1.0  **GENERAL**

1.1  **Co-ordination Requirements**

.1  Coordinate with the Facilities Transition Team, Infrastructure Development.

.2  Coordinate with UBC Learning Space Guidelines for provision of assistive listening devices in classrooms, auditoria and meeting rooms over 100sqm and where such devices are to be installed under new resilient flooring.

1.2  **Description**

.1  Resilient Flooring and Bases.

1.3  **Performance Standards**

.1  National Floor Covering Association of Canada (NFCA) - Floor Covering Reference Manual.

.2  Applicable product Standards including CSA, CGSB and ASTM.

1.4  **Quality Control and Assurance**

.1  **Submittals**

.1  Before Start of Work

.1  List of each proposed materials for review, and color samples for selection plus for final approval.

.2  MSDS Material Data Sheets for review and posting at jobsite.

.3  Manufacturer requirements for bond and moisture tests, and reports of test results to indicate substrate conformance.

.2  At Completion

.1  Maintenance data shall be an itemized list c/w manufacturer/distributor name, product type and color.

.2  Maintenance material shall be a minimum 5% of each product/color used (no cuttings), 2% if the standard materials listed below are utilized.

.3  Include sufficient adhesive in unopened containers. Package and label, including project name and number, and hand over at a UBC location to UBC Project Manager; obtain receipt.

.4  Maintenance Manual shall be manufacturers’ recommended maintenance procedures and products.

.2  Quality Assurance

.1  For sheet material, installer to be a certified manufacturer-trained "Master Mechanic" (or similar term), completely familiar with the products, seam welding, and the manufacturer currently recommended methods and conditions of installation. Submit certificate of qualification. Similarly for other resilient flooring installers, when available.

.2  Adhesives and auxiliary products to be as recommended in writing by each resilient flooring manufacturer.

.3  Flooring contractors to be a member in good standing with the National Floor Covering Association of Canada (NFCA).
.4 Site inspection required prior to installation of flooring material to ensure the completion of the warranty.

.3 Quality Control
   .1 Manufacturer preference shall be a registered ISO 9001 quality system.
   .2 The manufacturer's representative shall inspect the work when required during the contract, and at completion prior to submitting the manufacturer's warranty.
   .3 Install resilient flooring only when moisture emission from concrete substrate is at or below the maximum permissible level of 8 lbs. of water per 1000 sq.ft., based on qualitative tests using calcium chloride test kits developed by the Resilient Flooring Institute, and to manufacturer's requirements.

.4 Warranties
   .1 In addition to a 2-year warranty, submit a 5-Year manufacturer limited warranty for sheet flooring work.

.5 Commissioning
   .1 Conduct a walkthrough prior to handover to Facilities with the Custodial Services Group on recommended maintenance procedures and products, by manufacturer representative in presence of trade contractor.
   .2 Refer to the CPG-01 located here for additional guidance on setting up demonstrations for Building Operations personnel.

.6 Maintenance
   .1 Refer to Section 01 77 00 Closeout Procedures, 3.0 Cleaning.

2.0 MATERIALS

2.1 Performance Requirements
   .1 General
      .1 Products to conform and perform to Manufacturer published literature.
   .2 Environmental
      .1 Source
         .1 Manufacturer preference for registered ISO 14001 Environmental Management System.
      .2 Manufacture
         .1 Select materials of lowest VOC content, including adhesives which preferably should be water-based.
         .2 Select products with highest natural material content: Use linoleum as much as is practical, as the preferred product.
         .3 Consider the use of occupancy ready linoleum which is produced from natural renewable ingredients.
      .3 Maintenance
         .1 Suggest cleaning agents of least impact on environment.
      .2 Disposal
         .1 Products containing PVC: do “NOT” incinerate.
         .2 Dispose for recycling wherever possible.
2.2 Prescriptive Requirements

.1 Materials – Acceptable products

.1 Linoleum with heat-welded seams
.1.1 Linoleum must be used in corridors, and may be used in lecture theatres and classrooms; do “not” install on concrete slabs below grade, slabs on grade without a vapor barrier, wet areas such as entrance lobbies, (where walk-off mats on toweled concrete is preferred), in washrooms, and wet laboratory areas (where chemical staining and deterioration under prolonged water saturation will occur).
.2 Install linoleum in teaching labs, maker spaces wherever undergraduates work, (not carpet).
.3 Linoleum is not suitable for locations where water may collect such as below grade, entrances, washrooms and wet laboratories.
.4 Large size linoleum tiles may be used. Their use allows Facilities to maintain the floors, which sheet goods do not.
.5 All linoleum sheet products to be installed using heat-welded seams.

.2 Sheet Vinyl with heat-welded seams
.1 Use typically for wet laboratories and wet areas as discussed above; include flash-coved base where cleanliness is critical (toxic or radiation areas: discuss with UBC Risk Management Services).
.2 Large size vinyl tiles. As with linoleum tiles this product allows Facilities to maintain the floor finish, where sheet goods do not.

.3 Slip-Resistant Sheet Vinyl with Heat-Welded Seams
.1 Use (include flash-coved base).
.2 Washrooms and wet areas (as option to ceramic or similar tile), food service areas, janitor rooms, and wet laboratories.

.4 Vinyl Composition Tile (VCT)
.1 Can only be installed in less-used, low-traffic areas such as storage rooms, electrical rooms, vaults etc.
.2 Do not install VCT in well-used public areas, such as classrooms, lecture theatres, and corridors. VCT shrinks over time because the fillers dry the product out.
.3 VCT does not have the reinforcement strength that the old asbestos filler used to have. This allows water or traffic to release edges causing delamination. In lab areas where hazardous and often heavy materials (gas cylinders) are constantly transported, VC tiles have proved to be potentially dangerous and have caused tipping and tripping hazards. VCT has not proved to be satisfactory under life-cycle analysis.

.5 Rubber Sheet Flooring with Heat-Welded Seams
.1 Should be slip-resistant and include flash-coved base.
.2 Acceptable for use in washrooms, exercise rooms and public corridors. In public corridors, ensure the rubber flooring type and colour is suitable for intended use and traffic.
.3 Acceptable for use in wet laboratories. If using in wet laboratories, all maintenance and replacement will be customer-funded.

.6 Rubber Floor Tile
.1 Acceptable for use in public corridors and should be slip-resistant. Ensure the rubber floor tile type and colour is suitable for intended use and traffic.
.2 Can also be installed in less-used, low-traffic areas such as storage rooms. Do not install in custodial rooms or closets.
.3 Do not install rubber floor tiles in wet laboratories.
.4 Provide heat-welded seams.

.7 Rubber Cove Base shall typically be 102 mm (4") or 6" high and to match flooring colour as chosen by the architect.

3.0 OTHER

.1 Cleaning
   .1 Refer Section 01 77 00 Closeout Procedures, 3.0 Cleaning.

.2 Turn-Over Procedures
   .1 Contractor to protect resilient flooring in doorways with undyed card board or treated paper until floor has been handed over to and accepted by UBC Project Manager and Custodial Services. UBC Project Manager must contact the UBC Custodial Manager prior to occupancy to allow for burnishing and finishing plus general cleaning unless work will be carried out by the contractor to UBC Custodial Services specifications.

***END OF SECTION***