

## 09680 TILE CARPETING

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*SPECIFIER: This new (2007) section specifies either 24x24 in. or 500x500 mm (19.7x19.7 in.) carpet tile, suitable for use in administrative areas, resource rooms, under auditorium seating, and other low-traffic areas. These sizes are standard. With sizeable orders and plenty of lead time, producers will cut carpet tile to 24", 36" and 500 mm squares at some extra cost.*

*The specified styles offer good color selection and a range of striated and speckled and almost plain patterns, but no large figuring.*

*By consulting samples or spec sheets, the designer can narrow the selection down to specific patterns.*

*The specified carpet have many qualities of sustainability, including a phone number on the back of each tile that will bring a truck from the producer to collect the tiles at curbside for eventual recycling.*

*CSI 2004 MasterFormat number: 09 68 13.*

*An optional keynote to the Drawings follows major product titles, for A/Es using National CAD Standard.*

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### PART 1 GENERAL

#### 1.1 RELATED REQUIREMENTS

- A. Coordinate tile carpeting with work before and after. See especially:
  - 1. Finish on concrete floors. 03300
  - 2. Plumbing floor cover plates with recess for carpet. 15431
  - 3. Electrical and telephone floor cover plates with recess for carpet. 16132

#### 1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM). Test methods for:
  - 1. D1335-05 Tuft Bind of Pile Floor Coverings.
  - 2. D2859-04 Ignition Characteristics of Finished Textile Floor Coverings (includes CPSC FF1-70).
  - 3. D5252-05 Hexapod Walker Drum Tester.
  - 4. D6859-05 Pile Thickness of Finished Level Pile Yarn Floor Coverings.
  - 5. E648-04 Radiant Flux of Floor-Coverings - Radiant Heat Energy Source.
  - 6. E662-03 Specific Optical Density of Smoke Generated by Solid Materials.
  - 7. F710-04 Preparing Concrete Floors to Receive Resilient Flooring.
  - 8. F1861-02 Resilient Wall Base.
  - 9. F1869-98 Measuring Moisture Vapor Emission Rate of Concrete Using Anhydrous Calcium Chloride, Method F.
- B. American Association of Textile Colorists and Chemists (AATCC):
  - 1. 134 Static Generation.
  - 2. 138 Antimicrobial Qualities Retention.
  - 3. 16E Colorfastness to Light.
  - 4. 174 Antimicrobial / Fungicidal Activity Assessment of Carpets.
  - 5. 175 Soil and Stain Resistance.

#### 1.3 OVERALL STANDARDS

- A. Standard for Installation Specification of Commercial Carpet, 104-02, by Carpet and Rug Institute (CRI).

#### 1.4 QUALITY ASSURANCE

- A. Producer Qualifications: Have at least 15 years production experience with carpet tile similar to type specified; also have a recycling-of-existing carpet service in operation
- B. Installer Qualifications: Certified (or trained and approved) by the carpet tile producer and with at least 5 years demonstrable experience in the installation of tile carpeting.

#### 1.5 SUBMITTALS

Follow 01330

- A. Early Submittals: Submit and obtain approval before making other submittals:
  - 1. Text of Special Warranties, on producer's and installer's corporate letterheads, as will be signed at completion, including warranty duration and recycling guarantee: Submit for prior approval of A/E and Board.
  - 2. Certification of Installer: Submit carpet tile producer's certification of its installer for approval of A/E and Board.
- B. Product Data: Specifications for each carpet tile, including specified tests passed; description of adhesive, rubber base, transition strips and edge strips.
- C. Selection Samples: Submit samples of carpet tile, in the range of colors and patterns specified, for selection of one or more colors and patterns by A/E.
- D. Record Samples: One of each selected (type, color, pattern) carpet tile, full size.
- E. Maintenance Manuals: Two, with instructions for routine care and for removing stains.
- F. Extra Stock: Provide in producer's un-opened boxes, with sufficient adhesive to install at least 1 box. Provide at least 1 box of carpet tile in each color/pattern, totaling no less than 2% of all carpet tile installed in this Work.
- G. Closeout Submittals: Submit the following:
  - 1. Executed Special Warranties.
  - 2. Recycling certificate.
  - 3. Producer's invoice (original or producer-certified copy).
  - 4. Producer's certification that installer has followed producer's instructions for installing.
  - 5. 2 maintenance manuals.
  - 6. Copy of transmittal of extra stock, signed by the school administrator who received it.

#### 1.6 SPECIAL WARRANTIES

Follow 01790

- A. By Producer: 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 producer (or its Subcontractor), endorsed by Contractor, to correct defects in the tile carpeting work, including perimeter base and accessory products, as follows:
  - 1. Correct until date of Substantial Completion of the Work and, without any pro-rating over time, for 15 years after, or for the lifetime of the carpeting, whichever is the published standard of the producer.
  - 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.
  - 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. Exclusions: Damage from inflicted abuse, traffic by heavy wheeled equipment or shoe cleats, improper maintenance, excessive moisture in floor slab, or from mold that develops because of mold that has infected other parts of building.
  4. 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 as follows:
1. Correct until date of Substantial Completion of the Work and for 2 years after.
  2. Agreeing reinstall work having these defects, providing new products as needed:
    - a. Peaking or doming of tile due to setting carpet tiles too tightly.
    - b. Trip hazard at edges.
    - c. Improperly applied adhesive, squeezed-up adhesive.
    - d. Loss of adhesion of carpet tile to concrete.
  3. Excluding manufacturing defects in carpet tile; cracks imparted by substrate movement; damage from inflicted abuse; loss of adhesion from excessive substrate moisture in floor slab if test showed MVER figure less than 3.5 lb.

## PART 2 PRODUCTS

Follow 01600

### 2.1 ALL CARPET TILE

- A. Description: Carpeting squares of tufted nylon pile on sponge plastic or cushion backing.
1. Face Yarn: Nylon fiber, branded (not mill-extruded), continuous filament, soil hiding, with a permanent integral (not coated) static control component.
  2. Recycled content:
    - a. Fiber: At least 25% by weight.
    - b. Backing: At least 40% by weight.
  3. Dyeing: 100% Solution dyed.
  4. 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.
  5. Peak electrostatic charge: 3.5 kV maximum; AATCC 134 (step & scuff method).
  6. Anti-microbial treatment during yarn manufacture: Achieve >90% reduction of anti-bacterial and anti-fungal activity; AATCC 174.
  7. Anti-microbial qualities retention: Retain anti-bacterial and anti-fungal qualities after carpet has been washed 15 times; AATCC 138.
  8. Colorfastness to light: Contrast score of at least Grade 4 (Gray Scale) between exposed and unexposed carpet after exposure of 60 AFU; AATCC 16E.
  9. Wear: A minimum Hexapod walker score of 3; ASTM D5252.
  10. Dimensional stability: Less than 0.1% change; DIN 54318 "Aachen test".
  11. Radiant panel fire test: Critical radiant flux, when adhered to cement board, of at least 0.45 W/cm<sup>2</sup>; ASTM E648.
  12. Smoke density test: Optical density <450 in flaming mode; ASTM E662.
  13. Methanamine pill flammability test: Comply with CPSC FF 1-70; ASTM D2859.

14. Indoor air quality: Pass latest CRI IAQ Green Label Plus Carpet Emissions Test.
15. Recycling guarantee: Provide with product as specified in EXECUTION below.

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*Specifier: Select either polyolefin-backed or vinyl-backed carpet tile, unless it is desired to bid one against the other.*

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## 2.2 CARPET TILE, POLYOLEFIN BACKING

[09660.carp-t-o]

- A. Description: Tufted nylon pile bonded to glass-reinforced polyolefin backing.
  1. Face yarn: 100% Solution dyed, Type 6.
  2. Backing: Fiberglass reinforced, 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/yd<sup>2</sup>.
    - c. Dimensional stability: <0.15% change; DIN 54318 "Aachen test".
    - d. Recycled or reclaimed polyolefin content: At least 40%.
  3. Tile size: 24 x 24 in.
  4. Pile thickness: 0.070 to 0.125 in.; ASTM D6859.
  5. Finished pile yarn weight: minimum 17 oz/yd<sup>2</sup>.
  6. Pile density: 4500 – 8000 oz/yd<sup>3</sup>.

### B. Product / Producer:

- | <u>Producer</u> | <u>Product Family</u>   |
|-----------------|---|
| 1. Patcraft     |   |
| a.              | Color Your World  |
| b.              | Tweed   |
| c.              | Speak in Design   |
| d.              | Speak in Color  |
| e.              | Homeroom II   |
| 2.              | Other carpet tiles as approved after review by A/E and Board. |

## 2.3 CARPET TILE, VINYL BACKING

[09660.carp-t-v]

- A. Description: Tufted nylon pile bonded to glass-reinforced vinyl (PVC) backing.
  1. Face yarn: 100% Solution dyed, Type 6.
  2. 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/yd<sup>2</sup>.
    - c. Dimensional stability: <0.15% change; DIN 54318 "Aachen test".
    - d. Recycled or reclaimed vinyl content: At least 40%.
  3. Tile size: 500 x 500 mm.
  4. Pile thickness: 0.110 to 0.148 in.; ASTM D6859.
  5. Finished pile yarn weight: minimum 16 oz/yd<sup>2</sup>.
  6. Pile density: 5000 – 6000 oz/yd<sup>3</sup>.

### B. Product / Producer.

- | <u>Producer</u> | <u>Product Family</u> |
|-----------------|-----------------------|
| 1. Interface.   |                       |
| a.              | Squared Off           |
| b.              | Cubic/Cubic Colores   |

- c. Gradient
- d. Grillwork
- e. Panorama
- 2. J&J/Invision
  - a. L3
  - b. Good Vibrations
  - c. Impulse
- 3. Other carpet tiles as approved after review by A/E and Board.

## 2.4 RUBBER BASE

- A. Description: Rubber (not vinyl / PVC),
  - 1. Height: 4 in. unless 6 in. is shown on the Drawings.
  - 2. Profile: Cove bottom, unless a plain bottom is specifically shown on Drawings.
  - 3. Outside and inside corners: Permanently form corners with no joint within 4 in. of corner. Do not use premolded corner pieces.
  - 4. Color: As selected for each tile color by A/E from the producer's full 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, Style B except where Style A is noted.
- C. Product / Producer: Burke Mercer, Flexco, Johnsonite, RCA, or Roppe.

## 2.5 ACCESSORIES

- A. Leveling Compound: Polymer-fortified cement-based compound with pH <9.0.
- B. Carpet Tile Adhesive: Water-based, waterproof, antimicrobial, non-toxic, compliant with latest CRI Green Label Plus Adhesive Emissions Test Criteria, not subject to easy unauthorized lifting but releasable, light colored or clear, as recommended by carpet tile producer.
- 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, Reese, 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 Roppe.

## PART 3 EXECUTION

Follow 01700

### 3.1 EXAMINATION AND PREPARATION

- A. Field Conditions: Verify that slabs are ready to receive carpet tile.
  - 1. Floors shall be smooth, cured, clean, laitance-free, at 60 to 80 °F, pH<9.0.
  - 2. Verify that substrate is free of sealers, curing compounds, hardeners, old adhesive, and other substances that interfere with bond of carpet tile to substrate.
- B. Moisture Test:
  - 1. Between 14 and 21 days before the date of tile installation, perform moisture tests on each area in which carpet tile will be placed.

- a. At slabs on grade: One test for each 4000 ft<sup>2</sup> area.
    - b. At elevated slabs: One test at highest floor to receive carpet tile.
  2. Follow ASTM F710. Run CaCl<sub>2</sub> tests with lab-weighed CaCl<sub>2</sub>: ASTM F1869.
    - a. Another test method may be used if carpet tile producer certifies that specified moisture vapor emission rate (MVER) will be no greater than that measured by F710 test and A/E approves.
  3. From tests, determine each area's MVER (water vapor emitted in 24 h from a 1000 ft<sup>2</sup> area). MVER figure shall be less than 3.5 lb.
- C. Correct defects and bad conditions discovered during examination. Grind down ridges and other irregularities. Fill depressions, cracks, and holes with leveling compound.
- D. Removal and Recycling: Remove, salvage and recycle any existing carpet or carpet tile, following the producer's recycling guarantee. The new carpet tile producer and new carpet tile installer shall arrange times, costs, responsibilities, and certification of recycling method for recycling existing carpet or carpet tile that the installer salvages in order to make room for new carpet tile as follows:
1. Installer shall prepare salvage for pickup as directed by producer of new carpet tile. Place no salvage in any dumpster. Place salvage at curbside as directed by producer for pickup and certification of recycling by producer.
  2. Producer shall certify that it will either recycle the salvage or, if recycling is not feasible, that it will provide the waste-to-energy alternative.
  3. Recycling shall be performed at no cost to the Board.

### 3.2 INSTALLATION OF CARPET TILE AND BASE

- A. Install carpet tile following producer'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, then damp mop and let dry.
- 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.
  1. Set carpet tile in ample and uniform adhesive coat using notched trowel.
  2. Remove excess adhesive from floor, base and walls.
- E. Vacuum carpet tile using a machine with a rotating brush head.
- F. Protect carpet tile against damage and soiling from construction and furniture/equipment placing until time of Substantial Completion of the Work.
  1. Use un-dyed, untreated roll paper and secure paper to prevent lifting. ///