

SECTION 09 30 00

TILE

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Tile and Accessories

- B. Related Sections:
 - 1. Section 07 14 16 – Cold Fluid-Applied Waterproofing

1.2 REFERENCES

- A. American National Standards Institute (ANSI)
 - 1. ANSI 108 – Standard Specifications for the Installation of Ceramic Tile
 - 2. ANSI A118 – Standard Specifications for the Installation of Ceramic Tile
 - 3. ANSI A136 – Standard Specifications for the Installation of Ceramic Tile
 - 4. ANSI A 137.1 – 2012 - American National Standards Specifications For Ceramic Tile
 - a. Tile Council of North America, Inc. (TCNA) Handbook for Ceramic, Glass, and Stone Tile Installation 2022
 - b. Installation Standards: Comply with the requirements of ANSI Specifications for the Installation of Ceramic Tile, and Correlating Tile Council of America (TCA) Details, except as shown or specified otherwise. Tile Council of North America, Inc. (TCNA)

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, contained in its "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 tile and each type of product

- B. Samples for Verification:
 - 1. Full-size units of each type and composition of tile and for each color and finish required.
 - 2. Cured grout and sealant samples, color to be selected by owner.
 - a. Qualification Data: For qualified Installer.
 - b. Sample Warranties.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Maintenance Data: Include recommended cleaning methods, cleaning materials, stain removal methods, and polishes and waxes.
- B. 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 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.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications:
 - 1. Installer Qualifications: Company specializing in performing the work of this section with minimum five years' experience.
 - 2. Installer's supervisor for Project holds the International Masonry Institute's Foreman Certification.
 - 3. Installer employs Ceramic Tile Education Foundation Certified Installers.
- B. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Build 25 ft. square mockup of each type of floor tile installation.
 - 2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- C. Preinstallation Conference: Conduct conference at Project site.
- D. 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 labelling tile packages.
- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location and protect from contamination, dampness, freezing or overheating.
- 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.

1.8 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.

1.9 WARRANTY

- A. Manufacturer Warranty: Material manufacturer shall warrant materials against defects for the intended application:
 - 1. Tile Warranty Period: One (1) year from the date of Substantial Completion.
 - 2. Setting, Grout, and Sealant Materials Warranty Period: Twenty (20) years from the date of Substantial Completion
- B. Special Installer's Warranty: The Contractor shall warrant the concrete repairs to be free of faults and defects in accordance with the General Conditions. Installed work discovered to contain faults or defects within the five-year warranty period shall be repaired or replaced with materials in accordance with the specification at no cost to the Owner. The warranty shall be signed by the Contractor performing the work.
 - 1. Warranty Period: Two (2) years from the date of Substantial Completion.

PART 2 PRODUCTS

2.1 PRODUCTS, GENERAL

- A. Source Limitations for Tile: Obtain tile from one source or producer.
- 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. ANSI 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.
- D. 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.
- E. 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 MANUFACTURERS

- A. Acceptable Manufacturer: Selective Stone, LLC.
- B. Requests for substitutions will be considered for approval by owner and architect.

2.3 TILE PRODUCTS

- A. Provide new tile units from original manufacturer of identical size, color, finish as existing installed tile units.
- B. Tile:
 - 1. Product: Slate Tile
 - 2. Finish: as selected by owner
 - 3. Face Size: variable
 - 4. Thickness: 3/8" to 5/8"
 - 5. Dynamic Coefficient of Friction (Slip Resistance): Not less than 0.60 for exterior applications.
 - 6. Grout Color: As selected by Architect or owner from manufacturer's full range
 - 7. Pattern: Matching existing

2.4 SETTING MATERIALS

- A. Water-Cleanable, Large Format Tile mortar for exterior applications, ANSI A118.5
 - 1. Laticrete 226 Thick Bed, or approved equal
 - 2. Bond Coat: Laticrete 4237 with 221 Powder, or approved equal

2.5 GROUT AND JOINT SEALANT MATERIALS

- A. Cement Grout for exterior applications: ANSI A118.6 and A118.7.

1. Laticrete Permacolor Select, or approved equal
 2. Color: As selected by Owner from manufacturer's full range.
- B. 100% Silicone Sealant Joints for exterior tile applications
1. Latacrete Latasil, or approved equal
 2. Color: As selected by Owner from manufacturer's full range.

2.6 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. 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.

2.7 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, and 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.
 1. Verify that concrete substrates for tile floors installed with adhesives comply with surface finish requirements in ANSI A108.01 for installations indicated.

- B. Verify that surfaces that received a steel trowel finish have been mechanically scarified.
- C. Verify that protrusions, bumps, and ridges have been removed by sanding or grinding.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. 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.
- B. Protection: Protect adjacent surfaces before tile work begins.
- C. Cleaning: Clean substrate surfaces in accordance with applicable reference standards and manufacturer's installation instructions.

3.3 TILE INSTALLATION

- A. Comply with the latest edition of 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 that are referenced in TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
 - 1. Follow procedures in the ANSI A108 series of tile installation standards for providing not less than 95 percent mortar coverage.
 - 2. Tile Installation: TCNA F104; mortar setting over waterproof membrane on concrete.
- 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, drains, 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. 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. Where adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.
- F. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.
- G. Grouting Joints:
1. 3/8-inch, with +/-1/8-inch tolerance.
 2. Lippage between tiles shall not exceed 1/16".
 3. Allow setting mortar to cure fully in accordance with manufacturer's written instructions before grouting joints.
 4. Remove cracked or debonded grout from adjacent original tile work.
- H. Expansion Joints:
1. 1/2-inch, or otherwise recommended per the Tile Council of North America, Inc. (TCNA) Handbook for Ceramic, Glass, and Stone Tile Installation 2022

3.4 ADJUSTING and CLEANING

- A. Remove and replace tile that is damaged or that does not match adjoining tile. Provide new matching units, installed as specified and in a manner to eliminate evidence of replacement.
- B. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
1. Remove 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 ten (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.

3.5 PROTECTION

- A. 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.

- B. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.
- C. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

END OF SECTION