

## INSTALLATION CHECKLIST

### THIN SET/ MEDIUM SET MORTAR FOR PORCELAIN AND LARGE FORMAT PORCELAIN TILE

#### A. JOBSITE CONDITIONS

- 1. Temperature:**  
No ice or standing water present on structural slab or substrate. Water gauged Portland cement (and modified epoxy) mortars and grouts require installation surface temperature above 50<sup>0</sup> F/10<sup>0</sup> C. Latex fortified Portland cement (and accelerated epoxy) mortars and grouts require installation surface temperatures above 50<sup>0</sup> F /2<sup>0</sup> C.
- 2. Structural Concrete Substrate Cure:**  
A minimum 28 day cure at 70<sup>0</sup> F/21<sup>0</sup> C.
- 3. Surface Conditions:**  
Concrete Surface saturated dry, free of standing water, curing compounds, sealers, form release materials, paint, dirt, oil or grease, dust, etc. Non-structural shrinkage cracks should be pretreated with a crack suppression membrane (to prevent telegraphing of cracks through tile installation)
- 4. Structural Details:**  
Expansion and control joints must be carried through to surface of tile. Joint size and layout calculated by architect / engineer. Review Tile Council of North America (TCNA) Detail EJ171-YY "Expansion Joints" project. Compliance. Joints in substrate must not be bridged with tile or stone
- 5. Substrate Plane:**  
Surface variation should be no greater than 1/4" in 10' and 1/16" in 1foot. Large format (greater than 15" nominal) tile, improve flatness to 1/8" in 10'
- 6. Preparations For Waterproofing Membranes - ANSI A108.10:**  
**See #3** Substrate surface must be sound, smooth, steel troweled surface - slope to drain at a minimum 1/4" per foot (6 mm per 300 mm).

#### B. PRODUCTS

- 1. Tile:**  
Tile sample boards approved by architect/owner prior to installation. Written information received stating that tile is appropriate for intended use. Review master grade certificate or grade seal on tile. Examine trim and tile shapes and color (and grout color) as compared to approved sample boards.

Tile contractor by commencing work assumes overall responsibility to assure that all assemblies, components and parts shown or required within the installation comply with contract documents and are compatible with each other and with the conditions and expected use. Do not proceed with the installation until all unsatisfactory conditions have been corrected. Commencement of work signifies acceptance of substrate and installation conditions.

Jobsite Blending: blend tiles before installing in accordance with reference standards to produce an even range and distribution of color and finish.

- 2. Installation Products:**  
Installation products comply with written specification.  
Appropriate quantities of material have been purchased/provided for install area. If installation materials are from multiple sources, written verification stating all materials are compatible with each other, must be received from all manufacturers involved. Review warranty for installation materials. Alternate products under consideration should have independent testing lab reports to verify manufacturer's claims. Review warranty for alternate products

## INSTALLATION CHECKLIST (CONTINUED)

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3. **Containers:**

Tile and installation products delivered to jobsite shall be in original packaging with seals unbroken.

### C. EXECUTION

1. **Layout and Lighting:**

Review layout. Shop drawings (complicated designs) required and made from field measurements.

Adequate lighting (equal to finished project lighting) is necessary.

Cut tiles placed around perimeter, not within field, no less than 1/2 tile will be allowed. Use of trim shapes demonstrated or described

Large format (greater than 15" nominal) square/rectangular tile set in a running bond/ brick joint pattern utilizing tiles with any side greater than 15", the offset will be maximum of 1/3 of the tiles longest edge length (unless otherwise instructed by Crossville Technical Services). Tiles will be installed with a minimum 1/8" grout joint for rectified material and a 3/16" grout joint for calibrated (non-rectified) material.

See ANSI 108.02-4.3.7 4.3.8 TCNA Handbook

2. **Setting Tile/Stone:**

Continuous 3/32" (3 mm) to 1/8" layer of thin set mortar continually supports tile or stone.

Large format (greater than 15" nominal) a medium-bed setting mortar is recommended to provide a deeper non-shrinking bed of mortar and proper support to the tile. Proper notched trowel size used to achieve 100% mortar coverage on back of tile. The use of a 1/2" U notch trowel or larger in conjunction with a medium bed mortar for large format tile is recommended.

Large format (greater than 15" nominal) tile require 95%+ coverage and should be specified with the proper mortar, trowel size requirements noted above

Key the mortar onto the substrate with the flat side of the trowel. Comb the mortar with the notched side of the trowel in ONE DIRECTION. Firmly press the tiles into the mortar and move them back and forth ACROSS the mortar ridges. This will flatten the mortar and fill in the gaps between the mortar ridges. This recommended method will produce maximum coverage, with the corners and edges properly supported. Periodically remove and check an individual tile to assure 95% coverage.

The use of "glass handling" suction cups is recommended for flat-setting heavy large format tile/stone into fresh mortar. These "glass handlers/suction cups" effectively assist in working large format tiles into the mortar for maximum coverage.

CAUTION: glass handles/suction cups are effective with smooth unpolished, glazed or polished tile surfaces only.

If tiles, particularly large format tile are installed in a condition where one edge of the tile is higher than adjacent tile, giving the finished surface an uneven appearance known as lippage, the use of a high speed orbital sander (Remove all abrasive/sanding paper before applying vibrating pressure to the tile) applied along the edge of the elevated tile can be effective in vibrating excess mortar out for removal, and lowering the tile into alignment with the adjoining tiles.

3. **Waterproofing Membranes:**

Review installation procedures; determine ventilation, protection, cure and flood testing requirements. Continuous 24 hour flood test must be signed off by project architect.

## **INSTALLATION CHECKLIST (CONTINUED)**

### **THIN SET/ MEDIUM SET MORTAR FOR PORCELAIN AND LARGE FORMAT PORCELAIN TILE**

**4. Flexible Joints**

Flexible joints at: restraining surfaces, over cold joints, and at regular intervals as described in the Tile Council of North America Handbook (TCNA) Detail EJ-171 Movement Joints-Vertical and Horizontal Guidelines

**5. Mixing of Mortar and Grouts**

Portland cement based and epoxy materials mechanically mixed at low speed < 150 r.p.m.  
Portland cement based materials typically require 5-10 minute slake time before remixing and application.

**6. Grout Releases and Sealers**

Polished or abrasive tiles benefit from a one time application of grout release or penetrating sealer prior to grout application. This application prevents grout haze or pigment staining from building up in the micro pores and clefts of the tile surface.

**7. Grouting**

Review the grout type, color and installation procedure before installation.

**8. Grout Film Clean-up**

Cement based haze or film removed with nylon scrub pad, clean hot water and damp towels.

**9. Protection and Final Clean-up**

Protect finished floors by covering with heavy, breathable paper.

Final clean-up should employ a neutral cleaner. For removal of dirty detergent/grout slurry, the use of a wet vacuum is recommended.

**10. Extra Stock**

Contractor shall allow 5% extra tile (and grout) stock for future maintenance and use by property owner.