

## SECTION 09 65 36 – STATIC CONTROL RESILIENT FLOORING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Provide the work of this Section in accordance with requirements of the Contract Documents.
- B. Section includes static dissipative, vinyl composition floor tile **RF-11**.
- C. Related Work:
  - 1. Division 03, Section 03 30 00 "Cast-In-Place Concrete" for floor tolerances for new concrete floors.
  - 2. Division 03, Section 03 54 16 "Hydraulic Cement Underlayment" for underneath resilient floor tile.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: Technical data, installation instructions, and maintenance procedures for each product specified for each type of product.
- B. Sustainable Design Submittals:
  - 1. Building Product Disclosure and Optimization - Sourcing of Raw Materials:
    - a. Extended Producer Responsibility (EPR): Submit documentation indicating that manufacturers have a take back or recycling program for the product purchased.
    - b. Bio-based Materials: For bio-based products and materials other than wood, submit documentation of product data and testing results in compliance with LEED requirements.
    - c. Recycled Content: For products having recycled content, indicate percentages by weight of post-consumer and pre-consumer recycled content.
      - 1) Include statement indicating costs for each product having recycled content.
    - d. Regional Materials: For products that are required to comply with requirements for regional materials, indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material.
      - 1) Include statement indicating distance to Project, cost for each regional material and the fraction by weight that is considered regional.
  - 2. Indoor Environmental Quality, Low Emitting Materials: Building Products must be tested and compliant with the California Department of Public-Health (CDPH) Standard Method v1.2 2017, using the applicable exposure scenario.
    - a. Adhesives and Sealants: For wet applied on-site products, submit printed statement showing compliance with the applicable chemical content requirements of SCAQMD Rule 1168, effective July 1, 2005, and rule amendment date of January 7, 2005.

- b. For Flooring products, submit documentation of VOC emissions testing compliance for hard surface flooring products, containing any material in addition to composite wood, in the form of Floorscore certification or CDPH Standard Method v1.2 compliance verification.

C. Shop Drawings:

- 1. Submit for each type of static control resilient flooring.
- 2. Include floor covering layouts, edges, columns, doorways, enclosing partitions, built in furniture, cabinets, and cutouts.
- 3. Submit grounding diagram showing location of grounding strips and connections.

D. Samples: Submit full size floor tile for each type of static control resilient flooring,

### 1.3 INFORMATIONAL SUBMITTALS

A. Product Test Reports:

- 1. Submit reports based on evaluation of comprehensive tests performed by a qualified testing agency for static control resilient flooring.
- 2. Submit test result for vapor and moisture testing.
- 3. Submit test reports for alkalinity and adhesion testing.

B. Field quality control reports.

C. Maintenance Data: Submit for each type of static control resilient flooring to include in maintenance manuals.

D. Sustainable Design Submittals:

- 1. Building Product Disclosure and Optimization - Environmental Product Declarations
  - a. Submit product specific type III EPDs or Industry wide (generic) EPDs, USGBC approved program declaration or products with a publicly available, critically reviewed life-cycle assessment conforming to ISO 14044 that have at least a cradle to gate scope.
- 2. Building Product Disclosure and Optimization - Material Ingredients
  - a. Material Ingredient Reporting: Submit documentation confirming chemical inventory of products to at least 0.1 % (1000ppm) with at least one of the following:
    - 1) Submit published manufacturer inventory of ingredients identified by name and Chemical Abstract Service Registration Number (CASRN)
    - 2) Submit documentation that product has been certified as Cradle-to-Cradle v3 at the Bronze Level or better
    - 3) Submit Declare product label indicating that all ingredients have been disclosed down to 1000 ppm or designated as Red List Free or Declared
    - 4) Living Product Challenge
    - 5) Product Lens Certification
    - 6) USGBC approved program.

- b. Material Ingredient Optimization: Submit documentation confirming chemical inventory of products to at least 0.01 % (100ppm) and/or that has a compliant material ingredient optimization report with at least one of the following:
  - 1) Submit GreenScreen V1.2 Benchmark: Third party report prepared by a licensed GreenScreen List Translator, or a full GreenScreen Assessment.
  - 2) Submit third-party verified documentation that product has been certified as Cradle-to-Cradle v3 at the Bronze Level or better
  - 3) Submit third-party verified Cradle to Cradle v3 Material Health certificate at the Bronze Level or better
  - 4) Submit third-party verified Declare product label indicating that all ingredients have been disclosed down to 100 ppm
  - 5) Submit third-party verified documentation that product is Living Product Challenge certified with a Red List Free or LBC Red List Free Declare label.
  - 6) Submit documentation that product has a manufacturer prepared action plan with material inventory to at least 1000 ppm.

#### **1.4 QUALITY ASSURANCE**

- A. Installer Qualifications: Entity having minimum 5 years documented experience who employs trained or certified by manufacturer for required installation techniques and are competent in techniques required for static control resilient flooring.
- B. Source Limitations:
  - 1. Tile: Obtain floor products of same type and color or finish from one source or producer. Obtain tile from same production run and of consistent quality in appearance and physical properties for each contiguous area.
  - 2. Setting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from a single manufacturer and each aggregate from one source or producer.

#### **1.5 DELIVERY, STORAGE, AND HANDLING**

- A. Store static control resilient flooring and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer but not less than 50 degrees F (10 degrees C) or more than 90 degrees F (32 degrees C).
- B. Store floor tile on flat surfaces.

#### **1.6 PROJECT CONDITIONS**

- A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 degrees F (21 degrees C) or more than 85 degrees F (29 degrees C), in spaces to receive static control resilient flooring during the following time periods:
  - 1. 48 hours before installation.
  - 2. During installation.
  - 3. 48 hours after installation.
- B. Until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 degrees F (13 degrees C) or more than 95 degrees F (35 degrees C).

- C. Close spaces to traffic during static control resilient flooring installation.
- D. Close spaces to traffic for 48 hours after static control resilient flooring installation.
- E. Install static control resilient flooring after other finishing operations, including painting, have been completed.

## **1.7 EXTRA MATERIALS**

- 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.

## **PART 2 - PRODUCTS**

### **2.1 PERFORMANCE REQUIREMENTS**

- A. Static Dissipative Properties:
  - 1. Provide static control resilient flooring with static control properties indicated as determined by testing identical products per test method indicated by an independent testing and inspecting agency.
  - 2. Electrical Resistance: Test in accordance with ASTM F 150 with 100-V applied voltage and ESD-STM-7.1.
    - a. Average greater than 1 megohm and less than or equal to 1000 megohms when test specimens are tested surface to ground.
    - b. Average greater than 1 megohm and less than or equal to 1000 megohms when installed floor coverings are tested surface to ground.
  - 3. Static Generation: Less than 300 V when tested per AATCC-134 at 20 percent relative humidity with conductive footwear.
  - 4. Static Decay: 5000 to zero V in less than 0.25 seconds when tested per FED-STD-101C/4046.1.
- B. Fire Test Response Characteristics:
  - 1. Determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.
  - 2. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.
- C. Low-Emitting Materials:
  - 1. Adhesives and Sealants wet-applied inside the weather-proofing system must meet the VOC general emissions testing criteria of CDPH Standard Method v1.2.
  - 2. All adhesives and sealants wet-applied inside the weather-proofing system must have VOC content in compliance with the applicable VOC limits (g/L) found in tables in Division 01, Section 01 81 13.14 "Sustainable Design Requirements - LEED v4 BD+C."
  - 3. All flooring products must be Floorscore certified or compliant with the VOC emissions testing criteria of CDPH Standard Method v1.2.

## **2.2 STATIC DISSIPATIVE RESILIENT FLOOR COVERINGS**

### **A. Static Dissipative RF-11:**

1. Basis of Design Manufacturer: Armstrong Excelon SDT.
2. ASTM F 1066 Standard Specification for Vinyl Composition Tile, Class 2, through pattern.
3. Thickness: 0.125 inch (3.2 mm).
4. Size: 12 by 12 inches (305 by 305 mm).
5. Colors and Patterns: Armor 51951.
6. DCOF: Minimum 0.60.

## **2.3 INSTALLATION MATERIALS**

- A. Trowelable Leveling and Patching Compounds: Latex modified Portland cement or blended hydraulic cement based formulation provided or approved by manufacturer for applications indicated.
- B. Static Control Adhesive: Provided or approved by manufacturer; type that maintains electrical continuity of floor covering system to ground connection.
- C. Grounding Strips: Provided or approved by manufacturer; type and size that maintains electrical continuity of floor covering system to ground connection.
- D. Floor Tile Polish: Provided or approved by manufacturer; type that maintains electrical continuity of floor covering system to ground connection.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Examine substrates present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the work.
  1. Verify finishes of substrates comply with tolerances and other requirements and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion or static control characteristics of floor coverings.
  2. New concrete floor tolerances shall comply with Section 03 30 00 "Cast-In-Place Concrete". Out of floor tolerances shall be communicated to Architect and Structural Engineer.
- B. Proceed with installation after correcting unsatisfactory conditions have been corrected.

### **3.2 PREPARATION**

- A. Prepare substrates according to manufacturer's written instructions and with oversight by manufacturer's representative to ensure adhesion of static control resilient flooring and electrical continuity of floor covering systems.
- B. Concrete Substrates: Prepare according to ASTM F710.
  1. Verify substrates are dry and free of curing compounds, sealers, and hardeners.

2. Remove substrate coatings and other substances that are incompatible with floor covering adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
  3. Alkalinity and Adhesion Testing: Perform tests recommended by floor tile manufacturer. Proceed with installation after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.
  4. Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft. (18.6 sq. m), and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
    - a. Anhydrous Calcium Chloride Test: ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.
    - b. 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.
  5. Bond Test: Bond 3 feet by 3-foot (1 m by 1 m) panels spaced 50 feet (16.7 m) apart throughout subfloor area. After moisture test proves floor acceptably dry, install panels using adhesive. If panels are securely bonded after 72 hours, subfloor is sufficiently clean of foreign materials for satisfactory installation of resilient flooring.
  6. Perform additional vapor and moisture tests recommended by manufacturer. If substrates fail to meet manufacturers recommended moisture content, remediate moisture. Proceed with floor covering installation after substrates past testing.
- C. Moisture Remediation: Provide moisture vapor emissions control system specified in Section 09 05 61 "Moisture Vapor Emission Control" should the moisture test results indicated the concrete substrate fails to obtain the minimum moisture vapor emissions rate required by the flooring covering manufacturer.
- D. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.
- E. Do not install static control resilient flooring until it is same temperature as space where it is to be installed.
1. Move static control resilient flooring and installation materials into spaces where they will be installed at least 48 hours in advance of installation.
- F. Sweep and vacuum substrates to be covered by static control resilient flooring immediately before installation.

### **3.3 INSTALLATION**

- A. Install static control resilient flooring according to manufacturer's written instructions and with oversight by manufacturer's representative.
- B. Embed grounding strips in static control adhesive. Extend grounding strips beyond perimeter of static control resilient floor covering surfaces to ground connections.
- C. Scribe, cut, and fit static control resilient flooring to butt neatly and tightly to vertical surfaces and permanent fixtures including built in furniture, cabinets, pipes, outlets, and door frames.

- D. Extend static control resilient flooring into toe spaces, door reveals, closets, and similar openings. Extend static control resilient flooring to center of door openings.
- E. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on static control resilient flooring as marked on substrates. Use chalk or other nonpermanent, nonstaining marking device.
- F. Install static control resilient flooring on covers for telephone and electrical ducts, and similar items in installation areas. Maintain overall continuity of color and pattern with pieces of static control resilient flooring installed on covers. Tightly adhere static control resilient flooring edges to substrates that abut covers and to cover perimeters.
- G. Adhere static control resilient flooring to substrates using a full spread of static control 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.

### **3.4 INSTALLATION**

- A. Comply with manufacturer's written instructions for installing floor tile.
- B. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so floor tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half floor tile at perimeter.
- C. Lay floor tiles square with room axis.
- D. Match floor tiles for color and pattern by selecting floor tiles from cartons in same sequence as manufactured and packaged if so numbered. Discard broken, cracked, chipped, or deformed floor tiles.

### **3.5 FIELD QUALITY CONTROL**

- A. Testing: Engage a qualified testing agency to test electrical resistance of static control resilient flooring for compliance with requirements.
  - 1. Arrange for testing after static control adhesives have fully cured and static control resilient flooring has stabilized to ambient conditions and after ground connections are completed.
- B. Static control resilient flooring will be considered defective if it does not pass tests and inspections.
- C. Prepare test and inspection reports.

### **3.6 CLEANING AND PROTECTION**

- A. Comply with manufacturer's written instructions for cleaning and protection of static control resilient flooring.
- B. Perform operations immediately after completing static control resilient flooring:
  - 1. Remove static control adhesive and other blemishes from exposed surfaces.
  - 2. Sweep and vacuum surfaces thoroughly.
  - 3. Damp mop surfaces to remove marks and soil.

- C. Protect static control resilient flooring from mars, marks, indentations, and damage from construction operations and placement of equipment and fixtures during remainder of construction period.
  - 1. Do not wax or polish static control resilient flooring.
- D. Cover static control resilient flooring until Substantial Completion.

**END OF SECTION**