MultiSet - LFT Economical Large Format Tile Mortar

1 Product Name

MultiSet - LFT Economical Large Format Tile Mortar

2 Manufacturer

Custom Building Products
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3 Product Description

MultiSet-LFT Fortified Mortar is an economical, polymer-modified medium bed mortar for use with large format porcelain, ceramic tile on concrete surfaces with a non-slumping formula to help control lippage. MultiSet-LFT can be applied to 3/4" (19 mm) thick on horizontal applications. MultiSet-LFT exceeds ANSI A118.4H and A118.11 without the need for additives.

Key Features

- For most standard floor installations
- Supports large and heavy tile for flat, even installations
- Bonds to cement and exterior grade plywood surfaces.

Suitable Tile Types

- Vitreous, semi-vitreous or non-vitreous tile: cermaic, quarry, pavers
- Impervious porcelain

Suitable Substrates

- Concrete, mortar beds
- WonderBoard® Lite, cement backerboard
- Liquid-applied and fabric waterproofing membranes such as RedGard® Waterproofing Membrane and Custom® 9240
- Crack isolation sheet membranes such as Crack Buster® Pro
- Uncoupling mats such as RedGard® Uncoupling Mat
- Substrates treated with MBP Multi-Surface Bonding Primer
- Existing ceramic tile (scarified)
- Exterior Grade Plywood (interior residential and light commercial dry areas)

Composition of Product

Modified dry-set mortar, which is a proprietary blend of Portland cement, inorganic aggregates, copolymers and chemicals.

Benefits of Product in the Installation

- Specially formulated for large format tiles
- Good bond strength
- Approved for industry-recommended interior and exterior applications
- Exceeds ANSI A118.4H and A118.11 standards without the need for additives

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 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 resin agglomerate tile use EBM-Lite™ 100% Solids Epoxy Bonding Mortar or CEG-Lite™ 100% Solids Commercial Epoxy Grout.
- Do not use to install resin-backed stone; use EBM-Lite™ 100% 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.
- Ensure that the substrate meets deflection requirements
- Do not bond to fully-bonded sheet vinyl flooring (scarified) or plastic laminates (scarified)

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 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
ISO 13007-2

Technical Chart

Property	Test Method	Requirement	Typical Results
Pot Life			4 Hours
Open Time	A118.4 Section 5.3	> 20 Minutes	Pass
4 Week Shear Bond Strength			
Mixed with Water			
Glazed Wall Tile	A118.4 Section 5.1.5	> 300 psi	400 - 500 psi (21.2 - 22.8 kg/cm²)
Porcelain Tile	A118.4 Section 5.2.4	> 200 psi	250 - 325 psi (14.1 - 19.3 kg/cm²)
Quarry Tile to Plywood	A118.11 Section 4.1.2	>150 psi	150-250 psi (10.6 - 17.6 kg/cm2)

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. 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.

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 MPa) 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 current industry 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 ft2/gal (7.5 M2/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

WonderBoard Lite backerboard may be installed over structurally sound 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

For existing well-bonded ceramic tile, mechanically abrade the surface. Rinse and allow to dry. When sanding, an approved respirator should be used. The use of MBP can replace mechanically abrading, consult MBP TDS.

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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, perimeter 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 and F125A.

Mixing Ratios

Mix 5.5 - 6 qts (5.2 - 5.6 L) clean water per 50 lb (22.68 kg) bag of mortar.

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. Mortar thickness should be less than 3/4" when beat in. Ambient temperature should be maintained above 50° F (10° C) or below 100° F (38° C) for 72 hours to achieve proper bond.

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

See Safety Data Sheet for more information.

This product contains Portland cement and free silica. Avoid eye contact and 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	MSMLFTG50	50 lb (22.68 kg)	Gray	Bag
USA	MSMLFTW50	50 lb (22.68 kg)	White	Bag
Canada	CMSMLFTG50	50 lb (22.68 kg)	Gray	Bag
Canada	CMSMLFTW50	50 lb (22.68 kg)	White	Bag

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.

10 Filing System

Additional product information is available from the manufacturer upon request.

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VOC Content

No VOCs

Expected Wear

Properly installed tile will last for more than 60 years.

Related Products

VersaBond®-LFT Professional Large Format Tile Mortar

Natural Stone & Large Tile Premium Mortar

ProLite® Premium Large Format Tile Mortar

MegaLite® Ultimate Crack Prevention Large Format Tile Mortar

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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 3/8" x 1/4" (6 x 9.5 x 6 mm) Square-Notch	60 ft² (5.6 M²)	67 ft² (6.2 M²)
1/2" x 1/2" x 1/2" (13 x 13 x 13 mm) Square-Notch	**IMPORTANT NOTE BELOW**	**IMPORTANT NOTE BELOW**
3/4" x 9/16" x 3/8" (19 x 14 x 9.5 mm) U-Notch	34 ft² (3.2 M²)	38 ft² (3.5 M²)

Chart for estimating purposes. Coverage may vary based on installation practices and jobsite conditions.

***IMPORTANT NOTE:** Custom Building Products does not recommend the use of a 1/2" x 1/2" x 1/2" (13 x 13 x 13 mm) Square-Notched trowel as the ½" spacing between each square notch has been shown to make it more difficult to bed tiles and achieve proper mortar coverage. CUSTOM recommends the use of a trowel design that promotes mortar ridge collapse such as either a deeper, slanted, U-notch, V-notch, or ridged large format trowel when applying thicker amounts of mortar to accommodate tile warpage and back pattern recesses. Applying mortar using a 3/4" × 9/16" × 3/8" (19 × 14 × 9.5 mm) U- Notch at a 30° angle provides better coverage with the same coverage as the ½" notched trowel.

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 ¾" (19mm) continuous thickness. 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. 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 regarding flat back troweling, refer to The National Tile Contractors Association / Reference Manual & Flat Back & Notched Back - Troweling (TileTVS3 22 08)

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