

SECTION 064020

INTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:

- 1. Interior wood handrails at stairs.
- 2. Plastic laminate wall paneling.
- 3. Plastic laminate casework.
- 4. Solid surfacing material countertops.
- 5. Utility shelving and closet hardware.
- 6. Casework hardware.

- B. Sustainable Design Intent: Refer to Section 018113 - SUSTAINABLE DESIGN REQUIREMENTS.

- C. Related Work: The following items are not included in this Section and are specified under the designated Sections:

- 1. Section 061000 - ROUGH CARPENTRY for wood furring, blocking, shims, and hanging strips required for installing woodwork and concealed within other construction before woodwork installation.

1.3 SUBMITTALS

- A. Product Data: For each type of product specified, including casework hardware and accessories, 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.

- B. LEED Submittals:

- 1. Building Product Disclosure and Optimization, Environmental Product Declarations (EPD):

- a. Option 1: For wood products and plastic laminate, submit industry-wide EPDs.

- 2. Building Product Disclosure and Optimization, Sourcing of Raw Materials:

- a. General: For credit achievement calculation, submit location of products sourced (extracted, manufactured, and purchased), indicating number of miles from the project site.

- b. Option 2, Leadership Extraction Practices:

- 1) Wood Products: Wood products must be certified by the Forest Stewardship Council or USGBC-approved equivalent. Products meeting wood products criteria are valued at 100% of their cost for the purposes of credit achievement calculation.
 - 2) Recycled Content: Submit percentages by weight of postconsumer and pre-consumer recycled content for products having recycled content. Include statement indicating costs for each product having recycled content.
3. Low-Emitting Materials, General Emissions Evaluation: Building products must be tested and determined compliant in accordance with California Department of Public Health (CDPH) Standard Method v1.2-2017.
- a. For wood composite materials, submit test results, including TVOC emissions.
 - b. For adhesives and sealants, submit test results, including TVOC emissions and VOC content.
 - c. For wet-applied products, submit volume used.
- C. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
1. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
 - a. Provide schedule of blocking required to support the Work of this Section.
 2. Show locations and sizes of cutouts and holes for plumbing fixtures, electrical components and other items installed in architectural woodwork.
 3. 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 5 inches wide by 12 inches long for each species and cut, finished on 1 side and 1 edge.
 2. Lumber and panel products with shop-applied opaque finish, 5 inches wide by 12 inches long for lumber and 8 by 10 inches for panels, for each finish system and color, with 1/2 of exposed surface finished.
 3. Plastic laminates, 8 by 10 inches for each type, color, pattern, and surface finish, with 1 sample applied to core material, and specified edge material applied to 1 edge.
 4. Solid-surfacing materials, 6 inches square.
- 1.4 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.
1. Fabricator complies with OSHA Respirable Crystalline Silica standard and does not dry-cut engineered-quartz and natural stone materials.
- B. Source Limitations: Engage a qualified woodworking firm to assume undivided responsibility for production of interior architectural woodwork with blueprint-matched wood veneers and components.
- C. Quality Standard: Unless otherwise indicated, comply with AWI/AWMAC/WI's "Architectural Woodwork Standards," latest edition, including errata, for grades of interior architectural woodwork indicated for construction, finishes, installation, and other requirements.

- D. 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.
 - E. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
 - F. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01.
- 1.5 DELIVERY, STORAGE, AND HANDLING
- A. Do not deliver woodwork until painting and similar operations that could damage woodwork have been completed in installation areas. If woodwork must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Project Conditions" Article.
- 1.6 PROJECT CONDITIONS
- A. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.
 - 1. The HVAC systems as specified elsewhere may not provide for humidity controls. The expected ranges of relative humidity are expected to be as high as 55% to a low of uncontrolled during the heating system. Comply with AWS Section 2, Care and Storage.
 - B. Field Measurements: Where woodwork 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 woodwork 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 woodwork without field measurements. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.
- 1.7 COORDINATION
- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that interior architectural woodwork can be supported and installed as indicated.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Provide materials that comply with requirements of AWI/AWMAC/WI's "Architectural Woodwork Standards" for each type of woodwork and quality grade specified, unless otherwise indicated.
- B. Environmental Product Declarations (EPD): Industry-wide EPDs for wood products and plastic laminates are available from the American Wood Council and Canadian Wood Council.
- C. Certified Wood: Materials shall be 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."
 - 1. Salvaged and reclaimed wood is excluded from certified wood requirements.
- D. Recycled Content of Medium-Density Fiberboard and Particleboard: Provide products with an average recycled content so postconsumer recycled content plus one-half of preconsumer recycled content is not less than 25 percent.
- E. Lumber: Provide AWI Custom Grade materials and workmanship, unless otherwise indicated. For species not listed in the AWS comply with the following:
 - 1. Provide AWI Lumber Grade 1. Kiln dry to 6-8 percent moisture content. Components shall be free of defects and sapwood. Match adjacent pieces for color and grain pattern.
- F. Wood Species and Cut for Transparent Finish: As selected by the Architect.
 - 1. Architect's control samples for transparent finish, veneer grain and figure characteristics are available for review at the office of the Architect.
- G. Wood Species for Opaque Finish: Any closed-grain hardwood.
- H. Composite Wood Products: Comply with the following:
 - 1. Composite Wood, General: CARB II compliant or made with binder containing no added formaldehyde (NAF).
 - 2. Medium-Density Fiberboard (MDF): ANSI A208.2, Grade MD.
 - 3. Particleboard: ANSI A208.1, Grade M-2-Exterior Glue.
 - 4. Softwood Plywood: DOC PS 1, Medium Density Overlay (MDO).
- I. High-Pressure Decorative Plastic Laminate: NEMA LD 3, grades as indicated or, if not indicated, as required by woodwork quality standard.
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering high-pressure decorative laminates that may be incorporated into the Work include, but are not limited to, the following:
 - a. Abet Laminati, Inc.
 - b. Arborite; a division of Wilsonart.
 - c. Formica Corporation.
 - d. Lamin-Art; a division of Wilsonart.
 - e. Nevamar, Panolam, and Pionite; divisions of Panolam Surface Systems.
 - f. Wilsonart LLC.

- J. Solid-Surfacing Material: Homogeneous solid sheets of filled plastic resin complying with ISFA-2.
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Avonite Surfaces; Aristech Surfaces.
 - b. E. I. du Pont de Nemours and Company; Corian, Basis of Design.
 - c. Formica Corporation.
 - d. LG Hausys; Hi-Macs.
 - e. Wilsonart LLC.

2.2 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this Article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified.
 - 1. Do not use treated materials that do not comply with requirements of referenced wood-working 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 Lumber and Plywood by Pressure Process: Comply with performance requirements of AWPA C20 (lumber) and 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 after treatment, within limits set for wood removal that do not affect listed fire-test-response characteristics, using a woodworking plant certified by testing and inspecting agency.
 - 4. 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.
 - 5. Kiln-dry materials before and after treatment to levels required for untreated materials.
- C. Fire-Retardant Particleboard: Panels complying with the following requirements, made from softwood particles 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 25 or less per ASTM E 84.
 - 1. Basis of Design: Arauco NA; Duraflake FR.
- D. 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.
 - 1. Basis of Design: Roseburg.; Medite FR.

2.3 CASEWORK HARDWARE AND ACCESSORIES

- A. General: Provide casework hardware and accessory materials associated with architectural casework, except for items specified in Section 087100 - DOOR HARDWARE.
- B. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 100 degrees of opening, self-closing.
- C. Back-Mounted Pulls: BHMA A156.9, B02011.
 - 1. Mockett DP128/6 Series Round Top Drawer Pull- Satin Stainless Steel.
- D. Catches: Push-in magnetic catches, BHMA A156.9, B03131.
- E. Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081 or BHMA A156.9, B04102; with shelf brackets, B04112.
- F. Drawer Slides: BHMA A156.9, B05091; side mounted and extending under bottom edge of drawer; full-extension type; epoxy-coated-steel with steel ball-bearings; of the following grades:
 - 1. Box Drawer Slides: Grade 1.
 - 2. File Drawer Slides: Grade 1HD-100.
 - 3. Pencil Drawer Slides: Grade 2.
 - 4. Keyboard Slides: Grade 1.
 - 5. Trash Bin Slides: Grade 1HD-100.
- G. Door Locks: BHMA A156.11, E07121.
- H. Drawer Locks: BHMA A156.11, E07041.
- I. Grommets for Cable Passage through Countertops: Molded-plastic grommets and matching plastic caps with slot for wire passage.
- J. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
 - 1. Satin Stainless Steel: BHMA 630.
- K. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.
- L. Counter Supports: Hafele Hebgo 287.44.952 Heavy-Duty primed counter brackets, Basis of Design.
- M. Coat Hooks: Hafele 842.34.000 Mat, Stainless Steel Coat Hook, Basis of Design.

2.4 MISCELLANEOUS MATERIALS

- A. Furring, Blocking, Shims, and Hanging Strips: Fire-retardant-treated softwood lumber, kiln dried to less than 15 percent moisture content.
- B. 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 expansion sleeves for drilled-in-place anchors.
- C. Installation Adhesives and Wood Glues: Formulations approved for use indicated by adhesive manufacturer.

1. Low-Emitting Materials: Provide adhesives in compliance with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
2. VOC Limits: Use installation adhesives that comply with the following limits for VOC content:
 - a. Wood Glues: 30 g/L.
 - b. Contact Adhesives: Not permitted on the Project without Architect's prior approval.
3. Do not use adhesives that contain urea formaldehyde.
4. Methylene chloride and perchloroethylene may not be intentionally added to adhesives.

2.5 FABRICATION, GENERAL

- A. 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.
- B. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.
- C. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to radius indicated for the following:
 1. Corners of Casework and Edges of Solid-Wood (Lumber) Members and Rails: 1/16 inch.
- D. Complete fabrication, including assembly, finishing, and hardware application, 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.
- E. 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.
 1. Seal edges of openings in countertops with a coat of varnish.
- F. Install glass to comply with applicable requirements in Section 088000 - GLAZING and in GANA's "Glazing Manual." For glass in wood frames, secure glass with removable stops.

2.6 PLASTIC-LAMINATE CASEWORK

- A. Grade: Custom.
- B. AWI Type of Casework Construction: Flush overlay.
- C. Laminate Cladding for Exposed Surfaces: High-pressure decorative laminate complying with the following requirements:
 1. Horizontal Surfaces Other Than Tops: Grade HGS.
 2. Postformed Surfaces: Grade HGP.
 3. Vertical Surfaces: Grade HGS.
 4. Edges: Grade HGS.
- D. Materials for Semiexposed Surfaces:

1. Surfaces Other Than Drawer Bodies: High-pressure decorative laminate, Grade VGS.
 - a. Edges of Plastic-Laminate Shelves: Match laminate in color, pattern, and finish.
 - b. For semiexposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, Grade VGS.
 2. Drawer Sides and Backs: Solid-hardwood lumber.
 3. Drawer Bottoms: Hardwood plywood.
- E. Concealed Backs of Panels with Exposed Plastic Laminate Surfaces: High-pressure decorative laminate, Grade BKL.
- F. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
1. As selected by Architect from laminate manufacturer's full range.
- 2.7 PLASTIC-LAMINATE COUNTERTOPS
- A. Grade: Custom.
- B. High-Pressure Decorative Laminate Grade: HGS.
- C. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
1. As selected by Architect from manufacturer's full range.
- D. Edge Treatment: As indicated.
- E. Core Material: Exterior-grade plywood.
- F. Backer Sheet: Provide plastic-laminate backer sheet, Grade BKL, on underside of countertop substrate.
- 2.8 PLASTIC LAMINATE WALL PANELS
- A. Grade: Custom.
- B. Substrate: MDF.
- C. Laminate: As indicated on the Drawings.
- 2.9 SOLID-SURFACING-MATERIAL COUNTERTOPS
- A. Grade: Custom.
- B. Colors, Patterns, and Finishes: Provide materials and products that result in colors of solid-surfacing material complying with the following requirements:
1. As selected by Architect from manufacturer's full range.
- C. Fabricate tops in one piece, unless otherwise indicated. Comply with solid-surfacing-material manufacturer's written recommendations for adhesives, sealers, fabrication, and finishing.
1. Fabricate tops with shop-applied edges of materials and configuration indicated.
 2. Fabricate tops with loose backsplashes for field application.

- D. Drill holes in countertops for plumbing fittings and soap dispensers in shop.
- E. Edge Treatment: As indicated.

2.10 CLOSET AND UTILITY SHELVING

- A. Grade: Custom.
- B. Shelf Material: 1-inch plywood panel product with solid-lumber edge.
- C. Cleats: 3/4-inch solid lumber.
- D. Standards for Adjustable Shelf Brackets: BHMA A156.9, B04102; powder-coat-finished steel.
- E. Adjustable Shelf Brackets: BHMA A156.9, B04112; powder-coat-finished steel.
- F. Clothes Rods and Flanges: 1-5/16-inch-diameter, aluminum or steel. Do not chrome plate.

2.11 SHOP FINISHING

- A. General: Comply with AWI/AWMAC/WI's "Architectural Woodwork Standards" for factory finishing.
 - 1. Finish architectural woodwork at fabrication shop as specified in this Section. Defer only final touchup, cleaning, and polishing until after installation.
- B. Preparation for Finishing: Comply with referenced quality standard for sanding, filling counter-sunk fasteners, sealing concealed surfaces, and similar preparations for finishing architectural woodwork, as applicable to each unit of work.
 - 1. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of woodwork. Apply two coats to back of paneling and to end-grain surfaces. Concealed surfaces of plastic-laminate-clad woodwork do not require backpriming when surfaced with plastic laminate, backing paper, or thermoset decorative panels.
- C. Shop Priming: Shop apply the prime coat including backpriming, if any, for opaque-finished items specified to be field finished. Refer to Section 099000 - PAINTING AND COATING for material and application requirements.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Before installation, condition woodwork to average prevailing humidity conditions in installation areas.
- B. Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

3.2 INSTALLATION

- A. Grade: Install woodwork to comply with requirements for the same grade specified in Part 2 for fabrication of type of woodwork involved.
- B. Assemble woodwork and complete fabrication at Project site to comply with requirements for fabrication in Part 2, to extent that it was not completed in the shop.

- C. Install woodwork level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches.
- D. Scribe and cut woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- E. Fire-Retardant-Treated Wood: Handle, store, and install fire-retardant-treated wood to comply with chemical treatment manufacturer's written instructions, including those for adhesives used to install woodwork.
- F. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork and matching final finish if transparent finish is indicated.
- G. Paneling: Install paneling level, plumb, true, and straight with no distortions. Shim as required with concealed shims.
 - 1. Install level and plumb to a tolerance of 1/8 inch in 96 inches. Install with no more than 1/16 inch in 96-inch vertical cup or bow and 1/8 inch in 96-inch horizontal variation from a true plane.
 - a. 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.
 - 2. Scribe and cut paneling to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
 - 3. Anchor paneling to supporting substrate with concealed panel-hanger clips. Do not use face fastening unless covered by trim. Do not use adhesives, so that paneling may be removed and salvaged in the future.
- H. Casework: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
 - 1. Install casework with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
- I. Countertops: Anchor securely by screwing through corner blocks of base casework or other supports into underside of countertop.
 - 1. Align adjacent countertops and form seams to comply with manufacturer's written recommendations using adhesive in color to match countertop. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
 - 2. Install countertops with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
 - 3. Secure backsplashes to tops with concealed metal brackets at 16 inches and to walls with adhesive.
 - 4. Caulk space between backsplash and wall with sealant specified in Section 079200 - JOINT SEALANTS.
- J. Touch up finishing work specified in this Section after installation of woodwork. Fill nail holes with matching filler where exposed.

3.3 ADJUSTING AND CLEANING

- A. Repair damaged and defective woodwork, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.
- B. Clean, lubricate, and adjust hardware.
- C. Clean woodwork on exposed and semiexposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION