



# 220 Marble & Granite Mortar

DS-297.0-0817

**Globally Proven  
Construction Solutions**



## 1. PRODUCT NAME

220 Marble & Granite Mortar

## 2. MANUFACTURER

LATICRETE International, Inc.  
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Bethany, CT 06524-3423 USA

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## 3. PRODUCT DESCRIPTION

A fortified dry-set mortar specifically formulated to provide a one-step installation for large format ceramic tile, porcelain tile, marble and stone, including ungauged tiles or installing tiles on rough surface.

### Advantages

- Exceeds applicable ANSI A118.1 and A118.4 bond strength requirements
- Supports heavy tiles and stone, reducing lippage problems.
- For interior and exterior applications
- Build up to 3/4" (19 mm) without shrinkage or set-up time problems
- Ideal for submerged applications when mixed with E 3701 Mortar Admix

### Suitable Substrates

- Concrete
- Cement mortar beds
- Ceramic tile and stone\*
- Exterior glue plywood\*\* (interior only)
- Cement terrazzo
- Cement backer board\*\*\*^

\* Requires use of 3701 Mortar Admix.

\*\* Requires use of 333 Super Flexible Additive.

^^Consult cement backer board manufacturer for specific installation recommendations and to verify acceptability for exterior use.

### Packaging

50 lb (22.7 kg) bag; 56 bags per pallet

Colors: Grey & White

### Coverage

Approximately 25–35 sq. ft (2.3–3.2 m<sup>2</sup>) per 50 lb (22.7 kg) with 3/4" (18 mm) half loop or with 1/2" x 1/2" (12 mm x 12 mm) square notch.

### Shelf Life

Factory sealed containers of this product are guaranteed to be of first quality for one (1) year\*\*\* if stored off the ground in a dry area.

\*\*\*High humidity will reduce the shelf life of bagged product.

### Limitations

- For installations over exterior glue plywood, use with 333 Super Flexible Additive.
- For installations in submerged applications, mix with 3701 Mortar Admix. Wait 14 days after the final grouting period before filing water features with water at 70°F (21°C)
- Do not install tile/stone when surface temperatures are below freezing (32°F [0°C]).
- Adhesives/mastics, mortars and grouts for ceramic tile, pavers brick and stone are not designed as replacements for waterproofing membrane; use a Waterproofing Membrane ( see Section 10 FILING SYSTEMS).
- DO NOT bond to particle board, luan, Masonite® or hardwood surfaces.

*Note: Surfaces must be structurally sound, stable and rigid enough to support ceramic/stone tile, thin brick and similar finishes. Substrate deflection under all live, dead and impact loads, including concentrated loads, must not exceed L/360 for thin bed ceramic tile/brick installations or L/480 for thin bed stone installations where L=span length.*

### Cautions

Consult MSDS for more safety information.

- Contains portland cement and silica sand. May irritate eyes and skin. Avoid contact with eyes or prolonged contact with skin. In case of contact, flush thoroughly with water.
- Do not take internally. Silica sand may cause cancer or serious lung problems. Avoid breathing dust. Wear a respirator in dusty areas.
- Use LATAPOXY® 300 Adhesive for installing green marble, resin backed tile or stone or water sensitive natural stone and agglomerates.

- For light-colored marble and stone use 220 Marble & Granite Mortar white.
- Keep out of reach of children.

#### 4. TECHNICAL DATA

##### VOC/LEED Product Information



This product has been certified for Low Chemical Emissions (ULCOM/GG UL2818) under the UL GREENGUARD Certification Program for Chemical Emissions for Building Materials, Finishes and Furnishings (UL 2818 Standard) by UL Environment.

Total VOC Content pounds/gallon (grams/liter) of product in unused form is 0.00 lb/gal (0.00 g/l).



##### Applicable Standards

ANSI A118.4, A118.11

This product has a cradle-to-gate (with options) Product-Specific (Type III) Environmental Product Declaration. The PCR review, life cycle assessment and declaration were independently verified by UL Environment in accordance with ISO 14025, ISO 14040 and ISO 14044.

##### Performance Properties

220 Marble & Granite Mortar mixed with 3701 Mortar Admix

Test	Test Method	Specification	Results
7 day Cure Porcelain Tile Shear Strength	ANSI A118.4 5.2.2	>200 psi (1.38 MPa)	400–430 psi (2.8–3.0 MPa)
28 day Cure Porcelain Tile Shear Strength	ANSI A118.4 5.2.4	>200 psi (1.38 MPa)	500–540 psi (3.4–3.7 MPa)
Compressive Strength	ANSI A118.4 6.0	>2500 psi (17.24 MPa)	3600–4000 psi (24.8–27.6 MPa)

From Report on NAP248

220 Marble & Granite Mortar mixed with water

Test	Test Method	Specification	Results
7 Day Cure Porcelain Tile Shear Strength	ANSI 118.1.5.2.2	>150 psi (1.0 MPa)	270–290 psi (1.9–2 MPa)
7 Day Cure 7 Day Water Immersion Porcelain Tile Shear Strength	ANSI 118.1.5.2.3	>100 psi (0.69 MPa)	280–300 psi (1.9–2.1 MPa)
28 Day Cure Porcelain Tile Shear Strength	ANSI 118.1.5.2.4	>150 psi (1.0 MPa)	300–320 psi (1.9–2.2 MPa)
Compressive Strength	ANSI A118.4 6.0	>2500 psi (17.24 MPa)	1600–1700 psi (11–11.7 MPa)

##### Working Properties

220 Marble & Granite Mortar mixed with water or 3701 Mortar Admix

Open Time	30 minutes
Pot Life	3–4 hours
Time to Heavy Traffic	Minimum 24 hours
Wet Density	107 lbs/ft <sup>3</sup> (1720 kg/m <sup>3</sup> )

Specifications subject to change without notification. Results shown are typical but reflect test procedures used. Actual field performance will depend on installation methods and site conditions.

#### 5. INSTALLATION

##### Surface Preparation

All surfaces should be between 40°F (4°C) and 90°F (32°C) and structurally sound, clean and free of all dirt, oil, grease, paint, concrete sealers or curing compounds. Rough or uneven concrete surfaces should be made smooth with Latex Portland Cement Underlayment to provide a wood float (or better) finish. Dry, dusty concrete slabs or masonry should be dampened and excess water swept off. Installation may be made on a damp surface. New concrete slabs shall be damp cured and 28 days old before application. There is no minimum cure time for concrete slabs when mortar is mixed with latex additive.

All slabs must be plumb and true to within 1/4" (6 mm) in 10 ft (3 m). Expansion joints shall be provided through the tile work from all construction or expansion joints in the substrate. Follow ANSI specification A108.01-3.7 "Requirements for Movement Joints: Preparations by Other Trades" or TCNA detail EJ-171 "Movement Joints—Vertical & Horizontal". Do not cover expansion joints with mortar.

1. Installer must verify that deflection under all live, dead and impact loads of interior plywood floors does not exceed industry standards of L/360 for ceramic tile and brick or L/480 for stone installations where L=span length.

2. Minimum construction for interior plywood floors.

**SUBFLOOR:** 5/8" (16 mm) thick exterior glue plywood, either plain with all sheet edges blocked or tongue and groove, over bridged joints spaced 16" (400 mm) o.c. maximum; fasten plywood 6" (150 mm) o.c. along sheet ends and 8" (200 mm) o.c. along intermediate supports with 8d ring-shank, coated or hot dip galvanized nails (or screws); allow 1/8" (3 mm) between sheet ends and 1/4" (6 mm) between sheets edges; all sheet ends must be supported by a framing member; glue sheets to joints with construction adhesive.

**UNDERLAYMENT:** 5/8" (16 mm) thick exterior glue plywood fastened 6" (150 mm) o.c. along sheet ends and 8" (200 mm) o.c. in the panel field (both directions) with 8d ring-shank, coated or hot dip galvanized nails (or screws); allow 1/8" (3 mm) to 1/4" (6 mm) between sheets and 1/4" (6 mm) between sheet edges and any abutting surfaces; offset underlayment joints from joints in subfloor and stagger joints between sheet ends; glue underlayment to subfloor with construction adhesive. Refer to Technical Data Sheet 152 Bonding Ceramic Tile, Stone or Brick Over Wood Floors for complete details.

## Mixing

Mix one 50 lb (22.7 kg) bag of 220 Marble & Granite Mortar as follows: 5 to 5.25 qts (4.7 to 5 ℓ) of water or 3701 Mortar Admix; or 7.5 to 7.75 qts (7.1 to 7.3 ℓ) of 333 Super Flexible Additive. Place clean, potable water or a latex admix into a clean pail. Add 220 Marble & Granite Mortar powder. Mix by hand or with a slow speed mixer to a smooth, trowelable consistency. Allow mortar to slake 5–10 minutes. Adjust consistency if necessary. Remix and apply with the proper sized notched trowel.

## Application

Apply mortar to substrate with flat side of trowel, pressing firmly to work into surface. Comb on additional mortar with the notched side, use 1/2" x 1/2" (12 mm x 12 mm) or 3/4" (18 mm) half loop trowel. Spread as much mortar as can be covered with tile in 15–20 minutes. Back butter large > 8" x 8" (>200 mm x 200 mm) irregular backed tiles to provide full bedding and firm support. Place tiles into wet, sticky mortar and beat in using a beating block and rubber mallet to embed tile and to adjust level. Check mortar for complete coverage periodically removing a tile and inspecting bedding mortar transfer onto back of tile. If mortar is skimmed over (not sticky) remove and replace with fresh mortar.

## Grouting

Grout installation after a minimum of 24 hours curing time at 70°F (21°C). Grout with SPECTRALOCK® PRO Premium Grout†, SPECTRALOCK® PRO Grout†, PERMACOLOR® Grout^ mixed with water.

**Cold Weather Note:** The setting of portland cement mortars and grouts are retarded by low temperatures. Protect finished work for an extended period when installing in cold weather. For faster setting, mortar Thin-Sets with 101 Rapid Latex Admix. Do not set tile when surface temperature is below freezing or when substrate is frozen.

**Hot Weather Note:** The evaporation of moisture in portland cement mortars is accelerated by hot, dry conditions. Apply to dampened surfaces and protect freshly spread mortar and finished work when installing in hot temperatures.

## Cleaning

Clean tools and tile work with water while mortar is fresh.

## 6. AVAILABILITY AND COST

### Availability

LATICRETE® and LATAPOXY® materials are available worldwide.

### For Distributor Information, Call:

Toll Free: 1.800.243.4788  
Telephone: +1.203.393.0010

For on-line Distributor information, visit LATICRETE at [www.laticrete.com](http://www.laticrete.com).

### Cost

Contact a LATICRETE Distributor in your area.

## 7. WARRANTY

See 10. FILING SYSTEM

DS 230.13: LATICRETE Product Warranty (United States and Canada)

## 8. MAINTENANCE

LATICRETE and LATAPOXY grouts require routine cleaning with a neutral pH soap and water. All other LATICRETE and LATAPOXY

materials require no maintenance but installation performance and durability may depend on properly maintaining products supplied by other manufacturers.

## 9. TECHNICAL SERVICES

### Technical Assistance

Information is available by calling the LATICRETE Technical Service Hotline:

Toll Free: 1.800.243.4788, ext. 235  
Telephone: +1.203.393.0010, ext. 235  
Fax: +1.203.393.1948

### Technical and Safety Literature

To acquire technical and safety literature, please visit our website at [www.laticrete.com](http://www.laticrete.com).

## 10. FILING SYSTEM

Additional product information is available on our website at

[www.laticrete.com](http://www.laticrete.com). The following is a list of related documents:

DS 230.13: LATICRETE Product Warranty (United States and Canada)  
DS 231.0: 3701 Mortar Admix  
DS 236.0: 9235 Waterproofing Membrane  
DS 250.0: PERMACOLOR Grout^  
DS 264.0: 101 Rapid Latex Admix  
DS 266.0: 333 Super Flexible Additive  
DS 633.0: LATAPOXY 300 Adhesive  
DS 663.0: HYDRO BAN®  
DS 681.0: SPECTRALOCK PRO Premium Grout†  
DS 685.0: SPECTRALOCK PRO Grout†  
TDS 152: Bonding Ceramic Tile, Stone or Brick Over Wood Floors

† United States Invention Patent No.: 6881768 (and other Patents).

^ United States Invention Patent No.: 6784229 (and other Patents)