

## SECTION 09 62 00

### RESILIENT FLOORING

#### PART 1 - GENERAL

##### 1.01 SUMMARY

- A. Section Includes: Luxury Vinyl Tile. Indicated as **LVT** in the project finish schedule.
- B. Related Sections: Section(s) related to this section include:
  - 1. Concrete: Refer to Division 3 Concrete Sections for cast-in-place concrete, concrete toppings, and cementitious underlayments.
  - 3. Resilient Flooring Accessories: Refer to Division 9 Finishes Sections for resilient wall bases, reducer strips, and other resilient flooring accessories.

##### 1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM):
  - 1. ASTM E 648 Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Energy Source.
  - 2. ASTM E 662 Test Method for Specific Density of Smoke Generated by Solid Materials.
  - 3. ASTM F 710 Practice for Preparing Concrete Floors and Other Monolithic Floors to Receive Resilient Flooring.
  - 4. ASTM F 970 Test Method for Static Load Limit.
- B. National Fire Protection Association (NFPA):
  - 1. NFPA 253 Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Energy Source.
  - 2. NFPA 258 Test Method for Specific Density of Smoke Generated by Solid Materials.

##### 1.03 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide flooring which has been manufactured, fabricated and installed to performance criteria certified by manufacturer without defects, damage, or failure.

##### 1.04 SUBMITTALS

- A. General: Submit listed submittals in accordance with "Conditions of the Contract" and Division 1 Submittal Procedures Section.
- B. Product Data: Submit product data, including manufacturer's SPEC-DATA product sheet, for specified products.
- C. Samples: Submit selection and verification samples for finishes, colors, and textures.
- D. Quality Assurance Submittals: Submit the following:
  - 1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
  - 2. Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria, and physical requirements.
  - 3. Manufacturer's Instructions: Manufacturer's installation instructions.
- E. Closeout Submittals: Submit the following:
  - 1. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products, and precautions against cleaning materials and methods detrimental to

finishes and performance.

2. Warranty: Warranty documents specified herein.

#### 1.05 QUALITY ASSURANCE

- A. 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 installer certified as an "Associate Mechanic" or "Master Mechanic."
  2. Certificate: Submit certificate indicating qualification.
- B. Regulatory Requirements:
  1. Fire Performance Characteristics: Provide resilient linoleum tile flooring with the following fire performance characteristics as determined by testing products in accordance with ASTM method indicated below by a certified testing laboratory or another testing and inspecting agency acceptable to authorities having jurisdiction:
    - a. Critical Radiant Flux: Class 1 Rating per NFPA 253 (ASTM 648) (0.45 watts/cm<sup>2</sup> or greater).
    - b. Smoke Density: Less than 450 per NFPA 258 (ASTM E 662).
- C. Pre-Installation Meetings: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions, and manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.
- D. Pre-Installation Testing: Conduct pre-installation testing for moisture content in slab prior to installation and to ensure moisture levels are below thresholds allowed by manufacturer prior to installation.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. General: Comply with Division 1 Product Requirements Sections.
- B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- D. Storage and Protection: Store materials protected from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer.
  1. Material should be stored in areas that are fully enclosed, weathertight with the permanent HVAC system set at a uniform temperature of at least 68 degrees F (20 degrees C) for 48 hrs. prior to, during and after installation.

#### 1.07 PROJECT CONDITIONS

- A. Environmental Requirements/Conditions: In accordance with manufacturer's recommendations, Areas to receive flooring should be clean, fully enclosed and weathertight with the permanent HVAC system operational and set at a minimum of 68° F (20° C) for a minimum of 7 days prior to, during, and 7 days after the installation. The flooring material should be conditioned in the same manner for at least 48 hours prior to the installation. Maximum temperature should not exceed 100 degrees F after installation. Areas to receive flooring shall be adequately lighted to allow for proper inspection of the substrate, installation and seaming of the flooring, and for final inspection.
- B. Temperature Requirements: Maintain air temperature in spaces where products will be installed for time period before, during, and after installation as recommended by manufacturer.
  1. Temperature Conditions: 68 degrees F (20 degrees C) for 7 days prior to, during and after installation.
- C. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show

recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

#### 1.08 SEQUENCING AND SCHEDULING

- A. Finishing Operations: Install tile flooring after finishing operations, including painting and ceiling operations, have been completed.
- B. Concrete Curing: Do not install tile flooring over concrete substrates until substrates have cured and are dry to bond with adhesive as determined by resilient flooring manufacturer's recommended bond, moisture test, and pH test.

#### 1.09 WARRANTY

- A. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.
  - 1. Warranty Period: Five (5) year limited warranty commencing on Date of Substantial Completion.

#### 1.10 MAINTENANCE

- A. Extra Materials: Deliver to Owner extra materials from same production run as products installed. Package products with protective covering and identify with descriptive labels. Comply with Division 1 Closeout Submittals (Maintenance Materials) Section.
  - 1. Quantity: Furnish quantity of flooring units equal to 5% of amount installed.
  - 2. Delivery, Storage and Protection: Comply with Owner's requirements for delivery, storage and protection of extra materials.

### **PART 2 - PRODUCTS**

#### 2.01 LUXURY VINYL TILE

- A. Basis of Design– Luxury Vinyl Tile:
  - 1. Interface Modular Resilient LVT – Color to be determined
- B. Substitutions: Not permitted.

#### 2.2 ACCESSORIES

- 2.2.1 Reducer Strips: Solid vinyl or rubber composition, 1 inch wide by flooring thickness, tapered, color to be selected from manufacturer's full color range.
- 2.2.2 Leveling Compound: White, premixed, latex based.
- 2.2.3 Adhesive:
  - 2.2.3.1 Water based, waterproof, recommended by flooring manufacturer.
- 2.2.4 Grounding Tape: 1/2 inch wide copper tape.

#### 2.02 PRODUCT SUBSTITUTIONS

- A. Substitutions: Per criteria outlined in Specification Section 01300

## 2.03 RELATED MATERIALS

- A. Related Materials: Refer to other sections for related materials as follows:
  - 2. Resilient Flooring Accessories: Refer to Division 9 Finishes Sections for resilient flooring accessories.

## 2.04 SOURCE QUALITY

- A. Source Quality: Obtain flooring product materials from a single manufacturer.

## PART 3 - EXECUTION

### 3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions, and product carton instructions for installation.

### 3.02 EXAMINATION

- A. Site Verification of Conditions: Verify substrate conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions.
- B. Material Inspection: In accordance with manufacturer's installation requirements, visually inspect materials prior to installation. Material with visual defects shall not be installed. Labor costs required to replace material installed with visual defects shall be the responsibility of the installation contractor.

### 3.03 PREPARATION

- A. Adjacent Surfaces Protection: Protect adjacent work areas and finish surfaces from damage during product installation.
- B. Surface Preparation:
  - 1. General: Prepare floor substrate in accordance with manufacturer's instructions.
  - 2. Floor Substrate: Prepare floor substrate to be smooth, rigid, flat, permanently dry, clean and free of foreign materials such as dust, paint, grease, oils, solvent, curing and hardening compounds, sealers, asphalt and old adhesive residue.
  - 3. Concrete Floor Substrate: Concrete floor substrate shall have a minimum compressive strength of 3500 psi. Refer to Division 3 Concrete sections for patching and repairing crack materials, and leveling compounds with portland cement-based compounds.
    - a. Reference Standard: Comply with ASTM F 710 Practice for Preparing Concrete Floors and Other Monolithic Floors to Receive Resilient Flooring.
- C. Concrete Moisture Testing: Conduct moisture tests on all concrete floors regardless of the age, grade level or the presence of existing flooring. Conduct calcium chloride tests in accordance with ASTM F 1869. Measure the internal relative humidity of the concrete slab in accordance with ASTM F 2170. One test of each type should be conducted for every 1,000 sq. ft. of flooring. For projects less than 3,000 sq. ft., a minimum of three tests of each type should be conducted. The tests should be conducted around the perimeter of the room, at columns, and where moisture may be evident. Concrete moisture vapor emissions must not exceed 5.0 lbs. per 1,000 sq. ft. in 24 hrs. Concrete internal relative humidity must not exceed 75%. A diagram of the area showing the location and results of each test should be submitted to the Architect, General Contractor or End User. If any test result exceeds these limitations, the installation must not proceed until the problem has been corrected.
- D. Concrete pH Test: Perform pH tests on concrete floors regardless of the age or grade level. If the pH is greater than 10, it must be neutralized prior to beginning the installation.

### 3.04 INSTALLATION

- A. Full Spread Adhesive Method Installation: Install tile flooring with full spread adhesive method from established area center marks, in order for tile at opposite edges of area to be of equal width. Avoid using cut tile widths at perimeter less than four inches of tile width. Install tiles square with room axis. Lay tile material into wet adhesive, as recommended by tile manufacturer.
  - 1. Full Spread Adhesive Method, Seamless Flooring Installation: Rout out seams and heat weld together with complementary colored heat welding rod in accordance with flooring manufacturer's recommendations.
  - 2. Adhesive Material Installation: Use trowel as recommended by flooring manufacturer for specific type of adhesive. Spread at a rate of approximately 150 sq. ft./gal. as recommended by flooring manufacturer.
- B. Installation Techniques:
  - 1. Square with room axis.
  - 2. Where demountable partitions and other items are indicated for installation on top of finished flooring, install flooring before these items are installed.
  - 3. Scribe, cut, fit flooring to butt tightly to vertical surfaces, permanent fixtures and built-in furniture, including pipes, outlets, edgings, thresholds, nosings, and cabinets.
  - 4. Extend flooring into toe spaces, door reveals, closets, and similar openings.
  - 5. Install flooring on covers for telephone and electrical ducts, and similar items occurring within finish floor areas. Maintain overall continuity of color and pattern with pieces of flooring installed on covers.
  - 6. Do not install resilient flooring over expansion joints. Use expansion joint covers manufactured for use with resilient flooring. Refer to other specifications sections for expansion joint covers.
  - 7. Adhere resilient flooring to flooring substrate without producing open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, or other surface imperfections in completed flooring installation.
    - a. Use adhesive applied to substrate in compliance with flooring manufacturer's recommendations, including those for trowel notching, adhesive mixing, and adhesive open and working times.
  - 8. Roll resilient flooring as required by flooring manufacturer.
- C. Finish Flooring Patterns: As selected by Architect.

### 3.05 FIELD QUALITY REQUIREMENTS

- A. Manufacturer's Field Services: Upon Architect's request and with at least 72 hours notice, provide manufacturer's field service consisting of product use recommendations and periodic site visit for inspection of product installation in accordance with manufacturer's instructions.
  - 1. Site Visits: Two visit – one for pre-installation and one at completion of installation.

### 3.06 CLEANING

- A. Cleaning: Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance. Remove construction debris from project site and legally dispose of debris.
  - 1. Remove visible adhesive and other surface blemishes using cleaning methods recommended by tile floor manufacturer.
  - 2. Sweep and vacuum floor after installation.
  - 3. Do not wash floor until after time period recommended by flooring manufacturer.
  - 4. Damp-mop flooring to remove black marks and soil.

### 3.07 PROTECTION

- A. Protection: Protect installed product and finish surfaces from damage during construction. Remove and legally dispose of protective covering at time of Substantial Completion.

**END OF SECTION 09 65 20**