

PART 1 - GENERAL1.1 REFERENCE STANDARDS

- .1 ASTM International
 - .1 ASTM A 123/A 123M-15, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - .2 ASTM A 653/A 653M-15e1, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .2 CSA International
 - .1 CSA B111-1974 (R2003), Wire Nails, Spikes and Staples.
 - .2 CSA O121-08(R2013), Douglas Fir Plywood.
 - .3 CSA O141-05(R2014), Softwood Lumber.
 - .4 CSA O151-09(R2014), Canadian Softwood Plywood.
- .3 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber 2014.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

1.3 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.
 - .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 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.
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PART 2 - PRODUCTS

2.1 STRUCTURAL FRAMING

- .1 Lumber: unless specified otherwise, softwood, S4S, moisture content 19% 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 S2S is acceptable for all purposes.
 - .2 Board sizes: "standard" or better grade.
 - .3 Dimension sizes: "standard" light framing or better grade.
 - .4 Post and timbers sizes: "standard" or better grade.

2.3 PANEL MATERIALS

- .1 Douglas fir plywood: to CSA O121, standard construction.
 - .1 Urea-formaldehyde free.
- .2 Canadian softwood plywood (CSP): to CSA O151, standard construction.
 - .1 Urea-formaldehyde free.

2.4 ACCESSORIES

- .1 General purpose adhesive: to CAN/CGSB-71.26, cartridge loaded.
 - .2 Nails, spikes and staples: to CSA B111.
 - .3 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.
 - .4 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, recommended for purpose by manufacturer.
 - .5 Fastener finishes:
 - .1 Galvanizing: to ASTM A 123/A 123M, use galvanized fasteners for exterior work and interior highly humid areas.
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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.
 - .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 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 Select exposed framing for appearance. Install lumber and panel materials so that grade-marks and other defacing marks are concealed or are removed by sanding where materials are left exposed.
- .5 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
- .6 Countersink bolts where necessary to provide clearance for other work.
- .7 Install specified panel product for each application.

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.
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3.4 PROTECTION

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

PART 1 - GENERAL

1.1 REFERENCE STANDARDS

- .1 American National Standards Institute (ANSI)
 - .1 ANSI/ASME 18.6.1 1981 (R2016) Wood Screws (Inch Series).
 - .2 ANSI/BHMA A156.9-2010, Cabinet Hardware.
 - .3 ANSI/BHMA A156.11-2014, Cabinet Locks.
 - .4 ANSI/BHMA A156.16-2013, Auxiliary Hardware.
 - .5 ANSI/BHMA A156.18-2012, Materials and Finishes.
 - .6 ANSI A208.1-09, Particleboard.
- .2 Architectural Woodwork Manufacturers Association of Canada (AWMAC)
 - .1 Architectural Woodwork Standards (AWMAC AWS), 2014.
- .3 ASTM International
 - .1 ASTM A 153/A 153M-16, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - .2 ASTM E 1333-14, Standard Test Method for Determining Formaldehyde Concentrations in Air and Emission Rates From Wood Products Using a Large Chamber.
 - .3 ASTM F 1667-17 Standard Specification for Driven Fasteners: Nails, Spikes and Staples.
- .4 CSA International
 - .1 CSA O112-M Series 1977 (R2006) Standards for Wood Adhesives.
 - .2 CSA O121-17, Douglas Fir Plywood.
 - .3 CSA O141-05 (R2014), Softwood Lumber.
 - .4 CSA O151-17, Canadian Softwood Plywood.
- .5 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .6 National Electrical Manufacturers Association (NEMA)
 - .1 ANSI/NEMA LD-3-05, High-Pressure Decorative Laminates (HPDL).

1.2 PRE-INSTALLATION MEETING

- .1 Prior to enclosing framing, convene a meeting of contractor, casework fabricator, casework installer, framing subcontractor and Departmental Representative.
 - .1 Review locations of backing required for casework installation as shown on shop drawings and as necessary for installation.
 - .2 Review method of attachment for backing to wall system.
 - .3 Review coordination with other affected sections.
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1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Product Data:
 - .1 Prepare and submit material list in accordance with AWMAC AWS, cross-referenced to specifications.
 - .1 Include manufacturer's instructions, printed product literature, data sheets and catalogue pages for all materials and products to be incorporated into architectural wood casework and include product characteristics, performance criteria, dimensions and profiles, finish and limitations on use.
 - .2 Submit two copies of WHMIS MSDS in accordance with Section 01 35 29 - Health and Safety Requirements.
 - .3 Hardware List:
 - .2 Submit hardware list cross-referenced to specifications.
 - .3 Include manufacturer's specification sheets indicating name, model, material, function, finish, BHMA designations and other pertinent information.
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 - .3 Include manufacturer's specification sheets indicating name, model, material, function, finish, BHMA designations and other pertinent information.
 - .4 Shop Drawings:
 - .1 Prepare and submit shop drawings in accordance with AWMAC AWS and as follows.
 - .2 Submit two sets of shop drawings for initial review in accordance with requirements of Division 01. Revise as directed, submit six(6) copies for final acceptance and distribution.
 - .3 Indicate details of construction, profiles, jointing, fastening and other related details.
 - .1 Scales: profiles full size, details half full size.
 - .4 Indicate materials, thicknesses, finishes and hardware.
 - .5 Indicate locations of service outlets in casework, typical and special installation conditions, and connections, attachments, anchorage and location of exposed fastenings.
 - .6 Show location on casework elevations of backing required in supporting structure for attachment of casework.
 - .7 Indicate AWMAC AWS quality grade where different from predominant grade specified.
 - .8 Include color schedule of all casework items, including all countertop, exposed, and semi-exposed cabinet finishes, finish material manufacturer, pattern, and color.
 - .5 Samples:
 - .1 Prepare and submit samples in accordance with AWMAC AWS and as follows.
 - .2 Apply sample finishes to specified substrate or core material minimum 300 x 300 mm. For veneers with transparent finish submit three samples to illustrate range and colour of grain expected.
 - .3 Shop applied coatings:
 - .1 For transparent finish, submit samples of each species and
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cut of wood to be used, finished as specified.

.2 For opaque finish, submit samples for each colour selection, finished as specified.

.3 Submit duplicate samples of laminated plastic for each specified colour selection.

.4 Submit duplicate samples of laminated plastic joints, edging, cutouts and post-formed profiles.

.5 Certifications: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

.6 Submit statement of experience and qualifications of architectural wood casework fabricator.

1.4 QUALITY ASSURANCE

- .1 Perform Work of this Section by single architectural wood casework fabricator and having completed minimum one project with value within 20% of the cost of the work of this Section.

1.5 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 wood casework only when area of work is enclosed, plaster and concrete work is dry, and area is broom clean and site environmental conditions are acceptable for installation.
 - .3 Protect millwork against dampness and damage during and after delivery.
 - .4 Store millwork in ventilated areas, protected from extreme changes of temperature and humidity, and within range recommended by AWMAC AWS for location of project.
 - .5 Store materials indoors in dry location in clean, dry, well-ventilated area.
 - .6 Protect architectural woodwork and hardware from nicks, scratches, and blemishes.
 - .7 Replace defective or damaged materials with new.
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PART 2 - PRODUCTS

2.1 QUALITY GRADE

- .1 Provide all materials and perform all fabrication in accordance with AWMAC AWS Custom Grade.
- .2 In case of conflict between Contract Documents and AWMAC AWS grade requirements, Contract Documents govern.

2.2 LUMBER

- .1 Softwood and Hardwood Lumber: Sound lumber to specified AWMAC AWS quality grade requirements, kiln-dried to moisture content recommended by AWMAC AWS for location of the Work.
- .2 Machine stress-rated lumber is acceptable for all purposes.

2.3 PANEL MATERIALS

- .1 Douglas fir plywood (DFP): to CSA 0121, standard construction.
- .2 Hardwood plywood: to CHPA grading rules.
- .3 Canadian softwood plywood (CSP): to CSA 0151, standard construction.
- .4 Hardboard: To CAN/CGSB-11.3.

2.4 DECORATIVE OVERLAID COMPOSITE PANELS

- .1 Thermally Fused Laminate (TFL): to NEMA LD3 Grade VGL, High wear resistant thermofused melamine: equal or exceed 400 cycles (Minimum standard for HPL abrasion test).
 - .1 Laminate: Decorated paper with melamine or polyester resin, from based on solid woodgrain, printed pattern, multilayered colour range with satin furniture finish selected by Departmental Representative from manufacturer's full range.
 - .2 Core: Medium density fibreboard (MDF).
- .2 Overlay bonded to both faces where exposed two sides, and when panel material require surface on one side only, reverse side to be overlaid with a plain (buff) balancing sheet.

2.5 LAMINATED PLASTIC MATERIALS

- .1 Laminated plastic for flatwork: to NEMA LD3.
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- .1 High pressure decorative laminated (HPDL) plastic.
 - .1 Type: GP (general purpose).
 - .2 Horizontal Surfaces: HGS to suit application, 1.2 mm thick.
 - .3 Vertical Surfaces: VDS to suit application, 0.71 mm thick.
 - .4 Colour: multilayered.
 - .5 Pattern: solid, woodgrain, printed pattern.
 - .6 Finish: satin.
- .2 Laminated plastic for postforming work: to NEMA LD3.
 - .1 Type: postforming.
 - .2 Grade: HGP.
 - .3 Size: 0.7 mm thick.
 - .4 Colour: multilayered.
 - .5 Pattern: solid.
 - .6 Finish: satin.
- .3 Laminated plastic for backing sheet:
 - .1 Type: backer.
 - .2 Grade: BKH.
 - .3 Thickness: not less than 0.5 mm thick or same thickness as face laminate.
 - .4 Colour: same colour as face laminate.
- .4 Laminated plastic liner sheet: CLS grade, 0.75 mm thick, white almond colour.
- .5 Edge finishing for doors, drawer fronts, shelves and false fronts:
 - .1 PVC: solid colour to match face 3 mm thick.
 - .2 Edges dadoed or saw kerfed to take plastic "T" moulding in width and colour to match face.
- .6 Laminated plastic adhesive:
 - .1 Adhesive: urea resin adhesive to CSA 0112, contact adhesive to CAN/CGSB-71.20, resorcinol resin adhesive to CSA 0112.10, polyvinyl adhesive to CSA 0112-M, two component epoxy thermosetting adhesive.

2.6 CASEWORK FABRICATION - GENERAL

- .1 Fabricate casework of specified core and surface finish materials to specified AWMAC AWS quality grade.
 - .1 Construction type: frameless.
 - .2 Door-cabinet interface: flush overlay.
 - .2 Set nails and countersink screws apply stained wood filler to indentations, sand smooth and leave ready to receive finish.
 - .3 Shop install cabinet hardware for doors, shelves and drawers. Recess shelf standards unless noted otherwise.
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- .4 Shelving to cabinetwork to be adjustable unless otherwise noted.
- .5 Provide cutouts for plumbing fixtures, inserts, appliances, outlet boxes and other fixtures.
- .6 Shop assemble work for delivery to site in size easily handled and to ensure passage through building openings.
- .7 Obtain governing dimensions before fabricating items which are to accommodate or abut appliances, equipment and other materials.

2.7 LAMINATED PLASTIC CASEWORK FABRICATION

- .1 Do laminated plastic fabrication in compliance with NEMA LD3, Annex A and specified AWMAC AWS quality grade.
- .2 Ensure adjacent parts of continuous laminate work match in colour and pattern.
- .3 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 cutouts.
- .4 Form shaped profiles and bends as indicated, using post-forming grade laminate to laminate manufacturer's instructions.
- .5 Use straight self-edging laminate strip for flatwork to cover exposed edge of core material. Chamfer exposed edges uniformly at approximately 20 degrees. Do not mitre laminate edges.
- .6 Apply laminate backing sheet to reverse side of core of plastic laminate work.
- .7 Apply laminated plastic liner sheet to interior of cabinetry.
- .8 Drawer Construction:
 - .1 Sides:
 - .1 Custom grade: LPDL (melamine) or HPDL on MDF, thickness 12 mm.
 - .2 Bottoms: MDF with melamine surfaces, thickness 6 mm.
 - .3 Joinery: Meeting requirements of AWMAC for Grade specified.
 - .1 Sides, front and back: Nailed lock joints.
 - .4 Drawer bottoms fully housed into sides and sub front and mechanically fastened to back or plowed into back.

2.8 CABINET HARDWARE

- .1 Cabinet hardware: to AWMAC AWS quality grade specified and to
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ANSI/BHMA A156.9, designated by letter B and numeral identifiers as listed below.

- .2 Finish:
 - .1 Exposed hardware: dull nickle.
 - .2 Semi-exposed hardware: Manufacturer's standard finish.
- .3 Casework door hinges: concealed European style Grade II hinges minimum 120 degree opening type,
- .4 Other hinges: continuous full surface hinge, type.
- .5 Pulls: back mounted pull, type, 'D' Pull, finished to.
- .6 Shelf rests and standards: shelf rest installed in holes drilled, adjustable shelf standards.
- .7 Drawer slides:
 - .1 Slide type: bottom edge mounted drawer slides.
 - .2 Extension and capacity: full extension meeting requirements of AWMAC AWS for type and size of drawer.
 - .3 File drawer slides: full extension.

2.9 ACCESSORIES

- .1 Wood screws: stainless steel plain, type and size to suit application.
- .2 Nails and staples: to CSA B111 and ASTM F 1667.
- .3 Splines: metal.
- .4 Sealant: in accordance with Section 07 92 00 - Joint Sealants.

2.10 LAMINATED PLASTIC COUNTERTOPS

- .1 Laminated plastic for flatwork: to NEMA LD3.
 - .1 Type: general purpose.
 - .2 Grade: HGS.
 - .3 Size: 1.2 mm thick.
 - .4 Colour: multilayered.
 - .5 Pattern: solid.
 - .6 Finish: satin.
 - .2 Laminated plastic for post-forming work: to NEMA LD3.
 - .1 Type: post-forming.
 - .2 Grade: HGS.
 - .3 Size: 0.76 mm thick.
 - .4 Colour: multilayered.
 - .5 Pattern: solid.
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- .6 Finish: satin.
- .3 Core material: exterior grade hardwood plywood with a non-telegraphing grain.
 - .1 Countertops to receive plumbing fixtures: Veneer core plywood with type II adhesive.
- .4 Back splashes: cove.
- .5 Front edges: no drip bullnose edge.

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 Install architectural wood casework in accordance with AWMAC AWS grade for respective items.
 - .2 In case of conflict between Contract Documents and AWMAC AWS grade requirements, Contract Documents govern.
 - .3 Install prefinished millwork at locations shown on drawings.
 - .1 Position accurately, level, plumb straight.
 - .4 Fasten and anchor millwork securely.
 - .1 Supply and install heavy duty fixture attachments for wall mounted cabinets.
 - .5 Countersink mechanical fasteners at exposed and semi-exposed surfaces, excluding installation attachment screws and screws securing cabinets end to end.
 - .6 Use draw bolts in countertop joints.
 - .7 Scribe and cut as required to fit abutting walls and to fit
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properly into recesses and to accommodate piping, columns, fixtures, outlets or other projecting, intersecting or penetrating objects.

- .8 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.
- .9 Apply moisture barrier between wood framing members and masonry or cementitious construction.
- .10 Fit hardware accurately and securely in accordance with manufacturer's written instructions.
- .11 Make cutouts for inset equipment and fixtures using templates provided.

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 cabinet work, inside cupboards and drawers and outside surfaces.
 - .2 Remove excess glue, pencil and ink marks from surfaces.

3.4 PROTECTION

- .1 Protect 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.