

SECTION 09 3013 - CERAMIC 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 mosaic tile.
2. Quarry tile.
3. Pressed floor tile.
4. Porcelain tile.
5. Glazed wall tile.
6. Glass Tile.
7. Stone thresholds.
8. Tile backing panels.
9. Waterproof membrane for thinset applications.
10. Crack isolation membrane.

B. Related Requirements:

1. Section 03 3000 "Cast-in-Place Concrete" for concrete floor slabs.
2. Section 04 4200 "Unit Masonry" for concrete block walls.
3. Section 079200 "Joint Sealants" for sealing of expansion, contraction, control, and isolation joints in tile surfaces.
4. Section 09 2900 "Gypsum Board" for gypsum board walls.
5. Section 10 2113 "HDPE Toilet Partitions"
6. Section 10 28000 "Toilet Accessories"

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 86B1SSIA6108.1B, 5[(A)-9.7Tc 0.16-9.0-1.1( )0.6(A)2.3(N)8.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. LEED Submittals:
  - 1. Product Data for Credit IEQ 4.1: For adhesives, documentation including printed statement of VOC content.
  - 2. Product Data for Credit IEQ 4.3: For grout sealers, documentation indicating that products comply with requirements of FloorScore certification.
- C. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
- D. Samples for Initial Selection: For tile, grout, and accessories involving color selection.
- E. Samples for Verification:
  - 1. Full-size units of each type and composition of tile and for each color and finish required. For ceramic mosaic tile in color blend patterns, provide full sheets of each color blend.
  - 2. Full-size units of each type of trim and accessory for each color and finish required.
  - 3. Stone thresholds in 6-inch (150-mm) lengths.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Master Grade Certificates: For each shipment, type, and composition of tile, signed by tile manufacturer and Installer.
- C. Product Certificates: For each type of product.
- D. Product Test Reports: For tile-setting and -grouting products and certified porcelain tile.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels 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 indicated.
  - 2. Grout: Furnish quantity of grout equal to 3 percent of amount installed for each type, composition, and color indicated.

1.7 QUALITY ASSURANCE

- A. Comply with the most current edition of the Northwestern University Design Standards.
- B. Installer Qualifications:

1. Installer is a five-star member of the National Tile Contractors Association or a Trowel of Excellence member of the Tile Contractors' Association of America.

#### 1.8 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.

#### 1.9 FIELD 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 MANUFACTURERS

- A. Source Limitations for Tile: Obtain tile of each type from single 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 single manufacturer and each aggregate from single source or producer.
  1. Obtain setting and grouting materials, except for unmodified Portland cement and aggregate, from single manufacturer.
  2. Obtain waterproof membrane and crack isolation membrane, except for sheet products, from manufacturer of setting and grouting materials.
- C. Source Limitations for Other Products: Obtain each of the following products specified in this Section from a single manufacturer:
  1. Stone thresholds.
  2. Waterproof membrane.
  3. Crack isolation membrane.
  4. Cementitious backer units.



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- d. Wainscot Cap for Portland Cement Mortar Installations: Bead (bullnose), module size <Insert dimensions>.
- e. Wainscot Cap for Thinset Mortar Installations: Surface bullnose, module size <Insert dimensions>.
- f. Wainscot Cap for Flush Conditions: Regular flat tile for conditions where tile wainscot is shown flush with wall surface above it, same size as adjoining flat tile.
- g. External Corners for Portland Cement Mortar Installations: Bead (bullnose), module size <Insert dimensions>.
- h. External Corners for Thinset Mortar Installations: Surface bullnose, module size <Insert dimensions>.
- i.

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5. Thickness: [**1/4 inch (6.4 mm)**] [**3/8 inch (9.5 mm)**] [**1/2 inch (12.7 mm)**].
6. Face: [**Plain with square or cushion edges**] [**Plain with square edges**] [**Plain with cushion edges**] [**Polished with square edges**] [**As indicated**].
7. Dynamic Coefficient of Friction: Not less than 0.42.
8. Tile Color, Glaze, and Pattern: <**Insert color, glaze, and pattern**>.
9. Grout Color: <**Insert color**>.
10. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as follows, selected from manufacturer's standard shapes:
  - a. Base Cap: Surface Cap, module size same as adjoining flat tile

- g. External Corners for Thinset Mortar Installations: Surface bullnose, same size as adjoining flat tile.
- h. Internal Corners: Field-buttet square corners. For coved base and cap use angle pieces designed to fit with stretcher shapes.

## 2.4 Glass Tile

### A. Glass Tile Type: Large format glass tile, **[cast] [fused] [low temperature]**.

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. American Olean; a division of Dal-Tile Corporation.
  - b. Crossville, Inc.
  - c. Florida Tile, Inc.
- 2. Face Size: <Insert dimensions>.
- 3. Sizing Category: **[Standard] [Natural]**.
- 4. Aesthetic Class: **[V0] [V1] [V2] [V3] [V4]**.
- 5. Tile Color and Pattern: [As indicated by manufacturer's designations] [Match Architect's sample] [As selected by Architect from manufacturer's full range] <Insert color and pattern>.
- 6. Grout Color: [As indicated by manufacturer's designations] [Match Architect's sample] [As selected by Architect from manufacturer's full range] <Insert color>.

### B. Glass Tile Type: Factory-mounted mosaic glass tile, **[cast] [fused] [low temperature]**.

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. American Marazzi Tile, Inc.
  - b. American Olean; a division of Dal-Tile Corporation.
  - c. Crossville, Inc.
  - d. Florida Tile, Inc.
- 2. Module Size: <Insert dimensions>.
- 3. Sizing Category: **[Standard] [Natural]**.
- 4. Aesthetic Class: **[V0] [V1] [V2] [V3] [V4]**.
- 5. Tile Color and Pattern: [As indicated by manufacturer's designations] [Match Architect's sample] [As selected by Architect from manufacturer's full range] <Insert color and pattern>.
- 6. Grout Color: [As indicated by manufacturer's designations] [Match Architect's sample] [As selected by Architect from manufacturer's full range] <Insert color>.

### C. Glass Tile Type: Factory-mounted miniature mosaic glass tile, **[cast] [fused] [low temperature]**.

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. American Marazzi Tile, Inc.
  - b. American Olean; a division of Dal-Tile Corporation.
  - c. Crossville, Inc.

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- d. Daltile.
- e. Florida Tile, Inc.

- 2. Module Size: <Insert dimensions>.
- 3. Sizing Category: [Standard] [Natural].
- 4. Aesthetic Class: [V0] [V1] [V2] [V3] [V4].
- 5. Tile Color and Pattern: [As indicated by manufacturer's designations] [Match Architect's sample] [As selected by Architect from manufacturer's full range] <Insert color and pattern>.
- 6. Grout Color: [As indicated by manufacturer's designations] [Match Architect's sample] [As selected by Architect from manufacturer's full range] <Insert color>.

## 2.5 THRESHOLDS

- A. General: Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes.
  - 1. Bevel edges at 1:2 slope, with lower edge of bevel aligned with or up to 1/16 inch (1.5 mm) above adjacent floor surface. Finish bevel to match top surface of threshold. Limit height of threshold to 1/2 inch (12.7 mm) or less above adjacent floor surface.
- B. Granite Thresholds: ASTM C 615/C 615M, with [polished] [honed] finish.
  - 1. Description: Uniform, [fine] [medium]-grained, <Insert color> stone without veining.
  - 2. Description: Match Architect's sample.
- C. Marble Thresholds: ASTM C 503/C 503M, with a minimum abrasion resistance of [10] [12] according to ASTM C 1353 or ASTM C 241/C 241M and with honed finish.
  - 1. Description: Uniform, fine-  $\text{D}$





- d. Laticrete International, Inc.
- e. MAPEI Corporation.
- 2. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.1.
- C. Latex-Portland Cement Mortar (Thinset): ANSI A118.4.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Bostik, Inc.
    - b. Custom Building Products.
    - c. Laticrete International, Inc.
    - d. 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.

2.10 GROUT MATERIALS

- A. Sand-Portland Cement Grout: ANSI A108.10, consisting of white or gray cement and white or colored aggregate as required to produce color indicated.
- B. Standard Cement Grout: ANSI A118.6.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Bostik, Inc.
    - b. Laticrete International, Inc.
    - c. MAPEI Corporation.
- C. High-Performance Tile Grout: ANSI A118.7.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Bostik, Inc.
    - b. Laticrete International, Inc.
    - c. MAPEI Corporation.
  - 2. Polymer Type: Ethylene vinyl acetate or acrylic additive, in dry, redispersible form, prepackaged with other dry ingredients.
- D. Water-Cleanable Epoxy Grout: ANSI A118.3, with a VOC content of 65 g/L or less.
  - 1. Manufacturers: Subject to co

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- b. Bostik, Inc.
- c. Laticrete International, Inc.
- d. MAPEI Corporation.

2.11 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Vapor-Retarder Membrane: Polyethylene sheeting, ASTM D 4397, 4.0 mils (0.1 mm) thick.
- C. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.
- D. Grout Sealer:



- 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. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.
- E. Where accent tile differs in thickness from field tile, vary setting-bed thickness so that tiles are flush.
- F. 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.
- G. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:
1. Ceramic Mosaic Tile: [1/16 inch (1.6 mm)] [1/8 inch (3.2 mm)].
  2. Quarry Tile: [1/4 inch (6.4 mm)] [3/8 inch (9.5 mm)].
  3. Pressed Floor Tile: [1/4 inch (6.4 mm)] [3/8 inch (9.5 mm)].
  4. Glazed Wall Tile: [1/16 inch (1.6 mm)] [1/8 inch (3.2 mm)].
  - 5.

3.4 GLASS TILE INSTALLATION

- A. Comply with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA 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 TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
- 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. Where accent tile differs in thickness from field tile, vary setting-bed thickness so that tiles are flush.
- E. 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.

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- C. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

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