

SECTION 09 6519
RESILIENT TILE FLOORING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section Includes:
1. Vinyl composition floor tile.
 2. Luxury vinyl floor tile.

1.03 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM):
1. C 109 Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens).
 2. D 695 Test Method for Compressive Properties of Rigid Plastics.
 3. D 695 Test Method for Compressive Properties of Rigid Plastics.
 4. D 2240 Test Method for Rubber Property Durometer Hardness.
 5. D 2240 Test Method for Rubber Property Durometer Hardness.
 6. E 648 Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
 7. E 662 Standard Test Method for Specific Optical Density of Smoke Generated
 8. F 510 Test Method for Resistance to Abrasion of Resilient Floor Coverings Using an Abrader with a Grit Feed Meter.
 9. F 710 Practice for Preparing Concrete Floors to Receive Resilient Flooring.
 10. F 970 Test Method for Static Load Limit.
 11. F 1066 Vinyl Composition Floor Tile.
 12. F 1344 Rubber Floor Tile.
 13. F 1516 Practice for Sealing Seams of Resilient Flooring Products by the Heat Weld Method (when Recommended).
 14. F 1700 Solid Vinyl Floor Tile.
 15. F 1869 Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
 16. F 2170 Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
 17. F 2982 Polyester Composition Floor Tile.
 18. E 648 Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
- B. American with Disabilities Act Architectural Guidelines (ADAAG).
- C. National Fire Protection Association (NFPA):
1. 253 Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.

1.04 SUBMITTALS

- A. General: In compliance with Section 01 3300 and as specified herein.
- B. Product Data:
 - 1. Manufacturer's recommended maintenance instructions for Owner's use.
 - 2. Underlayment and leveling compound manufacturer's installation instructions and approval of compatibility with finish flooring.
- C. Shop Drawings: For each type of floor tile. Include floor tile layouts, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts.
 - 1. Show details of special patterns.
 - 2. Show details of flooring transitions to different adjacent materials.
- D. Samples: Full-size units of each color, pattern and style selected by Architect.
- E. Product Schedule: For floor tile. Use same designations indicated on Drawings.
- F. Qualification Data (FIO): For Installer.
- G. Fire Test Certification (FIO): Submit manufacturer's certification that flooring has been tested by independent laboratory and complies with required fire tests.
- H. Sustainable Construction Submittals:
 - 1. Indicate compliance with the Georgia Energy Efficiency and Sustainability Construction Standards for State Buildings dated July 1, 2009. Submit completed Section 6.3-Georgia based Materials and Products document. Refer to the requirements of Section 01 8113 – Sustainable Design Requirements, Georgia Peach Program.

1.05 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of floor tile to include in maintenance manuals.

1.06 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Floor Tile: Furnish one box for every 50 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.

1.07 QUALITY ASSURANCE

- A. Manufacturer: Provide each type of resilient flooring and accessories by a single manufacturer, including recommended primers, adhesives, sealants, including moisture mitigation system, finish accessories and leveling compounds.
- B. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.
 - 1. Engage an installer who employs workers for this Project who are trained or certified by floor tile manufacturer for installation techniques required.
- C. Pre-Installation Meeting: Pre-installation meeting to verify project requirement, substrate conditions, manufacturer's installation instructions, manufacturer's warranty requirements, and installer qualifications.

- D. Bond Test: Install multiple bond test using a 3'-0" x 3'-0" pieces of material adhered with the appropriate adhesive to verify quality of adhesion. Remove half of each piece after 24 hours, then the other half after 48 hours. Assess resistance to indentation, place end user equipment onto a sample for 72 hours.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Store floor tile and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F or more than 90 deg F. Store floor tiles on flat surfaces.

1.09 PROJECT CONDITIONS

- A. Environmental Requirements: Maintain ambient temperatures within range recommended by manufacturer, and not less than 70 deg F or more than 95 deg F for 48 hours prior to, during and thereafter installation, in spaces to receive floor tile.
- B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.
- C. Close spaces to traffic during floor tile installation.
- D. Close spaces to traffic for 48 hours after floor tile installation.
- E. Install floor tile after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics: For resilient tile flooring, as determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.
 - 1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

2.02 LUXURY VINYL FLOOR TILE; LVT-1

- A. Basis-of-Design Manufacturer: In accordance with Finish Schedule.
- B. Other Acceptable Manufacturers: Subject to compliance with requirements, manufacturers other than the scheduled product manufacturer must demonstrate materials substantially similar in color, texture, and appearance to the scheduled material by submitting samples to the Architect for approval no less than 10 days prior to bidding:
 - 1. Patcraft
 - 2. Armstrong World Industries.
 - 3. Johnsonite, A Tarkett Company.
 - 4. Mannington Mills, Inc.

2.03 RUBBER FLOOR TILE; RF-1

- A. Basis-of-Design Manufacturer: In accordance with Finish Schedule.

2.04 Other Acceptable Manufacturers:

- A. Requests for substitutions will be considered in accordance with provisions of Section 01 2500.

2.05 SOLID RUBBER TILE

- A. Basis-of-Design Product: Tarkett Angle Fit Rubber Stair Treads, Nosings, Risers, and Stringers or approved equal.
 - 1. Size: Provide manufacturer standard size in largest dimension available to minimize seams.
 - 2. Texture: Hammered.
 - 3. Colors and Patterns: TBD

2.06 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by floor tile manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by floor tile and adhesive manufacturers to suit floor tile and substrate conditions indicated.
- C. TS-4 Metal Edge/Transition Strips: Extruded aluminum with mill finish of profile indicated, of height required to protect exposed edges of resilient floor covering, and of maximum lengths to minimize running joints. Basis-of-Design Manufacturer: Schluter Systems "Vinpro-S".
- D. Floor Polish: Provide protective, liquid floor-polish products recommended by floor tile manufacturer if required.
- E. Rubber flooring installation and materials to be in accordance with manufacturer's recommendations including adhesives as supplied by flooring manufacturer for applicable installation including humidity.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of Work. Verify that substrate conditions are acceptable for product installation in compliance with manufacturer's instructions (i.e. moisture tests, bond test, pH test, etc.).
- B. Visually inspect flooring materials, adhesives and accessories prior to installation. Do not install flooring material with visual defects.
- C. Examine subfloors prior to installation to determine that surfaces are smooth and free from cracks, holes, ridges, and other defects that might prevent adhesive bond or impair durability or appearance of flooring material.
- D. Inspect subfloors prior to installation to determine that surfaces are free from curing, sealing, parting and hardening compounds; residual adhesives; adhesive removers; and other foreign materials that might prevent adhesive bond. Visually inspect for evidence of moisture, alkaline salts, carbonation, dusting, mold, or mildew.

- E. Report conditions contrary to contract requirements that would prevent proper installation. Do not proceed with installation until unsatisfactory conditions have been corrected.
- F. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Prepare substrates according to floor tile manufacturer's written instructions to ensure adhesion of resilient products.
- B. Concrete Substrates: Prepare in compliance with ASTM F 710. Perform pH tests on concrete floors regardless of their age or grade level. Document and retain test results.
 - 1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
 - 2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by floor tile manufacturer. Do not use solvents.
 - 3. Alkalinity and Adhesion Testing: Perform tests recommended by floor tile manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing.
 - 4. Moisture Testing: Proceed with installation only after substrates pass testing according to floor tile manufacturer's written recommendations, but not less stringent than the following:
 - a. Perform anhydrous calcium chloride test according to ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 5 lb of water/1000 sq. ft. in 24 hours.
 - b. Perform relative humidity test using in situ probes according to ASTM F 2170. Proceed with installation only after substrates have a maximum 80 percent relative humidity level.
- C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
- D. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient floor tile.

3.03 FLOOR TILE INSTALLATION

- A. Comply with manufacturer's product data, including technical bulletins, product catalog, installation instructions, and product carton instructions for installation and maintenance procedures as required.
- B. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.
- C. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.
 - 1. Lay tiles with grain direction as indicated on the drawings, or if no grain is indicated, with grain running in one direction for plank (rectangular) materials and with grain direction alternating in adjacent tiles (basket-weave pattern) for square materials.
- D. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.

- E. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.
- F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent marking device.
- G. Install floor tiles on covers for telephone and electrical ducts, building expansion-joint covers, and similar items in finished floor areas. Maintain overall continuity of color and pattern between pieces of tile installed on covers and adjoining tiles. Tightly adhere tile edges to substrates that abut covers and to cover perimeters.
- H. Adhere floor tiles to flooring substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

3.04 ACCESSORY INSTALLATION

- A. Apply top set wall base to walls, columns, casework, and other permanent fixtures in areas where top-set base is required. Install base in lengths as long as practical, with inside corners fabricated from base materials that are mitered or coped. Tightly bond base to vertical substrate with continuous contact at horizontal and vertical surfaces.
- B. Fill voids with plastic filler along the top edge of the resilient wall base or integral cove cap on masonry surfaces or other similar irregular substrates.
- C. Place resilient edge strips tightly butted to flooring, and secure with adhesive recommended by the edge strip manufacturer. Install edge strips at edges of flooring that would otherwise be exposed.
- D. Apply metal edge strips where shown on Drawings, after flooring installation. Secure units to substrate, complying with edge strip manufacturer's recommendations.

3.05 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protecting floor tile.
- B. Perform the following operations immediately after completing floor tile installation:
 - 1. Remove adhesive and other blemishes from exposed surfaces.
 - 2. Sweep and vacuum surfaces thoroughly.
 - 3. Damp-mop surfaces to remove marks and soil.
- C. Protect floor tile from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- D. Cover floor tile until Substantial Completion.

END OF SECTION