

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. Luxury vinyl tile.
2. Transition strips
3. Floor preparation requirements.

B. Related Sections:

1. Division 09 Section "Tiling" for metal edge strips installed with tile flooring.
2. Division 09 Section "Resilient Base and Accessories" for resilient base and reducer strips installed with resilient floor coverings.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

- B. CTHPB Documentation Submittals: Comply with Division 01 Section "Sustainable Design Requirements" and provide the following in addition to other action submittals:

1. Product Data for Credit 5d: For adhesives and sealants, documentation including printed statement of VOC content.
2. Product Data for Credit 5d: For resilient tile flooring, documentation from an independent testing agency indicating compliance with the FloorScore standard.
3. Product Data for Credit d8: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.
4. Product Certificates for Credit d10: For products and materials required to comply with requirements for regional materials indicating location and distance from Project of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.

- 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.

D. Samples for Initial Selection: For each type of floor tile indicated.

E. Samples for Verification: Full-size units of each color and pattern of floor tile required.

F. Product Schedule: For resilient flooring. Use same designations indicated on Drawings.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer.

1.5 CLOSEOUT SUBMITTALS

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

B. Warranty: Special warranties specified in this Section.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Floor Tile: Furnish 1 box for every 50 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs workers for this Project who are competent in techniques required by manufacturer for floor tile installation indicated.

1. Engage an installer who employs workers for this Project who are trained or certified by manufacturer for installation techniques required. Provide one Master Installer for each product specified.

B. Preconstruction Testing Service: Contractor to engage a qualified independent testing agency to perform testing indicated below.

1. ASTM F 2170, Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in Situ Probes.

2. ASTM F 3191, Standard Practice for Field Determination of Substrate Water Absorption (Porosity) for Substrates to Receive Resilient Flooring.

C. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures

related to flooring installation including, but not limited to, the following:

1. Review substrate conditions, moisture and pH test results, manufacturer's installation instructions, and warranty requirements.
 2. Document proceedings, including required corrective measures.
- D. 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 mockups for each type of resilient flooring including resilient base and accessories.
 - a. Size: Minimum 100 sq. ft. for each type, color, and pattern in locations directed by Architect.

1.8 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.

1.9 PROJECT CONDITIONS

- A. Maintain temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F , in spaces to receive floor tile during the following time periods:
 1. 48 hours before installation.
 2. During installation.
 3. 48 hours after installation.
- B. After postinstallation period, maintain 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 covering installation.
- D. Close spaces to traffic for 48 hours after floor covering installation.
- E. Install resilient products after other finishing operations, including painting, have been completed.

1.10 WARRANTY

- A. General Warranty: Special warranties specified in this Section shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

- B. **Manufacturer Warranty:** Written warranty, signed by manufacturer agreeing to repair or replace resilient flooring and adhesives that fails in performance, materials, or workmanship within specified warranty period.
 - 1. **Warranty Period:** Commencing from date of Substantial Completion:
 - a. **Luxury Vinyl Tile:** Five years
 - 2. **Exclusions from warranty include the following:**
 - a. **Problems caused by moisture, hydrostatic pressure, or alkali in the subfloor.**
 - b. **Damage to flooring products from high heels or spiked shoes.**

- C. **Installer Warranty:** Written warranty, signed by Installer agreeing to repair or replace resilient flooring, installed according to manufacturer's written recommendations, that fails in performance, materials, or workmanship within specified warranty period.
 - 1. **Warranty Period:** 18 months from date of Substantial Completion.
 - 2. **Exclusions from warranty include the following:**
 - a. **Problems caused by moisture, hydrostatic pressure, or alkali in the subfloor.**
 - b. **Damage to flooring products from high heels or spiked shoes.**

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. **Fire-Test-Response Characteristics:** For resilient sheet 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.

- B. **Regional Materials:** Products in this Section, including raw materials, to be regionally harvested, extracted, sourced and manufactured within 500 miles of Project site.

- C. **Recycled Content:** Meet or exceed the recycled content values defined by the EPA Procurement Guidelines listed in Division 01 Section "Sustainable Design Requirements."

- D. **FloorScore Compliance:** Resilient sheet flooring shall comply with requirements of FloorScore certification.

- E. **Low-Emitting Materials:** Flooring system shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.2 LUXURY VINYL TILE

A. Luxury Vinyl Tile:

1. Subject to compliance with requirements, provide one of the following:
 - a. Basis of Design: Mohawk, M-Force Ultra Commercial LVT
 - b. Armstrong
 - c. Karndean
 - d. Shaw
2. Tile Standard: ASTM F1700, Class 3, Type B- Embossed, through-pattern tile.
3. Wearing Surface: M-Force Ultra
4. Thickness: 0.197 inch.
5. Static Load Limit: ASTM F 970, 1000 psi.
6. Size: 9.25 x 59 inches.
7. Color: As selected from manufacturers standard colors.

B. Transition Strip:

1. Subject to compliance with requirements, provide or same manufacturer as LVT
2. Thickness: 0.197 inch
3. Size and Shape: Based on the material conditions, coordinate with drawings and confirm in field at material transition
4. Color: As selected by Architect from full range of color

2.3 INSTALLATION MATERIALS

A. Adhesives: Water-resistant type recommended by flooring and adhesive manufacturers to suit resilient sheet flooring and substrate conditions indicated.

1. Adhesives shall have a VOC content of 50 g/L or less.
2. Adhesives shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

B. Resilient Transition Strips: Height required to protect exposed edge of carpet, and of maximum lengths to minimize running joints.

1. Comply with Division 09 Section "Resilient Base and Accessories" for resilient moldings.

2.4 SUBSTRATE PREPARATION

A. Primer: ASTM C1059, Type I, latex formulation for use with underlayments.

1. Product: Subject to compliance with requirements, provide one of the following:
 - a. Ardex; P 51 Primer.
 - b. Koster; VAP 1-06.
 - c. Laticrete; NXT Primer.
 - d. MAPEI Corporation; Primer T for underlayments.

- B. Underlayment: ASTM A118.4, 5000 psi compressive strength at 28 days; trowel applied cementitious underlayment for filling holes, depressions, and damaged areas of concrete slabs in excess of 1/2-inch depth.
 - 1. Product: Subject to compliance with requirements, provide one of the following:
 - a. Ardex; SD-P.
 - b. Koster; Repair Mortar.
 - c. Laticrete; NXT Patch.
 - d. MAPEI Corporation; Mapecem Quickpa

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of floor tile.
- C. Proceed with installation only after unsatisfactory conditions have been corrected. Commencement of work indicates acceptance of substrates.

3.2 PREPARATION FOR EXISTING CONCRETE SLABS

- A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of all flooring products.
- B. Concrete Substrates: Prepare according to ASTM F 710.
 - 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 manufacturer. Do not use solvents.
- C. Prime all existing concrete surfaces. Allow primer to dry for 2 to 3 hours at 70 deg F, but not more than 24 hours before installation of underlayment. Areas of primer that have dried for more than 24 hours must be re-primed prior to application of underlayment. Comply with manufacturer's written recommendations and the following:
 - 1. Primer: Pour, mop or spray primer onto the surface. Apply an even thickness of primer to the prepared substrate using a bristle broom. Remove any puddles or thick areas.
 - 2. Underlayment: Apply underlayment to existing holes, depressions, and cracks in substrate as required for preparation of installation of self-leveling underlayment.
 - 3. Self-Leveling Underlayment: Prime surface and install self-leveling underlayment within 24 hours. Pour or pump self-leveling underlayment over the primed substrate and spread with a spike roller or gauging rake. Use a smoothing paddle to combine pours and to obtain a flat smooth surface.

- a. Furnish and install self-leveling underlayment on all existing slabs to receive new flooring, including those that have had existing VAT, VCT and/or mastic removed by the shot-blast method.
 - 1) Floor preparation work includes installation of underlayment as required and self-leveling underlayment in 1/8-inch thickness.
 - 2) Additional floor preparation work required in excess of 1/8-inch thickness for self-leveling underlayment, will be included in a Unit Price.

- D. Test concrete slabs for moisture following installation of underlayment(s), but do not test surface of self-leveling underlayment for moisture or pH.
 1. Alkalinity and Adhesion Testing: Contractor to Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
 - a. Surface pH not to exceed 9.

 2. Moisture Testing: Contractor to Perform tests recommended by manufacturer and as follows. Proceed with installation only after substrates pass testing.
 - a. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 to 5 lb. of
 - b. water/1000 sq. ft. in 24 hours, as required by manufacturer's written recommendation for maximum moisture content.
 - c. Perform relative humidity test using in situ probes, ASTM F 2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.

 3. Porosity Testing: Contractor to Perform tests as follows prior to installation of flooring.
 - a. Perform water absorption testing in accordance with ASTM F 3191 to determine if the substrate surface is porous or non-porous.
 - b. Substrate and ambient temperature: 75 +/- 10 degrees F.
 - c. Ambient humidity: 50 +/- 10 percent relative humidity.

- E. Do not install floor tiles until they are same temperature as space where they are to be installed.
 1. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

- F. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

3.3 FLOOR TILE INSTALLATION

- A. Comply with manufacturer's written instructions for installing floor tile.

1. Installation is not to begin until the HVAC system is operational, and the following conditions are maintained for at least 48 hours before, during and 72 hours after completion:
 - a. Ambient Temperature: Between 65 and 85 degrees F, unless otherwise stated by installed products manufacturer.
 - b. Ambient Humidity: Between 35 and 55 percent, unless otherwise stated by installed products manufacturer.
 - c. Substrate Temperature: Not less than 65 degrees F or more than 85 degrees F before, during and after installation, unless otherwise stated by installed products manufacturer.
 - 1) Do not install flooring unless substrate temperature is at least 5 degrees above dew point with temperature rising.
- 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.
 1. Lay rubber tiles with arrows in one direction.
- 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.
- 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, nonstaining marking device.
- G. 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.
- H. Metal Edge Strips: Install at locations indicated, where exposed edge of flooring meets carpet or other flooring that finishes flush with or below top of flooring and no threshold is indicated.

3.4 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protection of 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. Vinyl composition tile flooring:
1. Apply a minimum of 3 to 5 coats of protective, acrylic floor polish to horizontal surfaces that are free from soil, visible adhesive, and surface blemishes as recommended in writing by manufacturer and as required to achieve a high gloss finish.
 - a. Use commercially available product acceptable to manufacturer.
 - b. Coordinate selection of floor polish and final number of coats with Owner's maintenance service.
- D. Protect floor tile products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- DI. Cover floor tile until Substantial Completion.

END OF SECTION 096519