

**FSC® CERTIFIED,
VENEER, PARTICLEBOARD, MDF,
EUROPLY PLUS™, OR CLASSIC CORE™
DECORATIVE HARDWOOD PLYWOOD
PRODUCT SPECIFICATION IN CSI 3-PART
FORMAT**



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The mark of responsible forestry



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SECTION 06 40 00

ARCHITECTURAL WOODWORK

GENERAL NOTES TO SPECIFIER:

THE FOLLOWING PRODUCT SPECIFICATION LANGUAGE IS INTENDED TO ASSIST DESIGN PROFESSIONALS IN SPECIFYING FSC-CERTIFIED, NO-ADDED-FORMALDEHYDE DECORATIVE HARDWOOD PLYWOOD PANELS IN EXISTING 3-PART SPECIFICATIONS FOR PANELING, CASEWORK, AND SIMILAR ARCHITECTURAL WOODWORK.

SAMPLE LANGUAGE IS PROVIDED FOR APPLICABLE ARTICLES IN PART 1 - GENERAL, PART 2 – PRODUCTS, AND PART 3 - EXECUTION FOLLOWING THE CONSTRUCTION SPECIFICATION INSTITUTE'S *SECTIONFORMAT*. THE SAMPLE LANGUAGE SHOULD BE EDITED ACCORDINGLY TO FIT EACH FIRM'S SPECIFICATION STANDARDS.

ARTICLES AND PARAGRAPHS OF THIS PRODUCT SPECIFICATION ASSUME THE PROJECT MANUAL WILL CONTAIN COMPLETE DIVISION 1 DOCUMENTS. CLOSE COORDINATION WITH DIVISION 1 SECTIONS IS REQUIRED. IF THE PROJECT MANUAL DOES NOT CONTAIN THESE SECTIONS, ADDITIONAL INFORMATION MAY BE INCLUDED UNDER THE APPROPRIATE ARTICLES.

NOTES TO THE SPECIFIER ARE IN UPPER CASE TEXT AND ARE CONTAINED IN BOXES SIMILAR TO THIS ONE.

OPTIONAL ITEMS REQUIRING SELECTION BY THE SPECIFIER ARE ENCLOSED WITHIN BRACKETS, E.G. [35] [40] [45]. MAKE APPROPRIATE SELECTIONS AND DELETE OTHERS.

ITEMS REQUIRING ADDITIONAL INFORMATION ARE UNDERLINED BLANK SPACES, E.G. [_____].

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions, Division 01 - General Requirements, and other applicable specification sections in the Project Manual apply to the work specified in this Section.

1.2 SUMMARY

- A. Scope: Provide labor, material, equipment, related services, and supervision required, including, but not limited to, manufacturing, fabrication, erection, and installation for architectural woodwork as required for the complete performance of the work, and as shown on the Drawings and as herein specified.

1.3 REFERENCES

- A. General: The publications listed below form a part of this Specification to the extent referenced. The publications are referred to in the text by the basic designation only. The edition/revision of the referenced publications shall be the latest date as of the date of the Contract Documents, unless otherwise specified.
- B. American Wood Council (AWC):
 - 1. AWC DCA, "Design for Code Acceptance."
- C. Architectural Woodwork Institute (AWI):
 - 1. AWI AWS, "Architectural Woodwork Standards."
- D. ASTM (ASTM):
 - 1. ASTM D 523, "Standard Test Method for Specular Gloss."
 - 2. ASTM E 84, "Standard Test Method for Surface Burning Characteristics of Building Materials."
- E. Forest Stewardship Council (FSC):
 - 1. FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."
- F. Hardwood Plywood and Veneer Association (HPVA):
 - 1. ANSI/HPVA HP-1, "American National Standard for Hardwood and Decorative Plywood" (copyrighted by HPVA, ANSI approved).
 - 2. HPVA HPH, "Hardwood Plywood Handbook."
 - 3. HPVA VSG, "Veneer Species Guide."

1.4 SUBMITTALS

INCLUDE ANY OR ALL OF THE FOLLOWING PARAGRAPHS, AS APPLICABLE TO THE PROJECT.

- A. General: See Section 01 33 00 - Submittal Procedures.
- B. Product Data: Submit product data showing material proposed. Submit sufficient information to determine compliance with the Drawings and Specifications. Submit product data for each type of product and process specified and incorporated into items of architectural woodwork during fabrication, finishing, and installation.
- C. Shop Drawings: Submit shop drawings for each product and accessory required. Include information not fully detailed in manufacturer's standard product data, including, but not limited to, location of each item in dimensioned plans and elevations, large scale details, attachment devices, and other components.

NOMINAL 3 INCH (76 MM) BY 3 INCH (76 MM) PUREBOND PLYWOOD SAMPLES ARE COMMONLY AVAILABLE. MANUFACTURER MAY BE ABLE TO PROVIDE ADDITIONAL SAMPLES DEPENDING ON CIRCUMSTANCES UNIQUE TO A PARTICULAR PROJECT.

D. Samples:

1. Submit samples for initial selection. Submit samples of each specified finish. Submit samples in form of manufacturer's charts showing veneers and finishes available.

DELETE ABOVE IF COLORS, VENEERS, FINISHES, ETC., PRESELECTED AND SPECIFIED OR SCHEDULED. RETAIN BELOW WITH OR WITHOUT ABOVE.

2. Submit samples for verification purposes. Additional samples may be required to show fabrication techniques and workmanship.

E. Quality Control Submittals:

INCLUDE BELOW IF APPLICABLE TO THE PROJECT.

1. Fire Retardant Treatment Data: Submit fire retardant treatment data for material treated to reduce combustibility.

FOR LEED® PROJECTS INCLUDE THE FOLLOWING, AS APPLICABLE. CREDITS REFERENCED PERTAIN TO LEED® NC 2009.

F. Submittals that are required to comply with requirements for LEED® certification, as defined by the U.S. Green Building Council (USGBC) (<http://www.usgbc.org>), include, but shall not be limited to, the following:

1. Recycled Content Materials (Credits MR 4): Provide product data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content. Include statement indicating costs for each product having recycled content.
2. Regional Materials (Credits MR 5): Provide product data for regional materials indicating location and distance from the Project of material manufacturer and point of extraction, harvest, or recovery for each raw material. Distance shall be within 500 miles (805 Km) of the Project Site. Include statement indicating cost for each regional material and, if applicable, the fraction by weight that is considered regional.

RETAIN BELOW IF APPLICABLE TO THE PROJECT.

- a. Include requirements for Canada per Columbia LEED® Compliant Product Guide.
3. Certified Wood (Credit MR 7): Provide product invoice documentation, including, but not limited to, product description, FSC-claim, and chain-of-custody certificates, confirming what quantity, if any, of wood-based materials are certified in accordance with the Forest Stewardship Council (<http://www.fsc.org>) guidelines for wood products.
4. Low-Emitting Materials (Credit IEQ 4.4): Submit cut sheet and/or CARB TPC certification by the manufacturer confirming that products (i.e., plywood, particleboard, medium density fiberboard, insulation, etc.) contain no added urea-formaldehyde resins as outlined in LEED® Green Building Rating System.

1.5 QUALITY ASSURANCE

INCLUDE ANY OR ALL OF THE FOLLOWING PARAGRAPHS, AS APPLICABLE TO THE PROJECT:

- A. Regulatory Requirements: Comply with applicable requirements of the laws, codes, ordinances, and regulations of Federal, State, and local authorities having jurisdiction. Obtain necessary approvals from such authorities.

- B. Quality Standard: Comply with AWI AWS for grades of architectural woodwork, construction, finishes, and other requirements. Provide AWI certification labels or AWI certificates of compliance indicating that woodwork meets requirements of grades specified.

INCLUDE BELOW IF APPLICABLE TO THE PROJECT.

1. Comply with applicable requirements of standards published by the Scientific Equipment and Furniture Association (SEFA).

INCLUDE BELOW IF APPLICABLE TO THE PROJECT. COLUMBIA WILL FIX AND LAY VENEER TO FIRE-TREATED SUBSTRATES. COLUMBIA HAS NOT PERFORMED ANY TESTING TO DATE ON PANEL ASSEMBLIES FEATURING THE FIRE-RATED CORE. ANY CLAIMS OR STATEMENTS AS TO THE SURFACE BURNING CHARACTERISTICS OF THE PRODUCTS PROVIDED UNDER THIS SECTION ARE THE RESPONSIBILITY OF THE CONTRACTOR AND THE FABRICATOR AND THEY SHALL BE SOLELY RESPONSIBLE FOR FURNISHING ANY TESTING OR CERTIFICATION REQUIRED TO VERIFY SAID CHARACTERISTICS. COLUMBIA PROVIDES NO INDEMNIFICATION TO ANY PARTY, AND EXPRESSLY DISCLAIMS ANY AND ALL LIABILITY, RELATING TO OR ARISING FROM THE USE OF COLUMBIA PRODUCTS IN ANY APPLICATION AS IT RELATES TO SURFACE BURNING CHARACTERISTICS.

- C. Surface Burning Characteristics: Provide materials with the following characteristics as determined by testing identical products per ASTM test method indicated below, by Underwriters Laboratories, Inc. (UL), Intertek Testing Services (ITS), Hardwood Plywood and Veneer Association (HPVA), or another inspecting and testing agency acceptable to authorities having jurisdiction.
1. Surface burning characteristics shall not exceed values indicated below, tested per ASTM E 84.

FLAME SPREAD OF 200 OR BELOW IS ACCEPTABLE FOR CLASS III (CLASS C) CODE REQUIREMENTS.

- a. Flame Spread: 200.
b. Smoke Developed: 450.
2. Veneer of a thickness of 1/28 inch (0.9 mm) or less can be applied to a fire-resistant core and still retain fire-resistant core properties according to AWC DCA.
- D. Mock-Ups: Prior to installation of the work, fabricate and erect mock-ups for each type of finish and application required to verify selections made under sample submittals and to demonstrate aesthetic effects as well as qualities of materials and execution. Build mock-ups using materials indicated for final unit of work.
- E. Pre-Installation Conference: Conduct pre-installation conference in accordance with Section 01 31 19 - Project Meetings. Prior to commencing the installation, meet at the Project site to review the material selections, installation procedures, and coordination with other trades. Mock-ups shall be reviewed during the pre-installation conference. Pre-installation conference shall include, but shall not be limited to, the Contractor, the Installer, and any trade that requires coordination with the work. Date and time of the pre-installation conference shall be acceptable to the Owner and the Architect.

1.6 DELIVERY, STORAGE AND HANDLING

INCLUDE ANY OR ALL OF THE FOLLOWING PARAGRAPHS, AS APPLICABLE TO THE PROJECT:

- A. Deliver materials to the Project site in supplier's or manufacturer's original wrappings and containers (or suitable equivalent protection), labeled with supplier's or manufacturer's name, material or product brand name, and lot number, if any.
- B. Store decorative hardwood plywood and fabricated products in dry interior locations where temperature is maintained between 60°F (16°C) and 90°F (32°C) and relative humidity is maintained between 30 percent and 55 percent.
- C. Remove or loosen plastic wrappings. Sticker individual panels to hasten acclimatization.

- D. Cover decorative hardwood plywood panels and fabricated products to protect from exposure to light until installed.
- E. Protect decorative hardwood plywood from edge and surface damage.

1.7 PROJECT CONDITIONS

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

PART 2 - PRODUCTS

2.1 MATERIALS

FOR LEED® PROJECTS INCLUDE THE FOLLOWING, AS APPLICABLE. CREDITS REFERENCED PERTAIN TO LEED® NC 2009.

- A, LEED® Requirements:

SELECT APPLICABLE PERCENTAGES BELOW (10 PERCENT APPLIES TO CREDIT MR 4.1, 20 PERCENT APPLIES TO CREDIT MR 4.1 AND MR 4.2).

1. Recycled Content Materials (Credits MR 4): Provide building materials with recycled content such that post-consumer recycled content plus one-half of pre-consumer recycled content constitutes a minimum of [10 percent] [20 percent] of the cost of materials used for the Project. See LEED® Green Building Rating System.
2. Regional Materials (Credits MR 5): Provide a minimum of 10 percent (based on cost), of building materials that are regionally extracted, processed, and manufactured.
3. Certified Wood (Credit MR 7): Provide a minimum of 50 percent (by cost) of wood-based materials that are produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001. Wood-based materials include, but shall not be limited to, materials made from made wood, engineered wood products, or wood-based panel products.
4. Low-Emitting Materials (Credit IEQ 4.4): Do not use composite wood and agrifiber products that contain urea-formaldehyde resin.

FSC-MIXED xx% PERCENT PANELS CAN BE PRODUCED USING FSC-CERTIFIED CORES AND CONTROLLED FACE AND BACK VENEERS. FSC PURE AND FSC-MIXED CREDIT CERTIFIED PANELS REQUIRE BOTH FSC-CERTIFIED CORES, FACE VENEERS, AND BACK VENEERS. TWO-STEP PLATFORM CONSTRUCTION IS PREFERRED FOR SLICED DECORATIVE VENEERS AND WALL PANEL CONSTRUCTION TO REDUCE CORE TELEGRAPHING; SINGLE-STEP CONSTRUCTION PROVIDES A BETTER VALUE FOR CASE GOODS INTERIORS. PARTICLEBOARD OR MDF CORES ARE RECOMMENDED FOR DOOR AND DRAWER FRONTS AND OTHER USES PER AWS RECOMMENDATIONS.

SELECT ONE OF THE FOLLOWING FIVE PARAGRAPHS.

- B. Core Hardwood Plywood: Provide PureBond® process domestic veneer core hardwood plywood as manufactured by Columbia Forest Products (<http://www.columbiaforestproducts.com/Products.aspx/VeneerCore>).
- C. Particleboard Core Hardwood Plywood: Provide phenolic particleboard core hardwood plywood assembled with PureBond® formaldehyde-free technology by Columbia Forest Products (<http://www.columbiaforestproducts.com/Products.aspx/VeneerCore>).

- D. Medium Density Fiberboard (MDF) Core Hardwood Plywood: Provide phenolic or MDI bonded MDF-core hardwood plywood assembled with PureBond® formaldehyde-free technology by Columbia Forest Products (<http://www.columbiaforestproducts.com/Products.aspx/VeneerCore>).
- E. Multi-Layered Core Hardwood Plywood: Provide specialty all hardwood European style (Europly PLUS™) high-ply-count birch veneer core blank with a phenolic-bonded platform to assure a no-added urea-formaldehyde panel, with face and back veneers laminated with PureBond® formaldehyde-free technology, as manufactured by Columbia Forest Products (<http://www.columbiaforestproducts.com/Products.aspx/VeneerCore>).
- F. Combi-Core Hardwood Plywood: Provide panels constructed of veneer core inner plies with phenolic-bonded MDF crossbands; panel shall offer similar strength and stability to veneer core but shall have the void-free surface quality of PBC or MDF; panel shall provide excellent substrate for thin-sliced woods and rotary woods with face and back veneers laminated with PureBond® formaldehyde-free technology; Classic Core™ as manufactured by Columbia Forest Products (<http://www.columbiaforestproducts.com/Products.aspx/VeneerCore>).

THE FOLLOWING SUBPARAGRAPHS, SUB-SUBPARAGRAPHS, ETC., PERTAIN TO ALL FIVE TYPES OF PLYWOOD ABOVE. MAKE SELECTIONS WHERE REQUIRED.

- 1. Panel:
 - a. [(70 percent to 97 percent) mixed] [FSC pure] [FSC-mixed credit].
 - b. Manufacture according to ANSI/HVPA HP-1.

SELECT ONE OF THE FOLLOWING FOUR CORE CONSTRUCTION SUB-SUBPARAGRAPHS. RETAIN FIRST FOR VENEER CORE HARDWOOD PLYWOOD, SECOND FOR PARTICLEBOARD CORE HARDWOOD PLYWOOD, THIRD FOR MDF CORE HARDWOOD PLYWOOD, OR FOURTH FOR MULTI-LAYERED CORE HARDWOOD PLYWOOD OR COMBI-CORE HARDWOOD PLYWOOD.

- c. Core construction shall be FSC-certified veneer core.
- d. Core construction shall be FSC-certified phenolic or soy-bonded particleboard.
- e. Core construction shall be FSC-certified phenolic or MDI-bonded MDF.
- f. Core construction shall be FSC-certified.
- 2. Thickness: As shown on the Drawings.
- 3. Veneers:

COLUMBIA FOREST PRODUCTS MANUFACTURES ALL DECORATIVE PLYWOOD ON A BUILD-TO-ORDER BASIS. SPECIES SELECTION PRESENTED BELOW REFLECT MOST COMMON SPECIES BUT OTHER UNUSUAL VENEERS MAY ALSO BE AVAILABLE BY QUOTE. BEST SPECIFICATION RESOURCE AVAILABLE FOR DECORATIVE HARDWOOD PLYWOOD IS THE HARDWOOD HANDBOOK AVAILABLE FOR PURCHASE FROM THE HARDWOOD PLYWOOD AND VENEER ASSOCIATION (HPVA). IT IS RECOMMENDED THAT COLUMBIA FOREST PRODUCTS BE CONTACTED REGARDING AVAILABILITY OF SPECIES, GRADES, CUTS, AND MATCHES FOR VARIOUS SPECIES AND PANEL DIMENSIONS, PARTICULARLY FOR PROJECTS REQUIRING LESS THAN 30 SHEETS (<1000 SQUARE FEET [93 SQUARE METERS]).

- a. Face:

ALL OF THE BELOW VENEERS ARE AVAILABLE AS FSC-CERTIFIED EXCEPT HICKORY.

- 1) Species: [Anigre] [Cherry] [English Sycamore] [Eucalyptus] [Euro Ash] [Euro Chestnut] [Euro Oak] [Fir] [Hickory] [Hond. Mahogany] [Larch] [Nat. Birch] [Pearwood] [Poplar] [Red Oak] [Santos Rosewood] [Sapele] [Steamed Beech] [Teak] [Walnut] [Wenge] [White Ash] [White Birch] [White Maple] [White Oak] [Zebrawood].
- 2) Color Selection: [Natural] [Sap (light color)] [Heart (dark color)] [_____].
- 3) Grade: [AA] [A] [B] [C] [D], per ANSI/HPVA HP-1.
- 4) Cut: [Rotary] [Plain-sliced] [Quarter-sliced] [Rift cut].
- 5) Veneer Match: [Book-matched] [Slip match] [Random match] [Pleasing match] [Plank match].

BALANCED CONSTRUCTION (SAME FACE AND BACK SPECIES) IS TYPICAL BUT DIFFERENT, COMPATIBLE SPECIES COMBINATIONS ARE POSSIBLE (E.G. CHERRY WITH A MAPLE BACK) IN SPECIAL CASES. PLEASE CONSULT WITH COLUMBIA FOREST PRODUCTS FOR A DETERMINATION OF FEASIBILITY.

b. Back:

ALL OF THE BELOW VENEERS ARE AVAILABLE AS FSC-CERTIFIED EXCEPT HICKORY.

- 1) Species: [Anigre] [Cherry] [English Sycamore] [Eucalyptus] [Euro Ash] [Euro Chestnut] [Euro Oak] [Fir] [Hickory] [Hond. Mahogany] [Larch] [Nat. Birch] [Pearwood] [Poplar] [Red Oak] [Santos Rosewood] [Sapele] [Steamed Beech] [Teak] [Walnut] [Wenge] [White Ash] [White Birch] [White Maple] [White Oak] [Zebrawood].
- 2) Color Selection: [Natural] [Sap (Light color)] [Heart (dark color)] [_____].
- 3) Grade: [1] [2] [3] [4] [Same as face grade], per ANSI/HPVA HP-1.
- 4) Cut: [Rotary] [Plain-sliced] [Quarter-sliced] [Rift cut].
- 5) Veneer Match: [Book-matched] [Slip match] [Random match] [Pleasing match] [Plank match].

TWO FACTORY FINISHES BELOW ARE OPTIONAL. RETAIN EITHER, BOTH, OR NEITHER AS APPLICABLE TO THE PROJECT.

4. Factory Finish: Provide clear UV-cured acrylic coating on [face side] [back side] [both sides] (UV Wood™).
 - a. Gloss Level: [Flat, 15 to 30 gloss units] [Satin, 31 to 45 gloss units] [Semi-gloss, 46 to 60 gloss units] [Gloss, 61 to 100 gloss units] measured on 60 degree gloss meter per ASTM D 523.
5. Factory Finish: Provide pre-applied custom stained finish (CustomColors™). Finish shall be a pre-applied, UV-cured, 100 percent solid stain applied in the factory under controlled conditions. Provide finish as indicated or, if not indicated, as selected by the Architect from the manufacturer's standards.
 - a. Gloss Level: [Satin, 31 to 45 gloss units] [Semi-gloss, 46 to 60 gloss units] [Gloss, 61 to 100 gloss units] measured on 60 degree gloss meter per ASTM D 523.

INCLUDE BELOW IF APPLICABLE TO THE PROJECT.

- G. Fire-Retardant Treated Materials: Where indicated, use materials impregnated with fire retardant chemical formulations indicated, by a pressure process or by other means acceptable to authorities having jurisdiction, to produce products with surface burning characteristics specified.
1. Use chemical formulations that do not bleed through or otherwise affect finishes.
 2. Mill lumber before treatment and implement special procedures during treatment and drying processes that shall prevent lumber from warping and developing discolorations from drying sticks or other causes, marring, and other defects affecting appearance of treated architectural woodwork.
 3. Discard treated material that does not comply with requirements of referenced woodworking standard. Do not use twisted, warped, bowed, discolored, or otherwise damaged or defective material.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine areas and conditions under which the work is to be installed, and notify the Contractor in writing, with a copy to the Owner and the Architect, of any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.
1. Beginning of the work shall indicate acceptance of the areas and conditions as satisfactory by the Installer.

3.2 PREPARATION

- A. Condition work to average prevailing humidity conditions in installation areas before installing. Before installing work, examine shop-fabricated work for completion and complete work as required.

3.3 INSTALLATION

- A. General: Install in accordance with reviewed product data, final shop drawings, manufacturer's written recommendations, and as indicated on the Drawings.
- B. Quality Standard: Install architectural woodwork to comply with AWI AWS for the same grades specified in Part 2 - Products of this Section for type of architectural woodwork involved.

INCLUDE BELOW IF APPLICABLE TO THE PROJECT.

- C Fire Retardant-Treated Wood: Handle, store, and install fire retardant-treated wood to comply with recommendations of chemical treatment manufacturer, including, but not limited to, those for adhesives used to install architectural woodwork.
- C. Installation Tolerances: Install architectural woodwork plumb, level, true, and straight with no distortions. Shim as required with concealed shims.

3.4 ADJUSTING AND CLEANING

- A. Repair damaged and defective work where possible to eliminate functional and visual defects. Where not possible to repair, replace the work.
- B. Clean architectural woodwork on exposed and semi-exposed surfaces. Touch-up shop-applied finishes to restore damaged or soiled areas.

3.5 PROTECTION

- A. Provide final protection and maintain conditions in a manner acceptable to the Installer, that shall ensure that the work shall be without damage at time of Substantial Completion.

END OF SECTION