

Oxido & Piel

Substrate and Trowel Recommendations

The following recommendations refer to the Tile Council of North America's "2007 TCA Handbook for Ceramic Tile Installation" and are general in nature. When selecting a TCA handbook installation method, factors such as: sub-structure, sub-floor condition, location, specified setting material and intended use will determine the appropriate method.

NOTES: *Mortar beds must be well cured. Concrete slabs must be cured a minimum of 28 days. Floor systems shall be constructed in accordance with IRC (residential), IBC (commercial) or applicable building codes. The weight of the tile, setting material and substrate shall be included in the load consideration.*

Floors - Acceptable Substrates (see Ff floor flatness below)

- **Slab on grade concrete (Ff 25 or greater)**---Thin-set TCA F113-07, TCA F102-07 or Epoxy TCA F116-07
- **Slab on grade concrete (Ff 24 or lower)**---Cement mortar TCA F112-07, TCA F111-07 or self-leveling underlayment TCA F205-07
- **Elevated slabs or concrete slabs subject to deflection**—Cement mortar bed TCA F111-07
- **Wood sub-floors**---Cement mortar bed TCA F145-07, TCA F141-07 or Cementitious Backer Unit per TCA F144-07

Floors – Trowel Recommendations

The recommended notch trowel greatly depends upon the flatness of the substrate, tile size, specified grout joint size and the specified setting material. A qualified tile installer should determine the correct notch trowel for your installation.

NOTE: *Due to the inherent warpage in large format tiles, and to reduce lippage, floors designed with a running bond (brick) pattern should be offset no more than 30% of the tiles length.*

The F-Number System is the American Concrete Institute standard for the specification and measurement of concrete floor flatness. Table 1 shows how F-Numbers relate to tile industry recommendations. For thin-set applications, determine the flatness of the floor and desired grout joint size. Then use Table 2 to determine the appropriate notch trowel for your installation.

Table 1—Floor Flatness (Ff)

F-Number	Allowable Deviation in 10 feet
Ff 100	A Single 1/16" defect in 10 feet
Ff 50	A Single 1/8" defect in 10 feet
Ff 25	A Single 1/4" defect in 10 feet

Table 2 --- Grout Joint / Floor Flatness / Trowel Options

Joint Size	>Ff 50	Ff 50 to Ff 35	Ff 35 to Ff 25
1/8" (Minimum)	A	B	B
3/16"	A	B	B
1/4"	A	A	B

Trowels

A = 1/2" x 1/2" x 1/2" Square Notch Trowel

B = 3/4" x 9/16" x 3/8" Crescent shaped Notch Trowel

Walls – Acceptable Substrates

- Cement mortar bed (well cured) TCA W201-07, W202-07, W221-07, W231-07, or W241-07
- Cementitious Backer Unit (CBU) Installed per manufacturer's instructions TCA W244C-07, W244F-07, W244E-07
- Gypsum board (dry areas only) per TCA W243-07

Acceptable Adhesives

Due to the impervious nature and large format size of this material, high performing setting materials are required. The setting material must be an adhesive system specifically recommended by the manufacturer and listed on their container, for bonding porcelain tiles. Allow new installations to cure 48 hours prior to grouting.

NOTE: For best results use a setting adhesive and grout manufactured by the same company. Follow adhesive and grout manufacturer's instructions for mixing and use.

Movement Joints

Movement joints are essential for the success of most tile installations. Follow recommendations on movement joints EJ 171-07 in the "2007 TCA Handbook for Ceramic Tile Installation". Movement joint requirements will vary depending on substrata, climate and size of installation. An architect or design professional should be consulted when specifying the exact number and location of each movement joint.

Acceptable Grouts

Standard grade sanded, or epoxy grouts are recommended. Install grout mix according to grout manufacturer's instructions. Grout joints shall be full and uniformly finished.

NOTE: Due to the impervious nature of porcelain, the grout will take longer to set than with a more porous material.

Cleaning

Allow new installations to completely cure after grouting. For cleaning cement based grout or setting material haze, clean with a grout haze remover recommended by the grout manufacturer. Follow cleaning agent's use and safety instructions carefully. For routine maintenance, sweep or vacuum floors regularly. When wet mopping is necessary, use a mild, pH neutral detergent. Rinse with clean water.

TIP: *To avoid streaks, use soaps sparingly and rinse the mop with clean water often.*

Sealing

Sealers are beneficial for cement grouts; however, they will not penetrate or benefit Brio porcelain tile. Consult the grout manufacturer for sealing recommendations.

Use Locations		Brio - Porcelain			
Walls	Interior	◆	◆	◆	◆
	Exterior	◆	◆	◆	◆
Floors	Interior	◆	◆	◆	
	Exterior	◆	◆	◆	
Countertops	Kitchen	◆	◆		
	Powder Room	◆	◆	◆	
Submerged	Pools & Spas	◆	◆	◆	◆
Usage Level		Residential	Heavy Residential	Light Commercial	Heavy Commercial

ISO Standard	Type of Test	Requirements	Piel		Oxido	
			Sharkskin	Buckskin	Carbon	Rust
EN-ISO 10545-4	Modulus of Rupture	Min. 35	Pass	Pass	Pass	Pass
EN-ISO 10545-4	Breaking Strength	Min 1.300	Pass	Pass	Pass	Pass
EN-ISO 10545-3	Water Absorption	< .5% (Impervious)	Pass	Pass	Pass	Pass
EN-ISO 10545-11	Crazing Resistance (Steam)	Required	Resists	Resists	Resists	Resists
EN-101	Moh's Scratch Hardness (1-10)	Min. 5	5	5	5	6
EN-ISO 10545-7	Visible Abrasion Resistance	Scale 1 to 5	4	4	3	3
EN-ISO 10545-12	Frost Resistance	Required	Resists	Resists	Resists	Resists
EN-ISO 10545-13	Chemical Resistance	Manufacturer to state classification	Resists	Resists	Resists	Resists

ASTM Test	Type of Test	Piel	Oxido
C1028	Static Coefficient of Friction	Dry= .80 Wet= .64	Dry= .80 Wet= .64
C484	Thermal Shock	No Affect, 10 cycles	No Affect, 10 cycles