

SECTION 093000 - TILING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Tile for floor applications.
- B. Tile for wall applications.
- C. Stone thresholds.

1.2 RELATED REQUIREMENTS

- A. Section 079200 - Joint Sealants: Sealing joints between tile work and adjacent construction and fixtures.
- B. Section 093050 - Tile Trim and Accessories.

1.3 REFERENCE STANDARDS

- A. ANSI A108.19 - American National Standard Specifications for 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.
- B. ANSI A118.1 - American National Standard Specifications for Dry-Set Cement Mortar.
- C. ANSI A118.6 - American National Standard Specifications for Standard Cement Grouts for Tile Installation.
- D. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation.
- E. ANSI A137.1 - American National Standard Specifications for Ceramic Tile.
- F. ASTM C373 - Standard Test Methods for Determination of Water Absorption and Associated Properties by Vacuum Method for Pressed Ceramic Tiles and Glass Tiles and Boil Method for Extruded Ceramic Tiles and Non-tile Fired Ceramic Whiteware Products.
- G. ASTM C485 - Standard Test Method for Measuring Warpage of Ceramic Tile.
- H. ASTM C499 - Standard Test Method for Facial Dimensions and Thickness of Flat, Rectangular Ceramic Wall and Floor Tile.
- I. ASTM C648 - Standard Test Method for Breaking Strength of Ceramic Tile.
- J. TCNA (HB-GP) - Handbook for Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs Installation.
- K. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by affected installers.

1.5 SUBMITTALS

- A. See Section 013300 - Submittal Procedures for submittal procedures.
- B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.
- C. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, and setting details.
- D. Samples: Mount tile and apply grout on two plywood panels, minimum 18 by 18 inches in size illustrating pattern, color variations, and grout joint size variations.
- E. Installer's qualification statement.
- F. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 016000 - Product Requirements, for additional provisions.
 - 2. Extra Tile: Minimum 25 square feet of each size, color, and surface finish combination, in complete unopened carton(s).

1.6 QUALITY ASSURANCE

- A. Installer Qualifications:
 - 1. Company specializing in performing tile installation, with minimum of five years of documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.8 FIELD CONDITIONS

- A. Do not install solvent-based products in an unventilated environment.
- B. Maintain ambient and substrate temperature above 50 degrees F and below 100 degrees F during installation and curing of setting materials.

PART 2 PRODUCTS

2.1 TILE

- A. Manufacturers:
 - 1. Basis of Design: Dal-Tile Corporation: www.daltile.com

2. American Olean Corporation: www.americanolean.com.
 3. Florida Tile, Inc.: www.floridatile.com.
 4. Dal-Tile Corporation: www.daltile.com.
 5. Substitutions: See Section 016000 - Product Requirements.
- B. Glazed Floor Tile, Type CT-1: ANSI A137.1 standard grade.
1. Moisture Absorption: 7.0 to 20.0 percent as tested in accordance with ASTM C373.
 2. Break Strength: 125lbf when tested in accordance with ASTM C648.
 3. Thickness: 8.5 mm
 4. Thickness Variation: Maximum 0.030 inch when tested in accordance with ASTM C499.
 5. Surface Hardness: 5 Mohs.
 6. Warpage Edge: Conforms when tested in accordance with ASTM C485.
 7. Warpage Diagonal: Conforms when tested in accordance with ASTM C485.
 8. Size: 12 inch by 12 inch, nominal.
 9. Edges: Square.
 10. Surface Finish: Matte glaze.
 11. Color: As selected by Architect from manufacturer's full range.
 12. Products:
 - a. Basis of Design: Dal-Tile Corporation; Memoir: www.daltile.com/#sle.
 - b. Substitutions: See Section 016000 - Product Requirements.
- C. Glazed Wall Tile, Type CT-2: ANSI A137.1 standard grade.
1. Moisture Absorption: 7.0 to 20.0 percent as tested in accordance with ASTM C373.
 2. Break Strength: 125lbf when tested in accordance with ASTM C648.
 3. Thickness: 8.5 mm
 4. Thickness Variation: Maximum 0.030 inch when tested in accordance with ASTM C499.
 5. Surface Hardness: 5 Mohs.
 6. Warpage Edge: Conforms when tested in accordance with ASTM C485.
 7. Warpage Diagonal: Conforms when tested in accordance with ASTM C485.
 8. Size: 4-1/4 by 4-1/4 inch, nominal.
 9. Edges: Cushioned.
 10. Surface Finish: High gloss.
 11. Color: As selected by Architect from manufacturer's standard range.
 12. Products:
 - a. Basis of Design: Dal-Tile Corporation; Color Wheel Classic: www.daltile.com/#sle.
 - b. Substitutions: See Section 016000 - Product Requirements.

2.2 TRIM AND ACCESSORIES

- A. Tile trim as specified in Section 093050 - Tile Trim and Accessories.
- B. Thresholds: 2 inches wide by full width of wall or frame opening; beveled edge on both long edges; without holes, cracks, or open seams.
1. Thickness: 1/2 inch.
 2. Material: Marble, honed finish.
 3. Applications:

- a. At doorways where tile terminates.

2.3 SETTING MATERIALS

- A. Provide setting and grout materials from same manufacturer.
- B. Mortar Bed Materials: Pre-packaged mix of Portland cement, sand, and water. ANSI A118.1
 1. Products:
 - a. Basis of Design: Custom Building Products; CustomBlend Economical Non-Modified Thin-Set Mortar: www.custombuildingproducts.com.
 - b. LATICRETE International, Inc: www.laticrete.com.
 - c. Merkrete, by Parex USA, Inc: www.merkrete.com.
 - d. Substitutions: See Section 016000 - Product Requirements.

2.4 GROUTS

- A. Provide setting and grout materials from same manufacturer.
- B. Standard Grout: ANSI A118.6 standard cement grout.
 1. Applications: Use where indicated on drawings and where no other type of grout is indicated.
 2. Use sanded grout for joints 1/8 inch wide and larger; use unsanded grout for joints less than 1/8 inch wide.
 3. Color: As indicated on drawings.
 4. Products:
 - a. Basis of Design: LATICRETE International, Inc: www.laticrete.com.
 - b. Custom Building Products: www.custombuildingproducts.com.
 - c. Merkrete, by Parex USA, Inc: www.merkrete.com.
 - d. Substitutions: See Section 016000 - Product Requirements.

2.5 MAINTENANCE MATERIALS

- A. Grout Sealer: Liquid-applied, moisture and stain protection for existing or new Portland cement grout.
 1. Composition: Water-based colorless silicone.

2.6 ACCESSORY MATERIALS

- A. Concrete Floor Slab Crack Isolation Membrane: Material complying with ANSI A118.12; not intended as waterproofing.
 1. Crack Resistance: No failure at 1/8 inch gap, minimum.
 2. Fluid or Trowel Applied Type:
 - a. Material: Synthetic rubber or Acrylic.
 - b. Thickness: 20 mils, maximum.
 - c. Products:
 - 1) LATICRETE International, Inc; LATICRETE FRACTURE BAN SC: www.laticrete.com.
 - 2) Merkrete, by Parex USA, Inc; Merkrete Fracture Guard: www.merkrete.com.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify subfloor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive tile.
- B. Verify wall surfaces are smooth and flat within tolerances specified for that type of work, are dust-free, and are ready to receive tile.
- C. Verify that subfloor surfaces are dust free and free of substances that could impair bonding of setting materials to subfloor surfaces.
- D. Cementitious Subfloor Surfaces: Verify that substrates are ready for tiling installation by testing for moisture and alkalinity (pH).
 - 1. Obtain instructions if test results are not within limits recommended by tiling material manufacturer and setting material manufacturer.
- E. Verify that required floor-mounted utilities are in correct location.

3.2 PREPARATION

- A. Vacuum clean surfaces and damp clean.
- B. Seal substrate surface cracks with filler.
- C. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.3 INSTALLATION - GENERAL

- A. Install tile and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.19, manufacturer's instructions, and TCNA (HB) recommendations.
- B. Lay tile to pattern indicated on drawings. Do not interrupt tile pattern through openings.
- C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.
- D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.
- E. Form internal angles square and external angles bullnosed.
- F. Install non-ceramic trim in accordance with manufacturer's instructions.
- G. Install thresholds where indicated on drawings.
- H. Sound tile after setting. Replace hollow sounding units.
- I. Keep control and expansion joints free of mortar, grout, and adhesive.
- J. Prior to grouting, allow installation to completely cure; minimum of 48 hours.

- K. Grout tile joints unless otherwise indicated on drawings. Use standard grout unless otherwise indicated on drawings.
- L. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

3.4 INSTALLATION - FLOORS - THIN-SET METHODS

- A. Over interior concrete substrates, install in accordance with TCNA (HB) Method F113, dry-set or latex-Portland cement bond coat, on ground, with standard grout, unless otherwise indicated on drawings.

3.5 INSTALLATION - WALL TILE

- A. Over gypsum wallboard on wood or metal studs, install in accordance with TCNA (HB) Method W243, thin-set with dry-set or latex-Portland cement bond coat.

3.6 CLEANING

- A. Clean tile and grout surfaces.

3.7 PROTECTION

- A. Do not permit traffic over finished floor surface for 4 days after installation.

END OF SECTION 093000