



# Installation of Glass Mosaic Tiles

## TDS 145

For thin-bed ceramic tile installations when a cementitious bonding material will be used, including large and heavy tile mortar: maximum allowable variation in the tile substrate – for tiles with edges shorter than 15” (375mm), maximum allowable variation is 1/4” in 10’ (6mm in 3m) from the required plane, with no more than 1/16” variation in 12” (1.5mm variation in 300mm) when measured from the high points in the surface. For tiles with at least one edge 15” (375mm) in length, maximum allowable variation is 1/8” in 10’ (3mm in 3m) from the required plane, with no more than 1/16” variation in 24” (1.5mm variation in 600mm) when measured from the high points in the surface. For modular substrate units, such as cement backer board panels or adjacent concrete masonry units, adjacent edges cannot exceed 1/32” (0.8mm) difference in height. Should the architect/designer require a more stringent finish tolerance (e.g. 1/8” in 10’ [3mm in 3m]), the subsurface specification must reflect that tolerance, or the tile specification must include a specific and separate requirement to bring the subsurface tolerance into compliance with the desired tolerance. All surfaces to receive a glass mosaic tile installation should also meet minimum deflection standards of L/360 of the span under all concentrated or distributed live and dead loads. It is the responsibility of the specifier and installer to verify the suitability for the setting materials, methods and cure times with both the glass mosaic tile manufacturer and LATICRETE International, Inc.

LATICRETE International, Inc. strongly recommends the use of installers who have demonstrated their commitment to their craft and taken the time to stay current with the latest materials and methods. Requiring references and a portfolio along with a bid or estimate is a good way to ensure the installer has successfully completed work of similar size, scope, and complexity.

### **PREPARATION OF UNEVEN VERTICAL OR HORIZONTAL SURFACES**

If the substrate to receive the glass mosaic installation is uneven then it will be necessary to level the surface with 3701 Fortified Mortar, Lite Mortar, Lite Mortar R, or, 226 Thick Bed Mortar gauged with 3701 Mortar Admix. The leveling mortar is applied to the clean, damp substrate using a flat trowel to level the surface to tolerances as stated above. LATICRETE® Leveling Mortars can be applied from a feather-edge to 1/2” (12mm) thick in a single application (for walls). For vertical installations requiring leveling of more than 1/2” (12mm) then “scratch” the surface of the wet initial coat and allow the mortar to harden. The leveling coat can be directly applied to the hardened scratch coat.

**Follow glass tile manufacturer’s specific installation requirements for minimum cure time of skim coat, leveling mortars or self-leveling underlayments.**

Use only enough mortar to fill in the low areas of the surface and to make the entire surface level, plumb and smooth. **Allow leveling coat to cure for 24 – 72 hours at 70°F (21°C).**

Wet area installations can be waterproofed with HYDRO BAN® Cementitious Waterproofing, HYDRO BAN XP, HYDRO BAN or 9235 Waterproofing Membrane.

**NOTE: Some glass tile manufacturers prohibit the use of certain types of waterproofing or crack isolation membranes under their tile. Follow glass tile manufacturer’s specific installation requirements for use of waterproofing membranes, anti-fracture membranes and vapor barrier placement.**

### **INSTALLATION OF PAPER-FACE MOUNTED GLASS MOSAICS (per ANSI A108.15):**

Make sure that the substrate is clean, structurally sound, and free of any dirt, oil, grease, paint, sealers, form release agents, or curing compounds. Clean the surface with a damp sponge just before installation of the tile.

This installation requires that the same mortar mix used to set the glass mosaics is also used to grout the tile. This is commonly referred to as the One-Step Method. For the one-step installation of paper-face mounted glass mosaic tile, a separate adhesive and mix are required. To install paper-face mounted glass mosaic tile, use GLASS TILE ADHESIVE LITE, 254 Platinum (White), or 257 TITANIUM™ (White). To grout each sheet of paper-face mounted glass mosaic tile, use PERMACOLOR Select or PERMACOLOR Grout. If the project requires that the setting material be the same color as

the grout, use PERMACOLOR Select Color Kits mixed with GLASS TILE ADHESIVE LITE, 254 Platinum (White) or 257 TITANIUM™ (White), by following the mixing instructions on each thin-set's data sheet.

Place each sheet of glass mosaics face down and work a small amount of the grout into the back of each sheet with a rubber grout float or the flat side of a trowel. Remove excess mortar from the back of the mosaic sheets with the straight edge of the trowel or float. This should fill the joints but leave little or no grout on the back surface of the sheet.

Key the adhesive mortar into the substrate using the flat side of a trowel to initiate a bond coat. Using the appropriate sized V-notch or small square notch trowel (e.g. 3/16" [4mm] square notch), add more adhesive mortar and notch it in a horizontal, straight pattern. The freshly prepared sheet of glass mosaics is placed onto the fresh combed mortar on the floor or wall. After each sheet is placed, a flat wood block or rubber grout float is used to beat the face of the tiles and firmly embed the tiles into the mortar. A minimum of 95% coverage of mortar to tile should be achieved after the beat in. Check to make sure that a flat, uniform surface is attained.

Note: DO NOT APPLY EXCESSIVE MORTAR ON THE SURFACE TO BE COVERED WITH MOSAICS. Too much mortar can squeeze up through the joints and produce an uneven finished surface. Excessive thickness of mortar can also slow the hardening of the mortar which means that the mortar will remain soft for an extended period and delay the removal of the paper mounting.

**Transparent and translucent glass tiles can show shadowing (ghosting) if the glass tile manufacturer's installation instructions are not followed. Please be aware of visual and technical limitations with transparent and translucent glass tiles. A mock-up is strongly suggested to verify final appearance and acceptance.**

Apply the remaining sheets and make sure that the vertical and horizontal grout joints line up and a consistent pattern is maintained. The glass mosaic paper face mounting should be removed as soon as the tiles have set firm, but the "grout" is still pliable enough to make adjustments and repair pinholes or voids in the grout. Use a sponge dampened with clean water to moisten the paper sheets covering the mosaics. Two or more applications of water may be needed to safely remove the paper facing from the tile. When the paper is properly saturated, peel the paper from the face of the tile being careful not to pull tile away from the mortar. Inspect the grout joints for pinholes and voids and fix as necessary. Within one hour of initial set, clean any residual glue and paper from the surface using a light, damp sponge and buff with a dry cloth. Follow with an application of the same mortar used to set the glass mosaics and grout the areas between each sheet as necessary.

#### **INSTALLATION OF PAPER-FACE MOUNTED, BACK-MOUNTED, EDGE-MOUNTED, CLEAR FILM FACEMOUNTED GLASS MOSAICS, OR RESIN-BACKED/REAR COATED GLASS MOSAICS (per ANSI A108.16):**

FOR SWIMMING POOL INSTALLATIONS OF BACK-MOUNTED (DOT OR MESH) AND EDGE MOUNTED GLASS MOSAIC TILE IT IS NECESSARY TO CHECK WITH THE MANUFACTURER OF THE TILE TO DETERMINE SUITABILITY AND TO SELECT THE ADHESIVE MORTAR TYPE.

Although ANSI standards allow for the installation of back-mounted mosaics with latex thin-set mortars, the unstable nature of these backings may not be entirely suitable for the long-term performance of this type of tile installation when installed with latex thin-set mortar. LATAPOXY® 300 Adhesive or LATAPOXY BIOGREEN™ 300 Adhesive can be used to install most rear mesh mounted, dot-mounted or resin backed mosaic tile; however, consult with the glass tile manufacturer for their specific installation instructions. For installation of resin-backed glass mosaic tile, please refer to TDS 150 "Installation of Resin-Backed Tile and Stone" or TDS 190 "Installation of Large Format Glass Tile".

Make sure that the substrate is clean, structurally sound, and free of any dirt, oil, grease, paint, sealers, form release agents, or curing compounds. Clean the surface with a damp sponge just before installation of the glass mosaic tile.

This installation requires that the glass mosaic tile be installed and grouted in separate procedures. This is commonly called the Two-Step Method.

Check with the glass tile manufacturer to determine the type of adhesive recommended for installation of their product. Use GLASS TILE ADHESIVE LITE, 254 Platinum (white), 254 Platinum Rapid (white), 257 TITANIUM, or LATAPOXY 300 Adhesive, or LATAPOXY BIOGREEN 300 Adhesive the setting mortar. Key the mortar into the substrate using the flat side of a trowel to initiate a bond coat. Using the appropriate sized small square notch trowel, add more adhesive and notch

the mortar in a horizontal, straight pattern. Using the flat side of the trowel, flatten the notches to attain a smooth, consistent setting bed.

Place the glass mosaic sheets onto the fresh mortar and bring all surfaces to a true plane at the proper position. Use a flat wood block or rubber grout float to beat the face of the tiles and firmly embed the tiles into the mortar. A minimum of 95% coverage, of mortar to tile, should be achieved after the beat in.

Apply the remaining sheets and make sure that the vertical and horizontal grout joints line up and a consistent pattern is maintained.

For paper face mounted glass mosaic tiles, the paper should be removed as soon as the tiles have set firm, but the adhesive mortar is still pliable enough to make adjustments and repair pinholes or voids in the joint(s). Use a sponge dampened with clean water to moisten the paper sheets covering the mosaics. Two or more applications of water may be needed to safely remove the paper facing from the tile. When the paper is properly saturated, peel the paper from the face of the tile being careful not to pull tile away from the mortar. Inspect the grout joints for pinholes and voids and fix as necessary. Within one hour of initial set, clean any residual glue and paper from the surface using a light, damp sponge and buff with a dry cloth. Follow with an application of the same mortar used to set the glass mosaics and grout the areas between each sheet as necessary. **Transparent and translucent glass tiles can show shadowing (ghosting) if the glass tile manufacturer's installation instructions are not followed.**

Note: DO NOT APPLY EXCESSIVE MORTAR ON THE SURFACE TO BE COVERED WITH MOSAICS. Too much mortar will squeeze up through the joints and produce an uneven finished surface. Excessive thickness of mortar can also slow the hardening of the mortar which means that the mortar will remain soft for an extended period and delay the removal of the paper mounting.

For back-mounted and clear film face-mounted glass mosaic tile, allow the setting material to harden for 24 hours minimum (vertical installation) and 48 hours minimum (horizontal installation) prior to cleaning tile face and then grouting. Use warm water and a white scrub pad (or stiff nylon brush) to remove any residual setting material, glue or paper from the tile's face prior to grouting. Allow the installation to air dry before grouting.

Grout using PERMACOLOR® Select<sup>^</sup>; PERMACOLOR Grout; SPECTRALOCK 1, PERMACOLOR Select NS; SPECTRALOCK® PRO Premium Grout\*; SPECTRALOCK PRO Premium Translucent Grout; or, SPECTRALOCK PRO Grout as specified. It is recommended that a test area be performed to determine suitability of grout with glass tile. Sand may scratch the surface of the tile.

**NOTE: Some glass tile manufacturers will allow the use of an epoxy grout. If instances where epoxy grouts are acceptable use SPECTRALOCK PRO Premium Grout, SPECTRALOCK PRO Premium Translucent Grout, or SPECTRALOCK PRO Grout.**

Notes: Exterior installations in hot and dry conditions can cause a rapid drying of the setting mortar. To obtain longer working time it may be necessary to dampen the substrate with a damp sponge immediately before the mortar is applied. Cold weather installations can slow the curing of the setting mortar. A longer waiting time may be required for the mortar to cure before the face-mounting (if present) can be removed or the installation can be grouted.

### **Expansion Joints:**

**Expansion joints must be installed in accord with Tile Council of North America (TCNA) detail EJ171. The expansion joints need to be brought through to the tile surface and treated with a flexible sealant. Use LATASIL™ to treat the joints. Expansion joint requirements will vary due to application types and locations. An architect and engineer should be consulted when specifying expansion joint placement, construction and materials.**

### **Cleaning and Maintenance:**

Check with the glass tile manufacturer for their recommendations on routine cleaning and maintenance requirements.

\* United States Patent No.: 6,881,768 (and other Patents)

<sup>^</sup> United States Patent No.: 6,784,229 (and other Patents)

Technical Data Sheets are subject to change without notice. For latest revision, check our website at [www.laticrete.com](http://www.laticrete.com)

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