

BioBasedTiles<sup>®</sup>

# INSTALLATION AND CARE GUIDE



## General Considerations

BioBasedTiles® are suitable for interior applications where thin-set bonding mortar is acceptable.

### NOTE

This is a general guide for installing BioBasedTiles® utilizing thinset mortar-adhered methods. This guide should be referenced in conjunction with trade standards and local codes. 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.

It is recommended to order at least 5% overage due to waste in the installation process.

## Design Considerations

Control joints and provisions for drainage, moisture management, and crack isolation should be integrated into the design of the support and substrate systems before the installation of BioBasedTiles®. Expansion joints should be included in the installation of BioBasedTiles® by local code and industry standards. Biomason® is not responsible for product damage due to improper installation methods.

Recommended support systems include:

#### 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 self-furring corrosion resistant
- ◆ Cementitious backer board (interior installations)
- ◆ Waterproofing and uncoupling membrane products installed per manufacturer specification
- ◆ Gypsum wallboard (for dry, interior areas only)

For further details on backup systems and substrate preparation requirements, please refer to:

- ◆ TCNA (Tile Council of North America) installation guide for stone tile
- ◆ NCMA (National Concrete Masonry Association) installation guide for adhered manufactured stone veneer

## Installation Preparation

Store goods in a dry area protected from the elements until installation. Maintain a minimum of 40°F (4.4°C) before, during, and 48 hours after installation.

Substrate and tiles must be free of debris, sealers, oil, curing compounds, soil, mortar, dust, etc. Dry or dusty concrete and masonry surfaces must be washed and dried before applying any membrane or mortar.

Use BioBasedTiles® simultaneously from multiple skids to ensure acceptable variations in product are distributed across the installation. Once installed, any claims regarding color and size variation will not be accepted.



Store tiles on a pallet until time of installation.



# Workability

## CAUTION

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).

Using wet tools and methods for mechanical alteration minimizes health risks and is strongly recommended.

## CUTTING

A wet saw fitted with a continuous-rimmed diamond blade will yield clean cuts. The capacity to tilt the blade or cutting table will allow miter cuts for site-assembled corners, etc. An angle grinder fitted with an appropriate cutting blade and a dry saw fitted with a suitable cutting blade and vacuum may also be used.



Wet saw required for cutting BioBasedTiles®.



Angle grinder may also be used for cutting BioBasedTiles®.

## DRILLING

Carbide or diamond-tipped bits designed for tile should be used to minimize chipping of the finished surface. Wetting the tile while drilling is recommended. For boring larger holes, a diamond-tipped hole saw designed for wet use on tile should be used.

## CAUTION

Do not use a hammer drill on BioBasedTiles®. If the use of such is required to drill into the underlying structure, make a slightly larger pilot hole first in BioBasedTiles® using one of the above-recommended methods.

## Setting BioBasedTiles®

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.

Select a notched trowel sized by the mortar manufacturer's recommendation for the size of BioBasedTiles® being installed. When installing over porous concrete, masonry or bedding mortar, the substrate surface area should be lightly dampened before applying mortar.

Apply prepared thinset mortar to the substrate in a workable area of 5 - 10 square feet (0.5 to 1.0 square meters). Work the mortar into good contact with the substrate to a thickness of ½ inches (or 1.27cm) using the flat side of the trowel. Using the notched side of the trowel, screed mortar in one direction against the face of the substrate to form ridges. The mortar should not be allowed to skin before the bedding of the stone. If the mortar begins to set up before setting the tile, either re-screed with the notched side of the trowel or remove the mortar completely and re-apply.

Ensure BioBasedTiles® are damp but free of surface water. Use the "buttering floating" method on dampened BioBasedTiles® by applying adhesive to the tile and the substrate. If rapid absorption of moisture from the mortar becomes an issue, the back of each BioBasedTile® can be dampened with clean water using a brush, sponge, or mist to slow mortar dry time. The surface may be thoroughly dampened but free of surface water.



Apply mortar to substrate, screed with the notched trowel.



Back-butter the tile thoroughly.

## Setting BioBasedTiles® (cont.)

Firmly press the BioBasedTile® 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. Periodically remove and check pieces to verify full coverage is being achieved.

Once the tile is in place, remove excess mortar before laying the next course. Work carefully and meticulously to avoid the mortar dropping onto the tiles during installation. 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. Use tile spacers to ensure consistent spacing. Allow the installation to cure for the recommended time before resuming foot traffic, grouting, or removing support fixtures and spacers; typically 12-24 hours at 70°F (21°C).



Firmly press tile back buttered tile into the bed of mortar.

### *Note for vertical installations:*

Beginning at the bottom of the installation, use a permanent or temporary affixed level ledge as a base for the first course. If the installation is to meet the floor, plan the placement of the temporary support ledge accordingly to accommodate the installation of the units below once the main installation has cured or the temporary support ledge has been removed.

## Sealing + Grouting

Biomason® BioBasedTiles® 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 BioBasedTiles® be treated with a quality water-based sealant.

The use of sealant is strongly recommended for BioBasedTiles® 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 been shown to be effective while minimizing health and environmental hazards.

### NOTE

Grout and sealant products can have a significant aesthetic influence on 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.

Allow the mortar to properly cure before starting the jointing and grouting processes.



Allow installation to cure for 24 hours prior to grouting.  
Ensure exterior applications remain dry for 7 days.

**NOTE (cont.)**

Ensure all joints and the finished tile surface are free of excess mortar. A floated grout application is acceptable, however, pigments in contrasting grout can stain the finished face of BioBasedTiles®, even with sealant or grout release in place. For this reason, Biomason® does not recommend using grout with high contrast.

However, 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 the grout manufacturer's recommendations. Change the rinse water frequently to minimize the 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 BioBasedTiles® surface.

While grout/mortar remains damp, use a stiff-bristled brush with water to scrub away any embedded grout from the surface of the tiles, taking care not to disturb the freshly applied grout. Any residual 'crumbs' from the tooling of joints should be allowed to dry and be whisked off the surface with a stiff-bristled brush.



## BIOMASON® TESTING RESULTS

Water-based, penetrating products have been shown to be effective while minimizing health and environmental hazards. The results below are obtained from internal testing conducted by Biomason and are approved for use on BioBasedTiles®.

Other sealants may be used at the user's discretion.

Sealant	Carrier / Type	Suitable Applications	Color Shift (1 better - 5 worse)	Reapplication Period	Water Absorption (EN 14617-1)	VOC Content (g/L)	Number of GHS Listed Chemicals	Number of chemicals requiring PEL monitoring
<b>Fila MP90</b> <b>Eco Plus /</b> <b>Eco Extreme</b>	Water-Based	Interior Exterior	1	2 years (1 year for heavy foot traffic)	2.45%	50	1	0

### NOTE:

Biomason is not responsible for sealant selection, sealant application instructions, or sealant warranty. Please test the desired sealer before the complete application to ensure proper results. Follow all manufacturer instructions for application and re-application. These recommendations are based on Biomason's internal testing of the listed categories. This is not meant to be a fully comprehensive list of all possible sealants. Biomason makes no claim over which sealant is best for your desired application.

Drying time will vary based on the environment of the installation. Each sealant above is available in the USA and the EU.

## Post-Installation Cleaning + Sealing

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.

### CAUTION

Acidic cleaning agents must not be used under any circumstances as this will cause damage to BioBasedTiles® and void the warranty.

BioBasedTiles® are composed of Biocement® with characteristics similar to natural limestone. BioBasedTiles® do not come factory sealed. It is recommended BioBasedTiles® 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.

Sample testing of the chosen sealant is highly encouraged to assess aesthetic acceptability. It is recommended for the sealant be applied before the grout and again once the grout has cured.

## Ongoing Maintenance

Routine maintenance will be required from time to time. When cleaning BioBasedTiles®, please adhere to the following recommendations:

- ◆ Regular dusting and vacuuming for interior applications and hose washing for exterior applications are recommended. Dry sweep or vacuum before 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 BioBasedTiles®. 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 and 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 designed for the nature of the stain at hand. Always test in an inconspicuous area to verify compatibility and results.
- ◆ In some cases, a pressure washer fitted with a fan nozzle may be used. However, BioBasedTiles® 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 BioBasedTiles®, as well as loosen surrounding grout. A minimum distance of three feet must be maintained between the fan nozzle and BioBasedTiles® 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 BioBasedTiles<sup>®</sup> surface.

Proper care and maintenance of your BioBasedTiles<sup>®</sup> will extend its life and protect its characteristic aesthetic.

*We invite everyone to discover the possibilities of BioBasedTiles<sup>®</sup> and to make sustainable building the standard together.*

**StoneCycling**

Sustainable Building Materials

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