2.4	> 200 psi	200 - 275 psi (14.1 - 19.3 kg/cm <sup>2</sup> )
<b>Mixed with Thin-Set Admix</b>			
Glazed Wall Tile	A118.4 Section 5.1.5	> 300 psi	400 - 500 psi (28.1 - 35.2 kg/cm <sup>2</sup> )
Porcelain Tile	A118.4 Section 5.2.4	> 200 psi	250 - 325 psi (17.6 - 22.8 kg/cm <sup>2</sup> )
Quarry Tile to Plywood	A118.11 Section 4.1.2	> 150 psi	175 - 225 psi (12.3 - 15.8 kg/cm <sup>2</sup> )

## 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

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. 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 scarified. Sheet vinyl must be well bonded and stripped of old finish. 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.

### 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.



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## 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 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.

## Expansion 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 50 lb. (22.68 kg) bag of powder together to a smooth, paste-like consistency. When setting over Exterior Grade Plywood, use 1 quart (0.95 L) of Thin-Set Admix Concentrate and 5 quarts (4.73 L) clean, cool water to meet ANSI A118.11 requirements.

## 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 notched 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-buttering 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. 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 approximately 2 hours.

## Curing of Product

Allow to cure for 24 hours before grouting or light traffic, depending upon temperature and humidity. Polyblend® or Prism® SureColor® Grout is recommended.

## Cleaning of equipment

Clean with water before the material dries.

## 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.

## 6 Availability & Cost

Item Code	Size	Color	Package
MSMG50	50 lb (22.68 kg)	Gray	Bag
MSMW50	50 lb (22.68 kg)	White	Bag



# CUSTOM®

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## 7 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.

## 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](http://custombuildingproducts.com).

## 10 Filing System

Additional product information is available from the manufacturer upon request.

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### Expected Wear

Properly installed tile will last for more than 60 years.

### Related Products

Thin-Set Admix Concentrate

CustomFlex® Ultra-Strength Thin-Set Additive

Polyblend® Sanded Grout



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## Coverage

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

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. (7.9 M <sup>2</sup> )	90 sq. ft. (8.4 M <sup>2</sup> )
1/4" x 3/8" x 1/4" (6 x 9.5 x 6 mm) Square-Notch	60 sq. ft. (5.6 M <sup>2</sup> )	67 sq. ft. (6.2 M <sup>2</sup> )
1/2" x 1/2" x 1/2" (13 x 13 x 13 mm) Square-Notch	42 sq. ft. (3.9 M <sup>2</sup> )	47 sq. ft. (4.4 M <sup>2</sup> )



# CUSTOM<sup>®</sup>