

SECTION 06410
CASEWORK AND SHELVING

PART 1 - GENERAL

1.01 PROVISIONS INCLUDED

- A. The general provisions of the Contract, including General and Supplementary Conditions and Division 1 General Requirements, apply to this Section.

1.02 SUMMARY

- A. Work Included:
 - 1. Laminate clad cabinets.
 - 2. Laminate clad work surfaces.
 - 2. Epoxy work surface and sink.
 - 3. Adjustable shelving.
- B. Related Work Specified in Other Sections:
 - 1. Furring and blocking for attachment of cabinets to wall: Section 06100, "Rough Carpentry."
 - 2. Laboratory casework and tops: Section 12350.

1.03 REFERENCED STANDARDS

- A. American National Standards Institute (ANSI)/Builders Hardware Manufacturer's Association, Inc. (BHMA): ANSI/BHMA A156 Series standards for hardware and specialties.
 - 1. ANSI/BHMA A156.9, "American National Standard for Cabinet Hardware."
 - 2. ANSI/BHMA A156.11, "American National Standard for Cabinet Locks."
 - 3. ANSI/BHMA A156.16, "American National Standard for Auxiliary Hardware."
- B. Architectural Woodwork Institute (AWI): "Architectural Woodwork Quality Standards," 6th edition unless otherwise indicated.
- C. Hardwood Plywood and Veneer Association (HPVA): HP-1-1993, "Interim Voluntary Standard for Hardwood and Decorative Plywood."
- D. U. S. Department of Commerce Product Standards: PS-20, "American Softwood Lumber Standard."

1.04 SUBMITTALS

- A. Product data: Submit manufacturer's illustrated product literature, specifications and installation instructions for each type of manufactured product and process specified in this section.

- B. Shop drawings: Submit shop drawings for the following fabrications. Show location of each item; include dimensioned plans and elevations, large-scale details, attachment devices, and other components.
 - 1. Interior standing and running trim.
 - 2. Laminate clad cabinets.
 - 3. **[Epoxy][Laminate clad]** worktops.
- C. Samples:
 - 1. For initial selection, submit manufacturer's color charts or chains, showing full range of colors, textures, and patterns available for each type of material indicated.
 - a. Plastic laminate.
 - 2. For verification, submit the following samples:
 - a. Lumber with or for transparent finish, 50 square inches, for each species and cut, finished on one side and one edge.
 - b. Laminate clad panel products, 8-1/2 inches, by 11 inches for each type, color, pattern, and surface finish, with separate samples of unfaced panel product used for core.
 - c. Samples showing cabinet corner construction.
 - d. Exposed cabinet hardware, one unit of each type and finish.
- D. Product certificates signed by woodwork manufacturer certifying that products comply with specified requirements.
- E. Qualification data for firms and persons specified in "Quality Assurance" article to demonstrate their capabilities and experience. Include list of completed projects with project names, addresses, names of Architects and Owners, and other information specified.

1.05 QUALITY ASSURANCE

- A. Fabricator and Installer Qualifications: Firm experienced in successfully producing and installing architectural woodwork similar to that indicated for this Project, with sufficient production capacity to produce required units without causing delay in the Work. The fabricator shall assume undivided responsibility for woodwork specified in this section, including fabrication, finishing, and installation.
- B. Materials and Fabrication Quality Standard: Comply with applicable requirements of AWI "Quality Standards," except as otherwise indicated.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect woodwork during transit, delivery, storage, and handling to prevent damage, soilage, and deterioration.
- B. Do not deliver casework until gypsum partition installation, painting, and similar operations that could damage, soil, or deteriorate casework have been completed in installation areas.

1.06 PROJECT CONDITIONS

- A. Field Measurements: Where woodwork is indicated to be fitted to other construction, check actual dimensions of other construction by accurate field measurements before manufacturing woodwork; show recorded measurements on final shop drawings. Coordinate manufacturing schedule with construction progress to avoid delay of Work.

PART 2 - PRODUCTS

2.01 SOLID LUMBER

- A. Solid Stock: For trim in form of boards and worked products, provide lumber complying with this article.
- B. Solid Lumber, Transparent Finish: Select White Maple, plain sawn, AWI Grade I.
- C. Solid Lumber, Painted Finish: Poplar, or other close-grained hardwood. Solid lumber for painted finish may be either glued-up lumber or solid lumber stock.

2.02 PANEL PRODUCTS

- A. General: Provide materials that comply with requirements of the AWI woodworking standard for each type of woodwork and quality grade indicated.
- B. Panel Core Materials: Provide materials specified under fabrication or noted on the drawings, complying with the following standards:
 - 1. Medium Density Fiberboard: ANSI A208.2, with formaldehyde emission complying with NPA 9.
 - 2. Particleboard: ANSI A208.1, with formaldehyde emission complying with NPA 8.
 - 3. Softwood Plywood: PS 1.
 - 4. Water-Resistant Core: Exterior grade PS-1 plywood or phenolic resin particleboard (Type 2-M-2).
- C. Hardwood Plywood: HPVA HP-1 and AWI Section 200, Panel Products, with formaldehyde emission complying with HPMA FE; and the following:
 - 1. Grade: Grade AA
 - 2. Face Veneer: Select White Maple
 - 3. Veneer matching within panel: Book match, with flitches balanced.

2.03 PLASTIC LAMINATE

- A. Manufacturer: Subject to compliance with requirements, provide high pressure decorative laminates of one of the following:
 - 1. Formica Corp.
 - 2. Nevamar Corp.
 - 3. Pionite Decorative Surfaces
 - 4. Ralph Wilson Plastics Co.

- B. High Pressure Decorative Laminate (HPDL): NEMA LD 3, and meeting AWI Section 200-S-5 for Grade of overlay material.
 - 1. Grade/Thickness: As specified under fabrication or shown on drawings.
 - 2. Colors and Patterns: Architect will select from full range of standard solid colors and finishes available from the approved manufacturer
- C. Thermoset Decorative Overlay (TDO): Thermoset polyester resin overlay conforming to NEMA LD3-1995 for VGL and with AWI "Quality Standards," 200-S-11; in solid colors selected by Architect from full range of colors available from TDO manufacturer.
- D. Laminate Core: As specified under fabrication; if no specific material is specified in the fabrication article in this section, core is fabricator's choice.

2.04 EPOXY MATERIAL

- A. **[EC WILL INSERT HERE, IF WE GO WITH THIS SECTION.]**
- B. Color: Black.
- C. Accessories: Furnish manufacturer's standard adhesives and seaming materials; furnish seaming materials in color matching the polymer sheet.

2.05 CABINET HARDWARE AND ACCESSORIES

- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets.
- B. Hardware Standard: Comply with BHMA A156.9 for items indicated by referencing BHMA numbers or items referenced to this standard.
- C. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 135 degrees of opening.
- D. Wire Pulls: Back mounted, 5 inches (127 mm) long, 2-1/2 inches (62 mm) deep, and 5/16 inches (8 mm) in diameter.
- E. Catches: Push-in magnetic catches, BHMA A156.9, B03131.
- F. Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081.
- G. Drawer Slides: Side-mounted, full-extension, zinc-plated steel drawer slides with steel ball bearings, BHMA A156.9, B05091, and rated for the following loads:
 - 1. Box Drawer Slides: 100 lbf (440 N).
- H. Door Locks: BHMA A156.11, E07121.
- I. Drawer Locks: BHMA A156.11, E07041.

- J. Grommets for Cable Passage through Countertops: 2-inch (51-mm) OD, black, molded-plastic grommets and matching plastic caps with slot for wire passage.
- K. Exposed Hardware Finish: For exposed hardware, provide stainless steel hardware with satin finish that complies with BHMA A156.18 for BHMA 630.
- L. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

2.06 ACCESSORY MATERIALS

- A. Furring, Blocking, Shims, and Hanging Strips: Fire-retardant-treated softwood lumber, kiln-dried to less than 15 percent moisture content, conforming to Section 06100.
- 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 or lead expansion sleeves for drilled-in-place anchors.
- C. Screws: Select material, type, size, and finish required for each use. Comply with FS FF-S-111 for applicable requirements.
- D. Nails: Select material, type, size, and finish required for each use. Comply with FS FF-N-105 for applicable requirements.

2.07 FABRICATION, GENERAL

- A. Interior Woodwork Grade: Provide Premium grade interior woodwork complying with the referenced quality standard.
- B. Wood Moisture Content: Comply with requirements of referenced quality standard for moisture content of lumber in relation to relative humidity conditions existing during time of fabrication and in installation areas.
- C. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to 1/16 inch radius, unless other radius is indicated on the drawings.
- D. Complete fabrication, including assembly, finishing, and hardware application, before shipment to project site to maximum extent possible. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
- E. Factory-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. Seal edges of openings in countertops with a coat of varnish.

2.09 LAMINATE CLAD CABINETS

- A. Quality Standard: Comply with AWI Section 400 requirements for laminate cabinets.
- B. AWI Type of Cabinet Construction: Flush overlay.
- C. Laminate Cladding for Exposed Surfaces: High-pressure decorative laminate complying with the following requirements:
 - 1. Vertical Surfaces: VGS, 0.028 inch (0.7mm) thick.
 - 2. Horizontal Surfaces Other Than Tops: HGS, 0.05 inch (1.2 mm) thick.
 - 3. Edges: Match laminate surface in Grade, color, pattern, and finish.
- D. Materials for Semiexposed Surfaces: Provide surface materials indicated below:
 - 1. Surfaces Other Than Drawer Bodies: High-pressure decorative laminate, Grade VGS.
 - 2. Drawer Sides and Backs: Solid-hardwood lumber.
 - 3. Drawer Bottoms: Hardwood plywood.
- E. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
 - 1. Provide Architect's selections from laminate manufacturer's full range of colors and finishes in solid colors and patterns.

2.10 LAMINATE-CLAD CABINET TOPS

- A. Quality Standard: Comply with AWI Section 400 requirements for high-pressure decorative laminate countertops.
- B. High-Pressure Decorative Laminate Grade: HGS, 0.048 inch thick.
- 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. Provide Architect's selections from manufacturer's full range of colors and finishes in solid or pattern.
- D. Edge Treatment: As indicated.
- E. Core Material: Particleboard or medium-density fiberboard; except at counters with sinks, use particleboard made with exterior glue or medium-density fiberboard made with exterior glue.

2.11 EPOXY WORKTOPS

- A. Quality Standard: Comply with AWI Section 400 requirements for countertops.
- B. **TO COME**

2.13 SHELVING AND SUPPORTS

- A. Storage Shelving: Particleboard overlaid with low-pressure decorative laminate such as "melamine;" architect will select white or almond color. Finish both faces and all four edges so shelves can be reversed, if necessary.
- B. Shelving Supports: Heavy-duty 16-gauge steel double-slotted standards and steel shelf brackets; chrome finish; equal to Knap & Vogt 85 ANO standard with 185LL ANO brackets.
 - 1. Bracket Depth: 12" and 18" depths to match shelving depth; see Drawing for locations.
- C. Closet Rods: Stainless steel clad tubing, 1-1/16" diameter, 0.087 inch minimum wall thickness; with polished chrome escutcheon supports. One of the following or approved equal.
 - 1. Knap & Vogt #660 rods with #735 and 735 supports.
 - 2. EPCO (The Engineered Products Co.) #870 rods with #850 and 860 supports.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Quality Standard: Install woodwork to comply with AWI Section 1700 for same grade specified in Part 2 of this section for type of woodwork involved.
- B. Install woodwork plumb, level, true, and straight with no distortions. Shim as required with concealed shims. Install to a tolerance of 1/8 inch in 8'-0" for plumb and level (including tops) and with no variations in flushness of adjoining surfaces.
- C. Scribe and cut woodwork to fit adjoining work and refinish cut surfaces or repair damaged finish at cuts.
- D. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation. Except where prefinished matching fastener heads are required, use fine finishing nails for exposed nailing, countersunk and filled flush with woodwork and matching final finish where transparent finish is indicated.
- E. Cabinets: Install without distortion so that 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 the installation of hardware and accessory items as indicated.
- F. Tops and Counters: Anchor securely to base units and other support systems as indicated, using concealed fasteners.
 - 1. Splashback: Unless shown otherwise, install 4-inch high splashback wherever top or counter meets a vertical surface. Bed splashback in a continuous bead of sealant.

- G. Storage Shelving: Install in shelf supports in accordance with manufacturer's instructions. Locate standards as required so that each shelf unit is supported on at least two supports, one located near each end of each shelf unit, and with intermediate supports spaced as recommended by the manufacturer of the standards and brackets to support the design loads specified in Part 2 of this Section. Space shelves vertically as shown, or if not shown, at nominal 12 inch center to center spacing.

3.02 ADJUSTMENT AND CLEANING

- A. Repair damaged and defective woodwork where possible to eliminate defects functionally and visually; 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.

3.06 PROTECTION

- A. Protect casework and shelving and maintain environmental conditions in a manner acceptable to manufacturer and Installer, to ensure that woodwork is without damage or deterioration at time of Substantial Completion.

END OF SECTION 06410