

09680 TILE CARPETING

CSI 2004 MasterFormat number: 09 68 13.

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes provision for the installation of carpet tile, including rubber base and accessories, and preparation of the substrate surface over which these materials will be installed.

1.2 RELATED REQUIREMENTS

- A. Coordinate carpet tile installation with the following:

1. 03300 Cast-in-Place Concrete
2. 15421 Drains and Cleanouts
3. 16132 Floor Boxes

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM), latest version:

1. D1335 Standard Test Method for Tuft Bind of Pile Floor Coverings.
2. D2859 Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials.
3. D5252 Standard Practice for the Operation of the Hexapod Tumble Drum Tester.
4. D6859 Standard Test Method for Pile Thickness of Finished Level Pile Yarn Floor Coverings.
5. E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
6. E648-10E1 Standard Test Method for Critical Radiant Flux of Floor-Coverings - Systems using a Radiant Heat Energy Source.
7. E662-13c Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
8. F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
9. F1861 Standard Specification for Resilient Wall Base.
10. F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

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

1. Test Method 16E Colorfastness to Light.
2. Test Method 134 Electrostatic Propensity of Carpets.
3. Test Method 138 Cleaning: Washing of Textile Floor Coverings - Antimicrobial Qualities Retention.

4. Test Method 174 Antimicrobial Activity Assessment of New Carpets.
 5. Test Method 175 Stain Resistance: Pile Floor Coverings.
- C. Carpet and Rug Institute (CRI) 104 - Standard for Installation of Commercial Carpet.
 - D. NSF International - NSF/ANSI 140, minimum Gold Level of Achievement.
 - E. Florida Building Code (FBC).
 - F. American with Disabilities Act (ADA).
 - G. All references indicating to follow manufacturer's instructions shall imply using the latest manufacturer's published information.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Have at least 10 years production experience with carpet tile similar to type specified and have a recycling-of-existing carpet service in operation.
- B. Installer Qualifications: Certified (or trained and approved) by the carpet tile manufacturer and with at least 5 years demonstrable experience in the installation of tile carpeting.
- C. Provide data on compatibility of floor slab treatments (sealers, curing agents, cutback neutralizers) and identify any deleterious effects of such treatments on submitted adhesives.
- D. Provide moisture tests and pH tests (alkalinity) in accordance with manufacturer's written requirements and ASTM Standards referenced in this document. Do not install tile carpeting until concrete slabs have cured, are sufficiently dry to permit proper bonding with adhesives, and have pH in the range recommended by carpet manufacturer.

1.5 SUBMITTALS

- A. Initial Submittals: Submit and obtain approval of A/E and M-DCPS before making other submittals:
 1. Text of Special Warranties, on manufacturer's and installer's corporate letterheads, as will be signed at completion, including warranty duration and recycling guarantee:
 2. Certification of Installer: Submit carpet tile manufacturer's certification of its installer.
- B. Product Data: Specifications for each carpet tile, including specified tests passed, MSDS sheets, description of adhesive, rubber base, transition strips and edge strips.
 1. Indicate recycled content; indicate percentage of pre-consumer and post-consumer recycled content per unit of product.
 2. Manufacturer's installation instructions, including special procedures and perimeter conditions requiring special attention.
- C. Certification for Fire Test and Smoke Performance: Submit to A/E and M-DCPS, certification from an independent testing laboratory acceptable to authorities having jurisdiction that carpet tile complies with fire test and smoke performance requirements stated in this document.

D. Selection Samples:

1. Submit two full size samples of carpet tile, in the range of colors and patterns specified, for selection of one or more colors and patterns by the A/E.
2. Accessories: Submit two 12-inch long pieces of specified molding and 2 samples of all and any special treatment materials (carpet saddle, snap down dividers, reducers).

E. Record Samples: One of each selected (type, color, pattern) carpet tile, full size.

F. Carpet Manufacturer's Adhesives Certification: Submit certification that adhesives are compatible and recommended for use with specific carpet.

G. Mill Certification: Submit documentation and evidence that carpets delivered on site meet the requirements of this specification. Include lot numbers and other data to substantiate manufacture and quality of carpet.

H. Maintenance Manuals: Provide two complete manuals each with maintenance procedures, recommended maintenance materials, stain removal procedures and suggested schedule for cleaning and repair procedures.

I. Closeout Submittals: Submit the following:

1. Executed Special Warranties described below.
2. Manufacturer's written verification that installer has followed manufacturer's instructions for installing.
3. Two accepted maintenance manuals.
4. Copy of transmittal indicating receipt of extra stock, signed by the M-DCPS Project Manager who received it.
5. When removal and recycling are a part of this Contract, certificate indicating compliance with recycling requirements.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver all materials to the installation site in the Manufacturer's original packaging. Packaging to contain Manufacturer's name, product name and identification number and other related information.

B. Store Materials: Comply with CRI 104 and manufacturers written instructions.

1.7 SPECIAL WARRANTIES

A. By Manufacturer: In addition to the warranty and correction of work requirements of the General Conditions, provide a written and signed Special Warranty from the tile carpeting manufacturer (or its Subcontractor), endorsed by Contractor, to correct defects in the tile carpeting work, including perimeter base and accessory products, as follows:

1. Non-pro-rated, 15 years after date of Substantial Completion, or for the lifetime of the carpeting if it is the published standard of the manufacturer, whichever is greater.
2. Agreeing to replace products having any of the following defects for the duration of the Special Warranty:
 - a. Excessive surface wear, defined as losing more than 10% of pile face fiber by total fiber weight.

- b. Carpet tile generating static build-up greater than 3.5 kV at 70° and 20% relative humidity.
- c. Carpet tile losing its tuft or fibers due to defective tuft bind.
- d. Carpet tile raveling at its edges or delaminating from its backing.
- e. Carpet tile developing mold before any mold development in building walls, ceilings or HVAC system.

3. Recycling guarantee: Include guarantee as specified in EXECUTION below.

B. By Installer: In addition to the warranty and correction of work requirements of the General Conditions, provide a written and signed Special Warranty from the carpet tile installer (or Subcontractor), endorsed by Contractor, to correct defects in carpet tile and perimeter base installation, including labor required to move furniture and equipment, etc. to access the area to be corrected, and labor to return items to their original location and operating conditions, as follows:

- 1. Two years after date of Substantial Completion.
- 2. Agreeing to reinstall work having defects, using new materials. Defects include but are not limited to the following:
 - a. Peaking or doming of tile due to setting carpet tiles too tightly.
 - b. Trip hazard at edges.
 - c. Improperly applied adhesive, and squeezed-up adhesive.
 - d. Loss of adhesion of carpet tile to concrete.

1.8 MAINTENANCE EXTRA STOCK

A. Provide in manufacturer's unopened boxes. Provide minimum of 2% of all carpet tile installed in this Work, but no less than 1 full box of carpet tile in each color/pattern. Obtain signature of the M-DCPS Project Manager on the transmittal letter to confirm receipt of the carpet tile.

PART 2 PRODUCTS

2.1 ALL CARPET TILE

A. Description: Carpet tiles of tufted nylon pile on sponge plastic or cushion backing.

- 1. Size: Minimum 18" x 18", Maximum 24" x 24".
- 2. Face Yarn: 100% Solution dyed, Type 6 or 6.6, nylon fiber, branded, continuous filament, soil hiding, with a permanent integral (not coated) static control component.
- 3. Recycled content:
 - a. Fiber: At least 25% by weight.
 - b. Backing: At least 40% by weight.
- 4. Pile thickness: 0.070 to 0.148 in.; ASTM D6859.
- 5. Finished pile yarn weight: minimum 16 oz/yd².
- 6. Pile density: 4500 – 8000 oz/yd³

7. Soil / stain resistance level of yarn: Use a stain inhibiting fluorochemical applied during (not after) manufacture of the yarn, attaining at least Level 6 on the Red 40 Stain Scale; AATCC 175.
8. Peak electrostatic charge: 3.5 kV maximum; AATCC 134 (step & scuff method).
9. Anti-microbial treatment: Achieve >90% reduction of anti-bacterial and anti-fungal activity using EPA Registered biocides complying with AATCC 174.
10. Anti-microbial qualities retention: Retain anti-bacterial and anti-fungal qualities after carpet has been washed 15 times; AATCC 138.
11. Colorfastness to light: Contrast between exposed and unexposed carpet: at least Grade 4 (Gray Scale) after exposure of 60 AATCC Facing Units (AFU) per AATCC 16E.
12. Wear: A minimum Hexapod walker score of 3; ASTM D5252.
13. Dimensional stability: Less than 0.1% change; DIN 54318 "Aachen test".
14. Radiant panel fire test: Critical radiant flux, when adhered to cement board, of at least 0.45 W/cm²; ASTM E648.
15. Smoke density test: Optical density <450 in flaming mode; ASTM E662.
16. Methanamine pill flammability test: Comply with CPSC FF 1-70; ASTM D2859.
17. Indoor air quality: Pass latest CRI IAQ Green Label Plus Carpet Emissions Test.
18. Recycling guarantee: Provide with product as specified in EXECUTION below.

Specifier: Select either polyolefin-backed, vinyl-backed or cushion-backed carpet tile from the carpet Product Families listed below for approval by M-DCPS Facilities Design and Standards before issuing for bid.

2.2 CARPET TILE, POLYOLEFIN BACKING

A. Description: Tufted nylon pile bonded to glass-reinforced polyolefin backing.

1. Backing: Fiberglass reinforced, primary backing non-woven, fully fused to provide for no lamination, low VOC, thermoplastic polyolefin mat, with coating that binds tufts to at least 10.0 lb. withdrawal force; ASTM D1335.
 - a. Thickness: 0.090 to 0.100 in.
 - b. Overall weight: 75 to 80 oz/yd².
 - c. Dimensional stability: <0.15% change; DIN 54318 "Aachen test".
 - d. Backing Type: Structure Backing and impermeable to moisture.
 - e. Recycled or reclaimed polyolefin content: At least 35%.

B. Manufacturer / Product:

1. Patcraft Product Family:
 - a. Vivid.
 - b. Experience.
 - c. Speak in Design.
 - d. Speak in Color.
 - e. Color Pop.
2. Shaw Contract Group:
 - a. Diffuse.

- b. Disperse.
- c. Hybrid.
- d. Tangle.

3. Mannington Commercial

- a. Glitch Art Collection (6P)
- b. Frenemy Collection (6P)
- c. Allegiant Collection (6P)
- d. Urban Patina (6P)
- e. Good Form 2 Collection (6P)

4. Other carpet tiles of equal quality and performance as approved by the A/E and M-DCPS.

2.3 CARPET TILE, VINYL BACKING

A. Description: Tufted nylon pile bonded to glass-reinforced vinyl (PVC) backing.

- 1. Backing: Fiberglass reinforced, low VOC, thermoplastic PVC mat, with coating that binds tufts to at least 10.0 lb. withdrawal force; ASTM D1335
 - a. Thickness: 0.090 to 0.100 in.
 - b. Overall weight: 70 to 80 oz/yd².
 - c. Dimensional stability: <0.15% change; DIN 54318 "Aachen test".
 - d. Recycled or reclaimed vinyl content: At least 20%.

B. Manufacturer / Product:

1. Interface Product Family:

- a. Squared Off.
- b. Cubic/Cubic Colores.
- c. Gradient.
- d. Grillwork.
- e. Panorama.

2. J&J Invision Product Family:

- a. Index.
- b. Skyline/Elevated.
- c. Evolve/Emerge.
- d. Fiction/Non-Fiction.
- e. Well Versed.

3. Mannington Commercial:

- a. Glitch Art Collection (Infinity RE)
- b. Frenemy Collection (Infinity RE)
- c. Allegiant Collection (Infinity RE)
- d. Urban Patina (Infinity RE)
- e. Good Form 2 Collection (Infinity RE)

4. Other carpet tiles of equal quality and performance as approved by the A/E and M-DCPS.

2.4 CARPET TILE, CUSHION BACKING

A. Description: Tufted nylon pile bonded to PVC-free polyurethane cushion backing.

1. Backing: Environmentally sustainable PVC-free cushion backing certified NSF-140 Gold, binds tufts to at least 10.0 lb withdrawal force: ASTM D1335.
 - a. Thickness: 0.27 to 0.37 in., nominal
 - b. Overall weight: 90 to 97 oz/yd², nominal
 - c. Dimensional stability: <0.15% change; DIN 54318 "Aachen test"
 - d. Recycled or reclaimed content: At least 40%

B. Manufacturer / Product:

1. Milliken Product Family:

- a. Remix 2.0 TL.
- b. Southern Analog.
- c. Sound and Fury.
- d. Form Works.
- e. Scattergraph.
- f. Fixate loop.

2. Mannington Commercial:

- a. Glitch Art Collection (Infinity Cushion)
- b. Frenemy Collection (Infinity Cushion)
- c. Allegiant Collection (Infinity Cushion)
- d. Urban Patina (Infinity Cushion)
- e. Good Form 2 Collection (Infinity Cushion)

3. Other carpet tiles of equal quality and performance as approved by the A/E and M-DCPS.

2.5 ACCESSORIES

A. Leveling Compound: Polymer-fortified cementitious compound with low VOC as recommended by flooring manufacturer.

B. Adhesives:

1. Glue-free:

- a. Releasable, pressure-sensitive pad-type adhesive system as provided by carpet tile manufacturer
or
- b. Releasable, pressure-sensitive high-friction adhesive coating system factory-applied to back of entire carpet tile as provided by carpet tile manufacturer.

2. When carpet tile manufacturer and A/E agree that project conditions prevent use of a glue-free pressure-sensitive adhesive or a high-friction coating applied to back of tile, provide a releasable, water-based, waterproof, antimicrobial, low VOC, non-toxic trowel-applied adhesive, compliant with latest CRI Green Label Plus Adhesive Emissions Test Criteria, not subject to easy unauthorized lifting, light colored or clear, as recommended by carpet tile manufacturer.
- C. Aluminum Transition and Edge Strips: Gently tapered profile, at least 2 in. wide that will grip the edge of carpet tile without extending above adjacent pile height, as produced by Pemko, Schluter or Zero.
- D. Rubber Transition and Edge Strips: Not vinyl, gently tapered profile, at least 2 in. wide, that does not extend above carpet tile pile height, as produced by Burke Mercer, Flexco, Johnsonite, Roppe or Mannington.

2.6 RUBBER BASE

- A. Description: Rubber (not vinyl / PVC).
1. Provide rubber base in long rolls cut to fit, to reduce number of joints.
 2. Height: 4 in. unless 6 in. is shown on the Drawings.
 3. Outside and inside corners. Do not use premolded corner pieces.
 4. Color: As selected for each tile color by A/E from the manufacturer's standard color palette.
 5. Base adhesive: Waterproof, non-toxic, low-VOC, light-colored, formulated for maximum adhesion of rubber base.
- B. Standard: ASTM F1861, Type TS, Group 1, Cove, except where Group 2, Straight, is noted.
- C. Product / Manufacturer: Burke Mercer, Flexco, Johnsonite, Roppe or Mannington.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Field Conditions: Verify that slabs are ready to receive carpet tile.
1. Substrate shall be smooth, cured, clean, laitance-free per CRI guidelines and manufacturer's written instructions.
 2. Verify that substrate is free of sealers, curing compounds, hardeners, old adhesive, scaling and other substances and irregularities that interfere with bond of carpet tile to substrate.
 3. Verify that substrate exhibits neutrality relative to acidity and alkalinity.
 4. Verify that lower section of walls is free from debris and ready to receive rubber base material.
 5. Protect adjacent work areas and finish surfaces from damage during product installation.
 6. Correct defects and bad conditions discovered during examination. Grind down ridges and other irregularities. Fill depressions, cracks, and holes with leveling compound.

- B. Perform Concrete Moisture tests, Alkalinity pH tests, and Hydrostatic Pressure tests in accordance with manufacturer's instructions, and applicable ASTM Standards referenced in this document. All tests shall be performed by a certified testing firm at no additional cost to M-DCPS. Conduct one test of each type per 1,000 square feet of building area, or more frequently if required by the manufacturer's instructions. These tests shall be conducted on all concrete floors regardless of their age, grade level or the presence of existing flooring. A diagram of the areas showing the location and results of each test shall be submitted to the A/E and M-DCPS for their review. Installation of tile carpeting shall commence only after all test results indicate that conditions of the substrate comply with manufacturer's written instructions.
- C. All floors shall be inspected and approved by a manufacturing representative and the installer prior to installation of carpet.
- D. When removal and recycling are a part of this Contract, remove and recycle any existing carpet or carpet tile indicated on the drawings, following the manufacturer's recycling guarantee. The new carpet tile manufacturer and new carpet tile installer shall arrange times, responsibilities and certification of recycling method for recycling existing carpet or carpet tile that the installer removes where indicated on the drawings as follows:
 - 1. Installer shall prepare removed carpet for pickup as directed by manufacturer of new carpet tile. Place no removed carpet in any dumpster. Place removed carpet at curbside as directed by manufacturer for pickup and certification of recycling by manufacturer.
 - 2. Manufacturer shall certify that it will either recycle the removed carpet or, if recycling is not feasible, that it will provide the waste-to-energy alternative.
 - 3. Recycling shall be performed at no cost to M-DCPS.

3.2 INSTALLATION OF CARPET TILE

- A. Install carpet tile following manufacturer's current published recommendations and instructions, except as more stringently specified herein.
- B. Install carpet tile at 60 – 85 °F air temperature, under dry, ventilated, dust-free conditions.
 - 1. Condition tile to site conditions for at least 36 hours before installing.
 - 2. Vacuum floors free of grit before installing carpet.
- C. Cut and fit carpet tile to butt tightly at vertical surfaces, built-ins, pipes, outlets, edgings, thresholds and nosings. Extend carpet tile into toe spaces, door reveals, closets, and other similar departures from straight room boundaries. Provide edge strips at doors.
 - 1. Cover carpet tile perimeter with an aluminum edge strip where traffic can occur. Use rubber strips only where screw attachment of aluminum strips is impractical.
 - 2. Locate edge strips in doorways to fall under the closed door.
- D. Set carpet tile snugly together; do not compress so that peaking or doming occurs. Set carpet tiles in accordance with CRI-104 and manufacturer's written recommendations. Remove any excessive adhesive from tile joints and any other affected adjacent surfaces.
- E. Vacuum carpet tile using a machine with a rotating brush head.

- F. Protect carpet tile against damage and soiling by fully covering with an appropriate clean durable material. The durability of the material shall be appropriate to the anticipated level of activity remaining in the area. Contractor is responsible for any damage to the carpet tiles and will be required to replace areas damaged prior to work completion. Floor protection shall remain in place until Substantial Completion, or all work in the area is completed, whichever occurs last. Upon approval of M-DCPS Project Manager, the protective covering shall be removed by the Contractor and properly disposed . Do not use self-adhering plastic.

3.3 INSTALLATION OF RUBBER BASE

- A. Adhere base tight to wall surfaces.
- B. Fit joints tightly and make vertical.
- C. Permanently form corners with no joint within 4 in. of corner. Miter internal corners. At external corners, V-cut back of base strip to 2/3 of its thickness and fold.
- D. Cleaning: Remove excess adhesive from surfaces of base and any other affected surfaces without damage.

END OF SECTION