

SECTION 09300

TILE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Ceramic Mosaic Tile.
- B. Glazed Wall Tile.
- C. Quarry Tile.
- D. Paver Tile.
- E. Special Purpose (Faience) Tile.
- F. Dimension Stone.
- G. Setting Materials.
- H. Grout Materials.

1.2 RELATED SECTIONS

- A. Section 03300 - Cast-In-Place Concrete.
- B. Section 04810 - Unit Masonry Assemblies.
- C. Section 05400 - Cold Formed Metal Framing.
- D. Section 06100 - Rough Carpentry: Wood sheathing.
- E. Section 07900 - Joint Sealers.
- F. Section 09260 - Gypsum Board Assemblies.
- G. Section 10800 - Toilet, Bath, and Laundry Accessories

1.3 REFERENCES

- A. ANSI A108.1A - American National Standard Specifications for Ceramic Tile Installed in the Wet-Set Method with Portland Cement Mortar.
- B. 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.

- C. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile Setting Epoxy Adhesive.
- D. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar.
- E. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy.
- F. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout.
- G. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework.
- H. ANSI A108.11 - American National Standard for Interior Installation of Cementitious Backer Units.
- I. ANSI A118.1 - American National Standard Specifications for Dry-Set Portland Cement Mortar.
- J. ANSI A118.3 - American National Standard Specifications for Chemical Resistant, Water Cleanable Tile Setting and Grouting Epoxy and Water Cleanable Tile Setting Epoxy Adhesive.
- K. ANSI A118.4 - American National Standard Specifications for Latex-Portland Cement Mortar.
- L. ANSI A118.6 - American National Standard Specifications for Ceramic Tile Grouts.
- M. ANSI A118.8 - American National Standard Specifications for Modified Epoxy Emulsion Mortar Grout.
- N. ANSI A118.9 - American National Standard Specifications for Cementitious Backer Units.
- O. ANSI A118.10 - American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes For Thin-Set Ceramic Tile And Dimension Stone Installations.

- P. ANSI A136.1 - American National Standard for Organic Adhesives for Installation of Ceramic Tile.
- Q. ASTM C 242 - Standard Terminology of Ceramic Whitewares and Related Products.
- R. TCA (HB) - Handbook For Ceramic Tile Installation; Tile Council of America.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data:
 - 1. Tile and Dimension Stone:
 - a. Manufacturer's product data indicating compliance with specified requirements.
 - b. Manufacturer's installation instructions.
 - 2. Setting Materials and Grout Materials:
 - a. Manufacturer's product data indicating compliance with specified requirements.
 - b. Manufacturer's installation instructions.
 - c. Manufacturer's Safety Data Sheets (M.S.D.S.)
- C. Selection Samples:
 - 1. Tile and Dimension Stone: For each tile type specified, minimum 4 inch by 4 inch samples indicating manufacturer's full range of colors and finishes.
 - 2. Grout Materials: For each grout type specified, minimum 2 inch long samples indicating manufacturer's full range of available colors.
- D. Verification Samples:
 - 1. Ceramic mosaic tile, glazed wall tile: For each tile type and color, or tile color pattern, submit two (2) 12 in. by 12 in. panels on tempered hardboard substrates, grouted with specified grout type and color.
 - 2. Quarry tile, paver tile, dimension stone: For each tile type and color, or tile color pattern, submit two (2) panels, consisting of four tiles each, on tempered hardboard substrates, grouted with specified grout type and color.
 - 3. If more than one grout color specified for individual tile type and color, or tile color pattern, submit two (2) additional tile sample panels for each grout color specified.

4. Accessories: For each accessory; two (2) units, or two (2) 12 in. long samples of linear accessories.

E. Quality Control Submittals:

1. Certificates:

- a. Contractor's certification that:
 - 1) Products of this section, as provided, meet or exceed specified requirements.
 - 2) Manufacturers of products of this section meet specified qualifications.
 - 3) Installers of products of this section meet specified qualifications.
- b. Manufacturers' certifications that materials are suitable for intended use.
- c. TCA Master Grade Certificates; ceramic tile.
- d. Submit TCA Master Grade Certificates, issued and signed by tile manufacturer, countersigned by Contractor, when tile is delivered to project site; certificates to state grade, kind of tile, and identification marks for tile packages.
- e. Submit Performance Certification from tile manufacturer for frost-proof tile.

2. Manufacturer's instructions:

- a. Tile and Dimension Stone: Manufacturer's printed installation instructions.
- b. Setting Materials and Grout Materials:
 - 1) Manufacturer's printed installation instructions.
 - 2) Manufacturer's Safety Data Sheets (M.S.D.S.)

1.5 QUALITY ASSURANCE

A. Qualifications:

1. Tile and Dimension Stone Manufacturers: Minimum five (5) years documented experience producing respective products specified in this section.
2. Setting Materials and Grout Materials Manufacturer: Tile Council of America, Inc. Licensee for Dry-Set Mortar and Grouts, with minimum five (5) years documented experience producing respective products specified in this section.
3. Installer: Minimum five (5) years documented experience installing respective products specified in this section.

B. Mock-Up:

1. Construct mock-up panel using materials specified for final work.
2. Construct mock-up as directed, at location indicated or directed, and of full thickness.
3. Obtain Architect's acceptance of visual qualities of mock-up.
4. Mock-up may not remain as part of the Work.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials on site a minimum of 24 hours before use.
- B. Acceptance at site: Accept only materials in original containers, with seals unbroken and labels intact.
- C. Store materials in dry, heated area on site in original containers, with seals unbroken and labels intact, until time of use; prevent damage to materials such as chipping, breakage, freezing, or excessive heat; prevent contamination by water, moisture, foreign matter, or other causes.

1.7 PROJECT CONDITIONS

- A. Maintain ambient and surface temperatures at minimum 60 degrees F during installation of cementitious materials and for 72 hours after installation.
- B. Maintain ambient and surface temperatures between 65 degrees F and 95 degrees F during installation of epoxy setting and grouting materials and for 72 hours after installation.
- C. Vent temporary heaters to outside to avoid carbon dioxide damage to new tilework.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers:
 1. Ceramic Mosaic Tile:
 - a. _____.
 - b. _____.
 - c. _____.
 2. Glazed Wall Tile:
 - a. _____.

- b. _____.
- c. _____.
- 3. Quarry Tile:
 - a. _____.
 - b. _____.
 - c. _____.
- 4. Paver Tile:
 - a. _____.
 - b. _____.
 - c. _____.
- 5. Special Purpose (Faience) Tile:
 - a. _____.
 - b. _____.
 - c. _____.
- 6. Dimension Stone:
 - a. _____.
 - b. _____.
 - c. _____.
- 7. Setting Materials and Grout: Southern Grouts & Mortars, Inc.; 1502 S.W. 2nd Place, Pompano Beach FL 33069; ASD. Tel: (954) 943-2288, Fax: (954) 943-2402.
- B. Requests for substitutions will be considered in accordance with provisions of Section 01600.
- C. Substitutions: Not permitted.
- D. Supply each specified product from a single manufacturer; supply all setting materials and grout materials from a single manufacturer.

2.2 TILE MATERIALS

- A. Ceramic Mosaic Tile:
 - 1. Acceptable Product: _____.
 - 2. Characteristics:
 - a. Nominal Size: ___ inches by ___ inches.
 - b. Nominal Thickness: ___ inch.
 - c. Grade: TCA Master Grade.
 - d. Color and Finish: _____.
 - e. Color and Finish: To be selected from manufacturer's full range of available colors.
 - f. Colors and Finishes: Specified in Schedule at end of section.
- B. Glazed Wall Tile:
 - 1. Acceptable Product: _____.
 - 2. Characteristics:
 - a. Nominal Size: ___ inches by ___ inches.

- b. Nominal Thickness: ____ inch.
- c. Grade: TCA Master Grade.
- d. Color and Finish: _____.
- e. Color and Finish: To be selected from manufacturer's full range of available colors.
- f. Colors and Finishes: Specified in Schedule at end of section.

C. Quarry Tile:

- 1. Acceptable Product: _____.
- 2. Characteristics:
 - a. Nominal Size: __ inches by __ inches.
 - b. Nominal Thickness: ____ inch.
 - c. Grade: TCA Master Grade.
 - d. Color and Finish: _____.
 - e. Color and Finish: To be selected from manufacturer's full range of available colors.
 - f. Colors and Finishes: Specified in Schedule at end of section.

D. Paver Tile:

- 1. Acceptable Product: _____.
- 2. Characteristics:
 - a. Nominal Size: __ inches by __ inches.
 - b. Nominal Thickness: ____ inch.
 - c. Grade: TCA Master Grade.
 - d. Color and Finish: _____.
 - e. Color and Finish: To be selected from manufacturer's full range of available colors.
 - f. Colors and Finishes: Specified in Schedule at end of section.

E. Special Purpose (Faience) Tile:

- 1. Acceptable Product: _____.
- 2. Characteristics:
 - a. Nominal Size: __ inches by __ inches.
 - b. Nominal Thickness: ____ inch.
 - c. Grade: TCA Master Grade.
 - d. Color and Finish: _____.
 - e. Color and Finish: To be selected from manufacturer's full range of available colors.
 - f. Colors and Finishes: Specified in Schedule at end of section.

F. Dimension Stone:

- 1. Acceptable Product: _____.
- 2. Characteristics:

- a. Nominal Size: ___ inches by ___ inches.
- b. Nominal Thickness: ___ inch.
- c. Color and Finish: _____.
- d. Color and Finish: To be selected from manufacturer's full range of available colors.
- e. Colors and Finishes: Specified in Schedule at end of section.

2.3 MEMBRANES AND UNDERLAYMENTS

A. Membrane Underlayment:

- 1. Acceptable Product: Southern Grouts & Mortars, Inc.; Southcrete No.1100 Crack Suppression and Waterproofing Kit.
- 2. Characteristics: Anti-fracture, load-bearing, bondable membrane material for bridging minor shrinkage cracks in substrate; conforming to ANSI A118.10.

B. Sheet Underlayment:

- 1. Acceptable Product: Southern Grouts & Mortars, Inc.; Composition Cork Underlayment.
- 2. Characteristics: Anti-fracture, load-bearing, bondable sheet material for bridging minor shrinkage cracks in substrate.

C. Self-Leveling Cementitious Underlayment:

- 1. Acceptable Product: Southern Grouts & Mortars, Inc.; Self-leveling Underlayment (Cementitious).
- 2. Characteristics: Portland cement, modified with acrylic admixtures for improved self-leveling and curing performance.

D. Waterproof Membrane:

- 1. Acceptable Product: Southern Grouts & Mortars, Inc.; Deck Seal 1000 Membrane.
- 2. Characteristics: Anti-fracture, load-bearing, bondable membrane material; conforming to ANSI A118.10.

E. Sound Control Underlayment:

- 1. Acceptable Product: Southern Grouts & Mortars, Inc.; Southcrete 60 Sound Control.
- 2. Characteristics: Lightweight cementitious underlayment designed to reduce sound transmission.

F. Sound Control Underlayment:

1. Acceptable Product: Southern Grouts & Mortars, Inc.; Composition Cork Underlayment.
2. Characteristics: Sheet-applied polymeric bound composition cork underlayment designed to reduce sound transmission.

2.4 MORTARS AND ADHESIVES

A. Dry-Set Mortar:

1. Acceptable Product: Southern Grouts & Mortars, Inc.; TCA-759 (Premium) Thinset Mortar.
2. Characteristics: Portland cement and sand, with water-retentive admixtures, factory-mixed; conforming to ANSI A118.1.

B. Dry-Set Mortar:

1. Acceptable Product: Southern Grouts & Mortars, Inc.; Floor and Wall Thinset Mortar.
2. Characteristics: Portland cement and sand, with water-retentive admixtures, factory-mixed; conforming to ANSI A118.1.

C. Latex-Portland Cement Mortar:

1. Acceptable Product: Southern Grouts & Mortars, Inc.; TCA-759 (Premium) Thinset Mortar, gauged with Southcrete 25 Acrylic Mortar Admixture.
2. Characteristics: Dry-set mortar with latex to be used as replacement for all or part of gauging water; conforming to ANSI A118.4.

D. Latex-Portland Cement Mortar:

1. Acceptable Product: Southern Grouts & Mortars, Inc.; Premium Thinset Mortar, gauged with Southcrete 30 High Strength Mortar Admixture.
2. Characteristics: Dry-set mortar with latex to be used as replacement for all or part of gauging water; conforming to ANSI A118.4.

E. Latex-Portland Cement Mortar:

1. Acceptable Product: Southern Grouts & Mortars, Inc.; Floor and Wall Thinset Mortar, gauged with Southcrete 25 Acrylic Mortar Admixture.
2. Characteristics: Dry-set mortar with latex to be used as replacement for all or part of gauging water; conforming to ANSI A118.4.

F. Latex-Portland Cement Mortar:

1. Acceptable Product: Southern Grouts & Mortars, Inc.; Floor and Wall Thinset Mortar, gauged with Southcrete 30 High Strength Mortar Admixture.
 2. Characteristics: Dry-set mortar with latex to be used as replacement for all or part of gauging water; conforming to ANSI A118.4.
- G. Latex-Portland Cement Mortar:
1. Acceptable Product: Southern Grouts & Mortars, Inc.; Southcrete 40, with Crete-Mix Filler Powder.
 2. Characteristics: Portland cement mortar with latex to be used as replacement for all or part of the gauging water; conforming to ANSI A118.4.
- H. Medium-Bed Latex-Portland Cement Mortar:
1. Acceptable Product: Southern Grouts & Mortars, Inc.; Marble Set.
 2. Characteristics: Portland cement mortar with dry polymers added in re-emulsifiable powder form, factory-mixed; conforming to ANSI A118.4.
- I. Epoxy Mortar:
1. Acceptable Product: Southern Grouts & Mortars, Inc.; Ultra 100 Epoxy Mortar & Grout.
 2. Characteristics: Chemical-resistant, water cleanable, 100 percent solids epoxy mortar; conforming to ANSI A118.3.
- J. Modified Epoxy Emulsion Mortar:
1. Acceptable Product: Southern Grouts & Mortars, Inc.; Ultra-Poxy.
 2. Characteristics: Chemical-resistant, water cleanable modified epoxy emulsion mortar; conforming to ANSI A118.8.
- K. Organic Adhesive:
1. Acceptable Product: Southern Grouts & Mortars, Inc.; Southcrete 555 Floor & Wall Type 1 Adhesive.
 2. Characteristics: Conforming to ANSI A136.1, Type I.

2.5 GROUTS

- A. Commercial Portland Cement Grout:
1. Acceptable Product: Southern Grouts & Mortars, Inc.; Quarry Grade (AR) Grout.
 2. Characteristics: Portland cement, with sand and mineral filler coloring agents, factory-mixed; conforming to ANSI A118.6 H-2.1.

3. Color: _____.
 4. Color: To be selected from manufacturer's full range of available colors.
 5. Colors: Specified in Schedule at end of section.
- B. Dry-Set Grout:
1. Acceptable Product: Southern Grouts & Mortars, Inc.; Dry-Set (UNSANDED) Joint Filler.
 2. Characteristics: Portland cement, with mineral filler coloring agents and water-retentive admixtures, factory-mixed; conforming to ANSI A118.6 H-2.3.
 3. Color: _____.
 4. Color: To be selected from manufacturer's full range of available colors.
 5. Colors: Specified in Schedule at end of section.
- C. Latex-Portland Cement Grout:
1. Acceptable Product: Southern Grouts & Mortars, Inc.; Security Polymer Grout.
 2. Characteristics: Dry-set grout with dry polymers added in re-emulsifiable powder form, factory-mixed; conforming to ANSI A118.6 H-2.4.
 3. Color: _____.
 4. Color: To be selected from manufacturer's full range of available colors.
 5. Colors: Specified in Schedule at end of section.
- D. Epoxy Grout:
1. Acceptable Product: Southern Grouts & Mortars, Inc.; Ultra 100 Epoxy Mortar & Grout.
 2. Characteristics: Chemical-resistant, water cleanable, 100 percent solids epoxy grout: conforming to ANSI A118.3 E-2.1.
 3. Color: _____.
 4. Color: To be selected from manufacturer's full range of available colors.
 5. Colors: Specified in Schedule at end of section.
- E. Modified Epoxy Emulsion Grout:
1. Acceptable Product: Southern Grouts & Mortars, Inc.; Ultra-Poxy.
 2. Characteristics: Chemical-resistant, water cleanable modified epoxy emulsion grout: conforming to ANSI A118.8 J-2.1.
 3. Color: _____.
 4. Color: To be selected from manufacturer's full range of available colors.

5. Colors: Specified in Schedule at end of section.

2.6 ACCESSORIES

- A. Spacers for Porcelain Paver Tile: Plastic; size specified in manufacturer's printed installation instructions for tile thicknesses and joint widths indicated.
- B. Tile Edge: Stainless steel angle, leg length equal to depth of tile or panel and setting bed.
- C. Threshold: Marble, white; full door frame width, full depth of frame, thickness equal to depth of tile and setting bed, one long edge beveled 45 degrees.
- D. Miscellaneous Accessories: Supply additional components specified in ANSI and TCA specifications for indicated installations.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions:
 - 1. Verify that moisture content of substrates are within tolerances recommended by setting materials manufacturer.
 - 2. Verify that horizontal substrates are formed to required slopes.
 - 3. Verify that substrates meet requirements specified in referenced TCA details.
 - 4. Verify that locations and widths of required expansion joints are indicated on drawings.
- B. Installer's Examination:
 - 1. Have installer examine conditions under which construction activities of this section are to be performed, including but not limited to conditions specified in paragraph above, and submit written notification if substrates or conditions are unacceptable.
 - 2. Transmit two copies of installer's report to Architect within 24 hours of receipt of report.

3. Proceeding with construction activities of this section before unacceptable substrates and conditions have been corrected is prohibited.
4. Beginning construction activities of this section indicates installer's acceptance of substrates and conditions under which construction activities of this section are to be performed.

3.2 PREPARATION

- A. Horizontal Cementitious Substrates:
 1. Grind high spots of concrete slabs to achieve specified tolerances.
 2. Install specified underlayment to bring horizontal substrates to specified tolerances.
 3. Clean surfaces free of dust and debris; acid-etch concrete slabs.
- B. Vertical Cementitious Substrates:
 1. Grind high spots of concrete surfaces to achieve specified tolerances.
 2. Apply skim coat of specified latex-portland cement mortar to bring vertical cementitious substrates; including concrete, concrete unit masonry, plaster, and cementitious backer units; to specified tolerances.
 3. Clean surfaces free of dust and debris; acid-etch concrete surfaces.
- C. Cementitious Backer Units:
 1. Fill gaps between panels with specified latex-portland cement mortar; embed 2 inch wide fiberglass mesh tape in skim coat of the same mortar over joints and in corners.
 2. Apply skim coat of same mortar to bring wall to acceptable tolerances; do not exceed manufacturer's recommended thickness of materials.
 3. Allow material to cure in accordance with mortar manufacturer's instructions before application of additional materials.
- D. Protect surface of adjacent products and materials before beginning construction activities of this section.

3.3 INSTALLATION - GENERAL

- A. Install in accordance with the TCA Method indicated, and as follows.

- B. Install waterproof membrane, where required in referenced TCA Methods, in accordance with manufacturer's instructions.
- C. Mix and install proprietary materials in accordance with manufacturer's instructions.
- D. Expansion control:
 - 1. Form expansion control joints in accordance with TCA EJ171-95.
 - 2. Except where saw-cut cold expansion joints are indicated on drawings or otherwise indicated, provide expansion control joints where tile abuts vertical surfaces, where tile abuts dissimilar surfaces, where structural joints or changes of materials occur in tile substrate, as indicated on drawings, and as follows:
 - a. Tile expansion joints over structural joints: Provide joint in tile same width as structural joint.
 - b. For thickset tile installation, provide tile edge each side of tile expansion joint.
 - c. Provide removable joint filler strips in expansion joints; allowing mortar or grout to migrate into joint cavities is prohibited.
 - d. After grout has cured, and after cleaning of tile surfaces, remove filler strips and install joint backing materials and sealers in accordance with Section 07900.
- E. Install tile in accordance with referenced TCA details, including specifications and references contained therein.
 - 1. Extend into recesses, and under or behind equipment and fixtures, to form complete covering without interruptions, except as otherwise indicated.
 - 2. Cut tiles only with powered cut-off blade and drill holes in tiles, where required, using powered carbide-tip drill bit; cut or drilled tiles having chipped or broken edges are prohibited.
 - 3. Cut tiles less than 1/2 full tile dimension each way are prohibited.
 - 4. Maintain joint widths between tiles as specified in tile manufacturer's installation instructions; use spacers at corners of tile units or factory-assembled sheets of tile units.

3.4 INSTALLATION - FLOORS

- A. General:
 - 1. Provide tile edge where floor tile abuts dissimilar floor covering materials.
 - 2. Provide thresholds at doors and openings, except where tile is continuous between spaces; field-cut notches for door stops.
 - 3. Unless otherwise indicated, install tile in grid pattern perpendicular and parallel to adjacent vertical surfaces, centered in space.
- B. Exterior Concrete Floors and Slabs:
 - 1. On-grade, thickset: TCA F101; _____ bond coat.
 - 2. On-grade, thinset: TCA F102.
 - 3. Elevated, thickset, over drainage layer: TCA F103; with waterproof membrane, wire mesh reinforcement, and filter fabric.
- C. Interior Concrete Floors:
 - 1. On-grade:
 - a. Toilet Rooms: TCA ____.
 - b. All Other Areas: TCA ____.
 - 2. Elevated:
 - a. Toilet Rooms: TCA ____.
 - b. All Other Areas: TCA ____.
- D. Interior Wood Floors:
 - 1. Toilet Rooms: TCA ____.
 - 2. All Other Areas: TCA ____.
- E. Stairs: TCA S151-95, thickset on concrete.
- F. Stairs: TCA S151-95, thickset on metal pan.
- G. Stairs: TCA S151-95, thickset on wood.
- H. Marble Thresholds: TCA TR611.

3.5 INSTALLATION - WALLS

- A. General:
 - 1. Set full tile units, or full factory-assembled sheets of tile units, adjacent to outside corner units; cut tile only at inside corners.
 - 2. Unless otherwise indicated, install tile in grid pattern plumb and level.

3. Provide trim shapes as follows:
 - a. Coved base with bullnose cap for walls not receiving wall tile.
 - b. Coved base with square cap for walls receiving wall tile.
 - c. External corners for walls and base.
 - d. Other trim shapes specified in manufacturer's installation instructions for project conditions.
 4. Where wall tile and floor tile have same modular dimensions, align wall tile joints with floor tile joints.
- B. Exterior Masonry and Concrete Walls, Thickset: TCA 201, with waterproof membrane and wire mesh reinforcement.
- C. Exterior Masonry and Concrete Walls, Thinset: TCA W202.
- D. Interior Walls:
1. Masonry and Concrete, Thickset: W211.
 2. Masonry and Concrete, Thickset: TCA W201, with metal lath, scratch coat, and waterproof membrane at wet areas.
 3. Masonry and Concrete, Thinset: W202.
 4. On Gypsum Board: TCA W242, organic adhesive.
 5. On Gypsum Board: TCA W243, dry-set or latex-portland cement mortar.
 6. On Cementitious Backer Units: TCA W244, with waterproof membrane at wet areas.
 7. On Other Solid Backing: TCA _____.
 8. Directly On Wood Studs or Furring: TCA W231, with metal lath, scratch coat, and waterproof membrane.
 9. Directly On Metal Studs or Furring, Thickset: TCA W241, with metal lath, scratch coat, and waterproof membrane.

3.6 INSTALLATION - TUBS AND SHOWERS

- A. Bathtub Walls:
1. On Cementitious Backer Units: TCA B412.
 2. Directly on Wood or Metal Studs: TCA B411.
 3. On Water-Resistant Gypsum Board: TCA B413.
- B. Showers:
1. On Cementitious Backer Units: TCA B415
 2. Directly on Wood or Metal Studs: TCA B411.
 3. On Water-Resistant Gypsum Board: TCA B416.
 4. Receptors: TCA B414, thickset.

3.7 INSTALLATION - OTHER APPLICATIONS

- A. Interior Ceilings and Soffits, Thickset: TCA C311, on metal lath and scratch coat.
- B. Interior Ceilings and Soffits, Thickset: TCA C311, on cementitious backer unit.
- C. Interior Ceilings and Soffits, Thinset, on Gypsum Board: TCA C312, _____ bond coat.
- D. Countertops: TCA C511, thickset, with metal lath and scratch coat.
- E. Countertops: TCA C512, thinset, with organic adhesive.
- F. Countertops: TCA C512, thinset, with epoxy mortar,
- G. Countertops: TCA C513, thinset, with cementitious backer unit substrate.
- H. Miscellaneous Applications:
 - 1. Tile Tubs and Fountains: TCA B417-95.
 - 2. Swimming Pool: TCA P601.
 - 3. Window Stools: TCA WS610.
 - 4. Refrigerator Rooms, Thickset: TCA R612.
 - 5. Steam Rooms, Thickset: TCA SR613.
 - 6. Steam Rooms, Thinset: TCA SR614.

3.8 GROUTING

- A. Cure set tile in accordance with the following:
 - 1. Cure tile 72 hours before grouting when temperature is low or humidity is high.
 - 2. Cure tile 48 hours before grouting when hot, dry conditions exist.
 - 3. Check bond strength of tile before grouting.
- B. Grout tile in accordance with the following, using grout materials specified:
 - 1. Latex Portland Cement Grout: ANSI A108.10.
 - 2. Epoxy Grout: ANSI A108.6.
 - 3. Remove grout from tile surfaces while still plastic, as grouting progresses.

3.9 CLEANING

- A. After completion of setting and grouting, clean tile surfaces using cleaning methods and materials recommended by tile manufacturer and grout materials manufacturer.
- B. Except as specifically recommended by both tile manufacturer and grout materials manufacturer, acid cleaning of tile and grout surfaces is prohibited; in such instance, clean tile and grout surfaces in strict accordance with manufacturers' instructions for acid cleaning, including protection of adjacent products and materials.

3.10 PROTECTION

- A. Leave finished installation clean and free of cracked, chipped, broken, unbonded, or otherwise defective work.
- B. When recommended by tile manufacturer, apply protective coat of neutral protective cleaner to completed tile walls and floors.
- C. Protect installed tile in accordance with ANSI specifications and manufacturer's instructions; use Kraft paper or other heavy covering during construction period to prevent staining, damage, and wear.
- D. Remove protective coverings and rinse neutral cleaner from tile surfaces not more than 24 hours before final inspection.

3.11 SCHEDULE

END OF SECTION