

LARGE FORMAT TILE INSTALLATION

Glazzio Tiles does not manufacture any products used for installation. As such, the following is to be used as a general guide, and while these are best practices, the instructions provided may not be applicable to your specific product and installation. Each installation may pose its own unique circumstances. It is highly recommended you consult with an installation professional to obtain appropriate methods and materials based on your actual scope of work. Always check with the adhesive, grout, and sealer manufacturers for best practices on how to use their products.

Prior to starting any type of demolition or installation, be sure to protect adjacent areas and finishes as appropriate to prevent dust, damage, and debris from unintentionally ruining any surrounding surfaces.

Follow all safety protocols as required by the manufacturer, as well as Safety Data Sheets for instructions on proper handling and disposal of chemicals, powders and other related building materials. Use of gloves, safety goggles, long sleeved clothing, knee pads, and well-ventilated spaces may be required to ensure all safety protocols are properly observed.

Immediately contact a professional if there is damage, or unexpected results as some aesthetic changes to tiles may be reversed if attended to quickly and with the proper methods.

INSTALLATION STANDARDS

Refer to ANSI A108/A118/A136, the TCNA Handbook, or the NTCA Reference Manual, as needed, for the most up to date installation methods, industry standards, troubleshooting questions, and system assembly recommendations based on your specific scope of work. Reference to ANSI A137 may be necessary for physical properties and dimensional tolerances of specific product types to ensure proper installation.

Basic Installation:

1. Prepare your substrate to ensure it is ready for tile. The surface you are installing over should be appropriate for the type of tile being used, as well as the type of end use.
 2. Dry lay the tiles by placing 4-6 tiles together in your desired pattern, in a few rows to see how they will align. Figure out the best layout prior to spreading any mortar, taking grout joint width into consideration, to avoid any awkward sized cuts, and to ensure you are able to make cuts around the perimeter and as needed around fixtures. You will need to measure out and mark your centerlines to ensure tiles align properly between columns and rows.
 3. Trowel the adhesive/mortar onto your substrate, and on the back of the tiles, per the adhesive/mortar manufacturer's guidelines. You may need to do a test area to ensure you are using the appropriate notch size by setting a tile and removing it to achieve as close to 100% coverage on the back of the tile. Ridges should always go in one direction and should never be fan shaped.
 4. Set the tiles using a back-and-forth motion to collapse the notched ridges. Do not allow the mortar to come up too high on the sides of the tile. Any mortar that comes up between the joints should be wiped or cut away prior to grouting. Be sure to work in small areas that allow you to spread mortar and make cuts without the adhesive/mortar drying out
 5. Seal the tiles as needed prior to applying grout. Be sure to wait the appropriate adhesive/mortar cure times before applying any type of sealers onto the surface of the tile as not to dislodge them.
 6. Grout the tiles using a clean rubber float. Begin by forcing the grout at a 45-degree angle to the joints and then wiping the grout away using the rubber float at 90 degrees. Follow the grout manufacturer's recommendations on when to begin wiping the grout haze away using clean water and a rag, or sponge, as cure times will vary between based on the type of grout used and the manufacturer. Repeatedly rinse the grout using clean water as needed. If any grout haze, residue, or construction adhesives are left on the surface after the grout has cured, use the appropriate cleaners to remove these materials, such as a heavy-duty grout haze remover.
 7. The tiles should be cleaned using a pH neutral cleaner. Follow the tile manufacturer's cleaning instructions to achieve optimum results on the final cleaning.
 8. After the tiles are completely clean and all of the debris has been removed from the surface, the grout can be sealed. At this stage, for any porous tiles, the final sealer coat should also be applied to the tile. If the grout used contains additives, or has inherent stain resistant characteristics, it is not necessary to seal the grout. Often times, it is ok to seal over the tiles during the grout sealing process. However, sealing over glass, resin, shell, or metal products may cause a residue to form on the surface and should be avoided.
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SUBFLOORS SUBSTRATES AND MEMBRANES

Before starting any type of flooring installation, make sure that the surface you are adhering your tiles to is clean, dry, and free of any grease or residue.

WALLS

In vertical dry applications, tiles can be installed over properly primed surfaces and gypsum panels. Wet applications require a cement board, or cement board alternative, as well as water proofing membranes, which can be fabric or liquid applied. Be sure to read manufacturer's guidelines for proper application of substrates and membranes.

FLOORS

Any loose flooring, or subflooring you are installing over should be affixed firmly, patched, or replaced as needed prior to installing a new floor over it.

Use of self-leveling compounds, cement board, plywood, and other appropriate subflooring types, may be necessary based on the condition of the subfloor.

Crack isolation and cleavage membranes should be used as needed over floors that display signs of movement, or deflection.

Waterproofing membranes and vapor barriers should be used as needed over floors that will be used as wet applications or exposed to moisture.

Regardless of how level, or sloped your floor may be, you must always try and achieve as flat a surface as possible prior to tiling. Although small adjustments can be made during the mortar application process, floors should always be prepped with the appropriate materials prior to that stage as using too thick, or thin of a mortar bed trying to make up for flooring variations can potentially compromise the installation and cure times.

Follow adhesive and mortar manufacturer's guidelines for appropriate substrates to bond tiles to.

DRY-LAY/ PRODUCT LAYOUT

Dry laying tiles is an important step prior to setting any product in mortar. Due to the inherent nature of both manmade and natural products, size and shade variations may exist between modules. It is imperative that the tiles being installed be pulled from different cartons and placed together to ensure proper alignment and color/pattern blending prior to setting them in mortar or adhesive.

Snapping chalk lines, or the use of a laser may be necessary to ensure that the centerlines between tiles remain straight throughout the installation. Subtle variations in tiles size, tile alignment, floor flatness, or actual room dimensions may cause adjacent rows to veer of course. It is important to plan tile placement prior to installation to avoid awkward sized cuts around the perimeter as well as fixtures.

MORTARS AND ADHESIVES

Follow mortar manufacturer's guidelines closely as trowel notch sizes, substrates, and cure times may vary depending on the mortar or adhesive you choose. Mortars can be purchased premixed or as powders and there are many options available depending on the tiles, substrates and final use of your project. Wet, submerged, high traffic, commercial, exterior, high heat, and other applications with special conditions, will require specific mortars or system assemblies. Contact the mortar manufacturer of your choice for additional technical details around these types of projects.

ADDITIVES

Mortars and premixed adhesives are specifically formulated based on the type of tile being installed i.e., large format tiles (LFT), porcelain & ceramic, natural stone, and glass, to ensure a proper bond. In some instances, it may be necessary to combine a latex additive, or polymer admixture, into standard cement mortars to improve their working characteristics, add strength, water resistance, shock resistance, and improve the bond to difficult surfaces.

BACK-BUTTERING

For larger format tiles, those having an edge greater than 16", back-buttering is recommended to ensure proper coverage and bond with the substrate. Back-buttering is the application of mortar in a flat, thin, even layer to the back of the tile in addition to troweling it on to the substrate.

This technique is also used to ensure that the mortar cures evenly and prevents any stress cracks from forming in the tile. Under no conditions should spot bonding be used for installation, a practice where clumps of mortar or adhesive are applied in the corners and center causing empty pockets and voids behind the tile.

SPACERS AND LEVELING CLIP SYSTEMS

Due to the inherent nature of tile manufacturing, subtle variations may exist between tiles, even if they are from the same batch of production. These variations in dimensions are identified in ANSI A137 manufacturing standards and can exist in both manmade and natural products. Grout joints serve a purpose to not only hide these variations and allow the tiles to be aligned properly, but also bond adjacent tiles to one another, help release and reduce any potential tension from movement in the system assembly and substrates, and help the assembly be more water resistant.

Butt-jointing products, the practice of entirely omitting the grout joint by pressing two tiles closely to one another, is not recommended. At minimum a 1/16" joint should be used if the tiles allow it. Proper spacing is required between modules. The minimum grout joint width is always based on the type of tile being purchased. Some tiles with a more irregular edge, size, or shape may require wider joints, while those with straight edges and tighter size tolerances allow for tighter joints. For adjacent rows to line up properly, and to maintain straight centerlines, the correct size spacers must be used throughout installation. Alternatively, for larger format tiles and gauged porcelain slabs, leveling clip systems are not only recommended to ensure proper joint widths, but also to ensure lippage can be controlled across larger areas.

SEALERS AND GROUT RELEASE

Sealers (also known as impregnators) are not only recommended for natural stones, but can also be applied to unglazed, partially glazed, and fully glazed large format porcelain and ceramic tiles. There are many different sealers available, some that enhance the color of a product, others that can leave a topical glossy or matte finish, while others penetrate the surface of the product and don't change the look or feel of it at all. It is imperative that sealing, and grout release instructions are read carefully, and all manufactures' recommendations are followed. Some products may need to be sealed twice during the installation process: once before grouting and once after grouting.

Glazed Porcelain and Ceramic- Sealing glazed products is only recommended when the surface of the tile has a matte finish. The sealer will simply aid in grout haze removal during installation and may assist in day-to-day cleaning as it will fill any micro pores in the matte surface. A grout release can also be used in place of a sealer for the purpose of preventing a grout haze from settling on the surface finish of a matte product during installation.

Unglazed and Partially Glazed Porcelain and Ceramic- A surface penetrating sealer should be applied either before, or after an unglazed or partially glazed tile has been set in mortar. Alternatively, a grout release can be used in place of a sealer prior to grouting to prevent any potential grout haze from being embedded in the surface of the product. Sealers can be applied to these types of products regularly to aid in day-to-day cleaning and prevent dirt and debris from sticking to the surface in high traffic areas.

SANDED AND NONSANDED GROUT AND ALTERNATIVES

Generally speaking, sanded grout is used in floor and wall applications that require a ¼" or larger grout joint, simply because the sand in these grouts has more stability and lends itself better to wider joint widths. Non-sanded grouts are typically used in joints narrower than 1/4".

Since the process of grouting can be relatively forceful, any products that are polished, metallic, hand painted glazes, or are more prone to scratching from abrasion, should use a non-sanded grout, or alternative. Alternative grouts include but are not limited to epoxy grout, or quartz-based grouts, and in some instances a caulking type grout can be used in the joints.

NANO SCRUB

Polished porcelains often have a nano coating on them. This factory applied wax creates the highest attainable polish on the product, and also protects it from scratching during shipping. In some cases, during the grouting process, depending on the type of grout used, how forceful the applicator is, and the method of grouting, this nano coating can be compromised and may have a cloudy look, most visible under low angles of light, after installation. To even out the surface finish, the nano coating should be

removed using a nano scrub cleaner. If the nano coating is intact, and there are no visible changes to the surface finish of the tiles, then it is not necessary to remove the factory applied nano coating.

GROUT SEALER

It is always recommended that sanded and non-sanded grout joints be sealed, after it they have cured, and when appropriate. Some grouts, especially premixed products, are specially formulated, have an additive in them already, or can have an additive mixed into them, that make them stain resistant and unnecessary to seal. Questions regarding sealers, and stain resistant properties of grout, should be directed to the grout manufacturer.

POST INSTALLATION CLEANUP

The products and methods used for post installation clean up will vary depending primarily on whether the grout haze was properly cleaned during grouting, and whether there is any debris left over on the surface from mortars, adhesives, as well as construction debris, contaminants, and residue from other trades such as paint or wall compound. Proper chemicals must be used based on the type of dirt and debris you are trying to remove. In most instances, a heavy-duty tile cleaner can be used as a universal cleaner to remove any construction adhesives and grout from the surface. Alternatively, grout haze removers specific to the type of grout used, may be necessary to remove any leftover haze or residues from the surface. Refer to cleaning and maintenance guidelines for appropriate methods and cleaners based on the type of contaminants present, and type of tile used, as not to damage the finished application. Always consult a sales or installation professional before attempting to use harsh cleaners or abrasive methods.

CAUTION: TILE CONTAINS SILICA. Silica dust is harmful if inhaled. Exposure to silica dust from cutting, grinding, or polishing product can cause acute lung injury or cancer. Wet cutting methods are recommended. Use adequate dust prevention methods, including but not limited to: masks, protective goggles, and gloves. Children should not be present during installation process.