

BioBasedTiles (Biolith)

Installation Guide



Important- Please Read!

This is a general guide for the installation of Biolith tile utilizing thinset mortar adhere methods.

This guide should be referenced in conjunction with trade standards and local code.

Alternative methods may be considered to accommodate specific applications, site conditions, and building system requirements.

This guide shall not supersede professional recommendations from contractors or consultants in determining alternative installation methods.

For hanging facade systems, please refer to the manufacturer's installation instructions.

Biomason is not responsible for product damage due to improper installation methods.

Design Considerations

- Horizontal installations
 - Reinforced concrete slab
- Vertical installations
 - Wood stud, Metal stud, Concrete, Unit Masonry (CMU or Brick)
- Recommended substrate preparations include:
 - Clean, prepared concrete/masonry, Fortified mortar bed, Scratch coat over metal lath, Cementitious backer board (interior installations), Waterproofing and uncoupling membrane products (installed per manufacturer specification), Gypsum wall board (for dry, interior areas only)
- It is recommended to order **at least 5% overage** due to waste in the installation process.

Installation Preparation

- Store goods in a dry area protected from the elements until time of installation.
- Maintain a minimum of 4.4°C (40°F) prior to, during, and 48 hours after installation.
- Allow interior tiles to acclimate in their final environment at least 12 hours prior to installation.
- Substrates and tiles must be free of debris, sealers, oil, curing compounds, soil, mortar, dust, etc.
- Biolith is a natural material- it is subject to color and tonal variations and may require blending of tiles. It is recommended to shuffle tile from different boxes during installation to achieve a uniform effect.

Installation

- Cutting
 - Tiles should be cut using a sharp diamond blade in conjunction with water to yield clean cuts. An angle grinder fitted with an appropriate cutting blade and a dry saw fitting with appropriate cutting blade and vacuum may also be used.
 - **When wetting Biolith products there may be a slight organic smell**
 - **This smell is not hazardous and will dissipate once dried and sealed.**
 - If the smell is bothersome as mask with filter can be worn during installation
 - Product contains Crystalline Silica. Dust from cutting or sawing may create a possible cancer hazard. Dust may cause irritation of the nose, throat and respiratory tract. Avoid prolonged or repeated inhalation of dust. A properly fitted, particulate-filtering disposable NIOSH (National Institute of Occupational Safety Hazards) approved N-95 series facepiece respirator (“dust mask”), European FFP2 (EN 149) face mask, or equivalent should be used when mechanically altering this product (cutting, drilling or similar dust generating processes). Use of wet tools and methods for mechanical alteration minimizes health risks and is strongly recommended.
- Drilling
 - Carbide or diamond tipped bits designed for tile should be used to minimize damage to the finished surface. Wetting the tile while drilling is recommended. For boring large holes, a diamond tipped hole saw designed for wet use on tile should be used.
 - Do not use a hammer drill on Biolith tile. If the use of such is required to drill into the underlying structure, make a slightly larger pilot hole first in Biolith tile using one of the above recommended methods.
- Setting

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- Use a high quality, medium-bed thin set adhesive.
- A quality polymer modified thinset mortar is recommended. Validate product compatibility against the application, substrate, and environmental conditions.
- Prepare according to manufacturer recommendations. Mix in batches just large enough to use within the suggested workable time. Discard any that begins to set beyond workability.
- Make sure that adhesive is applied to the full back of each tile (100% coverage) using a large notched trowel (At least 12mm teeth).
- Spread floor and back butter the tiles which should be damp but free of surface water.
 - If rapid absorption of moisture from the mortar becomes an issue, the back of each Biolith Tile can be dampened with clean water using a brush, sponge, or mist to slow down mortar dry time. The surface may be thoroughly dampened but free of surface water.
 - When wetting Biolith products there may be a slight organic smell- this is due to the use of bacteria in the cement building process.
 - This smell is not hazardous and will dissipate once dried and sealed.
 - IF the smell is bothersome as mask with filter can be worn during installation
- Firmly press the Biolith tile into the mortar, moving it perpendicularly across the ridges to flatten and evenly compress the mortar. This helps ensure maximum mortar coverage between brick and substrate.
- 100% coverage is required.
- Once tile is in place, remove excess mortar prior to laying the next course.
- Wipe excess mortar from the surface of the tiles with a clean, damp cloth or sponge while it is still fresh, or with a stiff bristled brush as it dries.
- Continue setting tile, ensuring faces are aligned and in-plane.
- Tile spacers (soft, flexible spacer) are recommended to ensure consistent spacing.
 - Recommended grout joint width of 3-4 mm.
- Allow the installation to cure for the recommended time prior to resuming foot traffic, grouting, or removing support fixtures and spacers; typically 12-24 hours at 21°C (70°F).
- Sealing

Biomason Biolith tiles do not come factory sealed. For increased resistance to staining and discoloration, and to aid in maintaining its unique aesthetic and natural patina, it is recommended Biolith tile be treated with a quality water-based sealant. **The use of sealant is strongly recommended for Biolith tile installed in interior areas which are regularly exposed to moisture, such as shower walls and floors, and in floor applications.** Water-based, penetrating products have shown to be effective while minimizing health and environmental hazards. Please see the attached Biolith® Tile Approved Sealants document for recommended sealant options.

 - NOTE Grout and sealant products can have major aesthetic influence in the outcome of an installation. **Sample testing of sealant and grouting methods and materials is highly encouraged** to assess aesthetic acceptability. Many sealants claim to maintain the natural color and sheen of the material it is applied to, however, some may fall short of expectations.
- Ensure all joints and the finished tile surface are clean, free of excess mortar and dry.
- Seal the clean floor with the penetrating sealer.
 - Biolith tile is composed of Biocement® with characteristics similar to natural limestone. Biolith tiles do not come factory sealed. It is recommended Biolith tile be sealed with a quality impregnating sealant for increased resistance to staining and discoloration, and to aid in maintaining its unique aesthetic and natural patina.
 - It is recommended for sealant to be applied prior to grout and again once grout has cured.
- Once initial sealant application is complete and dry, grouting may begin.

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- Grouting
 - A floated grout application is acceptable,
 - Pigments in contrasting grout can stain the finished face of Biolith tile, even with sealant or grout release in place.
 - For this reason, Biomason does not recommend the use of grout with high contrast.
 - However, in the case where such high contrast grout is desired, it is recommended to work in small sections, removing excess grout from the surface using clean water and an absorptive grout sponge as soon as possible following grout manufacturer recommendations. Change the rinse water frequently to minimize redeposition of grout onto the surface of the tile and the potential for grout haze.
 - A grout bag or gun may also be used along with tooling techniques for application into larger joints. Minimizing the potential for discoloration of the Biolith tile surface.
 - Apply grout per manufacturer's specifications
 - When grouting, work in small areas, typically 1-2 sq. m. at a time and clean thoroughly before moving on to a new area. Remove any excess grout immediately. Grout that sits too long can be difficult to remove from the tile.
 - Once the grout has cured, clean any remaining grout haze with clean water or a commercially available pH neutral grout haze remover using a white nylon scrub pad.
 - After installation, clean the floor again. Any extra residue, mortar and/or grout should be removed immediately. Do not allow water or other liquids to spot or pool on the surface (i.e. Do not leave spills, drips or wet buckets, cups, footmarks, etc. on the surface at any time
 - Seal the clean floor, including grout, with the penetrating sealer.
 - Tiles and grout must be thoroughly dry prior to sealing.
 - Cover the tile immediately after completion with a protective covering to prevent staining and damage during the remainder of construction.

Ongoing Maintenance

Cement tiles are not difficult to maintain.

Once they have been sealed correctly, the surface can be cleaned with products that are suitable for use on natural stone. Household cleaners such as Simple Green or specialty products like Miracle Tile & Stone Cleaner have shown good results. Always follow the usage and dilution instructions from the manufacturer, and test new products in an inconspicuous area. Only non-acidic cleaning products should be used. **Acid will etch the tiles**, resulting in discoloration and/or pitting on the surface of the tile. Do not use vinegar, or products containing vinegar.

- Regular dusting and vacuuming for interior applications and hose washing for exterior applications is recommended. Dry sweep or vacuum prior to any wet cleaning.
- When cleaning agents are needed, select a pH-neutral detergent. Stone cleaning products intended for use on natural limestone are generally acceptable for use on Biolith tile. Test detergent in an inconspicuous area to verify compatibility and results. Avoid over-saturating with cleaning solutions; damp mopping should be sufficient for daily cleaning.
- For periodic deep cleaning, a stiff bristled brush or floor cleaning machine fitted with such may be used to scrub stubborn, embedded grime. Remove grime and excess solution with vacuum equipment or an absorbent mop.
- Rinse thoroughly with clean water. Refresh rinse water often to prevent grime and detergent residue from being redistributed. Dry the surface with vacuum equipment or an absorbent mop.
- For stubborn, isolated stains, a pH neutral stone poultice compound may be used. Commercially available poultices are formulated to be multi-purpose or stain-specific. Choose a product that is designed for the nature of the stain at hand. Always test in an inconspicuous area to verify compatibility and results.

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- In some cases, a pressure washer fitted with a fan nozzle may be used. However, Biolith tile should never be exposed to a direct attack from the nozzle. Note that an up-close jet spray from a pressure washer nozzle may erode the biocement material and natural aggregate structure of Biolith tile, as well as loosen surrounding grout. A minimum distance of three feet must be maintained between the fan nozzle and Biolith tile surface when pressure washing.
- Re-apply sealant products as needed following product manufacturer recommendations.

CAUTION DO NOT USE:

- Acid or acid based cleaners such as vinegar, citrus-based products, or muriatic acid.
- Abrasive cleaners, steel wool, or wire brushes.
- Any sharp object, such as a steel scraper, knife, or screwdriver, to remove stubborn deposits from the face of the stone.
- 0- degree pressure washer nozzle at any distance.
- Any high pressure nozzle within three feet of the Biolith tile surface.

Proper care and maintenance of your Biolith tile will extend its life and protect its characteristic aesthetic. If you have any questions, please contact your sales representative or via hello@biomason.com.