SECTION 24 FINISHES

PART 24 WOOD FLOORING

24.1 GENERAL

24.1.1 Summary

A. This Part includes general requirement for the supply and installation of the following wood flooring system, complete with accessories as required or where indicated:

1. Factory-finished wood flooring.
2. Sound control underlayment.

24.1.2 Submittals

A. Product Data: Submit manufacturers' specifications and installation instructions for each type of product indicated.

B. Shop Drawings: For each type of floor assembly and accessory. Include plans, elevations, sections, details, and attachments to other work. Include expansion provisions and trim details.

C. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors and finishes available for wood flooring.

D. Samples for Verification: For each type of wood flooring and accessory, with stain color and finish required, approximately 300 mm long and of same thickness and material indicated for the Work and showing the full range of normal color and texture variations expected.

E. Qualification Data: For qualified Manufacturer and Installer.

F. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency for each type of wod flooring product specified in this Part.

G. Warranty: Sample of special warranty to be issued upon completion of Project.

24.1.3 Quality Assurance

A. Manufacturer's Qualification: Manufacturer shall be 9001:2000 certified or one certified as employing an equivalent or higher system of quality management; having a minimum of Ten (10) years documented experience in the manufacture of product specified; and capable of providing field service representation, as required by Engineer, during installation.

B. Installer's Qualification: Highly-experienced in, and having a successful in-service record of installing wood flooring products similar in material and scope as those required for the Project.

C. Source Limitation: Obtain each type and color of materials specified for the Works in this Part from a single a source from a single manufacturer.

D. Mock-Up: Install mock-up, including base and shoe mouldings, to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Approval of mock-ups does not constitute approval of deviations from the Contract Documents contained in mock-ups unless Engineer specifically approves such deviations in writing.
2. Install mock-up on site as per location instructed by Engineer.
3. Approved mock-up may become part of the completed Work if undisturbed at the time of Substantial Completion, subject to Engineer's approval.

24.1.4 Delivery, Storage and Handling

A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Protect from dust and dirt.

B. Protect wood flooring from exposure to moisture. Do not deliver wood flooring until after concrete, masonry, plaster, ceramic tile, and similar wet work is complete and dry.

C. Store wood flooring materials in a dry, warm, ventilated, weathertight location.

24.1.5 Project Conditions

A. Conditioning period begins not less than 7 days before installation and shall continue through installation period until not less than Seven (7) days after installation of wood flooring.

1. Maintain an ambient temperature between 18 and 24 deg. C. and relative humidity within range of environmental condition planned for building occupants in spaces to receive wood flooring.
2. Deliver and store wood flooring material in spaces where they will be installed, at no later than the beginning of the conditioning period.
3. Open sealed packages to allow wood flooring material to acclimatize to environmental condition.
4. Do not install wood flooring until it adjusts to relative humidity of, and at the same temperature as, space where it is to be installed.
5. After conditioning period, maintain relative humidity and ambient temperature planned for building occupants.

B. Install factory-finished wood flooring only after other finishing operations, including painting, have been completed.

24.1.6 Coordination

A. Coordinate layout and installation of wood flooring with other adjacent construction to avoid delay of the Works.

24.1.7 Extra Materials

A. Furnish extra materials that matching installed products and packaged with protective covering for storage and clearly marked with identifying label.

1. Provide extra materials equal to 3 percent of quantity installed for each type and color indicated.

24.2 PRODUCTS

24.2.1 Manufacturers: Subject to compliance with this Specification and other parts of the Contract Documents, refer to Section 30.0-Schedule of Preferred Manufacturers.

24.2.2 Factory-Finished Wood Flooring

A. Solid-Wood Flooring (As Applicable): Plank or strip; kiln-dried to 6 to 9 percent maximum moisture content, tongue and groove, end matched; and having the following characteristics:

1. Species: First-grade oak or approved equal.
2. Cut: Quarter sawn or vertical grain, unless indicated otherwise.
3. Thickness: As indicated on Drawings, but not less than 13mm.
4. Face Width: As indicated on Drawings, but not less than 75mm.
5. Lengths: Manufacturer's standard complying with applicable grading rules.
6. Edge Style: Square, unless indicated otherwise.
7. Finish: UV-urethane.

    a. Color: As per Engineer's approved sample from the Manufacturer's full range.

B. Solid-Wood Parquet Flooring (As Applicable): Kiln-dried to 6 to 9 percent maximum moisture content; and having the following characteristics:

1. Species: First-grade oak or approved equal.
2. Thickness: As indicated on Drawings, but not less than 9mm.
3. Edge Style: Square, unless indicated otherwise.
4. Size and Pattern: As per Engineer's approved sample from the Manufacturer's full range.
5. Finish: UV-urethane, unless indicated otherwise.

    a. Color: As per Engineer's approved sample from the Manufacturer's full range.

24.2.3 Sound Control Underlayment (Where Required)

A. Provide impact-absorbing prefabricated polymer-bound recycled rubber or other impact-absorbing underlayment material recommended by wood flooring manufacturer and suitable to type of application required.

1. Thickness: 3mm, minimum.
2. Weighted Impact Sound Reduction (DL_W): Not less than 20dB, per ISO 140.

24.2.4 Accessory Materials

A. Wood Flooring Adhesive: Mastic recommended by flooring and adhesive manufacturer for type of application indicated.

B. Trowelable Leveling and Patching Compound: Latex-modified, hydraulic-cement based formulation approved by wood flooring manufacturer.

C. Fasteners: As recommended by manufacturer.

D. Vapor Retarder: To ASTM D 4397, polyethylene sheet not less than 0.15mm thick.

E. Trim: Provide manufacturer's standard reducer strip, threshold or other molding accessories, where required.

F. Thresholds and Saddles: To match wood flooring. Tapered on each side.

G. Reducer Strips: To match wood flooring; 50mm wide, tapered, and in thickness required to match height of flooring.

24.2.5 Other Materials

A. Provide other materials, not specifically described or indicated but required for the complete and proper installation of wood flooring, as recommended in writing by the manufacturer.

24.3 EXECUTION

24.3.1 Examination

A. Examine substrates, areas and conditions, with Installer present, for compliance with requirements for maximum moisture content, installation tolerances, and other conditions affecting performance of wood flooring.

1. Verify that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.
2. Concrete Slabs: Verify that concrete substrates are dry and moisture-vapor emissions are within acceptable levels according to manufacturer's written instructions.

a. Concrete Slabs: Verify that concrete substrates are dry and moisture-vapor emissions are within acceptable levels according to manufacturer's written instructions.
b. Moisture Testing: Perform tests so that each test area does not exceed 18 sq. m, and perform no fewer than two tests in each installation area and with test areas evenly spaced in installation areas.

    1) Perform anhydrous calcium chloride test per ASTM F 1869.
    2) Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 1.36 kg of water/92.9 sq. m. in 24 hours.

24.3.2 Preparation

A. Grind high spots and fill low spots on concrete substrate to produce a maximum 3mm deviation in any direction when checked with a 3-meter straight edge.

    1. Apply trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, and depressions in substrate.
    2. Verify that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.

B. Remove coatings, including curing compounds, and other substances on substrate that are incompatible with adhesive using mechanical methods recommended by manufacturer. Do not use solvents.

C. Broom or vacuum clean substrate immediately before installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Proceed with installation only after unsatisfactory conditions have been corrected.

24.3.3 Installation

A. General: Comply with flooring manufacturer's written installation instructions. Install solid wood flooring in accordance with approved submittals and in compliance with the approved shop drawings and the Finishing Schedule.

    1. Set in adhesive in pattern indicated on the approved Shop Drawings.

B. Installation of Vapor Retarder: Comply with wood flooring manufacturer recommendation.

C. Sound Control Underlayment (Where Required): Install over vapor retarder in accordance with manufacturer's written instructions.

D. Solid-Wood Flooring: Blind nail or staple flooring to substrate: For flooring of face width more than 75mm:

1. For Hardwood: Install countersunk screws at each end of each piece in addition to blind nailing. Cover screw heads with wood plugs glued flush with flooring.
2. For Softwood: Install no fewer than two countersunk nails at each end of each piece, spaced not more than 400mm along length of each piece, in addition to blind nailing. Fill holes with matching wood filler.

E. Solid-Wood Parquet Flooring: Set in adhesive in pattern indicated on the approved Shop Drawings.

F. Provide expansion spaces at floor and wall junction, and other obstructions and termination of flooring as recommended in writing by wood flooring manufacturer.

24.3.4 Cleaning and Protection

A. Clean completed solid wood flooring and adjoining construction according to wood flooring standard publication instructions.

B. Protect installed solid wood flooring during remainder of construction period with covering of heavy kraft paper or other suitable material. Do not use plastic sheet or film that might cause condensation.

C. Do not move heavy and sharp objects directly over covered solid wood flooring. Where necessary, protect flooring with plywood or hardboard panels to prevent damage from storing or moving objects over flooring.

END OF PART