

## **SECTION 09 30 00 - TILE**

### **PART 1 - GENERAL**

#### **1.01 DESCRIPTION**

A. This Section describes the requirements for furnishing and installing the following:

1. Wall tile.
2. Floor tile.
3. Solid surface transition strips.

B. Related Sections:

1. Elastomeric liquid waterproofing is specified in Section 07 14 16.
2. Joint sealants are specified in Section 07 92 00.
3. Glass-mat faced gypsum backing boards are specified in Section 09 28 16.

#### **1.02 SUBMITTALS**

A. General: Comply with Section 01 33 00.

B. Product Data: Furnish manufacturer's product data for each specified product.

C. Shop Drawings: Show tile patterns and locations and widths of expansion, contraction, and isolation joints in tile substrates and finished tile surfaces.

D. Samples for Verification: Furnish samples of the following items. Where products involve color and texture variations, furnish sets showing full range of variations expected.

1. Each type and composition of tile for each color and texture required, at least 12-inches square, mounted on plywood or hardboard backing and grouted.
2. Full-size units of each type of trim and accessory for each color required.
3. Transition strips in 6-inch lengths.
4. Metal edge or divider strips in 6-inch lengths.

#### **1.03 QUALITY ASSURANCE**

A. Single-Source Responsibility for Tile: Obtain each color, grade, finish, type, and variety of tile from a single source with resources to provide products of consistent quality in appearance without delaying progress of the work.

B. Single-Source Responsibility for Setting and Grouting Materials: Obtain ingredients of a uniform quality from one manufacturer for each cementitious and admixture component and from one source or producer for each aggregate.

C. Installer's Qualifications: A minimum of 3-years experience installing ceramic tile of the types specified, and a minimum of 5 installations of a magnitude similar to or larger than the work of this Section.

- D. Floor tile shall have a minimum coefficient of friction of 0.6 determined in accordance with ASTM C1028.

#### 1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. General: Comply with Section 01 61 00.
- B. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with ANSI A137.1 for labeling sealed tile packages.
- C. Prevent damage or contamination to materials by water, freezing, foreign matter, and other causes.

#### 1.05 PROJECT CONDITIONS

- A. Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer's printed recommendations.
- B. Maintain temperatures at 50-deg. F. or more in tiled areas during installation and for 7-days after completion, unless higher temperatures are required by referenced installation standard or manufacturer's instructions.

#### 1.06 EXTRA MATERIALS

- A. Furnish additional tile for replacement and maintenance, at the rate of approximately 5-percent, to the nearest full carton, for each size, color, pattern, and type installed. Identify each carton as to contents.

### PART 2 - PRODUCTS

#### 2.01 TILE MATERIALS

- A. Wall Tile: Manufacturer, pattern, size and color as indicated on the Finish Specifications and General Notes.
- B. Floor Tile: Manufacturer, pattern, size and color as indicated on the Finish Specifications and General Notes.
- C. Trim Units: Provide trim units to match adjoining flat tile.
  - 1. Size: Coordinate with sizes and coursing of adjoining flat tile.
  - 2. Shapes:
    - a. Base for Mortar-Set Tile: Coved.
    - b. Base for Thin-Set Tile: Straight.
    - c. Wainscot Cap for Thin-Set Tile: Surface bullnose.
    - d. External Corners for Thin-Set Tile: Surface bullnose.
    - e. Internal Corners: Field-buttet square corners.

## 2.02 TRANSITION STRIPS

- A. General: Provide solid surface material fabricated to sizes and profiles indicated or required to provide transition between tile surfaces and adjoining finished floor surfaces.
- B. Material: Silestone solid surface material, color as selected by the Interior Designer.

## 2.03 SETTING MATERIALS

- A. Mortar:
  - 1. Cement Mortar: Job mixed, portland cement, sand, water, and hydrated lime at Contractor's option, proportions specified in ANSI A108.1.
  - 2. Latex Portland-Cement Mortar: ANSI A118.4.
    - a. Mortar shall be approved for use in thin-setting ceramic tile over elastomeric liquid waterproofing specified in Section 07 14 16.

## 2.04 GROUTING MATERIALS

- A. Chemical-Resistant Epoxy Grout: Laticrete "Spectralock" or approved equal complying with ANSI A118.3, color as indicated in the Finish Specifications and General Notes.

## 2.05 MISCELLANEOUS MATERIALS

- A. Metal Edge Strips: Aluminum strips, 1/8-inch wide at top edge with integral provision for anchorage to mortar bed or substrate.
- B. Curing Cover: 40-pound Kraft membrane.

## PART 3 - EXECUTION

### 3.01 INSPECTION

- A. Examine substrates and areas where tile will be installed, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.
  - 1. Verify that substrates for setting tile are firm, dry, clean, and free from oil or waxy films and curing compounds.
  - 2. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed before installing tile.

### 3.02 PREPARATION

- A. Remove coatings, including curing compounds and other substances that contain soap, wax, oil, or silicone, that are incompatible with tile-setting materials.
- B. Fill cracks, holes, and depressions, with towable leveling and patching compound according to tile-setting material manufacturer's written instructions.
- C. Remove protrusions, bumps, and ridges by sanding or grinding.

- D. Blending: For tile exhibiting color variations within the range selected, verify that tile has been blended in factory and packaged accordingly so that tile units taken from one package show the same range in colors as those taken from other packages and match approved samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.
- E. Field-Applied Temporary Protective Coating: Where indicated under tile type or needed to prevent grout from standing or adhering to exposed tile surfaces, precoat them with continuous film of temporary protective coating, taking care not to coat unexposed tile surfaces.

### 3.03 INSTALLATION, GENERAL

- A. ANSI Tile Installation Standard: Comply with referenced parts of ANSI 108 series of tile installation standards.
- B. TCA Installation Guidelines: Comply with TCA "Handbook for Ceramic Tile Installation" installation methods referenced.
- C. Extend tile work into recesses and under or behind equipment and fixtures to form a complete covering without interruptions except as otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- D. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so that plates, collars or covers overlap tile.
- E. Jointing Pattern: Unless otherwise indicated, lay tile in grid pattern. Align joints when adjoining tiles on floor, base, walls, and trim are same size. Lay out tile work and center tile fields in both directions in each space or on each wall area. Adjust to minimize tile cutting. Provide uniform joint widths unless otherwise indicated.
  - 1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so that extent of each sheet is not apparent in finished work.
- F. Lay out tile wainscots to next full tile beyond dimensions indicated.
- G. Expansion Joints: Locate expansion joints and other sealant-filled joints, including control, contraction, and isolation joints during installation of setting materials, mortar beds, and tile. Do not saw cut joints after installation of tiles.
  - 1. Locate joints in tile surfaces directly above joints in concrete substrates.
  - 2. Prepare joints and apply sealants as specified in Section 07 92 00.

### 3.04 TILE INSTALLATION METHODS

- A. Interior Floors:
  - 1. Thin-set over Concrete Slab with Epoxy Grout: Install over concrete slab in accordance with ANSI A108.5 using TCA Method F115.
  - 2. Thin-set over Waterproofing: Install over waterproof membrane in accordance with ANSI A108.5 using TCA Method F122, modified to include epoxy grout. Waterproofing is specified in Section 07 14 16.

- B. Interior Walls:
  - 1. Thin-set over Glass-Mat Faced Gypsum Backing Boards: Install over glass-mat faced gypsum backing board in accordance with ANSI A108.5 using TCA Method W245, modified to include epoxy grout.
- C. Showers:
  - 1. Shower Wall Tile: Thin set over glass-mat faced gypsum backing boards in accordance with ANSI A108.5 using TCA Method W244 and B415.
  - 2. Shower Floor Tile: Thin set over waterproof membrane in accordance with ANSI A108.5 using TCA Method F122, modified to include epoxy grout. Waterproof membrane is specified in Section 07 14 16.
- D. Expansion Joints: Comply with TCA Method EJ171. Proposed joint locations shall be approved by the Architect.
  - 1. Interior: Provide expansion joints at 24- to 36-feet on center in both directions, over cold joints and saw-cut control joints, and where tile abuts restraining surfaces. Joint spacing for tile exposed to direct sunlight or moisture shall be 12-to 16-feet on center. Joint width for paver tile shall be minimum 1/4-inch wide; ceramic mosaic tile and glazed wall tile shall be minimum 1/8-inch.
  - 2. Sealant Materials: As specified in Section 07 92 00.

### 3.05 CLEANING

- A. Upon completion of placement and grouting, clean tile surfaces so they are free of foreign matter.
  - 1. Remove latex-portland cement grout residue from tile as soon as possible.
  - 2. Do not use acid or acid cleaners to clean tile.
- B. Leave finished installation clean and free of cracked, chipped, broken, unbonded, and otherwise defective tile work.

### 3.06 CURING

- A. Damp cure tile installations for a minimum of 72-hours.
  - 1. Cover with clean non-staining Kraft paper.
  - 2. Do not use polyethylene sheets directly over tile on horizontal surfaces.

### 3.07 PROTECTION

- A. Provide final protection and maintain conditions in a manner acceptable to manufacturer and installer that ensure tile is without damage or deterioration at time of Substantial Completion.
  - 1. When recommended by tile manufacturer, apply a protective coat of neutral protective cleaner to completed tile walls and floors. Protect installed tile work with Kraft paper or other heavy covering during construction period to prevent staining, damage, and wear.

2. Prohibit foot and wheel traffic from tiled floors for at least 7-days after grouting is completed.
- B. Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

END OF SECTION