



# Best Practices - Installation

## **PREP:**

### *Pattern Installations*

Before selecting a multi-size, multi-finish, or multi-product pattern, it is important to understand the nuances of pattern assembly and installation. Having the distribution center dry lay prior to ordering is absolutely necessary to ensure a pattern will work. Grout joint width must be taken into consideration in order for the final pattern design to align properly. Proper overages should be ordered to ensure the entire project is being ordered from appropriate size and shade calibers. When doing a checkerboard pattern, for example, with two tiles that are the same nominal size, from the same series, it may not work if the actual dimensions of the product are not the same. Each color, finish and size may be from a different production run. Selecting tiles from the same series or even the same color does not guarantee that a pattern will work correctly.

### *Dry Lay Prior to Setting in Mortar*

It is standard practice to dry lay all tiles with a pattern as well as mosaic products, especially those with an interlock prior to setting them in mortar. This is especially critical with natural stones that may display V2 Shade variation or higher. Dry laying ensures the interlock is tight, the tiles can be blended properly and the sheet placement and cuts can be planned accordingly.

### *Gauged Porcelain*

It is important to understand gauged porcelain standards for interior installations (ANSI A108.19) prior to beginning any work. Special tools and procedures must be observed to ensure a successful install. There are many things to consider from transportation of A-frames on flat-bed trucks, A-frames to move materials around the jobsite, carrying material up elevators and stair wells, suction cups and special tools for handling, additional surface prep to ensure floor flatness, appropriate tables and tools for cutting, corner protectors, additional labor and the like. Emser Tile, in partnership with its adhesive manufacturers, offers training and information on how to achieve a successful installation in this product category prior to purchasing. As of the publication of this catalog there are no industry standards for exterior use. As such, manufacturer's recommendations prevail. A mortar method can be used for horizontal exterior applications, while a mortar and mortar/fastener method should be considered for vertical exterior applications.

## **SET:**

### *Finishing High Relief Edges*

3D, textured, split-face and high relief products may be challenging to trim out when coming to a sudden stop in the middle of a wall, when tiling around an outlet, mitering a corner, or butting them up to an adjacent wall covering. Due to the nature of these products, it is best to tile from end to end both vertically and horizontally whenever possible. Where a stop is necessary, some series may come with a flat field tile that can be used to trim out the desired edges. Otherwise, it may be necessary to simply leave the edge grouted, coordinate bullnose and flat pieces from other series, or install metal profiles. In the case of natural stone split faced edges, hand chiseling may be required. Additional options should be discussed and may be available prior to material specification.

### *Knocking Down Ridges*

Before pressing glass tiles and mosaics into adhesive, it is important to knock down the ridges and smooth them out with the flat edge of your trowel, to prevent them from showing through the glass lens, or coming up through thinner mosaic products. In some cases, where back buttering tiles is necessary, it is important these ridges be knocked down as well as not to create stripes or unintentional voids. For glass lens products, any mortar or adhesive that comes up between the tiles may be visible post install.

### *Leveling Clip System*

A leveling clip system is recommended to achieve narrow grout widths and minimize lippage with planks and large format tiles (those with a single edge being >18"). The clip system will not only allow for a tighter joint, but will minimize the visibility of any inherent warping, or lippage, that may be prevalent in the finished application. Often times a clip system will allow a joint to be narrower than the manufacturer's recommendation and should be discussed with a sales associate prior to specification.

### *Large Format Shower Floor*

Field tiles larger than 6"x6", that meet appropriate DCOF values based on final use, that cannot be sloped towards a center drain on a shower floor, may be sloped to one side using a linear drain. For proper sloping, reference to ANSI installation standards is required.

### *Joint Width*

ANSI standards recommend that the actual grout joint size be at least three times the actual variation of facial dimensions of the tile supplied. Example: for tile having a total variation of 1/16" in facial dimensions, a minimum of 3/16" grout joint shall be used. Nominal centerline of all joints shall be straight with due allowances for hand molded or rustic tiles. The actual grout joint size may of necessity vary from the grout joint size specified or recommended by the manufacturer.

### *Lippage Allowance*

For grout joint widths 1/8"-1/4", a 1/32" lippage is allowed during installation. ANSI standards recommend that the total lippage be calculated by adding this allowable lippage for installation to the inherent warping of a product. Installation lippage + warping in manufacturing (within tolerance) = total allowable lippage of a finished assembly. This can be as much as the thickness of a quarter (coin), slightly over 2mm. The presence of lippage can be exaggerated by a number of factors: uneven subfloors, laying large format tiles in a 50% brick joint offset, not back buttering large format tiles, grout joint width being too narrow and natural and artificial light sources making standard variances more noticeable. Industry standards allow for a certain amount of lippage to be present based on various factors. In backsplashes the most common unavoidable issue that accentuates lippage is under-cabinet lighting, lighting from a hood range washing the tiled wall. Whenever possible all light sources should be a minimum 24" from the wall to prevent shadowing.

### *Universal Cove Installation*

Emser Tile's cove bases are designed to be universal top mount, or inline, with a 3/8" radius to comply with health codes. To use the cove as a top mount, the bottom lip should be cut at the curvature to ensure the curve feathers into the floor it is being placed on top of. This would be most commonly used over existing tile or concrete floors. To be used as an in-line cove, the lip should remain intact and be installed adjacent to the floor tile (not on top of it), so the curvature feathers into the surface of the field tile. To comply with codes, the lip should never be placed on top of an existing floor covering creating a 90 degree angle between perpendicular surfaces. The lip either must be cut off, or sunken in behind the tile/floor. To tile above a universal cove base, the bullnose edge simply needs to be cut off. Alternatively, the top bullnose edge can be left in place when the cove is used as a base trim.

### *33% Offset*

For running bond/brick joint patterns utilizing tiles (square or rectangular) where the side being offset is greater than 18" (nominal dimension), the running bond offset will be a maximum of 33% unless otherwise specified by the tile manufacturer. If an offset greater than 33% is specified, specifier and owner must approve mock up and lippage. In some cases, tiles with an edge larger than 48", by necessity, may only accept a maximum 20% offset. Should tiles in the actual shipment received be completely flat, the final offset can be determined by the specifier and owner and can be 50% only if the tiles and substrates allow it. Some patterns such as a weave, pinwheel or herringbone are considered a 50% offset.

### *Remove and Replace Modules*

When working with any mosaic sheet, especially those with a linear pattern, freeform pattern, or interlocking edge, manipulation by cutting individual modules from the mesh may be necessary to ensure that the product interlocks properly and creates a seamless look. Hand placement of individual pieces should also be considered for best results when working with certain types of freeform patterns to avoid small perimeter cuts.

### *Preventing Chatter During Glass Cuts*

To avoid chipped edges when cutting with a wet saw, position the blade 1/32" short of cutting entirely through the glass. When the cut is complete, simply snap the edge off for the cleanest cut.

### **GROUT:**

#### *Grouting High Relief Edges*

Grouting high relief products may not be necessary in a dry application when the tile is just being used as a decorative wall covering. However, when using tiles in a wet application such as a shower, exterior, or any area that will come in contact with moisture, grease, food, or other types of debris, it may be necessary to grout in between the tiles to prevent water damage, mold growth and other undesirable effects. The best way to do this is with a grout bag and/or brush, to ensure the grout is forced into the joint properly. In some cases where the joint width is very narrow, caulking may be a more suitable option instead of grout.



### *Brushing During Grouting*

For the best results during grouting, a medium bristle brush may be required to expose the edge of the pebbles or high relief modules to a desired level and expose any that may have been buried using a standard rubber float.

### *Forceful Grouting and Sanded Grout*

Forceful grouting with sanded and non-sanded grout may scratch the surface of metal, glass, resin, and polished finishes. It is important to be careful when grouting decorative mosaics, tiles with glossy glazes and unglazed polished products. A new rubber float is recommended for these types of finishes to ensure abrasives have not dried onto the float from any previous work.

### **CARE:**

#### *Removing Nano Coatings*

Nano coatings are buffed into the surface of polished products to increase luster and protect the tiles during shipping, handling and installation. This finish should not be removed unless it has been compromised during installation. A nano cleaning agent is necessary to evenly remove the coating. Other types of chemicals and detergents may not work if they are not specifically designed to be a nano scrub. A sealer should be applied to the surface after the nano coating is properly removed to aid in day to day cleaning.

#### *Grout Release and Sealing Porcelain, Ceramic, Glass and Metal*

When installing matte glazed, unglazed, metallic, textured, crackled, or high DCOF products (>0.50 DCOF wet), the use of a grout release is recommended prior to grouting. This includes frosted and matte finished glass tiles as well. Grout particles may become trapped in the surface pores on a microscopic level, or in the textured grooves of a product and inadvertently create a grout haze. Sometimes this haze can be invisible until it is exposed to dirt. Although glazed and high-density products are generally considered impervious, sealing these types of products after install will aid in day to day cleaning and help eliminate the appearance of fingerprints and other marks only seen under certain angles of light. Using inappropriate sealers and/or not following the sealing manufacturer's instructions may result in undesirable effects on the tile such as yellowing or creating a gummy film. All guidelines must be followed prior to application.

### **OTHER:**

#### *Wall Wash Lighting*

If wall wash lighting that is installed under cabinets, or on a range hood, is positioned closer than the recommended 24" from a wall, specifier and owner must approve a mock-up as well as any lippage effects. The nature of wall wash lighting that is installed too close to a wall surface is such that it may create undesirable and exaggerated shadowing on the tiled surface, making the appearance of tile that is otherwise produced and installed according to industry standards unattractive.

#### *Shadow Effect in Glass Tile*

When using back painted glass tile and mosaic products, a shadowing effect may be inherent in the finished application, at the grout joints, when viewed at certain angles. This effect is due to a number of factors including mortar ridges showing through, inherent presence of glue on the edges of any mosaic modules, or grout not being forced into the joint properly. It is most noticeable when the mortar is a contrasting color to the grout as well as when light colored grouts are used. In order to blend the appearance of shadows between adjacent tile modules, it is best to tint the mortar to match the grout color, make sure edges of tiles are clean, knock down any trowel ridges, ensure the mortar is not coming up between the tiles and ensure grout joints are properly filled.

#### *Mounting Shower Doors/Hardware to Glass Tiles*

Glass tiles breaking after being drilled for fixtures is a very common issue, even when the installer does everything correctly, due to a number of factors such as: tension in the glass from drilling, over-tightening screws, not using rubber washers etc. Glass tiles are generally not recommended behind any type of grab bars, shower doors or any fixtures that need to be drilled into. Where tile is used in this type of application cracks may not be evident immediately during, or after install and may appear at a later time. If a glass tile is used in this type of application, rubber washers, soft joints, drilling into the joint, hand tightening screws, and water jetting holes whenever possible are recommended for optimal results.

#### *General Installation Liability*

Emser Tile will not be responsible for any materials damaged due to improper installation, installation defects or errors, misuse including negligence, and physical or chemical abuse to the surface of the tile. It is imperative that industry standards and guidelines for installations are followed. Refer to the TCNA Handbook, NTCA Handbook, ANSI, NSI and any other reputable industry sources for guidelines on proper installation as needed.

