

DIVISION 09 – FINISHES

SECTION 09300

TILE

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Divisions 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. 12" x 24" Porcelain Field Tile and Accent Tile for Floors and Walls.
 - 2. Stone thresholds.

1.3 SUBMITTALS

- A. General: Submit the following in accordance with conditions of Contract and Division 1 Specification Sections.
- B. Product data for each type of product specified.
- C. Samples for initial selection purposes in form of manufacturer's standard tile chips consisting of actual tiles or sections of tile showing full range of colors, textures and patterns available for each type and composition of tile indicated. Include samples of grout and accessories involving color selection.

1.4 QUALITY ASSURANCE

- A. Single-Source Responsibility for Tile: Obtain each color, grade, finish, type, composition and variety of tile from a single source with resources to provide products of consistent quality in appearance and physical properties 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 Qualifications: Engage an experienced installer who has successfully completed tile installations similar in material, design and extent to that indicated for project.

1.5 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 requirement of ANSI A137.1 for labeling sealed tile packages.
- B. Prevent damage or contamination to materials by water, freezing, foreign matter and other causes.

1.6 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 (10 deg C) 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.

1.7 EXTRA MATERIALS

- A. Deliver extra materials to Owner. Furnish extra materials that match products installed as described below, packaged with protective covering for storage and identified with labels clearly describing contents.

PART 2: PRODUCTS

2.1 PRODUCTS, GENERAL

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the work include, but are not limited to, the following:
1. Emser Tile (Pietre Del Nord) double loaded porcelain series.
- B. ANSI Standard for Tile Installation Materials: Comply with ANSI A137.1 “American National Standard Specifications for Ceramic Tile” for types, compositions and grades of tile indicated.
- C. ANSI Standard for Tile Installation Materials: Comply with ANSI standard referenced with products and materials indicated for setting and grouting.
- D. Coefficient of Friction of Wearing Surface for Floor tile. Wet and dry values of at least .60 per CTI 69-5.
- E. Colors, textures and Patterns: Where manufacturer’s standard products are indicated for tile, grout and other products requiring selection of colors, surface textures, patterns and other appearance characteristics, provide specific products or materials complying with the following requirements:
1. Provide selections made by Architect from manufacturer’s full range of standard colors, textures and patterns for products of type indicated.
 2. Provide tile trim and accessories that match color and finish of adjoining flat tile.
- F. Factory Blending: For tile exhibiting color variations within the ranges selected during sample submittals, blend tile in factory and package 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.
- G. Mounting: Where factory-mounted tile is required, provide back-or-edge-mounted tile assemblies as standard with manufacturer unless another mounting method is indicated.
1. Where tile is indicated for installation in wet areas, do not use back-or-edge-mounted tile assemblies unless tile manufacturer specifies that this type of mounting is suitable for these kinds of use and has been successfully used on other projects.

2.2 TILE PRODUCTS

- A. 12” x 24” Unpolished Porcelain Floor and Wall Tile: Provide flat tile complying with the following requirements:
1. Nominal Facial Dimensions: 12” X 24, unless otherwise indicated.
 2. Nominal Thickness: 3/8”.
 3. Composition: Porcelain.
 4. Style: Emser Tile (Pietre Del Nord) double loaded porcelain series.
 5. Color:
 - a. Field Color: Alaska
 - b. Accent Band for Wall Band and Floor Border: Pietre Michigan Matt Brown
- B. Trim Units: Provide tile trim units to match characteristics of adjoining flat tile and to comply with following requirements:
1. Size: As indicated, coordinated with sizes and coursing of adjoining flat tile where applicable.
 2. Shapes: As follows, selected from manufacturer’s standard shapes:
 - a. Base for Portland Cement Mortar Installations: Coved.
 - b. Wainscot Cap for Thinset Mortar Installations: Surface bullnose.
 - c. External Corners for Thinset Installations: Surface bullnose.
 - d. Internal Corners: Field-butt square corners, except use coved base and cap angle pieces designed to member with stretcher shapes.
- C. Edge Protection and Transition for Outside Corners

1. Schluter®-RONDEC Description: bullnose-type profile with symmetrically rounded visible surface with 1/4 inch (6 mm) radius, integrated trapezoid-perforated anchoring leg, and integrated grout joint spacer.
2. Material and Finish:[AE - Satin Anodized Aluminum]
3. Height: Floor to Ceiling.
4. Schluter Systems, L.P., 194 Pleasant Ridge Road, Plattsburgh, NY 12901-5841. Tel.: (800) 472-4588. Fax: (800) 477-9783. E-mail: specassist@schluter.com. Internet: www.schluter.com.

2.3 STONE THRESHOLDS

- A. General: Provide stone that is uniform in color and finish, fabricated to sizes and profiles indicated or required to provide transition between tile surfaces and adjoining finished floor surfaces.
- B. Marble Thresholds: Provide marble thresholds complying with ASTM C 503 requirements for exterior use and for abrasion, resistance where exposed to foot traffic, a minimum hardness of 10 per ASTM C 241.
 1. Provide white, honed marble complying with MIA Group "A" requirements for soundness.

2.4 WATERPROOFING FOR THINSET TILE INSTALLATIONS

- A. Polyethylene Sheet Waterproofing: Manufacturer's standard product consisting of composite sheets, 60 inches wide by a nominal thickness of 0.030, composed of an inner layer of chlorinated polyethylene sheet faced on both sides with laminated high-strength nonwoven polyester material, designed for embedding in latex-portland cement mortar, and as substrate for latex-portland cement mortar setting bed.

2.5 SETTING MATERIALS

- A. Portland Cement Mortar Installation Materials: Provide materials complying with ANSI A108.1 and as specified below.
 1. Cleavage Membrane: Asphalt felt, ASTM D 226, Type 1 (No. 15), or polyethylene sheeting ASTM D 4397, 4.0 mils thick.
 2. Latex additive (water emulsion) described below, serving as replacement for part or all of gauging water, of type specifically recommended by latex additive manufacturer for use with job-mixed portland cement and aggregate mortar bed.
 - a. Latex Additive: Manufacturer's standard.
- B. Latex-Portland Cement Mortar: ANSI A118.4, composition as follows:
 1. Prepackaged dry mortar mix composed of portland cement, graded aggregate, and the following dry polymer additive in the form of a reemulsifiable powder to which only water is added at job site.
 - a. Dry Polymer Additive: Manufacturer's standard.
 2. Latex additive (water emulsion) of type described below, serving as replacement for part or all of gauging water, combined at job site with prepackaged dry mortar mix supplied or specified by latex additive manufacturer.
 - a. Latex Type: Manufacturer's standard.
- C. Water-Cleanable Tile-Setting Epoxy Adhesive: ANSI A118.3.
- D. Organic Adhesive: ANSI A136.1, Type I.

2.6 GROUTING MATERIALS

- A. Dry-Set Grout: ANSI A118.6, color as indicated.
- B. Latex-Portland Cement Grout: ANSI A118.6, color as indicated, composition as follows:
 1. Prepackaged dry grout mix composed of portland cement, graded aggregate and the following dry polymer additive in the form of a reemulsifiable powder to which only water is added at job site.

- a. Dry Polymer Additive: Polyvinyl acetate or ethylene vinyl acetate.
- 2. Latex additive (water emulsion) serving as replacement for part or all of gauging water, added at job site with dry grout mixture, with type of latex and dry grout mix as follows:
 - a. Latex Type: Manufacturer's standard.
 - b. Dry Grout Mixture: Dry-set grout specified or supplied by latex additive manufacturer. Use latex additive without retarder with dry-set grout.
 - (1) Application: Use dry-set grout combined with latex additive for grouting joints in glazed wall tile.
 - c. Dry Grout Mixture: Commercial portland cement specified or supplied by latex additive manufacturer.
 - (1) Application: Use commercial portland cement grout combined with latex additive for grouting joints in floor tile unless otherwise indicated.

2.7 ELASTOMERIC SEALANTS

- A. General: Provide Manufacturer's standard chemically curing, elastomeric sealants of base polymer indicated that comply with requirements of Division 7 Section "Joint Sealers," including ASTM C 920 as referenced by Type, Grade, Class and Uses.
- B. Colors: Provide colors of exposed sealants to match colors of grout in tile adjoining sealed joints unless otherwise indicated.
- C. One-Part Mildew-Resistant Silicone Sealant: Type S; Grade NS; Class 25; Uses NT, G, A, and as applicable to nonporous joint substrates indicated, O; formulated with fungicide, intended for sealing interior ceramic tile joints and other nonporous substrates that are subject to In-service exposures of high humidity and temperature extremes.

2.8 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with requirements of referenced standards and manufacturers including those for accurate proportioning of materials, water or additive content; type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other procedures needed to produce mortars and grouts of uniform quality with optimum performance characteristics for application indicated.

PART 3: EXECUTION

3.1 EXAMINATION

- A. Examine substrates and areas where tile will be installed, with installer present, for compliance with requirements for installation tolerance 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.
- B. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Blending: For tile exhibiting color variations within the ranges selected during sample submittals, 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.

3.3 INSTALLATION, GENERAL

- A. ANSI Tile Installation Standard: Comply with parts of ANSI 108 series of tile installation standards included under "American National Standard Specifications for the Installation of Ceramic Tile" that apply to type of setting and grouting materials and methods indicated.

- B. TCA Installation Guidelines: TCA Installation methods indicated.
- C. Extend tile work into recesses and under or behind equipment and fixtures to form a complete covering without interruptions except as otherwise shown. 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 shown, 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 shown.
 - 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, where indicated 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.
- H. Grout tile to comply with the requirements of the following installation standards:
 - 1. For ceramic tile grouts (sand-portland cement, dry-set, commercial portland cement, and latex-portland cement grouts), comply with ANSI A108.10.

3.4 WATERPROOFING FOR THINSET TILE INSTALLATIONS

- A. Install waterproofing in compliance with waterproofing manufacturer's instructions to produce a waterproof membrane of uniform thickness bonded securely to substrate.
- B. Do not install tile over waterproofing until waterproofing has cured and been treated to determine that it is watertight.

3.5 FLOOR INSTALLATION METHODS

- A. Ceramic (Porcelain) Tile: Install tile to comply with requirements indicated below for setting bed methods, TCA installation methods related to types of subfloor construction and grout types:
 - 1. Portland Cement Mortar: ANSI A 108.1
 - a. Bond Coat: Portland cement paste or dust coat on plastic bed or the following thin-set mortar on cured bed, ANSI A108.5, at contractor's option:
 - 1) Latex-portland cement mortar.
 - b. Concrete sub-floors, Interior: TCA F111 (cleavage membrane).
 - c. Concrete sub-floors, Interior, Waterproofing Membrane: TCA F121.
 - d. Grout: Dry-set.
 - e. Grout: Latex-portland cement.
 - 2. Organic Adhesive: ANSI A108.4.
 - a. Concrete Subfloors, Interior: TCA F116.
 - b. Grout: Latex-portland cement.
 - 3. Latex-Portland Cement Mortar: ANSI A108.5.
 - 4. Dry-Set Portland Cement Mortar: ANSI A108.5.
 - a. Concrete Sub-floors, Interior: TCA F113.
 - b. Cementitious Backer Unit Underlayment, Interior: TCA F144.
 - c. Grout: Latex-portland cement.
- B. Stone Thresholds: Install stone thresholds at locations indicated; set in same type of setting bed as abutting field tile unless otherwise indicated.

1. Set thresholds in latex-portland cement mortar for locations where mortar bed would otherwise be exposed above adjacent nontile floor finish.

3.6 WALL TILE INSTALLATION METHODS

- A. Install types of tile designated for wall application to comply with requirements indicated below for setting-bed methods, TCA installation methods related to subsurface wall conditions and grout types:
 1. Dry-Set Portland Cement Mortar: ANSI A108.5.
 - a. Cementitious Backer units, Interior: TCA W244.
 - b. Bathtub walls, cementitious Backer Units: TCA B412. (If Applicable).
 - c. Shower Receptors, Cementitious Backer Units: TCA B415. (If Applicable).
 - d. Grout: Latex-portland cement.

3.7 SEALING TILE WALLS AND FLOORS:

- A. See Division 9 – Section 09900 Painting.

3.7 CLEANING AND PROTECTION

- A. Cleaning: Upon 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. Unglazed tile may be cleaned with acid solutions only when permitted by tile and grout manufacturer's printed instructions, but no sooner than 14 days after installation. Protect metal surfaces, cast iron and vitreous plumbing fixtures from effects of acid cleaning. Flush surface with clean water before and after cleaning.
- B. Finished Tile Work: Leave finished installation clean and free of cracked, chipped, broken, unbonded and otherwise defective tile work.
- C. Provide final protection and maintain conditions in a manner acceptable to manufacturer and installer that ensures that 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.
- D. Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

END OF SECTION – 09300