



# Installation of Large and Heavy Porcelain Pavers

## DATE

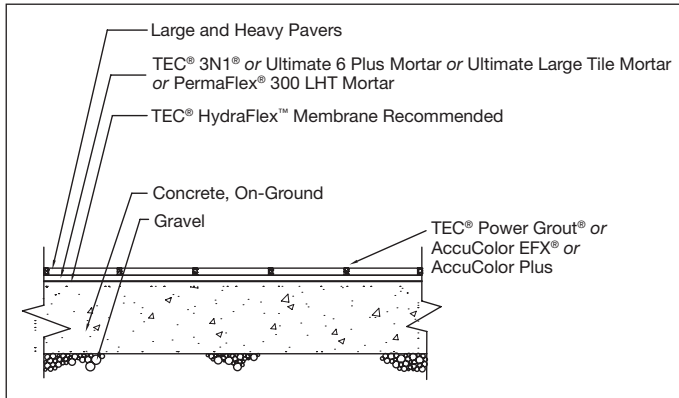
September 2020

## RECOMMENDATION

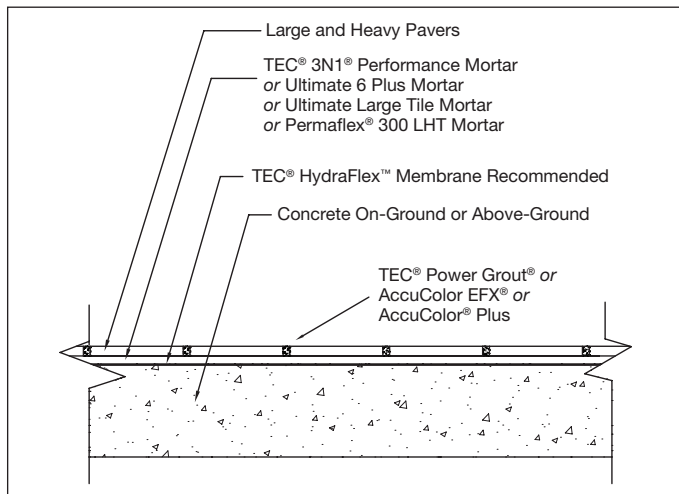
H.B. Fuller Construction Products Inc. recommends the use of TEC® 3N1® Performance Mortar, Ultimate 6 Plus Mortar, Ultimate Large Tile Mortar, or PermaFlex® 300 LHT Mortar for the installation of large and heavy pavers. Suitable substrates are concrete and mortar bed screeds for interior and exterior environments as detailed in the respective TCNA methods.

## Details

Exterior Floors over On-Ground Concrete (TCNA F102)



Interior Floors over On-Ground or Above Ground Concrete (TCNA F113)



## System Warranty

TEC® warrants the system to maintain the bond between the large and heavy porcelain pavers for interior and exterior floors over approved substrates under normal use provided that the products was properly applied as a system within its applicable shelf life and in accordance with TEC®/HB Fuller Construction Products' written guidelines, Product Data Sheets found at [tecspecialty.com](http://tecspecialty.com) in effect on the date of its application and consistent with all applicable building codes and industry standards and guidelines, including the TCNA Handbook when applicable, and procedures for professional application to the extent they are consistent with HBF-CP's written guidelines.

Application	Lifetime System <sup>1</sup>	15 Year System <sup>1</sup>	5 Year System <sup>1</sup>
TEC® Mortar	3N1® Performance Mortar <i>or</i> Fast Set 3N1® Performance Mortar <i>or</i> Ultimate 6 Plus Mortar	Ultimate Large Tile Mortar	PermaFlex® 300 LHT Mortar
TEC® Grout	Power Grout® Ultimate Performance Grout <i>or</i> AccuColor EFX® Epoxy Special Effects Grout	Power Grout® Ultimate Performance Grout <i>or</i> AccuColor EFX® Epoxy Special Effects Grout	AccuColor® Plus Grout
TEC® Caulk	AccuColor 100® 100% Silicone Sealant	AccuColor 100® 100% Silicone Sealant	AccuColor 100® 100% Silicone Sealant

<sup>1</sup>System = Mortar + Grout + Caulk.

Limited Warranty period is effective from the date of the installation.

## Surface Prep

All substrates must be dry, structurally sound with maximum deflection per industry standards of  $\frac{1}{360}$  for ceramic and porcelain tile installations and  $\frac{1}{720}$  for natural stone installations; and free from oil, grease, dust, paint, sealers or concrete curing compounds. All contaminants must be removed prior to installation of tile. Surface protrusions shall be removed by sanding, scraping or scarifying. After preparation, remove all dust by vacuuming.

Notes: Vinyl asbestos tile or any substrate containing asbestos must not be sanded, scored or scarified because of the potential health hazard of breathing dust. Any substrate containing asbestos must be handled in accordance with existing EPA regulations. Contact your local EPA office.

Expansion joints must be provided in the tile work over all construction, control and expansion joints in the backing and where backing materials change. Follow ANSI A108.01 Section 3.7 Requirements for Expansion Joints and TCNA EJ171. Maximum variations in all substrates must not exceed  $\frac{1}{4}$ " in 10 ft. (6 mm in 3 m) and  $\frac{1}{16}$ " in 1 ft. (1.6 mm in 0.3 m) from the required plane for tile less than 15" (381 mm) on all sides. Maximum variations in all substrates must not exceed  $\frac{1}{8}$ " in 10 ft. (3 mm in 3 m) and  $\frac{1}{16}$ " in 2 ft. (1.6 mm in 0.6 m) from the required plane for tile 15" (381 mm) or greater on any one side.

## Application TEC® Hydraflex™

### Full Coverage Treatment of Non-Structural Crack and Joints

Cracks or Control Joints [typically  $\frac{1}{4}$ " (6 mm) or smaller]: Ensure crack or joint is clean and free of all debris. Then fill the crack or joint with membrane. Install the membrane over the entire surface ensuring a continuous 50 mil wet film thickness. Generic movement joints in the tile should be placed as shown in TCNA EJ171F Movement Joint Guidelines. Place at a frequency of 20' to 25' in each direction for interior installations and 8' to 12' for exterior installations or interior installations with direct sunlight or moisture exposure. Perimeter joints should be placed as shown in EJ171. When HydraFlex™ is applied over the entire substrate, it is not necessary to locate tile or stone field movement joints directly over control joints or cracks as shown in EJ171B.

### Partial Coverage - Treatment of Non-Structural Cracks and Joints

To properly treat the cracks, first fill all with the crack isolation membrane material. Then apply the membrane to the concrete surface at least 12 inches or one and one half tiles wide (whichever is greater) on both sides of the crack. This method will allow substrate movement to be distributed throughout the flexible membrane and not transferred to the tile. An appropriate elastomeric joint material (sealant) is required in lieu of grout in the joints closest to the crack. After a complete cure of HydraFlex™ (typically 2-3 hours), install tile with a suitable TEC® latex modified mortar.

### Treatment of Structural Crack Defects or Expansion Joints

Cracks with possible movement in excess of  $\frac{1}{4}$ " or any amount of out of plane (vertical) movement should be communicated to the architect or structural engineer for evaluation and directions. Expansion joints are designed separations

between adjoining parts of a slab to allow movement where expansion and contraction is likely. Expansion Joints need to be respected and brought up through the tile with an appropriate elastomeric joint material (sealant). As a result, tile or stone should NOT be applied directly over expansion joints.

## Application – Mortars

For best results, maintain all tiling materials, substrates, room and adhesives at 50°-70°F (10-21°C) for 24 hours before and 48 hours after installation. Exterior areas should be conditioned as needed.

Apply mortar using flat side of trowel to promote better substrate contact, then comb in one direction with the notched side of the trowel. Spread only an area that can be tiled while surface is still tacky (typically 20-30 minutes). Press tiles into setting bed, then push in a direction perpendicular to the notched trowel ridges to achieve full coverage. Apply mortar in a heavy enough layer so that complete contact (no voids) between mortar and tile is accomplished when tile is positioned. Irregularities in substrate may require "back-buttering" of large tiles to achieve complete coverage and firm support. Periodically remove and check a tile to assure proper coverage. Keep a minimum of  $\frac{2}{3}$  of the joint depth between tiles for grouting. Open time and tile hand adjustability may vary with job site conditions. Stir occasionally during use to maintain the smooth, creamy consistency of the product. Do not add additional water.

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