

CERAMIC TILING

GENERAL INFORMATION

- 1.1 Ceramic mosaic tile floors and bases, glazed wall tile wainscots and walls, and marble thresholds.
- 1.2 Installation will typically be with latex-portland cement mortar and grout, via the Thin-Set method, although this should be reviewed with Facilities for each project.
- 1.3 Work shall include all reinforcement and accessories necessary to complete installation.
- 1.4 Review with Facilities required locations for installation of a waterproofing membrane at toilet room floors.
- 1.5 Porcelain, glass or engineered tile products should be reviewed with CU Facilities prior to specifying.

DESIGN REQUIREMENTS

- 2.1 Ceramic Tile design, specification, materials, and installation methods should adhere to, or exceed, all applicable American National Standards Institute (ANSI), American Society for Testing and Materials (ASTM), and Tile Council of America (TCA). These include, but are not limited to the latest editions of the following:
 - a. ANSI A108.1 Specifications for Installation of Ceramic Tile with Portland Cement Mortar.
 - b. ANSI A108.5 Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar.
 - c. ANSI A108.10 Installation of Grout in Tilework
 - d. ANSI A118.4 Specifications for Latex-Portland Cement Mortar.
 - e. ANSI A118.6 Specifications for Ceramic Tile Grouts.
 - f. ANSI A137.1 Specifications for Ceramic Tile.
 - g. ASTM C241 Test for Abrasion Resistance of Stone Subjected to Foot Traffic.

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- h. TCA Ceramic Tile Installation Handbook.
- 2.2 Samples of proposed ceramic tiles should be submitted to CU representatives for review. Include samples of ceramic tile accessories and grout. Clearly identify proposed colors, textures, patterns, and other appearance characteristics
- 2.3 Specify submission of test reports indicating that products comply with project requirements.
- 2.4 Specify manufacturer's standard grade ceramic tile unless use of a higher grade ceramic tile is approved by Facilities. Do not specify use of white grout.
- 2.5 Specify use of color impregnated grout sealer.
- 2.6 Tile floors with floor drains shall be sloped towards drains.
- 2.7 All tile to be used in residence halls shall be specifically reviewed and approved by Facilities.
- 2.8 All floor tile shall be matt, non-slip texture.
- 2.9 Standard marble thresholds shall be standard white marble, MIA Soundness Group A, minimum abrasive hardness of Ha10.0 per ASTM C241, honed finish on exposed surfaces, precut and delivered to the Project ready to install.
- 2.10 Pre-packaged Thin-Set Mortar shall be a factory-formulated, pre-sanded mix in a standard color complying with ANSI A118.4 - Latex Portland Cement Mortar when mixed with manufacturer's latex additive.
- 2.11 Pre-packaged Grout:
 - a. Sanded Joint Filler: Factory-formulated, pre-sanded, acid-resistant joint filler for vitreous tile in standard colors; suitable for gaging with manufacturer's latex additive; complying with ANSI A118.6.
 - b. Unsanded Dry Wall Grout: Factory formulated dry-set type in standard colors, suitable for gaging with manufacturer's latex additive; complying with ANSI A118.6.
- 2.12 Latex Additives shall be non-flammable, non-toxic, pre-diluted styrene butadiene rubber or acrylic resin gaging liquid by pre-packaged mortar/grout manufacturer for use with his product.
- 2.13 Sealants (subject to compatibility with other ceramic tile products):

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- a. Traffic Surfaces: Multi-component self-leveling and/or non-sag urethane sealant and backer material color matched to floor grout.
 - b. Non-Traffic Surfaces: One-component acrylic latex sealant with mildew-resistant properties, color matched to floor grout.
- 2.14 Joint Tape for Reinforced Cement Board: 2" wide glass fiber mesh provided or approved by the panel manufacturer.
- 2.15 Waterproofing Membrane for Toilet Room Floors: Self-curing liquid rubber polymer with reinforcing fabric, for installation over concrete subfloors, prior to installation of ceramic tile. Use only products compatible with existing subfloors and subsequent toppings, in accordance with manufacturer's recommendations.

CONSTRUCTION REQUIREMENTS

- 3.1 Environmental Requirements: Comply with applicable ANSI specifications and the following:
- a. Substrates: At temperature and moisture equilibrium with ambient conditions.
 - b. Temporary Heat: Evenly distributed into work areas.
 - c. Ventilation: Adequate and suitable for safe working conditions and proper curing of setting and grouting materials.
- 3.2 Before contractor commences installation they shall review and agree to tile setting method with Architect.
- 3.3 Contractor shall follow ANSI tile installation specifications and tile manufacturer's recommendations.
- 3.4 Reinforced Cement Board Joint Treatment: Fill open joints with latex-portland cement mortar. Cover joints and corners with joint tape, embedded in a skim coat of latex-portland cement mortar.
- 3.5 Protection:
- a. Protect building finishes and equipment from wetting, staining, dusting, contamination, and other damage.
 - b. Provide waterproof deck protection beneath mixing equipment.

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- c. Legally dispose of discarded materials off the site. Clean equipment in an area reserved for the purpose. Do not hose down equipment or dump cleaning water indiscriminately about the site.
- 3.6 Install crack isolation membrane at all areas to receive slate tile flooring. Install membrane in thinset mortar, in accordance with manufacturers recommendations.
- 3.7 Install waterproofing membrane at floor toilet room floors on supported slabs as specified, in accordance with manufacturer's recommendations.
- 3.8 Where not otherwise specified or amended herein, set tile per cited ANSI Specifications and install grout per ANSI A108.10. TCA Installation Handbook details are cited for general illustration only, and do not take precedence over other requirements of this Section.
- 3.9 Allowable Tolerances:
 - a. Variation from Required Plane: 1/8" maximum in 8'-0", without abrupt changes.
 - b. Joints: No noticeable variation in width, alignment, orientation, or color.
- 3.10 Layout: Center and balance areas where possible, so that perimeter tiles are equal and at least half size. Plumb and level wall joints. Where not otherwise shown, run floor joints normal and parallel to walls.
 - a. Trim Units: Bases: Use cove bases for all work.
 - b. Vertical Corners: Round out-angles for all work. Square in-angles.
 - c. Exposed Terminal Edges: Bullnose trim units.
- 3.11 Tile Cutting and Fitting: Per ANSI Specifications and the following:
 - a. Smooth exposed cut edges with abrasive stone.
 - b. Where standard trim shapes do not meet job conditions, cut, grind, and fit tile to member with adjacent work. In no case shall transitions be made with grout fill between non-membering pieces.
 - c. Fit tile accurately to finish trim, thresholds, and built-in fixtures.
- 3.12 Mortar and Grout:
 - a. Proprietary Mortar and Grout: Mix and cure in strict accordance with manufacturer's instructions.

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- b. Setting Beds: Beat-in and adjust tile while bed is properly plastic. If bed skims over or starts to set before tile is installed, scrape it off and replace it with new material. Do not set tile on a dry or partially cured bed.
 - c. Ribbed-Back Tiles: Fill ribs completely with setting mortar immediately before setting each tile.
- 3.13 Unless otherwise specified, install all floor and wall ceramic tile with latex-portland cement mortar.
 - a. Installation shall comply with ANSI A108.5.
 - b. Mortar: Prepackaged mix gaged with liquid additive.
 - c. Grout: Prepackaged mix gaged with liquid additive; sanded joint filler for vitreous tile; un-sanded grout for non-vitreous tile.
- 3.14 Install thresholds at entry doors to tile-floored rooms. Fit thresholds accurately to door jambs.
 - a. Set thresholds as specified for adjoining tile floor.
- 3.15 Isolation Joint Installation:
 - a. Joints between tile/thresholds and door frames; joints between tile and other items that penetrate or abut tile. Where not otherwise shown, size isolation joints to match width of adjoining grouted joints, but not less than 1/8".
 - b. Isolation Joint Sealing: Clean joints. When joints are dry, install joint backer and sealant in accordance with tile manufacturer's recommendations.
- 3.16 Correct non-complying and damaged work. Replace work that cannot be satisfactorily corrected in place. Blend-in repairs to match adjacent work.
- 3.17 Cleaning:
 - a. During Installation: Clean as often as necessary to prevent stains from forming.
 - b. After Grouting: Sponge and polish tile surfaces thoroughly with a clean dry cloth. Do not use acid cleaners.
 - c. Clean up excess material, smears and spatters in a way that does not injure or stain tile work or adjoining surfaces. Stained or damaged tile work will be replaced to the satisfaction of the Architect and Facilities.
- 3.18 Protection:

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- a. Close off work spaces to traffic and construction during tiling and for at least 48 hours after completion of tile work.
- b. Protect completed installations from damage.
- c. Installation should be fully cleaned prior to protecting.

REFERENCE

- 4.1 The applicable CSI Specification Section is 09 30 13.