

SECTION 06400 – INTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Extent of each type of architectural millwork is indicated on drawings. Types of architectural millwork include:
 - 1. Plastic laminate cabinets.
 - 2. Plastic-laminate countertops.
 - 3. Solid-surfacing-material countertops.

1.3 DEFINITIONS

- A. Interior architectural woodwork includes wood blocking, shims, and hanging strips for installing woodwork items, unless concealed within other construction before woodwork installation.

1.4 SUBMITTALS

- A. Product Data: For hardboard, medium-density fiberboard, particleboard, high-pressure decorative laminate, adhesive for bonding plastic laminate, thermoset decorative overlay, solid-surfacing material, cabinet hardware and accessories, and finishing materials and processes.
- B. 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 locking and reinforcement specified in other Sections.
 - 2. Show locations and sizes of cutouts and holes for plumbing fixtures, and other items installed in architectural woodwork.
 - 3. All shop drawings shall indicate use of particle board with minimum density of 45 # throughout panels.
- C. Samples for verification: For the following:

1. Thermoset decorative-overlay surfaced panel products, 8 by 10 inches, for each type, color, pattern, and surface finish.
 2. Solid-surfacing materials, 6 inches square.
 3. Exposed cabinet hardware and accessories, one unit for each type and finish.
- D. Product Certificates: Signed by manufacturer's of woodwork certifying that products furnished comply with requirements.
- E. Qualification Data: For firm and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with names and addresses, names and addresses of architects and owners, and other information specified.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed architectural woodwork similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Fabricator Qualifications: A firm experienced in producing architectural similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Source Limitations: Engage a qualified woodworking firm to assume undivided responsibility for production and installation of interior architectural woodwork.
- D. Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Quality Standards" for grades of interior architectural woodwork, construction, finishes, and other requirements.
1. Provide AWI Quality Certification Program certificate indicating that woodwork complies with requirements of grades specifies.
- E. Sample Cabinet: Before fabricating and installing interior architectural woodwork, build sample cabinet. Build sample cabinets to comply with the following requirements, using materials indicated for the completed Work:
1. Sample Cabinet: Construct full size base cabinet. Sample cabinet shall be an 18B48 unit as illustrated on casework detail.
 2. Contractor shall bring sample cabinet to jobsite for architect's review during a regularly scheduled jobsite meeting.
 3. Contractor shall make any necessary modifications to sample cabinet to comply with architect's comments.
 4. Approved sample cabinet shall remain at jobsite as a standard for judging the completed work.

5. Remove the sample cabinet at the completion of the project.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect millwork during transit, delivery, storage and handling to prevent damage, soiling and deterioration.
- B. Do not deliver millwork until painting, wet work, grinding and similar operations that could damage, soil or deteriorate millwork have been completed in installation areas. If millwork 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 millwork 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.
- 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. Establish 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 establish 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 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 the AWI quality standard for each type of woodwork and quality grade specified, unless otherwise indicated.
- B. Wood Products: Comply with the following:
 1. Hardboard: AHA A135.4.

2. Medium-Density Fiberboard: ANCI A208.2, Grade MD.
 3. Particleboard: ANSI A208.1, Grade M-2.
- C. Thermoset Decorative Overlay: Particleboard complying with ANSI A208.1, grade M-2, or medium-density fiberboard complying with ANSI A208.2, Grade MD, with surface of thermally fused, melamine-impregnated decorative paper complying with LMA SAT-1.
- D. Clear Tempered Float Glass for Doors: ASTM C 1048, Kind FT, Condition A, Type I, Class I, Quality q3; manufactured by horizontal (roller hearth) process, with exposed edges seamed before tempering, 6 mm thick, unless otherwise indicated.
- E. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated, or if not indicated, as required by woodwork quality standard.
1. Manufacturer: Subject to compliance with requirements, provide high-pressure decorative laminates as specified under finish legend. Where not specified, approved manufacturer's are Wilsonart, Formica, Nevamar OR approved equal.
- F. Adhesive for Bonding Plastic Laminate: Unpigmented contact cement.
- G. Solid-Surfacing Material: Homogeneous solid sheets of filled plastic resin with material and performance requirements in ANSI Z124.3, for Type 5 or Type 6, without a precoated finish.
1. Products: Subject to compliance with requirements, provide materials specified under finish legend.
- 2.2 CABINET HARDWARE AND ACCESSORIES
- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets, except for items specified in Division & Section "Door Hardware."
- B. Hardware Standard: Comply with BHMA A156.9 for items indicated by referencing BHMA numbers or items referenced to this standard.
- C. Butt Hinges: 2-3/4-inch, 5-knuckle steel hinges made from 0.095-inch thick metal, and as follows:
1. Semiconcealed Hinges for Overlay Doors: BHMA A156.9, B01521 unless otherwise noted.
- D. Semi-recede pulls: ABS Plastic, color as selected by Architect/Engineer.
- E. Catches: magnetic catches, BHMA A156.9, B03141.
- F. Shelf Rests: BHMA A156.9, B04013.
- 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: 75 lbf.
2. File drawer Slides: 150 lbf.
3. Pencil Drawer Slides: 45 lbf.
4. Keyboard Slide: 75 lbf.

H. Door Locks: BHMA A156.11, E07121.

I. Drawer Locks: BHMA A156.11, E07041.

J. Grommets for Cable Passage through Countertops: 2-1/2-inch black, molded-plastic grommets and matching plastic caps with slot for wire passage.

1. Product: Subject to compliance with requirements, provide "SG series" by Doug Mockett & Co., Inc. (800-523-1269)

K. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.

1. Satin Chromium Plated: BHMA 626 unless otherwise noted.
2. Satin Stainless Steel: BHMA 630.

2.3 PLASTIC-LAMINATE CABINETS

A. Quality Standard: Comply with AWI Section 400 requirements for laminate cabinets and its Division 400B.

B. Grade: Custom.

C. AWI Type of Cabinet Construction: Flush overlay. Panel Type Construction

1. All particleboard construction shall be 45# density throughout panel.
2. All cabinets at wet areas to be 3/4" plywood construction.
3. All cabinets over 36-inches wide to have 3/4" continuous top.
4. Shelving units over 33" wide shall have vertical divider support or reinforcement.
5. drawer bottoms over 24" wide shall be reinforced.
6. Cabinets shall have a separate and continuous pressure treated sub-base. Cabinet sides to floor will not be acceptable.

D. Laminate Cladding for Exposed Surfaces: High-pressure decorative laminate complying with the following requirements:

1. Horizontal Surfaces Other Than Tops: HGS.
2. Vertical Surfaces: VGS.

3. Edges: Same as laminate cladding on faces OR doors and drawers shall receive 3-mm PVC banding, machine applied with waterproof hot melt adhesive with external edges and outside corners machine profiled to 1/8" radius. Cabinet bodies and shelving shall receive 1-mm PVC banding, machine applied with waterproof hot melt adhesive. Shelving shall have 1-mm PVC banding around all four sides. All shall match laminate in color, pattern, and finish.

E. Materials for Semiexposed Surfaces: Provide surfaces materials indicated below:

1. Surfaces Other Than Drawer Bodies: 120 gram minimum Thermofused Melamine decorative overlay.
2. Drawer Sides and Backs: 120 gram minimum Thermofused Melamine decorative overlay.
3. Drawer Bottoms: 120 gram minimum Thermofused Melamine decorative overlay.
4. Panels with plastic laminate on one side are to receive a CL-20 balance sheet OR equal plastic laminate on opposite side. CL-20 liner on all plywood core panels.

F. Materials for Concealed Surfaces: Provide surfaces materials indicated below:

1. 120 gram minimum Thermofused Melamine finish. Color to be as specified on Drawings or as selected by Architect.

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

1. Match color, pattern, and finish as indicated laminate manufacturer's designations for these characteristics as indicated on finish legend.
2. Colors to be as specified on Drawings or as selected by Architect.

2.4 PLASTIC-LAMINATE COUNTERTOPS

- A. Quality Standard: Comply with AWI Section 400 requirements for high-pressure decorative laminate countertops and its Division 400C.
- B. Grade: Custom unless otherwise indicated.
- C. High-Pressure Decorative Laminate Grade: HGS-50 on 1 1/4" edge up to 36 inches wide.
- D. Colors, Patterns, and Finishes: Provide material and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
 1. Match color, pattern, and finish as indicated by manufacturer's designations for these characteristics, as indicated on finish legend.
 2. Colors to be as specified on Drawings or as selected by Architect.
- E. Grain Direction: Parallel to cabinet fronts.

- F. Edge Treatment: Same as laminating cladding on horizontal surfaces.
- G. Core Material: Particleboard.
- H. Core Material at Sinks: Particleboard made with exterior glue, or exterior-grade plywood.
- I. Grommets: Provide one (1) 2 ½” grommet by Doug Mockett & Co., Inc. (800-523-1269) for each 48 inch length of workstation countertop. Locations to be determined in the field by Owner.
- J. Notes:
 - 1. Countertops to be plywood at all wet areas with 1-1/4” plywood edge up to 36 inches wide (for PVC banding) OR 1-1/2” plywood edge up to 36 inch wide (for plastic laminate edging).
 - 2. All countertops to receive BK-20 sub-top except wet areas to receive plywood core with CL-20 sub top.
 - 3. Tops over 36 inches wide to receive ¾” continuous top with BK-20 backer sheet.

2.5 SOLID-SURFACING-MATERIAL COUNTERTOPS

- A. Quality Standard: Comply with AWI Section 400 requirements for countertops.
- B. Grade: Premium.
- C. Solid-Surfacing-Material Thickness: ¾ inch.
- D. Colors, Patterns, and Finishes: Provide materials and products that result in colors of solid-surfacing material complying with the following requirements:
 - 1. Match color, pattern, and finish as indicated by manufacturer’s designations for these characteristics as indicated on finish legend.
 - 2. Colors to be as specified on Drawings or as selected by Architect.
- E. Fabricate tops in one piece with shop-applied backsplashes and edges, unless otherwise indicated. Comply with solid-surfacing-material manufacturer’s written recommendations for adhesives, sealers, fabrication, and finishing.
- F. Install integral sink bowls in countertops in shop.

2.6 FABRICATION GENERAL

- A. Interior Woodwork Grade: Provide Custom grade interior woodwork complying with the referenced quality standard unless otherwise noted.
- B. Wood Moisture Content: Comply with requirements of referenced quality standard for wood moisture content in relation to ambient relative humidity during fabrication and installation areas.
- C. Fabricate woodwork to dimensions, profiles, and details indicated with openings and mortises precut, where possible, to receive hardware and other items and work.

- D. Complete fabrication, assembly, finishing, hardware application and other work 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. Install glass to comply with applicable requirements in Division * Section "Glazing" and in GANA's "Glazing Manual." For glass in wood frames, secure glass with removable stops.
- F. Fabricate architectural millwork with precut openings, where possible, to receive hardware, appliances, plumbing fixtures, electrical work and similar items. Locate openings accurately and use templates or roughing-in diagrams for proper size and shape. Smooth edges of cutoffs and, where located in countertops and similar exposures, seal edges of cutouts with a water-resisting coating such as exposed openings to receive plastic grommets.
- G. Before proceeding with fabrication of millwork required to be fitted to other construction, obtain field measurements and verify dimensions and shop drawing details as required for accurate fit.

2.7 INSTALLATION MATERIALS

- A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln-dried to less than 15 percent moisture content. Fire retardant treated where installed within construction.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Condition millwork to average prevailing humidity conditions in installation areas before installation.
- B. Before installing architectural millwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and back priming.

3.2 INSTALLATION

- A. Quality Standard: Install millwork to comply with AWI Section 1700 for the same grade specified in Part 2 of this Section for type of woodwork involved.
- B. Install millwork level, plumb, true, and straight with no distortions. Shim as required with concealed shims. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches and with no variations in flushness of adjoining surfaces.
- C. Scribe and cut millwork to fit adjoining work, and refinish cut surfaces and repair damages finish at cuts.
- D. Anchor millwork 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 millwork, and matching final finish where transparent finish is indicated.

- E. Cabinets: 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 cabinets with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
 - 2. Fasten wall cabinets through back, near top and bottom, at ends and not more than 16 inches o.c. with No.10 wafer-head sheet metal screws through metal backing or metal framing.
- F. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertops.
 - 1. Align adjacent solid-surfacing-material countertops and form seals 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. Calk space between backsplash and wall with sealant specified in Division 7 Section "Joint Sealants."

3.3 ADJUSTING AND CLEANING

- A. Repair damaged and defective millwork to eliminate functional and visual defects; where not possible to repair, replace millwork. Adjust joinery for uniform appearance.
- B. Clean, lubricate, and adjust hardware.
- C. Clean millwork on exposed and semi-exposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.
- D. Complete the finishing work specified as work of this section, to whatever extent not completed at the shop or prior to installation of millwork.
- E. Provide final protection and maintain conditions, in a manner acceptable to Fabricator and Installer, which ensures architectural millwork is without damage or deterioration at time of substantial completion.

END OF SECTION 06400