

Part I General**I.1 REFERENCES**

- .1 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB 51.34-M86 - Vapour Barrier, Polyethylene Sheet for Use in Building Construction and amendment.
- .2 Canadian Standards Association (CSA)
 - .1 CSA B111-1974 (R2003) - Wire Nails, Spikes and Staples.
 - .2 CAN/CSA G164-M92 (R2003) – Hot Dip Galvanizing of Irregularly Shaped Articles.
 - .3 CSA O112.9-10 (R2014) - Evaluation of Adhesives for Structural Wood Products (Exterior Exposure).
 - .4 CSA O141-05 (R2014) - Softwood Lumber.
 - .5 CSA O151-09 (R2014) – Canadian Softwood Plywood.
- .3 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber, 2007.

I.2 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. Include product characteristics, performance criteria, physical size, finish, and limitations.
- .3 Shop Drawings:
 - .1 As required, submit drawings stamped and signed by professional engineer registered or licensed in Province of Manitoba, Canada.

I.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 in accordance with CSA and ANSI standards.

I.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 Deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

- .3 Storage and Handling Requirements:
 - .1 Store materials off ground in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect wood from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

Part 2 Products

2.1 FRAMING STRUCTURAL AND PANEL MATERIALS

- .1 Lumber: Softwood S-P-F species, select grade, S4S; pressure preservative treated for exterior applications; moisture content 19% (S-dry) or less in accordance with following standards:
 - .1 CSA O141.
 - .2 NLGA Standard Grading Rules for Canadian Lumber – Grade 2 minimum.
- .2 Furring, blocking, nailing strips, grounds, and rough bucks:
 - .1 S2S or S4S material.
 - .2 Board sizes: "Standard" or better grade.
 - .3 Dimension sizes: "Standard" light framing or better grade.
 - .4 Install concealed wood blocking for support of wall mounted cabinets, A/V equipment, lockers, toilet partitions, handrail brackets, chair rails, caretaking room walls, railings, and other items as required.
- .3 Plywood:
 - .1 Canadian softwood plywood (CSP): To CSA O151, standard construction.
 - .2 Pressure preservative treated for exterior applications.

2.2 ACCESSORIES

- .1 Polyethylene film: To CAN/CGSB 51.34, Type I, 0.15 mm thick.
- .2 Sealants: In accordance with Section 07 92 00 - Joint Sealants.
- .3 General purpose adhesive: To CSA O112.9.
- .4 Nails, spikes, and staples: To CSA B111.
- .5 Fastener Finishes:
 - .1 Galvanizing: To CAN/CSA G164, use galvanized fasteners for exterior work, interior highly humid areas, and lumber treated with pressure-preservative and fire-retardant.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify conditions of substrates are acceptable for product installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate.
 - .2 Inform Departmental Representative of unacceptable conditions.
 - .3 Proceed with installation only after unacceptable conditions have been remedied.

3.2 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 furring and blocking to space-out and support casework, cabinets, wall and ceiling finishes, facings, and other work as required.
- .4 Install rough bucks, nailers, and linings to rough openings as required to provide backing for frames and other work.
- .5 Use dust collectors and high quality respirator masks when cutting or sanding wood panels.
- .6 Frame, anchor, fasten, tie, and brace members to provide necessary strength and rigidity.
- .7 Countersink bolts where necessary to provide clearance for other work.

3.3 CLEANING

- .1 Clean in accordance with Section 01 74 11 - Cleaning.
- .2 Progress Cleaning: Leave Work area clean at end of each day.
- .3 Final Cleaning: Upon completion remove surplus materials, rubbish, tools and equipment.
- .4 Waste Management: Remove waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

3.4 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 I General**I.1 REFERENCES**

- .1 American National Standards Institute (ANSI)
 - .1 ANSI/BHMA A156.9-2010, Cabinet Hardware.
 - .2 ANSI A208.1-09, Particleboard.
 - .3 ANSI A208.2-09, Medium Density Fiberboard (MDF) for Interior Applications.
- .2 Architectural Woodwork Manufacturers Association of Canada (AWMAC)
 - .1 Architectural Woodwork Standards, 2nd edition (2014).
- .3 ASTM International
 - .1 ASTM B221-14, Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- .4 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB 71.20-M88, Adhesive, Contact, Brushable.
- .5 Canadian Standards Association (CSA)
 - .1 CSA B111-1974 (R2003) - Wire Nails, Spikes and Staples.
 - .2 CSA O151-09 (R2014), Canadian Softwood Plywood.
- .6 National Electrical Manufacturers Association (NEMA)
 - .1 ANSI/NEMA LD3-2005 - High-Pressure Decorative Laminates (HPDL).
- .7 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber, 2007.

I.2 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 architectural woodwork. Include product characteristics, performance criteria, physical size, finish, and limitations.
- .3 Shop Drawings:
 - .1 If required, submit drawings stamped and signed by professional engineer registered or licensed in Province of Manitoba, Canada.
 - .2 Indicate details of construction, profiles, jointing, fastening and other related details.
 - .1 Scales: Profiles full size; details half of full size.
 - .3 Indicate materials, thicknesses, finishes, and hardware.
 - .4 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 duplicate 150 x 150 mm samples of laminated plastic for colour selection.
 - .2 Submit duplicate 150 mm long samples of PVC edgebanding for colour selection and approval by Consultant.
- .5 Certifications: Submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

I.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 NPA standards.

I.4 PRE-INSTALLATION MEETING

- .1 Before framing is completed, arrange meeting, including Contractor, woodwork manufacturer, woodwork installer, and framing sub-contractor.
 - .1 Review locations of backing required for casework installation as shown on casework shop drawings.
 - .2 Review method of attachment for backing to wall system as shown on architectural drawings.

I.5 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 Deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
 - .1 Protect millwork against dampness and damage during and after delivery.
 - .2 Store millwork in ventilated areas, protected from extreme changes of temperature or humidity.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground, 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 Softwood lumber: Unless specified otherwise, S4S, moisture content 15% or less in accordance with following standards:
 - .1 CSA O141.
 - .2 NLGA Standard Grading Rules for Canadian Lumber.

- .3 AWMAC custom grade, moisture content as specified.
- .2 Hardwood lumber: Moisture content in accordance with AWMAC standards.
- .3 Machine stress-rated lumber is acceptable for all purposes.
- .4 Hardwood plywood: To AWMAC standards, natural birch, grade A veneer face for transparent finish, thicknesses as shown on drawings.
 - .1 Plywood resin to contain no added urea-formaldehyde.
- .5 Interior mat-formed wood particleboard: To ANSI/NPA A208.1.
 - .1 Particleboard resin to contain no added urea-formaldehyde.
- .6 Hardboard:
 - .1 To CAN/CGSB 11.3.
 - .2 Hardboard resin to contain no added urea-formaldehyde.
- .7 MDF (medium density fibreboard): To ANSI A208.2, Grade 130 or better.
 - .1 Modulus of rupture: Minimum 21.6 N/mm² (3130 psi).
 - .2 MDF resin to contain no added urea-formaldehyde.
- .8 Moisture resistant MDF: To ANSI A208.2, 6 mm.
- .9 Canadian softwood plywood (CSP): To CSA O151, standard construction.
 - .1 Plywood resin to contain no added urea-formaldehyde.
- .10 Laminated plastic for horizontal surfaces: To NEMA LD3, Horizontal Grade Standard (HGS), 1.2 ± 0.12 mm thick; suede or matte finish.
- .11 Laminated plastic for vertical surfaces: To NEMA LD3, Vertical Grade Standard (VGS), 0.7 mm ± 0.10 mm thick, microdot, wood grain, suede, or matte finish.
- .12 Laminated plastic liner sheet: Grade CLS, 0.5 ± 0.10 mm thick, white colour.
- .13 Laminated plastic backing sheet: Grade BKL, minimum 0.5 mm thickness.
- .14 Thermofused Melamine: To NEMA LD3, melamine, polyester, or foil resin impregnated paper thermally fused under pressure to an approved core.
 - .1 High wear resistant thermofused melamine: Equal or exceed 400 cycles (Minimum standard for HPL abrasion test).
- .15 Edgebanding: Extruded impact resistant PVC, 3 mm thick, colour to match plastic laminate.
- .16 Aluminum extrusions: To ASTM B221, profiles as indicated on drawings.
- .17 Nails and staples: To CSA B111.
- .18 Wood screws: Stainless steel, type and size to suit application.
- .19 Splines: Metal.
- .20 Sealant: In accordance with Section 07 92 00 - Joint Sealants.
- .21 Wood adhesive: Type II, polyvinyl acetate (PVA).
- .22 Laminated plastic adhesive: Contact adhesive to CAN/CGSB 71.20.

2.2 HARDWARE

- .1 General:
 - .1 All hardware to be to BHMA A156.9.
 - .2 Finish: Brushed nickel or stainless steel, unless otherwise specified.
- .2 Hinges: European style hinges.
- .3 Pulls: Metal, with brushed nickel finish, contemporary closed end bar pull.
 - .1 Mounting screws: 128 mm center-to-center.
 - .2 Overall dimension: 170 mm long; 40 mm projection from mounting surface.
 - .3 Confirm proposed product with Consultant.
- .4 Catches: Type I – magnetic catch.
- .5 Adjustable shelf standards and supports: Vertical slotted shelf standard, type B04102.
- .6 Drawer slides: Full extension side mounted drawer slides with ball bearings, zinc finish.

2.3 MANUFACTURED UNITS

- .1 Casework:
 - .1 Grade: AWMAC Custom Grade.
 - .2 Construction type: Frameless.
 - .3 Cabinet and door interface: Flush overlay.
 - .4 Core:
 - .1 Top, bottom, gables, doors, body, shelves, and valances: Particleboard, 19 mm thick.
 - .2 Tops and bottoms \geq 812 mm and without valances: Particleboard, 25 mm thick.
 - .3 Shelves and adjustable shelves \geq 812 mm width: Particleboard 25 mm thick.
 - .4 Backs: Particleboard, 13 mm thick.
 - .5 Surfaces:
 - .1 Exposed surfaces: HPDL.
 - .2 Exposed interior surfaces: HPDL matching exposed surfaces.
 - .3 Semi-exposed surfaces: Cabinet liner vertical grade laminate, white.
 - .6 Edgeband: 3 mm PVC.
 - .1 Colour: As selected by Consultant.
 - .7 Ladder base: Canadian softwood plywood, 19 mm thick.
 - .1 Kitchenette: Softwood plywood, 19 mm thick, with 6 mm moisture resistant MDF mounted to front face.
- .2 Drawers:
 - .1 Grade: AWMAC Custom grade:
 - .2 Fronts: Particle board core, 19 mm thick, with HPDL.
 - .3 Sides and Backs:
 - .1 Particle board, 16 mm, with white melamine surfaces.

- .4 Bottoms:
 - .1 Tempered hardboard, 13 mm thick, with white melamine surfaces.
- .3 Laminated plastic countertops:
 - .1 Core material: Particleboard.
 - .2 Surface: HPDL.
 - .3 Front edges: 3 mm PVC.

2.4 FABRICATION

- .1 Set nails and countersink screws apply plain wood filler to indentations, sand smooth and leave ready to receive finish.
- .2 Shop install cabinet hardware for doors, shelves, and drawers. Recess shelf standards unless noted otherwise.
- .3 Shelving to cabinetwork to be adjustable unless otherwise noted.
- .4 Provide cut-outs for plumbing fixtures, inserts, appliances, outlet boxes and other fixtures.
- .5 Shop assemble work for delivery to site in sizes easily handled and to ensure passage through building openings.
- .6 Obtain governing dimensions before fabricating items that are to accommodate or abut appliances, equipment, and other materials.
- .7 Ensure adjacent parts of continuous laminate work match in colour and pattern.
- .8 Veneer laminated plastic to core material in accordance with adhesive manufacturer's instructions. Ensure core and laminate profiles coincide to provide continuous support and bond over entire surface. Use continuous lengths up to 3000 mm. Keep joints 600 mm from sink cut-outs.
- .9 Apply laminate backing sheet to reverse side of core of plastic laminate work.
- .10 Apply laminated plastic liner sheet where indicated.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify conditions of substrates are acceptable for architectural woodwork installation in accordance with manufacturer's instructions.
 - .1 Visually inspect substrate.
 - .2 Inform Departmental Representative of unacceptable conditions.
 - .3 Proceed with installation only after unacceptable conditions have been remedied.

3.2 INSTALLATION

- .1 Perform architectural woodwork to AWMAC Woodwork Standards.
- .2 Install millwork at locations shown on drawings.
 - .1 Position accurately, level, plumb, and 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 and adjacent wall finish, apply small bead of silicone sealant in accordance with Section 07 92 00 - Joint Sealants.
- .7 Fit hardware accurately and securely in accordance with manufacturer's written instructions.
- .8 Chair rail:
 - .1 Fabricate from white birch, Select or better grade, plain sawn.
 - .2 Attach cleat to wall mechanically.
 - .3 Attach chair rail to cleat with Type II wood adhesive. Clamp installed rail to cleat until adhesive sets and cures. Wipe away excess 'squeeze-out' adhesive immediately after clamping.
 - .4 Fabricate rails in one piece and length when practical.
 - .5 Fit joints to produce hair-line crack.

3.3 CLEANING

- .1 Clean in accordance with Section 01 74 11 - Cleaning.
- .2 Progress Cleaning: Leave Work area clean at end of each day.
- .3 Final Cleaning: Upon completion, remove surplus materials, rubbish, tools, and equipment.
 - .1 Clean millwork, cabinet work, outside surfaces, insides of cupboards and drawers.
 - .2 Remove excess glue from surfaces.
- .4 Waste Management: Remove waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

3.4 PROTECTION

- .1 Protect millwork 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