

SECTION 093000 - TILING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Ceramic tile.
2. Stone thresholds.
3. Waterproof and crack isolation membrane.
4. Metal edge strips.

- B. Related Sections:

1. Division 09 Section "Gypsum Board" for glass-mat, water-resistant backer board.

1.3 DEFINITIONS

- A. General: Definitions in the ANSI A108 series of tile installation standards and in ANSI A137.1 apply to Work of this Section unless otherwise specified.
- B. ANSI A108 Series: ANSI A108.01, ANSI A108.02, ANSI A108.1A, ANSI A108.1B, ANSI A108.1C, ANSI A108.4, ANSI A108.5, ANSI A108.6, ANSI A108.8, ANSI A108.9, ANSI A108.10, ANSI A108.11, ANSI A108.12, ANSI A108.13, ANSI A108.14, ANSI A108.15, ANSI A108.16, and ANSI A108.17, which are contained in "American National Standard Specifications for Installation of Ceramic Tile."
- C. Module Size: Actual tile size plus joint width indicated.
- D. Face Size: Actual tile size, excluding spacer lugs.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Selection:
 1. Full-size units of each type and composition of tile and for each color and finish required.
 2. Full-size units of each type of trim and accessory.
 3. Metal edge strips in 6-inch lengths.

1.5 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of product, signed by product manufacturer.
- B. Material Test Reports: For each tile-setting and -grouting product.

1.6 QUALITY ASSURANCE

- A. Source Limitations for Tile: Obtain tile of each type and color or finish from one source or producer.
 - 1. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.
- B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from one manufacturer and each aggregate from one source or producer.
- C. Source Limitations for Other Products: Obtain each of the following products specified in this Section from a single manufacturer for each product:
 - 1. Waterproof and crack isolation membrane.
 - 2. Joint sealants.
 - 3. Metal edge strips.
- D. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review requirements in ANSI A108.01 for substrates and for preparation by other trades.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.
- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination can be avoided.
- D. Store liquid materials in unopened containers and protected from freezing.
- E. Handle tile that has temporary protective coating on exposed surfaces to prevent coated surfaces from contacting backs or edges of other units. If coating does contact bonding surfaces of tile, remove coating from bonding surfaces before setting tile.

1.8 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.
 - 1. Provide tile complying with Standard grade requirements unless otherwise indicated.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCA installation methods specified in tile installation schedules, and other requirements specified.
- C. Factory Blending: For tile exhibiting color variations within ranges, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.

2.2 TILE PRODUCTS

- A. Ceramic Floor Tile: Unglazed paver tile.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide DalTile Lodge or approved substitute.
 - 2. Composition: Porcelain.
 - 3. Face Size: 12 by 24 inches.
 - 4. Thickness: 3/8 inch.
 - 5. Face: Plain with square or cushion edges.
 - 6. Tile Color and Pattern: As selected by Architect from manufacturer's full range.
 - 7. Grout Color: As selected by Architect from manufacturer's full range.
- B. Glazed Wall Tile: Provide flat tile complying with the following requirements:
 - 1. Module Size: 6 by 6 inches.
 - 2. Thickness: 5/16 inch.
 - 3. Face: Plain with cushion edges.
 - 4. Tile Type/Products: Available products include the following:
 - a. Dal-Tile: Matte and Semi-gloss.
 - 5. Tile Color and Pattern: 60% Matte from price group 2 and 40% Semi-Gloss from price group 4.

6. Grout Color: As selected by Architect from manufacturer's full range.

2.3 WATERPROOF AND CRACK ISOLATION MEMBRANE

- A. General: Manufacturer's standard product, selected from the following, that complies with ANSI A118.10 and ANSI A118.12, and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
- B. Fabric-Reinforced, Fluid-Applied Membrane: System consisting of liquid-latex rubber or elastomeric polymer and continuous fabric reinforcement.
 1. Products: Subject to compliance with requirements, provide the following:
 - a. Laticrete International, Inc.; Laticrete 9235 Waterproof Membrane. (2.39 g/L)
 - b. MAPEI Corporation; Mapelastic HPG with MAPEI Fiberglass Mesh. (31 g/L)

2.4 SETTING MATERIALS

- A. Latex-Portland Cement Mortar (Thin Set): ANSI A118.4.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Bonsal American; an Oldcastle company.
 - b. Bostik, Inc.
 - c. C-Cure.
 - d. Custom Building Products.
 - e. Laticrete International, Inc.
 - f. MAPEI Corporation.
 2. Provide prepackaged, dry-mortar mix containing dry, redispersible, vinyl acetate or acrylic additive to which only water must be added at Project site.
 3. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.4.

2.5 GROUT MATERIALS

- A. Starquartz urethane.

2.6 ELASTOMERIC SEALANTS

- A. General: Provide manufacturer's standard sanded acrylic caulking containing a mildew-cide or antimicrobial protection.
- B. Colors: Provide colors of exposed sealants to match colors of grout in tile adjoining sealed joints unless otherwise indicated.
- C. Products: Available products include the following:

1. Keracaulk™ S by Mapei
2. CeramaSeal by Bostik Findley

2.7 MISCELLANEOUS MATERIALS

- A. VOC Content of Interior Sealers: Sealers used inside the weatherproofing system shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 1. Waterproof Sealers: 250 g/L.
 2. All Other Sealers: 200 g/L.
- B. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- C. Metal Edge Strips: Angle or L-shape, height to match tile and setting-bed thickness, metallic or combination of metal and PVC or neoprene base, designed specifically for flooring applications; stainless-steel, ASTM A 666, 300 Series exposed-edge material.
 1. Provide Schiene by Schluter or approved substitute.

2.8 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.
- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions 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, free of coatings that are incompatible with tile-setting materials including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
 2. Verify that concrete substrates for tile floors installed with thin-set mortar comply with surface finish requirements in ANSI A108.01 for installations indicated.

- a. Verify that surfaces that received a steel trowel finish have been mechanically scarified.
 - b. Verify that protrusions, bumps, and ridges have been removed by sanding or grinding.
3. 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.
 4. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with thin-set mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.
- B. Where indicated, prepare substrates to receive waterproofing by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped 1/4 inch per foot toward drains.
- C. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of 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.

3.3 TILE INSTALLATION

- A. Comply with TCA's "Handbook for Ceramic Tile Installation" for TCA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 Series "Specifications for Installation of Ceramic Tile" that are referenced in TCA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
 1. For the following installations, follow procedures in the ANSI A108 Series of tile installation standards for providing 95 percent mortar coverage:
 - a. Tile floors composed of tiles 8 by 8 inches or larger.
- B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- C. 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 plates, collars, or covers overlap tile.

- D. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. 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 joints between sheets are not apparent in finished work.
 - 2. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.
 - 3. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.
- E. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:
 - 1. Paver Tile: 1/8 inch.
 - 2. Glazed Wall Tile: 1/16 inch.
- F. Lay out tile wainscots to dimensions indicated or to next full tile beyond dimensions indicated.
- G. Metal Edge Strips: Install where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with or below top of tile and no threshold is indicated.

3.4 WATERPROOFING/CRACK ISOLATION MEMBRANE INSTALLATION

- A. Install waterproofing to comply with manufacturer's written instructions to produce membrane of uniform thickness and bonded securely to substrate.
- B. Do not install tile or setting materials over waterproofing until waterproofing/crack isolation membrane has cured.
- C. Locations:
 - 1. Toilet Rooms slabs receiving tile flooring. Turn membrane up 2 inches minimum at perimeter walls to keep water from traveling under partitions.
 - 2. Install over all cracks, control and construction joints in concrete floor.

3.5 CLEANING AND PROTECTING

- A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
 - 1. Remove latex-portland cement grout residue from tile as soon as possible.
 - 2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.

3. Remove temporary protective coating by method recommended by coating manufacturer and that is acceptable to tile and grout manufacturer. Trap and remove coating to prevent drain clogging.
- B. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.
- C. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.
- D. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

3.6 INTERIOR TILE INSTALLATION SCHEDULE

- A. Interior Floor Installations, Concrete Subfloor:
 1. Tile Installation F122: Thin-set mortar on waterproof membrane; TCA F122.
 - a. Tile Type: Ceramic floor tile.
 - b. Thin-Set Mortar: Latex-portland cement mortar.
 - c. Grout: Urethane unsanded grout.
- B. Interior Wall Installations, Metal Studs or Furring:
 1. Tile Installation W245: Thin-set mortar on coated glass-mat, water-resistant gypsum backer board; TCA W245.
 - a. Tile Type: Ceramic wall tile.
 - b. Thin-Set Mortar: Latex- portland cement mortar.
 - c. Grout: Urethane unsanded grout.

END OF SECTION 093000