SECTION 09300

TILE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tile for floor applications.

B. Tile for wall applications.

C. Tile for shower receptors.

D. Stone thresholds.

E. Ceramic accessories.

F. Ceramic trim.

G. Non-ceramic trim.

1.02 RELATED REQUIREMENTS

A. Section 07900 - Joint Sealers.

B. Section 15400 - Plumbing Fixtures: Shower receptor.

1.03 REFERENCE STANDARDS

A. ANSI A108 Series/A118 Series/A136.1 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium).

1. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar.
2. ANSI A108.1b - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex Portland Cement Mortar.
3. ANSI A108.1c - Specifications for Contractors Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Bed with Dry-Set or Latex Portland Cement Mortar.
4. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile-Setting Epoxy Adhesive.
5. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar.
6. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy.
7. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout.
8. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout.
9. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework.
10. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone.
11. ANSI A118.1 - American National Standard Specifications for Dry-Set Portland Cement Mortar.
12. ANSI A118.4 - American National Standard Specifications for Latex-Portland Cement Mortar.
13. ANSI A118.6 - American National Standard Specifications for Standard Cement Grouts for Tile Installation.

14. ANSI A118.7 - American National Standard Specifications for Polymer Modified Cement Grouts for Tile Installation.
15. ANSI A118.8 - American National Standard Specifications for Modified Epoxy Emulsion Mortar/Grout.
16. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units.
17. ANSI A118.10 - American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation.
18. ANSI A118.11 - American National Standard Specifications for EGP (Exterior glue plywood) Latex-Portland Cement Mortar.
19. ANSI A136.1 - American National Standard for Organic Adhesives for Installation of Ceramic Tile.
20. ANSI A137.1 - American National Standard Specifications for Ceramic Tile.

B. ASTM C 847 - Standard Specification for Metal Lath.

C. TCA (HB) - Handbook for Ceramic Tile Installation; Tile Council of North America, Inc..

1.04 SUBMITTALS

A. See Section 01350 - Submittals, for submittal procedures.

B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.

C. Samples: Provide two samples of each tile specified.

D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

E. Maintenance Data: Include recommended cleaning methods, cleaning materials, stain removal methods, and polishes and waxes.

F. Maintenance Materials: Furnish the following for County of Orange/OC Public Works use in maintenance of project.
   1. Extra Tile: 2 percent percent of each size, color, and surface finish combination.

1.05 QUALITY ASSURANCE

A. Maintain one copy of TCA Handbook and ANSI A108 Series/A118 Series on site.

B. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, with minimum 5 years of documented experience.

C. Installer Qualifications: Company specializing in performing tile installation, with minimum of 5 years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

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

1.07 FIELD CONDITIONS

A. Do not install adhesives in an unventilated environment.

B. Maintain ambient and substrate temperature of 50 degrees F during installation of mortar materials.

PART 2 PRODUCTS

2.01 TILE

A. Manufacturers/Distributors:
   1. Ceramic Mosaic Tile:
      a. Crossville - Contact: Monica Farley; Tel: (714) 630-7872.

b. Dal Tile - Contact: Linda; Tel: (949) 260-0488.

2. Glazed Wall Tile:
   a. Bedrosians - Contact: Lucy Sepulveda; Tel: (714) 778-1800.
   b. Cepac Tile - Contact: Eddie Gutierrez; Tel: (714) 535-5550.
3. Glass Wall Tile:
   a. G&G Home Supplies - Contact: Rainbow Yu; Tel: (626) 964-2426.

B. Tile
   1. Type, Size, and Color: As indicated on drawings.
   2. Trim Units: Matching shapes in sizes coordinated with field tile.

2.02 TRIM AND ACCESSORIES

A. Non-Ceramic Trim: Satin natural anodized extruded aluminum, style and dimensions to suit application, for setting using tile mortar or adhesive.
   1. Applications: Use in the following locations:
      a. Open edges of wall tile.
      b. Open edges of floor tile.
      c. Wall corners, outside and inside.
      d. Transition between floor finishes of different heights.
      e. Thresholds at door openings.
      f. Expansion and control joints, floor and wall.
      g. Floor to wall joints.
      h. Borders and other trim as indicated on drawings.
      i. Balcony and terrace edge trim and fascia.
   2. Manufacturer:
      a. Schluter-Systems: www.schluter.com.
      b. Genesis APS International: www.genesis-aps.com.
   3. Substitutions: Refer to Section 01640 - Substitutions and Product Options.

B. Thresholds: Marble, white, honed finish; 2 inches wide by full width of wall or frame opening; 1/2 inch thick; beveled one long edge with radiused corners on top side; without holes, cracks, or open seams.
   1. Applications: Provide at the following locations:
      a. At doorways where tile terminates.
      b. At open edges of floor tile where adjacent finish is a different height.

2.03 ADHESIVE MATERIALS

A. Manufacturers:
   1. Bonsal American, Inc: www.sakrete.com
   2. Bostik Inc: www.bostik-us.com.
   3. Mapei Corporation: www.mapei.com.
   4. Substitutions: Refer to Section 01640 - Substitutions and Product Options.

B. Organic Adhesive: ANSI A136.1, thinset bond type; use Type I in areas subject to prolonged moisture exposure.

C. Tile Setting Adhesive: Elastomeric, waterproof, liquid applied.

2.04 MORTAR MATERIALS

A. Manufacturers:
   1. Bonsal American, Inc: www.sakrete.com
   2. Bostik Inc: www.bostik-us.com.
   3. Custom Building Products: www.custombuildingproducts.com.
   4. Substitutions: Refer to Section 01640 - Substitutions and Product Options.

B. Mortar Bed Materials: Portland cement, sand, latex additive and water.

C. Mortar Bond Coat Materials:
   1. Dry-Set Portland Cement type: ANSI A118.1.
   2. Latex-Portland Cement type: ANSI A118.4.

2.05 GROUT MATERIALS

A. Manufacturers:
   1. Bonsal American, Inc: www.sakrete.com
   2. Bostik Inc: www.bostik-us.com.
   3. Custom Building Products: www.custombuildingproducts.com.
   4. Substitutions: Refer to Section 01640 - Substitutions and Product Options.

B. Standard Grout: Any type specified in ANSI A118.6 or A118.7.
   1. Color: As selected.

2.06 ACCESSORY MATERIALS

A. Waterproofing Membrane at Floors: PVC sheet membrane, 40 mils thick, minimum; specifically designed for bonding to cementitious substrate under thick mortar bed or thin-set tile; complying with ANSI A118.10.
   1. Manufacturers:
      a. Compotite Corporation; Composeal Gold: www.compotite.com.
      b. Substitutions: Refer to Section 01640 - Substitutions and Product Options.

B. Waterproofing Membrane at Showers and Tiled Tubs: PVC sheet membrane, 40 mils thick, minimum; specifically designed for bonding to cementitious substrate under thick mortar bed or thin-set tile; complying with ANSI A118.10.
   1. Manufacturers:
      a. Compotite Corporation; Composeal Blue Shower Pan: www.compotite.com.
      b. Substitutions: Refer to Section 01640 - Substitutions and Product Options.

C. Membrane at Walls: 4 mil thick polyethylene film.

D. Metal Lath: ASTM C 847, Flat diamond mesh, of weight to suit application, galvanized finish.

E. Mesh Tape: 2-inch wide self-adhesive fiberglass mesh tape.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that sub-floor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.

C. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of setting materials to sub-floor surfaces.

D. Verify that concrete sub-floor surfaces are ready for tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by tile manufacturer and setting materials manufacturer.

E. Verify that concrete sub-floor surfaces are ready for tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within the following limits:
   1. Moisture emission rate: Not greater than 3 lb per 1000 sq ft per 24 hours when tested using calcium chloride moisture test kit for 72 hours.
   2. Alkalinity: pH range of 5-9.

F. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Protect surrounding work from damage.

B. Vacuum clean surfaces and damp clean.

C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

D. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.03 INSTALLATION - GENERAL

A. Install tile and thresholds and grout in accordance with applicable requirements of ANSI A108.1 through A108.13, manufacturer's instructions, and TCA Handbook recommendations.

B. Lay tile to pattern indicated. 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.

D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.

E. Form internal angles square and external angles bullnosed.

F. Install ceramic accessories rigidly in prepared openings.

G. Install non-ceramic trim in accordance with manufacturer's instructions.

H. Install thresholds where indicated.

I. Sound tile after setting. Replace hollow sounding units.

J. Keep expansion or control joints free of adhesive or grout. Apply sealant to joints.

K. Allow tile to set for a minimum of 48 hours prior to grouting.

L. Grout tile joints. Use standard grout unless otherwise indicated.

M. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

A. Over interior concrete substrates, install in accordance with TCA Handbook Method as indicated on drawings, with standard grout, unless otherwise indicated.

3.05 INSTALLATION - FLOORS - MORTAR BED METHODS

A. Over interior concrete substrates, install in accordance with TCA Handbook Method as indicated on drawings.

B. Waterproofing Membrane: Install as specified in ANSI A108.13.

C. Mortar Bed Thickness: As required to fill 2 inch depression in slab.

3.06 INSTALLATION - SHOWERS AND BATHTUB WALLS

A. At tiled shower receptors install in accordance with TCA Handbook Method as indicated on drawings.

B. Grout with standard grout as specified above.

C. Seal joints between tile work and other work with sealant specified in Section 07900.

3.07 INSTALLATION - WALL TILE

A. Over metal studs without backer install in accordance with TCA Handbook Method as indicated on drawings, with membrane where indicated.

3.08 CLEANING

A. Clean tile and grout surfaces.

3.09 PROTECTION

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

END OF SECTION