
York University Building Standards

Note to the Designer/Architect/Engineer: These standards are basic minimum criteria to be met in preparing the final project specifications for this section, which is the responsibility of the Designer

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1.0 GENERAL

1.1 Scope of Work

- .1 This section defines relevant York University standards related to carpet tiles and rolled or broadloom carpet

1.2 Guideline Principles

- .1 In academic and administrative building applications, preference is given to the use of carpet tiles as opposed to rolled carpet or broadloom. Rolled carpet or broadloom is preferable in student residence, and apartment applications
- .2 Do not use carpet in high traffic general circulation areas or staircases
- .3 Selection of carpet tile should be based on standard manufacturers' colour and pattern offerings, custom colour and pattern shall not be permitted
- .4 The selection of colour and patterns shall be based on the intended use and shall be evaluated and selected in consultation with York University's Furnishings Coordinator Planning & Architectural Design Services, CSBO
- .5 Whenever possible, and if financially viable, efforts should be made to match existing carpet colour and pattern for major renovation projects

1.3 Sustainable Design Requirements

- .1 Follow university project procedures for compliance, documentation and certification of the project in accordance with the requirements of the desired certification or credits (such as LEED)
- .2 If project is intended to achieve LEED certification or credit towards EQ 4.3 then submit the following:
 - .1 For carpet tile, documentation indicating compliance with testing and product requirements of CRI's Green Label Plus program
 - .2 For installation adhesives, documentation including printed statements of Volatile Organic Compound (VOC) content emissions
- .3 Provide information on the manufacturer's carpet tile reclamation/recycling program. Indicate the type and extent of carpet recycling at end of life stage. Provide information

on pre and post consumer recycled fibre and backing
materials content

1.4 Quality Assurance

- .1 Qualifications: provide work for this section, executed by competent installers with:
 - .1 Minimum five (5) years experience in the application of products covered in this Section with the approval of the manufacturers
 - .2 Carpets, installed as part of this Section shall be from the same production run
 - .3 Carpets shall be installed in accordance with the manufacturer's documented instructions

1.5 Related York University Standards

- .1 Resilient Flooring Section 09 65 00
- .2 Painting Section 09 91 00
- .3 Entrance Foot Grille Section 12 48 16

1.6 References and Performance Standards

- .1 Comply with all applicable municipal, provincial, federal and trade standards in this specification, unless more stringent requirements are given herein
- .2 CAN/CGSB (Canadian General Standards Board)-4 129 Carpet for Commercial Use
- .3 ASTM D2859-06 (2011) Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials
- .4 ASTM E648 -10e1 Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
- .5 ASTM E662 -09 Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
- .6 American Association of Textile Chemists and Colorists AATC 134 Test Method 134-2011 Electrostatic Propensity of Carpets
- .7 American Association of Textile Chemists and Colorists AATC 175 Stain Resistance: Pile Floor Coverings (1991)
- .8 CGSB 4-GP-156 Direct Glue Down Carpet, Guide to Selection and Installation
- .9 CAN/CGSB 4.2 No. 0-2001 Textile Test Method – Moisture Regain Values, SI Units Used in CAN/CGSB 4.2 and Fibre Yarn, Fabric, Garment and Carpet Properties

- .10 Carpet and Rug Institute “Green Label Plus” program
 - .11 ASTM F710-11 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
 - .12 ASTM F1869-04 Standard test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
 - .13 ASTM D1335 11 Standard Test Method for Tuft Bind Pile yarn Floor Coverings
 - .14 ASTM 5252 11 Standard Practice for the Operation of the Hexapod Tumble Drum Tester
 - .15 ASTM D5417 11 Standard Practice for the Operation of the Vetterman Drum Tester
 - .16 American Association of Textile Chemists and Colorists AATC Test Method 165-2008 Colorfastness to Crocking: Textile Floor Coverings – Crockmeter Method
 - .17 American Association of Textile Chemists and Colorists AATC Test Method 129 2011 Colorfastness to Ozone in the Atmosphere under High Humidities
 - .18 ASTM D 5116 10 Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products
 - .19 American Association of Textile Chemists and Colorists AATCC 134 Test Method 134, Electrostatic Propensity of Carpets
 - .20 NFPA-258 (2006) Recommended Practice for Determining Smoke Generation of Solid Materials
 - .21 NFPA-253 (2011) Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
 - .22 ASTM E648 10e1 Standard test Method for Critical radiant Flux of Floor-covering Systems Using a radiant Heat Energy Source
 - .23 NSF/ANSI Standard 140 – 2007 Sustainable Carpet Assessment.
- 1.7 System Design Criteria
- .1 Carpets (rolled or tiles) shall be used for floors only and not on ceiling or wall surfaces, except where specified as a wall base
- 1.8 Submittals

- .1 Submit to York University's Project Representative Product Data Sheets for products that will be used in the project and covered in this standard
 - .2 Samples (PS):
 - .1 Submit four (4) samples of each type and colour, and pattern of carpet tile and edge trim. For acceptance of colour, pattern
 - .2 Broadloom carpet minimum sample size should be: 457mm X 457mm (18" X 18")
 - .3 Shop Drawings:
 - .1 Shop drawings are required only for large carpet installation projects
 - .2 For broadloom carpets, submit seam and layout drawings:
 - .1 Submit for review drawings of seam locations, pile direction, pattern recognition of possible wear locations, ease of replacement and the location of type of accessories and other information and details pertaining to the installation of carpets.
 - .4 Manufacturer's Installation Instructions:
 - .1 Provide submit carpet tile and rolled carpet and adhesives manufacturer's written installation instructions for each type of substrate required
 - .2 For rolled carpet: Identify trowel notch size and shape, and required adhesive coverage rates for each specified carpet material for installation
 - .5 Extra material:
 - .1 For large projects, provide extra flooring material of each colour and pattern at the rate of 5 tiles for each 1000 tiles and 0.5 m2 for each 92 m2 of sheet flooring installed. Package extra materials in original properly marked containers bearing the manufacturer's name, brand name, pattern colour name and number or code, production run, and handling instructions
- 1.9 Maintenance Instructions (M.I.):
- .1 Provide two (2) copies maintenance instructions including cleaning procedures and intervals for each type of carpet. The maintenance program shall be prepared by the carpets' manufacturer with a list of recommended cleaning products

1.10 Delivery and Storage

- .1 For large projects, deliver materials in the manufacturer's original mill wrappings, with carpet having registered tag number attached
- .2 Deliver carpet only after the building (or project site) is enclosed and spaces have controlled temperature and humidity
- .3 Store materials under cover, off floor, in ventilated space. Protect from damage, staining and moisture. Stand no roll material on end
- .4 Deliver adhesives in containers clearly labeled with manufacturer's name, brand name, number, installation instructions, safety instructions and flash point
- .5 Store carpets and adhesives in a clean, dry well ventilated area, protected from damage and soiling. Maintain storage space temperature above 16°C

1.11 Standard Warranties and Extended Warranties (S.W. / E.W.)

- .1 Warrant installation of rolled carpet and carpet tiles (as per this York University Standard) for a period of two (2) years
- .2 In addition, warrant rolled carpeting and carpet tiles in writing, against wear, permanent static, delamination, zippering, shrinkage, edge raveling, fading or other defects detrimental to appearance or performance for a period of ten (10) years from the date of Substantial Performance of the Work

1.12 Environmental Considerations

- .1 Carpet tiles shall be certified "Cradle to cradle" by a third party
Third party verified sustainability standard shall be gauged against NSF/ANSI Standard 140 – 2007 Sustainable Carpet Assessment.
- .1 Temperature and Humidity:
 - .1 Carpet must be installed when indoor temperature is between 18°C to 35°C with a maximum relative humidity of 65%. If ambient conditions are outside these conditions, the installation shall not begin until HVAC system is operational and these conditions are maintained for at least 48 hours prior to installation, during and 72 hours after completion

- .2 In larger carpet installations, traffic or movement of furniture or equipment in carpeted area shall not be permitted for 24 hours after installation. Other work, which would damage the carpet, shall be completed prior to installation of carpet.

2.0 PRODUCTS

- 2.0.1 For all carpet types (rolled or tiles) ensure the compatibility of flooring products with primers, adhesives and all other materials specified in this standard, as well as any other materials within or applied to the substrate

- 2.1 Carpet Tile and Rolled Carpet Physical Characteristics:

- 2.1.1 Carpet Tile:

- .1 Specify carpets (rolled or tiles) certified for interior quality of air under the Carpet and Rug Institute and/or Canadian Carpet Institute
- .2 Carpets (rolled or tiles) shall be free of any visual blemishes, streaks, poorly dyed area, fuzzing of pile yarn, spots or stains and other physical and manufacturing defects
- .3 **Maximum pile height** shall not exceed: 3.25 mm (0.1 inch)
- .4 **Pile Fiber:** preference is given for Nylon with a minimum post consumer recycled content of 25%
- .5 **Pile Type:** Level Loop
- .6 **Backing Material:** Manufacturer's proprietary backing material shall permit glue down of carpet tiles and removal of carpet tiles for repair and maintenance. Preference is given to backing materials that contain post consumer recycled content
- .7 **Tuft Bind:** minimum force of 40N (10 lb) required to pull tuft or loop free from carpet backing. Test per ASTM D1335
- .8 **Appearance Retention Rating (ARR):** Carpet shall be tested and have a minimum 3.5 to 4.0 Severe ARR when tested in accordance with either ASTM 5252 (Hexapod) or ASTM D5417 (Vettermann) test methods using the number of cycles for short and long term tests as specified
- .9 **Colorfastness to Crocking:** Dry and wet crocking and water bleed, comply with AATCC 165 Color Transference Chart for colors, minimum class 4 rating is required
- .10 **Colorfastness to Ozone:** Comply with AATCC 129, carpet must have a minimum rating of 4 on the AATCC color transfer chart
- .11 **Delamination Strength:** Minimum of 440N/m (2.5 lb/inch) between secondary backing

- .12 **Density:** Average Pile Yarn Density (APYD) – for high traffic areas (such as corridors, lobbies, entrances, common areas, classrooms, meeting rooms, and other common multipurpose rooms, open office areas, waiting areas, the minimum APYD shall be not less than 6000 all other areas the minimum APYD shall be not less than 4000
- .13 **Volatile Organic Compound (VOC) Limits:** Use carpets and carpet adhesives that comply with the following limits for VOC content when tested to ASTM D 5116:
 - .1 carpet (tile and broadloom or rolled) total VOCs: 0.5 mg/sq. m X hr.
 - .2 carpet (tile and broadloom or rolled), 4-PC (4-Phenylcyclohexene): 0.05 mg/sq. m x hr.
 - .3 carpet (tile and broadloom or rolled), Formaldehyde: 0.05 mg/sq.m x hr.
 - .4 carpet (tile and broadloom or rolled), Styrene: 0.4 mg./sq. m x hr.
 - .5 adhesives: Total VOCs: 10.00 mg/sq.m x hr.
 - .6 adhesives: Formaldehyde: 0.05 mg/sq. m x hr.
 - .7 adhesives: 2-Ethyl-1-Hexanol: 3.00 mg/sq.m x hr.
- .14 **Electrostatic Propensity:** shall be less than 3000 volts or less at 20% R.H. and 20C° when tested in accordance with AATCC 134
- .15 **Flame Spread Rating and Smoke Development**
Classification in accordance with Ontario Building Code (2006)
 - .1 Flame Spread rating to meet NFPA-253, flooring, radiant panel as per ASTM E648, Direct Glue Down mode (Class 1)
 - .2 Smoke development classification: to meet NFPA-258 Smoke Density as per ASTM E662, Flaming mode (450 or less)
- .16 **Light Fastness:** 4.0 at 80 hours or better
- .17 **Stain Resistance:** 8.0 as per AATCC 175
- .18 **Treatment:** 3M ScotchGuard Carpet Protector (or similar treatment) as well as antimicrobial treatment

2.1.2 Rolled Carpet Physical Characteristics:

- .1 **Maximum Pile Height:** between 5 mm and 7.9 mm is acceptable
- .2 **Carpet Material:** Nylon
- .3 **Construction:** Cut pile pattern
- .4 **Pile weight:** minimum: 950 g/m² to 1017 g/m² is acceptable
- .5 **Density factor:** 7.5 to 9.7 kilotex/cm² is acceptable
- .6 **Yarn Construction:** Bulked Continuous Filament

- .7 **Stitch Count:** 32.3 stitches/10cm to 37.8 stitches/10cm is acceptable
- .8 Average Tuft Bind: Must exceed CGSB 4GP 129
- .9 **Coloration:** Pressure Beck Dyed
- .10 **Primary carpet backing:** woven synthetic (i.e. polypropylene)
- .11 **Secondary carpet backing:** woven synthetic
- .12 Delamination Strength: Must meet or exceed CGSB 4GB 129
- .13 Dying method: piece dyed
- .14 Resistance to Wet Cleaning: Grey Scale 5
- .15 Electrostatic Propensity: shall be less than 3000 volts or less at 20% R.H. and 20C° when tested in accordance with AATCC 134
- .16 Flame Spread Rating and Smoke Development Classification in accordance with Ontario Building Code (2006)
 - .1 Flame Spread rating to meet NFPA-253, flooring, radiant panel as per ASTM E648, Direct Glue Down mode (Class 1)
 - .2 Smoke development classification: to meet NFPA-258 Smoke Density as per ASTM E662, Flaming mode (450 or less)
- .16 Light Fastness: 4.0 at 80 hours or better
- .17 Stain Resistance: 8.0 as per AATCC 175
- .18 Treatment: 3M ScotchGuard Carpet Protector (or similar treatment) as well as antimicrobial treatment

2.2 Carpet Accessories

- .1 Nosing on stairs shall be vinyl and be glued-in with the manufacturers specified adhesive. Metal nosing is also acceptable, but a rationalization shall be provided why vinyl nosing should not be used instead
- .2 Finishing and nosing are to be in contracting colour and of a non-slip finish
- .1 Seam Tape
 - .1 to be used only in broadloom or rolled carpet applications shall be permanently resistant to carpet cleaning solutions, steam, and water
 - .2 shall be recommended by carpet manufacturer
- .2 Edge Strip Wall Base (Cove Base)
 - .1 Cove base or edge strip shall be vinyl

- .2 Toeless or toed is acceptable depending on intended use
 - .3 Minimum height from floor shall be 76.2 mm (3")
 - .4 Beveled (or toed) surface to finish shall be flush with carpet for a tight joint and other side of floor finish
 - .4 Color of vinyl wall base shall be determined by the architect, designer or engineer from a standard manufacturer's color offering
 - .5 Where specified by the designer/architect/engineer use matching vinyl transitions, corner guards, edge guards, cove caps, and other flooring trip accessories from the same manufacture as the wall base used in the project
 - .6 Matching carpet is acceptable as a wall base
- .3 Edge Strip and other vinyl and rubber products adhesives:
- .1 shall be solvent-free, water based and water proof adhesive, for use with vinyl base and stair edge strips as recommended by flooring manufacturer and to be compatible with substrate
- .4 Reduction Strips for floors:
- .1 Shall be vinyl strips to match flooring colour
- .5 Transition strips
- .1 Depending on application and situation transition strips shall be vinyl or metal (aluminum or zinc)
- .6 Rolled Carpet Adhesives
- .1 Adhesive for rolled carpets shall be polymer adhesive for carpet for permanent adhesion. Shall be solvent-free adhesive, or solvent-free latex adhesive, suitable for polypropelene backed carpet
- .7 Cove Base Adhesives
- .1 Wet-set adhesive specifically designed for installation of rubber and vinyl cove base
 - .2 Shall have zero VOC emissions
 - .3 Shall have aggressive initial grab to prevent slid during cove base installation
 - .4 Shall be a water based adhesive
- .8 Concrete Floor Leveling Compounds
- .1 Where conditions of the concrete floor warrant, use a self leveling compound that is compatible with carpet adhesive

- and carpet tile adhesive
- .2 Portland cement, silica sand, based polymer modified with latex, polyvinyl acetate or other resin manufactured specifically for resurfacing and leveling concrete floors shall be used prior to carpet or carpet tile installation.
- .3 Leveling compound shall have low to zero VOC rating
- .9 Substrate crack filler:
 - .1 Shall be compatible with carpet adhesive used and shall be recommended by carpet manufacturer
 - .2 Shall have similar properties as the leveling compound used
- .10 For rolled carpets - Underpad

3.0 EXECUTION

- 3.1 Coordination
 - .1 Coordinate with York University Project Representative
- 3.2 Installation for Carpet Tiles:
 - .1 Sequence carpeting with other work so as to minimize the possibility of damage and soiling of carpet during remainder of construction
 - .2 Do not begin carpet installation until painting and finishing work are complete and ceilings and overhead work have been tested, approved, and completed
 - .3 Concrete floors shall be prepared in accordance with ASTM F710-8
 - .4 Concrete floors for resilient floorings (including carpeting) should be permanently dry, clean, smooth, structurally sound, and free of substances that may prevent adhesive bonding
 - .5 Surface cracks, grooves, depression, control joints or other non-moving joints, and other irregularities should be filled or smoothed with latex patching or a recommended underlayment compound
 - .7 The surface of the floor should be cleaned by scraping, brushing, vacuuming, or any other method
 - .8 All concrete slabs should be tested for moisture regardless of age or grade level while all concrete floors should be tested for pH before installing resilient flooring
 - .9 Maximum percentage of acceptable is 1.4kg/93m² (3lb/1000ft²) in a 24-hour period, unless otherwise specified by manufacturer's printed literature

- .10 Testing Requirements:
 - .1 test for moisture vapor transmission in accordance with ASTM F1869-04
 - .2 test for pH
 - .3 for each test type: perform 3 tests for flooring application less than 186 m² (2000 ft.
- .11 Install carpet tiles firmly with precision, butting edges perfectly against each other and pressing the joints with a joint roller
- .12 Cut carpet tiles on the back with a strong bladed knife, and use a steel ruler
- .13 Adjust carpet tiles around architectural or other objects, fixed furniture, projections etc.
- .14 Seal edges of cut-outs with latex
- .15 Finish installation to present smooth wearing surface, free from conspicuous seams, burring and other faults.
- .16 Use material from the same dye lot and ensure colour, pattern and texture match within any one area
- .17 Install transition or finishing trims, or reduction strips at unprotected edges, at centerline of doors, where required, and vinyl bases in accordance with the flooring manufacturers recommendations

3.3 Installation for Rolled Carpet

- .1 Follow carpet manufacturer's documented installation instructions
- .2 For glue down installations:
 - .1 unroll, cut and fit carpet lengths for space prior to applying adhesive.
 - .2 In cutting allow 12.7mm overlap in adjacent widths
 - .3 Apply seaming cement to cut backing and pile edges without evidence on carpet faces. Apply to half the width at a time, beginning at the seam, with carpet width already laid
 - .4 Compress 12.7 mm overlap at seam by fitting against width already laid; then push looseness away from seam
 - .5 as installation progresses roll out air bubbles using a roller weighing approximately 4.5 kilo
 - .6 Where transverse seams are required, loosely back-sew lengths together
 - .7 For carpet at vertical surfaces trim straight and true to line, within 0.79mm of abutting surfaces

3.4 Installation of Resilient Floor Base

- .1 Where the project specifies the installation of a resilient base, then:
 - .1 Set base in adhesive tightly against wall and floor surfaces. Use lengths as long as practicable and not less than 1200mm (4') long
 - .2 Cover base back with adhesive and press firmly against wall, using a 3 kg. manual roller
 - .3 Install straight and level to variation of 1:1000
 - .4 Cut and adjust base to door frames and

- 3.5 Installation of accessories
 - .1 Install transition or finishing trims: jointless metal angles, mill finish, having the proper height as recommended by flooring manufacturer

- 3.6 Cleaning and Protection
 - .1 At completion of installation remove debris
 - .2 Vacuum carpet with s commercial type vacuum cleaner having a rotating agitator in nozzle
 - .3 Remove stains with spot remover acceptable to carpet manufacturer
 - .4 For large projects, immediately after cleaning, cover carpeted area with heavy Kraft paper. Maintain in place for remainder of construction/renovation period
 - .5 Just prior to Date of Substantial Completion, remove protective covering and vacuum carpet. Steam clean areas if required to remove stains
 - .6 Replace carpet which cannot be cleaned

- 3.7 Quality Control
 - .1 On larger projects the carpet installer shall arrange for the carpet manufacturer's representative to visit the site prior to installation of carpet to asses floor preparation, during carpet installation to assess installation practice, and after installation to review completed installation. The manufacturer's representative visits are intended to ensure that installation of carpet tiles and broadloom is undertaken in accordance with manufacturers instruction. York University Project Representative shall be notified in advance of the carpet manufacturer's planned visits. A report covering observed floor preparation, installation and results

shall be prepared by the carpet manufacturer's representative and provided to York University's Project Representative

End of Section