

## PART 1 - GENERAL

### 1.1 SUMMARY

1. Section Includes:
  1. Plastic-laminate-faced architectural cabinets.
  2. Wood furring, blocking, shims, and hanging strips for installing plastic-laminate-faced architectural cabinets unless concealed within other construction before cabinet installation.
2. Related Work:
  1. Division 12 Sections on countertops.
  2. Division 06 Section *Cabinet and Drawer Hardware*
  3. Division 08 Section *Rough Carpentry* for wood furring, blocking, shims, and hanging strips required for installing cabinets and concealed within other construction before cabinet installation.

### 1.2 SUBMITTALS

1. With respect to Submittals: Provide custom millwork submittals by a professional, third party shop drawing company.
2. Product Data: For each type of product, including panel products and finishing materials and processes.
3. Product Data: For each type of product, including panel products, high-pressure decorative laminate, and adhesive for bonding plastic laminate.
4. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
  1. Show details full size.
  2. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
  3. Show locations and sizes of cut-outs and holes for electrical switches and outlets and other items installed in architectural wood cabinets.
5. Samples for Verification:
  1. Plastic laminates 300 by 300 mm, for each type, colour, pattern, and surface finish, with one sample applied to core material and specified edge material applied to one edge.
  2. Thermoset decorative panels, 200 by 250 mm, for each colour, pattern, and surface finish, with edge banding on one edge.
6. Qualification Data: For Installer.
7. Product Certificates: For the following:
  1. Composite wood and agrifibre products.
  2. Thermoset decorative panels.
  3. High-pressure decorative laminate.
  4. Adhesives.

### 1.3 QUALITY ASSURANCE

1. 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.
2. Installer Qualifications: Fabricator of products.
3. Mock-ups: Build mock-ups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
  1. Build mock-ups of typical architectural wood cabinets as shown on Drawings.
  2. Subject to compliance with requirements, approved mock-ups may become part of the completed Work if undisturbed at time of Substantial Completion.

### 1.4 DELIVERY, STORAGE, AND HANDLING

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

### 1.5 FIELD CONDITIONS

1. Environmental Limitations: Do not deliver or install cabinets 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.
2. Field Measurements: Where cabinets are 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 cabinets by field measurements before being enclosed, and indicate measurements on Shop Drawings.
3. Established Dimensions: Where cabinets are indicated to fit to other construction, establish dimensions for areas where cabinets are to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

### 1.6 COORDINATION

1. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that architectural cabinets can be supported and installed as indicated.
2. Hardware Coordination: Coordinate hardware required with Division 08 Section *Cabinet and Drawer Hardware*.

## PART 2 - PRODUCTS

### 2.1 PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

1. Quality Standard: Unless otherwise indicated, comply with the *Architectural Woodwork Standards* for grades of architectural plastic-laminate cabinets indicated for construction, finishes, installation, and other requirements.

1. The Contract Documents contain selections chosen from options in the quality standard and additional requirements beyond those of the quality standard. Comply with those selections and requirements in addition to the quality standard.
  2. Grade: Custom.
  3. Certified Wood (LEED designated projects only): Plastic-laminate cabinets shall be made from wood products certified as *FSC Pure* or *FSC Mixed Credit* according to FSC STD-01-001, *FSC Principles and Criteria for Forest Stewardship* and FSC STD-40-004, *FSC Standard for Chain of Custody Certification*.
  4. Type of Construction: Frameless.
  5. Cabinet, Door, and Drawer Front Interface Style: Flush overlay.
  6. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or if not indicated, as required by woodwork quality standard.
  7. Laminate Cladding for Exposed Surfaces:
    1. Horizontal Surfaces: Grade HGS or better.
    2. Postformed Surfaces: Grade HGP.
    3. Vertical Surfaces: Grade VGS or better.
    4. Edges: PVC edge banding, 2 mm thick minimum, matching laminate in colour, pattern, and finish.
    5. Pattern Direction: Vertically for drawer fronts, doors, and fixed panels, unless noted otherwise.
  8. Materials for Semi-exposed Surfaces:
    1. Surfaces Other Than Drawer Bodies: Thermoset decorative panels.
      1. Edges of Thermoset Decorative Panel Shelves: PVC edge banding.
      2. For semi-exposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, NEMA LD 3, Grade VGS or Grade CLS.
  9. Drawer Construction:
    1. Drawer Sub-fronts, Backs, and Sides: Solid-hardwood lumber, same species indicated for exposed surfaces.
      1. Drawer Bottoms: Hardwood plywood.
    2. Dust Panels: 6.4 mm plywood or tempered hardboard above compartments and drawers unless located directly under tops.
    3. Join sub-fronts, backs, and sides with glued dovetail joints.
  10. Colours, Patterns, and Finishes: Provide materials and products that result in colours and textures of exposed laminate surfaces complying with the following requirements:
    1. As scheduled.
- 2.2 WOOD MATERIALS
1. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.
    1. Do not use plain-sawn softwood lumber with exposed, flat surfaces more than 75 mm wide.
    2. Wood Moisture Content: 8 to 13 percent.
    3. Certified Wood (For LEED designated projects only): Produce cabinets from wood certified as *FSC Pure* or *FSC Mixed Credit* according to FSC STD-01-001, *FSC Principles and Criteria for Forest Stewardship*, and FSC STD-40-004, *FSC Standard for Chain of Custody Certification*.

2. Composite Wood and Agrifibre Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.
  1. Composite Wood and Agrifibre Products: Products shall comply with the testing and product requirements of the California Department of Health Services' *Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers*.
3. Softwood lumber: to CAN/CSA-O141.
  1. Wood species: Pine.
4. Medium-Density Fibreboard
  1. To ANSI A208.2, Grade MD.
  2. Made with binder containing no urea formaldehyde.
  3. Recycled Content of Medium-Density Fiberboard: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 80 percent.
  4. Provide products made from not less than 80% recycled wood fibre.
5. Particleboard
  1. ANSI A208.1, Grade M-2-Exterior Glue.
  2. Made with binder containing no urea formaldehyde.
  3. Recycled Content of Medium-Density Particleboard: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 80 percent.
  4. Provide products made from not less than 80% recycled wood fibre.
6. Hardboard
  1. To CAN/CGSB-11.3.
  2. Made with binder containing no urea formaldehyde.
7. Veneer-Faced Panel Products (Hardwood Plywood)
  1. To HPVA HP-1.
  2. Made with adhesive containing no urea formaldehyde.
  3. Grade: Grade B or better veneer for, unless otherwise noted.
8. Baltic Plywood
  1. Birch or other closed grain hardwood veneer.
    1. Baltic/Russian/Finland Hardwood Plywood consisting of multiple thin, solid veneer layers.
    2. Europly as marketed by Columbia Forest Products;
    3. Or approved alternate.
9. Softwood Plywood
  1. Canadian softwood plywood (CSP) to CSA O151, standard construction or better.
  2. Made with adhesive containing no urea formaldehyde.
10. Thermoset Decorative Panels
  1. Thermoset Decorative Panels: Particleboard or medium-density fiberboard finished with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for test methods 3.3, 3.4, 3.6, 3.8, and 3.10.
  2. Recycled Content of Medium-Density Fiberboard and Particleboard: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 80 percent.
  3. Colours, Patterns, and Finish: if not otherwise indicated, then selected by Public Works Representative from manufacturer's full line of standard colours, patterns, and finishes.

4. Provide 2-3 mm thick PVC edge banding on components with exposed or semi exposed edges.
  1. Colour: If not otherwise indicated, then provide colour to match plastic-laminated and thermoset decorative panels.

### 2.3 CABINET HARDWARE AND ACCESSORIES

1. General: Provide cabinet hardware and accessory materials associated with architectural cabinets to the requirements of Division 06 Section *Cabinet and Drawer Hardware*,

### 2.4 MISCELLANEOUS MATERIALS

1. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln dried to less than 15 percent moisture content.
2. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.
3. Adhesives: Do not use adhesives that contain urea formaldehyde.
4. Adhesives (LEED designated projects only): Use adhesives that meet the testing and product requirements of the California Department of Health Services' *Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers*.

### 2.5 FABRICATION

1. Fabricate cabinets to dimensions, profiles, and details indicated.
2. 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.
  1. Notify Architect seven days in advance of the dates and times woodwork 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 before disassembling for shipment.
3. Shop-cut openings to maximum extent possible to receive hardware, appliances, 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 cut-outs to remove splinters and burrs.
4. Install glass to comply with applicable requirements in Division 08 Section *Glazing* and in GANA's *Glazing Manual*. For glass in wood frames, secure glass with removable stops.

## PART 3 - EXECUTION

### 3.1 PREPARATION

1. Before installation, condition cabinets to average prevailing humidity conditions in installation areas.

2. Before installing cabinets, examine shop-fabricated work for completion and complete work as required, including removal of packing and back-priming.

### 3.2 INSTALLATION

1. Grade: Install cabinets to comply with same grade as item to be installed.
2. Assemble cabinets and complete fabrication at Project site to the extent that it was not completed in the shop.
3. Install cabinets level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb to a tolerance of 3 mm in 2400 mm.
4. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
5. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork.
  1. For shop finished items use filler matching finish of items being installed.
6. 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 3 mm in 2400 mm sag, bow, or other variation from a straight line.
  2. Maintain veneer sequence matching of cabinets with transparent finish.
  3. Fasten wall cabinets through back, near top and bottom, and at ends not more than 400 mm o.c. with No. 10 wafer-head screws sized for not less than 38 mm penetration into wood framing, blocking, or hanging strips.

### 3.3 ADJUSTING AND CLEANING

1. Repair damaged and defective cabinets, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.
2. Clean cabinets on exposed and semi-exposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

**END OF SECTION**