SECTION 064200 - WOOD PANELING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Flush wood paneling using veneered panels.
2. Stile and rail wood paneling using veneered panels.
3. Decorative overlay (thermally set) flush paneling.
4. LEED Documentation (when Project is to be LEED certified).

B. Related Sections:

1. Division 01 Section “Sustainable Design Requirements”.
2. Division 06 Section "Rough Carpentry" for wood furring, blocking, shims, and hanging strips required for installing paneling and that are concealed within other construction before paneling installation.
3. Division 06 Section "Interior Architectural Woodwork" for interior woodwork other than paneling.
4. Division 08 Section "Flush Wood Doors."
5. Division 08 Section "Stile and Rail Wood Doors."
6. Division 09 Section “Interior Painting” for painting items that are not designated to be shop finished for the Project
7. Division 12 Section “Residential Casework” for casework that may be manufactured for this Project and is not found within “Interior Architectural Woodwork” specification Section.

1.3 DEFINITIONS

A. Paneling includes wood furring, blocking, and shims for installing paneling, unless concealed within other construction before paneling installation.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated, including finishing materials and processes.

B. Product Data: For panel products, decorative overlays, adhesives, fire-retardant-treated materials and finishing materials and processes.

1. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements.

C. Shop Drawings: Show location of paneling, large-scale details, attachment devices, and other components. Include dimensioned plans and elevations.

1. Show details full size.
2. Show locations and sizes of furring and blocking, including concealed blocking specified in other Sections.
3. For paneling produced from pre-manufactured sets, show finished panel sizes, set numbers, sequence numbers within sets, and method of cutting panels to produce indicated sizes.
4. For paneling veneered in fabrication shop, show veneer leaves with dimensions, grain direction, exposed face, and identification numbers indicating the flitch and sequence within the flitch for each leaf.

D. Samples for Verification:

1. Lumber with or for transparent finish, not less than 50 sq. in. (300 sq. cm), for each species and cut, finished on 1 side and 1 edge.
2. Veneer leaves representative of and selected from flitches to be used for transparent-finished paneling.
3. Veneer-faced panel products with or for transparent finish, 8 by 10 inches (200 by 250 mm), for each species and cut. Include at least one face-veneer seam and finish as specified.
4. Panel products with shop-applied opaque finish 50 sq. in. (300 sq. cm), for each finish system and color, with 1/2 of exposed surface finished.
5. Corner pieces for stile and rail paneling, 18 inches (450 mm) high by 18 inches (450 mm) wide by 6 inches (150 mm) deep.
6. Decorative overlays, 8 by 10 inches (200 by 250 mm), for each type, color, pattern, and surface finish, with 1 sample applied to core material.

E. LEED Submittals (NOTE: If Project is to be LEED certified, comply with following submittal requirements):

1. Product Data for Credit EQ 4.1: For installation adhesives, including printed statement of VOC content.
2. Product Data for Credit EQ 4.4: For composite-wood products and fabrication adhesives, documentation indicating that products contain no urea formaldehyde.
3. Product Data for Credit(s) MR 4.1 and MR 4.2: For products having recycled content, documentation indicating percentages by weight of postconsumer and pre-consumer recycled content.

    a. Include statement indicating costs for each product having recycled content.

4. Product Data for Credit(s) MR 5.1 and MR 5.2: Product cut sheets, product literature, or letter from the manufacturer for Credit MR 5.1 and MR 5.2 indicating the location of manufacture or location of extraction of products provided under this Section.
5. Certificates for Credit MR 7: Chain-of-custody certificates certifying that products specified to be made from certified wood comply with forest certification requirements.

Include evidence that manufacturer is certified for chain of custody by an FSC-accredited certification body.

a. Include statement indicating costs for each certified wood product.

F. Product Certificates – Shall be provided for each of the following:
1. Sustainable Forestry Initiative (SFI) chain-of-custody certified as verified by an independent audit by PricewaterhouseCoopers.
2. Forest Stewardship Council (FSC) chain-of-custody certified as verified by Scientific Certification Systems (SCS), an authorized certifier of FSC.
3. Environmentally Preferred Product (EPP) certified by the Composite Panel Association (CPA).
4. American Plywood Association (APA) certified to meet the PS-1 standard.
5. Hardwood Plywood and Veneer Association (HPVA) certified to ANSI/HPVA-1-2004 Section 3.12, Formaldehyde Emission Requirements.

1.5 QUALITY ASSURANCE

A. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate products similar to those required for this Project and whose products have a record of successful in-service performance. Shop is a certified participant in the Sustainable Forestry Initiative (SFI) as verified by PricewaterhouseCoopers. Shop is a certified participant in the Forest Stewardship Council (FSC) program as verified by Scientific Certification Systems (SCS).

B. Installer Qualifications: Certified participant in the Sustainable Forestry Initiative (SFI) as verified by PricewaterhouseCoopers. Certified participant in the Forest Stewardship Council (FSC) program as verified by Scientific Certification Systems (SCS).

C. Source Limitations: Engage a qualified woodworking firm to assume undivided responsibility for production of paneling and interior architectural wood work, with sequence-matched wood veneers (where Project requires same) and wood doors faced with veneers from same flitches as paneling (where Project requires same).

D. Quality Standard: Unless otherwise indicated, comply with WI's "Manual of Millwork" for grades of paneling indicated for construction, finishes, installation, and other requirements.

E. Fire-Test-Response Characteristics: Where fire-retardant materials or products are indicated, provide materials and products with specified fire-test-response characteristics as determined by testing identical products per test method indicated by UL, ITS, or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify with appropriate markings of applicable testing and inspecting agency in the form of separable paper label or, where required by authorities having jurisdiction, imprint on surfaces of materials that will be concealed from view after installation.

F. Product Certifications (NOTE: If Project is to be LEED certified, comply with following submittal requirements):

1. Provide paneling produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."

2. Provide lumber products obtained from a managed forest that is certified by the "Sustainable Forestry Initiative (SFI) Program"
3. Provide panel products that have been certified by the Composite Panel Association's "Environmentally Preferred Product Certification".

1.6 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver paneling until painting and similar operations that could damage paneling have been completed in installation areas. If paneling must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Project Conditions" Article.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install paneling until building is enclosed, wet work is complete, and HVAC system is operating and will maintain temperature and relative humidity at occupancy levels during the remainder of the construction period.

B. Field Measurements: Where paneling is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1. Locate concealed framing, blocking, and reinforcements that support paneling by field measurements before being enclosed and indicate measurements on Shop Drawings.
2. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating paneling without field measurements. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

1.8 COORDINATION

A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that paneling can be installed as indicated.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Timber Products Company "Green T" panel products – PO Box 269, 305 South 4th Street, Springfield, Oregon, 97477 USA (800-547-9520) www.timberproducts.com

B. Timber Products Company - Additional Certified Locations:
1. 1090 S.E. M Street, Grants Pass, Oregon 97526
2. 2701 South Harper Road, Corinth, MS 38834

2.2 MATERIALS

A. General: Provide materials that comply with requirements of "Quality Assurance" Article indicated within this specification for quality standard for quality grade specified, unless otherwise indicated.

B. Recycled Content of Medium-Density Fiberboard and Particleboard: Provide products with a recycled content of not less than 100 percent.

C. Core Products: Comply with the following:

1. Medium-Density Fiberboard (MDF) – "Arreis" Core: ANSI A208.2, Grade MD, made with 100 percent recycled wood fiber core and a binder containing no urea formaldehyde.
2. Particleboard: ANSI A208.1, Grade M-2 particleboard with a binder containing no urea formaldehyde.
3. Hardwood Plywood: DOC PS 1 plies are fabricated with veneer cores and a binder containing no urea formaldehyde.

D. Wood Veneer Species and Cut – Transparent Finish Stained with Transparent Finish: Confirm with both the Manufacturer as to availability and Project requirements as to which species and cut will be utilized from the following: White oak, rift sliced, Cherry, plain sliced, Maple, plain sliced, Birch Select Red or White, plain sliced.

E. Wood Veneer Species for Opaque Finish: Confirm with both the Manufacturer as to availability and Project requirements as to which species will be utilized from the following: Any closed-grain hardwood veneer or MDO Faces.

F. Decorative Overlay: (NOTE: Confirm with Project requirements which product is being installed). Thermally set roll laminate in 60-gram top-coated paper bonded to substrate, "DecraBoard" and/or hardwood-faced panel with a decorative overlay back, "SpectraBoard".

1. Manufacturer:

a. Timber Products Company or any of their affiliate companies.

G. Adhesives: Do not use adhesives that contain urea formaldehyde.

H. VOC Limits for installation Adhesives and Glues: Use installation adhesives that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Wood Glues: 30 g/L.
2. Panel Adhesives: 50 g/L.
3. Contact Adhesive: 80 g/L.
4. Special Purpose Contact Adhesive (contact adhesive that is used to bond melamine covered board, metal, unsupported vinyl, Teflon, ultra-high molecular weight polyethylene, rubber or wood veneer 1/16 inch or less in thickness to any surface): 250 g/L.

2.3 FIRE-RETARDANT-TREATED MATERIALS

A. General: Where fire-retardant-treated materials are indicated, use materials that are acceptable to authorities having jurisdiction and that comply with requirements in this Article and with fire-test-response characteristics specified.

1. Do not use treated materials that do not comply with requirements of referenced woodworking standard or that are warped, discolored, or otherwise defective.
2. Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants to distinguish treated materials from untreated materials.
3. Identify fire-retardant-treated materials with appropriate classification marking of UL, U.S. Testing, Timber Products Inspection, or another testing and inspecting agency acceptable to authorities having jurisdiction.

B. Fire-Retardant-Treated Plywood by Pressure Process: Comply with performance requirements of AWPA C27 (plywood). Use the following treatment type:

1. Exterior Type: Organic-resin-based formulation thermally set in wood by kiln drying.
2. Interior Type A: Low-hygroscopic formulation.
3. Mill lumber before treatment and implement special procedures during treatment and drying processes that prevent lumber from warping and developing discolorations from drying sticks or other causes, marring, and other defects affecting appearance of treated woodwork.
4. Kiln-dry materials before and after treatment to levels required for untreated materials.

C. Fire-Retardant Fiberboard: Medium-density fiberboard panels complying with ANSI A208.2, made from softwood fibers, synthetic resins, and fire-retardant chemicals mixed together at time of panel manufacture to achieve flame-spread index of 25 or less and smoke-developed index of 200 or less per ASTM E 84.

2.4 INSTALLATION MATERIALS

A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln dried to less than 15 percent moisture content.

B. Furring, Blocking, Shims, and Hanging Strips: Fire-retardant-treated softwood lumber, kiln dried to less than 15 percent moisture content.

C. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide nonferrous-metal or hot-dip galvanized anchors and inserts on inside face of exterior walls and elsewhere as required for corrosion resistance. Provide toothed-steel or lead expansion sleeves for drilled-in-place anchors.

2.5 FABRICATION, GENERAL

A. Paneling Grade: Prior to fabrication, confirm with Project specifics as to which grade will be utilized for project; Premium, Custom or Economy grade paneling complying with referenced quality standard.

B. Wood Moisture Content: Comply with requirements of referenced quality standard for wood moisture content in relation to ambient relative humidity during fabrication and in installation areas.

C. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.

D. Arrange paneling in shop or other suitable space in proposed sequence for examination by Architect. Mark units with temporary sequence numbers to indicate position in proposed layout.

1. Lay out one elevation at a time if approved by Architect.
2. Notify Architect seven days in advance of the date and time when layout will be available for viewing.
3. Provide lighting of similar type and level as that of final installation for viewing layout, unless otherwise approved by Architect.
4. Rearrange paneling as directed by Architect until layout is approved.
5. Do not trim end units and other non-modular size units to less than modular size until after Architect's approval of layout. Indicate trimming by masking edges of units with non-marking material.
6. Obtain Architect's approval of layout before start of assembly. Mark units and Shop Drawings with assembly sequence numbers based on approved layout.

E. Complete fabrication, including assembly and finishing, to maximum extent possible, before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

1. Notify Architect seven days in advance of the dates and times paneling fabrication will be complete.
2. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended and check measurements of assemblies against field measurements indicated on approved Shop Drawings before disassembling for shipment.

F. Shop cut openings, to maximum extent possible, to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

2.6 FLUSH WOOD PANELING

A. Grade - Confirm with Project specifics as to which of the following grades will be utilized: [Premium] [Custom] [Economy].

B. Wood Species and Cut - Confirm with Project specifics as to which of the following will be utilized: [White oak, rift sliced] [Butternut, plain sliced].

C. Matching of Adjacent Veneer Leaves - Confirm with Project specifics as to which of the following will be utilized: [Book] [Slip] [Random] match.

D. Panel-Matching Method - Confirm with Project specifics if the following will be utilized: No matching is required between panels. Select and arrange panels for similarity of grain pattern and color between adjacent panels.

E. Panel-Matching Method - Confirm with Project specifics as to which of the following will be utilized: [Pre-manufactured sets used full width] [Pre-manufactured sets selectively reduced in width] [Sequence-matched, uniform-size sets] within each separate area.

F. Confirm with Project specifics as to which of the following will be utilized for Vertical Panel-Matching Method: [Continuous match; veneer leaves of upper panels are continuations of veneer leaves of lower panels] [Vertical book match; veneer leaves are individually book matched from lower panels to upper panels] [Vertical slip match; veneer leaves are individually slip matched from lower panels to upper panels] [Panel vertical book match; panels are book matched from lower panels to upper panels] [Panel vertical slip match; panels are slip matched from lower panels to upper panels].

G. Panel Core Construction:

1. Medium-Density Fiberboard (MDF) – “Arreis” Core.
2. “Green T” Particleboard Core.
3. “Green T” Hardwood Plywood.
4. Fire-retardant particleboard or fire-retardant, medium-density fiberboard.

H. Confirm with Project specifics as to which of the following will be utilized for Exposed Panel Edges: [Solid wood or wood veneer matching faces] [Legs of metal channels forming reveals] [Bronze flat bars 1/16 inch (1.6 mm) thick by depth of panels] [veneered construction of same species and cut as panel faces and compatible with grain and color of panel faces].

I. Fire-Retardant-Treated Paneling: Provide panels consisting of wood-veneer and fire-retardant particleboard or fire-retardant, medium-density fiberboard. Panels shall have a flame-spread index of 25 or less and a smoke-developed index of 450 or less per ASTM E 84.

J. Provide paneling of thickness shown or, if not shown, 3/4-inch (19-mm) minimum thickness. Assemble by gluing and concealed fastening.

2.7 STILE AND RAIL WOOD PANELING

A. Grade - Confirm with Project specifics as to which of the following grades will be utilized: [Premium] [Custom] [Economy].

B. Wood Species - Confirm with Project specifics as to which of the following will be utilized: [White oak, rift sawn/sliced] [Butternut, plain sawn/sliced].

C. Stiles and Rails: Veneered construction with edges banded or with lumber moldings, as indicated, to conceal core and veneer joints.

D. Panels: Flat panels.

E. Panel Core Construction:

1. Medium-Density Fiberboard (MDF) – "Arreis" Core.
2. "Green T" Particleboard Core.
3. "Green T" Hardwood Plywood.
4. Fire-retardant particleboard or fire-retardant, medium-density fiberboard.

F. Insert Panels: Book and balance match face veneers within panels. No matching is required between adjacent panels; select and arrange panels for similarity of grain pattern and color between adjacent panels.

G. Shop assemble stile and rail paneling into largest units practical for delivery and installation. Provide shop-prepared detachable joints for necessary field connections. Sand and pull joints tight in shop so field joints will comply with joint tolerances for specified grade. Unless otherwise indicated, provide continuous mortise-and-tenon joints between panel units and provide removable temporary protection for joints during handling and delivery.

1. Outside Corner of Stile and Rail Paneling: Shop prepare using lock-mitered or mitered-and-splined construction. Assemble, sand, and glue in shop, if site conditions permit.

2.8 DECORATIVE OVERLAY FLUSH PANELING - (NOTE: Confirm with Project requirements which product is being installed).

A. Thermally set roll laminate in 60-gram top-coated paper bonded to substrate, "DecraBoard".

B. Hardwood-faced panel with a decorative overlay back, "SpectraBoard".

C. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed surfaces complying with the following requirements:

1. As selected by Architect from manufacturer's full range in the following categories:

a. Solid colors, [gloss] [matte] finish.
b. Wood grains, [gloss] [matte] finish.
c. Patterns, [gloss] [matte] finish.

2. Grain Direction: Vertical.
3. Grain Direction: Horizontal.

D. Panels: Flat panels.

E. Panel Core Construction:

1. Standard-Density Fiberboard – "Arreis" Core.
2. "Green T" Particleboard Core.
3. "Green T" Hardwood Plywood.
4. Fire-retardant particleboard or fire-retardant, medium-density fiberboard.

F. Provide paneling of thickness shown or, if not shown, 3/4-inch (19-mm) minimum thickness. Assemble by gluing and concealed fastening.

2.9 SHOP FINISHING

A. Grade: Provide finishes of same grades as paneling to be finished.

B. General: Finish paneling at fabrication shop as specified in this Section. Defer only final touchup, cleaning, and polishing until after installation.

C. General: Shop finish transparent-finished paneling at fabrication shop as specified in this Section. Refer to Division 09 painting Sections for finishing of opaque-finished paneling.

D. General: Drawings indicate paneling that is required to be shop finished. Finish such paneling at fabrication shop as specified in this Section. Refer to Division 09 painting Sections for finishing paneling not indicated to be shop finished.

E. Shop Priming: Shop apply the prime coat including backpriming, if any, for transparent-finished paneling specified to be field finished. Refer to Division 09 painting Sections for material and application requirements.

F. Preparation for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing paneling, as applicable to each unit of work.

1. Backpriming: Apply two coats of sealer or primer, compatible with finish coats, to concealed surfaces of paneling. Concealed surfaces of plastic-laminate-clad paneling do not require backpriming when surfaced with plastic laminate.

G. Note: Confirm with Project specifics as to which of the following will be utilized for Transparent Finish:
1. Catalyzed lacquer.
2. Acrylic lacquer.
3. Conversion varnish.
4. Acrylic lacquer.
5. Water-reducible acrylic lacquer.
6. Catalyzed lacquer.
7. Conversion varnish.
8. Staining: Match approved sample for color.
9. Wash Coat for Stained Finish: Apply wash-coat sealer to woodwork made from closed-grain wood before staining and finishing.
10. Open Finish for Open-Grain Woods: Do not apply filler to open-grain woods.
11. Filled Finish for Open-Grain Woods: After staining (if any), apply paste wood filler to open-grain woods and wipe off excess. Tint filler to match stained wood.

    a. Apply wash-coat sealer after staining and before filling.

12. Sheen - Note: Confirm sheen with Project requirements: [Flat, 15-30] [Satin, 31-45] [Semigloss, 46-60] [Gloss, 61-100] gloss units measured on 60-degree gloss meter per ASTM D 523.

H. Opaque Finish:
1. Catalyzed lacquer.
2. Acrylic lacquer.

3. Conversion varnish.
4. Acrylic lacquer.
5. Water-reducible acrylic lacquer.
6. Catalyzed lacquer.
7. Conversion varnish.
8. Synthetic enamel.
9. Opaque pigmented lacquer.
10. Colors: As selected by Architect from manufacturer's full range.
11. Sheen - Note: Confirm sheen with Project requirements: [Flat, 15-30] [Satin, 31-45] [Semigloss, 46-60] [Gloss, 61-100] gloss units measured on 60-degree gloss meter per ASTM D 523.

PART 3 - EXECUTION

3.1 PREPARATION

A. Before installation, condition paneling to average prevailing humidity conditions in installation areas.

B. Before installing paneling, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

3.2 INSTALLATION

A. Grade: Install paneling to comply with requirements for same grade specified in Part 2 for fabrication of type of paneling involved.

B. Install paneling level, plumb, true, and straight with no distortions. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm). Install with no more than 1/16 inch in 96-inch (1.6 mm in 2400-mm) vertical cup or bow and 1/8 inch in 96-inch (3 mm in 2400-mm) horizontal variation from a true plane.

1. For flush paneling with revealed joints, install with variations in reveal width, alignment of top and bottom edges, and flushness between adjacent panels not exceeding 1/32 inch (0.8 mm).

C. Scribe and cut paneling to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

D. Note: Confirm with Project specifics as to which of the following will be utilized for Anchor paneling to supporting substrate with [concealed panel-hanger clips] [splined connection strips] [blind nailing]. Do not use face fastening unless [covered by trim] [otherwise indicated].

E. Complete finishing work specified in this Section to extent not completed at shop or before installation of paneling. Fill nail holes with matching filler where exposed. Apply specified finish coats, including stains and paste fillers if any, to exposed surfaces where only sealer/prime coats are applied in shop.

3.3 ADJUSTING AND CLEANING

A. Repair damaged and defective paneling, where possible, to eliminate functional and visual defects; where not possible to repair, replace paneling. Adjust for uniform appearance.

B. Clean paneling on exposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION 064200