

Part 1 General

1.1 REFERENCE STANDARDS

- .1 ASTM International
 - .1 ASTM A123/A123M-15, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - .2 ASTM A153/A153M-09, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - .3 ASTM F1667-13, Standard Specification for Driven Fasteners: Nails, Spikes and Staples.
- .2 CSA International
 - .1 CSA B111-1974 (R2003), Wire Nails, Spikes and Staples.
 - .2 CSA O151-09 (R2014), Canadian Softwood Plywood.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for wood products and accessories and include product characteristics, performance criteria, physical size, finish and limitations.

1.3 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store materials off ground with moisture barrier at both ground level and as a cover forming a well-ventilated enclosure, with drainage to prevent standing water.
 - .3 Replace defective or damaged materials with new.

Part 2 Products

2.1 FRAMING

- .1 Lumber: softwood, S4S, moisture content 19% (S-dry) or less in accordance with following standards:

- .1 CSA O141.
- .2 NLGA Standard Grading Rules for Canadian Lumber.

2.2 FURRING AND BLOCKING

- .1 Furring, blocking, nailing strips, grounds, rough bucks, cants, curbs, fascia backing and sleepers:
 - .1 Board sizes: "Standard" or better grade.
 - .2 Dimension sizes: "Standard" light framing or better grade.
- .2 Where indicated, provide pressure treated materials for furring, blocking, nailing strips, grounds, rough bucks, cants, curbs, fascia backing.

2.3 PANEL MATERIALS AND APPLICATION

- .1 Sheathing and Blocking:
 - .1 Plywood, CSP sheathing grade, 19 mm thickness unless indicated otherwise.

2.4 ACCESSORIES

- .1 General purpose adhesive: to CSA O112.9.
- .2 Nails, spikes and staples: to ASTM F1667.
- .3 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.
- .4 Fastener Finishes: use galvanized fasteners for exterior work, plain finish other locations.
 - .1 Galvanizing: to ASTM A123/A123M.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for product installation in accordance with manufacturer's written instructions.

3.2 FRAMING INSTALLATION

- .1 Install members true to line, levels and elevations, square and plumb.
- .2 Construct continuous members from pieces of longest practical length.
- .3 Install spanning members with "crown-edge" up.
- .4 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
- .5 Countersink bolts where necessary to provide clearance for other work.

3.3 SHEATHING INSTALLATION

- .1 Install sheathing in accordance with requirements of NBC.
- .2 Use nailing disks for soft sheathing as recommended by sheathing manufacturer.

3.4 FURRING AND BLOCKING

- .1 Install furring and blocking as required to space-out and support casework, cabinets, wall and ceiling finishes, facings, fascia, soffit, and other work as required.
- .2 Install furring to support siding applied vertically where there is no blocking and where sheathing is not suitable for direct nailing.
 - .1 Align and plumb faces of furring and blocking to tolerance of 1:600.
- .3 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.
- .4 Install wood cants, fascia backing, nailers, curbs and other wood supports as required and secure using galvanized fasteners.
- .5 Install plywood blocking within walls, attached to framing, for support of fixtures and equipment.

3.5 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

3.6 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by rough carpentry installation.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Section includes but is not limited to:

- .1 Window sills and aprons.
- .2 Closet shelving.

1.2 RELATED SECTIONS

- .1 Section 06 40 00 - Architectural Woodwork.
- .2 Section 09 91 23 - Interior Painting.

1.3 REFERENCES

- .1 Architectural Woodwork Manufacturers Association of Canada (AWMAC).
 - .1 Architectural Woodwork Standard, Current Edition (AWS).
- .2 Canadian Standards Association (CSA)
 - .1 CSA B111-1974 (R1998), Wire Nails, Spikes and Staples.
 - .2 CSA O121-M1978 (R2003) - Douglas Fir Plywood
 - .3 CSA O151-M1978, Canadian Softwood Plywood.
 - .4 CSA O153-M1980 (R2003), Poplar Plywood.
 - .5 CAN/CSA-O141-91, Softwood Lumber.
 - .6 CSA O151-M1978, Canadian Softwood Plywood.
- .3 National Electrical Manufacturers Association (NEMA).
 - .1 NEMA LD-3-2005, High-Pressure Decorative Laminates.

1.4 QUALITY ASSURANCE

- .1 Where modifications to the AWMAC AWS are included in this specification, such modifications shall govern in case of conflict.
- .2 Any reference to Custom or Premium grade in this Section shall be as defined in the AWMAC AWS.
- .3 Any item not given a specific quality grade shall be Custom grade as defined by AWMAC AWS.

1.5 QUALITY ASSURANCE

- .1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.

- .2 Plywood identification: by CANPLY (Canadian Plywood Association) certification stamp and in accordance with applicable CSA standards.

1.6 SUBMITTALS

- .1 Submit in accordance with Section 01 33 00.
- .2 Submit shop drawings to indicate profiles in full scale.
- .3 Shop drawings shall show construction details and general arrangements; typical and special installation conditions; materials being supplied and all connections, attachments, anchorage and location of exposed fastenings, as applicable.
- .4 No work shall be fabricated until the shop drawings have been reviewed and all related submittals and samples as required by the specification have been approved by the Departmental Representative.

1.7 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, handle, store and protect materials in accordance with Section 01 61 00.
- .2 Protect materials against dampness during and after delivery.
- .3 Store materials in ventilated areas, protected from extreme changes of temperature or humidity.

Part 2 Products

2.1 FINISH LUMBER

- .1 Hardwood Lumber: AWMAC AWS Custom grade; Species as indicated on Finishes Schedule, maximum moisture content of 11 percent; with plain sawn grain, of quality suitable for transparent finish.

2.2 PANELS

- .1 Douglas Fir plywood (DFP): to CSA O121 and CANPLY Douglas Fir species, plain sliced, Good Two Sides (G2S) or Sanded Two Sides where faces are exposed or semi-exposed, Good One Side (G1S) if one face concealed.
- .2 Thermofused Melamine (MCP): to NEMA LD3 Grade VGL.
 - .1 High wear resistant thermofused melamine: equal or exceed 400 cycles (Minimum standard for HPL abrasion test).

2.3 PLASTIC LAMINATE

- .1 Plastic Laminate: Refer to Finishes Schedule.

- .1 Laminated plastic for flatwork: to NEMA LD3, Grade VGL, Type S , minimum 1.0 mm thick; based on printed pattern and colour range and finish selected by Departmental Representative.

2.4 HARDWARE, FASTENERS AND ACCESSORIES

- .1 Fasteners and Anchorages: Provide nails, screws, and other anchoring devices of the type and size required for application indicated to provide secure attachment, concealed where possible.

2.5 PAINT FINISHES

- .1 VOC compliant; Refer to Section 09 91 23.

2.6 FASTENERS AND ACCESSORIES

- .1 Wood screws: Type and size to suit application. Provide matching species wood plugs for members to receive stained or clear finishes. Provide coloured vinyl plugs to conceal fastenings in laminate-clad components.

Part 3 Execution

3.1 INSTALLATION

- .1 Do finish carpentry to Quality Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC), Custom grade, except where specified otherwise.
- .2 Scribe and cut as required, fit to abutting walls, and surfaces, fit properly into recesses and to accommodate piping, columns, fixtures, outlets, or other projecting, intersecting or penetrating objects.
- .3 Form joints to conceal shrinkage.
- .4 Install items of finish carpentry as scheduled by this Section and as indicated on the Drawings.

3.2 CONSTRUCTION AND FINISH SCHEDULE

- .1 Fastening.
 - .1 Position items of finished carpentry work accurately, level, plumb, true and fasten or anchor securely.
 - .2 Design and select fasteners to suit size and nature of components being joined. Use proprietary devices as recommended by manufacturer.
 - .3 Set finishing nails to receive filler. Where screws are used to secure members, countersink screw in round cleanly cut hole and plug.
 - .4 Replace items of finish carpentry with damage to wood surfaces including hammer and other bruises.
- .2 Window Sills and Aprons:

- .1 Fabricate using G1S DFP plywood as indicated.
- .2 Conceal fastening.
- .3 Finish: HPDL selected by Departmental Representative.
 - .1 Edgeband with matching laminate tape at all exposed panel core.
- .3 Closet Shelving:
 - .1 Shelf and Wall Cleats, Gables: Melamine panel, minimum 19 mm (3/4 inch) thickness unless noted otherwise. Colour selected by Departmental Representative.
 - .2 Edgeband with matching laminate tape all exposed panel core.
 - .3 Scribe shelf to fit tight to wall surfaces.
 - .4 Hanger Rod: Minimum 32 mm (1-1/4 inch) diameter, stainless steel tubing. Provide in continuous lengths. Provide wall attachment brackets where required.
- .4 Miscellaneous Finish Carpentry:
 - .1 Fabricate using hardwood as indicated; VOC compliant clear finish to Section 09 91 00.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 American National Standards Institute (ANSI)
 - .1 ANSI A208.1-09, Particleboard.
 - .2 ANSI A208.2-09, Medium Density Fiberboard (MDF) for Interior Applications.
 - .3 ANSI/HPVA HP-1-10, Standard for Hardwood and Decorative Plywood.
- .2 ASTM International
 - .1 ASTM E1333-10, Standard Test Method for Determining Formaldehyde Concentrations in Air and Emission Rates From Wood Products Using a Large Chamber.
 - .2 ASTM D2832-92(R2011), Standard Guide for Determining Volatile and Nonvolatile Content of Paint and Related Coatings.
 - .3 ASTM D5116-10, Standard Guide For Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products.
- .3 Architectural Woodwork Manufacturers Association of Canada (AWMAC).
 - .1 Architectural Woodwork Standard, Current Edition (AWS).
- .4 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-71.20-M88, Adhesive, Contact, Brushable.
- .5 CSA International
 - .1 CSA B111-74(R2003), Wire Nails, Spikes and Staples.
 - .2 CSA O151-09, Canadian Softwood Plywood.
- .6 National Electrical Manufacturers Association (NEMA)
 - .1 ANSI/NEMA LD-3-05, High-Pressure Decorative Laminates (HPDL).
- .7 National Lumber Grades Authority (NLGA) Standard Grading Rules for Canadian Lumber 2010.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for architectural woodwork and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit two copies of WHMIS MSDS.
- .3 Shop Drawings:

- .1 Indicate details of construction, profiles, jointing, fastening and other related details.
 - .1 Scales: profiles full size, details half full size.
- .2 Indicate materials, thicknesses, finishes and hardware.
- .3 Indicate locations of service outlets in casework, typical and special installation conditions, and connections, attachments, anchorage and location of exposed fastenings.
- .4 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Samples will be returned for inclusion into work.
 - .3 Submit duplicate samples of laminated plastic for colour selection.
 - .4 Submit duplicate samples of laminated plastic joints, edging, cutouts and postformed profiles.
- .5 Certifications: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

1.3 QUALITY ASSURANCE

- .1 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Plywood, particleboard, OSB and wood based composite panels to CSA and ANSI standards.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address. Protect millwork against dampness and damage during and after delivery.
 - .1 Store millwork in ventilated areas, protected from extreme changes of temperature or humidity.
- .3 Storage and Handling Requirements:
 - .1 Store materials indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect architectural woodwork from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

Part 2 Products

2.1 MATERIALS

- .1 Hardwood lumber: Hard Maple species unless noted otherwise and in accordance with following standards:
 - .1 National Hardwood Lumber Association (NHLA).
 - .2 AWMAC AWS premium grade, moisture content as specified.
- .2 Hardwood plywood: to ANSI/HPVA HP-1, Uniform White Maple species for clear finish.
- .3 MDF (Medium Density Fibreboard): to ANSI A208.2-02; Grade MD, density 740kg/mn, thickness as indicated, urea-formaldehyde free.
- .4 Interior mat-formed wood particleboard: to ANSI/NPA A208.1.
- .5 Thermofused Melamine (MCP): to NEMA LD3 Grade VGL.
 - .1 High wear resistant thermofused melamine: equal or exceed 400 cycles (Minimum standard for HPL abrasion test).
- .6 Plastic Laminate: Refer to Finishes Schedule.
 - .1 Laminated plastic for flatwork: to NEMA LD3, Grade VGL, Type S , minimum 1.0 mm thick; based on printed pattern and colour range and finish selected by Departmental Representative.
 - .2 Laminated plastic for postforming work: to NEMA LD3, Grade VGL, Type S, based on printed pattern and colour range and finish selected by Departmental Representative.
 - .3 Laminated plastic backing sheet: Grade BK, Type S minimum of 0.5 mm thick or same thickness as face laminate.
 - .4 Laminated plastic liner sheet: Grade GP, Type LD, white colour.
- .7 Laminated plastic adhesive:
 - .1 Adhesive: urea resin adhesive to CSA O112.10, contact adhesive to CAN/CGSB-71.20, resorcinol resin adhesive to CSA O112.10, polyvinyl adhesive to CSA O112.10, or two component epoxy thermosetting adhesive.
- .8 Nails and staples: to CSA B111.
- .9 Wood screws: steel , type and size to suit application.
- .10 Sealant: in accordance with Section 07 92 00 - Joint Sealants, type silicone.

2.2 HARDWARE AND COMPONENTS

- .1 Hinges: 125° opening angle, nickel plated steel with self-closing spring mechanism, fully concealed and adjustable, c/w mounting plates. Provide hinges for flush overlay casework design as indicated.

- .2 Drawer Slides: ball bearing, rail mount, full extension, 90 kg load rating. Clear zinc finish.
- .3 Door and Drawer Pulls: Refer to Drawings.
- .4 Shelving Standards: Adjustable, recessed, steel with black finish, length as required with heavy duty metal shelf clips (4 per shelf).
- .5 Furring, Blocking, Shims, and Hanging Strips: Urea-formaldehyde free CSP plywood.
- .6 Cable Entry Pass-through Plugs: circular, 50 mm diameter unless indicated otherwise. Black colour. Provide in quantity equal to one/lineal metre of countertop.
- .7 Continuous Hinges: full height piano hinge, nickel finish, prepunched for fasteners, 40 mm wide, 0.8 mm thickness.
- .8 Cam Locks: chrome-plated cam locks, with keeper, latch length to suit application, keyed alike in each room but different between rooms, for panel thicknesses indicated. Provide keys in duplicate for each lock.
- .9 Castors: Non-marking hard rubber wheels, corrosion-resistant steel construction, ball-bearing raceways, swiveling and locking castors; size, quantity and type selected by Departmental Representative to suit.

2.3 FABRICATION - GENERAL

- .1 Shop assemble casework and other components for delivery to site in units easily handled and to permit passage through building openings.
- .2 Joinery to be in accordance with the AWMAC AWS.
- .3 When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trip for scribing and site cutting.
- .4 Provide cutouts for plumbing fixtures, inserts, appliances, outlet boxes, and other fixtures and fittings.
- .5 Natural and manufacturing defects in excess of those permitted in the grade specified are permitted if such defects are to be covered by adjoining members or otherwise concealed.
- .6 Carefully fit equipment to be installed. Provide filler pieces when required.
- .7 Set nails and countersink screws, apply colour matched wood filler to indentations, sand smooth and leave ready to receive finish.
- .8 Shop install cabinet hardware for doors, shelves and drawers.
- .9 Recess shelf standards leaving 2 mm above surface of panel.
- .10 Shelving to cabinetwork to be adjustable unless otherwise noted.
- .11 Edgebanding to be hot-melt applied in shop.

2.4 FABRICATION - CUSTOM CABINET UNITS

- .1 Fabricate in accordance with AWMAC QSI, Custom grade.
- .2 General Construction: Flush overlay, concealing cabinet case body.
- .3 Thickness: Thickness for panels identified on Drawings shall govern.
- .4 Case Body:
 - .1 Exposed Ends: Not less than 19 mm thick MDF.
 - .2 Unexposed Ends: Not less than 19 mm thick MDF.
 - .3 Tops and Bottoms: Not less than 19 mm thick MDF, fully supported and secured in rabbets in panels.
 - .4 Backs: Not less than 13 mm thick MCP fastened to machined rear edge of ends, top and bottom case partitions.
 - .5 Exterior Exposed Finish: HPL, HGL grade, colour and pattern selection by Departmental Representative.
 - .6 Interior Finish: HPL, liner grade, colour and pattern selection by Departmental Representative.
 - .7 Edgebanding: Laminate, colour match to exposed finish.
- .5 Doors and Applied Drawer Fronts: Both faces of solid slab panel doors and drawer fronts to be finished in plastic laminate of same thickness, to prevent warpage:
 - .1 Panel: Not less than 19 mm thick MDF.
 - .2 Exposed Finish: HPL, HGL grade, colour and pattern selected by Departmental Representative.
 - .3 Concealed Finish: to match exposed finish.
 - .4 Edgebanding: Laminate, colour match to exposed finish.
- .6 Drawers: box-type construction with applied drawer fronts.
 - .1 Sides, Backs and Sub-fronts: MDF, 13 mm thickness. Sub-front and back rabbeted into sides and secured with glue and mechanical fasteners. Fasten applied front to sub-front with mounting screws from interior of body.
 - .1 Finish: HPL, HGL grade, colour and pattern selection by Departmental Representative.
 - .2 Bottoms: Hardboard, 6 mm thickness. Set into rabbets in back, sides, and front
- .7 Shelving: Melamine.
 - .1 Semi-exposed finish, shelves within cabinets: White melamine finish both faces of panel, laminate tape edgebanding all four sides, white colour.

- .2 Exposed finish, exposed shelving without doors: HPL, HGL grade, colour and pattern selected by Departmental Representative. Colour-matching laminate edgebanding all four sides.
- .3 Thickness: 19 mm thick for up to 915 mm unsupported length, 25 mm thick for unsupported lengths between 915 mm and 1066 mm, unless otherwise indicated.
- .8 Toe Kicks: Not less than 19 mm CSP plywood, full height of toe space, for applied resilient or hard tile base.
- .9 Corner Blocks: Particleboard or CSP plywood; glued and fastened in each of four top corners to maintain cabinet squareness and rigidity.

2.5 FINISHING

- .1 Finish in accordance with Section 09 91 23 - Interior Painting.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for architectural woodwork installation in accordance with manufacturer's instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied

3.2 INSTALLATION

- .1 Do architectural woodwork to Quality Standards of AWMAC.
- .2 Install prefinished millwork at locations shown on drawings.
 - .1 Position accurately, level, plumb straight.
- .3 Fasten and anchor millwork securely.
 - .1 Supply and install heavy duty fixture attachments for wall mounted cabinets.
- .4 Use draw bolts in countertop joints.
- .5 Scribe and cut as required to fit abutting walls and to fit properly into recesses and to accommodate piping, columns, fixtures, outlets or other projecting, intersecting or penetrating objects.
- .6 At junction of plastic laminate counter back splash and adjacent wall finish, apply small bead of sealant in accordance with Section 07 92 00 - Joint Sealants.
- .7 Apply water resistant building paper over wood framing members in contact with masonry or cementitious construction.

- .8 Fit hardware accurately and securely in accordance with manufacturer's written instructions.
- .9 Site apply laminated plastic to units as indicated.
 - .1 Adhere laminated plastic over entire surface.
 - .2 Make corners with hairline joints.
 - .3 Use full sized laminate sheets.
 - .4 Make joints only where approved by Departmental Representative.
 - .5 Slightly bevel arises.
- .10 For site application, offset joints in plastic laminate facing from joints in core.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
 - .1 Clean millwork and cabinet work, inside cupboards and drawers and outside surfaces.
 - .2 Remove excess glue from surfaces.

3.4 PROTECTION

- .1 Protect millwork and cabinet work from damage until final inspection.
- .2 Protect installed products and components from damage during construction.
- .3 Repair damage to adjacent materials caused by architectural woodwork installation.

END OF SECTION