	Title: YALE OFFICE OF FACILITIES PROCEDURE MANUAL Chapter: 01 - Yale Design Standard Division: 09 00 00 Finishes	Section: 09 68 00 Requirements for Carpet
		Date: December 2023
		Author: Office of Facilities

PART 1 - INTRODUCTION

1.1 PURPOSE

This section contains general design criteria for carpet.

PART 2 - GENERAL DESIGN REQUIREMENTS

2.1 SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

- A. Provide carpet material, including roll goods and modular tiles, intended for use in commercial and public spaces. Construction, accessibility, fire-life safety ratings, static control, and appearance must be appropriate for commercial and public spaces.
- B. Provide a detached, synthetic rubber or urethane carpet cushion that meets applicable federal standards.
- C. Cradle to cradle carpet products, which carry an environmental guarantee to reclaim and recycle the product at the end of its use, are preferred.

2.2 SUBMITTALS

Contractor must submit samples, product data, and shop drawings for each carpet type to be used. Also, the contractor must submit manufacturers' recommended maintenance data at project closeout.

2.3 PRODUCT STANDARDS

- A. Products must conform to the following standards.
 - Carpet and Rug Institute (CRI) 104-1996 – Standard for Installation Specification of Commercial Carpet.
 - CRI – Carpet Installation Guidelines for Indoor Air Quality.
- B. Carpet materials must meet or exceed the performance criteria in Table 1.



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Table 1. Carpet Material Performance Criteria

Performance Characteristic	Performance Criteria
Flammability	Pass the methaenamine pill test per CPSC, Part 1630.
Flame Spread	Pass critical radiant flux limits, Class I; NBS minimum of 0.455 watts/sq cm per NFPA 258/ASTM E648.
Smoke Density	Pass the smoke density test with a specific optical density (corrected) of no greater than 450, tested in accordance with NFPA.
Dry Breaking Strength	Not less than 110 lbs per ASTM D2646.
Wear	Must not exceed 10% of the pile face fiber, by weight, for 10 years.
Edge Ravel	Properly installed, with no edge ravel for 10 years under normal use.
Static Resistance	Per NFPA 99 in healthcare facilities
Static Generation	Less than 3.5 kV for 10 years, per AARCC-134.
Tuft Bind	Greater than 15 lbs for 10 years, per ASTM D-1335.
Backing Integrity	No de-lamination for 10 years.
Color Fastness	No change in color from exposure to light, per AATCC 16E. No color change due to atmospheric contamination, including ozone and/or oxides of nitrogen per AATCC164 and AATCC 129. No stain by crocking for 10 years, per AATCC165.
Microbial Growth Resistance	Must meet AATCC174, Parts I, II, and III standards for inhibiting bacteria and fungus. Lifetime warranted.
Soil and Stain Resistance	No apparent stains for 10 years, per AATCC 6, AATCC 123 and AATCC 175.

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2.4 CONSTRUCTION

Carpet construction must conform to the standards in Table 2.

Table 2. Carpet Construction Standards


Construction Feature	Construction Standard
Face Construction	Tufted, textured loop pile or tip-sheared loop, woven or Syntex
Face Fiber	100% nylon, type 6 or type 6.6
Dyeing Method	Solution dyed or Lee's Duracolor. Each type, pattern, style and color must be on one dye lot with roll sequence integrity.
Primary Backing	Woven polypropylene
Secondary Backing	Powerbond RS, iLoc MB, Unibond, Thermobond, Unitary, Unitary/Action-Bac, Surelock, or equivalent
Gauge	1/8, 1/10, 1/12, 1/13, or 5/64, per ASTM D5793
Density	Minimum 6,000 ounces per cubic yard, per ASTM D 418
Weight Density	Minimum 188,000, per ASTM D418
Pile Height	0.187" average maximum
Pile Thickness	0.150" averages minimum
Yarn Weight	Minimum 26 oz/sq yd, per ASTM D5848
Total Weight	Minimum 60 oz/sq yd
Roll Goods	Available in 12" and 6' widths
Indoor Air Quality Certification	Registration per CRI Green Label Program

2.5 MOUNTING

- A. Tackless—use slab rubber or virgin urethane.
- B. Direct glue down—use waterproof, strippable adhesive.
- C. Carpet tiles must be free-laid.
- D. Terminations—rubber or vinyl terminations or reducers. Do not use anodized aluminum.

2.6 EXTRA MATERIALS

Attic stock or extra material is not required. If space is available for storage attic stock may be retained at the discretion of the project manager. It must be in full-width rolls or tiles, and be packaged properly for storage.

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2.7 QUALITY CONTROL

The carpet installer must be an experienced installer with at least five years experience installing carpet of this quality.

2.8 WARRANTY

The carpet manufacturer must provide a signed, written warranty agreeing to replace carpet that does not comply with requirements or that fails within the specified warranty period. The warranty does not include deterioration or failure of carpet due to unusual traffic, substrate failure, vandalism, or abuse. The warranty must cover the following performance criteria for the specified time periods:


- Wear, tuft-bind, edge ravel, zippering, de-lamination, dimensional stability, and soil and stain resistance—10 years minimum
- U/V protection—10 years
- Color fastness (color change due to atmospheric contamination)—5 years
- Microbial growth resistance (where specified) and static resistance—lifetime
- Spike-proof products (where specified)—5 years minimum.

2.9 CARPET TYPES

Table 3 is a guide for carpet type by location.

Table 3. Carpet Type by Location

Location	Carpet Type
Head of College's, Dean's, Fellow's or other non-student residential quarters.	Can be residential. Tackless, free lay, or rugs are acceptable. Commercial carpet is not usually selected for these premises.
Student residence halls	Carpet is not recommended.
Office spaces	Tufted or textured loop is recommended, especially if the floor is concrete. Minimum weight should be 26 oz, with an enhancer backing. Recommended tweed pattern, not solid colors.
Waiting areas with light traffic	May use carpet without an enhancer backing if weight is 30 oz.
Public hallways, and other	Commercial broadloom
Dining halls	Carpet is not recommended.
Libraries, seminar, some offices, reading rooms	Carpet tiles. Rigid polymer backing. Minimum weight: 20 oz.

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