



WMU Design Guidelines Instructions: These guidelines are to be used by the Design Professional to inform the design process and outline WMU-specific desires for University projects. Text appearing in blue indicates a WMU design guideline which must be met for all campus projects unless approved in writing by the University. Blue text that is struck out indicates products or practices that are **not** acceptable, and shall not be included unless similarly approved. Any text remaining in black is to be edited by the Design Professional as part of the normal specifications-writing process. Guidelines language shall be included in the project specifications and their intent incorporated into the drawings.

SECTION 09 6813 - TILE CARPETING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes modular carpet tile.

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at **[Project site]** <Insert location>.
 - 1. Review methods and procedures related to carpet tile installation including, but not limited to, the following:
 - a. Review delivery, storage, and handling procedures.
 - b. Review ambient conditions and ventilation procedures.
 - c. Review subfloor preparation procedures.
 - d. <Insert agenda items>.

1.3 ACTION SUBMITTALS

- A. **Product Data:** For each type of product.
 - 1. Include manufacturer's written data on physical characteristics, durability, and fade resistance.
 - 2. Include manufacturer's written installation recommendations for each type of substrate.

Designer Note: For projects seeking LEED certification, include sustainable design submittals as required.

- B. Sustainable Design Submittals:
 - 1. <Double click to insert sustainable design text for adhesives.>
 - 2. <Double click to insert sustainable design text for carpeting products.>
 - 3. <Double click to insert sustainable design text for flooring.>



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- C. Shop Drawings: For carpet tile installation, plans showing the following:
 - 1. Columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cutouts are required in carpet tiles.
 - 2. Carpet tile type, color, and dye lot.
 - 3. Type of subfloor.
 - 4. Type of installation.
 - 5. Pattern of installation.
 - 6. Pattern type, location, and direction.
 - 7. Pile direction.
 - 8. Type, color, and location of insets and borders.
 - 9. Type, color, and location of edge, transition, and other accessory strips.
 - 10. Transition details to other flooring materials.

 - D. Samples: For each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules.
 - 1. Carpet Tile: Full-size Sample.
 - 2. Exposed Edge, Transition, and Other Accessory Stripping: 12-inch-long Samples.

 - E. Samples for Initial Selection: For each type of carpet tile.
 - 1. Include Samples of exposed edge, transition, and other accessory stripping involving color or finish selection.

 - F. Samples for Verification: For each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules.
 - 1. Carpet Tile: Full-size Sample.
 - 2. Exposed Edge, Transition, and Other Accessory Stripping: 12-inch-long Samples.

 - G. Product Schedule: For carpet tile. Use same designations indicated on Drawings.

 - H. Sustainable Product Certification: Provide ANSI/NSF 140 certification for carpet products.
- 1.4 INFORMATIONAL SUBMITTALS
- A. Qualification Data: For Installer.
 - B. Product Test Reports: For carpet tile, for tests performed by a qualified testing agency.
 - C. Sample Warranty: For special warranty.
- 1.5 CLOSEOUT SUBMITTALS
- A. Maintenance Data: For carpet tiles to include in maintenance manuals. Include the following:



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1. Methods for maintaining carpet tile, including cleaning and stain-removal products and procedures and manufacturer's recommended maintenance schedule.
2. Precautions for cleaning materials and methods that could be detrimental to carpet tile.

1.6 MAINTENANCE MATERIAL SUBMITTALS

Designer Note: The amount of attic stock is determined on a project-by-project basis. This needs to be discussed with WMU during the design phases of the project, including where the extra materials will be stored.

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 1. Carpet Tile: Full-size units equal to [5] <Insert number> percent of amount installed for each type indicated, but not less than 10 sq. yd..

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who is certified by the International Certified Floorcovering Installers Association at the [Commercial II] [Master II] <Insert description> certification level.
- B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.
 1. Build mockups at locations and in sizes shown on Drawings.
 2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Comply with CRI's "CRI Carpet Installation Standard."

1.9 FIELD CONDITIONS

- A. Comply with CRI's "CRI Carpet Installation Standard" for temperature, humidity, and ventilation limitations.
- B. Environmental Limitations: Do not deliver or install carpet tiles until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at levels planned for building occupants during the remainder of the construction period.
- C. Do not install carpet tiles over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive and concrete slabs have pH range recommended by carpet tile manufacturer.
- D. Where demountable partitions or other items are indicated for installation on top of carpet tiles, install carpet tiles before installing these items.



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1.10 WARRANTY

- A. Special Warranty for Carpet Tiles: Manufacturer agrees to repair or replace components of carpet tile installation that fail in materials or workmanship within specified warranty period.
1. Warranty does not include deterioration or failure of carpet tile due to unusual traffic, failure of substrate, vandalism, or abuse.
 2. Failures include, but are not limited to, the following:
 - a. More than 10 percent edge raveling, snags, and runs.
 - b. Dimensional instability.
 - c. Excess static discharge.
 - d. Loss of tuft-bind strength.
 - e. Loss of face fiber.
 - f. Delamination.
 - g. **<Insert failure characteristic>**.
 3. Warranty Period: **[10] <Insert number>** years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CARPET TILE **<Insert drawing designation>**

- A. **<Double click here to find, evaluate, and insert list of manufacturers and products.>**
- B. Color: **[As indicated by manufacturer's designations] [Match Architect's samples] [As selected by Architect from manufacturer's full range] <Insert color>**.
- C. Pattern: **[Match Architect's samples] <Insert pattern>**.
- D. Fiber Content: 100 percent nylon 6, 6 or 100 percent nylon 6 ~~[100 percent polypropylene]~~ ~~[100 percent wool]~~ ~~[80 percent wool; 20 percent nylon 6, 6]~~ ~~[80 percent wool; 20 percent nylon 6]~~ **<Insert percentage>**.
- E. Fiber Type: **<Insert proprietary fiber type>**.
- F. Pile Characteristic: Level-loop or cut-and-loop ~~[Cut]~~ **<Insert construction>** pile.
- G. Yarn Twist: **<Insert TPI>**.
- H. Yarn Count: **<Insert count>**.
- I. Density: **<Insert oz./cu. yd. >**.
- J. Pile Thickness: **<Insert inches>** for finished carpet tile **[according to ASTM D6859]**.
- K. Stitches: **<Insert stitches per inch>**.
- L. Gage: **<Insert ends per inch>**.
- M. Surface Pile Weight: **<Insert oz./sq. yd. >**.



- N. Total Weight: **<Insert oz./sq. yd. >** for finished carpet tile.
- O. Primary Backing/Backcoating: **[Manufacturer's standard composite materials] [PVC] [Fiberglass-reinforced PVC] [Fiberglass-reinforced amorphous resin] [Reinforced polyurethane composite cushion] [Reinforced polyurethane composite] [Reinforced thermoplastic copolymer]** **<Insert specific primary backing materials; consult manufacturers>**.
- P. Secondary Backing: **[Manufacturer's standard material]** **<Insert specific secondary backing material>**.
- Q. Backing System: **<Insert proprietary name>**.
- R. Size: **[18 by 18 inches] [24 by 24 inches] [18 by 36 inches] [36 by 36 inches]** **<Insert dimensions>**.
- S. Applied Treatments:
1. Soil-Resistance Treatment: **[Manufacturer's standard treatment]** **<Insert treatment>**.
 2. Antimicrobial Treatment: **[Manufacturer's standard treatment]** **<Insert treatment>** that protects carpet tiles as follows:
 - a. Antimicrobial Activity: Not less than 2-mm halo of inhibition for gram-positive bacteria, not less than 1-mm halo of inhibition for gram-negative bacteria, and no fungal growth, according to AATCC 174.
- T. Sustainable Design Requirements:
1. Sustainable Product Certification: **[Silver] [Gold] [Platinum]** level certification according to ANSI/NSF 140.
 2. **<Double click to insert sustainable design text for carpet and cushion.>**
- U. Performance Characteristics:
1. Appearance Retention Rating: **[Moderate traffic, 2.5] [Heavy traffic, 3.0] [Severe traffic, 3.5]** **<Insert number>** minimum according to ASTM D7330.
 2. Critical Radiant Flux Classification: Not less than **[0.45 W/sq. cm] [0.22 W/sq. cm]** according to NFPA 253.
 3. Dry Breaking Strength: Not less than 100 lbf according to ASTM D2646.
 4. Tuft Bind: Not less than **[3 lbf] [5 lbf] [6.2 lbf] [8 lbf] [10 lbf]** **<Insert value>** according to ASTM D1335.
 5. Delamination: Not less than **[3.5 lbf/in.] [4 lbf/in.]** **<Insert value>** according to ASTM D3936.
 6. Dimensional Tolerance: Within 1/32 inch of specified size dimensions, as determined by physical measurement.
 7. Dimensional Stability: 0.2 percent or less according to ISO 2551 (Aachen Test).
 8. Noise Reduction Coefficient (NRC): **<Insert NRC>** according to ASTM C423.
 9. Colorfastness to Crocking: Not less than 4, wet and dry, according to AATCC 165.
 10. Colorfastness to Light: Not less than 4 after **[40] [60]** **<Insert number>** AFU (AATCC fading units) according to AATCC 16, Option E.
 11. Electrostatic Propensity: Less than **[3.5] [2]** **<Insert number>** kV according to AATCC 134.



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2.2 INSTALLATION ACCESSORIES

- A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided or recommended by carpet tile manufacturer.
- B. Adhesives: Water-resistant, mildew-resistant, nonstaining, pressure-sensitive type to suit products and subfloor conditions indicated, that comply with flammability requirements for installed carpet tile, and are recommended by carpet tile manufacturer for releasable installation.
 - 1. <Double click to insert sustainable design text for VOC content of adhesive.>
 - 2. <Double click to insert sustainable design text for adhesives.>
- C. Metal Edge/Transition Strips: Extruded aluminum with [mill] **<Insert finish>** finish of profile and width shown, of height required to protect exposed edge of carpet, and of maximum lengths to minimize running joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet tile performance.
- B. Examine carpet tile for type, color, pattern, and potential defects.
- C. Concrete Slabs: Verify that finishes comply with requirements specified in Section 03 3000 "Cast-in-Place Concrete" and that surfaces are free of cracks, ridges, depressions, scale, and foreign deposits.

Designer Note: WMU requires moisture testing per product manufacturer's recommendations.

- 1. **Moisture Testing:** Perform tests so that each test area does not exceed [200 sq. ft.] [1000 sq. ft.] **<Insert area>**, and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
 - a. **Anhydrous Calcium Chloride Test:** ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of [3 lb of water/1000 sq. ft.] **<Insert emission>** in 24 hours.
 - b. **Relative Humidity Test:** Using in situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum [75] **<Insert number>** percent relative humidity level measurement.
 - c. Perform additional moisture tests recommended in writing by adhesive and carpet tile manufacturers. Proceed with installation only after substrates pass testing.
- D. **Wood Subfloors:** Verify the following:
 - 1. Underlayment over subfloor complies with requirements specified in Section 06 1600 "Sheathing."
 - 2. Underlayment surface is free of irregularities and substances that may interfere with adhesive bond or show through surface.



- E. Metal Subfloors: Verify the following:
 - 1. Underlayment surface is free of irregularities and substances that may interfere with adhesive bond or show through surface.
- F. Painted Subfloors: Perform bond test recommended in writing by adhesive manufacturer.
 - 1. Access Flooring Systems: Verify the following:
 - 2. Access floor substrate is compatible with carpet tile and adhesive if any.
 - 3. Underlayment surface is flat, smooth, evenly planed, tightly jointed, and free of irregularities, gaps greater than [1/8 inch] <Insert dimension>, protrusions more than 1/32 inch, and substances that may interfere with adhesive bond or show through surface.
- G. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. General: Comply with CRI's "Carpet Installation Standards" and with carpet tile manufacturer's written installation instructions for preparing substrates indicated to receive carpet tile.
- B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, depressions, and protrusions in substrates. Fill or level cracks, holes and depressions 1/8 inch wide or wider, and protrusions more than 1/32 inch unless more stringent requirements are required by manufacturer's written instructions.
- C. Concrete Substrates: Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by adhesive and carpet tile manufacturers.
- D. Metal Substrates: Clean grease, oil, soil and rust, and prime if recommended in writing by adhesive manufacturer. Rough sand painted metal surfaces and remove loose paint. Sand aluminum surfaces, to remove metal oxides, immediately before applying adhesive.
- E. Broom and vacuum clean substrates to be covered immediately before installing carpet tile.

3.3 INSTALLATION

- A. General: Comply with CRI's "CRI Carpet Installation Standard," Section 18, "Modular Carpet" and with carpet tile manufacturer's written installation instructions.
- B. Installation Method: As recommended in writing by carpet tile manufacturer AND/OR glue down; install every tile with full-spread, releasable, pressure-sensitive adhesive [~~Partial glue down; install periodic tiles with releasable, pressure sensitive adhesive~~] [Free lay; install carpet tiles without adhesive].
- C. Maintain dye-lot integrity. Do not mix dye lots in same area.
- D. Maintain pile-direction patterns [indicated on Drawings] [recommended in writing by carpet tile manufacturer].



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- E. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet tile manufacturer.
- F. Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
- G. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on carpet tile as marked on subfloor. Use nonpermanent, nonstaining marking device.
- H. Install pattern parallel to walls and borders.
- I. Do not bridge expansion joints with flooring material.
- J. For seams that occur at doorways, seam shall be centered under the door in its closed position.
- K. Access Flooring: Stagger joints of carpet tiles so carpet tile grid is offset from access flooring panel grid. Do not fill seams of access flooring panels with carpet adhesive; keep seams free of adhesive.

3.4 CLEANING AND PROTECTION

- A. Perform the following operations immediately after installing carpet tile:
 - 1. Remove excess adhesive and other surface blemishes using cleaner recommended by carpet tile manufacturer.
 - 2. Remove yarns that protrude from carpet tile surface.
 - 3. Vacuum carpet tile using commercial machine with face-beater element.
- B. Protect installed carpet tile to comply with CRI's "Carpet Installation Standard," Section 20, "Protecting Indoor Installations."
- C. Protect carpet tile against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet tile manufacturer.
- D. Vacuum all carpeted areas immediately prior to FF&E installation.

END OF SECTION 09 6813