

## Tile & Stone Installation Systems

# *Ultrabond ECO*<sup>®</sup> *GPT* adhesive for gauged porcelain tile on walls

### The challenges of installing GPT

Along with being lightweight, gauged porcelain tiles (GPT) and gauged porcelain tile panels/slabs are produced using less raw materials and less energy in manufacturing. This combination of qualities makes them a perfect choice for many “sustainable” installation projects specifying interior walls, countertops and soffits.

The ANSI A137.3 standard specification (“Gauged Porcelain Tile and Gauged Porcelain Tile Panels/Slabs”) lists a thickness range from 3 to 6.5 mm. Traditional dust-pressed tile porcelain tiles are greater than 7 mm thick.

Installation of gauged porcelain tile panels/slabs is different from that of standard-body porcelain tile, requiring special techniques during and after installation. In addition to the reduced tile thickness, many of these GPT tiles are produced in large-format sizes ranging from 20" x 20" to 63" x 126" (51 x 51 cm to 160 x 320 cm) or larger, which may require special tools and equipment when handling, placing and adjusting the tiles.

Before tile selection and installation, consult the GPT manufacturer to determine the tile's suitability in accordance with all federal, state/provincial and local municipal codes for interior wall and ceiling applications. Also refer to the most current installation methods of the Tile Council of North America (TCNA) or the Terrazzo Tile & Marble Association of Canada (TTMAC) for interior and exterior walls and ceilings.

### Development of *Ultrabond ECO GPT*

To provide a contractor-friendly solution for wall applications of gauged porcelain tile panels/slabs, MAPEI has developed *Ultrabond ECO GPT*, a hybrid-polymer-based adhesive for gauged porcelain tile.

There are currently no installation standards for installing GPT with a hybrid-polymer moisture-cured adhesive. Using adhesive instead of thin-set mortar is quite different, so read the installation instructions for *Ultrabond ECO GPT* adhesive on its packaging and Technical Data Sheet (TDS). One standard that will address interior use of GPT, the tools, handling, and installation is ANSI A108.19-2017 standard (“Interior Installation of Gauged Porcelain Tiles and Gauged

Porcelain Tile Panels/Slabs by the Thin-Bed Method Bonded with Modified Dry-Set Cement Mortar or Improved Modified Dry-Set Cement Mortar.”)

### Substrate preparation

It is critical that the wall meet or exceed industry requirements for substrate tolerance before installation of GPT. All approved and properly prepared substrates should have no more substrate tolerance variation of 1/8" in 10 feet (3 mm in 3.05 m) from the required plane, nor more than 1/16" in 24" (2 mm in 60 cm) when measured from high points in the surface with a straight edge. To level or plumb walls, consider MAPEI's *Planitop*<sup>®</sup> *330 Fast*, a quick-setting, polymer-modified, fiber-reinforced cementitious rendering, patching and leveling mortar for walls.

Interior walls as well as ceilings and soffits must be structurally stable and capable of supporting the tile, setting system, and associated live loads and dead loads. Vertical and overhead substrates in addition to existing tile should be fully cured and free of soap scum, dust, dirt, oil, wax, sealers, paint, coatings, and any other substances that could reduce or inhibit proper adhesion performance. For specific requirements, refer to MAPEI's “Surface preparation requirements” reference guide for Tile & Stone Installation Systems.

### Suitable substrates

Interior walls, ceilings and soffits with the following criteria are considered suitable substrates:

- Concrete (cured at least 28 days and porous)
- Masonry cement block, brick, cement mortar beds, render coats and leveling coats
- Cement backer units (CBU) – see manufacturer's installation guidelines
- Gypsum wallboard and plaster – interior walls in dry areas only (priming or sealing may be required). See MAPEI's “Surface preparation requirements” reference guide for Tile & Stone Installation Systems.
- Existing ceramic and porcelain tile (interior in wet/dry conditions)
- Steel, epoxy and fiberglass
- MAPEI waterproofing/crack-isolation membranes

Interior existing tile should be sound, stable, well-bonded and prepared using either of the following options:

- Option 1: Refer to the most current TCNA handbook, Method TR713; or the TTMAC Tile Installation Manual, Detail 323RW.
- Option 2: Prime the existing tile over concrete with MAPEI's *ECO Prim Grip*, referring to the most current TDS at [www.mapei.com](http://www.mapei.com). *ECO Prim Grip* per TCNA Environmental Classifications is limited to RES 3 or COM 3.

### Trowel selection

Use a trowel with a configuration that helps to maximize adhesive coverage between the substrate and the gauged porcelain tile panels/slabs. Evenly spread the adhesive across the bonding side (backside) of the tile. It is up to the installer to select the most suitable trowel or trowels. For coverage results using different trowels, consult the TDS for *Ultrabond ECO GPT* at [www.mapei.com](http://www.mapei.com).

### GPT installation

1. For a controlled moisture-cure process before installing porcelain tile, dampen the substrate with water using a damp sponge or mist lightly with a sprayer, avoiding excessive pooling, saturation or dripping water.
2. Choose a notched trowel with enough depth to achieve more than 80% mortar contact to both the tile and substrate for all interior applications. (Refer to ANSI A108.5 specifications and TCNA handbook guidelines.)
2. *Ultrabond ECO GPT* adhesive is ready to use, with no mixing necessary.
3. On the back of the tile, use a damp sponge to remove any dust and moisten the surface for a more consistent curing rate.
3. With pressure, apply a coat of *Ultrabond ECO GPT* by using the trowel's flat side to key the mortar onto the back side of the tiles.
4. Apply additional *Ultrabond ECO GPT* to the back sides of the tiles with the recommended trowel, combing it in a single direction parallel to the tiles' shortest dimension, with the notched side.
5. On the substrate, use a damp sponge to remove any dust and moisten the surface with water or a light mist using a sprayer to achieve a more consistent curing rate.

Note: When tile is placed, care must be taken to ensure maximum coverage, avoiding air pockets and voids under the tile.

6. Open time can vary with jobsite conditions, check adhesive transfer with a light touch; if the product skins over, remove it and apply fresh adhesive. Open time will vary depending upon temperature and humidity.
7. Carefully place the tiles firmly onto the damp substrate, using proper equipment and techniques as specified by GPT manufacturers, as close to the final desired position as practical. Push the tiles back and forth in a direction perpendicular to trowel lines, to collapse the adhesive ridges, force out trapped air and help achieve maximum coverage before beating in the tiles.

8. After establishing the desired tile position, use a beat-in paddle or rubber float to firmly set the GPT in place. Begin by beating in down the centerline of the panel; do not beat in the edges at this time. Detach any equipment from the panel and place lippage control straps along the edges where adjacent thin porcelain tile will be placed, staying 2" to 3" (5 to 7.5 cm) away from the corners.
9. After placement of the lippage control straps, use a beat-in paddle from the centerline of the panel outward to the edges, removing any trapped air and maximizing coverage and transfer. The use of an orbital sander to vibrate the porcelain panel is not necessary.
10. After adjacent tile are placed and grout spacing is set, assemble caps on the lippage control devices and tighten them down.
11. Using a rubber grout float or weighted coated beat-in paddle, tamp the centerline of the GPT along its entire length before removing the suction cupped frame. This provides initial adhesion of the gauged porcelain tile or gauged porcelain tile panel/slab to the wall.
12. Work the edges of the tile panels with the beat-in paddle or rubber grout float between the lippage control devices as necessary to eliminate lippage.
13. Remove excess adhesive from the joint areas so that at least 2/3 of the tile depth is available for grouting. Plastic tools are preferred to avoid the chance of chipping the face of the thin tile (see ANSI A108.10 guidelines). Wipe any adhesive from the face of the tile with a dry cloth.
14. Allow the adhesive to cure 8 to 12 hours before removing the lippage control devices.
15. Allow tiles to reach a firm set, typically within 24 hours. Then grout with an appropriate grout.

### Movement joints

Provide for expansion and control joints as specified per TCNA Method EJ171 or TTMAC Specification Guide 09 30 00, Detail 301MJ. Do not cover expansion joints with adhesive.

### Edge-tuning devices

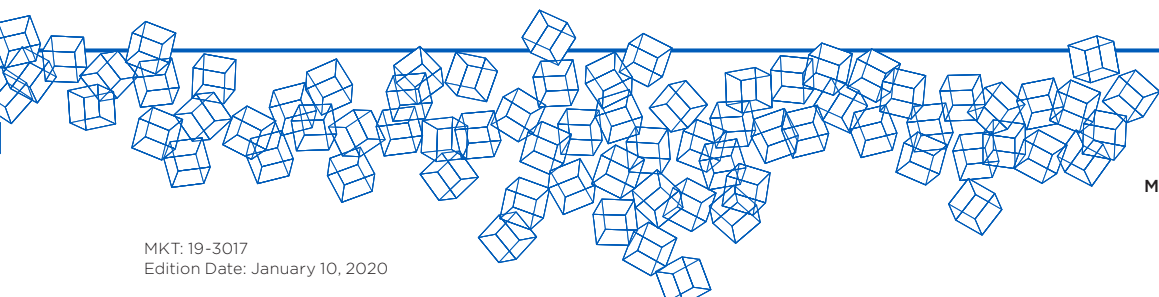
Edge-leveling devices – such as the Tuscan, MLT or Raimondi lippage control system – will greatly assist in GPT installation to reduce the effects of lippage and the subsequent “wall-washing effect.”

### Cleanup

- *Ultrabond ECO GPT* develops exceptional bond strength. It is formulated to be relatively easy to remove from the porcelain tile even after curing. Following best practices, wipe the adhesive when wet with a dry, non-abrasive towel as you work, not allowing the product to cure.
- After it cures, adhesive may be removed with a plastic scraper and a dry, non-abrasive towel, taking care not to damage the finish. Immediately clean all tools and equipment before the material cures.

- If the material cures on trowels or tools, it will be able to be peeled off by scraping the next day.
- *Ultrabond® Urethane Cleaner* may also be used for cleanup while the adhesive is still fresh/wet.

For the most current product information, visit [www.mapei.com](http://www.mapei.com) or contact MAPEI's Technical Services Department.



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