

# MASTER SPECIFICATIONS FOR **AMERIWORX ESD VINYL TILE**

## SECTION 09660 STATIC CONTROL FLOORING

### PART 1 - GENERAL

#### 1.1 SECTION INCLUDES

- A. Static control (Conductive and Static dissipative) resilient vinyl floor tile.

#### 1.2 RELATED SECTIONS

- A. Section 03300 - Cast-in-Place Concrete: Finishes for concrete substrates.
- B. Section 06100 - Rough Carpentry: Wood floor substrate.
- C. Section 09650 - Resilient Flooring: Resilient wall base.
- D. Section [\_\_\_\_ - \_\_\_\_\_]: Termination edging of adjacent floor finish.
- E. Section [\_\_\_\_ - \_\_\_\_\_]: Recessed floor accessories.

#### 1.3 REFERENCES

- A. ASTM D 2240 - Standard Test Method for Rubber Property-Durometer Hardness; 2000.
- B. ASTM D 3389 - Standard Test Method for Coated Fabrics Abrasion Resistance (Rotary Platform, Double-Head Abrader); 1994 (Reapproved 1999).
- C. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2000a.
- D. ASTM E 162 - Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source; 1998.
- E. ASTM E 648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2000.
- F. ASTM F 970 - Standard Test Method for Static Load Limit; 2000.
- G. ASTM F 1700 - Standard Specification for Solid Vinyl Floor Tile; 1999.
- H. ASTM F 1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 1998.
- I. ASTM F 2170 – 02 Determining Relative Humidity in Concrete Floor Slabs Using in-situ Probes

- J. ESD S7.1-2013 Floor Materials – Resistive Characterization of Materials; Electrostatic Discharge Association; 2001.
- K. FTM 101C, Method 4046.1 – Test Procedures for Packaging Materials; Electrostatic Properties of Materials; Revision C, 1980, incl. Change Notice 3, 1988.

#### **1.4 SUBMITTALS**

- A. Submit in accordance with Section 01300.
- B. Submit manufacturer's literature for all products furnished, including appropriate Material Safety Data Sheets (MSDS) and specimen warranties.
- C. Selection Samples: Submit two sets of samples or color charts showing all available colors.
- D. Verification Samples: Submit two samples of each type and color or pattern that will be installed.
- E. Manufacturer's Installation Instruction: Submit written instructions describing examination, preparation and installation procedures.
- F. Maintenance Instructions: Submit maintenance manual including procedures and recommended floor care products for stain removal, surface repair and cleaning.
- G. Warranty: Submit executed copy of warranty.

#### **1.5 QUALITY ASSURANCE**

- A. Installer Qualifications: Company trained by manufacturer or supervised by company trained by manufacturer specializing in applying the work of this section with a minimum of five years' experience.

#### **1.6 DELIVERY, STORAGE AND HANDLING**

- A. Deliver materials to job site in sealed, undamaged containers with labels intact and legible, indicating the material name, date of manufacture and lot number.
- B. Store materials in a dry secure area, where temperatures and other requirements are in accordance with manufacturer's recommendations.
- C. Keep products away from open flames.

## 1.7 PROJECT CONDITIONS

- A. Install materials in accordance with all safety procedures required by manufacturer and applicable rules and regulations of local, state and federal authorities having jurisdiction.
- B. Environmental requirements:
  - 1. Do not install flooring when temperature is below 65 degrees F (18.3 degrees C).
  - 2. Maintain temperature at or above the minimum allowed in accordance with manufacturer's recommendations.
  - 3. Ventilate area where flooring is being installed.
- C. During installation period, provide uniform lighting at area of installation equivalent to finished project lighting.
- D. Prevent traffic from entering area where flooring is being installed or is curing.

## 1.8 MAINTENANCE

- A. Review manufacturer's maintenance instructions with building management. Never wax materials specified herein without written recommendation with approved products from manufacturer.

## 1.9 WARRANTY

- A. Tile: Provide manufacturer's standard warranty for installed flooring, for period of 10 years from date of purchase for materials and for the lifetime of the installed ESD floor for electrical properties from the date of testing and certification by authorized representative of flooring manufacturer.

## PART 2 PRODUCTS

### 2.1 MANUFACTURER

- A. Product shall be manufactured in The United States of America.
- B. Acceptable Manufacturer: StaticWorx, Inc., 4706 Waterbury-Stowe Road, Waterbury Center, Vermont 05677; Tel: 617-923-2000; Fax: 617-467-5871; Email: [info@staticworx.com](mailto:info@staticworx.com); Web: [www.staticworx.com](http://www.staticworx.com)

**a. MATERIALS**

- i. Conductive and/or static dissipative Floor Tile: AmeriWorx Series ESD Floor Tile; solid vinyl tile made with at least 10% percent pre-consumer recycled content; complying with ASTM F 1700, not requiring waxing to achieve a gloss finish or to maintain electrical properties, and with the following characteristics:
  - 1. Hardness: Plus/minus 55, Shore D, when tested in accordance with ASTM D 2240.
  - 2. Abrasion Resistance: < 1.0 grams loss, maximum, when tested in accordance with ASTM D 3389.
  - 3. Static Load Resistance: When tested in accordance with ASTM F 970:
    - a. At 125 pounds (57 kg) load, 0.25-inch (6 mm) diameter indenter foot, for 24 hours (equivalent of 2,500 psi (17 MPa) point load): Residual indentation 24 hours after removing load not more than 3 percent of tile thickness.
    - b. At 700 pounds (317 kg) load, 1.125-inch (31 mm) diameter indenter foot, for 24 hours (equivalent of 700 psi (5 MPa) point load): Residual indentation 24 hours after removing load not more than 1 percent of tile thickness.
  - 4. Flame Spread Index: Not more than 25 (Class 1), when tested in accordance with ASTM E 84 or ASTM E 162.
  - 5. Smoke Developed Index: Not more than 450 (Class 1), when tested in accordance with ASTM E 662.
  - 6. Critical Radiant Flux: 1.1 W per sq. cm, minimum, when tested in accordance with ASTM E 648 or NFPA 253.

**7. Conductive Tile Performance:**

- a. Electrical Resistance, Surface to Ground: 25,000 to 1,000,000 ( $2.5 \times 10^4$  to  $1 \times 10^6$ ) ohms, when tested in accordance with ANSI/ESD STM S7.1-2013 & ASTM F 150.
- b. Static Decay: Less than 0.01 seconds, from 5,000 volts to 0 volts, when tested in accordance with FTM 101C, Method 4046.1.
- c. Static Generation: Less than 12 volts with conductive footwear at 20 percent relative humidity.

**8. Static-Dissipative Tile Performance:**

- a. Electrical Resistance, Surface to Ground: 1,000,000 to 1,000,000,000 ( $1 \times 10^6$  to  $1 \times 10^9$ ) ohms, when tested in accordance with ANSI/ESD STM S7.1-2013 & ASTM F 150.
- b. Static Decay: Less than 0.2 seconds, from 5,000 volts to 0 volts, when tested in accordance with FTM 101C, Method 4046.1.
- c. Static Generation: Less than 20 volts with conductive footwear at 20 percent relative humidity.

**9. Color: As selected by specifier from manufacturer's full range.**

- a. Adirondack Ridge
- b. Appalachian Spring
- c. Big Sky Country
- d. Black Hills
- e. Boothbay Harbor
- f. Great Plains
- g. Morning Mist
- h. Rio Grande
- i. Shenandoah Valley
- j. Spring Snow
- k. ROX - Black Rock Canyon
- l. ROX - Gray Dolomite
- m. ROX - Living Coral
- n. ROX - Pearl

**10. Thickness: 3.0 mm****11. Size(s): As indicated on drawings.**

- a. Size: 12" x 12" (305 mm x 305 mm).
- b. Size: 24" x 24" (610 mm x 610 mm). Special Order Only
- c. Size: 36" x 36" (915 mm x 915 mm). Special Order Only

**ii. Tile Adhesive: Conductive adhesive as recommended by flooring manufacturer.**

**B. ACCESSORY MATERIALS**

- i. Grounding Strips: Copper foil, of type recommended by flooring manufacturer; provide minimum of 1 strip 2" x 24" per 1,000 square feet (93 sq. m) and minimum of 3 in a single room.
- ii. Subfloor Filler: Latex modified, cementitious materials with compressive strength greater than concrete subfloor.
- iii. Subfloor Joint Sealer: Elastomeric epoxy or equivalent.
- iv. Cleaning agents: As recommended by flooring manufacturer.
- v. Concrete Substrate Moisture Test Kit: Calcium chloride type kit, as required to conduct ASTM F 1869 tests; as recommended by flooring manufacturer.
- vi. Concrete Substrate Relative Humidity Test: Relative Humidity Meter as required to conduct ASTM F 2170 – 02 -Determining Relative Humidity in Concrete Floor Slabs using in-situ Probes
- vii. Megohmmeter capable of measuring resistive properties  $>25,000$  ohms and  $\leq 1.0 \times 10^{10}$  ohms per ANSI/ESD STM S7.1-2013 & ASTM F 150.

**C. EXECUTION****a. EXAMINATION**

- i. Verify that subfloors:
  1. Meet flooring manufacturer's requirements.
  2. Are ready to receive work.
  3. Are compatible with the flooring.
  4. Are clean, dry, and free of substances that would affect bond.
  5. Are free from dropping, projections, ridges or other surface defect that would adversely affect installation, performance or appearance.
- ii. Do not begin work until concrete substrate has cured 28 days minimum, and measured moisture vapor transmission rate (MVTR) is not greater than 3 pounds (1.4 kg) per 1,000 square feet (93 sq. m) per 24 hours, when tested in accordance with ASTM F 1869 using calcium chloride test kits and concrete relative humidity is not greater than 75% when measured per ASTM F2170.

- iii. Verify that curing agents used for concrete are compatible with flooring and adhesives.
- iv. Verify flatness tolerances. Do not install flooring on subfloors not meeting requirements of flooring manufacturer. Notify Architect of unsatisfactory conditions.
- v. Beginning of installation means acceptance of existing substrates.

b. PREPARATION

- i. Prepare surfaces for flooring installation in accordance with manufacturer's instructions and warranty conditions.
- ii. Repair substrate and surface to flatness tolerances meeting flooring manufacturer's requirements.
- iii. Clean and abrade surfaces by shot blast or equivalent abrasive method producing a residue free sub-floor.

c. INSTALLATION

- i. Install in accordance with manufacturer's instructions and warranty conditions and to meet specified performance requirements.
- ii. Install wall base in accordance with manufacturer's instructions.
- iii. Finish floor to smooth level surface to tolerances specified by manufacturer.
- iv. Slope to drains.

d. ELECTRICAL PROPERTIES CERTIFICATION

- i. Manufacturer or manufacturer's representative shall certify the electrical resistive properties of floor upon completion of the installation using the test method ANSI/ESD S7.1-2013. All tests shall be performed prior to the application of any waxes, polishes or finishes. Static dissipative measurements must be no greater than  $1.0 \times 10^9$  and no less than  $1.0 \times 10^6$  ohms. Conductive measurements must be no greater than  $1.0 \times 10^6$  and no less than  $2.5 \times 10^4$  ohms.

e. PROTECTION

- i. Protect finished flooring from damage until Substantial Completion.

**END OF SECTION**