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USACE / NAVFAC / AFCEC **UFGS-09 68 00 (November 2024)**

Preparing Activity: USACE **Superseding**
UFGS-09 68 00 (November 2017)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated January 2025
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UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated January 2025
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SECTION 09 68 00

CARPETING
11/24

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NOTE: This guide specification covers the requirements for broadloom carpet, modular tile carpet, and entrance carpet.

This section is intended for floor coverings only, and should not be used to specify carpeting installed on wall or ceiling surfaces. Where carpeting is to be used on surfaces other than floors, refer to Section 09 72 00 WALLCOVERINGS.

Adhere to UFC 1-300-02 Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable item(s) or insert appropriate information.

Remove information and requirements not required in respective project, whether or not brackets are present.

Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a Criteria Change Request (CCR).
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PART 1 GENERAL

1.1 REFERENCES

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NOTE: This paragraph is used to list the publications cited in the text of the guide specification. The publications are referred to in the text by basic designation only and listed in this paragraph by organization, designation, date, and title.

Use the Reference Wizard's Check Reference feature when you add a Reference Identifier (RID) outside of the Section's Reference Article to automatically place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature to update the issue dates.

References not used in the text will automatically be deleted from this section of the project specification when you choose to reconcile references in the publish print process.

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The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)

AATCC 16.1	(2023) Test Method for Colorfastness to Light: Outdoor
AATCC 107	(2013) Colorfastness to Water
AATCC 134	(2016) Electrostatic Propensity of Carpets
AATCC 165	(2013) Colorfastness to Crocking: Textile Floor Coverings - Crockmeter Method
AATCC 174	(2016) Antimicrobial Activity Assessment of New Carpets

ASTM INTERNATIONAL (ASTM)

ASTM C423	(2023; E 2024) Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
ASTM D297	(2015; R 2019) Rubber Products - Chemical Analysis
ASTM D1335	(2017; E 2018) Standard Test Method for Tuft Bind of Pile Yarn Floor Coverings
ASTM D1667	(2022) Standard Specification for Flexible Cellular Materials - Poly (Vinyl Chloride) Foam (Closed-Cell)
ASTM D2646	(2024) Standard Guide for Backing Fabric Characteristics of Pile Yarn Floor Coverings
ASTM D2859	(2016) Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials
ASTM D3278	(2021) Standard Test Methods for Flash Point of Liquids by Small Scale Closed-Cup

	Apparatus
ASTM D3574	(2017) Standard Test Methods for Flexible Cellular Materials—Slab, Bonded, and Molded Urethane Foams
ASTM D3676	(2013) Rubber Cellular Cushion Used for Carpet or Rug Underlay
ASTM D3936	(2021) Standard Test Method for Resistance to Delamination of the Secondary Backing of Pile Yarn Floor Covering
ASTM D5793	(2018) Standard Test Method for Binding Sites Per Unit Length or Width of Pile Yarn Floor Coverings
ASTM D5848	(2020) Standard Test Method for Mass Per Unit Area of Pile Yarn Floor Coverings
ASTM D6859	(2011) Standard Test Method for Pile Thickness of Finished Level Pile Yarn Floor Coverings
ASTM D7330	(2015) Standard Test Method for Assessment of Surface Appearance Change in Pile Floor Coverings Using Standard Reference Scales
ASTM E648	(2023) Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
ASTM F1869	(2023) Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
ASTM F2170	(2019a) Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH)

CDPH SECTION 01350	(2017; Version 1.2) Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources using Environmental Chambers

CARPET AND RUG INSTITUTE (CRI)

CRI 104	(2015) Carpet Installation Standard for Commercial Carpet
CRI 105	(2015) Carpet Installation Standard for Residential Carpet
CRI GLP QM	(2017) Green Label Plus Quality Manual
CRI Test Method 103	(2015) Standard Test Method for the Evaluation of Texture Appearance Retention

	of Carpet Standards Program
GREEN SEAL (GS)	
GS-36	(2013) Adhesives for Commercial Use
INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)	
ISO 2551	(2020) Textile Floor Coverings and Textile Floor Coverings in Tile Form-Determination of Dimensional Changes Due to the Effects of Varied Water and Heat Conditions and Distortion Out of Plane
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)	
NFPA 253	(2011) Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
NSF INTERNATIONAL (NSF)	
NSF/ANSI 140	(2019) Sustainability Assessment for Carpet
SCIENTIFIC CERTIFICATION SYSTEMS (SCS)	
SCS	SCS Global Services (SCS) Indoor Advantage
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)	
SCAQMD Rule 1113	(2016) Architectural Coatings
SCAQMD Rule 1168	(2022) Adhesive and Sealant Applications
U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)	
16 CFR 1630	Standard for the Surface Flammability of Carpets and Rugs (FF 1-70)
UL SOLUTIONS (UL)	
UL 2818	(2022) GREENGUARD Certification Program For Chemical Emissions For Building Materials, Finishes And Furnishings

1.2 SUBMITTALS

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NOTE: Review Submittal Description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list, and corresponding submittal items in the text, to reflect only the submittals required for the project. The Guide Specification technical editors have classified those items that require Government approval, due to their complexity or criticality, with a "G." Generally, other submittal items can be reviewed by the Contractor's Quality Control System. Only add a "G" to an item, if the submittal is sufficiently important or

complex in context of the project.

For Army projects, fill in the empty brackets following the "G" classification, with a code of up to three characters to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy and Air Force projects.

The "S" classification indicates submittals required as proof of compliance for sustainability Guiding Principles Validation or Third Party Certification and as described in Section 01 33 00 SUBMITTAL PROCEDURES.

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Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for Contractor Quality Control approval. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Installation Drawings; G, [_____]

SD-03 Product Data

Carpet; G, [_____]

Textile Composite Carpet; G, [_____]

Carpet Cushion; G, [_____]

Recycled Content for Carpeting; S

Recycled Content for Fiber Cushion; S

Recycled Content for Rubber Cushion; S

Recycled Content for Polyurethane-Foam Cushion; S

Recycled Content for Textile Composite Carpet; S

Moldings; G, [_____]

Indoor Air Quality for Aerosol Adhesives; S

Indoor Air Quality for Non-Aerosol Adhesives; S

Indoor Air Quality for Concrete Primer; S

[Modular Carpet Tile Connectors; G, [_____]

] SD-04 Samples

Carpet; G, [_____]

Textile Composite Carpet; G, [_____]

Carpet Cushion; G, [_____]

Moldings; G, [_____]

Sustainable Product Certifications; S

SD-06 Test Reports

Moisture and Alkalinity Tests; G, [_____]

SD-07 Certificates

Indoor Air Quality for Carpet; S

Indoor Air Quality for Textile Composite Carpet; S

Indoor Air Quality for Fiber Cushion; S

Indoor Air Quality for Rubber Cushion; S

Indoor Air Quality for Polyurethane-Foam Cushion; S

SD-08 Manufacturer's Instructions

Surface Preparation

SD-10 Operation and Maintenance Data

Cleaning and Protection

Maintenance Service

SD-11 Closeout Submittals

Warranty

1.3 CERTIFICATIONS

1.3.1 Indoor Air Quality Certifications

1.3.1.1 Floor Covering Materials

Provide carpet[,][and]cushion[, and textile composite carpet] products certified to meet indoor air quality requirements by UL 2818 (GreenGuard) Gold, SCS Global Services Indoor Advantage Gold, CRI GLP QM or provide certification or validation by other third-party program that products meet the requirements of this Section. Provide current product certification documentation from certification body. When product does not have certification, provide validation that product meets the indoor air quality product requirements cited herein.

1.4 DELIVERY, STORAGE, AND HANDLING

Deliver materials to the site in the manufacturer's original wrappings and packages clearly labeled with the manufacturer's name, brand name, size, dye lot number, and related information. Remove materials from packaging and store them in a clean, dry, well ventilated area (100 percent outside air supply, minimum of 1.5 air changes per hour, and no recirculation), protected from damage, soiling, and moisture, and strong contaminant sources and residues, and maintain at a temperature above 16 degrees C 60 degrees F for 2 days prior to installation. Do not store carpet or modular carpet tiles with materials which have high emissions of volatile organic compounds (VOCs) or other contaminants, including paints and adhesives. Do not store carpet near materials that may off gas or emit harmful fumes, such as kerosene heaters, fresh paint, or adhesives.

1.5 AMBIENT CONDITIONS

Maintain areas in which carpeting is to be installed at a temperature above 16 degrees C 60 degrees F and below 32 degrees C 90 degrees F for 2 days before installation, during installation, and for 2 days after installation. Provide temporary ventilation during work of this section. Maintain a minimum temperature of 13 degrees C 55 degrees F thereafter for the duration of the contract.

1.6 WARRANTY

Provide manufacturer's standard performance guarantees or warranties including minimum ten year wear warranty, two year material and workmanship and ten year tuft bind and delamination.

PART 2 PRODUCTS

2.1 CARPET

****

NOTE: If more than one carpet type is required for a project, use a separate paragraph for each carpet type. Designate each carpet type with a letter or number symbol. Use the same designations to key carpets to locations on the drawings and in Section 09 06 00 SCHEDULES FOR FINISHES.

ADA Requirements: Carpet must be securely attached; have a firm cushion, or backing, or no cushion; and have a level loop, textured loop, level cut pile, or level cut/uncut pile texture. The maximum thickness should be 13 mm 1/2 inch. Fasten exposed edges of carpet to floor surfaces and have trim along the entire length of the exposed edge.

Nylon fiber is typically abrasion resistant and durable in all pile configurations using filament fiber, has good stain removal characteristics, and is recommended for commercial installations.

Triexta (PTT) fiber is recommended for residential installations. Some PTT fiber made outside the US can be used in commercial applications, but specification of these products must comply with the

Buy America Act when applicable. Triexta is marketed as offering excellent durability, resiliency and crush resistance. Permanent stain resistance, bleach resistance and colorfastness built into the fiber helps to make triexta carpets easy to clean and can extend the life of the carpet. It is important to note that long term performance of triexta fiber has not yet been tested.

Polyethylene terephthalate (PET) recycled polyester fiber has permanent fade resistance, is permanently colorfast, has a permanent stain resistance which is higher than other type fibers, is impervious to harsh chemicals, and has the lowest static buildup. PET type polyester carpet, once crushed under continued high pressure, is less likely than nylon carpet to rebound. PET carpet is not recommended for severe and moderate wear level areas and should be limited to light wear areas.

Wool is a natural fiber, which is inherently flame resistant, forming a char that will neither melt nor drip. Wool is also rapidly renewable and resilient, and due to the scaly character of its fiber it scatters optical light, thus reducing soiling visibility. Wool is highly recommended for shipboard use due to it being inherently flame resistant.

Wool, cotton, jute, hemp and sisal carpets may not meet accepted performance requirements of commercial carpet. Verify suitability, availability and adequate competition before specifying these products.

Flexible and modular components, like carpet tile, reduce the labor and materials costs related to operations and maintenance, churn, and future renovations.

Continuous dye process uses two to three times less water than batch dyeing during manufacture.

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Furnish first quality carpet that is free of visual blemishes, streaks, poorly dyed areas, fuzzing of pile yarn, spots or stains, and other physical and manufacturing defects. Provide carpet materials and treatments as reasonably nonallergenic and free of other recognized health hazards. Provide a static control construction on all grade carpets which gives adequate durability and performance. Submit 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. Submit manufacturer's Product Data for a.) Carpet, b.) Moldings, c.) Carpet Cushion, and d.) Textile Composite Carpet. Also, submit Samples of the following:

a. Carpet: [Two] [_____] "Production Quality" samples 450 by 450 mm 18

by 18 inches of each carpet proposed for use, showing quality, pattern, and color specified

b. Moldings: [Two] [_____] samples of each type minimum 300 mm 12 inches long

c. Carpet Cushion: [Two] [_____] samples minimum 150 by 150 mm 6 by 6 inches

[d. Textile Composite Carpet: [Two] [_____] samples minimum 450 by 450 mm 18 by 18 inches

]2.1.1 Recycled Content

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NOTE: Use materials with recycled content where appropriate for use. Verify suitability, availability within the region, cost effectiveness and adequate competition (including verification of bracketed percentages included in this guide specification) before specifying product recycled content requirements. A resource that can be used to identify products with recycled content is the "Comprehensive Procurement Guidelines (CPG)" page within the EPA's website at http://www.epa.gov. Other products with recycled content are also acceptable when meeting all requirements of this specification.

Research shows the product is available from US national manufacturers above the minimum recycled content percentages shown below. Some manufacturers and regions have higher percentages. Based on research, insert desired minimum percentages into the empty set of brackets.

****

Carpeting must contain a minimum of [20][40][_____] percent recycled content. Provide data identifying percentage of recycled content for carpeting[and recycled content for textile composite carpet].

2.1.2 PFOS/PFOA Requirements

Provide materials free from perfluorooctanesulfonic acid (PFOS) or perfluorooctanoic acid (PFOA).

2.1.3 Indoor Air Quality Requirements

Products must meet emissions requirements of CDPH SECTION 01350. Provide certification or validation of indoor air quality for carpet[indoor air quality for textile composite carpet].

[2.1.4 Sustainable Product Certifications

Submit sustainable product certifications per NSF/ANSI 140.

]2.1.5 Physical Characteristics for [Broadloom][Modular Tile][Entrance][Textile Composite] Carpet

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NOTE: Copy this paragraph including subparagraphs if more than one carpet is specified. Designate each carpet type with a letter or number symbol. Use the same designations to key carpets to locations on the drawings or in Section 09 06 00 SCHEDULES FOR FINISHES.

Terms such as "sheet carpet" may be used in the industry for "broadloom carpet" and "textile composite flooring" may be used in the industry for "textile composite carpet." Confirm differing terminologies when editing and selecting carpeting products.

Terms such a "plank" or "tile" are subject to available product formats from the manufacturers. Sizes suggested in Part 2 are not exhaustive or intended to exclude other sizes.

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2.1.5.1 Carpet Construction

[Tufted] [Woven] [Bonded] [Needlebond] [Needle Felt] [Composite] [_____]

2.1.5.2 Type

[Broadloom carpet [3.6] [1.8] m [12] [6] feet minimum usable carpet width [with exception of corridors] [and] [stairs] [_____].][Modular carpet tile [450 by 450] [500 by 500] [600 by 600] [914 by 305] [1219 by 305] [_____] mm square [18 by 18] [20 by 20] [24 by 24] [36 by 12] [48 by 12] [_____] inch square with 0.15 percent growth/shrink rate in accordance with ISO 2551.] [Entrance [450 by 450] [_____] mm [18 by 18] [_____] inch square [3.6] [1.8] m [12] [6] feet width [_____] mat size.] [Modular tile textile composite carpet of [knitted][molded] fabric on backer [305 by 1219] [450 by 450] [610 by 610] [_____] mm[12 by 48] [18 by 36] [24 by 24] [_____] inch] [Backed broadloom matching [modular carpet tile][modular tile textile composite carpet] for use on[stairs][and][ramps].][See Section [09 69 13 RIGID GRID ACCESS FLOORING][and][09 69 19 STRINGERLESS ACCESS FLOORING] for size required for a one to one alignment with raised access floor panels.]

2.1.5.3 Pile Type[s]

[Level-loop] [Multilevel loop] [Cut and loop] [Frieze] [Cut pile] [Random sheared] [Level tip shear] [Knitted fabric]

2.1.5.4 Pile Fiber

Commercial 100 percent branded (federally registered trademark) [nylon continuous filament] [nylon staple] [wool with Woolmark certification] [wool blend with Wool Bureau certification] [_____].

2.1.5.5 Gauge or Pitch

Minimum [_____] mm inch in accordance with ASTM D5793

2.1.5.6 Stitches or Rows/Wires

Minimum [_____] per square meter square inch

2.1.5.7 Surface Pile Weight

Minimum [_____] kg/square meter ounces per square yard. This does not include weight of backings. Determine weight in accordance with ASTM D5848.

2.1.5.8 Pile Thickness

Minimum [_____] mm inch in accordance with ASTM D6859

2.1.5.9 Pile Density

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NOTE: Pile Density = 36 x Pile Weight/Pile Thickness.

****

Minimum [_____]

2.1.5.10 Dye Method

[Solution dyed] [Stock dyed] [Yarn (or Skein) dyed] [Piece dyed] [Space dyed] [Continuous dyed]

2.1.5.11 Backing Materials

Provide primary backing materials like [those customarily used and accepted by the trade for each type of carpet] [polypropylene] [synthetic material] [rubber] [jute] [cotton] [_____]. Provide secondary backing to suit project requirements of those customarily used and accepted by the trade for each type of carpet.

2.1.5.12 Attached Cushion

Provide an attached cushion [chemically frothed polyurethane with minimum weight of 0.610 kg/sq. m 18 oz/sq. yard, minimum density of 176 kg/cubic m 11 lb/cubic foot] [mechanically frothed polyurethane with minimum weight of 0.745 kg/sq. m 22 oz/sq. yard, minimum density of 224 kg/cubic m 14 lb/cubic foot, minimum thickness of 2.5 mm 0.100 inch, and maximum compression resistance of 34.5 kPa 5 psi, and compression set of 15 percent in accordance with ASTM D3676]. Do not exceed the maximum ash content of 50 percent when tested in accordance with ASTM D297. Pass the accelerated aging test in accordance with [ASTM D3676] [ASTM D1667] for the cushion.

2.2 PERFORMANCE REQUIREMENTS

2.2.1 Texture Appearance Retention Rating (TARR)

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NOTE: Use the chart below to identify the recommended minimum use TARR traffic level classification that corresponds to the end-use application. These classifications are based on typical usage. Use a higher classification if

traffic exposure is expected to be greater than usual. Provide a TARR traffic level classification for each carpet used on a project.

END-USE CLASSIFICATION CHART

End-Use Application	*Minimum Use Classification*
BANKS/CREDIT UNIONS	
Entrances and customer banking space	Severe
Open office space, private offices	Heavy
BOWLING ALLEYS	
Concourses (excluding food service, working and storage areas)	Severe
CHAPELS AND OTHER RELIGIOUS FACILITIES	
Educational wing, worship areas	Heavy
CHILD CARE CENTERS	
All areas	Severe
CLUBS	
All areas	Severe
HOUSING	
Single Family	
Family rooms, living rooms, dining rooms	Heavy
Sleeping rooms	Heavy
Combination living/sleeping rooms	Heavy
Multi-Family	
Common areas (lobbies, lounges)	Severe
Corridors	Severe
Family rooms, living rooms, dining rooms	Heavy
Multi-purpose areas	Severe
Sleeping rooms	Heavy
Combination living/sleeping rooms	Heavy
LABORATORY/RESEARCH FACILITIES	
Computer work areas	Severe
Closed private office	Heavy
Open work areas, dry labs	Severe
LIBRARIES	
Conference rooms, corridors	Severe
LODGING FACILITIES/DORMITORIES	
Conference rooms	Severe
Combination living/sleeping rooms	Severe
Dining facilities	Severe
Offices	Heavy
Public areas(lobbies, lounges, TV rooms, day rooms)	Severe
Sleeping rooms	Heavy
MEDICAL FACILITIES (excluding patient treatment areas)	
Assisted living areas, classrooms	Heavy
Chapels, consultation rooms	Heavy

Clinical waiting areas (outpatient, pharmacy, ancillary zone only)	**Severe**
Corridors, dining areas, elevators	**Severe**
Entrance areas (entry mats should be used)	**Severe**
Libraries	**Heavy**
Lobbies	**Severe**
Lounges	**Heavy**
Offices (private, semi-private)	**Severe**
Patient rooms	**Heavy**
Playrooms (OB/GYN, Pediatric clinics)	**Severe**
Staff sleeping and watch areas	**Heavy**
MILITARY HOUSING	
Family Housing	
Flag	**Heavy**
Single unit	**Heavy**
Multi-unit (corridors, sleeping/living rooms)	**Heavy**
Multi-unit (public areas, lobbies, lounges)	**Severe**
Bachelor Officer Quarters	
Sleeping/living rooms	**Heavy**
Public areas (lobbies, lounges)	**Severe**
Dining Facilities	**Severe**
Offices	**Heavy**
Bachelor Enlisted Quarters	
Sleeping/living rooms	**Severe**
Public areas (lobbies, lounges)	**Severe**
Dining Facilities	**Severe**
Offices	**Heavy**
MUSIC OR DRAMA CENTERS	
All areas	**Severe**
OFFICES (including administrative areas)	
Closed private offices	**Heavy**
Corridors	**Severe**
Conference rooms	**Heavy**
Open plan office (circulation areas)	**Severe**
Open plan office (work areas)	**Heavy**
RESTAURANTS (excluding work spaces)	
Dining areas	**Severe**
Cafeteria-type dining areas, enlisted canteens	**Severe**
Office areas	**Heavy**
RETAIL STORES	
Offices	**Heavy**
Restaurant and cafeteria dining areas	**Severe**
Sales areas	**Severe**
THEATERS	
All areas	**Severe**
TRAINING BUILDINGS/EDUCATIONAL FACILITIES (including dependents' schools)	

Classrooms, corridors **Severe**
Staff/administration offices **Heavy**

YOUTH CENTERS
All areas **Severe**

****

Provide carpet with a greater than or equal to [3.0 (Heavy)] [3.5 (Severe)] TARR traffic level classification in accordance with ASTM D7330 or CRI Test Method 103.

2.2.2 Static Control

****
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.
****

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.

2.2.3 Flammability and Critical Radiant Flux Requirements

****
NOTE: 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.
****

Comply with 16 CFR 1630 or ASTM D2859. Provide carpet in corridors and exits with a minimum average critical radiant flux of [0.22] [0.45] watts per square centimeter when tested in accordance with ASTM E648 or NFPA 253.

2.2.4 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 10 pound average force for loop pile broadloom] [18 N 3 pound average force for cut pile broadloom] [36 N 8 pound average force for modular carpet tile].

2.2.5 Colorfastness to Crocking

Comply dry and wet crocking with AATCC 165 and with a Class 4 minimum rating on the AATCC Color Transference Chart for all colors.

2.2.6 Colorfastness to Light

Comply colorfastness to light with AATCC 16.1, Test Option E "Water-Cooled Xenon-Arc Lamp, Continuous Light" and with a minimum 4 gray scale rating after 40 hours.

2.2.7 Colorfastness to Water

****
NOTE: Include this test when specifying carpet constructed of yarn dyed fibers.
****

Comply colorfastness to water with AATCC 107 and with a minimum 4.0 gray scale rating and a minimum 4.0 transfer scale rating.

2.2.8 Breaking Strength

ASTM D2646 dry breaking strength, not less than 445 N100 lbf.

2.2.9 Delamination Strength

Provide delamination ASTM D3936 strength for tufted carpet with a secondary back of minimum 615 N/m 3.5 lbs/inch.

[2.2.10 Noise Reduction Coefficient

Provide noise reduction coefficient (NRC) of [_____] per ASTM C423.

]2.2.11 Antimicrobial

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

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

2.3 CARPET CUSHION

****
NOTE: Select the appropriate carpet cushion.

Carpet such as modular tile carpet, modular tile textile composite carpet, and broadloom versions of modular carpet types are manufactured with integral cushion backing. Confirm types when editing to prevent unintentionally omitting padding or duplicating padding under backed carpet.
****

[2.3.1 Fiber Cushion

[Rubberized hair, mothproofed and sterilized] [Rubberized jute [with minimum 40 percent recycled content], mothproofed and sterilized] [Synthetic with minimum [___] percent recycled content] [Resinated, recycled textile]. [Provide data identifying percentage of recycled content for fiber cushion.

Products must meet emissions requirements of CDPH SECTION 01350. Provide certification or validation of indoor air quality for fiber cushion.]

2.3.1.1 Weight

[_____] g/sq.m[_____] oz./sq. yd.

2.3.1.2 Thickness

[_____] mm[_____] inches plus 5 percent maximum

2.3.1.3 Density

[_____] kg/cu.m[_____] lb/cu.ft.

][2.3.2 Rubber Cushion

[Flat][Rippled waffle][Textured flat][Reinforced][, with minimum 60 percent recycled content. Provide data identifying percentage of recycled content for rubber cushion.

Products must meet emissions requirements of CDPH SECTION 01350. Provide certification or validation of indoor air quality for rubber cushion.]

2.3.2.1 Weight

[_____] g/sq.m[_____] oz./sq. yd.

2.3.2.2 Thickness

[_____] mm[_____] inches plus 5 percent maximum

2.3.2.3 Compression Resistance

[_____] kg/sq. mm[_____] lb/sq. in. at [25][65] percent in accordance with ASTM D3574.

2.3.2.4 Density

[_____] kg/cu.m[_____] lb/cu.ft.

][2.3.3 Polyurethane-Foam Cushion

[Grafted prime] [Densified] [Bonded] [Mechanically frothed] [, with minimum 15 percent recycled content. Provide data identifying percentage of recycled content for polyurethane-foam cushion.

Products must meet emissions requirements of CDPH SECTION 01350. Provide certification or validation of indoor air quality for polyurethane-foam cushion.]

2.3.3.1 Compression Force Deflection at 65 Percent

[_____] mm[_____] lb/sq.in. of polymer density in accordance with ASTM D3574

2.3.3.2 Thickness

[_____] mm[_____] inches plus 5 percent maximum

2.3.3.3 Density

[_____] kg/cu.m[_____] lb/cu.ft.

]2.3.4 Performance Requirements - Critical Radiant Flux

Provide carpet cushion in corridors and exits with a minimum average critical radiant flux of [0.22][0.45] watts per square centimeter when tested in accordance with ASTM E648.

2.4 ADHESIVES AND CONCRETE PRIMER

Comply with applicable regulations regarding toxic and hazardous materials. Provide water resistant, mildew resistant, nonflammable, and nonstaining adhesives and concrete primers for carpet installation as required by the carpet manufacturer. 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. Non-aerosol adhesive products used on the interior of the building (defined as inside of the weatherproofing system) must meet either emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type) or VOC content requirements of SCAQMD Rule 1168. Aerosol adhesive products used on the interior of the building (defined as inside of the weatherproofing system) must meet either emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type) or VOC content requirements of GS-36. Provide validation of indoor air quality for aerosol adhesives. Provide validation of indoor air quality for non-aerosol adhesives. Concrete primer products used on the interior of the building (defined as inside of the weatherproofing system) must meet either emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type) or VOC content requirements of SCAQMD Rule 1113. Provide validation of indoor air quality for concrete primer.

[2.5 MODULAR CARPET TILE CONNECTORS

Provide carpet manufacturer's concealed modular carpet tile connectors (adhesive tabs) to restrain modular carpet tiles in place in lieu of adhesive between modular carpet tile and substrate.[Where intended for use over access flooring panels, confirm source of connectors by either flooring panel or carpet tile manufacturer. Provide coordinated layout drawings of connectors, modular carpet tile joints, flooring panel joints, and penetrating items through carpet tiles and flooring panels.]

][2.6 ADHESIVE BACKING

Provide adhesive backed modular tile with release paper for removal at installation.

]2.7 MOLDINGS

Provide carpet moldings where floor covering material changes or carpet edge does not abut a vertical surface. Provide [a heavy-duty [vinyl] [rubber] molding designed for the type of carpet being installed. Provide floor flange of a minimum [38 mm] [1 1/2 inches] wide. Provide [_____] color to match [resilient base] [_____].] [an aluminum molding, pinless clamp-down type, designed for the type of carpet being installed. Provide [natural color anodized] [prefinished color [_____] finish. Provide a

floor flange of a minimum 38 mm 1-1/2 inch wide and face a minimum 16 mm 5/8 inch wide.]]

2.8 TAPE

Provide tape for seams as recommended by the carpet manufacturer for the type of seam used in broadloom installation. Seam sealant must have a maximum VOC content of no more than 50 grams/liter. Do not use sealants that contain 1,1,1-trichloroethane or toluene.

2.9 COLOR, TEXTURE, AND PATTERN

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NOTE: Coordinate editing of color reference sentence(s) with the Government. Generally the Section 09 06 00 SCHEDULES FOR FINISHES or drawings are used when the project is designed by an Architect or Interior designer. Select color from manufacturer's standard colors or identified in this specification only when the project has minimal finishes.

When the government directs that color be located in the drawings, add a note that states: "Where color is shown as being specific to one manufacturer, an equivalent color by another manufacturer may be submitted for approval. Manufacturers and materials specified are not intended to limit the selection of equal colors from other manufacturers. The word "color" as used herein includes surface color and pattern."

When more than one type, pattern or color is specified identify location.

When a manufacturer's name, stock number, pattern, and color is specified for color, be certain that the product conforms to the specification, as edited.

****

Provide color, texture, and pattern in accordance with [Section 09 06 00 SCHEDULES FOR FINISHES] [the drawings] [_____].

PART 3 EXECUTION

3.1 SURFACE PREPARATION

Do not install carpet on surfaces that are unsuitable and will prevent a proper installation. Prepare subfloor in accordance with flooring manufacturer's recommended instructions. Repair holes, cracks, depressions, or rough areas using material recommended by the carpet or adhesive manufacturer. Free floor of any foreign materials and sweep clean. Before beginning work, test subfloor with glue and carpet to determine "open time" and bond. Submit [three] [_____] copies of the manufacturer's printed Installation instructions for the carpet, including Surface Preparation, seaming techniques, and recommended adhesives and tapes.

3.2 MOISTURE AND ALKALINITY TESTS

Test concrete slab for excessive moisture content and excessive alkalinity in accordance with CRI 104/CRI 105, ASTM F1869, and ASTM F2170. Submit [three] [_____] copies of reports of Moisture and Alkalinity Tests including content of concrete slab stating date of test, person conducting the test, and the area tested. Perform tests for each [18.6 sq. m200 sq. ft.][304.8 sq. m1000 sq. ft.]. Perform a minimum of three evenly spaced tests of each installation area. For anhydrous calcium chloride test, confirm substrates have a moisture-vapor-emission rate less than [1.36 kg of water/92.9 sq. m3 lb of water/1000 sq. ft.][_____]. For relative humidity tests confirm substrate relative humidity levels are less than [75][_____] percent.

3.3 PREPARATION OF CONCRETE SUBFLOOR

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NOTE: Coordinate need for sealing of concrete slab with project requirements such as wet conditions which might occur in hospital care.

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Do not commence installation of the carpeting until concrete substrate is at least 90 days old. Prepare the concrete surfaces in accordance with the carpet manufacturer's instructions. Match carpet, when required, and adhesives to prevent off-gassing to a type of curing compounds, leveling agents, and concrete sealer.

3.4 INSTALLATION

Isolate area of installation from rest of building. Perform all work by manufacturer's approved installers. Conduct installation in accordance with the manufacturer's printed instructions and CRI 104/CRI 105. Protect edges of carpet meeting hard surface flooring with molding and install in accordance with the molding manufacturer's printed instructions. Use autofoam mothproofing system for wool carpets. Follow ventilation, personal protection, and other safety precautions recommended by the adhesive manufacturer. Continue ventilation during installation and for at least 72 hours following installation. Do not permit traffic or movement of furniture or equipment in carpeted area for 24 hours after installation. Complete other work which would damage the carpet prior to installation of carpet. Submit [three] [_____] copies of Installation Drawings for 1) Carpet, 2) Carpet Cushion, and 3) Moldings indicating areas receiving carpet, carpet types, patterns, direction of pile, location of seams, and locations of edge molding.

Do not install building construction materials that show visual evidence of biological growth.

3.4.1 Broadloom Installation

Install broadloom carpet [direct glue down] [pre-applied adhesive glue down] smooth, uniform, and secure, with a minimum of seams. 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 direction. Match patterns accurately. Neatly cut and fit cutouts, at door jambs, columns and ducts securely. Locate seams at doorways parallel to and centered directly under doors. Do not make seams

perpendicular to doors or at pivot points. 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 1.8 m 6 feet.

3.4.2 Modular Tile Installation

Install modular tiles with [releasable] [manufacturer's adhesive tab system] [permanent vinyl-compatible] [self-adhering] [_____] adhesive and snug joints. Use [monolithic] [1/4 turn] [ashlar] [brick] [herringbone] [random] [_____] installation method. Comply with manufacturer installation instructions for required drying time of releasable adhesive so it sets up properly. Provide accessibility to the subfloor where required. Modular carpet tile on stairs and sloped surfaces must be installed with a more permanent installation method in accordance with the manufacturer's instructions and with manufacturer recommended adhesives for this application. Install broadloom version of modular tile when available from the same manufacturer for use on stairs and sloped surfaces. [See Section [09 69 13 RIGID GRID ACCESS FLOORING][and][09 69 19 STRINGERLESS ACCESS FLOORING] for installation method of modular carpet tile on access flooring.]

3.4.3 Entrance Carpet Installation

[Install tiles with [permanent vinyl-compatible] [releasable] adhesive and snug joints. Use [monolithic] [1/4 turn] [ashlar] [brick] [random] installation method.] [Install roll goods [direct glue down] [pre-applied adhesive glue down] and smooth, uniform, and secure, with a minimum of seams. Prepare regular, unnoticeable, and treated seams with a seam adhesive. Install breadths parallel, with carpet pile in the same direction. Match patterns accurately. Neatly cut and fit, securely, cutouts at door jambs, columns, and ducts. Locate seams at doorways parallel to and centered directly under doors. Do not make seams perpendicular to doors or at pivot points.] [Cut mats to specified size and finish them with a tapered vinyl edge that is glued and sewn on.]

[3.4.4 Stretch-in Installation

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NOTE: Installation with tack strips (stretch in method) over cushion can avoid potential adhesive interaction with carpet backing. It is appropriate for residential and hospitality settings, in which rooms are relatively small and separate cushion is used; but not feasible in large, open spaces.
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Provide carpet tack strips wherever carpeting abuts vertical surfaces. Install tackless carpet stripping by nailing. Place carpet cushion face-up, as recommended by cushion manufacturer, over entire floor area to be carpeted with joints butted. Do not use adhesives to attach carpet, cushion, or substrate. Comply with carpet manufacturer's instructions for installation. Attach rubber or metal edge strip to substrate with adhesive for transition when carpet meets other flooring materials or to finish carpet edge when required.

]## 3.5 CLEANING AND PROTECTION

Submit [three] [_____] copies of carpet manufacturer's maintenance

instructions describing recommended type of cleaning equipment and material, spotting and cleaning methods, and cleaning cycles.

3.5.1 Cleaning

As specified in Section 01 78 00 CLOSEOUT SUBMITTALS. After installation of the carpet, remove debris, scraps, and other foreign matter. Remove soiled spots and adhesive from the face of the carpet with appropriate spot remover. Cut off and remove protruding face yarn. Vacuum carpet clean with a high-efficiency particulate air (HEPA) filtration vacuum.

3.5.2 Protection

Protect the installed carpet from soiling and damage with heavy, reinforced, nonstaining kraft paper, plywood, or hardboard sheets. Lap and secure edges of kraft paper protection to provide a continuous cover. Restrict traffic for at least 48 hours. Remove protective covering when directed by the Contracting Officer.

3.6 REMNANTS

Manage waste as specified in the Waste Management Plan. [Provide remnants remaining from the installation, consisting of scrap pieces more than 600 mm 2 feet in dimension with more than 0.6 square meters 6 square feet total [to the Government] [to local non-profit such as Habitat for Humanity as directed by the Government]]. [Set aside and return non-retained scraps to manufacturer for recycling into new product] [Remove non-retained scraps from site and recycle appropriately].

3.7 MAINTENANCE

3.7.1 Extra Materials

Provide extra material from same dye lot consisting of [full width continuous broadloom][,][and][uncut modular carpet tiles][,][and][textile composite carpet] for future maintenance. Provide a minimum of [three] [_____] percent of total square meters square yards of each carpet type, pattern, and color. [Furnish [three] [____] percent extra of total adhesive tabs.]

3.7.2 Maintenance Service

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NOTE: Maintenance agreements are standard practice in the building industry. Under a green lease, when the customer no longer requires the use of the particular product or requires an updated model, the manufacturer is obligated to reclaim it and refurbish it or disassemble it for recycling as appropriate.
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Collect information from the manufacturer about [maintenance agreement] [green lease] options, and submit to Contracting Officer. Service must reclaim materials for recycling and/or reuse. Service must not landfill or burn reclaimed materials. When such a service is not available, seek local recyclers to reclaim the materials. Submit documentation of manufacturer's [maintenance agreement] [take-back program] [green lease] for carpet. Include contact information, summary of procedures, and the

limitations and conditions applicable to the project. Indicate manufacturer's commitment to reclaim materials for recycling and reuse.

-- End of Section --