

**Part 1        General**

**1.1        REFERENCES**

- .1    ASTM International
  - .1    ASTM A123/A123M-08, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
  - .2    ASTM A653/A653M-08, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanealed) by the Hot-Dip Process.
- .2    Canadian Standards Association (CSA)
  - .1    CSA B111-1974 (R2003), Wire Nails, Spikes and Staples.
  - .2    CSA O112.9-10 (R2014), Evaluation of Adhesives for Structural Wood Products (Exterior Exposure).
  - .3    CSA O121-08 (R2013), Douglas Fir Plywood.
  - .4    CSA O141-05 (R2014), Softwood Lumber.
  - .5    CSA O151-09 (R2014), Canadian Softwood Plywood.
  - .6    CSA O325-07 (R2012), Construction Sheathing.
- .3    National Lumber Grades Authority (NLGA)
  - .1    NLGA Standard Grading Rules for Canadian Lumber (2007 edition).

**1.2        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.

**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    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, 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 Furring, blocking, nailing strips, grounds, rough bucks, cants, curbs, fascia backing and sleepers:
  - .1 Use S2S or S4S materials.
  - .2 Board sizes: "Standard" or better grade.
  - .3 Dimension sizes: "Standard" light framing or better grade.
- .3 Plywood, OSB, and wood based composite panels: CSA O325.
- .4 Douglas fir plywood (DFP): CSA O121, standard construction.
- .5 Canadian softwood plywood (CSP): CSA O151, standard construction.
- .6 Treated wood products: To CSA O80 Series.
- .7 Fire retardant treated wood: To CAN/ULC S102.
  - .1 Flame spread: Maximum 25.
  - .2 Smoke developed: Maximum 25.

### **2.2 ACCESSORIES**

- .1 Sealants: In accordance with Section 07 92 00 - Joint Sealants.
- .2 General purpose adhesive: CSA O112.9.
- .3 Nails, spikes and staples: CSA B111.
- .4 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.
- .5 Proprietary fasteners: Toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, recommended for purpose by manufacturer.
- .6 Fasteners: Hot dipped galvanized steel to ASTM A123/A123M or ASTM A653/A653M for high humidity and treated wood locations, unfinished steel elsewhere.

## **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 FURRING AND BLOCKING**

- .1 Install furring and blocking as required to space-out and support casework, cabinets, wall and ceiling finishes, audio-visual equipment mounting, electrical equipment mounting boards, architectural hardware, bathroom accessories, fire extinguisher cabinets and brackets, and other work as required.
- .2 Install rough bucks, nailers, and linings to rough openings as required to provide backing for frames and other work.
- .3 Install wood cants, fascia backing, nailers, curbs, and other wood supports as required and secure using galvanized steel fasteners.
- .4 Install sleepers as indicated.

### **3.3 EQUIPMENT/ELECTRICAL MOUNTING BOARD**

- .1 Equipment/Electrical mounting board:
  - .1 Douglas Fir plywood, good one side.
  - .2 Size: 1220 x 2440 mm x 19 mm (48 x 96 x ¾ inch).
  - .3 Finish: Fire-retardant paint finish, white or to match wall colour unless otherwise specified; finish on all six surfaces prior to installation to ensure proper sealing.
  - .4 Fastening: Exposed stainless steel fasteners, at 400 mm (16 inches) o.c. unless otherwise specified.

### **3.4 CLEANING**

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

### **3.5 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.
- .2 Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI)
  - .1 Architectural Woodwork Standards, 2<sup>nd</sup> Edition, 2014.
- .3 Builders Hardware Manufacturers Association (BHMA)
  - .1 ANSI/BHMA A156.9-2015, Cabinet Hardware.
  - .2 ANSI/BHMA A156.11-2014, Cabinet Locks.
- .4 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB 71.20-M88, Adhesive, Contact, Brushable.
- .5 Canadian Standards Association (CSA)
  - .1 CSA B111-74 (R2003), Wire Nails, Spikes and Staples.
  - .2 CSA O112.10-08 (R2013), Evaluation of Adhesives for Structural Wood Products (Limited Moisture Exposure).
  - .3 CSA O121-08 (R2013), Douglas Fir Plywood.
  - .4 CSA O141-05 (R2014), Softwood Lumber.
  - .5 CSA O151-09 (R2014), Canadian Softwood Plywood.
- .6 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .7 National Electrical Manufacturers Association (NEMA)
  - .1 ANSI/NEMA LD3-2005, High-Pressure Decorative Laminates (HPDL).
- .8 National Lumber Grades Authority (NLGA)
  - .1 Standard Grading Rules for Canadian Lumber, 2014.

**1.2        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 and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Submit two copies of WHMIS MSDS in accordance with Section 01 35 29 - Health and Safety Requirements.

- .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 duplicate manufacturer's samples of high-pressure decorative laminate for pattern and colour selection.
- .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 NPA standards.

### **1.4 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .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 Machine stress-rated lumber is acceptable for all purposes.
- .2 Canadian softwood plywood (CSP): To CSA O151, standard construction.
  - .1 Plywood resin to contain no added urea-formaldehyde.

- .3 Hardboard:
  - .1 Hardboard resin to contain no added urea-formaldehyde.
- .4 Particleboard core: To NPA A208.1, Grade M2 or better.
  - .1 Thickness swelling: Maximum 5.5%.
  - .2 Modulus of rupture: Minimum 13.0 N/mm<sup>2</sup> (1885 psi).
- .5 MDF (medium density fibreboard) core: To NPA A208.2, Grade 130 or better.
  - .1 Modulus of rupture: Minimum 21.6 N/mm<sup>2</sup> (3130 psi).
  - .2 MDF resin to contain no added urea-formaldehyde.
- .6 Moisture-resistant MDF: To ANSI/NPA A208.2, Grade 155 MR50.
- .7 High pressure decorative laminate (HPDL) for horizontal surfaces: To NEMA LD3, Horizontal Grade Standard (HGS), 1.2 ± 0.12 mm thick; colours and patterns as selected by Departmental Representative.
- .8 HPDL for vertical surfaces: To NEMA LD3, Vertical Grade Standard (VGS), 0.7 mm ± 0.10 mm thick, colours and patterns as selected by Departmental Representative.
- .9 HPDL for postforming work: To NEMA LD3, Horizontal Grade Postforming (HGP), 1.0 ± 0.12 mm thick, colours and patterns as selected by Departmental Representative.
- .10 HPDL liner sheet: Grade CLS, 0.5 ± 0.10 mm thick, white colour.
- .11 HPDL backing sheet: Grade BKL, minimum 0.5 mm thickness.
- .12 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).
- .13 Nails and staples: To CSA B111.
- .14 Wood screws: Stainless steel, type and size to suit application.
- .15 Splines: Metal.
- .16 Sealant: In accordance with Section 07 92 00 - Joint Sealants.
- .17 Laminate adhesive:
  - .1 Adhesive: Contact adhesive to CAN/CGSB 71.20.

## **2.2 HARDWARE**

- .1 General:
  - .1 Hardware: ANSI/BHMA A156.9.
  - .2 Finish: Brushed nickel or stainless steel, unless otherwise specified.
- .2 Hinges: European style hinges, 110° minimum opening.
- .3 Drawer and Door Pulls: "U" shaped, flush mounted.
  - .1 Confirm proposed product with Departmental Representative.

- .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 coated steel, 30 kg (66 lb) load capacity, soft closing.
- .7 Fixed brackets: For cantilevered surfaces, steel angle welded to wall-mounting plate for, 150 kg capacity per pair, prime paint finish, pre-drilled holes for screw attachment to substrate and table top.
- .8 Cabinet Locks: ANSI/BHMA A156.11, Grade 1; keyed cylinder, two keys per lock, master keyed, steel with satin finish; complete with strike.
  - .1 Body: Die cast zinc.
  - .2 Cylinder: Solid brass, pin tumbler.
  - .3 Coordinate keying with Departmental Representative.

## **2.3 MANUFACTURED UNITS**

- .1 All work to AWMAC Custom grade.
- .2 Core: Particleboard or MDF.
- .3 Casework:
  - .1 Construction type: Frameless.
  - .2 Cabinet and door interface: Flush overlay.
  - .3 Core:
    - .1 Top, bottom, gables, doors, body, shelves, and valances: Particleboard, 19 mm thick.
    - .2 Backs: Particleboard, 13 mm thick.
  - .4 Surfaces:
    - .1 Exposed exterior surfaces: HPDL.
    - .2 Exposed interior surfaces: HPDL matching exposed surfaces.
    - .3 Semi-exposed surfaces: Cabinet liner vertical grade laminate, white.
    - .4 Concealed: Manufacturer's choice.
  - .5 Edgeband: 3 mm PVC.
  - .6 Ladder base: Canadian softwood plywood, 19 mm thick.
    - .1 Kitchenette: Mount 6 mm moisture resistant MDF to front face of ladder base; HPDL finish.
- .4 Drawers:
  - .1 Fronts: Particle board core, 19 mm thick, with HPDL.
  - .2 Sides and Backs: Particle board, 16 mm, with white melamine surfaces.
  - .3 Bottoms: Tempered hardboard, 13 mm thick, with white melamine surfaces.
  - .4 Edgeband: 3 mm PVC.

- .5 Countertops:
  - .1 Core material: Particleboard.
  - .2 Surface: HPDL.
  - .3 Front edges and exposed side edges: 3 mm PVC.

## **2.4 FABRICATION**

- .1 Set nails and countersink screws apply 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 size 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 laminate 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 Use straight self-edging laminate strip for flatwork to cover exposed edge of core material. Chamfer exposed edges uniformly at approximately 20°. Do not mitre laminate edges.
- .10 Apply laminate backing sheet to reverse side of core of laminate work.
- .11 Apply laminate 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 Quality Standards of AWMAC.



- .2 Install prefinished 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 countertop 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.

### **3.3 CLEANING**

- .1 Progress Cleaning: Clean in accordance with Section 01 74 11 - Cleaning.
- .2 Leave Work area clean at end of each day.
- .3 Final Cleaning: Upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
  - .1 Clean millwork outside surfaces, and inside 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**