

**Part 1 General**

**1.01 RELATED SECTIONS**

- .1 Section 09 68 00 - Carpeting.
- .2 Section 09 72 00 - Hygienic Wall System.

**1.02 REFERENCES**

- .1 American Society for Testing and Materials (ASTM International).
  - .1 ASTM D2047-11. Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine.
  - .2 ASTM E648-15e1. Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
  - .3 ASTM E662-15a. Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
  - .4 ASTM F970-15. Standard Test Method for Static Load Limit.
  - .5 ASTM F1303-04(2014). Standard Specification for Sheet Vinyl Floor Covering with Backing.
  - .6 ASTM F1861-08(2012)e1. Standard Specification for Resilient Wall Base.
  - .7 ASTM F2034-08(2013). Standard Specification for Sheet Linoleum Floor Covering.
- .2 Underwriters Laboratories of Canada (ULC).
  - .1 CAN/ULC-S102.2-10-EN. Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings and Miscellaneous Flooring Items.

**1.03 SUBMITTALS**

- .1 Provide Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit Manufacturers Product Data sheets on specified products. Describe physical and performance characteristics, sizes, patterns and colours available.
- .3 Submit Shop Drawings. Indicate seaming plan, borders and patterns for each space listed in the Finish Schedule. Indicate whether flooring is heat welded or sealed at the joints between sheets.
- .4 Submit Shop Drawings for baseboards. Indicate baseboard detail for each flooring Type. Indicate whether baseboards are sealed or welded to floor sheets and wall panels.
- .5 Submit Samples. Submit duplicate samples of each product in type, colour, pattern specified. Sample size 300 x 300 mm. Submit 300 mm long sections of baseboard, feature strips and edge trim strips. Submit samples of transition strips and thresholds.
- .6 Submit samples of each type of adhesive.
- .7 Submit Manufacturer's Test data for anti slip products confirming that the product meets the specified properties.
- .8 Submit Manufacturer's installation instructions for each specified product. Submit Manufacturer's special installation requirements including special procedures and perimeter conditions requiring special attention.

**1.04 MOCK-UPS**

- .1 Construct Mock-Up as specified in Section 01 45 00 - Quality Control.
- .2 Construct a Mock-Up for each Type of flooring specified. Mock-Up to demonstrate typical installation of flooring including flooring, edge trim, baseboards and accessories. Minimum size: 10 square meters minimum for each type of floor specified.
- .3 Construct Mock-Ups where directed by Consultant.
- .4 Allow for inspection of Mock-Up by Consultant before proceeding with additional flooring work. When accepted, Mock-Up will demonstrate minimum standard for this work. Approved Mock-Up may remain as part of the finished work.

**1.05 CLOSEOUT SUBMITTALS**

- .1 Provide maintenance data for resilient flooring for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
- .2 Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.
- .3 Submit letter stating that the moisture content of concrete slab and the ph of the surface is within manufacturer's written guidelines for new flooring.

**1.06 ENVIRONMENTAL REQUIREMENTS**

- .1 Maintain air temperature and structural base temperature at flooring installation area above 20° for 48 hours before, during and 48 hours after installation.
- .2 Consultant will arrange to provide a high ventilation rate, with maximum outside air, during installation and for 48 to 72 hours after installation. Where possible, provide additional fans to vent directly to the outside. Maintain extra ventilation for as long as practical and to approval of Consultant. Do not let contaminated air recirculate through a district or whole building air distribution system.

**1.07 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate and recycle waste materials in accordance with Waste Management and Disposal Plan as specified in Section 01 74 21 - Construction / Demolition Waste Management and Disposal.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities. Collect and separate for disposal paper, plastic, polystyrene and corrugated cardboard packaging material in appropriate on-site for recycling in accordance with Waste Management Plan.

**1.08 DELIVERY STORAGE AND HANDLING**

- .1 Deliver products to site, store and protect in accordance with Section 01 61 00 - Common Product Requirements and Manufacturers written instructions.
- .2 Store materials on site for three days prior to installation in area of installation to achieve temperature stability.

**Part 2 Products**

**2.01 MATERIALS**

- .1 Linoleum sheet flooring: to ASTM F2034. Homogenous flooring made from natural ingredients including linseed oil, rosin binders, wood flour, limestone and dry pigments which are mixed and calendared onto a natural jute backing. Properties as follows:
  - .1 Pattern: Solid tone.
  - .2 Thickness: 2.5 mm.
  - .3 Sheet sizes: 2.0 m wide x 32 meter roll lengths.
  - .4 Static Load limit: to ASTM F970. 850 pounds per square inch.
  - .5 Slip resistance: to ASTM D2047. Greater than 0.5 for flat surfaces.
  - .6 Flame spread: to CAN/ULC-S102.2: 150.
  - .7 Smoke developed: to CAN/ULC-S102.2: 145.
  - .8 Finish: factory applied high performance protective coating. Double UV cured, 2 layer technology. Requiring no initial maintenance prior to use.
  - .9 Linoleum adhesive: water-based, solvent-free, adhesive as recommended by manufacturer. Water resistant after curing. Requiring solvent clean up after adhesives have set.
  - .10 Acceptable Materials: Forbo Marmoleum. Walton UNI. Colour: 171 Cement.
- .2 Safety Flooring: heavy duty, slip resistant, vinyl safety flooring. To ASTM F1303, Type 2, Grade 1, Class A. Blend of high quality vinyl with coloured, slip retardant particulate suspended evenly throughout the product thickness. Backing: moisture resistant, non-woven polyester / cellulose with glass fibre reinforcement. Integral bacteriostatic to protect against surface bacteria and fungal decay. Provides lifelong slip and abrasion resistance with enhanced chemical and indentation resistance. Phthalate free. Contains rapidly renewable bio based content. Contains 10 % post consumer lead free recycled glass. 100 % recyclable and SCS FloorScore Certified. Technical Properties as follows:
  - .1 Pattern: non directional.
  - .2 Thickness 2.5 mm.
  - .3 Roll Size: 20.0 m x 2.0 m wide.
  - .4 Static load limit: to ASTM F970. 1000 psi.
  - .5 Slip resistance: to ASTM D2047. SCOF: Dry: 0.9. Wet: 1.0.
  - .6 Critical radiant flux: to ASTM E648. Pass. Class 1.
  - .7 Smoke generation: to ASTM E662. Less than 450. Pass.
  - .8 Surface burning: to CAN/ULCS-102.2. Tested.
  - .9 Acceptable Material: Altro Classic 25. Colour: Graphite number X2546R11.
- .3 Resilient base: to ASTM F1861, solid rubber. Type TP thermoplastic rubber. Top set, coved. Single length per location. 101 mm high x 3.17 mm thick x 30.5 m coiled length. Including premoulded end stops and external corners. Provide in a single length per wall section.
  - .1 Colours: a minimum of 20 different colours will be selected by Consultant from full and extended range of available colours including premium and accent colours. Provide a standard colour range of a minimum of 100 colours.
  - .2 Adhesive: premium solvent free or contact adhesive for porous or non porous wall surfaces as recommended by base manufacturer.

## 2.02 ACCESSORIES

- .1 By same manufacturer of flooring:
  - .1 Cove former: preformed section to allow flooring to extend up wall and create a seamless coved baseboard. 32 x 32 mm and 20 x 20 mm sizes.
  - .2 Capping seal. Integral vinyl shape to accept top edge of flooring where flooring terminates on vertical surface. 42 mm overall height with 17 mm high return to accept flooring. Self sealing without the need for sealant.
  - .3 Provide additional components to create seamless watertight terminations at vertical doorways, floor drains and other penetrations in the flooring
- .2 Primers and adhesives: waterproof type as recommended by flooring manufacturer for specific material on applicable substrate, above, on or below grade. Low VOC.
- .3 High strength sub-floor filler and leveler: 2 part, latex modified, portland cement mortar requiring no water to produce cementitious paste. As recommended by manufacturer for use with their product. Minimum compressive strength of 25 MPa.
- .4 Metal edge strips: solid stainless steel with lip to extend under floor finish, shoulder flush with top of adjacent floor finish. Polished finish.
- .5 Edging to floor penetrations: solid stainless steel, type recommended by flooring manufacturer. Polished finish.

## Part 3 Execution

### 3.01 MANUFACTURER'S INSTRUCTIONS

- .1 Comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and datasheet.

### 3.02 SITE VERIFICATION OF CONDITIONS

- .1 Ensure concrete floors are clean and dry using test methods recommended by manufacturer.
- .2 Test sub floor for moisture content in accordance with flooring manufacturer's instructions using the Vaprecision vapour emission test. Perform moisture condition test in each major area. A minimum of 1 test per 93 square meters prior to installation. Moisture condition shall not exceed 1.6 kg per 93 square meters per 24 hour day in accordance with manufacturer's recommendations. Do not proceed with work until results of moisture condition tests are acceptable.
- .3 Leave concrete slabs clean and ready to receive new flooring. Do not proceed with application of new flooring until prepared surfaces have been accepted by consultant. Verify floor and wall surfaces are free of substances that may impair adhesion of adhesive.

### 3.03 PREPARATION

- .1 Remove sub-floor ridges and bumps. Fill low spots, cracks, joints, holes and other defects with sub-floor filler.
- .2 Clean floor and apply filler. Fill low spots, cracks, joints, holes and other defects with sub-floor filler to achieve floor level to a tolerance of 1:500. Trowel and float to leave smooth, flat hard surface. Prohibit traffic until filler cured and dry.
- .3 Vacuum clean all floor surfaces. Wet mop as recommended by manufacturer to obtain clean, dust free surfaces.
- .4 Prime or seal concrete slab to resilient flooring manufacturer's printed instructions.

**3.04 APPLICATION: FLOORING**

- .1 Apply adhesive uniformly using recommended trowel in accordance with flooring manufacturer's instructions. Do not spread more adhesive than can be covered by flooring before initial set takes place.
- .2 Lay flooring with seams parallel to building lines to produce a minimum number of seams. Border widths minimum 1/3 width of full material.
- .3 Run sheets in direction of traffic. Double cut sheet joints and continuously seal according to manufacturer's printed instructions.
- .4 Heat weld all linoleum sheets in accordance with manufacturer's instructions.
- .5 Heat weld all vinyl sheets in accordance with manufacturer's instructions.
- .6 As installation progresses, and after installation roll flooring in 2 directions with 45 kg minimum roller to ensure full adhesion.
- .7 Cut flooring neatly around fixed objects. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.
- .8 Install flooring in pan type floor access covers. Maintain floor pattern.
- .9 Continue flooring over areas which will be under built-in furniture.
- .10 Continue flooring through areas to receive movable type partitions without interrupting floor pattern.
- .11 Terminate flooring at centreline of door in openings where adjacent floor finish or colour is dissimilar.
- .12 Install metal edge strips at unprotected or exposed edges where flooring terminates. Install metal edge strips with adhesive.

**3.05 APPLICATION: BASE**

- .1 Resilient Base: Lay out base to keep number of joints to a minimum. Clean substrate and prime with one coat of adhesive. Apply adhesive to back of base. Set base against wall and floor surfaces tightly by using 3 kg hand roller. Install straight and level to variation of 1:1000.
- .2 Scribe and fit to door frames and other obstructions. Use premoulded end pieces at flush door frames. Cope internal corners. Use premoulded corner units for right angle external corners. Use formed toeless base material for external corners of other angles. Wrap around toeless base at external corners.

**3.06 INITIAL CLEANING**

- .1 Remove excess adhesive from floor, base and wall surfaces without damage.
- .2 Do not wax floor surfaces. Clean floors and baseboards in accordance with Manufacturer's instructions.

**3.07 PROTECTION OF FINISHED WORK**

- .1 Protect new floors from time of final set of adhesive or after initial waxing until final waxing inspection.
- .2 Prohibit traffic on floor for 48 hours after installation.

**END OF SECTION**