

## **Part 1 GENERAL**

### **1.1 RELATED REQUIREMENTS**

- .1 Section 06 40 00 – Architectural Woodwork.
- .2 Section 08 11 00 – Metal Doors and Frames.
- .3 Section 08 71 00 – Door Hardware.
- .4 Section 09 22 16 – Non-Structural Metal Framing.

### **1.2 REFERENCES**

- .1 American Society for Testing and Materials (ASTM)
  - .1 ASTM A123/A123M-15, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
  - .2 ASTM D1761-12, Standard Test Methods for Mechanical Fasteners in Wood.
- .2 CSA Group
  - .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-O153-13, Poplar Plywood.
- .3 National Lumber Grades Authority (NLGA)
  - .1 Standard Grading Rules for Canadian Lumber, 2014.

### **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 in accordance with CSA and NLGA standards.

### **1.4 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
- .2 Remove packaging waste from work site and ship to appropriate recycling centres.
- .3 Divert unused wood materials from landfill to recycling facility as approved.
- .4 Do not dispose of treated wood with materials intended for recycling or reuse.
- .5 Dispose of treated wood, trimmings, waste wood and shavings in landfill approved by Departmental Representative.
- .6 Dispose of wood protection materials at approved official hazardous waste facility.

## **Part 2 PRODUCTS**

### **2.1 LUMBER**

- .1 Lumber: unless otherwise indicated, 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 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 PANELS**

- .1 Interior use: Douglas fir plywood, to CSA-O121, standard construction, appropriate thickness, humidity 8%, good both sides for carpentry and interior work. Plywood for interior use must not contain any added urea-formaldehyde resins.
- .2 Poplar plywood: to CSA-O153, fire retardant.
  - .1 Pressure treated to improve fire resistance.
  - .2 Labelled by certified test agency such as Underwriters Laboratories of Canada.
- .3 Interior mat-formed wood particleboard: to NLGA.

### **2.3 ACCESSORIES**

- .1 General purpose adhesive: to CSA-O112.9.
- .2 Nails, spikes and staples: to CSA-B111 and ASTM-D1761.
- .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, explosive actuated fastening devices, recommended for purpose by manufacturer.

### **2.4 FASTENER FINISHES**

- .1 Galvanizing: use galvanized fasteners to ASTM A123/A123M.

## **Part 3 EXECUTION**

### **3.1 PREPARATION**

- .1 Store wood and wood derivatives dry, protected from weather.

### **3.2 INSTALLATION**

- .1 Proceed according to NBC and following requirements.
- .2 Install furring and blocking as required to space-out and support casework, cabinets, wall and ceiling finishes, facings, fascia, soffit, siding, and other work as required.
- .3 Align and plumb faces of furring and blocking to tolerance of 1:600.
- .4 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.
- .5 Install wood cants, fascia backing, nailers, curbs and other wood supports as required and secure using galvanized steel fasteners.

- .6 Installer furring and blocking as required to support casework, accessories, boards, wall and ceiling finishes, fascia, siding, electrical equipment mounting boards and other work as required.
- .7 Install wood backing, dressed, tapered and recessed slightly below top surface of roof insulation for roof hopper.

### **3.3 ASSEMBLY**

- .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 ELECTRICAL EQUIPMENT MOUNTING BOARD**

- .1 Provide and install boards for mounting electrical equipment as indicated. Mount fire-resistant plywood panels, 19 mm thick, on 19 x 38 mm frame reinforced with same size ribbing 300 mm centre maximum or as indicated.

**END OF SECTION**



## **Part 1 GENERAL**

### **1.1 RELATED REQUIREMENTS**

- .1 Section 06 10 00 – Rough Carpentry.
- .2 Section 09 22 16 – Non-Structural Metal Framing.

### **1.2 REFERENCES**

- .1 American Society for Testing and Materials (ASTM)
  - .1 ASTM E 1333-14, Standard Test Method for Determining Formaldehyde Concentrations in Air and Emission Rates From Wood Products Using a Large Chamber.
  - .2 ASTM D 2832-92(R2011), Standard Guide for Determining Volatile and Nonvolatile Content of Paint and Related Coatings.
  - .3 ASTM D 5116-10, Standard Guide For Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products.
- .2 Architectural Woodwork Manufacturers Association of Canada (AWMAC)
  - .1 AWMAC Quality Standards for Architectural Woodwork.
- .3 Builders hardware manufacturers association (ANSI/BHMA).
  - .1 ANSI/BHMA A156.9-10, Cabinet Hardware.
- .4 CSA Group
  - .1 CSA-B111-1974 (R2003), Wire Nails, Spikes and Staples.
  - .2 CSA-O141-05 (R2014), Softwood Lumber.
- .5 National Electrical Manufacturers Association (NEMA)
  - .1 ANSI/NEMA LD-3-05, High-Pressure Decorative Laminates.
- .6 National Hardwood Lumber Association (NHLA)
  - .1 Rules for the Measurement and Inspection of Hardwood and Cypress 1998.
- .7 National Lumber Grades Authority (NLGA)
  - .1 Standard Grading Rules for Canadian Lumber 2005

### **1.3 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Indicate details of construction, profiles, jointing, fastening and other related details.
- .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.
- .5 All colors are the choice of the Departmental Representative.

### **1.4 PRODUCT DATA**

- .1 Submit in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit two copies of product data for each product specified in this section or expected to be used.

### **1.5 SAMPLES**

- .1 Submit in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit duplicate samples of laminated plastic for colour selection.
- .3 Submit duplicate samples of laminated plastic joints, edging, cutouts and postformed profiles.

## **1.6 DELIVERY, STORAGE AND HANDLING**

- .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.

## **1.7 IMPLEMENTATION REQUIREMENTS**

- .1 All dimensions are to be checked on the site. Only the dimensions shown "±" may be adjusted.
- .2 Provide a filler to fit to the end of counters and cabinets to meet wall and ceiling.

## **1.8 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
- .2 Remove packaging waste from work site and ship to appropriate recycling centres.
- .3 Divert unused wood materials from landfill to recycling facility as approved.

# **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 Machine stress-rated lumber is acceptable for all purposes.
- .3 Hardwood lumber: moisture content 15% or less in accordance with following standards:
  - .1 National Hardwood Lumber Association (NHLA).
  - .2 AWMAC custom grade, moisture content as specified.
- .4 Window sill: 16 mm plywood. Exposed surface (sill and moulding) trimmed with stratified plastic. Size and shape as indicated on drawings.
  - .1 AWMAC custom grade, moisture content as specified.
  - .2 ANSI/NEMA LD-3
- .5 MDF (medium density fibreboard) core: to ANSI A208.2, density 769 kg/m<sup>2</sup>. Formaldehyde emissions under 0.15 ppm (180 microg/m<sup>2</sup>) when measured in compliance with ASTM E1333.
- .6 Nails and staples: to CSA B111.
- .7 Bolts, washers, lag bolts and screws: appropriate size. Use stainless steel screws and stainless steel or chrome washers where exposed, spaced as indicated at equal distance. Use anti-intrusion fasteners where exposed.
- .8 Adhesives and glues: brand names, appropriate for use, waterproof and complying with following emission levels:
  - .1 Total VOC: less than 0.5mg/m<sup>3</sup>/heure.
  - .2 Formaldehyde: less than 1PPB.
  - .3 4 Phenylcyclohexane (4-PCH): less than 1-PPB.
- .9 Laminated plastic (S): As indicated on drawings :
  - 1. Laminated plastic **S01**:  
Acceptable products:
    - .1 Arborite, standard collection, Elegant White, No. S-550 CA.
    - .2 Formica, standard collection, White, No. 949-58.
    - .3 Wilsonart, standard collection, Frosty White No. 1573-60.

- .4 Substitute materials and products: approved by addendum in accordance with Instructions to tenderers.
- 2. Laminated plastic **S02**:  
Acceptable products:
  - .1 Arborite, standard collection, Silver Grey, No. S-406 CA.
  - .2 Formica, standard collection, Fog No. 961-58.
  - .3 Wilsonart, standard collection, Dove Grey, No. D92-60.
  - .4 Substitute materials and products: approved by addendum in accordance with Instructions to tenderers.
- .10 Melamine particleboard (**M**), Grade M-2:  
As indicated on drawings:
  - 1. Melamine particleboard (**M01**):  
Acceptable products:
    - .1 Uniboard, classic collection, Willow Grey, No. 802.
    - .2 Tafisa, standard collection, Morning Dew, No. L763.
    - .3 Dolce by Goodfellow, standard collection, Folkstone Grey.
    - .4 Substitute materials and products: approved by addendum in accordance with Instructions to tenderers.
  - 2. Melamine particleboard (**M02**):  
Acceptable products:
    - .1 Uniboard, classic collection, Ingot Grey, No. 828.
    - .2 Tafisa, standard collection, Sundown, No. L768.
    - .3 Dolce by Goodfellow, standard collection, Fog Grey.
    - .4 Substitute materials and products: approved by addendum in accordance with Instructions to tenderers.
  - 3. Melamine particleboard (**M03**):  
Acceptable products:
    - .1 Uniboard, classic collection, Classic Maple, No. 290.
    - .2 Tafisa, standard collection, Palomino High, No. L575 (O)
    - .3 Dolce by Goodfellow, standard collection, Bella Maple.
    - .4 Substitute materials and products: approved by addendum in accordance with Instructions to tenderers.

## 2.2 MANUFACTURED UNITS

- .1 Casework:
  - .1 Fabricate caseworks to AWMAC custom quality grade.
  - .2 Furring, blocking, nailing strips, grounds and rough bucks and sleepers.
    - .1 Board sizes: "standard" or better grade.
    - .2 Dimension sizes: "standard" light framing or better grade.
  - .3 Framing:
    - .1 Particleboard laminated with melamine, 16 mm thick, with all exposed edges finished.
  - .4 Cupboard doors and drawer fronts:
    - .1 Particleboard laminated with melamine, 16 mm thick, with all exposed edges finished.
  - .5 Shelving:
    - .1 Particleboard laminated with melamine, finished on four sides.
      - 16 mm thick for shelving 750 mm or less.
      - 19 mm thick minimum for shelving 915 mm or less.
      - 25 mm thick minimum for shelving 914 mm to 1,066 mm long.
    - Support shelving over 1,066 mm long.
  - .6 Drawers:
    - .1 Drawers: prefabricated including melamine frames and sliders.
    - .2 Sides of varying height to match drawers.
    - .3 All bottoms in melamine, 16 mm thick, same finish on all sides.
  - .7 Counters:
    - .1 Preformed countertops, agglomerate, 2 x 16 mm thick covered with laminated plastic, unless indicated otherwise.

## 2.3 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 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.
- .9 Form shaped profiles and bends as indicated, using postforming grade laminate to laminate manufacturer's instructions.
- .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 Install grommets at indicated areas, in strict accordance with manufacturer's instructions.
- .12 Install backing sheets on all concealed surfaces.
- .13 Make necessary opening for voice exchange units and document trays, as indicated on drawings. Polish edges of openings.

## 2.4 FINISHING

- .1 Laminated plastic:
  - .1 General purpose laminated plastic: to NEMA LD3, general purpose, 1.15 mm thick.
  - .2 Postforming laminated plastic: to NEMA LD3, (PF.30), 0.75 mm thick.
  - .3 Laminated plastic for support sheet (compensation): NEMA LD3, support category (UG-BK-R), same thickness as face sheet, sanded one side.

## 2.5 HARDWARE

- .1 Furniture hardware: to ANSI/BHMA-A156.9, premium quality aluminum, or as indicated on drawings.
- .2 Provide and install the following furniture hardware:
  - .1 Steel ball bearing drawer slides, full extension with integrated close, 45.5 load capacity.
  - .2 Concealed hinges, 110° opening angle, with integrated spring and stop control. Clip assembly.
  - .3 Plastic shelf supports, adjustable (inside cabinets).
  - .4 Brushed nickel handle, round section with rounded corners, ±100 mm long and 35 mm projection.
  - .5 Clear round rubber pads on all drawers and cabinet doors.
  - .6 Zinc leveller, total height 100 mm with 70 mm rotation adjustment capacity, 500 kg load capacity for bottom drawers.
  - .7 Document tray integrated into counter and centred under glass. Outside dimensions: width 477 mm, height 58 mm, depth 643 mm. Inside : l x h x d = 315 x 30 x 100 mm. Finish: RAL 9005 structure coating.



## **Part 3 EXECUTION**

### **3.1 INSTALLATION**

- .1 Do architectural woodwork to Quality Standards of AWMAC.
- .2 Install prefinished millwork at locations shown on drawings. Position accurately, level, plumb straight.
- .3 Fasten and anchor millwork securely. 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 Apply thin bead of sealant (matched or clear colour) in joint between laminated plastic backsplash and adjacent wall finish, laminated plastic backsplash and counter, furniture and floor.
- .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.
- .9 Site apply laminated plastic to units as indicated. Adhere laminated plastic over entire surface. Make corners with hairline joints. Use full sized laminate sheets.
- .10 For site application, offset joints in plastic laminate facing from joints in core.
- .11 Coordinate installation of lighting fixtures and woodwork with Division 26. Coordinate installation of mechanical and plumbing and woodwork with Division 22.

### **3.2 FIXING WORK**

- .1 Position accurately, level, plumb straight.
- .2 Fit hardware accurately and securely in accordance with manufacturer's written instructions.
- .3 Cover finish nails to be plugged. Countersink screws in round, countersunk, carefully drilled holes and plug holes with wood plugs.

### **3.3 WINDOW SILLS**

- .1 Position accurately, level, plumb straight and secure with concealed fasteners.
- .2 Apply sealing joints at junction with adjacent work (walls, windows and other).

### **3.4 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
- .2 Clean millwork, cabinet work, outside surfaces, inside cupboards and drawers.
- .3 Remove excess glue from surfaces.

### **3.5 PROTECTION**

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

**END OF SECTION**