

**Part 1 General**

**1.1 REFERENCES**

- .1 American National Standards Institute (ANSI)
  - .1 ANSI/NPA A208.1-[1999], Particleboard, Mat Formed Wood.
- .2 American Society for Testing and Materials International (ASTM)
  - .1 ASTM A653/A653M-[05a], Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanealed) by the Hot-Dip Process.
  - .2 ASTM C36/C36M-[03], Standard Specification for Gypsum Wallboard.
  - .3 ASTM C578-[05a], Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
  - .4 ASTM C1289-[05a], Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
  - .5 ASTM D1761-[88(2000)], Standard Test Methods for Mechanical Fasteners in Wood.
  - .6 ASTM D5055-[05], Standard Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists.
  - .7 ASTM D5456-[05a], Standard Specification for Evaluation of Structural CompoSite Lumber Products.
- .1 Canada Green Building Council (CaGBC)
  - .1 LEED Canada Reference Guide for Green Building Design and Construction 2009
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-11.3-[M87], Hardboard.
  - .2 CAN/CGSB-51.32-[M77], Sheathing, Membrane, Breather Type.
  - .3 CAN/CGSB-51.34-[M86], Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
  - .4 CAN/CGSB-71.26-[M88], Adhesive for Field-Gluing Plywood to Lumber Framing for Floor Systems.
- .3 Canadian Standards Association (CSA International)
  - .1 CSA A123.2-[03], Asphalt Coated Roofing Sheets.
  - .2 CAN/CSA-A247-[M86], Insulating Fiberboard.
  - .3 CSA B111-[1974(R2003)], Wire Nails, Spikes and Staples.
  - .4 CAN/CSA-G164-[M92(R2003)], Hot Dip Galvanizing of Irregularly Shaped Articles.
  - .5 CSA O112 Series-[M1977(R2006)], CSA Standards for Wood Adhesives.
  - .6 CSA O121-[M1978(R2003)], Douglas Fir Plywood.
  - .7 CSA O122-[06], Structural Glued-Laminated Timber.
  - .8 CSA O141-[05], Softwood Lumber.
  - .9 CSA O151-[04], Canadian Softwood Plywood.
  - .10 CSA O153-[M1980(R2003)], Poplar Plywood.
  - .11 CAN/CSA-O325.0-[92(R2003)], Construction Sheathing.
  - .12 CSA O437 Series-[93(R2006)], Standards on OSB and Waferboard.

- .4 Forest Stewardship Council (FSC)
  - .1 FSC-STD-01-001-[2004], FSC Principle and Criteria for Forest Stewardship.
  - .2 FSC-STD-20-002-[2004], Structure and Content of Forest Stewardship Standards V2-1
  - .3 FSC Accredited Certified Bodies.
- .5 National Lumber Grades Authority (NLGA)
  - .1 Standard Grading Rules for Canadian Lumber [2005].
- .6 South Coast Air Quality Management District (SCAQMD), California State (SCAQMD)
  - .1 SCAQMD Rule 1113-[04], Architectural Coatings.
  - .2 SCAQMD Rule 1168-[05], Adhesives and Sealants Applications.
- .7 Truss Design and Procedures for Light Metal Connected Wood Trusses, Truss Plate Institute of Canada.
- .8 Underwriters' Laboratories of Canada (ULC)
  - .1 CAN/ULC-S706-[97], Mineral Fibre Thermal Insulation for Buildings.
- 1.2 SUBMITTALS**
  - .1 Submit Submittal submissions: in accordance with Section 01 33 00 - Submittal Procedures.
- 1.3 QUALITY ASSURANCE**
  - .1 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
  - .2 Plywood, in accordance with CSA standards.
- 1.4 WASTE MANAGEMENT AND DISPOSAL**
  - .1 Separate and recycle waste materials in accordance with Section 01 74 00 – Cleaning & Waste Management.
  - .2 Place materials defined as hazardous or toxic waste in designated containers.
  - .3 Ensure emptied containers are sealed and stored safely for disposal away for public.
  - .4 Use chemical hardeners that are non-toxic, biodegradable and have zero or low VOC's.
  - .5 Dispose of surplus chemical and finishing materials in accordance with Federal, Provincial and Municipal regulations.
- Part 2 Products**
  - 2.1 FRAMING AND STRUCTURAL MATERIALS**
    - .1 Lumber: unless specified otherwise, 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.
- .3 Forestry Stewardship Council (FSC) certified.
- .2 Framing and board lumber: in accordance with NBC.
- .3 Furring, blocking, nailing strips, grounds, rough bucks, cants, curbs, fascia backing and sleepers:
  - .1 S2S is acceptable for all Work.
  - .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.

## **2.2 PANEL MATERIALS**

- .1 Indoor Environmental Quality
  - .1 SCAQMD Rule 1168, Adhesives and Sealants Applications.
- .2 Plywood, OSB and wood based compoSite panels: to CAN/CSA-O325.0.
- .3 Douglas fir plywood (DFP): to CSA O121, standard construction.
- .4 Canadian softwood plywood (CSP): to CSA O151, standard construction.
- .5 Poplar plywood (PP): to CSA O153, standard construction.
- .6 Interior mat-formed wood particleboard: to ANSI 208.1.
- .7 Mat-formed structural panelboards (OSB wafer): to CAN3-O437.0.
- .8 Insulating fiberboard sheathing: to CAN/CSA-A247.
- .9 Glass fibre board sheathing: non-structural, rigid, faced, fiberglass, insulating exterior sheathing board.
- .10 Isocyanurate sheathing: to ASTM C1289, faced.
- .11 Expanded polystyrene sheathing: to ASTM C578.
- .12 Gypsum sheathing: to ASTM C36/C36M.
- .13 Electrical equipment mounting boards:
  - .1  $\frac{3}{4}$ " Plywood G1S, DFP or CSP grade, square edge.

## **2.3 ACCESSORIES**

- .1 Exterior wall sheathing paper: to CAN/CGSB-51.32 single ply, spunbonded olefin type coated impregnated as indicated.
- .2 Polyethylene film: to Section 07 26 00 – Vapour Retarders.
- .3 Sill Gasket Air seal: closed cell polyurethane or polyethylene.
- .4 Sealants: Section 07 92 00 – Joint Sealants.
- .5 General purpose adhesive: to CSA O112 Series.

- .6 Nails, spikes and staples: to CSA B111.
- .7 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.
- .8 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, explosive actuated fastening devices, recommended for purpose by manufacturer.
- .9 Joist hangers: minimum 1 mm thick sheet steel, galvanized ZF001 coating designation.
- .10 Roof sheathing H-Clips: formed "H" shape, thickness to suit panel material, type approved by Contract Administrator.

## **2.4 FASTENER FINISHES**

- .1 Galvanizing: to CAN/CSA-G164, use galvanized fasteners for exterior Work, pressure-preservative, fire-retardant, treated lumber.

## **Part 3 Execution**

### **3.1 INSTALLATION**

- .1 Comply with requirements of NBC 2010 Part 3 supplemented by following paragraphs.
- .2 Install members true to line, levels and elevations, square and plumb.
- .3 Construct continuous members from pieces of longest practical length.
- .4 Install spanning members with "crown-edge" up.
- .5 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.
- .6 Install wall sheathing in accordance with manufacturer's printed instructions.
- .7 Install roof sheathing in accordance with requirements of NBC.
- .8 Install furring and blocking as required to space-out and support casework, cabinets, wall and ceiling finishes, facings, fascia, soffit, siding electrical equipment mounting boards, and other Work as required.
- .9 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.
- .10 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other Work.
- .11 Install wood cants, fascia backing, nailers, curbs and other wood supports as required and secure using galvanized fasteners.
- .12 Use dust collectors and high quality respirator masks when cutting or sanding wood panels.

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**3.2 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 Use nailing disks for soft sheathing as recommended by sheathing manufacturer.

**3.3 SCHEDULES**

- .1 Roof sheathing:
  - .1 Plywood, DFP or CSP sheathing grade (SHG) T&G edge, 16 mm thick, unless otherwise indicated.
- .2 Electrical equipment mounting boards:
  - .1 Plywood, DFP or CSP grade, (G1S) select square edge 16 mm thick, unless otherwise indicated.

**END OF SECTION**

**Part 1            General**

**1.1                REFERENCES**

- .1 American National Standards Institute (ANSI)
  - .1 ANSI A208.1-[99], Particleboard.
  - .2 ANSI A208.2-[02], Medium Density Fibreboard (MDF).
  - .3 ANSI/HPVA HP-1-[2004], Standard for Hardwood and Decorative Plywood.
- .2 American Society for Testing and Materials International (ASTM)
  - .1 ASTM E1333-[96(2002)], Standard Test Method for Determining Formaldehyde Concentrations in Air and Emissions Rates from Wood Products Using a Large Chamber.
- .3 Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI)
  - .1 Architectural Woodwork Quality Standards Illustrated, 8th edition, Version 1.0 [2003].
- .4 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-11.3-[M87], Hardboard.
- .5 Canadian Plywood Association (CanPly)
  - .1 The Plywood Handbook [2005].
- .6 Canadian Standards Association (CSA International)
  - .1 CSA B111-[74(R2003)], Wire Nails, Spikes and Staples.
  - .2 CAN/CSA-G164-[M92(R2003)], Hot Dip Galvanizing of Irregularly Shaped Articles.
  - .3 CSA O121-[M89(R2003)], Douglas Fir Plywood.
  - .4 CAN/CSA O141-[91(R1999)], Softwood Lumber.
  - .5 CSA O151-[04], Canadian Softwood Plywood.
  - .6 CSA O153-[M1980(R2003)], Poplar Plywood.
  - .7 CSA Z760-[94], Life Cycle Assessment.
- .7 Forest Stewardship Council (FSC)
  - .1 FSC-STD-01-001-[2004], FSC Principle and Criteria for Forest Stewardship.
- .8 National Hardwood Lumber Association (NHLA)
  - .1 Rules for the Measurement and Inspection of Hardwood and Cypress [1998].
- .9 National Lumber Grades Authority (NLGA)
  - .1 Standard Grading Rules for Canadian Lumber [2005].
- .10 South Coast Air Quality Management District (SCAQMD), California State (SCAQMD)
  - .1 SCAQMD Rule 1113-[04], Architectural Coatings.
  - .2 SCAQMD Rule 1168-[05], Adhesives and Sealants Applications.
- .11 Underwriters Laboratories of Canada (ULC)

- .1 CAN4-S104-[80(R1985)], Standard Method for Fire Tests of Door Assemblies.
  - .2 CAN4-S105-[85(R1992)], Standard Specification for Fire Door Frames, meeting the Performance Required by CAN4-S104.
- .1 Canada Green Building Council (CaGBC)
    - .1 LEED Canada Reference Guide for Green Building Design and Construction 2009

## 1.2 SUBMITTALS

- .1 Shop Drawings Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
  - .1 Indicate details of Construction, profiles, jointing, fastening and other related details.
  - .2 Indicate materials, thickness, finishes and hardware.

## 1.3 QUALITY ASSURANCE

- .1 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Plywood, in accordance with CSA standards and AWMAC custom grade.
- .3 Wood fire rated frames and panels: listed and labelled by an organization accredited by Standards Council of Canada in conformance with CAN4-S104 and CAN4-S105 for ratings specified or indicated.

## 1.4 DELIVERY, STORAGE, AND HANDLING

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

## 1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 00 – Cleaning & Waste Management.
- .2 Place materials defined as hazardous or toxic waste in designated containers.
- .3 Ensure emptied containers are sealed and stored safely for disposal away for public.
- .4 Use chemical hardeners that are non-toxic, biodegradable and have zero or low VOC's.
- .5 Dispose of surplus chemical and finishing materials in accordance with Federal, Provincial and Municipal regulations.

## Part 2 Products

### 2.1 LUMBER MATERIAL

- .1 Softwood lumber: unless specified otherwise, S4S in accordance with following standards:

- .1 CAN/CSA-O141.
- .2 NLGA Standard Grading Rules for Canadian Lumber.
- .3 AWMAC premium grade, moisture content as specified.
- .2 Machine stress-rated lumber is acceptable.
- .3 Hardwood lumber: in accordance with following standards:
  - .1 National Hardwood Lumber Association (NHLA).
  - .2 AWMAC custom grade, moisture content as specified.

## 2.2 PANEL MATERIAL

- .1 Douglas fir plywood (DFP): to CSA O121, standard construction.
  - .1 Urea-formaldehyde free.
- .2 Canadian softwood plywood (CSP): to CSA O151, standard construction.
  - .1 Urea-formaldehyde free.
- .3 Hardwood plywood: to ANSI/HPVA HP-1.
  - .1 Urea-formaldehyde free.
- .4 Poplar plywood (PP): to CSA O153, standard construction.
  - .1 Urea-formaldehyde free.
- .5 Particleboard: to ANSI A208.1.
  - .1 Urea-formaldehyde free.
- .6 Hardboard: to CAN/CGSB-11.3.
  - .1 Urea-formaldehyde free.
- .7 Medium density fibreboard (MDF): to ANSI A208.2, density 640-800 kg/m<sup>3</sup>.
  - .1 Urea-formaldehyde free.
    - .1 Medium density fibreboard
      - .1 Forestry Stewardship Council (FSC) certified.
      - .2 Urea-formaldehyde free.
- .8 Low density fibreboard: to CSA-A247M.
  - .1 Urea-formaldehyde free.
- .9 Decorative overlaid composite panels.
  - .1 Decorative overlay, heat and pressure laminated with suitable resin to 12.7 mm thick particleboard MDF core.
  - .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.
  - .3 Edge finishing: matching melamine and polyester overlay edge strip with self-adhesive.

## 2.3 ACCESSORIES

- .1 Nails and staples: to CSA B111; galvanized to CAN/CSA-G164 for exterior Work, interior humid areas and for treated lumber; plain finish elsewhere.



- .2 Wood screws: electroplated, type and size to suit application.
- .3 Splines: wood, plastic, metal.
- .4 Adhesive: recommended by manufacturer.
- .1 Adhesives: maximum VOC limit 30g/L.

### **Part 3 Execution**

#### **3.1 INSTALLATION**

- .1 Do finish carpentry to Quality Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC), 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.

#### **3.2 CONSTRUCTION**

- .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 smooth cut hole and plug with wood plug to match material being secured.
  - .4 Replace items of finish carpentry with damage to wood surfaces including hammer and other bruises.
- .2 Standing and running trim
  - .1 Butt and cope internal joints of baseboards to make snug, tight, joint. Cut right angle joints of casing and base with mitred joints.
  - .2 Fit backs of baseboards and casing snugly to wall surfaces to eliminate cracks at junction of base and casing with walls.
  - .3 Make joints in baseboard, where necessary using a 45° scarf type joint.
  - .4 Install door and window trim in single lengths without splicing.
- .3 Panelling:
  - .1 Secure panelling and perimeter trim using adhesive recommended for purpose by manufacturer. Fill nail holes caused by temporary fixing with filler matching wood in colour.
  - .2 Secure panelling and perimeter trim using concealed fasteners.
  - .3 Secure panelling and perimeter trim using counter sunk screws plugged with matching wood plugs.
- .4 Shelving.

- .1 Install shelving on shelf brackets, where indicated.
- .5 Hardware.
  - .1 Install cabinet and miscellaneous hardware as indicated.

**END OF SECTION**

**Part 1 General**

**1.1 REFERENCES**

- .1 American National Standards Institute (ANSI)
  - .1 ANSI/NPA A208.1, Particle board.
  - .2 ANSI A208.2, Medium Density Fiberboard (MDF) for Interior Applications.
  - .3 ANSI/HPVA HP-1, Standard for Hardwood and Decorative Plywood.
- .2 Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI)
  - .1 Architectural Woodwork Quality Standards Illustrated.
- .3 American Society for Testing and Materials (ASTM)
  - .1 ASTM E1333, Standard Test Method for Determining Formaldehyde Concentrations in Air and Emission Rates From Wood Products Using a Large Chamber.
- .4 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-71.20, Adhesive, Contact, Brushable.
- .5 Canadian Standards Association (CSA)
  - .1 CSA B111, Wire Nails, Spikes and Staples.
  - .2 CSA O112.4, Standards for Wood Adhesives.
  - .3 CSA O121, Douglas Fir Plywood.
  - .4 CSA O141, Softwood Lumber.
  - .5 CSA O151, Canadian Softwood Plywood.
  - .6 CSA O153, Poplar Plywood.
- .6 National Hardwood Lumber Association (NHLA)
  - .1 Rules for the Measurement and Inspection of Hardwood and Cypress.
- .7 National Lumber Grades Authority (NLGA)
  - .1 Standard Grading Rules for Canadian Lumber.
- .1 Canada Green Building Council (CaGBC)
  - .1 LEED Canada Reference Guide for Green Building Design and Construction 2009

**1.2 QUALITY ASSURANCE**

- .1 Provide Certificate of Quality Compliance upon completion of Fabrication, in accordance with Architectural Woodwork Manufacturer's Association of Canada (AWMAC) quality standards.
- .2 Provide Certificate of Quality Compliance upon satisfactory completion of installation.
- .3 Work shall be in accordance with the Grade or Grades specified of the *Architectural Woodwork Standards*.
- .4 Qualification:

- .1 Firm (woodwork manufacturer) with no less than 5 years of production experience similar to a specific project, whose qualifications indicate the ability to comply with the requirements of this Section.
- .2 The woodwork manufacturer must have at least one project in the past 5 years where the value of the woodwork was within 20 percent of the cost of woodwork for this Project.

### **1.3 SUBMITTALS**

- .1 In accordance with Section 01 33 00 - Submittal Procedures.
- .2 Indicate details of construction, profiles, jointing, fastening and other related details.  
Scales:
  - .1 profiles full size, details 1/2 full size.
- .3 Indicate all 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.
- .5 Submit duplicate colour samples of laminated plastic for colour selection.
- .6 Submit duplicate samples of laminated plastic joints, edging, cutouts, and postformed profiles.

### **1.4 SHOP DRAWINGS**

- .1 Submit shop drawings
- .2 Indicate details of construction, profiles, jointing, fastening and other related details.
  - .1 Scales: profiles, details 1/2 full size.
- .3 Indicate locations of service outlets in casework, typical and special installation conditions, and connections, attachments, anchorage and location of exposed fastenings.

### **1.5 DELIVERY, STORAGE, AND HANDLING**

- .1 Deliver, handle, store and protect materials of this section in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Deliver materials only when the project is ready for installation and the Contractor has provided a clean storage area.
  - .1 Delivery of architectural millwork shall be made only when the area of operation is enclosed, all plaster and concrete Work is dry and the area broom clean.
  - .2 Maintain indoor temperature and humidity within the range recommended by the Architectural Woodwork Standards for the location of the project.

### **1.6 SCHEDULING**

- .1 Coordinate fabrication, delivery, and installation with the Contractor and other applicable trades.

## 1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 00 – Cleaning & Waste Management.
- .2 Place materials defined as hazardous or toxic waste in designated containers.
- .3 Ensure emptied containers are sealed and stored safely for disposal away for public.
- .4 Use chemical hardeners that are non-toxic, biodegradable and have zero or low VOC's.
- .5 Dispose of surplus chemical and finishing materials in accordance with Federal, Provincial and Municipal regulations.

## Part 2 Products

### 2.1 MATERIALS

- .1 Softwood lumber: unless specified otherwise, S4S, moisture content 19 % or less in accordance with following standards:
  - .1 CAN/CSA-O141.
  - .2 NLGA Standard Grading Rules for Canadian Lumber.
  - .3 AWMAC premium grade, moisture content as specified.
- .2 Machine stress-rated lumber is acceptable for all purposes.
- .3 Hardwood lumber: moisture content 10% or less in accordance with following standards:
  - .1 National Hardwood Lumber Association (NHLA).
  - .2 AWMAC premium grade, moisture content as specified.
- .4 Douglas fir plywood (DFP): to CSA O121, standard construction.
  - .1 NAUF - Urea-formaldehyde free.
- .5 Canadian softwood plywood (CSP): to CSA O151, standard construction.
  - .1 NAUF - Urea-formaldehyde free.
- .6 Hardwood plywood: to ANSI/HPVA HP-1.
  - .1 Urea-formaldehyde free.
- .7 Poplar plywood (PP): to CSA O153, standard construction.
  - .1 NAUF - Urea-formaldehyde free.
- .8 Birch plywood: to AWMAC Natural.
  - .1 NAUF - Urea-formaldehyde free.
- .9 Hardboard: to CAN/CGSB – 11.3.
  - .1 Urea-formaldehyde free.
- .10 Medium density fibreboard (MDF): to ANSI A208.2, density 769 kg/m<sup>3</sup>
  - .1 NAUF - Urea-formaldehyde free.
  - .2 Must meet the performance requirements of ANSI A208.2

- .11 Particleboard core: to ANSI 208.1, sanded faces, of thickness indicated.
  - .1 NAUF - Urea-formaldehyde free.
- .12 Laminated plastic: to CAN3-A172, Section 06 47 00 – Plastic Laminate Finishes.
- .13 Thermofused Melamine Composite Panel (MCP): to NEMA LD3 Grade VGL.
  - .1 High wear resistant thermofused melamine: equal or exceed 400 cycles (Minimum standard for HPL abrasion test).
- .14 Nails and staples: to CSA B111.
- .15 Wood screws: steel plain, type and size to suit application.
- .16 Splines: wood.
- .17 Sealant: Section 07 92 00 – Joint Sealants.
- .18 Glazing: provide glazing to the requirements of Section 08 80 00 – Glazing.
- .19 Hardware: Door and drawer rolls, hinges, slides, locks, pulls, knobs, shelf rest, standards, rods, track shall be in accordance with CAN/CGSB-69.25-M90/ANSI/BHMA A156.9.

## 2.2 MANUFACTURED UNITS

- .1 Fabricate caseworks to AWMAC custom grade supplemented as follows:
  - .1 Solid wood baseboard inside Room 2 – ‘SHED’:
    - .1 Pressure-treated wood,
    - .2 Nominal 2x6” profile
    - .3 Wood to be free of knot holes and loose knots.
    - .4 Finish: Clear sealant
  - .2 Thermofused melamine base cabinet, including 6” deep drawer and an adjustable shelf within the cabinet. Use 1/8” thick PVC edge-banding on all perimeter-edges of the drawer-front, the cabinet door and on all four edges of the adjustable shelf.
  - .3 Countertops: Plastic laminate on 2-ply19mm (38 mm total) particle board core in accordance with Section 06 47 00 – Plastic Laminate finishes.

## 2.6 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 cutouts 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 which are to accommodate or abut appliances, equipment and other materials.
- .7 Ensure adjacent parts of continuous laminate Work match in colour and pattern..
- .8 Comply with NEMA LD 3, Annex A.
- .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 2400 mm. Keep joints 600 mm from sink cutouts.
- .10 Form shaped profiles and bends as indicated, using post forming grade laminate to laminate manufacturer's instructions.
- .11 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.
- .12 Apply laminate backing sheet to reverse side of core of plastic laminate Work.
- .13 Apply laminated plastic liner sheet to interior of cabinetry where indicated.

### **Part 3 Execution**

#### **3.1 EXAMINATION**

- .1 Verify the adequacy and proper location of any required backing or support framing.
- .2 Verify that Mechanical, Electrical, Plumbing, and other building components affecting Work in this Section are in place

#### **3.2 INSTALLATION**

- .1 Do architectural woodwork to Quality Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC), except where specified otherwise.
  - .1 Installation shall conform to the AWS Grade of the items being installed.
- .2 Install prefinished millwork at locations shown on drawings. Position accurately and secure in place, level, plumb and square.
- .3 Fasten and anchor millwork securely. Provide 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 Apply water resistant building paper over wood framing members in contact with masonry or cementitious construction.

- .7 Fit hardware accurately and securely in accordance with manufacturer's written instructions.

### **3.3 INSTALLATION LAMINATES**

- .1 Install Work plumb, true and square, neatly scribed to adjoining surfaces.
- .2 Make allowances around perimeter where fixed objects pass through or project into laminated plastic Work to permit normal movement without restriction.
- .3 Use draw bolts and splines in countertop joints. Maximum spacing 450 mm oc, 75 mm from edge. Make flush hairline joints.
- .4 Provide cutouts for inserts, grilles, appliances, outlet boxes and other penetrations. Round internal corners, chamfer edges and seal exposed core.
- .5 At junction of laminated plastic counter back splash and adjacent wall finish, apply small bead of sealant.

### **3.4 ADJUSTING & TOUCH UP**

- .1 Before completion of the installation, the installer shall adjust all moving and operating parts to function smoothly and correctly.
- .2 All nicks, chips, and scratches in the finish shall be filled and retouched. Damaged items that cannot be repaired shall be replaced.

### **3.5 CLEANING**

- .1 Clean millwork and cabinet Work inside cupboards and drawers, and outside surfaces.

### **3.6 PROTECTION**

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

**END OF SECTION**



**Part 1 General**

**1.1 REFERENCES**

- .1 American National Standards Institute (ANSI)
  - .1 ANSI 208.1, Particleboard.
  - .2 ANSI A208.2, Medium Density Fibreboard (MDF) for Interior Applications.
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-71.20, Adhesive, Contact, Brushable.
- .3 Canadian Standards Association (CSA International)
  - .1 CSA O112, Standards for Wood Adhesives.
  - .2 CSA O121, Douglas Fir Plywood.
  - .3 CSA O151, Canadian Softwood Plywood.
  - .4 CSA O153, Poplar Plywood.
- .4 National Electrical Manufacturers Association (NEMA)
  - .1 NEMA LD3, High Pressure Decorative Laminates.
- .5 Canada Green Building Council (CaGBC)
  - .1 LEED Canada Reference Guide for Green Building Design and Construction 2009

**1.2 SUBMITTALS**

- .1 Submit manufacturer's printed product literature, specifications and data sheet.
- .2 Submit duplicate samples of joints, edging, cutouts and postformed profiles.
- .3 Provide maintenance data for laminate Work for incorporation into maintenance manual.
- .4 Submit manufacturer's instructions.

**1.3 QUALITY ASSURANCE**

- .1 Provide Certificate of Quality Compliance upon completion of fabrication.
- .2 Provide Certificate of Quality Compliance upon satisfactory completion of installation.

**1.4 DELIVERY, STORAGE, AND HANDLING**

- .1 Deliver, handle, store and protect materials of this section in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Maintain relative humidity between 25 and 60% at 22°C during storage and installation.

**1.5 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate and recycle waste materials in accordance with Section 01 74 00 – Cleaning & Waste Management.

- .2 Place materials defined as hazardous or toxic waste in designated containers.
- .3 Ensure emptied containers are sealed and stored safely for disposal away for public.
- .4 Use chemical hardeners that are non-toxic, biodegradable and have zero or low VOC's.
- .5 Dispose of surplus chemical and finishing materials in accordance with Federal, Provincial and Municipal regulations.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Acceptable Manufacturer: Formica Corp., 10155 Reading Road, Cincinnati, OH. 45241 (513-786-3400) or approved equal in accordance with B7.
- .2 Decorative Plastic Laminate: Manufacturers standard and custom decorative surface papers with melamine resins, bonded under heat and pressure to kraft paper backing sheet with phenolic resins.
- .3 Laminated plastic for countertops to NEMA LD 3.
  - .1 Type: General purpose.
  - .2 Grade: 12 (HGP)
  - .3 Size: 0.9 mm thick
  - .4 Surface burning characteristics: In accordance with ASTM E84.
  - .5 Finish: Matte
  - .6 Colour: to be Formica 6613-58 White Ellipse.
  - .7 Edging: 3mm PVC edge banding. Colour to be determined by Contract Administrator from manufacturers standard colour selection chart.
- .4 Particleboard core: to ANSI 208.1, sanded faces, of thickness indicated.
- .5 Laminated plastic adhesive: urea resin adhesive to CSA O112.5 contact adhesive to CAN/CGSB-71.20 resorcinol resin adhesive to CSA O112.7 polyvinyl adhesive to CSA O112.4 two component epoxy thermosetting adhesive.
- .6 Sealer: water resistant sealer on glue acceptable to laminate manufacturer.
- .7 Sealants: Silicone based material to CGSB 19-GP-22M.
- .8 Draw bolts and splines: as recommended by fabricator.

## **2.2 SUBSTITUTIONS**

- .1 Refer to Section B7 – Substitutes of Bid Opportunity 668-2017.

## **2.1 FABRICATION**

- .1 Comply with NEMA LD 3, Annex A.
- .2 Obtain governing dimensions before fabricating items which are to accommodate or abut appliances, equipment and other materials.
- .3 Ensure adjacent parts of continuous laminate Work match in colour and pattern.
- .4 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.
- .5 Form shaped profiles and bends as indicated, using postforming grade laminate to laminate manufacturer's instructions.
- .6 Use straight self-edging laminate strip for flat Work to cover exposed edge of core material. Chamfer exposed edges uniformly at approximately 20°. Do not mitre laminate edges.
- .7 Apply laminate backing sheet to reverse side of core of plastic laminate Work.
- .8 Apply laminated plastic liner sheet to interior of cabinetry.

## **Part 3 Execution**

### **3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

### **3.2 INSTALLATION**

- .1 Install Work plumb, true and square, neatly scribed to adjoining surfaces.
- .2 Make allowances around perimeter where fixed objects pass through or project into laminated plastic Work to permit normal movement without restriction.
- .3 Use draw bolts and splines in countertop joints. Maximum spacing 450 mm oc, 75 mm from edge. Make flush hairline joints.
- .4 Provide cutouts for inserts, grilles, appliances, outlet boxes and other penetrations. Round internal corners, chamfer edges and seal exposed core.
- .5 At junction of laminated plastic counter back splash and adjacent wall finish, apply small bead of sealant.

**3.3 PROTECTION**

- .1 Cover finished laminated plastic veneered surfaces with heavy kraft paper or put in cartons during shipment. Protect installed laminated surfaces by approved means. Do not remove until immediately before final inspection.

**3.4 CLEANING**

- .1 Perform cleaning after installation to remove construction and accumulated environmental dirt.
- .2 Perform care and cleaning with NEMA LD 3, Annex B.
- .3 Remove traces of primer, caulking, epoxy and filler materials; clean doors and frames.

**END OF SECTION**