

**096800 CARPET**

*Cornell’s Design and Construction Standards provide mandatory design constraints and acceptable or required products for all construction at Cornell University. These standards are provided to aid the design professional in the development of contract documents and are not intended to be used verbatim as a contract specification nor replace the work and best judgement of the design professional. Any deviation from the Design and Construction standards shall only be permitted with approval of the University Engineer.*

**PART 1: GENERAL**

**1.01 RELATED SECTIONS**

- A. Section 018110 – Green Building Guidelines

**1.02 INTENT AND BACKGROUND**

- A. The intent of this standard is to establish a benchmark standard of quality for all carpet installed in Cornell University buildings.
- B. This standard addresses the minimum acceptable quality of carpeting for general use in medium to heavy traffic areas such as classrooms, student spaces and administration offices. For extra traffic or special use (i.e. low static - computer) areas consult with Facilities Engineering to determine an appropriate specification.
- C. Acceptable carpet shall comply with all current building codes at the time of purchase and installation.
- D. Installation practices shall conform to manufacturer’s recommendations and industry standards “Best Practices” in all cases.
- E. Use of broadloom carpet shall only be used in areas of low traffic or highly specific designed areas. When carpet is used, carpet tile is the preferred product and attic stock should be incorporated into the project.

**1.03 OBJECTIVES**

- A. Cornell desires a high quality carpet product that meets the functional, aesthetic and fiscal needs of the University and supports the University’s commitment to sustainability.
- B. A wide range of styles and colors should be available at locked, high-volume contract pricing.

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1.04 ROLES AND RESPONSIBILITIES

- A. This standard should be considered alongside Cornell Design and Construction Standard 018110 – Green Building Guidelines, which require all new buildings and major renovations to meet LEED/30 standards. Specific items that could potentially affect the selection of carpet products under the requirements of this standard include minimum recycled content, recyclability of the product after its useful lifespan, life cycle costs and construction waste reduction.
- B. Approved Cornell University preferred carpet manufacturer, local distributors and installers shall be used. Check with Cornell’s Office of Supply Management for current approved installers. On capital projects that are bid, the preferred carpet manufacturer should be the basis of design. (Currently Interface and J+J Flooring Group)

PART 2: PRODUCT REQUIREMENTS

2.01 GENERAL

The following items apply to both tile and broadloom carpet products:

- A. Aesthetics: Carpet colors are to be of a serviceable mixture such as tweeds, multi-colored combinations, or monochromatic color combinations. This is especially important in high-traffic, high-stain areas. Solid color carpeting is not preferred.
- B. Mergeability: Carpet that is of same style/color, but from different dye lots and/or manufacturing dates, must be able to be merged and used interchangeably, both at initial installation and at later selective replacement, to create a continuous carpeted surface.
- C. Warrantee: 20 year full term, non-prorated period:
  - No edge ravel, zippering, backing separation, shrinking, stretching and static electricity.
  - Secondary Backing will not delaminate.
  - No more than 10% face yarn loss.
  - Will maintain tuft bind wet or dry.
  - Carpet should not require the use of chair pads.
  - The stain resistant properties of the fiber must be permanent and cannot be removed by commercial cleanings or abrasive wear. Products are free of perfluorinated (PFC) stain resistance treatments.

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- Modular tile will remain dimensionally stable and not cup, dome or dish under normal use.
- Mergeable dye lots – product must be able to be replaced without visual recognition.
- Will maintain anti-microbial effectiveness.
- 10 year warrantee on installation.

D. Minimum Performance Standards:

National Voluntary Laboratory Accreditation Program (NVLAP) certified test results that meet or exceed the following testing requirements:

- Flammability (Pill) Test (CPSC FF 1-70)
- Flooring Radiant Panel (ASTM E-648) Class 1
- Smoke Density Test (ASTM E-662) ≤450
- Static Generation Electrostatic Propensity (AATCC-134) Under 3.0kV
- Color fastness to Light (AATCC 16-E) AATCC grey scale for color change minimum of 4 or better after 60 AFUS for solution dyed yarns.
- Carpet tile only: Dimensional Stability (Aachen Method ISO 2551) \_less than 0.1%

E. Third Party Certifications:

1. CRI Green Label Plus:  
[http://www.carpet-rug.org/pdf\\_word\\_docs/CRI\\_GLP\\_factsheet.pdf](http://www.carpet-rug.org/pdf_word_docs/CRI_GLP_factsheet.pdf)
2. NSF140 Platinum:  
[http://www.nsf.org/business/newsroom/pdf/NSF\\_140\\_Carpet\\_Standard.pdf](http://www.nsf.org/business/newsroom/pdf/NSF_140_Carpet_Standard.pdf)
3. Climate Neutral:  
[http://www.interfaceflooring.com/library/PDF/CoolCarpet\\_Brief\\_32504.pdf](http://www.interfaceflooring.com/library/PDF/CoolCarpet_Brief_32504.pdf)

2.02 CARPET TILE – MINIMUM CONSTRUCTION REQUIREMENTS

- A. Face Construction: Tufted Level of Multi Loop
- B. Face Fiber:

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- a. Interface: 100% Nylon, Premium Branded by Universal or Aquafil. All fibers must have a modification ratio of 2.5 or less. Fibers extruded by carpet mills will be considered “unbranded” for purposes of this standard.
  - b. J + J Flooring: two types of 100% nylon – type 6 and type 6, 6 nylon.
  - c. J + J Kinetex: 100% polyester Universal Fibers. Universal Fibers(SM) PET is 100% solution-dyed.
- C. Gauge: Minimum 1/10"
- D. Stitches: Minimum 8 per inch
- E. Dye Method: Yarn, 100% Solution Dyed
- F. Patterning: Integrated (topical application or wet patterning not permitted)
- G. Soil/Stain Resistance: Protekt®, patented fluorchemical soil-resistance treatment
- H. Anti-microbial: (AATCC 171 Washed) (AATCC 174 Parts 2&3). This feature must pass both Part 2 and Part 3 of AATCC 174 with a minimum of 90% reduction both gram negative and gram-positive bacteria and no macroscopic growth against the fungi. Must contain no arsenic, formaldehyde or heavy metals (tin, lead, mercury, silver, copper or zinc), be non-halogenated (no fluorine, chlorine, bromine or iodine) and non-phenolic. This feature must be incorporated into the primary latex coating of the product during manufacturing process, NOT topically applied to the carpet fibers.
- I. Pile Height: Minimum .122 inch
- J. Tufted Yarn Weight: Minimum 18 oz.
- K. Pile Density: Minimum 6,000
- L. Recycled Content:
- 1. Minimum 43% total post industrial
  - 2. Minimum 20% total post consumer
  - 3. Minimum 50% total recycled content
- M. Primary Backing: Non-woven Primary Backing. Woven primary backings not permitted. Primary backing must be 100% recyclable.
- N. Secondary Backing: Fiberglas Reinforced thermoplastic Composite. Secondary backing must be 100% recyclable.

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O. Tile Size: 19.69 in. x 19.69 in. (50 cm x 50 cm) or larger.

**2.03 BROADLOOM CARPET – MINIMUM CONSTRUCTION REQUIREMENTS**

A. Face Construction: Tufted Level loop

B. Face Fiber: 100% Premium Branded Nylon by Universal or Aquafil, Type 6 and Type 6, 6 nylon. Must be 100% recyclable.

C. Gauge: 1/10"

D. Stitches: 9 per inch

E. Dye Method: Yarn, Solution Dyed or Combination

F. Pile Height: .175 inch

G. Yarn Weight: 24 oz /yd<sup>2</sup>

H. Total Weight: 61 oz /yd<sup>2</sup>

I. Pile Density: Minimum 5,000

J. Soil/Stain Resistance: Protekt® or J+J ProSept®, patented fluorchemical soil-resistance treatment.

K. Recycled Content:

- 1. Post Consumer: 10.01 - 10.98% min.
- 2. Pre Consumer: 9.50 - 11.50% min.
- 3. Total Recycled Content: 19 - 23% min.

L. Primary Backing: Polybac®GL or J+J Nexus Primary Backing, plain weave that offers a dimensionally stable foundation for superior tuftability and pattern definition, strength, moisture resistance and durability.

M. Secondary Backing: Actionbac® or J+J Protex Soil Release Secondary Backing, moisture and stain resistant and produces no mold, mildew or harmful chemical emissions. Actionbac adds tensile strength and dimensional stability.

N. Width: 12 or 12.6 feet

O. Flame Resistance: Passes Methylamine Pill Test DOC-FF1-70

P. Flooring Radiant Panel Test: Passes ASTM-E648 - Class 1

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- Q. CRI: IAQ Testing Program Label Required
- R. Static Electricity Generation: 3.5 kilovolt or less as tested under AATCC-134
- S. Smoke Density: Pass current test.

**2.04 ADHESIVES**

A. Concern for safe and healthy environments in Cornell facilities has prompted the adoption of very stringent standards requiring the use of quality, non-toxic adhesives for carpet installations. The manufacturer and products listed below have been determined to be acceptable adhesives for carpet installation in campus buildings. This approval is proprietary and specific to the manufacturer and products listed. Selection and appropriate use in given applications is at the discretion and responsibility of the installer. Such approval will in no way preclude the requirements to provide a Material Safety Data Sheet (MSDS [A1000](#), [A10001](#), [A1100](#), [A11001](#), [A2000](#), [A2001](#), [A2100](#), [A21001](#)) for all materials used on installations. “Or equal” substitution of adhesives must be approved in writing and submitted with all evaluation data before being bid or used for campus applications.

**B. Manufacturers and Products:**

(\*Note: Preference is for glue-free installation methods. Adhesive, seam sealers and primers must pass CRI Green Label Plus.)

**1. Interface Americas RE: Source Technologies, Inc.**

- Premium Multipurpose Cushion Backing Adhesive 1000 (for use with unbacked sheet goods).
- Grid-Set Green Glue 2000 (for use with GlasBac, GlasBac RE, Graphlar and Graphlax backing systems).
- TacTiles (for non-wet and glue-free installations).
- Performance Broadloom Adhesive 2100 (for use with PVC structured back broadloom carpet).

**2. J + J Flooring Group by Engineered Flooring.**

- J+J Nexus adhesive or Premium adhesive for all Endure cushion back products.
- Nexus adhesive (for use with GlasBac, GlasBac RE, Graphlar and Graphlax and Nexus backing systems).
- J+J Tile Tabs.
- Kinetex adhesive used for all Kinetex installation under manufacturer’s full warranty.
- J + J Premium broadloom adhesive.

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C. Due to moisture concerns in some environments on campus, manufactures must include products upholding a RH rating of 95-99%.

1. Product: J+J Moisture Kinetex.

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