

**SECTION 09 68 00
CARPETING**

SPEC WRITER NOTE: Delete between // // if not applicable to project. Also delete any other item or paragraph not applicable in the section and renumber the paragraphs.

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Section specifies carpet, molding, adhesives, and other items required for complete installation.

1.2 RELATED WORK

- A. //Section 01 81 13, SUSTAINABLE CONSTRUCTION REQUIREMENTS: Sustainable Design Requirements.//
- B. Section 09 05 16, SUBSURFACE PREPARATION FOR FLOOR FINISHES: Testing of Concrete Floors Before Installation.
- C. Section 09 06 00, SCHEDULE FOR FINISHES: Manufacturer, Color and Style of Carpet and Edge Strip.
- D. Section 09 65 13, RESILIENT BASE AND ACCESSORIES: Resilient Wall Base.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: A company specializing in carpet installation with a minimum three (3) years' experience and employing experienced flooring installers who have retained, and currently hold, an INSTALL Certification, or a certification from a comparable certification program, and a valid OSHA 10 certification.
1. Installers to be certified by INSTALL or a comparable certification program with the following minimum criteria:
- a. US Department of Labor approved four (4) year apprenticeship program, 160 hours a year.
 - b. Career long training.
 - c. Manufacturer endorsed training.
 - d. Fundamental journeyman skills certification.

SPEC WRITER NOTE: Mock-up must be approved by Contracting Officer Representative (COR) in the project's design phase before including requirement in specification.

- B. //Mockup: Install 3.04 x 3.04 meter (10 x 10 feet) minimum mockup to verify selections made under sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and

installation. Engage a qualified independent inspector approved by COR is to examine carpet installation workmanship of mockup and evaluate the workmanship according to the criteria established by INSTALL's Certification Program submit a report of installation evaluation. COR approved mockups may become part of the completed Project if undisturbed at the time of Substantial Completion. //

1.4 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. //Sustainable Design Submittals as described below:
 - 1. //Volatile organic compounds per volume as specified in PART 2 - PRODUCTS.// //
- C. Product Data:
 - 1. Manufacturer's catalog data and printed documentation stating physical characteristics, durability, resistance to fading and flame resistance characteristics for each type of carpet material and installation accessory.
 - 2. Manufacturer's printed installation instructions for the carpet, including preparation of installation substrate, seaming techniques and recommended adhesives and tapes.
- D. Samples:
 - 1. Carpet: "Production Quality" samples 305 x 305 mm (12 x 12 inches) of carpets, showing quality, pattern and color specified in Section 09 06 00, SCHEDULE FOR FINISHES.
 - 2. Floor Edge Strip (Molding): 152 mm (6 inches) long of each color and type specified.
 - 3. Base Edge Strip (Molding): 152 mm (6 inches) long of each color specified.
- E. Shop Drawings: Installers layout plan showing seams and cuts for sheet carpet and carpet module.
- F. Maintenance Data: Carpet manufacturer's maintenance instructions describing recommended type of cleaning equipment and material, spotting and cleaning methods and cleaning cycles.
- G. Installer's Qualifications.
- H. Manufacturer's warranty.

1.5 DELIVERY AND STORAGE

- A. Deliver carpet in manufacturer's original wrappings and packages clearly labeled with manufacturer's brand name, size, dye lot number

and related information. Transport carpet to job site in a manner that prevents damage and distortion that might render it unusable. When bending or folding is unavoidable for delivery purposes, unfold carpet and lay flat immediately.

- B. Deliver adhesives in containers clearly labeled with manufacturer's brand name, number, installation instructions, safety instructions and flash points.
- C. Store in a clean, dry, well-ventilated area, protected from damage and soiling. Before installation, acclimate carpet to the atmospheric conditions of the areas in which it will be installed for 2 days prior to installation

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Maintain areas in which carpeting is to be installed at a temperature between 18 - 35 degrees C (65 - 95 degrees F) with a maximum relative humidity of 65 percent for two (2) days before installation, during installation and for three (3) days after installation.
- B. Minimum Substrate Surface Temperature: 18 degrees C (65 degrees F) at time of installation.
- C. Three (3) days after installation, maintain minimum temperature of 10 degrees C (50 degrees F) for the duration of the contract.

1.7 WARRANTY

- A. Construction Warranty: Comply with FAR clause 52.246-21, "Warranty of Construction".
- B. Manufacturer Warranty: Manufacturer shall warranty their carpet for a minimum of ten (10) // // years from date of installation and final acceptance by the Government. Submit manufacturer warranty.

SPEC WRITER NOTE: Update Applicable Publications to current issue at time of project specification preparation.

1.8 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. American National Standards Institute (ANSI):
ANSI/NSF 140-10.....Sustainable Carpet Assessment Standard
- C. American Association of Textile Chemists and Colorists (AATCC):
16-04.....Colorfastness to Light
134-11.....Electric Static Propensity of Carpets

- 165-08.....Colorfastness to Crocking: Textile Floor Coverings-AATCC Crockmeter Method
- 174-11.....Antimicrobial Activity Assessment of New Carpets
- D. ASTM International (ASTM):
- D1335-17e1.....Tuft Bind of Pile Yarn Floor Coverings
- D3278-20.....Flash Point of Liquids by Small Scale Closed-Cup Apparatus
- D5116-17.....Determinations of Organic Emissions from Indoor Materials/Products
- D5252-20.....Operation of the Hexapod Tumble Drum Tester
- D5417-16.....Operation of the Vettermann Drum Tester
- E648-19ae1.....Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
- E. Code of Federal Regulation (CFR):
- 40 CFR 59.....Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coating
- F. The Carpet and Rug Institute (CRI):
- CIS.....Carpet Installation Standard
- G. International Standards and Training Alliance (INSTALL)
- H. International Organization for Standardization (ISO):
- 2551-81.....Machine-Made Textile Floor Coverings
- I. U.S. Consumer Product and Safety Commission (CPSC):
- 16 CFR 1630.....Surface Flammability of Carpets and Rugs

PART 2 - PRODUCTS

SPEC WRITER NOTES:

1. Do not use cushions under carpet.
2. Specify glue down installation only, using nylon carpet.
3. See Carpet and Rug Institute, Construction guide carpet specification.
4. Specify carpet manufacturer, color and style in Section 09 06 00, SCHEDULE FOR FINISHES.
5. Note that carpet is available in a wide variety of constructions and types. Modify physical characteristics to match type(s) specified.

2.1 CARPET

A. Physical Characteristics:

1. Carpet free of visual blemishes, streaks, poorly dyed areas, fuzzing of pile yarn, spots or stains and other physical and manufacturing defects.
2. Type:
 - a. Carpet Construction: // Tufted // // Woven // // Bonded //
// Needlebond // // Needle Felt // // //.
 - b. Carpet Type: // Broadloom // //4.6// //4.1// //3.65// //1.82// m
(//15// //13.5// //12// //6// feet) minimum usable carpet width
// with exception of corridors // // and // // stairs //. //
Modular tile //457 by 457// //508 by 508// //610 by 610//
// // mm square (//18 by 18// //20 by 20// //24 by 24//
// // inch square) with 0.15 percent growth/shrink rate in
accordance with ISO 2551. //
 - c. Pile Type: // Level-loop // // Multilevel loop // // Cut and
loop // // Frieze // // Cut pile // // Random sheared // // Level
tip shear //. Pile type and thickness must conform to ADA
requirements.
 - d. Pile Fiber: Commercial 100 percent branded (federally registered
trademark), nylon continuous filament.

SPEC WRITER NOTE: Specify static control to meet project requirements. Installations for critical areas such as computer rooms will use the 2.0 kV requirements. Static protected carpets for most commercial installations are normally rated at 3.5 kV.

3. Static Control: Provide static control to permanently regulate static buildup to less than // 3.5 // // 2.0 // // // kV when tested at 20 percent relative humidity and 21 degrees C (70 degrees F) in accordance with AATCC 134.

SPEC WRITER NOTES:

1. Consult with manufacturers for backing and back coating materials available.
 2. Insert and edit specific backing materials required for project/intended installation use.
4. Backing Materials: Provide backing for // glue-down // // release adhesive for modular tile // installations. // For healthcare

installations, provide impervious moisture backing that is 100 percent PVC free. //

a. Broadloom:

- 1) Primary Backing: // Manufacturer's standard material //
// Woven polypropylene // // Nonwoven, polypropylene or polyester // // //.
- 2) Secondary Backing: // Manufacturer's standard material //
// Woven polypropylene // // Nonwoven, polypropylene or polyester // // Fiberglass // // //.
- 3) Backcoating: // Manufacturer's standard material // // SBR latex // // PVC // // Thermoplastic copolymer // // //.

b. Modular Tile:

- 1) 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 // // //.
- 2) Secondary Backing: // Manufacturer's standard material //
// //.

5. Appearance Retention Rating (ARR): Carpet to be tested and have the minimum 3.5 - 4.0 severe ARR when tested in accordance with either the ASTM D5252 (Hexapod) or ASTM D5417 (Vettermann) test methods using the number of cycles for short and long term tests as specified in the ASTM standard.
6. Tuft Bind: Comply with ASTM D1335 for tuft bind force required to pull a tuft or loop free from carpet backing with a minimum
// 40 N (9 pound) average force for loop pile broadloom //
// 18 N (4 pound) average force for cut pile broadloom //
// 36 N (8 pound) average force for modular carpet tile //.
7. Colorfastness to Crocking: Dry and wet crocking and water bleed, comply with AATCC 165 Color Transference Chart for colors, minimum class 4 rating.
8. Colorfastness to Light (AATCC 16, Option 3): Color change between the exposed and unexposed carpet areas equivalent to a minimum of Grade 4 on the Gray Scale for Color Change after an exposure of 40 AFU (AATCC fading units) for all specified colors.

9. Delamination Strength: Minimum of 440 N/m (2.5 lb./inch) between secondary backing.

SPEC WRITER NOTES:

1. Choice of critical radiant flux level as it applies to building type and area of application will be made in accordance with the latest edition of NFPA 101. Wherever the use of Class II (0.22) watts finish is required, Class I (0.45) watts will be permitted.
2. Use Class I in VA Medical facilities.

10. Flammability and Critical Radiant Flux Requirements:

- a. Comply with 16 CFR 1630.
- b. Test Carpet in accordance with ASTM E648.
- c. //Class I: Minimum critical radiant flux of 0.45 watts per square centimeter (2.9 watts per square inch).//
- d. //Class II: Minimum critical radiant flux of 0.22 watts per square centimeter (1.4 watts per square inch).//
- e. Carpet in corridors, exits and Medical Facilities to be Class I.

11. Average Pile Yarn Density (APYD):

- a. Corridors, lobbies, entrances, common areas or multipurpose rooms, open offices, waiting areas and dining areas: Minimum APYD 6000.
- b. Other areas: Minimum APYD 4000.

SPEC WRITER NOTE: Include when required for a specific use such as child care, dining facilities or hospitals.

12. //Antimicrobial: Nontoxic antimicrobial treatment in accordance with AATCC 174 Part I (qualitative), guaranteed by the carpet manufacturer to last the life of the carpet. //

13. //VOC Limits: Use carpet that complies with the following limits for VOC content when tested according to ASTM D5116:

- a. Carpet, Total VOCs: 0.5 mg/square meter x hour
- b. Carpet, 4-PC (4-Phenylcyclohexene): 0.05 mg/square meter x hour
- c. Carpet, Formaldehyde: 0.05 mg/square meter x hour.
- d. Carpet, Styrene: 0.4 mg/square meter x hour //

2.2 ADHESIVE AND CONCRETE PRIMER

- A. Provide water resistant, mildew resistant, nonflammable, and nonstaining adhesives and concrete primers for carpet installation. Provide release adhesive for modular tile carpet as recommended by the

carpet manufacturer. Provide adhesives flashpoint of minimum 60 degrees C (140 degrees F) in accordance with ASTM D3278.
 // Materials are to have a VOC maximum of 50 g/L when calculated according to 40 CFR 59, (EPA Method 24). //

2.3 SEAMING TAPE

- A. Provide tape for seams as recommended by the carpet manufacturer for the type of seam used in installation. // Seam sealant is to have a maximum VOC content of 50 g/L when calculated according to 40 CFR 59, (EPA Method 24). // Do not use sealants that contain 1,1,1-trichloroethane or toluene.

SPEC WRITER NOTES:

1. Use metal strips in traffic area corridors and where subject to cart traffic.
2. Use vinyl strips in remaining areas unless scheduled otherwise.
3. Designate strips locations in finish schedule.

2.4 EDGE STRIPS (MOLDING)

A. Metal:

1. Utilize metal in corridors and where subject to cart traffic.
2. Hammered surface aluminum, pinless, clamp down type designed for the carpet being installed.
3. Floor flange not less than 38 mm (1-1/2 inches) wide, face not less than 16 mm (5/8 inch) wide.
4. Finish: Clear anodic coating unless specified otherwise in Section 09 06 00, SCHEDULE FOR FINISHES.

B. Vinyl Edge Strip:

1. For use in low traffic areas. Beveled floor flange minimum 50 mm (2 inches) wide.
2. Beveled surface to finish flush with carpet for tight joint and other side to floor finish.
3. Color as specified in Section 09 06 00, SCHEDULE FOR FINISHES.

SPEC WRITER NOTE: Use top edge strip where carpet base is used.

C. Carpet Base Top Edge Strip:

1. Vinyl "J" strip wall flange minimum of 38 mm (1-1/2 inches) wide with cap beveled from wall to finish flush with carpet being installed.
2. Color as specified in Section 09 06 00, SCHEDULE FOR FINISHES.

PART 3 - EXECUTION

SPEC WRITER NOTE: Include Section 09 05 15, SUBSURFACE PREPARATION FOR FLOOR FINISHES in specifications manual for preparation and testing procedures for concrete and other subsurface conditions required before installation of flooring.

3.1 SURFACE PREPARATION

- A. Contractor to prepare and test surfaces to receive carpet and adhesives as per Section 09 05 16, SUBSURFACE PREPARATION FOR FLOOR FINISHES.

3.2 GENERAL INSTALLATION

- A. Isolate area of installation from rest of building.
- B. Perform all work by manufacturer's approved installers. Conduct installation in accordance with the manufacturer's printed instructions and CRI CIS.
- C. Protect edges of carpet meeting hard surface flooring with molding and install in accordance with the molding manufacturer's printed instructions.
- D. Follow ventilation, personal protection, and other safety precautions recommended by the adhesive manufacturer. Continue ventilation during installation and for at least three (3) days following installation.
- E. Do not permit traffic or movement of furniture or equipment in carpeted area for 24 hours after installation.
- F. Complete other work which would damage the carpet prior to installation of carpet.
- G. Follow carpet manufacturer's recommendations for matching pattern and texture directions.
- H. Cut openings in carpet where required for installing equipment, pipes, outlets, and penetrations. Bind or seal cut edge of sheet carpet. Use additional adhesive to secure carpets around pipes and other vertical projections.

3.3 BROADLOOM CARPET INSTALLATION

- A. Install broadloom carpet direct glue down smooth, uniform, and secure, with a minimum of seams.
- B. Apply regular, unnoticeable, and treated seams with a seam adhesive. Run side seams toward the light, where practical, and where such layout does not increase the number of seams. Install breadths parallel, with carpet pile in the same directions.

- C. Match patterns accurately. Neatly cut and fit cutouts, at door jambs, columns and ducts securely.
- D. Locate seams at doorways parallel to and centered directly under doors. Do not make seams perpendicular to doors or at pivot points.
- E. Provide seams at changes in directions of corridors to follow the wall line parallel to the carpet direction. Lay the carpet lengthwise down the corridors with widths less than 1.82 m (6 feet).

3.4 MODULAR TILE INSTALLATION

- A. Install per CRI CIS, Adhesive Application.
- B. Lay carpet modules with pile in same direction unless specified otherwise in Section 09 06 00, SCHEDULE FOR FINISHES.
- C. Install carpet modules so that cleaning methods and solutions do not cause dislocation of modules.
- D. Lay carpet modules uniformly to provide tight flush joints free from movement when subject to traffic.

3.5 EDGE STRIPS INSTALLATION

- A. Install edge strips over exposed carpet edges adjacent to uncarpeted finish flooring.
- B. Anchor metal strips to floor with suitable fasteners. Apply adhesive to edge strips, insert carpet into lip and press it down over carpet.
- C. Anchor vinyl edge strip to floor with adhesive. Apply adhesive to edge strip and insert carpet into lip and press lip down over carpet.

SPEC WRITER NOTE: Use paragraphs below only where carpet base is used.

- D. //Carpet Base Top Edge Strip Installation:
 1. Place carpet molding at top edge of carpet where turned up as base.
 2. Install molding in accordance with manufacturer's instructions. //

3.6 PROTECTION AND CLEANING

- A. Once a carpet installation is complete, clean up scrap materials and debris, and vacuum the area, using manufacturer-approved equipment. Inspect seams carefully for evenness and protruding backing yarns, and inspect the perimeter of the installation for an acceptable finished appearance.
- B. Protect installed carpet if furniture is being moved, by laying plywood, fiberboard or porous non-staining sheeting material for minimum time practical. Based on manufacturer guidelines, protect carpet from rolling or foot traffic. Protect against other materials or

renovation or construction activities, including dust, debris, paint, contractor traffic, until it is ready for its final use.

- C. Do not move furniture or equipment on unprotected carpeted surfaces.
- D. Just before final acceptance of work, remove protection and vacuum carpet clean.

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