

SECTION 09300

TILE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. This Section includes the following:
 - 1. Ceramic mosaic tile.
 - 2. Glazed wall tile.
 - 3. Marble thresholds.
 - 4. Mortars and grouts.
 - 5. Cementitious backer units.
 - 6. Sealants.
- B. Related Sections: The following sections contain requirements that relate to this Section:
 - 1. Division 3 Section "Cast-in-Place Concrete" for monolithic slab finishes specified for tile substrates.

1.03 SUBMITTALS

- A. Shop drawings indicating tile patterns and locations and widths of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
 - 1. Locate precisely each joint and crack in tile substrates by measuring, record measurements on shop drawings, and coordinate them with tile joint locations, in consultation with Architect.
- B. Samples for selection purposes of each item listed below in sets showing full range of colors available in price range indicated.

- C. Material test reports from qualified independent testing laboratory indicating and interpreting test results relative to compliance of tile and tile setting and grouting products with requirements indicated.
 - 1. Slip Resistance Characteristics: Provide floor tile that are identical to those tested for slip resistance per CTI 69-5 test procedure.
 - a. Coefficient of Friction of Wearing Surfaces: Wet and dry values of at least 0.60.

1.04 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.
- D. Preinstallation Conference: Conduct conference at Project site to comply with requirements of Division 1 Section "Project Meetings."

1.05 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.

1.06 PROJECT CONDITIONS

- A. Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer's printed recommendations.
- B. Vent temporary heaters to exterior to prevent damage to tile work from carbon dioxide buildup.

- C. 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.

1.07 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.
 - 1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed, for each type, composition, color, pattern, and size.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products manufactured by one of the following:
 - 1. Tiles:
 - American Olean Tile Co., Inc.
 - Dal-Tile Corp.
 - Monarch Tile Manufacturing, Inc.
 - Summitville Tiles, Inc.
 - United States Ceramic Tile Co.
 - Wenzel Tile Co.
 - 2. Latex-Portland Cement Mortars and Grouts:
 - American Olean Tile Co., Inc.
 - Boiardi Products Corp.
 - Bostik Construction Products Div.
 - Custom Building Products
 - C-Cure Chemical Co.
 - DAP Inc. Div.; USG Corp.
 - L & M Mfg. Inc.
 - Laticrete International Inc.
 - Mapei Corp.

Southern Grouts & Mortars, Inc.
Summitville Tiles, Inc.
Syracuse Adhesives Co.

2.02 PRODUCTS, GENERAL

- A. ANSI Standard for Ceramic Tile: Comply with ANSI A137.1 "American National Standard Specifications for Ceramic Tile" for types, compositions, and grades of tile indicated.
 - 1. Furnish tile complying with "Standard Grade" requirements unless otherwise indicated.
- B. ANSI Standard for Tile Installation Materials: Comply with ANSI standard referenced with products and materials indicated for setting and grouting.
- C. Colors, Textures, and Patterns: Products of American Olean Tile Company are indicated on Product Data Sheets at end of this section to establish a standard of quality, appearance, and performance.
 - 1. Provide tile trim and accessories that match color and finish of adjoining flat tile.
- D. 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.
- E. Mounting: Factory-mounted tile is optional. Provide back- or edge-mounted tile assemblies standard with manufacturer.

2.03 TILE PRODUCTS

- A. Standards for Tile Units: Provide manufacturers' standard units of size, type, pattern, color and texture indicated. Comply with ANSI standards for size and thicknesses.
- B. Trim Units: Provide tile trim units to match characteristics of adjoining flat tile, coordinated with sizes and coursing of adjoining flat tile where applicable. Select from manufacturer's standard shapes:
 - 1. Base for Portland Cement Mortar Installations: Coved.

2. Base for Thinset Mortar Installations: Coved.
 3. Wainscot Cap for Thinset Mortar Installations: Surface bullnose.
 4. External Corners for Thinset Installations: Surface bullnose.
 5. Internal Corners: Field-buttet square corners, except use coved base and cap angle pieces designed to member with stretcher shapes.
- C. Marble Thresholds: Provide marble thresholds complying with ASTM C 503 requirements for abrasion resistance, a minimum hardness of 10 per ASTM C 241.
1. Provide white, honed marble complying with MIA Group "A" requirements for soundness, in profile complying with ADA requirements.

2.04 WATERPROOFING FOR THINSET TILE INSTALLATIONS

- A. Polyethylene Sheet Waterproofing: Noble Co. "Nobleseal TS" 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.

2.05 SETTING MATERIALS

- A. Latex-Portland Cement Mortar: ANSI A118.4, composition as follows:
1. Prepackaged dry mortar mix composed of portland cement, graded aggregate, and manufacturer's standard dry polymer additive in the form of a reemulsifiable powder to which only water is added at job-site.

2.06 GROUTING MATERIALS

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

B. Chemical-Resistant Epoxy Grout: ANSI A118.3, color as selected by Architect.

1. Provide product capable of resisting continuous and intermittent exposure to temperatures of up to 140 deg F (60 deg C) and 212 deg F (100 deg C), respectively, as certified by mortar manufacturer for intended use.

2.07 ELASTOMERIC SEALANTS

- A. General: Provide manufacturer's standard chemically curing, elastomeric sealants indicated that comply with requirements of 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.
- D. Multipart Pourable Urethane Sealant for Use T: Type M; Grade P; Class 25; Uses T, M, A, and as applicable to joint substrates indicated, O.
- E. Products: Subject to compliance with requirements, provide one of the following:

1. One-Part Mildew-Resistant Silicone Sealant:

"Dow Corning 786;" Dow Corning Corp.
"SCS 1702;" General Electric Co.
"863 #345 White;" Pecora Corp.
"Rhodorsil 6B White;" Rhone-Poulenc Inc.
"Proglaze White;" Tremco Corp.

2. Multipart Pourable Urethane Sealant:

"Chem-Calk 550;" Bostik Construction Products Div.
"Vulkem 245;" Mameco International, Inc.
"Urexpan NR-200;" Pecora Corp.
"THC-900;" Tremco Corp.

2.08 CEMENTITIOUS BACKER UNITS (GLASS MESH MORTAR UNITS)

- A. Proprietary backing units with glass fiber mesh reinforcing and water-resistant coating on both faces, complying with the following requirements:
 - 1. Cement-Coated Portland Cement Panels: High-density portland cement surface coating on both faces and lightweight concrete core composed of portland cement and expanded ceramic aggregate; fabricated in panels 5/8-inch thick by 36-inches wide by 36, 48, 60, 64, or 72-inches long and weighing 3.2 to 3.8 psf.
- B. Mortar Unit Finishing Materials: Tape and joint compounds as recommended by manufacturer of cementitious backer units.
- C. Products: Subject to compliance with requirements, provide one of the following products:
 - 1. "Wonder-Board;" Modulars Inc.
 - 2. "Durock Tile Backer Board;" Durabond Div., USG Industries, Inc.
 - 3. "DomCrete Cementitious Tile Backer Board", Domtar Gypsum

2.09 MISCELLANEOUS MATERIALS

- A. Metal Edge Strips: Zinc alloy or stainless steel terrazzo strips, 1/8-inch wide at top edge with integral provision for anchorage to mortar bed or substrate unless otherwise indicated.

PART 3 - EXECUTION

3.01 EXAMINATION

- 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.

- B. Slab-on-Grade Moisture Vapor Emission Test: Conduct calcium chloride dome test. Where presence of moisture on substrate exceeds those recommended by the tile manufacturer notify the Architect before proceeding with installation.
- C. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 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.

3.03 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 "Handbook for Ceramic Tile Installation;" comply with 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 so that no tiles less than one-half width occur. Adjust to minimize tile cutting. Provide uniform joint widths unless otherwise shown. Lay out tile wainscots to next full tile beyond dimensions indicated.
- F. Expansion Joints: Locate expansion joints and other sealant-filled joints, including control, contraction, and isolation joints in accordance with recommendations contained in the TCA handbook and ANSI installation standards. Install 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. Space joints 24' to 36' in each direction unless otherwise shown.
 3. Seal joints between edge of tile and adjacent dissimilar surfaces.
 4. Prepare joints and apply sealants to comply with requirements of Division 7 Section "Joint Sealants."
- G. Grout tile to comply with the requirements of the following installation standards:
1. For ceramic tile grouts unless otherwise indicated comply with ANSI A108.10.
 2. For chemical-resistant epoxy grouts, comply with ANSI A108.6.

3.04 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 tested to determine that it is watertight.

3.05 FLOOR INSTALLATION METHODS

- A. Ceramic Mosaic 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. Latex-Portland Cement Mortar: ANSI A108.5.
 - a. Concrete Slab-on-Grade, Interior: TCA F113.
 - b. Grout: Latex-portland cement.
- B. Marble Thresholds: Install marble 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.
- C. Metal Edge Strips: Install at locations indicated or where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with top of tile.

3.07 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. Latex-Portland Cement Mortar: ANSI A108.5.
Metal Studs, Interior: TCA W243.
 - a. Grout: Latex-portland cement.

3.08 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.

3. Remove temporary protective coating by method recommended by coating manufacturer that is acceptable to brick and grout manufacturer. Trap and remove coating to prevent it from clogging drains.
- 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.

3.09 PRODUCT DATA SHEETS

- A. Provide tiles as indicated on the following Product Data Sheets.

TILE PRODUCT DATA SHEET

Drawing/Schedule Designation: CT-1

Tile Type: Ceramic mosaic tile

Product/Manufacturer: Unglazed Porcelain Ceramic Mosaics, American
Olean
Tile Co.

Color: Solid colors selected by Architect from Color Group
2

Size: 2-inches by 2-inches

Thickness: 1/4-inch

Face: Matte

TILE PRODUCT DATA SHEET

Drawing/Schedule Designation: CT-2

Tile Type: Glazed ceramic mosaic tile (Wall tiles where indicated)

Product/Manufacturer: Bright, American Olean Tile Co.

Color: Selected by Architect from full range of colors
(Color Groups 1 and 2)

Size: 6-inches by 6-inches

Thickness: 5/16-inch

Face: Smooth

****END OF SECTION****