



M31 3D Printing Mortar

DS-36584-1222

**Globally Proven
Construction Solutions**

1. PRODUCT NAME

M31 3D Printing Mortar

2. MANUFACTURER

LATICRETE International, Inc.

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3. PRODUCT DESCRIPTION

Mortar for 3D printing (additive manufacturing) use via extrusion equipment applying layered application.

Advantages

- Pumpability, material when mixed is able to be pumped and extruded through 3D printing systems
- Buildability, layers are able to hold the weight of subsequent layers (layer limits may vary)
- Inter-layer adhesion, once extruded the layers will bond together to form the finished printed object

Suitable Substrates

Packaging

- 50LB (22.7KG) BAG
- 2200LB (1000KG) SACK

Limitations

- Do not install NXT Level over particleboard, chipboard, hardboard (Masonite®), Luan panels, asbestos, gypsum-based patching materials, asphalt, coal tar, or lightweight insulating concrete, or any other dimensionally unstable materials.
- NXT Level is not recommended for steel-wheeled traffic.
- For interior use only.
- Do not install when surface temperature is below 40°F (4°C) or above 90°F (32°C).
- Do not install over painted surfaces.

- Do not exceed recommended mixing ratio as indicated in mixing instructions. Over watering will weaken product properties.
- Never mix with cement or admixtures.
- Do not apply NXT Level over waterproofing or crack isolation membranes.
- Adhesives/mastics, mortars and grouts for ceramic tile, pavers, brick and stone are not replacements for waterproofing membranes. When a waterproofing membrane is required, use a LATICRETE® Waterproofing Membrane on top of the dry NXT Level.
- Not for use in submerged applications.

Cautions

- Read and understand the Product Data Sheet and Material Safety Data Sheet.
- Check www.laticrete.com for any technical bulletins or updated information about the product and its application
- Contact your local LATICRETE Technical Sales Representative with any questions.
- Consult MSDS for more safety information.
- Protect finished work from traffic until fully cured.
- 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.
- Keep out of reach of children.

4. TECHNICAL DATA

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

- Surface must be dry, level and clear of any debris
- Clean substrate to eliminate dust, dirt, oil, grease, paint or any contaminants which may inhibit bonding
- Do not use chemicals to clean substrate. Remove any loose particles by vacuuming and damp sponging

- Maintain substrate temperature between 40-100°F (4-38°C) and air temperature between 60-90°F (15-32°C) during installation.

Mixing

Mix the dry mortar with 15-17% water (weight base: est. 3.6-4.1 qt. (3.4-3.9L) per bag)

Mix thoroughly for 3-8 minutes or until the mixture is homogeneous

Open time: 15-25 minutes

Initial set (as per ASTM C266): 60-180 minutes

Application

§ Mortar application is subject to printer configurations and print design.

§ Delivery time (time from finish mixing to extruding) should not exceed the minimum suggested open time (15 minutes)

§ Print speed: min. time between layers 30 seconds; printer head speed: 2-20 cm/second (0.8-7.9 inches/second). Min. filament height is 1 cm (0.4 inch). Minimum filament ratio (filament's height/width) ¼.

§ Substrate temperature must be between 40-100°F (4-38°C) during application and air temperature maintained between 60-90°F (15-32°C).

§ Data Sheets are subject to change without notice. For latest revision, visit www.laticrete.com

§ Proper application is the responsibility of the user. Field visits by LATICRETE personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite

Cleaning

Uncured mortar is washable with water to flush out the pump/printer system. Disposal of waste water should follow applicable local regulations. Follow printer equipment instructions, typically can be flushed out with water

8. MAINTENANCE

LATICRETE® 3D Printable Mortar require no maintenance but installation performance and durability may depend on the mixing and the installation processes.

9. TECHNICAL SERVICES

Technical Assistance

Information is available by calling the LATICRETE Technical Service Hotline:

Toll Free: 1.800.243.4788, ext. 1235

Telephone: +1.203.393.0010, ext. 1235

Fax: +1.203.393.1948

Technical and Safety Literature

To acquire technical and safety literature, please visit our website at laticrete.com.

10. FILING SYSTEM

Additional product information is available on our website at laticrete.com. The following is a list of related documents:

- DS 230.13: LATICRETE® Product Warranty A component of: DS 230.05: LATICRETE 5 Year System Warranty (United States and Canada) DS 230.10: LATICRETE 10 Year System Warranty (United States and Canada)

6. AVAILABILITY AND COST

Availability

LATICRETE 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 laticrete.com

Cost

Contact a LATICRETE Distributor in your area.

LATICRETE International, Inc.

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