

## 1 GENERAL

### 1.01 RELATED REQUIREMENTS

- .1 Section 09 65 19 - Resilient Tile Flooring.

### 1.02 REFERENCE STANDARDS

- .1 American Association of Textile Chemists and Colorists (AATCC)
  - .1 AATCC Test Method 16.1-2012(R2014), Colorfastness to Light: Outdoor.
  - .2 AATCC Test Method 16.2-2012(R2014), Colorfastness to Light: Carbon-Arc.
  - .3 AATCC Test Method 16.3-2012(R2014), Colorfastness to Light: Xenon-Arc
  - .4 AATCC Test Method 23-2010(R2015), Colorfastness to Burn Gas Fumes.
  - .5 AATCC Test Method 129-2010(R20156), Colorfastness to Ozone in the Atmosphere Under High Humidities.
  - .6 AATCC Test Method 134-2013(2016), Electrostatic Propensity of Carpets.
  - .7 AATCC Test Method 171-2014, Carpets: Cleaning of; Hot Water Extraction Method .
  - .8 AATCC Test Method 175-2013, Stain Resistance: Pile Floor Coverings.
  - .9 AATCC Test Method 189-2012, Fluorine Content of Carpet Fibers.
- .2 ASTM International (ASTM)
  - .1 ASTM D 297-15, Standard Test Methods for Rubber Products-Chemical Analysis.
  - .2 ASTM D 1335-12, Standard Test Method for Tuft Bind of Pile Yarn Floor Coverings.
  - .3 ASTM D 1667-05(R2011), Standard Specification for Flexible Cellular Materials-Poly (Vinyl Chloride) Foam (Closed-Cell).
  - .4 ASTM D 2661-14, Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings.
  - .5 ASTM D 3574-11, Standard Test Methods for Flexible Cellular Materials - Slab, Bonded, and Molded Urethane Foams.
  - .6 ASTM D 3936-12, Standard Test Method for Resistance to Delamination of the Secondary Backing of Pile Yarn Floor Covering.
  - .7 ASTM D 5116-10÷, Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products.
- .3 Canadian General Standards Board (CGSB)
  - .1 <B>CAN/CGSB-4.2 No. 22-2004(2013), Textile Test Methods - Colourfastness to Rubbing (Crocking).
  - .2 <B>CAN/CGSB-4.2 No.27.6-M91-(R2013), Textile Test Methods - Flame Resistance - Methemine Tablet Test for Textile Floor Coverings.
  - .3 <B>CAN/CGSB-4.2 No. 76-94/ISO 2551: 1981 IDT (R2013), Textile

- Test Methods - Machine-Made Textile Floor Coverings -  
Determination of Dimensional Changes Due to the Effects of Varied  
Water and Heat Conditions.
- .4 <B>CAN/CGSB-4.2 No.77.1-94/ISO 4919: 1978 (R2012), Textile Test  
Methods - Carpets - Determination of Tuft Withdrawal Force.
  - .4 Carpet and Rug Institute (CRI)
    - .1 CRI 104 Standard for Installation of Commercial Carpet 2015.
    - .2 CRI Green Label Plus Indoor Air Quality Testing Program.
  - .5 Health Canada
    - .1 C.R.C., c.923-10, Hazardous Products Act - Carpet Regulations,  
Part II of Schedule 1.
  - .6 National Floor Covering Association (NFCA)
    - .1 National Floor Covering Specification Manual 2007.
  - .7 South Coast Air Quality Management District (SCAQMD), California State,  
Regulation XI. Source Specific Standards
    - .1 SCAQMD Rule 1113-A2016, Architectural Coatings.
    - .2 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.
  - .8 ULC Standards (ULC)
    - .1 CAN/ULC-S102-11, Standard Method of Test for Surface Burning  
Characteristics of Building Materials and Assemblies.
    - .2 CAN/ULC-S102.2-88, Standard Method of Test for Surface Burning  
Characteristics of Flooring, Floor Coverings and Miscellaneous  
Materials and Assemblies.

### **1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature  
and data sheets for each carpet tile, adhesive carpet protection,  
subfloor patching compound and include product characteristics,  
performance criteria, physical size, finish and limitations.
  - .2 Submit 2 copies of WHMIS SDS in accordance with Section  
01 35 29.06 - Health and Safety Requirements.
- .3 Shop Drawings:
  - .1 Information on shop drawings to indicate:
    - .1 Nap: direction, open edges, special patterns.
    - .2 Cutouts: show locations where cutouts are required.
    - .3 Edgings: show location of edge moldings and edge bindings.
- .4 Samples:
  - .1 Submit 2 samples for review and acceptance of each accessory.
  - .2 Submit 2 samples of each type of carpet tile specified and  
duplicate tiles for each colour selected.
  - .3 Samples returned for inclusion into work.
- .5 Certificates: submit product certificates signed by manufacturer  
certifying materials comply with specified performance characteristics  
and criteria and physical requirements.

- .6 Test and Evaluation Reports:
  - .1 Certified test reports showing compliance with specified performance characteristics and physical properties.
- .7 Manufacturer's Instructions: submit manufacturer's installation and storage instructions.
- .8 Manufacturers Reports:
  - .1 Manufacturer's Field Reports: submit manufacturer's written reports within 3 days of review, verifying compliance with specifications.

#### **1.04 CLOSEOUT SUBMITTALS**

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for installed products for incorporation into manual.
- .3 Warranty Documentation: submit warranty documents specified.

#### **1.05 MAINTENANCE MATERIAL SUBMITTALS**

- .1 Extra stock materials: deliver to Owner extra materials from same production run as products installed. Package products with protective covering and identify with descriptive labels. Comply with Section 01 78 00 - Closeout Submittals.
  - .1 Quantity: provide minimum 5% of:
    - .1 Carpet tile: all types.
  - .2 Delivery, storage and protection: comply with Owner's requirements for delivery and storage of extra materials.

#### **1.6 QUALITY ASSURANCE**

- .1 Regulatory Requirements:
  - .1 Prequalification: compliance with Health Canada regulations under "Hazardous Products <B>CAN/CGSB-4.2 No. 27.6.
- .2 Qualifications:
  - .1 Manufacturer: capable of providing field service representation during construction and approving application method.
  - .2 Flooring Installer:
    - .1 Experienced in performing work of this Section who has specialized in installation of work similar to that required for this project.
    - .2 Certified by carpet manufacturer prior to bid submission.
    - .3 No sub-contract labour without written approval of Departmental Representative.
    - .4 Responsible for proper product installation, including floor testing and preparation as specified and in accordance with carpet manufacturer's written instructions.

#### **1.07 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00

- Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
  - .1 Store materials off ground, indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store materials protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
  - .3 Store and protect carpet tile and adhesive in original containers or wrapping with manufacturer's seals and labels intact.
  - .4 Store and protect carpet tile and accessories in location as directed by Departmental Representative.
  - .5 Store carpet and adhesive at minimum temperature of 18 degrees C and relative humidity of maximum 65% for minimum of 48 hours before installation.
  - .6 Prevent damage to materials during handling and storage. Keep materials under cover and free from dampness.
  - .7 Safety: comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials.
  - .8 Replace defective or damaged materials with new.

#### 1.08 SITE CONDITIONS

- .1 Moisture: substrate within moisture limits and alkalinity limits recommended by manufacturer. Prepare moisture testing and provide report to Departmental Representative.
- .2 Temperature: maintain ambient temperature of minimum 18 degrees C from 48 hours before installation to minimum 48 hours after completion of work.
- .3 Relative humidity: maintain between 10% and 65% for 48 hours before, during and 48 hours after installation.
- .4 Ventilation:
  - .1 Departmental Representative will co-ordinate operation of ventilation system during installation of carpet. Ventilate area of work as directed by Departmental Representative by use of approved portable supply and exhaust fans.
  - .2 Provide continuous ventilation during and after carpet application. Run ventilation system 24 hours per day during installation; provide continuous ventilation for 7 days after completion of carpet installation.
- .5 Install carpet after:
  - .1 Wet-work in space completed and nominally dry.
  - .2 Work above ceilings complete.

## 1.09 WARRANTY

- .1 Manufacturer's warranty: submit, for Departmental Representative's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty in addition to and not limit other rights Owner may have under Contract Documents.

## 2 PRODUCTS

### 2.01 MATERIALS

- .1 Manufacturers:
  - .1 Ensure manufacturer has minimum 5 years experience in manufacturing components similar to or exceeding requirements of project.
- .2 Description:
  - .1 Sustainability Characteristics:
  - .2 Adhesives: Maximum VOC limit 50 g/L to SCAQMD Rule 1168GS-36.
  - .3 Primer and/or Sealer: in accordance with manufacturer's recommendations for surface conditions:
    - .1 VOC limit: maximum 100 g/L to SCAQMD Rule 1113

### 2.02 PERFORMANCE

- .1 Flammability: certified for flammability to Health Canada regulations under "Hazardous Products - Carpet Regulations", Part II of Schedule 1.
- .2 Flame Spread: maximum flame spread rating 300, maximum smoke developed classification 500, when tested to CAN/ULC-S102.2.
- .3 Smoke Development: Maximum 450 to ASTM E 662.
- .4 Dry Breaking Strength: to ASTM D 2661, minimum acceptable tear strength in both length and width:
  - .1 11.3 kg for carpets installed by glue down installation.
- .5 Wear: maximum 10% loss of pile face fibre by weight for 10 years.
- .6 Edge Ravel: none for 10 years.
- .7 Static Resistance: permanent static control to AATCC 134, 3000 V maximum at 20% RH and 22 degrees C.
- .8 Static Generation: less than 3.0 kV per AATCC 134 for 10 years.
- .9 Tuft Bind: Tuft Lock: to ASTM D 1335 CAN/CGSB-4.129, minimum acceptable 3.6 for loop pile product.
- .10 De-lamination of Secondary Backing: Lamination Strength of Secondary Backing: to ASTM D 3936, minimum acceptable peel strength of 1.6 kg/25 mm.

- .11 Stain resistance: to AATCC 175, 8.
- .12 Soil Resistance: 350 ppm fluorine minimum Fluorine Durability Level to AATCC 189.
- .13 Colorfastness, dimensional stability, permanency of finishes, and ease of cleaning: to AATCC 171.
- .14 <B>CAN/CGSB-4.2 No.18.3 AATCC 16.
- .15 Colourfastness to atmosphere: to AATCC 129 and AATCC 23.
- .16 <B>CAN/CGSB-4.2 No. 22.
- .17 Cleaning of Carpets with Hot Water Extraction Method: to AATCC 171.
- .18 Indoor Air Quality Certification: certified to CRI Green Label Plus IAQ requirements.

## **2.03 FABRICATION**

- .1 Product Dimension:
  - .1 Type 1: 457 mm x 915 mm.
  - .2 Type 2: 457 mm x 457 mm.
- .2 Face construction:
  - .1 Tufted.
- .3 Pile Surface Appearance:
  - .1 Type 1: Field Carpet: Level loop: tufted, multi-colour patterned loop, organic linear pattern. Multiple colour tones, linear pattern, in multiple shades of grey - the dominant tone being a medium grey colour, minimum number of yarn colours: 5.
  - .2 Type 2: Accent Carpet: tufted, solid colour loop. Saturated medium tone green-yellow.
- .4 Pile fibre: to CAN/CGSB-4.129.
  - .1 Nylon:
    - .1 Type: Nylon 6.6.
- .5 Face Fiber Content: 100% first quality, bulk continuous filament nylon. Fibre shape to have maximum Modification Ratio of 2.2 for soil release capabilities. CRI Green Label Plus Certified.
- .6 Face Fiber Denier: minimum 18.
- .7 Dyeing Method: solution dyed.
- .8 Tufted Carpet Backing: to CAN/CGSB-4.129.
  - .1 Primary backing:
    - .1 Polypropylene: Loop Pile Carpet: 100% polypropylene at a minimum weight of 109 g/m<sup>2</sup>.
- .9 Woven Carpet Backing: to CAN/CGSB-4.129.
  - .1 100% moisture resistant warp, filling and stuffer yarns.

- .10 Secondary and Unitary Backings: to CAN/CGSB-4.129.
- .11 Pile Weight Density: Minimum 1251 Km/m3.
- .12 Finished Pile Height: minimum 0.5 mm average.
- .13 Surface Pile Weight: minimum 712 gm/m2 (21 oz/sq yd).
- .14 Performance Rating: 3.0 minimum at 12,000 cycles to Hexapod test 22,000 cycles to Vetterman test.
- .15 Dimensional Stability: maximum + 0.15% to <B>CAN/CGSB-4.2 No. 76/ISO 2551.

## **2.04 ACCESSORIES**

- .1 Base: .
  - .1 Resilient Base: to meet ASTM F 1861 Standard Specification for Resilient Wall Base, Type TP, and Group 1. Base to be 108 mm high, 6.35 mm thick, with a 45 degree angular top and a 5.5 mm wide surface reveal, solid colour, selected from manufacturer's standard range of samples. Sample to be approved by Departmental Representative before installation.
- .2 Adhesive:
  - .1 Multi-purpose Adhesive Type: recommended by carpet tile manufacturer for direct glue down installation.
  - .2 Adhesive in compliance with CCD-152.
- .3 Carpet protection: non-staining heavy duty kraft paper.
- .4 Concrete floor sealer: to CAN/CGSB 25.20, type 1.
  - .1 VOC limit: 100 g/L maximum to SCAQMD Rule 1113.
- .5 Subfloor patching compound: Portland cement base filler, mix with latex and water to form cementitious paste.

## **3 EXECUTION**

### **3.01 INSTALLERS**

- .1 Experienced and qualified technicians to carry out assembly and installation of tile carpet.

### **3.02 PREPARATION**

- .1 Demolition / Removal:
  - .1 Remove and divert return carpet for reuse recycling reclamation in accordance with Section 01 74 19 - Waste Management and Disposal 01 74 19.13 - Carpet Reclamation and with Waste Reduction Workplan. Co-ordinate with Departmental Representative.
  - .2 Vacuum used carpet before removal.
  - .3 Maintain possession of removed used carpet.
  - .4 Remove used tiles and pack in pallets. Use effective packing

- techniques to maximize amount of material in container.
- .5 Sort only clean, dry carpet tiles for reclamation. Clean is defined as carpet free from demolition debris, asbestos contamination, garbage, knife blades and tack strips.
- .6 Carpet undercushion: provide recycling of carpet padding where locally available or as designated by carpet reclamation program.
- .2 Subfloor Preparation:
  - .1 Inspect concrete and determine special care required to make it a suitable for carpet installation.
  - .2 Fill and level cracks 3 mm wide or protrusions over 0.8 mm with appropriate and compatible latex patching compound.
  - .3 Comply with manufacturer's written recommendations for maximum patch thickness.
  - .4 Prime large patch areas with compatible primer.
  - .5 Ensure concrete substrates cured, clean and dry.
  - .6 Ensure concrete substrates free of paint, dirt, grease, oil, curing or parting agents, and other contaminants, including sealers, that interfere with bonding of adhesive.
  - .7 Where powdery or porous concrete surface encountered, apply primer compatible with adhesive to provide suitable surface for glue-down installation.
  - .8 Provide self-leveling to 50% of the contract area to a maximum protrusion of 25.0mm
- .3 Surface Preparation: prepare surface in accordance with manufacturer's written recommendations.
  - .1 Prepare floor surfaces in accordance with CRI Carpet Installation Standard.

### 3.03 INSTALLATION

- .1 Install carpet tiles in accordance with manufacturer's written instructions, and CRI Carpet Installation Standard.
- .2 Co-ordinate tile carpeting work with work of other trades, for proper time and sequence to avoid construction delays.
- .3 Install carpet tile after finishing work is completed but before demountable office partitions and telephone and electrical pedestal outlets installed.
- .4 Install carpet tile in accordance with manufacturer's recommendation. This can include quarter-turn 90 degree format, monolithic, random, quarter turn ashlar, horizontal, herringbone or vertical ashlar. Refer to drawings.
- .5 Snugly join carpet tiles in completed installation.
  - .1 Measure distance covered by 11 carpet tiles (10 joints) and ensure distance is compliance with manufacturer specifications.
  - .2 Trapping yarn between carpet tiles is prohibited.
- .6 Apply thin film of pressure-sensitive adhesive according to manufacturer's recommendations.
- .7 Finished installation to present smooth wearing surface free from



conspicuous seams, burring and other faults.

- .8 Use material from same dye lot.
  - .1 Colour, pattern and texture to match within visual areas.
  - .2 Maintain constant pile direction.
- .9 Fit around architectural, mechanical, electrical and telephone outlets, and furniture fitments, around perimeter of rooms into recesses, and around projections.
- .10 Extend carpet tiles into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
- .11 Install carpet tiles smooth and free from bubbles, puckers, and other defects.
- .12 Protect exposed carpet tile edges at transition to other flooring materials with suitable transition strips.
- .13 Base Installation: install base per manufacturer's written instructions.

### **3.04 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
  - .1 Leave Work area clean at end of each day.
  - .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.
    - .1 Vacuum carpets clean immediately.

**END OF SECTION**