

DIVISION 9 - FINISHES

Section 09330 - Tile

Introduction

Tile work shall be designed and specified in accordance with the current edition of the Tile Council of North America (TCNA) Handbook for Ceramic Tile Installation and The American National Standards Institute (ANSI) for the materials used to install and grout ceramic tile and stone.

Indicate extent and any patterns of tile work on the drawings, including floor and wall layouts, full height or wainscot limits, tile sizes, color arrangement, perimeter conditions, interface with dissimilar materials, trim components, control and expansion joints, thresholds and setting details.

Multiple stall restrooms: indicate on drawings, full height tile (from floor to finished ceiling) at wet walls behind toilets and at side return walls at toilets, to ensure wall tile is behind all accessories such as toilet partition brackets and grab bars. Indicate full height tile behind wall hung sinks; tile above vanity counter surface to ceiling (full tile behind mirrors).

A variety of tile types may be used in combination. (Glass, matte, gloss). During the design phase, prepare a Color Board "mock up" using full size tiles to clearly demonstrate the design intent of the finished installation. Present patterns, sizes, finishes and colors using actual tiles for user group review and approval.

Trim and Accessories: Verify that matching tile trim units are available for the specified floor and wall tile. Availability: In the event matching tile trim is not manufactured, specify and detail metal or rigid PVC trim components (Products such as Schluter-DILEX-HK®, or similar) for sanitary cove base, inside and outside corners, unfinished tile edges and floor change transitions in lieu of sealant and caulk to treat such transitions.

Retrofit of existing showers in Residence Life facilities as well as new installations which provide handicapped access to showers shall be carefully studied and floor slopes, floor drain locations and waterproofing shall be carefully analyzed and detailed. Provide details for setting beds, expansion and control joints, waterproofing, and drain seals.

Linear Floor Drains (stainless steel) preferred for ganged showers.

Preferred tile sizes for shower room floors are porcelain 1" x 1" or 2" x 2" maximum and shall meet ≥ 0.42 requirement, measured per the DCOF AcuTest®, for level interior tiles that will be walked on when wet.

Pre-Installation Meeting: At least three weeks prior to commencing tile work, contractor to conduct a meeting at the project site with tile installers, architect and PD+C project manager to discuss job conditions and scope.

Part 1 – General- Considerations for Selection

- When patching tile in existing areas, develop a pattern rather than merely replacing required tile (when owner replacement stock is depleted and the original tile is no longer available or discontinued).
- Dark grout colors are preferred in areas that are routinely exposed to wet mops (floor tile, wall base).
- Polished and semi polished surfaces create a very smooth surface and are not recommended for flooring applications in areas exposed to water, oil, or grease.
- Interior public areas that are likely to be walked on when wet, shall meet ≥ 0.42 requirement, measured per the DCOF AcuTest® (Wet)
- Exterior Applications exposed to water (pedestrian plazas, pool decks) shall meet ≥ 0.60 requirement, measured per the DCOF AcuTest® (Wet) when tile size is larger than 3x3.
- Glazed floor tiles and porcelain tiles on ramped surfaces shall meet ≥ 0.65 requirement, measured per the

DCOF AcuTest® (Wet) when tile size is larger than 6x6.

- When specifying products for flooring applications, consider ease of maintenance for custodial cleaning staff. Select products that resist scratches and resist stains from soil, body oils, food and beverage spills, etc.
- Avoid caulked joint transitions at wall base as these areas deteriorate quickly when exposed to routine cleaning and must be continually maintained throughout the life of the installation.

Part 2 - Products

- Products shall meet or exceed the specified requirements of ANSI A137.1, for types, compositions and other characteristics indicated.
- Single Source Responsibility: For quality assurance, obtain each type and color of tile from a single source. Obtain each type and color of mortar, adhesive and grout from the same source.
- Products shall be suitable for a Commercial environment and for the specific usability needs of the application. Verify ASTM Porcelain/Ceramic test results for Water Absorption (ASTM C73-88) Scratch Hardness (MOHS scale rating) Breaking Strength (ASTM 648-04) Chemical Resistance (ASTM C650-04) and Abrasion Resistance (ASTM C1027-99).
- Ceramic or Porcelain tile used on floors to have MOH's Scale Hardness Value of 7 or greater and an Abrasion Resistance Classification of Class Four (4) or greater, per ASTM C1027-99.
- Non-Ceramic Trim: Satin anodized aluminum or stainless steel finish with profile that is suitable for the application at open edges of tile. Detail exposed edge protection and transition profiles at floors and corners, including but not limited to: transitions between floor finishes of different heights, between tile surface and adjoining finishes at doorways, and expansion and control joints at floors and walls.
- Stone Thresholds shall be uniform in color and finish. Marble complying with ASTM C241 for abrasion resistance and ASTM C503 for exterior use; Granite complying with ASTM C 615.
- Showers: Specify acrylic coated mold and moisture resistant gypsum panel substrate for inside shower areas. Install in accordance with TCNA Handbook Methods. Products shall comply with ASTM C1178/C, 1178M and ASTM D3273 (Products such as National Gypsum Gold Bond eXP® Tile Backer, Georgia Pacific DensShield® Tile Backer, Certainteed M2Tech® Moisture & Mold Resistant Gypsum Board, or similar).
- Specify and detail Waterproofing Membranes for shower walls and bases, pipe protrusions, inside and outside corners, curbs and wet area shower niches. (Composite sheet membrane products such as NoblelSeal TS® or similar. Liquid applied waterproofing membranes products such as Laticrete Hydro Ban®, Laticrete 9235®, RedGard®, or similar).
- Wet areas: Specify moisture resistant board as a tile backer in toilet/sink areas with limited water exposure. (Products such as National Gypsum eXP® Gypsum Board, or similar).
- Silicone sealant, moisture and mildew resistant type for shower floors and shower walls.
- Quarry or tressed paver products with matching cove base and epoxy grout is recommended for flooring in Service or Food Prep areas accumulating oils, grease and water.
- Textured or Small format tile is preferred in wet areas such as kitchens, showers, and exterior areas where rain may mix with dust and make a slick surface.

Part 3 - Execution

- Installation shall be in accordance with Tile Council of America Standards (TNCA) and shall adhere to industry installation guidelines ANSI A108, A118 and A136.

- Specify the setting method for each type tile and location by reference to TCNA standards. Generally all tile installations shall be thin set except sloped floors and shower floors where mud set shall be used.
- Setting materials, grouts and sealants shall be appropriate for the installation method.
- Coordinate and detail expansion joints with building details.
Ensure tile joints are watertight, without voids, cracks, excess mortar, or excess grout. Contractor to apply penetrating sealant (Colorless, stain-resistant sealer, not affecting color and physical properties of ceramic tile and stone surfaces). Protect finished installation until substantial completion acceptance.
- Extra stock for the Owner's use in replacement and maintenance shall be clearly labeled and consist of one (1) box or at minimum, 2 percent of each of the primary sizes and colors of tile installed as well as extra stock of adhesives, mortars, grouts and other installation materials from same production run or batch as original tile and installation materials.
- Require submission of an "as-built" color and material schedule with the project closeout documents, including:
 - Descriptive location (room number, etc.)
 - Tile (manufacturer, color and size)
 - Grout (manufacturer and color)

End of Section 09330