PART ONE: GENERAL

1.1 Summary

1.1.1 Section includes general administrative and procedural requirements governing execution for Laminate Flooring for interior applications. Section includes laminate products and applications, including those specified in other Sections where laminate requirements are specified by reference to this Section including but not limited to, the following:
   a. Commercial Laminate Flooring
   b. Floating foam underlayment
   c. Coordinated transitions and moulding pieces
   d. Miscellaneous installation materials.

1.2 Related Documents

1.2.1 Construction Documents and general provisions of the Agreement Between Owner and Construction Manager and the Guaranteed Maximum Price (GMP) Amendment, including Division 00 General Conditions of the Contract for Construction and Supplementary Conditions and other Division 01 Specification Sections, applicable to this Section. All methods herein are to follow all applicable state and local code as well as installation standards.

1.2.2 Comply with the requirements of the various specifications and standards referred to in the contract Plans and Specifications, except where they conflict with the specific requirements of these contract Plans and Specifications. Such reference specifications and standards.

1.3 Reference Standards

1.3.1 American Society for Testing and Materials (ASTM)
   b. ASTM E 662 (Smoke Generation) Maximum Specific Optical Density
   c. ASTM E 90 (Classified by E 413) Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements (STC)
   e. ASTM F 970 (Standard & Modified) Test Method for Static Load Limit.
f. ASTM F 710 - Standard Practice for Preparing Concrete Floors.
g. ASTM F 1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
h. ASTM F 2170 - Standard Test Method for Determining Relative Humidity in Concrete Slabs Using In-Situ Probes.

1.3.2 National Fire Protection Association (NFPA):
   a. NFPA 253 Test Method for Critical Radiant Flux of floor covering systems using a radiant energy source
   b. NFPA 258 Test Method for Specific Density of Smoke Generated by Solid materials

1.4 Submittals

1.4.1 All submittals shall be made in accordance to section 01 33 00 and as specified herein. Contractor is to submit the following to Owner and/or Consultant for approval prior to construction and fabrication:

1.4.1.1 Shop Drawings/floor layouts indicating installation methods, transitions/moulding details, manufacturer’s installation instructions, and detail of additional accessory items.

1.4.1.2 Submit three (3) samples for each type of glass product as follows:
   1. Submit plank width x 12” long sample
   2. Submit 6” lengths of each transition/moulding to be used for installation.

1.4.1.3 Manufacturer’s Certification to verify materials comply with specified requirements and suitable for intended application.

1.4.1.4 Product data for each specified product.

1.4.1.5 Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors where exposed.

1.4.1.6 Warranty

1.5 Quality Assurance

1.5.1 Control Samples: Laminate shall match the Engineer's control samples in all respects. Control samples require the Engineer's approval before they may be used as a standard.

1.5.2 Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.5.3 Source Limitations: Obtain each material required for any one type and color from a single source to minimize variations in appearance and quality.

1.5.4 All work of this Section shall be performed by skilled installers of the trade and shall be of the highest quality. Company specializing in manufacturing the products specified in this section with minimum five years of documented experience.
Comply with applicable Industry Standards for all work and materials as specified. Such Industry Standards are to include but not be limited to the applicable provisions or standards in this section.

1.5.3 Mock-Up - Typical Floor Panel: The Contractor shall install a typical floor panel, approximately 3-feet square in an appropriate location. Mock-up shall include joint treatment and other accessories/transitions as required for a finished installation. Maintain accepted panel as the standard for completed work. Provide a typical floor panel for each different type of laminate flooring and floor design indicated. Mock-up will be provided for evaluation of surface preparation techniques and application workmanship for each type using manufacturer approved installation methods. Do not proceed with production work until workmanship and finishes are approved by Architect and/or Owner and/or designer. Mock-up may remain as part of the work.

1.6 Coordination

1.6.1 Coordinate installation of all glazing items. Furnish shop drawings/flooring layouts, and directions for a complete installation. Deliver all required items and installation accessories to project site in time for installation.

1.7 Delivery, Storage and Handling

1.7.1 Deliver packaged materials in original containers with seals unbroken and labels intact until time of use. Store and handle in strict compliance with manufacturer's recommendations. Protect from damage due to weather, excessive temperatures, and construction operations.

1.7.2 Deliver materials only when environmental conditions meet requirements specified for installation areas. If materials must be stored in other than installation areas, store only where environmental conditions meet requirements specified for installation areas.

1.7.3 Deliver materials sufficiently in advance of installation to acclimate materials to the environment prior to installation if required per manufacturer’s instructions.

1.7.4 Maintain a minimum temperature in the spaces to receive the flooring and accessories of 65°F (18°C) and a maximum temperature of 100°F (38°C) for at least 48 hours before, during, and for 48 hours after installation. Protect all materials from the direct flow of heat from hot-air registers, radiators, or other heating fixtures and appliances. Preferred jobsite Relative Humidity shall be between 35% - 55%, not to exceed limits for optimum product performance. Ensure that permanent HVAC is in operation (minimum 14 days) along with permanent lighting prior to installation. Keep in mind that adverse fluctuations in Relative Humidity
for extended periods of time may result in expansion and contraction of laminate flooring leading to complaints and possible floor failure.

1.7.5 Install flooring and accessories after all other finishing operations and construction have been completed. Close spaces to traffic during the installation of the flooring and protect flooring surface as necessary with a breathable material after the completion of installation. Do not install flooring over concrete slabs or wood substrates until they are sufficiently dry to achieve a bond with the adhesive (especially when employing direct glue down method to substrate), in accordance with the manufacturer's recommended bond and moisture tests.

PART TWO: PRODUCTS

2.1 General

2.1.1 Acceptable manufacturer/supplier as specified in contract drawings and/or Interior Design drawing set and specifications or an Owner approved equal. Approved equals and/or substitutions will only be approved for Work if submitted and approved in accordance with provisions of Section 01 25 00.

2.2 Materials

2.2.1 All materials shall be furnished to the quality as specified in the construction drawings and in accordance with the Architect’s/Interior Design specifications. All material qualities shall meet and/or exceed industry standards for the specified application.

2.3 Underlayment, Transitions, mouldings

2.3.1 For added noise reduction, sound absorption, thermal insulation, and moisture barrier provide manufacturer’s recommended underlayment for Floating applications.

2.3.2 Resilient / Acoustical Underlayment: moisture resistant 3 to 6 mm (1/8" to 1/4") thick closed multi-cell polyethylene resilient sheet foam or other type with density and permeability as recommended or approved by laminate flooring manufacturer. Where the underlayment is required to have an acoustical rating care must be taken in the type and density of underlayment used and with manufacturers claims in regard to noise reduction properties.

2.3.3 Provide all available coordinating transitions and moulding pieces designated for the specified laminate collection to meet installation application for finishing and transitioning to other flooring products. Install in accordance with manufacturer’s guidelines and intended use.

2.3.4 Treads: one-piece laminate flooring complete with laminate wrapped bullnose nosing by full tread width for contained (boxed) stairways.
2.3.5 Nosings: separate [overlapping wood] [flush laminate wrapped bullnose] [extruded aluminum] nosing for finish flooring edge at the top of stairs. Note that overlapping nosing is secured to substrate and not to laminate floor so that the floor is free to move. Verify if overlapping nosings meet code requirements before specifying.

2.3.6 Risers: matching one-piece laminate by full tread width x riser height required.

2.3.7 Stringers: one-piece painted, stained wood to match laminate full depth plus base height.

2.3.8 Mouldings and Trim: factory laminate wrapped MDF or HDF material wood of species, grade, and finish] to match laminate flooring pre-finished metal as selected by the Owner/Consultant in full widths, lengths, and profiles to suit conditions as required.

2.3.9 Quarter Round: laminate wrapped to cover gap at walls and other fixed vertical surfaces.

2.3.10 Use the following to cover expansion void at laminate flooring, wall openings (without doors) and where laminate flooring abuts another type of floor finish:
   - a. T-Moulding - doorways or thresholds to join two areas of laminate flooring
   - b. End Caps - used at end of laminate at exterior doorways.
   - c. Reducers: Tapered to join laminate flooring to other flooring materials of varying heights.

2.3.11 Interior Contractor shall submit samples of each underlayment, transition and moulding type to Consultant for approval.

2.4 Adhesives and Accessories

2.4.1 Provide manufacturer’s recommended adhesive for optional glue application on Floating installations. Use of adhesive to seal and glue Laminate joints is not required in Commercial applications but recommended for areas that are likely subjected to topical moisture sources, as a preventative measure. See manufacturer’s limitations to installation in high moisture areas in product literature.

2.4.2 Adhesive for Glued-Down Components: (stair treads and risers as recommended by laminate manufacturer) high strength premium grade low VOC (solvent-free), alkaline and water resistant type specially formulated for glue-down application of laminate flooring stair components (treads and risers) and to suit material and substrate types and conditions as recommended by both adhesive and laminate flooring manufacturers. Spread rates for adhesive shall be strictly adhered to. Provide Adhesive for optional Glue Down application directly to substrate.
Understand that Laminate by design is intended as a floating application with the introduction of a Locking mechanism and seldom requires the use of glue. If requested, can be fully glued provided that the manufacturer’s substrate requirements are met; all recommendations shall be followed in accordance with the manufacturer’s instructions.

2.4.3 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 (or 27.6 MPa (4000 psi) where laminate is glued directly to substrate) for patching / filling / levelling substrates, with type to suit substrate conditions as recommended by adhesive / laminate flooring manufacturer.

2.4.4 For moisture remediation on concrete slabs tested with ASTM method F 1869 exceeding maximum Laminate requirement of 5 lbs/1000 ft²/24 hr period, not to exceed 12 lbs/1000 ft²/24 hr Moisture Vapor Emission Rate (MVER) use the recommended Urethane only adhesives for Floating and Glue down installations.

PART THREE: EXECUTION

3.1 Examination

3.1.1 Do not begin installation until substrates have been properly prepared.

3.1.2 Verify surfaces and substrates are prepared to receive products of this section.

3.1.3 If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of decorative metal.

3.1.4 Examine materials before installation. Reject materials that are defective and/or damaged.

3.1.5 Proceed with installation only after unsatisfactory conditions have been corrected.

3.1.6 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 laminate floor covering manufacturer’s recommendations. Final moisture test results must be in compliance with industry/manufacturer’s standards or meet the following:

   a. RH In-Situ Probe test results, conducted according to ASTM F-2170, shall not exceed 85%
   b. 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.
   c. Alkalinity results shall not exceed a maximum pH rating of 7.
3.1.7 Check substrate surfaces with a metal straight edge and ensure that they are free from all bumps, ridges, and other imperfections detrimental to flooring installation for level tolerances to insure they are within industry standards.

3.2 Preparation

3.2.1 Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.2.2 Grinding or sanding of ridges, undulations, projections and areas of carbonation and scaling and filling and leveling of expansion joints, cracks, grooves and other irregularities

3.3 Installation

3.3.1 Verify floor direction and pattern with Interior Design consultant prior to installation.

3.3.2 Install laminate flooring in strict accordance with flooring manufacturer's directions and to areas and patterns scheduled and detailed on drawings pre-approved shop drawings and Finish Schedules.

3.3.3 Provide expansion void at perimeter vertical interfaces (walls, millwork, adjacent floor finishes, and at openings as required) of width and in accordance with flooring manufacturer's recommendations and requirements using temporary blocking if and as required and expansion material as recommended by flooring manufacturer.

3.3.4 Unless otherwise indicated, install flooring symmetrically about room centre line and parallel to long dimension of room(s) and corridor(s), continuous through doorways, and cut to fit all projections, with all joints straight, true to plane, and with minimum half plank width at perimeters. Stagger end joint locations a minimum of 10 to 12" and seal all cut ends as recommended by manufacturer. When required by manufacturer install specified adhesive to laminate joints in strict accordance with manufacturer's written instructions.

3.3.5 Seal perimeters of wet areas, i.e., in expansion gap under stoves, fridges, and dishwashers with a clear silicone sealant.

3.3.6 Install wood base (and quarter round if required) over expansion void at perimeter of flooring secured to vertical interfaces using nails in accordance with industry standards. Ensure base does not contact floor surface and is not secured to it.
3.3.7 Install protective edgings / reducer strips and laminate thresholds to all exposed laminate flooring edges and interfaces with other flooring materials as required to suit conditions, fixed as recommended by the manufacturer.

3.3.8 Install metal thresholds at openings and where indicated and attached to adjacent rigid floor surface. Where thresholds cover an expansion space, ensure that they are fastened to the substrate and not to laminate flooring, to allow flooring to move (i.e., expand and contract) under the threshold.

3.3.9 Install laminate flooring to treads and riser faces fitted tightly to adjacent wall surfaces allowing for expansion as required and install specified wood base and stringers fitted tightly to horizontal and vertical stair surfaces and to wall surfaces without gaps or voids.

3.4 Protection, Cleaning and Repairs

3.4.1 Protect installed work with Kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by manufacturer.

3.4.2 Prohibit foot and wheel traffic from floors for at least 24 hours after completion.

3.4.3 Before final inspection, remove protective coverings and clean floor surfaces.

3.4.4 Remove and replace any items which are broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.

END OF SECTION