

## DIVISION 09 FINISHES

### Section 09 68 16 – Sheet Carpeting

#### **PART 1: GENERAL**

##### **1.01 Scope of Standard**

- A. This standard provides general guidance concerning the specific preferences of Texas State University-San Marcos for sheet carpet.
- B. Texas State University-San Marcos recognizes that project conditions and requirements vary, thus precluding the absolute adherence to the items identified herein in all cases. However, unless there is adequate written justification, it is expected that these guidelines will govern the design and specifications for Texas State University-San Marcos projects.

##### **1.02 Design Guidelines (NOT USED)**

##### **1.03 Section Includes:**

- A. Testing Protocols
- B. Performance Requirements
- C. Product Specifications
- D. Environmental Requirements
- E. Warranties
- F. Exclusions
- G. Installation
- H. Maintenance
- I. Accessories

##### **1.04 References**

- A. American Association of Textile Chemists and Colorists (AATCC):
  - 1. AATCC 16, Test Method of Colorfastness to Light.
  - 2. AATCC 107, Test Method for Colorfastness to Water.
  - 3. AATCC 129, Test Method for Colorfastness to Ozone in the Atmosphere under High Humidity.
  - 4. AATCC 134, Test Method for Electrostatic Propensity of Carpets.
  - 5. AATCC 165-(93), Test Method for Colorfastness to Crocking: Carpets – AATCC Crock meter Method.

6. AATCC 175-(98), Test Method for Stain Resistance: Pile Floor Coverings
  7. AATCC 189, Test Method for Fluorine Content of Carpet Fibers
  8. AATCC 164, Test Method for Colorfastness to Oxides of Nitrogen in the atmosphere under High Humidity.
- B. American Society for Testing and Materials (ASTM):
1. ASTM D418-(12), Methods for Testing Pile Yarn Floor Covering Construction (Finished Pile thickness Only)
  2. ASTM D5848, Standard Test Method for Mass per Unity of Pile Yarn for Floor Covering.
  3. ASTM D5823, Standard Test Method for Tuft Height of Pile Floor Coverings
  4. ASTM D5793, Standard Test Method for Binding Sites per Unity Length or Width of Pile Yarn Floor Coverings.
  5. ASTM D1335 – Standard Test Method for tuft Bind of Pile Yarn Floor Covering.
  6. ASTM E648- Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.
  7. ASTM E662 – Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
  8. ASTM D3676, Standard Specification for Rubber Cellular Cushion Used for Carpet or Rug Underlay (covers thickness, Compression Resistance, Volume, Density, Compression Set, and Accelerated Aging).
  9. ASTM D3574, Standard Test Methods for Flexible Cellular Materials – Slab, Bonded, and Molded Urethane Foams.
  10. ASTM D3936, Standard Test Method for Resistance to Delimitation of the Secondary Backing of Pile Yarn Floor Covering.
- C. International Standards Organization (ISO):
1. ISO 2551, Test Method for Dimensional Stability (Aachen test)
- D. Supplemental Testing Procedures:
1. PT-155-Rev. 86, Loop Pile Run Resistance test
- E. Carpet and Rug Institute (CRI):
1. CRI Indoor Air Quality Testing and Labeling Program
- F. U.S. Department of Housing and Urban Development (HUD):
1. HUD UM 44D-(93), HUD Building Product Standards and Certification Program for Carpet.

### **1.05 Performance Requirements**

A. Comply with the following performance requirements:

1. Radiant Panel: ASTM E648: >.45 watts/sq. cm: Class 1
2. Smoke Density: ASTM E662: 450 Flaming Mode – Maximum
3. Static Generation: AATCC 134: 3.5 KV – Maximum
4. Light fastness: AATCC 16E: Min 4.0 at 40 hrs.
5. Crocking: AATCC 165: 4.0 – Wet/Dry
6. Cold Water Bleed: AATCC 107: 3.0 – Minimum
7. Ozone Fade: AATCC 129: 3.0 – Minimum
8. Soil Protection: AATCC 189: 500 PPM Min.
9. CRI Green Label Air Quality Certification: Pass

B. Warranty Performance Requirements:

1. Warranties must be for Lifetime on all items.
2. Lifetime warranties must cover face components and backing components
3. Warranties must be non-prorated.
4. Carpet manufacturer must warrant both product and adhesive systems.

C. Special Performance Requirements

1. Must have Soil and Stain resist treatment
2. Must have minimum 20 dpf fiber.
3. Must have permanent anti-stat yarn.
4. Must be type 6 or 6, 6 fiber.

**1.06 Submittals**

A. Manufacturer's Data

1. Submit two (2) copies of manufacturer's specifications and installation instructions for Broadloom carpet and related items specified.

B. Fiber Requirements

1. Submit certification from the fiber producer verifying the following:
  - a. Use of the specified fiber in the submitted carpet product.

C. Warranties

1. Submit warranties as described in Section 1.13

D. Maintenance

1. Maintenance Manual – submit manual of carpet manufacturer’s recommendations for the general care, cleaning and maintenance of carpet products.

E. Certificate of Compliance

1. Submit certified test reports that carpet meets all the performance requirements stated above in section 1.3 Performance requirements. Submit certified test reports from a NVLAP Certified Lab that carpet meets all performance criteria.

F. Shop Drawings

1. For carpeted areas submit shop drawings showing installation of carpeting, pattern direction, necessary installation accessories, and provisions for work of other trades. Show location of different patterns or styles of carpet. Also show locations of any threshold conditions
  - a. The contractor will supply reproducible prints on request, to facilitate shop drawing preparation.

G. Samples

1. Submit standard-size carpet samples of each type of carpet, in each specified pattern, color and construction.
  - a. Final Sample Submittal
    - 1). Submit two (2) sets of samples for each carpet type
  - b. No carpet shipments are permitted until acceptance of final samples is given by representative of the end user or architect/design firm, certifying that samples are the approved color, pattern and texture.
  - c. Custom Color only
    - 1). A representative of the end user or architect/design firm, certifying that the samples are the approved color, pattern and texture, shall sign high quality color samples.
  - d. Samples submitted are assumed to be the manufacturer’s best obtainable match to the color described under Materials Section.
  - e. Must have federally registered Branded trademark.

**1.07 Closeout Submittals****A. Maintenance Data**

1. Include maintenance procedures, recommended cleaning and stain removal materials, and recommended cleaning schedule. Include product data and Material Safety data Sheets (MSDS) for cleaning and stain-removal materials.

**B. Installation Instructions**

1. Include detailed installation procedures. Include carpet installation procedures, adhesive types, trowel sizes, spread rates, open times, and Material Safety data sheets (MSDS) for all carpet adhesives.

**C. Warranties and Performance Certifications**

1. Submit written warranties for all products as well as Performance testing results on all items included in Warranty section and Performance section of this specification.

**1.08 Quality Assurance****A. Single Source Responsibility: Provide products from a single manufacturer.**

1. Warranties must be standard and not job specific.
2. All styles must come from the same manufacturer.
3. Must be single source fiber extrusion and yarn manufacturing.

**1.09 Qualifications****A. Manufacturer**

1. Company specializing in manufacturing commercial carpet with minimum five (5) years (documented) experience.

**B. Installer/Flooring Contractor Qualifications**

1. Carpet contractor must provide all the necessary licenses, performance bonds, and insurance certificates that comply with all local, state, and federal laws, ordinances, or codes prior to the start of the installation.
2. Carpet contractor shall be a firm established not less than five (5) years and, if requested, shall submit evidence of having furnished and installed commercial carpet projects of similar size and scope for at least five (5) years.
3. Flooring Contractor to provide references at the request of the owner.
4. Carpet Contractors must also be mill certified for installing products.
5. Carpet Contractor will be responsible for the proper product installation, including floor preparation, in those areas indicated in the Drawings.

6. Carpet Contractor to provide owner a written warranty that guarantees the completed installation free from defects in materials and workmanship for a period of two (2) years after job completion.

#### **1.10 Pre-Installation Meetings**

- A. Convene one (1) week prior to commencing work of this section.
- B. Require attendance of (manufacturer), (installer), (contractor), (owner), (architect) and other parties directly affecting the work of this section.

#### **1.11 Delivery, Storage and Handling**

- A. Deliver carpet in sealed protective rolls and accessories in sealed containers. Segregate each product (if several product styles are involved), according to style, color, pattern, dye lot, run number, and quantity.
- B. Store products in an enclosed and dry area protected from damage and soiling.

#### **1.12 Environmental Requirements**

- A. Do not install carpet until areas have been fully enclosed and environmental conditions have reached the levels indicated during occupancy.
- B. Maintain ambient temperature and humidity conditions during and after installation of carpet at levels indicated during occupancy.
- C. Allow carpet to reach room temperature or minimum temperature recommended by manufacturer before beginning installation.
- D. Protect adhesives from freezing. Follow manufacturer's recommendations for minimum temperatures to which adhesives are exposed.
- E. IAQ Requirements, Green Label: All products must be CRI Green Label Certified.
- F. Must be 100% recyclable.
  1. Contribute minimum 80% of product cost toward LEED Recycled Dollar value from fiber.
  2. Must have 50% recycled content face fiber. 25% must be Post Consumer and 25% must be Post Industrial.

#### **1.13 Field Measurements**

- A. Verify that field measurements are as indicated on drawings.

#### **1.14 Sequencing**

- A. Sequence installation so as to minimize possibility of damage and soiling of carpet.
- B. Do not commence installation until painting and finishing work are complete and ceiling and overhead work have been tested, approved and completed.

- C. Remove and replace existing carpet (renovations) in accordance with pre-approved architectural plan.

#### **1.15 Warranty**

- A. Provide carpet manufacturer's warranty against defects in materials.
- B. Fiber must have lifetime static warranty.
- C. Warranty – include coverage for:
  - 1. Provide carpet installer's warranty against defects in installation.
  - 2. Provide full spectrum of Manufacturer's Lifetime warranties as outlined below:
    - a. Wear
    - b. Tuft Bind
    - c. Static Protection
    - d. Edge ravel
    - e. Zippering
    - f. Delamination
    - g. Dimensional Stability
  - 3. All warranty items are to be non-prorated for the entire warranty period.
  - 4. Supplemental Warranty items:
    - a. Must keep warranties intact through flooding.
- D. Supplemental Fiber Warranty Items:
  - 1. Colorfastness to Light
  - 2. 10 Year Stain Warranty
  - 3. 10 Year – Colorfastness to Atmospheric contaminants

#### **1.16 Extra Materials**

- A. Provide percent overage of calculated yardage for each type of carpet (include carpet needed for complete installation plus waste and usable scraps in calculated yardage) as specified by architect and/or end user. Recycle waste, unusable scrap and any carpet damaged during installation through manufacturer's environmental program.
- B. Deliver specified attic stock to Owner's designated amounts and to designated storage space, properly packaged and identified. Redirect small pieces of waste to be appropriately recycled.

**PART 2: PRODUCTS****2.01 Products**

- A. Product Must Meet The Following Criteria:
  - 1. Must have choice of at least ten running line products.

**2.02 Carpet Construction**

- A. All yarn and other carpet materials shall be manufacturer's first quality.

- 1. Detailed Product Construction Specifications
  - a. Product Type: Broadloom
  - b. Construction: Tufted
  - c. Surface Appearance: Textured Multicolored Loop
  - d. Pitch/Gauge: 135 (197 ends per meter)
  - e. Pile Weight: 28.0 Oz. per sq. yd. (949 g/m<sup>2</sup>)
  - f. Pile Thickness: .137" (3.48 mm)
  - g. Stitches/Rows per Inch: 11.00 (43.31 per 10 cm)
  - h. Dye Method: Solution Dyed
  - i. Nylon Type: Nylon 6 or 6,6
  - j. Density: 7,358
  - k. Weight Density: 206,024
  - l. Primary Backing: Woven Polypropylene
  - m. Pattern Repeat: None
  - n. Secondary Backing: Woven Polypropylene
  - o. Width: 12' (3.66m)

**2.03 Accessories**

- A. Leveling Compound: Latex type as recommended by carpet manufacturer; compatible with carpet adhesive and curling/sealing compound used on concrete.
- B. Multipurpose Adhesive: Low VOC as recommended by carpet manufacturer for direct glue down of carpeting; comply with CRI Green Label Certification Program.
- C. Non-Metallic Carpet edge Guard: Extruded or molded heavy-duty vinyl or rubber carpet edge guard of size and profile indicated; minimum two (2) inch wide anchorage flange; colors selected by (Owner) (Architect) (Designer) from manufacturer's standard range of colors.

- D. Miscellaneous Materials: As recommended by manufacturer of carpet, cushion, and other carpet products; as required to complete installation.

### **PART 3 EXECUTION**

#### **3.01 Examination**

- A. Examine substrates for conditions under which carpeting is to be installed.
- B. Verify that floor surfaces are smooth and flat within tolerances specified in Section 3.2 and are ready to receive work.
- C. Beginning of installation means installer accepts existing substrate conditions.

#### **3.02 Preparation**

- A. Allow new concrete to cure for 90 days before carpet installation starts.
- B. Perform moisture content testing as required by manufacturer's instructions to ensure pH readings of no more than nine (9). Moisture transmission of 5.0-lbs/sq. ft per 24 hours is acceptable. If values exceed this level, follow manufacturer's recommendations for moisture transmission mitigation. Do not proceed until unsatisfactory conditions have been corrected.
- C. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes and other defects with sub-floor filler.
- D. Fill, level and make smooth cracks 1/16 inch or more, holes, unevenness, and roughness with compatible latex floor patching compounds. Feather floor filling or leveling compound a minimum of four (4) ft. Sweep floor of loose granular debris prior to filling. After filling, allow filler to dry. Damp mop floor with warm water and allow to dry. Vacuum after mopping to ensure that loose granular debris is removed and to provide a proper substrate to install Broadloom carpet. Prohibit traffic until filler is cured.
- E. Vacuum floor again immediately before installation of carpeting.
- F. Confirm compatibility of premium multipurpose adhesive with curing compounds on concrete floors.
- G. Preheat areas to receive carpet to a minimum temperature of 68° F for 72 hours prior to installation, with a relative humidity of not more than 65 percent. Maintain minimum temperature of 50° F thereafter. Carpet and adhesive must be stored at a minimum temperature of 68° F, for 72 hours prior to installation.
- H. Store premium multi purpose adhesive and other liquid materials in same atmospheric conditions as carpet, 68° F for at least 72 hours.

#### **3.03 Installation**

- A. Install carpet in accordance with the Technical Bulletins provided by the manufacturer for tufted and/or woven products. These technical bulletins will offer the proper instructions to install carpet including: (1) Conducting Site Testing and conditioning, (2) Floor Preparation, (3) Installation of the carpet, including layout (seaming, carpet layout and cutting, power stretching, approved adhesives systems and seam sealers, etc.) As a supplement, the CRI 104, section 8 will supply additional installation support guidance for your installation.

- B. Adhesives and Sealers: Carpet adhesives and sealers include, but may not be limited to, premium multipurpose adhesive, Latex Carpet Edge Sealers, and Solvent Free Carpet Seam Sealer.
- C. Install carpet under open-bottom obstructions and under removable flanges and furnishings, and into alcoves and closets in each space.
- D. Provide cut outs where required. Conceal cut edges with protective edge guards or flanges.
- E. Install carpet under open-bottom items and install tight against walls, columns, and cabinets so that the entire floor area is covered with carpet. Cover over floor-type door closers.
- F. Install edging guards at openings and doors wherever carpet terminates, unless indicated otherwise.
- G. Perform cutting in accordance with manufacturer's recommendation using tools designed for carpet being installed. Verify carpet match before cutting to insure minimal variation between dye lots.
- H. Install carpet from same dye lot and run within each continuous carpet area.
- I. Seal seams with manufacturer recommended seam sealer, if applicable.
- J. Install carpet with pile-lay in same direction except when indicated otherwise on drawings.
- K. Use leveling compound where necessary. Feather floor leveling compounds minimum of 4 ft.
- L. Do not bridge building expansion joints with continuous carpeting. Provide for movement.
- M. Apply seam adhesive to base of edge glued down. Lay adjoining piece with seam straight, not overlapped or peaked, and free of gaps.
- N. Roll with appropriate roller for complete contact of adhesive to carpet backing.
- O. Trim carpet neatly at walls and around interruptions or extend carpet at base finish up vertical surface to form base. Terminate top of base with cap strip.
- P. Complete installation of edge strips, concealing exposed edges.
- Q. Cut carpet at fixtures, architectural elements, and perimeters.
- R. Use a fixed reducer trip to secure broadloom area in open perimeter designs.
- S. Install carpet on stairs using acceptable permanent adhesive. Furnish and use compatible edge strip and nosing products as required.

### **3.04 Field Quality Control**

- A. Inspect completed carpet installation on each floor
- B. Verify that installation is complete; work is properly done and acceptable
- C. Remove and replace, at no additional cost to owner, any work found not to be acceptable.

**3.05 Cleaning**

- A. On completion of installation in each area, remove dirt and scraps from surface of finished carpet. Clean soiling, spots, or excess adhesive on carpet with cleaning materials recommended by carpet manufacturer.
- B. Remove debris; sort pieces from carpet scraps
- C. At completion of work, vacuum carpet using commercial vacuuming equipment as recommended by manufacturer. Remove spots and replace carpet where spots cannot be removed. Remove rejected carpet pieces and replace with new carpeting. Remove any protruding yarns with shears or sharp scissors.

**3.06 Protection**

- A. Do not permit traffic over unprotected carpet surface.
- B. Protect carpet against damage during construction. Cover with 6-mil thick polyethylene covering joints during construction period whenever protection is required so that carpet will be without soiling, deterioration, wear, or damage at time of completion.
- C. Damaged carpet will be rejected. As carpet is installed, remove trimmings, scraps of carpet and installation materials.
- D. Maintain protection of carpeting on each floor or area until work is accepted.

END OF SECTION 09 68 16