SPECIFICATION GUIDE 09 65 00 - RESILIENT FLOORING

Revision 01 - December 2018

B06A-1 General
B06A-2 Products
B06A-3 Execution

1 • GENERAL

1.1 **Description**

SPEC NOTES:

1. *This article (1.1) is not intended to scope resilient sheet and tile flooring work but to serve as a general description. The onus of defining the extent of this section of Work remains with the General Contractor, who will ensure that the area / scope of responsibility of any particular Subcontractor / supplier is set out in full detail when awarding the contract for resilient flooring work. The extent of this section of Work is also governed by the limits of local trade agreements and conditions. This article should be used in conjunction with Related Work.*
2. *Subfloor preparation work is not included under this section, except as noted in Part B04A - Scope of Work. If extended preparation work is required, this must be specified, and a Separate Bid used, or a Separate Price requested for this work as necessary. Part A12 - Substrate Preparation, Part A13 - Patching and Filling, and Part A16 - Specification Guides for information.*
3. *Existing flooring to be removed is normally included in demolition work by the General Contractor (in Division 02). If its removal is the only demolition work, removal requirements could be included herein as an additional cost. Refer to Part A10 - Acceptable Conditions and Part B04A - Scope of Work.*
4. *Labour requirements for the removal of asbestos-containing flooring materials and adhesives and/or any other hazardous flooring material must be Bid under a separate contract prior to the start of any new floor covering work. (Refer to Part A10 - Acceptable Conditions and Part B04A - Scope of Work).*

.1 **Section Includes:** All labour, materials, equipment, and services to supply and install resilient flooring to
areas noted on drawings and schedules and as specified herein.

.2 The work shall also include but not necessarily be limited to the following:

SPEC NOTES:

1. *The following is in compliance with Part B04A - Scope of Work and excludes maintenance data and cleaning instructions. Other jurisdictions may vary. The specifier must verify these requirements with the applicable Provincial Floor Covering Association and local trades.*
2. *Delete, revise, or add to example selections listed below as required.*

.a review and acceptance of conditions and surfaces.
.b job site coordination and co-operation.
.c resilient stair treads and risers including related accessories.
.d resilient bases.
.e trims and accessories.
.f special (cut-in) patterns.

.3 The following shall be supplied by others:

.a acceptable substrate surfaces.
.b testing for moisture and alkalinity unless otherwise noted herein.
.c threshold at entries in accordance with the requirements of Section 08 70 00.
.d removal and disposal of existing floor covering materials including adhesive.

SPEC NOTE: *Use the following only if Separate, Alternative, and/or Unit Pricing is required and select / amend to suit. Refer to Part A16 - Specification Guides for information. Note that such pricing is indicated using the Section number as an aid to listing such pricing in a numerical order on the Bid Form. The following items .4 and .5 are examples only; specifiers may choose an alternate method.*

.4 **Separate Prices:** Provide the following separate price and note same on Bid Form:

.a **Unit Price 096500-U1** for lineal [metre] [foot] of resilient flooring flash coved based.

.5 **Unit Prices:** Provide the following Unit Price and note same on Bid Form:

.a **Unit Price 096500-U1** for lineal [metre] [foot] of resilient flooring flash coved based.

.6 This Section along with the drawings forms part of the Contract and is to be read, interpreted, and coordinated with all other parts.

.7 Division 00 - Procurement and Contracting Requirements and Division 01 - General Requirements form an integral part of this Section of Work.

.8 **Related Work Specified Elsewhere:** Related work includes but is not necessarily limited to the following:

SPEC NOTE: This lists work directly related to this section but not to be included as part of this section. Delete, revise, or add to example sections listed below as required. This is not a comprehensive list. Refer to CSC Master Format for additions Sections that may be related and amend as required. Coordinate items with other Sections of Work in the Project Manual.

Section 02 40 00	Demolition / Alterations (removal / disposal of existing floor finishes)
Section 02 42 10	Existing Flooring Removal (for flooring Contracts only)
Section 02 82 00	Facility Remediation (hazardous material removal)
Section 03 30 00	Cast-in-Place Concrete (substrates including topping and finishes)
Section 03 54 15	Cementitious Underlayment (for levelling)
Section 06 10 00	Rough Carpentry (subfloor framing and sheathing)
Section 06 20 00	Finish Carpentry (floor underlayment, wood bases)
Section 06 40 00	Architectural Woodwork (millwork bases, stair posts and railings)
Section 07 92 00	Caulking and Sealants
Section 07 95 00	Expansion Joints (floors and walls)
Section 08 70 00	Hardware (thresholds by others)
Section 09 29 00	Gypsum Board (wall finishes for base)
Section 09 30 00	Tiling (transitions to resilient flooring)
Section 09 62 19	Laminate Flooring (transitions to resilient flooring)
Section 09 62 23	Bamboo Flooring (transitions to resilient flooring)
Section 09 62 29	Cork Flooring (transitions to resilient flooring)
Section 09 64 00	Hardwood Flooring (wood bases and transitions to resilient flooring)

Section 09 65 30 Static Control Resilient Flooring (transitions to resilient flooring)
Section 09 68 00 Carpet Flooring (transitions to resilient flooring)
Section 12 35 30 Residential Casework (millwork base)
Division 22 Mechanical (floor drains, trenches, clean-outs, etc.)
Division 23 Heating, Ventilation, and Air Conditioning (floor grilles, etc.)
Division 26 Electrical (floor outlets / boxes for power and communications, etc.)

1.2 Reference Standards:

.1 The latest edition of the Floor Covering Reference Manual issued by the National Floor Covering Association of Canada (NFCA) shall govern all materials and workmanship. Whenever reference is made within this specification to NFCA requirements it shall mean, as a minimum, those standards and requirements noted in the NFCA Reference Manual.

.2 The latest applicable edition of the following reference standards shall also govern all materials and installation work specified herein as applicable:

SPEC NOTE: *Select appropriate standards and delete all others. Add other applicable consensus standards required which may include those dealing with indoor air quality, etc. Ensure that standard date is current before including.*

CAN/CSA A23.1-00, Concrete Materials and Methods of Concrete Construction.
ASTM F710,Standard Specification for Preparing Concrete Floor to Receive Resilient Flooring
ASTM F3311, Standard Practice for Mat Bond Evaluation of Performance and Compatibility for Resilient Flooring Systems Components Prior to Installation.
ASTM F3191 Standard Practice for Field Determination of Substrate Surface Water Absorption (Porosity) for Substrates to Receive Resilient Flooring.
ASTM 1482, Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring
ASTM F1066, Standard Specification for Vinyl Composition Floor Tile.
ASTM F1303, Standard Specification for Sheet Vinyl Flooring With Backing.
ASTM F1344, Standard Specification for Rubber Floor Tile.
ASTM F1700, Standard Specification for Solid Vinyl Floor Tile.
ASTM F1859, Standard Specification for Rubber Sheet Flooring Without Backing.
ASTM F1860, Standard Specification for Rubber Sheet Flooring With Backing.
ASTM F1861, Standard Specification for Resilient Wall Base.
ASTM F1913, Standard Specification for Vinyl Sheet Floor Covering Without Backing.
ASTM F2034, Standard Specification for Sheet Linoleum Floor Covering.
ASTM F693, Standard Practice for Sealing Seams of Resilient Sheet Flooring Products by Use of Liquid Seam Sealers.
ASTM F1516, Standard Practice for Sealing Seams of Resilient Flooring Products by the Heat Weld Method (when Recommended).
ASTM F355, Test Method for Shock-Absorbing Properties of Playing Surface Systems and Materials.
ASTM F1292, Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment.
ASTM F1931, Standard Test Method for Characterization of Gymnastic Landing Mats and Floor Exercise Surfaces.
CGSB 20-GP-32M, Matting, Floor, Rubber or Plastic.
CAN/ULC-S102, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
CAN/ULC-S102.2, Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies.
Industrial Health and Safety Regulations of the Workers Compensation Board (WCB).
Workplace Hazardous Materials Information System (WHMIS).

1.3 Quality Assurance:

.1 All preparation, materials, and workmanship shall be in strict accordance with NFCA requirements and material manufacturer's written recommendations and detail requirements for conditions of work that apply and guarantee / warranty periods noted herein.

.2 Any preparation, materials, and workmanship that does not meet NFCA requirements shall be repaired or replaced in accordance with Quality Assurance requirements at no additional cost to the Owner.

.3 The flooring contractor shall be recommended by the manufacturer / supplier of resilient flooring as qualified to install specified flooring materials including heat welding of seams and must have a minimum of three (3) years local experience and have successfully completed a minimum of five (5) projects with the same or similar materials, quantities, and complexity as this project. If requested provide a list of similar flooring projects completed within the last two (2) years.

SPEC NOTE: *Use the following clause on large commercial / institutional projects and where the Quality Assurance Program is used.*

.4 Only persons who are Trade Qualified or Product Qualified in accordance with NFCA Part A05 requirements shall be engaged in the installation of resilient flooring. *Include the following if the project is under union jurisdiction [*Apprentices may be employed provided they work at all times under the direct supervision of a Trade Qualified person. The ratio of apprentices to journey persons employed on site must not exceed the ratio outlined by local trade regulations.]

.5 For specialty resilient flooring materials or systems the manufacturer=s representative shall review all surfaces and conditions for material applications and provide sufficient site reviews and reports to ensure that the installation is in conformance with the product guarantee requirements.

.6 Pre-construction meeting.

1. Convene a pre-construction meeting in accordance with Section 01 31 19 – All relevant parties shall attend including the Contractor, Concrete Contractor, Flooring Contractor, Consultant (specifying authority), Owners representative, Quality Assurance Program Inspector.

2. Review:
    1. Coordination with Section 03 30 00 for starting concrete flatness, levelness tolerances and slab surface requirements.
    2. Temporary heating and humidity control required for installation of flooring products.
    3. Acceptable substrate conditions (moisture, pH, relative humidity, straightedge gap measurements.

.7 Pre-Installation meeting - See 1.7 Pre-Installation Site Meeting in this section.

1.4 NFCA Quality Assurance Program (QAP) Inspection Requirements:

.1 The cost of the Quality Assurance Program (QAP), shall be included in the cost of the floor covering work. Contact NFCA (www.nfca.ca) for clarifications prior to submitting a bid. QAP costs can be viewed in PART A04B of the NFCA Floor Covering Reference Manual.

.2 The cost of a two-year, 100% Maintenance Bond is to be carried under the project by the floor covering contractor.

.3 All Work described in this Section is included under the Quality Assurance Program (QAP) of NFCA (National Floor Covering Association), as detailed in section PART A04 Quality

Assurance Program in the latest (online) edition of the Floor Covering Reference Manual of Canada and will be reviewed in accordance with QAP requirements therein by an Inspection Agency assigned by the National Floor Covering Association (NFCA).

.4 Any preparation, materials, and workmanship that do not meet NFCA requirements will be replaced in accordance with Quality Assurance requirements without any additional cost to the Owner.

.5 On award of contract, contact NFCA and request a QA Review Form complete and submit prior to ordering materials.

.6 Qualification of installers performing all work shall meet the requirements detailed in PART A05 Trade Qualifications in the latest edition of the NFCA Floor Covering Reference Manual.

.7 Installer Qualifications – The floor covering contractor at the time of and through-out the performance of the work shall be a member in good standing of the National Floor Covering Association (NFCA) and referenced on the NFCA website (www.nfca.ca)

1.5 Testing Requirements:

SPEC NOTES:

- *Refer to Part A11 - Substrate Testing for information and requirements.*
- *Where there is no General Contractor the flooring contractor shall provide and pay for such testing at an additional cost to the work. Refer to Part B04A - Installation Guide - Scope of Work. Where this is the case delete 1.5.2 accordingly.*

1. Moisture and alkalinity tests shall be conducted by an independent third-party testing agency using testing methods and devices in accordance with NFCA requirements and the floor covering manufacturer's recommendations. In multiple story buildings each floor level shall be tested. All test locations shall be marked on As-Built Drawings.

2. It shall be the responsibility of the Contractor to provide and pay for such testing in a timely manner.

3. The final test results must be in compliance with minimum NFCA requirements, resilient flooring, cementitious underlayment and adhesive manufacturer's recommendations, and unless otherwise permitted by the floor covering material manufacturers [and approved by the NFCA Quality Assurance Inspector]

    1. RH In-Situ Probe test results, conducted according to ASTM F-2170, shall not exceed 85%.

    2. Anhydrous Calcium Chloride test results, conducted according to ASTM F-1869, shall not exceed an MVER of 3 lbs./ 1000 ft² over a twenty-four (24) hour period.

    3. Alkalinity test results according to ASTM F710.

    4. For wood substrates check the manufacturers installation requirements. An electronic pin moisture meter reading of no more than 12% is often recommended (depending on the meter being used).

4. Check substrate surfaces for correct temperature to ensure manufacturers requirements are met. This includes the following:

    1. Hydraulic Cementitious Underlayment. Minimum surface temperature of 10c (50F).

    2. Floor adhesive. Minimum surface temperature of 16c (60F).

5. Check ambient room temperature is at 'service' conditions and meet manufacturers requirements.

6. Check floor covering and related products are within a temperature range recommended by the manufacturer prior to application.

7. Check ambient room relative humidity and ambient room temperature are between 40 - 60% or meet manufacturers requirements for the products being used.

8. Check concrete surface profile meets manufacturers requirements.

9. Check sub-floor surface porosity (water absorption) meets adhesive manufacturers requirements. Conduct tests in accordance with ASTM F3191.

10. Check substrate surfaces for flatness tolerances to ensure they are within NFCA requirements of 3/16" over 10', or as required by the floor covering product manufacturer.

11. Do not install flooring materials until testing results indicate that all substrate surfaces are acceptable for covering. Report any unsatisfactory conditions to the Contractor.

12. ASTM F-710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring shall apply.

13. Perform Mat Bond Tests to confirm acceptable adhesion between all products prior to installation start up.

1.6 Regulatory and Environmental Requirements:

1. Ensure that all materials, including adhesives and other accessory products, are environmentally safe and are not prohibited by any applicable laws, regulations, bylaws, ordinances or orders of any government authority.

2. Ensure that all employees are fully informed and comply, at all times with Workplace Hazardous Material Information System (WHMIS) requirements. Such compliance shall include but not be limited to:

    1. Training of staff in the proper handling and storage of such materials.

    2. Furnishing and use of workplace Material Safety Data Sheets (MSDS) and labels for such materials.

3. LEED and environmental sustainability / recyclability requirements for flooring materials shall include the following:

    1. Flooring materials shall be manufactured locally or be from a local distribution source.

    2. Flooring materials used shall contain natural products or materials.

    3. Flooring materials used must [be 100% recyclable] [contain a minimum recycled material content of [insert %].

    4. Flooring materials including any adhesive and sealant used shall be low VOC materials and shall be conditioned on site to lessen off-gassing.

1.7 Pre-Installation Site Meeting:

1. Before commencement of work on site, the Contractor, resilient flooring contractor, flooring manufacturer's factory/distributor representative and the [Consultant] [Owner] shall meet to discuss the following items:

    1. Where applicable, removal and disposal of existing floor coverings, adhesives and contaminants (sealers, paint, curing agents etc).

    2. Review of substrate requirements and conditions including substrate finish and level and flatness tolerances.

3. Substrate testing for moisture and alkalinity and provision of written results.

4. Other testing requirements such as Bond (Pull) Testing, Porosity, surface compressive strength (psi), concrete surface profile (CSP), existing sub-floor surface requirements.

5. Confirmation of all floor covering materials, i.e., types, patterns / colours and miscellaneous related materials and Mock up.

6. Scheduling of all flooring work, including material deliveries, handling, storage, conditioning, and staging of work.

7. Installation requirements, including heating, ventilation, condition and preparation of acceptable substrates, workspace lighting and protection of completed work.

8. Review of details, including, but not limited to (when applicable) seaming, bases, correct drywall finish for cove former, corners, interfaces with adjacent materials, all expansion and movement joints, floor access hatches (where applicable), and floor penetration (e.g. trench and drain) requirements.

9. Coordination with Mechanical sub-trade to ensure that floor drain types for sheet flooring have a clamping ring and flush floor grate.

10. Inspection procedures and reports. (Including timing of the four reports for multi-phase projects).

11. Flooring contractor requirements:
    1. Provision of project flooring specifications and applicable drawings.

    2. A schedule of materials intended for use on the project and any subsequent addenda.

    3. Changes approved by the Specifying Authority, if any, shall be provided to the QA Inspector as approval is secured.

    4. Provision of a list of names and qualifications of installers prior to commencement of work.

    5. Provision of Consent of Surety (by the flooring contractor) for a 2 year 100% Maintenance Bond.

    6. Notification of conditions that do not meet manufacturer and or NFCA standards.

    7. Notify the QA Inspector a minimum of **five (5) full working days** prior to the start of the floor covering work and the same for subsequent site meetings.

12. Provision of maintenance materials and data requirements for cleaning, treatment and maintenance for each type of flooring installed.

13. Keep minutes of meeting including responsibilities of various parties and deviations from specifications and installation instructions and distribute minutes to attendees within 48 hours

1.8 **Mock-Up:** (use for large projects as required)

1. Prior to installation, install a sample of [each type of] specified resilient flooring to designated area(s) or room(s) in accordance with site meeting requirements to show selected material, pattern / texture / colour schemes, direction of lay, finish fits to walls and doorways, seam finish, top-set base and/or flash cove details at inside and outside corners and/or any other requirements that apply as well as workmanship.

2. Following completion, the installation is to be reviewed by the Consultant, Contractor, resilient flooring contractor, and flooring manufacturer's factory/distributor representative. If accepted, the mock-up sample / room(s) shall serve as the "**Standard**" for all other such work throughout the building. Do not proceed with balance of installation until such approval has been given.

1.9 **Product Delivery, Handling, and Storage**:

SPEC NOTE: Sufficient secure, dry, and heated storage space to store floor covering materials, tools and equipment necessary for installation shall be provided by the Contractor or Owner.

1. Deliver all flooring materials (including adhesives and accessories) wrapped / sealed in original labelled and unopened packaging with type and pattern / colour and registration numbers clearly marked on each roll, carton, or container.

2. Prevent damage to and store all materials in strict accordance with manufacturer's written requirements in a secure dry space on site at locations [designated by the Contractor] [pre-approved by the Owner]. Roll goods shall be stored **on end** and tile boxes should **not** be stacked over four boxes high.

3. Deliver all materials to work areas when required and a minimum of 48 hours before installation to condition materials to site temperature and humidity conditions.

1.10 **Installation Requirements**

1. Work under this Section shall be limited to that indicated under the scope of work of this trade including the correction and filling of minor imperfections and irregularities with a non-shrinking latex-based patching / levelling compound and sanding it smooth.

2. It shall be the responsibility of the General Contractor to provide conditions acceptable for the installation of floor covering materials. This shall include the provision of floor levels, finish tolerances, and conditions in accordance with manufacturer's recommendations and minimum requirements of NFCA Floor Covering Reference Manual Part A10 - Acceptable Conditions including the following:

    1. Concrete slabs - Substrate surfaces equal to or less than a flatness tolerance of 3/16" over 10', as per ASTM 710, or as required by the manufacturer shall be provided by the General Contractor before work of this section proceeds using an acceptable Hydraulic Cement Underlayment and or grinding of high areas as necessary.

    2. Wood subfloor surfaces within flatness and level tolerances noted in PART A10 - Acceptable Conditions based on using straight edge values. Where these values are exceeded the substrate surface shall be rectified by the General Contractor (prior to installing panel underlayment).

    3. Concrete substrates machine trowelled to a smooth (Concrete Surface Profile 1-2), porous (perform porosity test ASTM F-3191), flat surface that are free of all marks, imperfections or conditions that will telegraph through or damage installed flooring materials.

    4. Grinding or sanding of ridges, undulations, projections and areas of carbonation and scaling and filling and levelling of expansion joints, cracks, grooves and other irregularities.

    5. Clean, dry substrate surfaces free of contaminants detrimental to flooring installation (e.g. paint, varnish, oils, release agents, waxes, sealers and curing and hardening compounds not compatible with adhesives employed if flooring is glued down). Surfaces shall be broom cleaned. Removal of existing flooring material including adhesive where applicable.

    6. Removal of existing flooring material including adhesive where applicable.

7. Environmental conditions prior to and immediately after flooring installation meeting the following criteria:

    1. heating, air conditioning and humidity control facilities in operation.

    2. substrate moisture content and alkalinity level within manufacturer's requirements. New concrete and suspect existing concrete surfaces shall be tested in accordance with NFCA requirements by an independent testing agency in a timely manner arranged by the Contractor with costs paid for by the Owner.

    3. environment and substrate temperatures within manufacturer's requirements. This includes the temperature of all materials to be installed and areas to receive flooring be maintained at a minimum of 18°C (65°F) and maximum of 29°C (85°F) for at least 48 hours prior to, during, and after installation, and that a minimum temperature of 13°C (55°F) is maintained thereafter. If temperature is not within range postpone installation until acceptable conditions are provided.

    4. Adhesive requirement - sub-floor surface temperature minimum 16c (60F) and 29c (85F).

    5. humidity range within manufacturer's requirements and as a minimum between 40% and 60% assuming an 18°C to 25°C (65°F to 77°F) temperature. If humidity is not within this range, postpone installation until conditions are suitable.

    6. areas to receive flooring shall be vented 24 to 48 hours prior to installation using fresh circulating air and adequate ventilation (for noxious fumes) shall be provided in accordance with WHMIS and WCB requirements.

    7. areas to receive flooring shall be provided with adequate illumination (minimum of 500 lux at floor level) in accordance with WCB requirements.

8. The final type and condition of each substrate shall be in complete accordance with NFCA requirements and the flooring material manufacturer's installation recommendations.

9. Condition all flooring materials including adhesives on site to avoid potential expansion, contraction, and bonding problems.

10. Consult with and coordinate flooring work and make provisions for all trades in advance to avoid conflict and future repairs. Refer to other flooring Sections for interface details and base type where applicable.

11. Install flooring materials only after all other trade work, especially gypsum board and painting, has been completed and all overhead mechanical and lighting work, and other wall-mounted equipment has been installed.

12. DO NOT proceed with installation until all unsatisfactory conditions have been corrected. Notify the Contractor in writing of all defects likely to impair finished work. Start of work implies acceptance of surfaces and conditions.

13. Unless otherwise noted herein or pre-approved, resilient flooring seams shall be placed with consideration of traffic patterns.

    SPEC NOTE: *When resilient flooring with a high gloss finish is required by the Owner careful attention must be paid to substrate preparation and cleaning requirements in both concrete and flooring specifications, as this type of finish will highlight any deficiencies in the substrate.*

1.11 **Submittals:**

1. All submittals shall be in accordance with the requirements of Section 01 30 00.

2. Submit manufacturer's product literature, technical data in both metric and imperial values verifying compliance with specification requirements, and full range of products and patterns / colours available with sample set for review / selection.

3. Submit manufacturer's product literature of accessory products and full range set of patterns / colours available, and minimum 100 mm (4") long sample of each type of protective edgings and reducer strips to be used for review / selection and pre-approval.

4. If required to meet project LEED requirements, submit manufacturer's documentation as required, including indication of percentage of recycled content contained in each product by colour and recyclability of each product.

5. Within 24 hours after award of Contract place orders for all materials and send copies of all such orders including confirmed delivery dates. No substitutions of specified or pre-approved materials will be entertained.

6. Submit material installation drawings for all areas clearly indicating flooring types, patterns / colours, pattern direction, joint (seam) locations (ie. locations of length and cross seams and open edges) and other details required to clarify the work including type and finish / colour of trims and mouldings used for review before commencing installation.

7. Submit minimum 600 mm (24") square mock-up of flash-coved [slip-resistant] resilient floor assembly showing flash coving, cap trim, feature strip, heat welded joint and corner details for review and acceptability before commencing installation.

8. At project completion, submit a list of all materials installed, including adhesives, accessories and bases clearly indicating material and manufacturer's names, type / pattern / colour name and numbers for Owner's future reference.

9. At project completion submit manufacturer's maintenance data and cleaning instructions for each type of resilient flooring and base installed.

   Note: Unless otherwise noted, flooring will be installed in accordance with industry-accepted practice (i.e., with flooring installed long way of room or corridor and with end seams across the room or corridor). If the Design authority has other requirements, they must be either noted on drawings and/or indicated in the specification to ensure that adequate materials and pricing is included.

1.12 **Maintenance Materials and Data:**

1. **For sheet goods:** At project completion, provide full roll width x length as required to meet [two percent (2%)] of total area or minimum [five (5) square metres (fifty-five (55) square feet)] [ten (10) square metres (one hundred and ten (110) square feet)] from same production run of each type, pattern / colour of resilient flooring installed.

2. **For goods in cartons:** At project completion, provide a minimum of one box of each type and pattern / colour of resilient tile used or the amount required to meet [two percent (2%)] of total area for each product installed or minimum [five (5) square metres (fifty-five (55) square feet)] from same production run for each type, pattern / colour of tile installed.

3. At project completion provide balance of roll but no less than length required to meet a minimum of [two percent (2%)] of total length of each type, colour and height from same production run of resilient base installed to a maximum of [one (1) full roll or 36500 mm (120 feet) for each].

4. At project completion, provide a minimum of one piece but no less than [two percent (2%) of total length] from same production run for each type, finish / colour of flash coved capping installed.

5. At project completion, deliver all maintenance materials as directed and obtain a written receipt stating amount and date delivered. Receipt shall be signed by the Contractor who

shall forward a copy to the Owner. **SPEC NOTE:** NFCA notes that maintenance data, cleaning, and refinishing procedures are excluded from the scope of work for this trade. Such information should be requested from the floor covering manufacturer for each type of resilient flooring installed.

6. At project completion provide cleaning and maintenance data from the manufacturer for each type of flooring material installed for Owner's maintenance manual and later use.

7. At project completion conduct a cleaning, treatment and maintenance training session with facility maintenance personnel.

1.13 **Maintenance Bond** (where Quality Assurance Program is included)**:**

1. Furnish a 100%, Two (2) year Maintenance Bond on completion of resilient flooring work. The Maintenance Bond shall warrant that the work has been performed in accordance with applicable NFCA Quality Assurance Program requirements. The cost of this Maintenance Bond shall be included in this bid.

2. Provide a copy of the bond to be used, together with written proof (Consent of Surety) of ability to furnish the bond at no cost to the Owner with Bid.

3. Refer to PART A04 section 17 (QAP Bond Provisions) of the Floor Covering Reference manual where the NFCA Quality Assurance Program is specified.

1.14 **Warranties:**

1. Provide the following warranties beyond date of Substantial Performance in writing as well as any details of other warranties offered that exceed noted minimum requirements:

SPEC NOTE: *Review manufacturer's warranties and revise noted values (what is really available) or ensure they meet minimum requirements noted.*

.a **Flooring manufacturer:**

- Five (5) year abrasive wear guarantee that resilient flooring will provide specified level of
appearance, subject to proper care and maintenance.

- Seven (7) year abrasive wear guarantee that slip-resistant resilient flooring will provide specified level of appearance, subject to proper care and maintenance.

.b **Flooring installer:**

- One (1) year against substrate preparation / installation failures such as incorrect layout / improper fitting, seam failures, buckling due to bond failure, telegraphing of substrate imperfections, tile slippage / gapping and other deficiencies that can be attributed to poor workmanship.

.c **Adhesive manufacturer:**

- Ten (10) year, including labour and materials, against adhesive failure.

2 • PRODUCTS

SPEC NOTE: *Delete, revise, or add to the items indicated below to suit proje requirements. Note this must be done carefully!*

2.1 **General Requirements:**

.1 All work shall be based on the use of specified materials. Other floor coverings and accessory materials may be approved by the Consultant only before Bid Closing providing they meet or exceed the requirements specified herein. Refer to submittal requirements. No other products will be accepted after Bid Closing.

.2 All colours, patterns, and textures of resilient flooring material (flooring, welding rods, bases, treads, risers, etc.) shall be as selected by the Consultant from manufacturer=s complete range as indicated on Finish Schedules and/or as noted below.

SPEC NOTES:

- *If several different types of floor coverings and/or colours are used on a project, assign type numbers and ensure that they are shown on the Finish Schedule for each respective area.*
- *Check availability of all specified floor materials especially colours.*

2.2 Installation Materials:

.1 **Sheet Underlayment:** plywood, medium density fibreboard, or cementitious board of type to suit conditions and as approved by both board and flooring manufacturers for use as an underlayment under resilient flooring materials.

OR

.1 **Sheet Underlayment:** plywood, medium density fibreboard, or cementitious board of type to suit conditions and as approved by both board and flooring manufacturers for use as an underlayment under resilient flooring materials.

SPEC NOTE: *This underlay does not constitute a waterproof membrane. Confirm suitability with flooring manufacturer before specifying.*

.2 **Substrate Primers and Sealers:** as recommended by substrate filler and resilient flooring manufacturer's

.3 **Substrate Filler:** smooth trowelling, fast setting, non-shrinking, non-cracking, pre-mixed filler with Portland cement and polymeric modifiers (white latex) and a minimum compressive strength of 20 MPa (2900 psi) at 28 days for patching / filling / levelling substrates, type(s) to suit substrate conditions as recommended by each resilient flooring manufacturer. Gypsum based products are not permitted.

.4 **Adhesives:** [premium] [standard] grade, [low VOC (solvent-free)], alkaline and water resistant type to suit material backing and substrate type and condition as recommended by both adhesive and resilient flooring and resilient base manufacturers. Manufacturer=s spread rates shall be strictly adhered to.

.5 **Adhesive for Rubber Mat Flooring:** one-part moisture-cured water-based polyurethane type as recommended by flooring manufacturer to suit substrate requirements.

.6 **Trowel:** (for adhesive) notched type as recommended by flooring material and adhesive manufacturer.

.7 **Roller:** minimum weight as recommended by resilient flooring manufacturer.

.8 **Heat Welding Rods:** [solid colour] [patterned] rods to match / compliment flooring as recommended and supplied by flooring manufacturer, and as selected by the Consultant from manufacturer's standard range.

.9 **Fasteners:** non-corrosive staples, nails, tacks, and screws of type to suit material types and substrate conditions as recommended by accessory manufacturer.

.10 **Sealants:** mildew resistant sanitary sealant to CAN/CGSB 19.22 for use around toilets, tub / shower units and to requirements noted in Section 07 92 00.

SPEC NOTE: *Include the following for rubber mat / large tile flooring when applicable.*

.11 **Rubber Mat Flooring Cleaner:** as recommended by the flooring manufacturer.

.12 **Rubber Mat Flooring Sealer:** [high][medium][low] gloss detergent, water, alcohol, stain and soil resistant, fast drying waterborne acrylic emulsion sealer as recommended by the flooring manufacturer.

SPEC NOTES:

- *Refer to Part B03B for a complete description of the following tile and sheet materials.*
- *Select from the following choices and delete those not required. If there are several different types of resilient flooring and/or colours used on a project, assign type numbers and ensure that they are specified herein and are shown on the Finish Schedule for each respective area.*
- *Refer to manufacturer=s product literature for specific information (size, gauge, data, etc. and revise information and values as required.*
- *Refer to manufacturer's product specs and insert Fire Test Data and Static Load Limit (to ASTM F970 - Modified) ratings if required. Refer to Vinyl Composition Tile as an example.*

2.3 Resilient Tile Flooring

SPEC NOTES:

- *ASTM F1066, Specification for Vinyl Composition Floor Tile Class 1 (solid colour), Class 2 (through pattern), and Class 3 (surface pattern) tile.*
- *This standard replaces CSA A126.1-M1984, Type A (plain), B (mottled) or C (embossed surface design).*

Provide the following resilient tile flooring types:

.1 **Vinyl Composition Tile:** [305 mm (12")] square x [2 mm (0.080")] [2.4 mm (3/32")] [3 mm (1/8")] thick tile to ASTM F1066, Class [1] [2] [3]. [Tile to have a critical radiant flux rating to ASTM E 648 of 0.45 watts/cm2 or more, smoke developed rating of 450 or less to ASTM E662, and flame spread rating of 25 or less and smoke developed rating of 50 or less to CAN/ULC-S102.2 and with a static load limit of 75 psi to ASTM F970.]

.2 **Solid Vinyl Tile:** [305 mm (12")] square x [2 mm (0.080")] [3 mm (1/8")] thick tile to ASTM F1700, Type A.

.3 **Rubber Tile:** [305 mm (12")] [500 mm (19 5/8")] [600 mm (24")] [1000 mm (39 3/8")] square x [2 mm (0.080")] [2.5 mm (3/32")] [3 mm (1/8") thick [profiled] moulded tile to ASTM F1344, with [plain] [marbleized], [smooth] [raised (square)(circle)] [slate] pattern.

.4 **Linoleum Tile:** [480 mm (19")] square x [2 mm (0.080")] [2.5 mm (1/10")] [3 mm (1/8")] [4 mm (5/32") thick tile to ASTM F2034, Type 1, with [marbleized] [plain] pattern.

.5 **Slip Resistant (Safety) Tile Flooring:** [305 mm (12")] square x [2 mm (0.080")] [2.5 mm (1/10")] [3 mm (1/8")] thick [vinyl composition tile to ASTM F1066] [rubber tile to ASTM F1344] with a minimum slip resistance rating of [0.6 for accessible routes] [0.8 for ramps] in accordance with ASTM F13 and F1677 or F1679.

SPEC NOTE: *Refer to manufacturer's literature and verify slip-resistance rating for above noted flooring. Verify that it meets ASTM F13 and either ASTM F1677 or F1679.*

.6 **Sports Tile Flooring:** [305 mm (12")] [457 mm (18")] [915 mm (36")] [1000 mm (39")] square x [*insert size from 2.3 mm to 13 mm (1/2")*] thick [PVC tile to ASTM F1303, ASTM F1913,] [rubber tile to ASTM 1859, ASTM F1860,] and ASTM WK463.

SPEC NOTE: *Use the following if cork flooring is not specified under Section 09 62 29. Refer to this Section for additional information.*

.7 **Cork Tile:** [305 mm (12")] square x [3 mm (1/8")] [5 mm (3/16")] [8 mm (5/16")] thick, [factory] [site] sealed tile to ASTM WK7115 and EN 12104.

2.4 Resilient Sheet Flooring (Roll goods)

Provide the following resilient sheet flooring types [in manufacturer's standard widths, unless otherwise noted herein] [in [915 mm (36")] [1000 mm (39")] [1220 mm (48")] [1830 mm (72")] [2000 mm (79")] [3660 mm (120")] [4000 mm (158")].

Where indicated, provide flooring with smoke developed rating of 450 or less in accordance with ASTM E662 and with a maximum flame spread rating of 25 or less and smoke developed rating of 50 or less in accordance with CAN/ULC S102.

.1 **Flexible Polyvinyl Chloride (PVC) Flooring:** [*insert gauge*] thick [solid PVC flooring in single or multiple layer types with or without solid backing] [unfilled PVC wear surface flooring with laminated open or closed PVC backing] [filled PVC wear surface flooring with laminated open or closed PVC backing] [to ASTM F1303, Type II, Grade 1 with backing] [to ASTM F1913 without backing].

.2 **Inlaid or Filled Sheet Vinyl Flooring:** [*insert gauge*] thick flooring to ASTM [F1303] [F1913].

.3 **Rotogravure Cushion Flooring:** [*insert gauge*] thick flooring to ASTM F1303.

.4 **Linoleum Flooring:** to ASTM F2034, Type 1 [2.0 mm (0.080")] [2.5 mm (1/10")] [3.0 mm (1/8")] [4 mm (5/32")] thick flooring, with [marbleized] [plain] pattern.

.5 **Rubber Flooring:** [2 mm (0.080")] [2.5 mm (3/32")] [3.0 mm (1/8")] thick sheet flooring [without backing to ASTM F1859] [with backing to ASTM F1860], with [plain] [marbleized], [smooth] [raised (square)(circle)] [slate] pattern. *(Insert Fire Test Data and Static Load Limit (to ASTM F970 - Modified) as required.)*

.6 **Slip Resistant (Safety) Flooring:** [*insert type and thickness from types below if only one type*] sheet flooring with a minimum wet and dry slip resistance rating of [0.6 for accessible routes] [0.8 for ramps] in accordance with ASTM F13 and F1677 or F1679. Provide following types:

.a **Sheet Vinyl Flooring:** [2.0 mm (0.080")] [2.5 mm (0.10")] thick, heat-weldable commercial grade homogeneous, non-layered PVC flooring to ASTM [F1303] [F1913] with [silicone quartz, silicon carbide and aluminum oxide crystals] [silicon carbide granules on surface and aluminum oxide and quartz crystals] uniformly dispersed throughout, and with pattern and colour extending throughout, complete with [a fibreglass reinforced vinyl backing] [raised textured surface embossing].

OR

.b **Sheet Vinyl Flooring:** [2.0 mm (0.08")] thick, heat-weldable commercial grade heterogeneous layered flooring to ASTM [F1303] [F1913] with a minimum [0.5 mm (0.020")] thick wear layer of pigmented pure plasticized PVC complete with uniformly dispersed carborundum granules and with pattern and colour extending throughout over a fibreglass reinforced filled PVC base.

OR

.c **Sheet Vinyl Flooring:** [2.0 mm (0.080")] thick, heat-weldable commercial grade homogeneous pigmented pure plasticized flexible PVC flooring to ASTM [F1303] [F1913], Type II, Grade I, with pattern and colour extending throughout complete with raised pattern embossing.

OR

.d **Sheet Rubber Flooring:** [2 mm (0.080")] [2.5 mm (3/32")] [3.0 mm (1/8")] thick sheet flooring [without backing to ASTM F1859] [with backing ASTM F1860], with [plain] [marbleized], [smooth] [raised (square)(circle)] [slate] pattern. *[Insert Fire Test Data and Static Load Limit (to ASTM F970 - Modified) as required.]*

.7 **Sports Flooring:** [5.5 mm (0.22") thick heat weldable commercial grade cushioned sheet vinyl flooring to ASTM F1303, Type II, Grade I, consisting of a [2.0 mm (.080")] homogeneous PVC wear layer with pattern and colours extending throughout, laminated to a [3.5 mm (0.14")] high density foam backing.] [6.5 mm (0.26") thick heat weldable commercial grade cushioned sheet vinyl flooring, consisting of a factory applied, clear polyurethane wear layer, over a homogeneous pigmented pure plasticized flexible PVC layer with pattern and colour extending throughout, laminated to a high-density foam backing].

.8 **Acoustical Flooring:** [4 mm (5/32")] thick, heat weldable commercial grade sheet vinyl flooring to ASTM F1303, Type II, Grade I, consisting of a [1.5 mm (0.60")] thick homogeneous PVC wear layer with pattern and colour extending throughout and a [2.3 mm (0.92")] thick high density vinyl foam interlayer with a [0.2 mm (008")] thick foil backing. Flooring assembly to have a minimum STC value of 2.

2.5 Mat / Runner Flooring:

.1 **Rubber Mat Floor Tile:** minimum 965 mm (38") square x [10 mm (3/8")] [6 mm (1/4")] thick non-laminated floor matting of minimum [50%] recycled tire rubber (buffings, black SBR) and coloured EPDM virgin rubber granules / powder chemically bonded using a non-toxic polyurethane binder, with a minimum Shore A Hardness of 60 to ASTM 2240, [smooth] [pebbled] slip resistant top surface, and [square] [interlocking] edges with type and colours as selected by the Owner / Consultant from manufacturer's complete range.

.2 **Runner Material:** [3 mm (1/8")] [4 mm (5/32")] thick ribbed rubber surface type] [2.4 mm (3 /32")] [3 mm (1/8")] [5 mm (3/16")] thick plain rubber type] x 915 mm (36") wide.

2.6 Other Resilient Flooring:

.1 **Static Control Flooring:** by others in accordance with requirements of Section 09 65 30.

.2 **Outdoor Resilient Floor Coverings:** *[specify in accordance with manufacturers requirements. Consult local floor covering representative for types and styles available. Expect limited choices and availability.]*

2.7 Resilient Stair Coverings:

SPEC NOTES:

- *Select from following choices and delete those not required. If several different types of stair coverings and/or colours are used on a project, assign type numbers and ensure that they are specified herein and are shown on the Finish Schedule for each respective stair area.*
- *Refer to Manufacturer=s product literature for specific information (size, gauge, data, etc. and revise information and values as required.*

- *Refer to Part B03B - Material Guide - Flooring for additional guidance and information.*
- *Use rubber material in high maintenance areas (schools, hospitals, care facilities, etc.), as scuff marks are easily cleaned - not so with vinyl.*
- *Manufactured rubber and vinyl stair treads are made to exact ordered sizes, the flooring contractor cannot be held responsible if the finished step exceeds the tread sizes shown on the detailed drawing. Dimensions given cannot be applied to all types or styles of stair treads.*

Provide the following [residential and light commercial medium duty] [commercial/institutional heavy duty] resilient stair components:

.1 **Stair Tread and Risers:** [moulded rubber] [extruded vinyl] one piece tread / nosing / riser full tread width of stair with [smooth] [non-slip [ribbed] [embossed] [raised [diamond] [square] [circle] tread finish, nominal [50 mm (2")] [38 mm (1 2")] deep [square] [round] nosing, minimum [50 mm (2")] wide clearly contrasting coloured [black] abrasive strip for visually impaired, tapering gauge from [6 to 5 mm (1/4" to 3/16")] [5 to 3 mm (3/16" to 1/8")] thick, and with and colour and pattern from the same production run as [adjacent flooring] [stair landing].

OR

.1 **Stair Treads:** [moulded rubber] [extruded vinyl] treads full tread width of stair with [smooth] [non-slip [ribbed] [embossed] [raised [diamond] [square] [circle] tread finish, minimum [50 mm (2")] [38 mm (1 2")] deep [square] [round] nosing, minimum [50 mm (2")] wide clearly contrasting coloured [black] abrasive strip (for visually impaired), tapering gauge from [6 to 5 mm (1/4" to 3/16")] [5 to 3 mm (3/16" to 1/8")] thick, and with colour and pattern from the same production run as [adjacent flooring] [stair landing].

.2 **Stair Risers:** [2.4 mm (3/32")] [3 mm (1/8")] thick by full tread width and full riser height, smooth [moulded rubber] [extruded vinyl] to match stair treads, [toeless] with [pre-formed toe] and colour from the same production run and to match treads.

OR

.2 **Stair Nosings:** [45 mm (1 3/4") x 25 mm (1")] [45 mm (1 3/4") x 45 mm (1 3/4")] [63 mm (2 1/2") x 32 mm (1 1/4")] by full tread width of stair [moulded rubber] [extruded vinyl] nosing for [resilient] [carpet] treads with [square] [round] nose, clearly contrasting coloured [black] abrasive strip for visually impaired], and with colour [to compliment] [in contrast with] treads] as applicable.

OR

.2 **Stair Nosings:** [rigid PVC] [extruded aluminum] full tread width of stair [with anti-slip insert of contrasting colour], finish and contrasting colour to treads and risers.

.3 **Stair Landings:** [rubber] [vinyl] [sheet] [tile] flooring of colour and pattern from the same production run as [stair treads] [corridor flooring].

.4 **Tactile Stair Warning:** non-slip [embossed] [raised [square] [circle] patterned [rubber] [vinyl] [sheet] [tile] with texture, pattern and colour in contrast to floor covering on landing, of size in accordance with Code requirements x thickness to match adjacent flooring.

SPEC NOTE: *Tactile warning material: Textured or coloured warning strips placed jointly with flooring at entrances of stair and landing installations to alert the visually impaired and pedestrians of potential danger. Consult material manufacturer=s product data for types, sizes and styles available.*

.4 **Stair Stringers:** [2.4 mm (3/32")] [3 mm (1/8")] thick x 254 mm (10") high (or cut from roll goods, smooth sheet [rubber to ASTM F1344] [vinyl to ASTM F1913], by full stair run length with colour from the same production run and to match resilient base.

2.8 Bases:

SPEC NOTES:

- *Select from the following choices and delete those not required. If several different types / heights of bases and/or colours are used on a project, assign type numbers and ensure that they are specified herein and are shown on the Finish Schedule for each respective area.*
- *Refer to Manufacturer=s product literature for specific information (size, gauge, data, etc. and revise information and values as required.*
- *Refer to Part B03B - Material Guide - Flooring for additional guidance and information.*
- *ASTM F1861, Type TP - moulded rubber; Type TV - extruded vinyl.*
- *Use rubber base in high-maintenance areas (schools, hospitals, care facilities, etc.), as scuff marks are easily cleaned - not so with vinyl.*

.1 **Rubber Base:** [3 mm (1/8") thick x [63.5 mm (2 1/ 2")] [102 mm (4")] [150 mm (6")] [200 mm (8")] high top set moulded rubber [coved] [toeless (straight)] base to ASTM F1861, Type TP [, complete with pre-moulded external [and internal] corners].

OR

.1 **Vinyl Base:** [2 mm (0.080")] [3 mm (1/8") thick x [63.5 mm (2 1/ 2")] [102 mm (4")] [150 mm (6")] [200 mm (8")] high top set extruded vinyl [coved] [toeless (straight)] base to ASTM F1861, Type TV [, complete with pre-moulded external [and internal] corners].

OR

.2 **Vent-Cove Base:** 102 mm (4") high x 8 mm (5/16")] thick coved base in minimum 1220 mm (48") lengths to ASTM F-1861, Type TS, Group 1 (solid), with a 75 mm (3") long by 10 mm (3/8") thick toe, colour(s, limited (generally black and brown). Back surface of base to be grooved with vertical semi-circular (5/32" radius) vents (15 vents per 48" length). Provide with minimum 102 mm (4") long prefabricated outside corners.

OR

.2 **Self-Coved Base:** top set [3 mm (1/8") thick moulded rubber base to ASTM F1861, Type TP] [3 mm (1/8")] [2 mm (0.080") thick extruded vinyl base to ASTM F1861, Type TV], [63.5 mm (2 1/2")] [102 mm (4")] [150 mm (6") high, complete with [50 mm (2")] extended toe for heat welded flooring [, and with pre-moulded external [and internal] corners].

OR

.2 **Flash-Coved Integral Base:** fabricated from resilient sheet flooring that is flash-coved [100 mm (4")] [150 mm (6")] up wall face, complete with pre-approved heat welded joint seams and interior and exterior corner details [and with continuous top cap as specified].

.3 **Self / Flash-Coved Base Supports:** minimum 19 mm (3/4") radius (22 mm (7/8") for backed flooring) continuous wood, hard wax, or plastic fillet material as recommended by flooring manufacturer.

.4 **Flash-Coved Base Cap:** continuous [PVC] [pre-finished extruded metal] cap for transition of flash coved resilient flooring with colour as selected by the Consultant from manufacturer's standard range. Provide the following types:

.a termination cap for flooring on gypsum board walls.
.b termination cap for flooring to ceramic wall tile.
.c transition cap for flooring to sheet vinyl wall covering.

.5 Refer to Finish Schedule for base types, locations, and colours and co-ordinate bases with other flooring types as applicable.

.6 Provide bases in minimum 915 mm (36") or long lengths (roll-form).

.7 Use [standard B-wrapped outside corner] [pre-moulded corner] finish. [*If pre moulded corners are required, check for availability.*]

2.9 Protective Edging and Reducers:

.1 **Protective Edgings and Reducer Strips:** [heavy duty commercial] [residential] grade [pre-formed / pre-finished metal] [tapered [rubber] [vinyl] type to suit application and traffic conditions as recommended by resilient flooring manufacturer with material, style, finish, and colour as selected by the Consultant from manufacturer's standard range to match resilient flooring and compliment flooring finishes. Items to be mechanically fastened or glue applied to suit substrate conditions with a vandal proof, non-destructive wear surface as appropriate. Thickness as required for adjoining floor covering.

Note: All trims used must be pre-approved before use in accordance with submittal and design criteria noted herein.

.2 **Protective Edgings and Reducer Strips to Carpet:** by others in accordance with requirements of Section 09 68 00.

.3 **Protective Edgings and Reducer Strips to Ceramic Floor Tile:** by others in accordance with requirements of Section 09 30 00.

.4 **Reducer Edging for Rubber Mat Tile Flooring:** manufacturer's heavy-duty type to suit application with interlocking or straight edge to tile with material, style, finish, and colour as selected by the Consultant from manufacturer's standard range to compliment rubber mat tile.

3. EXECUTION

3.1 Installation Requirements:

.1 Review substrate, environmental conditions and work by other trades to ensure that they are in complete compliance with the manufacturer's recommended installation specification and NFCA Standard requirements prior to the installation of resilient floor coverings. Start no work until all conditions are acceptable.

.2 Ensure that paint, varnish, oils, release agents, waxes, sealers and curing and hardening compounds not compatible with adhesives employed have been removed.

.3 Ensure that all appliances and other movable equipment and furnishings are removed.

3.2 Preparation:

SPEC NOTE: *Testing of substrates for moisture and alkalinity shall be in accordance with NFCA requirements and be provided by the General Contractor (or by the flooring contractor if no General Contractor).*

.1 Verify that moisture and alkalinity testing has been done by General Contractor and field check ratings as required.

.2 The type, location, condition and surface tolerances of substrate must be in complete accordance with NFCA requirements and resilient flooring manufacturer=s recommendations.

.3 Fill substrate low spots, minor cracks, joints and holes with substrate filler to the extent required by scope of work and ensure substrates are free from all bumps, ridges and other imperfections. Feather filler as required to allow for difference in adjacent floor materials. Sand smooth to eliminate all irregularities, bumps, ridges and other imperfections and vacuum clean to provide a surface that will not telegraph imperfections

through resilient flooring.

.4 Seal and prime substrate surfaces if recommended by flooring adhesive manufacturer's recommendations.

.5 Review all site conditions, installation requirements and timetable for work and ensure substrate, environmental conditions and work by other trades is acceptable prior to commencing installation of all materials and to ensure that schedule can be maintained.

.6 Ensure that temperature requirements for installation of materials is within appropriate range prior to, during, and after installation.

.7 Provide adequate means to protect face of doors, door frames and walls from marring due to supply and installation of new resilient flooring and/or removal of existing flooring.

.8 Where applicable, remove existing resilient flooring and dispose of in a legal manner or recycle in accordance with noted requirements.

.9 [After remedial work has been done to subfloors] ensure all surfaces to receive resilient flooring are vacuumed clean and are dry, smooth and free from substances detrimental to filler and adhesive bond (as noted herein).

.10 Remove toilet bowls if installed before sheet flooring so that flooring material butts to toilet flange and replace wax seals and, if necessary, provide new brass anchor bolts and plastic cover caps. Install specified silicone sealant around toilet bowl and bathtub / shower edge, neatly with even and smooth concave surface.

3.3 Installation of Resilient Flooring:

SPEC NOTE: *Modify the following to suit sheet or tile materials used.*

.1 Mix and apply adhesives in strict accordance with manufacturer's written instructions, observing recommended trowel notching, spread / coverage rates, open times and safety precautions. Do not spread more adhesive than can be covered by flooring before initial set takes place. Roll flooring as required (during and after installation) to prevent visible adhesive / trowel marks in high polished flooring. No visible traces of adhesive will be acceptable in sheet or tile joints.

.2 Install all resilient flooring and accessories in accordance with NFCA guidelines using tools, materials, methods and sequence of work as recommended.

.3 Install resilient flooring to mock-up areas and rooms for approval to types and patterns as detailed or scheduled.

.4 Install all resilient flooring to areas and patterns detailed and/or shown on Finish Schedules, and unless otherwise noted or pre-approved, continuous under all appliances and moveable millwork and furniture items and into closets.

.5 Provide contrasting bands, inlays, and features using specified materials double-cut or water-cut (to produce tight fine joints) to shapes, sizes, and profiles shown on drawings and install into positions of installed field material. Correctly match patterned materials and place designs for best visual appearance.

.6 Install resilient tile and sheet flooring with variations in shade or pattern disbursed to obtain a uniform effect, with pattern grain laid in [one direction, long way of room or corridor] [chequer board pattern for tile]. Abrupt variations are not permitted.

.7 Install all resilient flooring continuous through doorways and scribed to fit all projections and vertical surfaces. Terminate flooring at centerline of door in openings where adjacent

floor finish or colour is dissimilar.

.8 Unless otherwise noted on drawings, install resilient sheet flooring with joints straight [long] [short] way of room or corridor, true to plane and symmetrical with minimum [one half] [one third] width of sheet at perimeters.

.9 Install resilient tile flooring with joints straight, true to plane and symmetrical with minimum half width tile at perimeters, but not less than 150 mm (6") wide, unless otherwise necessitated by irregular shaped rooms.

.10 Keep resilient sheet joints to a minimum and conceal from view where possible with locations pre-approved by the Consultant prior to installation. Minimize sheet joints by using full width rolls, wherever possible. Follow manufacturer=s recommendations in regard to reverse or non-reverse lay for best colour match.

.11 Cross seams and seams at doors and at pivot points shall be avoided unless unavoidable by material width or roll length. Such conditions shall be reviewed with and pre-approved before proceeding.

.12 Install resilient sheet flooring with double cut [pre-approved [chemically welded joints] [heat welded joints using matching colour rods] [at all wet areas] [with heat welded joints seams finished flush with floor and free from voids, recesses and raised areas].

.13 Install resilient sheet flooring into clamping ring of floor drains and down into trench drains where applicable. Cutting and caulking of such flooring flush with floor drain grate / trim is not acceptable and flooring will be rejected.

.14 Cut and install resilient flooring around and to fit tightly to crawl space access hatch frame and within hatch recess with cut-out for key / lock access as required.

.15 Caulk with vandal proof / waterproof sealant at perimeter of linoleum abutting walls, millwork bases and other projections in wet areas.

3.4 Installation of Slip-Resistant Flooring / Waterproof Underlay Membrane:

SPEC NOTE: *Use flat lay method as noted above or flash cove integral base as noted below* in addition to resilient flooring installation requirements noted above:

.1 Fill any voids in substrate with recommended patching compound before installing waterproof membrane material to provide a smooth flat surface.

.2 Loose lay underlay membrane in strict accordance with the manufacturer=s recommendations utilizing full width rolls to minimize joints where possible.

.3 Cut underlay membrane to fit perimeter of vertical surfaces, allowing 6 mm (1/4") gap at all abutments. Material must lay flat with no distorting bumps and with seams butted together to provide a tight neat fit.

.4 Do not seal or use adhesive under seams or edges except where underlay membrane edges are abutting against existing resilient flooring.

.5 Install specified slip resistant flooring material over underlay / membrane in strict compliance with the manufacturer's recommendations.

3.5 Installation of Resilient [Sports] [Acoustical] Flooring:

SPEC NOTE: *Due to the variety of sports and acoustical flooring available, refer to selected flooring manufacturer's recommendations.*

In addition to Resilient flooring requirements noted above:

.1 Install resilient [sports] [acoustical] flooring in areas indicated on drawings and Finish

Schedule in strict compliance with manufacturer's recommendations.

3.6 Installation of Moulded Rubber Tile / Slab Flooring:

.1 Install moulded rubber tile / slab flooring material [loose laid over] [fully adhered to] substrate at locations indicated on drawings and Finish Schedule.

.2 Install flooring with joints straight in a true plane, symmetrical with, and parallel to the axis of the room. Interlock or butt joints with moderate contact and scribe material to fit tightly to abutting surfaces. Patterns and contours of flooring tile / slabs shall match and fit accurately to create uniform effects. Install reducer edging to suit.

.3 Use only adhesives specified and approved by the particular manufacturer and apply using a suitable notched trowel to obtain recommended coverage. Clean any excess adhesive immediately.

.4 Roll flooring material as each section is installed in two directions, with a clean roller weighing at least 45.3kg (100 lbs.).

.5 When using a two-component adhesive follow manufacturer's mixing and installation instructions. Do not pressure-fit tile joints and dry-fit fills along vertical surfaces before applying adhesive. Re-roll flooring and if necessary, place weighs until a complete bond has been achieved. Maintain recommended temperature.

3.7 Installation of Resilient Base:

SPEC NOTE: *Where resilient base is provided for carpet under this Section include the following in brackets*

.1 Provide resilient base to all areas with resilient flooring [and carpet] of sizes and colours as noted on drawings and schedules.

.2 Install base where indicated on schedule in longest practical lengths (minimum 2400 mm (96") long) fitted tightly to floor and vertical surfaces (walls, columns, millwork, etc.). Scribe to door frames and other obstructions.

.3 Fit base at exterior and interior corners in accordance with manufacturer's recommendations and following:

.a Form internal corners by butting and mitring (coping) lip of base on one side.

.b Form external corners by V-grooving back of base and wrapping around outside corners a minimum of 300 mm (12") and bonding to vertical surfaces with contact adhesive

OR

.a Provide matching pre-fabricated external corners that wrap around outside corners a minimum of 300 mm (12") and [matching internal corners] [butt / mitre internal corners] unless otherwise pre-approved by the Consultant.

3.9 Installation of Resilient Flooring Flash-Coved Base:

.1 Provide resilient flooring flash-coved base using [same flooring material] [different coloured flooring material] where indicated on drawings and/or Finish Schedule in strict accordance with manufacturer's installation recommendations.

.2 Install fillet strip (cove backing) to facilitate transition at intersection of wall and floor.

.3 Install continuous base cap of types specified to wall face at heights indicated for base on

Finish Schedule or detailed on drawings ensuring that adjacent pieces are aligned and level.

.4 Install flash-coved base [100 mm (4")] [150 mm (6")] up wall [to heights indicated on Finish Schedule] [and fit top of flooring into continuous cap].

.5 Where resilient wall covering is used, install flooring flash-coved up wall and under wall covering [a minimum of 30 mm (1 1/2")] [to meet resilient wall covering] in accordance with pre-approved details.

.6 Cut, fit, and heat weld base at exterior and interior corners in strict accordance with manufacturer's recommendations and pre-approved details

SPEC NOTE: *Specify type of corner finish, ie. Butterfly V-plug for flexible PVC flooring. Consult with manufacturer for appropriate details.*

.7 Complete and finish all seams in strict accordance with NFCA requirements and flooring manufacturer's detailed recommendations for the type flooring specified.

3.10 Installation of Resilient Stair Treads, Risers and Stringers:

.1 Provide stair covering materials to locations indicated on drawings and Finish Schedule, scribed to fit tightly to profile of stair components and adjacent surfaces.

.2 Install stair treads / risers full width of stairs [less 75 mm (3") each side], with top of riser neatly scribed against next nosing. Apply adhesive evenly to back of coverings at a rate sufficient to bond and to completely fill any gap between step treads and risers, particularly at junctions. Set firmly in position tight to nosing and roll.

.3 Install stair nosings in strict accordance with manufacturer=s recommendations fully adhered to tread edge using methods and (epoxy) adhesive as recommended by manufacturer.

.4 Install tactile warning strips at stair landings where shown, width of stair x 750 mm (30") deep, set back from front edge of stair one tread depth.

.5 Install specified resilient [sheet] [tile] flooring to stair floor [and intermediate] landings. [Install specified resilient stair landing material to intermediate stair landings.]

OR

.5 Install landing tile and tactile warning strips in sheet or tile form with joints symmetrical. Cut edges neatly and accurately, finish flush with rear of stair tread. Stair tread and tactile warning strip pattern to align and be consistent in each tread.

.6 Install stair treads and nosing's flush with surfaces of floor covering materials on landings.

.7 Install resilient stair stringers to heights specified, scheduled, or detailed before treads / nosing's and risers accurately scribed / fitted tightly to stair profile and wall surfaces and aligned with and cut to suit base on landings. Securely bond stringer to substrate in a straight line.

3.11 Installation of Protective Edgings and Reducer Strips:

.1 Install protective edgings / reducer strips to all exposed resilient flooring edges as required to suit conditions, securely bonded to substrate and in a straight line.

.2 Coordinate edging adjacent to carpet with Section 09 68 00 as applicable.

.3 Refer to Section 09 30 00 - Ceramic tile for supply and installation of edging adjacent to ceramic tile (including marble, slate, etc.).

3.12 Installation of Rubber Runner Material

.1 Install rubber runner material [loose laid over] [fully adhered to] substrate at locations indicated on drawings and Finish Schedule, scribed to fit tightly to abutting surfaces with adjoining lengths neatly fitted and butted.

.2 Where separate pieces are joined, surface contours shall match and fit accurately.

.3 To ensure uniform adhesion roll with clean roller.

3.13 Cleanup, Adjustment and Protection:

.1 On completion remove all floor covering waste and scraps from areas and rooms worked in, and from the job site, AND inspect all installed floor covering for adjustments and repairs required. Provide a list of deficiencies to the Consultant / Flooring QA Inspector.

.2 Remove excess adhesive from floor, base, and wall surfaces without causing damage.

.3 Prohibit traffic on all installed resilient flooring for 48 hours after installation.

.4 Protect resilient flooring with suitable non-marring covering from time of final set of adhesive until just before final inspection. Refer to Section 01 60 00 for protection after installation until Substantial Performance.

SPEC NOTE: *As the floor covering subcontractor will not be able to control the work or actions of other trades or persons that might cause damage, the overall responsibility for protection of floor coverings from completion of flooring work until it is accepted by the Owner is the responsibility of the General Contractor.*

.5 Protect resilient flooring against damage from rolling loads by covering with plywood or hardboard.

SPEC NOTE: *Include the following only when this type of flooring with site applied finish is included.*

3.14 Cleaning and Sealing of Rubber Mat Flooring:

.1 After installation of rubber mat flooring clean flooring using cleaner and method recommended by the manufacturer.

.2 Apply three coats of clear matt sealer over mat flooring surface at application rates recommended by the manufacturer and allow to dry between coats.

.3 Prohibit traffic on mat flooring for a minimum of 24 hours after sealing.

END OF SECTION