

SECTION 09680
ESD CARPET TILE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Floor preparation and site conditions
 - 2. Materials; including carpet, carpet tile, adhesive and grounding
 - 3. Accessories

- B. Related Sections, if part of a Project Manual
 - 1. Allowances
 - 2. Submittals: Administrative and general requirements for mockups, samples and shop drawings.
 - 3. Warranties: Administrative and general requirements for warranties and guarantees.

- C. Alternates shall be in manufacturer's running line. No special runs or special constructions will be accepted.

- D. Substitutions:
 - 1. Requests for product substitutions shall be submitted [in prescribed form] to the [Owner] [Architect] [Interior Designer] for consideration 15 days prior to bid date.
 - 2. Approved substitutions will be acknowledged in an addendum issued 7 days prior to bid date. No substitutions will be considered after this date.
 - 3. Consideration will be given to those submittals containing samples; product specifications in the format used herein, and certified test reports to show compliance with this section.
 - 4. Samples shall be accompanied by the manufacturer's certification on company letterhead certifying equal qualification with every requirement as specified herein and signed a representative of the company.

1.2 REFERENCES

- A. Federal Specifications
 - 1. FS DDD-C-0095 - Carpet and Rugs, Wool, Nylon, Acrylic, Modacrylic, Polyester, Polypropylene.
 - 2. FSS DDD-C-1023 Cushion, Carpet and Rug (Hair Felt and Rubber Coated Jute and Animal Hair or Fiber).

- B. American Standards Testing Methods (ASTM)

- C. American Association of Textile Chemists and Colorists (AATCC)

- D. National Fire Protection Agency (NFPA)

- E. ESD Association (ANSI/ESD)

1.3 ACTION SUBMITTALS

- A. Submittals shall be made in compliance with the project manual
- B. Product Data: For each type of product.
 - 1. Show compliance to required static control standard, safety codes, and traffic ratings for the intended application.
 - 2. Manufacturer's installation instructions.
- C. Shop Drawings:
 - 1. Show layout of seams, edges and other conditions where joined or butted to adjacent materials.
 - 2. Indicate method of joining seams and direction of carpet.
 - 3. Indicate grounding schematics.
- D. Samples
 - 1. Minimum, 12" x 18" (300cm x 457cm) samples of proposed carpet.
 - 2. Minimum 12" (300cm) sample of each type of exposed edge strip or accessory items.
 - 3. Samples shall be of material proposed for use.
 - 4. Sample should be example of the electrical properties.
- E. Maintenance Instructions
 - 1. Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.
 - 2. List materials, substances, and other items which will affect finishes and performance.

1.4 QUALITY ASSURANCE

- A. Carpet manufacturer shall have been manufacturing commercial and/or contract carpet tile continuously for a period of 10 years.
- B. Qualifications of Installers: All work shall be done by installation firms specializing in commercial carpet installation. It is recommended that, whenever possible, the firm shall be a member of the Floor Covering Installation Contractors Association (FCICA) or certified by the Floor Covering Installation Board (FCIB).
- C. Carpet manufacturer shall certify by register and roll numbers or M.O.# that carpet shipped for this project complies with all requirements of this Section subject to normal manufacturing tolerances.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Carpeting shall be delivered to the job site in original mill wrapping with each roll or tile box having its register number properly attached, clearly marked as to size, dye lot, and materials.
- B. Material shall be stored in an enclosed and dry area protected from damage and soiling.

- C. Coordinate location or storage area within building with the General Contractor.

1.6 FIELD CONDITIONS

- A. Floor covering installation contractor shall visit the site and be responsible for all measurements and job conditions.
- B. Sequence carpeting with other work so as to minimize possibility of damage and soiling of carpet during remainder of construction period.
- C. Do not begin carpet installation until painting and finishing work are complete and ceilings and overhead work have been tested, approved, and completed.
- D. Maintain room temperature at 65°F (18°C) minimum for at least 48 hours prior to installation and relative humidity at 65% maximum.
- E. After installation, continue to fresh-air ventilate for 48 to 72 hours at normal room temperatures by operating the ventilation fan system at full capacity and by opening windows and doors, if possible.

1.7 WARRANTY

- A. Manufacturer's Warranty: Carpet shall carry a 15 year Manufacturer's Warranty. See written warranty document for details.
- B. Floor Covering Installation Contractor's Warranty: Submit a certificate guaranteeing the installation to be free of defects in workmanship for a period of one year. The certificate shall include the following statement: Installer shall, at his own expense and upon written notice from the Owner or his representative, promptly correct/replace any and all improper work and material that may become apparent within [one] year after the date of final completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Staticworx, Inc., 4706 Waterbury Stowe Rd, Waterbury Center, VT 05677. 1 (617) 923-2000
- B. Substitutions: Must be approved by the [Owner] [Architect] [Interior Designer] prior to bid date

2.2 PERFORMANCE REQUIREMENTS

- A. Carpet tile shall be first quality of American manufacture and all yarn shall be of domestic origin.
- B. Carpet shall be manufactured by Staticworx, Inc.
- C. Style Name - ShadowFX SDC "Chenille Warp" Static Dissipative Carpet Tile
- D. Color – TBD
- E. Static Control Fiber: Continuous Static Dissipative Staticworx® 44 denier helix fiber.

- F. Yarn System – Post-consumer content Type 6,6 branded nylon
- G. Yarn Manufacturer – Universal
- H. Recycled Content
 - 1. Post-industrial range: 48%
 - 2. Post-consumer: 2%
 - 3. Total recycled content: 50%
- I. Yarn Construction – Tufted tip-sheared
- J. Dye Method – 100% Solution Dyed
- K. Dye Lots – Mergeable
- L. Manufacturing Process – Tufted
- M. Gauge – 1/12 in
- N. Tufted Stitches Per Inch – 9/in
- O. Tufted Pile Height – 0.138 in
- P. Tufted Yarn Weight – 17 oz/yd³
- Q. Pile Thickness – 0.099 in
- R. Pile Density – 6,182 oz/yd³
- S. Fiber Modification Ratio – 1.7 to 1.9
- T. Tile Size: 50cm x 50cm (19.69in x 19.69in)
- U. Radiant Panel – Passes (ASTM E 648)
- V. Smoke Density – ≤ 450 (ASTM E 662)
- W. Flammability – Passes Methenamine Pill Test (DOC-FF1-70)
- X. Lightfastness - ≥ 4.0 @ 60 AFUs (AATCC 16 - E)
- Y. Dimensional Stability – AACHEN Din 54318 < .10%
- Z. Traffic Classification – Heavy
- AA. Soil Stain Protection – Protekt®
- BB. Preservative Protection – Intersept®
- CC. Preservative Efficacy
 - 1. (AATCC 174 Parts 2&3) 99% Reduction/No Mold 7 Days
 - 2. (ASTM E-2471) Complete Inhibition

- DD. Electrostatic Propensity – < 0.4 kV (AATCC 134-1996)
- EE. Electrical Resistance - ANSI/ESD S7.1, RTT, RTG:
 - 1. 1.0×10^6 Ohms Minimum, 1.0×10^9 Ohms Maximum (ANSI/ESD S7.1-2013)
 - 2. ANSI/ESD S20.20-2007:
 - a. ANSI/ESD S97.2 Voltage on a person < 100 volts when tested with approved conductive footwear system.
 - b. ANSI/ESD S97.1 System resistance < 3.5×10^7 Ohms
- FF. Grounding: Groundable Path
 - 1. Grounding Connector: 5 mm, 26 gauge Copper strip
 - 2. Grounding Frequency – 1 ground connector per 1000 square feet and minimum of 1 per room
- GG. Adhesive – Groundtack™ conductive, releasable adhesive for carpet tile (< 1.0×10^6 Ohms Rtt)
- HH. Glue-free Installation – Use GroundBridge™ underlayment with Interface TacTiles®
- II. Crockfastness: AATCC Test Method 165 Minimum stain rating on International Grey Scale of not less than 5 wet and dry.
- JJ. Atmospheric Fading AATCC Test Method 129 Ozone/AATCC Test Method 23, Burned Gas shall not be less than 3 on International Grey. Scale after two cycles on each test.

2.3 ACCESSORIES

- A. Subfloor Underlayment: Base Portland cement powder, mixed with liquid latex recommended by the carpet manufacturer. **Adhesives and cements not approved by the carpet manufacturer will void carpet warranties**
- B. Installation Floor Adhesive:
 - 1. Staticworx, Inc. GroundTack Low VOC releasable adhesive with Thunderon conductive fibers
 - 2. Staticworx GroundBridge™ conductive underlayment and Interface TacTiles™
- C. Edge strips: As selected by owner, architect, and/or interior designer
- D. Stair Nosing: As selected by owner, architect, and/or interior designer
- E. Resilient Base: Provide [rubber base] [vinyl base] [wood base (shoe mold)] with smooth finish, matching end stops and preformed outside corner units. Unless otherwise shown, provide 4" high base with [top set cove] [carpet] profile.

2.4 SOURCE QUALITY CONTROL

- A. Manufacturer shall be from an integrated mill (in-house fiber and/or yarn manufacturing, tufting, dyeing and finishing) with a formal Quality Improvement Process or equivalent quality initiative (Juran, Deming, ISO 9000, SIX SIGMA) in operation. Manufacturer shall provide verification when requested.

- B. Testing
 - 1. Upon request, carpet supplier shall furnish test results by a certified testing laboratory made for each of the performance criteria listed herein.
 - 2. [Owner] [Architect] [Interior Designer] at his option, may request additional tests from an independent test lab at his own expense on any portion of furnished fabric for conformance with his criteria.
- C. Tests, if ordered, shall be at the expense of the owner if material is in compliance with this section. If material is not in compliance with this section, the carpet supplier shall bear testing costs.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Report to the [General Contractor] [Architect] [Owner] [Interior Designer], in writing, any imperfections, unacceptable conditions and/or corrections required to be made before commencing work of this section.
- B. Beginning installation of any given area means acceptance of all surfaces and conditions affecting the work of this area by the floor covering installation contractor.
- C. Where primers/sealers are used, their compatibility with adhesive shall be verified prior to starting work.

3.2 PREPARATION

- A. It shall be the responsibility of the [General Contractor] [Owner] to present the floors in a condition to receive the carpet.
- B. Surface to receive carpet must be free of dirt, solvents, oil, grease, paint, plaster, moisture, and other substances detrimental to proper performance of adhesive and carpet.
- C. Concrete Surfaces
 - 1. The [General Contractor] [Owner] must submit to the floor covering installation contractor prior to installation a written report on the moisture and alkalinity condition of the concrete slab. Results of ASTM F1869 - 04 Anhydrous Calcium Chloride test should be < 5 pounds per 1000ft² / 24 hours and results of ASTM F 2170 should be below 75% RH.
 - 2. Check to ensure there is no dusting. A primer may be needed to prevent dusting.
- D. Existing vinyl composition tile, wood, terrazzo other acceptable securely bonded floor coverings must be clean and free of all waxes, finishes, sealers, or other contaminants.

3.3 INSTALLATION

- A. Carpet shall be installed in strict accordance with manufacturer's written instructions and recommendations (Staticworx, Inc. Installation Guidelines); maintain uniformity of direction and lay of pile.

- B. Apply floor adhesive uniformly to substrate in accordance with manufacturer's instructions. Butt carpet tile edges firmly together to form seams without gaps. Remove adhesive promptly from face of carpet.
- C. Where carpet meets dissimilar floor surface, proper edge molding shall be used.
- D. Install edge moldings where carpet edge is exposed and at transitions to other floor coverings. Edge moldings shall be securely anchored to substrate.
- E. Apply base at all adhered carpet installations, to walls, columns, pilasters, casework, and other permanent fixtures in rooms or areas where base is required.
 - 1. Install base in lengths as long as practical, with preformed corner units.
 - 2. Tightly bond base to backing throughout length of each piece, with continuous contact at horizontal and vertical surfaces.
 - 3. On masonry surfaces, of other similar irregular surfaces, fill voids along top edge of wall base with base manufacturer's recommended adhesive filler material.
- F. Grounding – copper grounding strips be placed approximately 25' to 40' apart throughout the installation or accessible to all I-beams or other designated building or electrical ground. The copper strip shall be installed at least every 1,000 square feet or 1 ground strip per room minimum.
- G. Stairs
 - 1. Install stair nosing full width of tread, in one continuous piece.
 - 2. Adhere over center surface and fit accurately and securely.
 - 3. Adhere carpet tight to treads and risers. Confirm that stair nosings to receive carpet have a minimum radius of $\frac{3}{4}$ ".
 - 4. Butt carpet on treads and risers tight to nosing.

3.4 RESTORATION

- A. Any damage done to point, walls, woodwork, floors, and/or similar finishes as a result of this work, shall be the responsibility of the carpet contractor.
- B. Required repairs shall be made by the proper trade contracted on the work of this project that shall make the necessary repairs and shall be paid by the carpet subcontractor for the repair work.

3.5 CLEANING/CARE

- A. Upon completion of the installation, remove all waste materials, tools and equipment.
- B. Using commercial vacuums, thoroughly vacuum the entire floor surface to the [Owner's][Architect's] [Interior Designer's] satisfaction.
- C. Remove spots or replace carpet where spots cannot be removed.
- D. Remove debris, sorting pieces to be saved from scraps to be disposed of.
 - 1. Usable pieces of carpet are to be returned to their original packaging and left on the job site and placed in an orderly manner in such areas as designed by the [Owner] [Architect] [Interior Designer].

2. Dispose of smaller pieces as construction waste in accordance with local, state, and federal regulations.
- E. Provide protection methods and materials needed to ensure that carpeting will be without deterioration or damage at time of substantial completion.

3.6 TESTING AND CERTIFICATION

Upon project completion, the manufacturer or the manufacturer's designated representative shall test the resistive properties of the floor using an ohmmeter per the test method ANSI/ESD S7.1-2013. Resistance measurements shall be performed from the surface of tiles to the groundable point and from one point on the tile surface to a second point on the same tile surface. The test results shall be confirmed in writing certifying that the flooring resistance properties measure in the static dissipative range (no less than 1.0×10^6 and no greater than 1.0×10^9 .) The certification letter shall reference compliance with space specified recognized grounding standards.

- A. ANSI/ESD S20.20-2014: For static sensitive parts handling in electronics manufacturing
- B. Motorola R56: Telecommunication applications, Mission Critical Command Centers, 9-1-1 call centers, Dispatcher positions
- C. ATIS 0600321-2010: Alliance of Telecommunications Industry Standards
- D. FAA-STD 019 f: Flight control areas

3.7 ATTIC STOCK

- A. Upon completion of installation, deliver a minimum of 3% - 5% of each type, color, and pattern of carpet, exclusive of material required to properly complete installation or of usable pieces described previously in this section.
- B. Furnish accessory components as required.
- C. Furnish replacement materials from the same production runs as installed materials.
- D. Package replacement materials with protective covering with identifying labels.
- E. Store extra stock where directed by [Architect] [Owner] [Interior Designer].

END OF SECTION