

**Part 1 General**

**1.1 REFERENCES**

- .1 ASTM International
  - .1 ASTM A123/A123M-09, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
  - .2 ASTM A653/A653M-11, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanealed) by the Hot-Dip Process.
- .2 CSA International
  - .1 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.
  - .2 CSA O121-08, Douglas Fir Plywood.
  - .3 CSA O141-05(R2009), Softwood Lumber.
  - .4 CSA O151-09, Canadian Softwood Plywood.
  - .5 CSA O153-M1980(R2008), Poplar Plywood.
  - .6 CSA O325-07, Construction Sheathing.
  - .7 CAN/CSA-Z809-08, Sustainable Forest Management.
- .3 Forest Stewardship Council (FSC)
  - .1 FSC-STD-01-001-2004, FSC Principle and Criteria for Forest Stewardship.
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .5 National Lumber Grades Authority (NLGA)
  - .1 Standard Grading Rules for Canadian Lumber 2010.

**1.2 ACTION AND INFORMATIONAL SUBMITTALS**

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

**1.3 QUALITY ASSURANCE**

- .1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Plywood identification: by grade mark in accordance with applicable CSA 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.

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**Part 2            Products**

**2.1                LUMBER MATERIAL**

- .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.
  - .3 CAN/CSA-Z809 or FSC or SFI certified.
- .2 Furring, blocking, nailing strips, grounds, rough bucks, cants, curbs.
  - .1 Board sizes: "standard" or better grade.
  - .2 Dimension sizes: "standard" light framing or better grade.
  - .3 Post and timbers sizes: "standard" or better grade.

**2.2                PANEL MATERIALS**

- .1 Canadian softwood plywood (CSP): to CSA O151, standard construction.
  - .1 Urea-formaldehyde free.
  - .2 CAN/CSA-Z809 or FSC or SFI certified.

**2.3                ACCESSORIES**

- .1 Nails, spikes and staples: to CSA B111.
- .2 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.
- .3 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, recommended for purpose by manufacturer.

**2.4                FINISHES**

- .1 Fastener Finishes:
  - .1 Galvanizing: to ASTM A123/A123M /ASTM A653,

**2.5                FIRE-RETARDANT TREATED WOOD PRESERVATIVE (FIRE-RESISTANT SEPARATIONS OR ASSEMBLY)**

- .1 Pressure treated Douglas fir plywood (DFP) construction CSA 080-M1.20 et 1.27 ULC-S102 and kiln-dried to 15% maximum moisture content.

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**Part 3 Execution**

**3.1 PREPARATION**

- .1 Not applicable.

**3.2 INSTALLATION**

- .1 Comply with requirements of NBC, supplemented by the following paragraphs.
- .2 Install furring and blocking as required to space-out and support casework, cabinets, racks, wall and ceiling finishes, electrical equipment mounting boards, all accessories (tables writing, viewing and projection bands clashes, signs, corner protectors and protective walls, rods, hooks, etc.), all items of furniture (cabinets, consoles, racks and shelves), head of door openers and other work as required.
- .3 Install furring and blocking as required to space-out and support casework, wall and ceiling finishes, facings and other work as required.
- .4 Align and plumb faces of furring and blocking to tolerance of 1:600.
- .5 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.
- .6 Use caution when working with particle board. Use dust collectors and high quality respirator masks.

**3.3 ERECTION**

- .1 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
- .2 Countersink bolts where necessary to provide clearance for other work.

**3.4 SUPPORTING PANELS FOR ELECTRICAL PANELS**

- .1 Provide electrical equipment backboards for mounting electrical equipment as indicated. Use 1220 x 2440 x 19 mm thick, fire-resistant plywood on vertical wood stiles 38mm x 89 mm to 300 mm c / c.

**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 Waste Management: separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

**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                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 Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI)
  - .1 Architectural Woodwork Quality Standards Illustrated, 8th edition, Version 1.0 (2009).
- .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 O112.10-08, Evaluation of Adhesives for Structural Wood Products (Limited Moisture Exposure).
  - .3 CSA O121-08, Douglas Fir Plywood.
  - .4 CSA O141-05(R2009), Softwood Lumber.
  - .5 CSA O151-09, Canadian Softwood Plywood.
  - .6 CSA O153-M1980(R2008), Poplar Plywood.
  - .7 CAN/CSA-Z809-08, Sustainable Forest Management.
- .6 Forest Stewardship Council (FSC)
  - .1 FSC-STD-01-001-2004, FSC Principle and Criteria for Forest Stewardship.
- .7 Green Seal Environmental Standards (GS)
  - .1 GS-11-11, Paints and Coatings.
  - .2 GS-36-11, Commercial Adhesives.
- .8 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .9 National Electrical Manufacturers Association (NEMA)
  - .1 ANSI/NEMA LD-3-05, High-Pressure Decorative Laminates (HPDL).

- .10 National Hardwood Lumber Association (NHLA)
  - .1 Rules for the Measurement and Inspection of Hardwood and Cypress 2011.
- .11 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 - Submittal Procedures.
- .2 Shop Drawings:
  - .1 Indicate details of construction, profiles, jointing, fastening and other related details.
  - .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.
- .3 Samples:
  - .1 Submit duplicate samples of laminated plastic for colour selection.

## **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 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.
- .4 Packaging Waste Management: remove for reuse packaging materials as specified in Construction Waste Management Plan Waste Reduction Workplan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

## 1.5 ACCEPTABLE MATERIALS OR PRODUCTS

- .1 Where materials are specified by trade name refer to the “Instructions to Tenderers” for a procedure to be followed in applying for approval of alternatives.

## Part 2 Products

### 2.1 MATERIALS

- .1 Softwood lumber: unless specified otherwise, S4S, moisture content 15 19 % or less in accordance with following standards:
  - .1 CSA O141.
  - .2 CAN/CSA-Z809 or FSC or SFI certified.
  - .3 NLGA Standard Grading Rules for Canadian Lumber.
  - .4 AWMAC premium grade, moisture content as specified.
- .2 Machine stress-rated lumber is acceptable for all purposes.
- .3 Canadian softwood plywood (CSP): to CSA O151, standard construction, CAN/CSA-Z809 or FSC or SFI certified.
  - .1 Plywood resin to contain no added urea-formaldehyde.
- .4 Interior mat-formed wood particleboard: to ANSI/NPA A208.1, CAN/CSA-Z809 or FSC or SFI certified.
  - .1 Particleboard resin to contain no added urea-formaldehyde.
- .5 MDF (medium density fibreboard) core: to ANSI A208.2, density 769 kg/m<sup>2</sup>, CAN/CSA-Z809 or FSC or SFI certified.
  - .1 Medium density fibreboard performance requirements to: ANSI A208.2.
  - .2 MDF resin to contain no added urea-formaldehyde.
- .6 Laminated plastic for flatwork: to NEMA LD3, Grade VGL, 1.15 mm thick; printed patten, color as indicated on drawings.
- .7 Laminated plastic backing sheet: Grade BK, minimum of 0.5 mm thick or same thickness and colour as face laminate.
- .8 Thermofused Melamine: to NEMA LD3 Grade VGL.,
  - .1 High wear resistant thermofused melamine: equal or exceed 400 cycles (Minimum standard for HPL abrasion test).
- .9 Nails and staples: to CSA B111.
- .10 Wood screws: steel, type and size to suit application.
- .11 Splines: metal.
- .12 Aluminium sheet (for indicated window sill) : alliage 1100-H14, 1,6 mm thickness, anodised finish as existing window sills.

- .13 Sealant: in accordance with Section 07 92 00 - Joint Sealants.

## 2.2 MANUFACTURED UNITS

- .1 Furring, blocking, nailing strips, grounds and rough bucks and sleepers.
  - .1 S2S is acceptable .
  - .2 Board sizes: "standard" or better grade.
  - .3 Dimension sizes: "standard" light framing.
- .2 Casework:
  - .1 Fabricate caseworks to AWMAC custom quality grade.
  - .2 Case bodies (ends, backs, divisions and bottoms).
    - .1 Particleboard, 16 mm thick, laminated with thermofused melamine or plastic laminated finish.
  - .3 Shelving:
    - .1 Particleboard, laminated with thermofused melamine, 19 mm thick.
    - .2 Edge banding: provide a prefabricated PVC strip, with round edges.
- .3 Drawers:
  - .1 Fabricate drawers to AWMAC premium custom grade supplemented as follows:
  - .2 Sides and Backs.
    - .1 Particleboard, laminated with thermofused melamine, 16 mm thick.
  - .3 Bottoms:
    - .1 Particleboard, laminated with thermofused melamine, 16 mm thick.
  - .4 Fronts:
    - .1 Softwood plywood: 16 mm thick, plastic laminated finish including edges.
- .4 Casework Doors:
  - .1 Fabricate casework doors to AWMAC premium custom grade supplemented as follows:
  - .2 Softwood plywood: 16 mm thick, plastic laminated finish including edges.
- .5 Counters and backsplash:
  - .1 Softwood plywood: 19 mm thick, plastic laminated finish including edges.
- .6 Divider panels and module.
  - .1 Softwood and poplar plywood DFP or CSP or PP, square edge, 2x16 mm thick. plastic laminated finish 2 sides including edges.

## 2.3 HARDWARE

- .1 Supports for adjustable shelves (compliant CAN/CGSB-69.25-M90)

- .1 Shelves inside casing: racks, in metal zinc finished, U-profile with carriers suitable for racks. Product Reference: Richelieu 120 series or replacement product approved by addendum according to Instructions to bidders.
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- .3 Shelves in open casing: metal sleeve, 5 mm in diameter. Reference product: Richelieu, 5837-2G or replacement product approved by addendum according to Instructions to bidders.
- .2 Hidden Hinges: 110 degree opening, with spring steel. Surface installation. Reference product: Blum clip Richelieu 110 or replacement product approved by addendum according to Instructions to bidders.
- .3 Opening mechanism for lift-up door : complete system of hinges with damping mechanism, including 107 degrees opening hinges, mounting brackets and assembly supports for door opening mechanism, in silver finish metal. Reference product: Richelieu #367521106, including all manufacturer recommended products, or replacement product approved by addendum according to Instructions to bidders.
- .4 Door handle, drawer or sliding shelf: to CAN/CGSB-69.25-M90 in brushed nickel finish metal, and maximum length according to the width of the door opening (to ensure an opening without contact). Reference product: : Richelieu #BP873192195, finished 195 or replacement product approved by addendum according to Instructions to bidders.
- .5 Slides for drawers and shelves: compliant CAN/CGSB-69.25-M90 for side mounting with ball bearings.
  - .1 Filing drawers: Reference product: Richelieu / Accuride series 4032 or 4034 or replacement product approved by addendum according to Instructions to bidders.
  - .2 Other drawers: Reference product: Richelieu / Accuride 3832 series or replacement product approved by addendum according to Instructions to bidders.
- .6 Lock for drawers and cabinets: cam and cylinder fitted with a rosette trim, mortise striker and a lockwasher. Reference product: Richelieu lock series 1202, 20-21-31 strike or replacement product approved by addendum according to Instructions to bidders.
- .7 Wire trim: Richelieu A-60.0910-90 or replacement product approved by addendum according to Instructions to bidders.
- .8 E-Cargo recycling system of Richelieu with concealed slides and two bin of 35 liters #3619100 of Richelieu or replacement product approved by addendum according to Instructions to bidders.

## 2.4 FABRICATION

- .1 Set nails and countersink screws apply stained plain wood filler to indentations, sand smooth and leave ready to receive finish.
- .2 Prepare all visible surfaces to receive sealer, stain or varnish.
- .3 Shop install cabinet hardware for doors, shelves and drawers. Recess shelf standards unless noted otherwise.
- .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.
- .8 Ensure adjacent parts of continuous laminate work match in colour and pattern.
- .9 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.
- .10 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.
- .11 Apply laminate backing sheet to reverse side of core of plastic laminate work.
- .12 Apply laminated plastic liner sheet to interior of cabinetry.
- .13 Provide all casework doors with a pair of concealed hinges.
- .14 Provide casework doors with locks according to indications on plans. Provide for each pair of doors a cam lock on the right sided door, a magnetic latch and elbow latch on the left sided door.
- .15 Provide all doors drawers and sliding shelves with a door handle/pull.
- .16 Provide all drawers and sliding shelves with slides installed on both sides.

### **Part 3 Execution**

#### **3.1 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 Choose fastening mechanisms adapted to dimensions and nature of elements to assemble. Use patented mechanisms according to manufacturer's recommendations.
- .5 Coordinate installation of all nailer boards required in walls by Section 06 10 00.01 – Rough carpentry (short form).
- .6 Use draw bolts in countertop joints.

- .7 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.
- .8 Cut plastic laminates leaving sufficient tolerance at locations where fixed parts cross through laminate sheet to enable them to move freely.
- .9 Use lag bolts and strips. Place joints at 75 mm of edge and at maximum 450 mm spacing.
- .10 Use draw bolts to execute tight and flush counter top joints.
- .11 Cut notches necessary for inserts (grilles, electrical equipment, electrical outlets or others). Round internal angles, bevel edges and seal exposed core material of panel edges.
- .12 At junction of plastic laminate counter back splash and adjacent wall finish, apply small bead of sealant.
- .13 Fit hardware accurately and securely in accordance with manufacturer's written instructions.
- .14 Provide cloakrooms with closet rod and supports.
- .15 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 indicated.
  - .5 Slightly bevel arises.
- .16 For site application, offset joints in plastic laminate facing from joints in core.
- .17 Replace all parts with damaged surfaces.

### **3.2 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
- .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.

### **3.3 PROTECTION**

- .1 Protect millwork and cabinet work from damage until final inspection.

**END OF SECTION**