

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 09 30 13 – Ceramic Tiling
- .2 Section 22 42 16 – Commercial Lavatories and Sinks
- .3 Section 26 50 00 - Lighting

1.2 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-1-09, 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 ASTM D5116-10, Standard Guide For Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products.
 - .3 Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI)
 - .1 Architectural Woodwork Standards (AWS), 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(R2013), Evaluation of Adhesives for Structural Wood Products (Limited Moisture Exposure).
 - .3 CSA O121-08(R2013), Douglas Fir Plywood.
 - .4 CSA O141-05(R2009), Softwood Lumber.
 - .5 CSA O151-09, Canadian Softwood Plywood.
 - .6 CSA O153-13, Poplar Plywood.
 - .7 CAN/CSA-Z809-08(2013), 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.
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- .2 GS-36-13, Commercial Adhesives.
- .8 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .9 International Organization for Standardization (ISO)
 - .1 ISO 14040-2006, Environmental Management-Life Cycle Assessment - Principles and Framework.
 - .2 ISO 14041-98, Environmental Management-Life Cycle Assessment - Goal and Scope Definition and Inventory Analysis.
- .10 National Electrical Manufacturers Association (NEMA)
 - .1 ANSI/NEMA LD-3-05, High-Pressure Decorative Laminates (HPDL).
- .11 National Hardwood Lumber Association (NHLA)
 - .1 Rules for the Measurement and Inspection of Hardwood and Cypress 2011.
- .12 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber 2010.
- .13 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
 - .1 SCAQMD Rule 1113-A2013, Architectural Coatings.
 - .2 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.
- .14 Sustainable Forestry Initiative (SFI)
 - .1 SFI-2010-2014 Standard.

1.3 ACTION AND INFORMATIONAL 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 29.06 - Health and Safety Requirements.
 - .3 Shop Drawings:
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Ontario, Canada.
 - .2 Indicate details of construction, profiles, jointing, fastening and other related details.
 - .1 details 1:2 or 1:5 as appropriate
 - .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.
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- .4 Samples:
 - .1 Submit duplicate samples of laminated plastic for colour selection.
 - .2 Submit duplicate samples of laminated plastic joints, edging, cutouts and postformed profiles.
- .5 Certifications: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
- .6 Sustainable Design Submittals:
 - .1 Construction Waste Management:
 - .1 Submit project Waste Management Plan and Waste Reduction Workplan highlighting recycling and salvage requirements.
 - .2 Submit calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that 75% of construction wastes were recycled or salvaged.
 - .2 Wood Certification: submit vendor's Chain-of-Custody Certificate number for FSC certified wood.
 - .1 Submit manufacturer's FSC Chain-of-Custody Certificate number.
 - .3 Low-Emitting Materials:
 - .1 Submit listing of adhesives and sealants, paints and coatings used in building, comply with VOC and chemical component limits or restrictions requirements.
 - .2 Submit listing of composite wood products used in building, stating that they contain no added urea-formaldehyde resins, laminate adhesives used in building, stating that they contain no urea-formaldehyde.

1.4 QUALITY ASSURANCE

- .1 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Sustainable Standards Certification:
 - .1 Certified Wood: submit listing of wood products and materials used in accordance with CAN/CSA-Z809 or FSC or SFI.
- .3 Plywood, particleboard, OSB and wood based composite panels to CSA and ANSI standards.

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 Delivery and Acceptance Requirements: 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:
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- .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 Develop Construction Waste Management Plan and Waste Reduction Workplan related to Work of this Section.
- .5 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

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 CAN/CSA-Z809 or FSC or SFI certified.
 - .3 NLGA Standard Grading Rules for Canadian Lumber.
 - .4 AWMAC Grade II, moisture content as specified.
- .2 Machine stress-rated lumber is acceptable for all purposes.
- .3 Ensure manufacturing process adheres to Lifecycle Assessment (LCA) Standards to ISO 14040/14041 LCA Standards.
- .4 Hardwood lumber: moisture content in accordance with following standards:
 - .1 FSC Certified
 - .2 AWMAC Grade II, moisture content as specified.
- .5 Canadian softwood plywood (CSP): to CSA O151, standard construction, FSC certified.
 - .1 Plywood resin to contain no added urea-formaldehyde.
- .6 Hardwood plywood for countertops: to ANSI/HPVA HP-1, FSC certified.
 - .1 Plywood resin to contain no added urea-formaldehyde.
- .7 Interior mat-formed wood particleboard: to ANSI/NPA A208.1, FSC certified.
 - .1 Particleboard resin to contain no added urea-formaldehyde.
- .8 Fibreboard must contain less than 10% roundwood by weight, using weighted average over three month period at manufacturing locations.
 - .1 Fibreboard resin to contain no added urea-formaldehyde.
 - .2 FSC certified.
- .9 Hardboard:
 - .1 To CAN/CGSB-11.3, FSC certified.
 - .2 Hardboard resin to contain no added urea-formaldehyde.

- .10 MDF (medium density fibreboard) core: to ANSI A208.2, 16 mm thick unless otherwise indicated, density 769 kg/m², FSC certified.
 - .1 Medium density fibreboard performance requirements to: ANSI A208.2.
 - .2 MDF resin to contain no added urea-formaldehyde.
- .11 Laminated plastic for flatwork: to NEMA LD3, Grade VGL, Type HD, 1.2 mm thick; based on manufacturer's standard colour range.
- .12 Laminated plastic backing sheet: Grade BK, Type HD, same thickness as face laminate, white colour.
- .13 Laminated plastic liner sheet: Grade GP, Type HD, 0.5 mm thick, white colour.
- .14 Nails and staples: to CSA B111.
- .15 Wood screws: plain, type and size to suit application.
- .16 Splines: wood
- .17 Sealant: in accordance with Section 07 92 00 - Joint Sealants
 - .1 Sealants: VOC limit 250 g/L maximum to SCAQMD Rule 1168.
- .18 Laminated plastic adhesive:
 - .1 Adhesive: , contact adhesive to CAN/CGSB-71.20
 - .2 Adhesives: VOC limit 30 g/L maximum to GS-36.
 - .3 Clear Wood Finishes: VOC limit 350 g/L maximum to GS-11
 - .4 Paints: VOC limit 50 g/L maximum to GS-11.

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 Urea-formaldehyde free.
 - .3 Framing species, NLGA grade.
 - .4 Case bodies (ends, divisions and bottoms).
 - .1 Softwood and poplar plywood DFP or CSP or PP or particleboard, square edge, 19 mm thick unless otherwise indicated, grade suitable for application of plastic laminate. Plastic laminate all exposed faces and edges, including face of cabinets behind doors and drawers, plastic laminate backing sheet on opposite concealed faces.
 - .5 Backs:
 - .1 Hardboard, Type 2, 6 mm thick.
 - .6 Shelving:
 - .1 Concealed locations:
 - .1 Particleboard, 19mm thick, plastic laminate liner sheet all faces and edges

- .2 Exposed locations:
 - .1 Particleboard, 19mm thick, plastic laminate all faces and edges
- .2 Drawers:
 - .1 Fabricate drawers to AWMAC custom grade supplemented as follows:
 - .2 Backs:
 - .1 Hardwood plywood:
 - .1 Thickness: 12.7mm.
 - .2 Number of plies: 7.
 - .3 Plastic laminate liner sheet all faces and edges
 - .3 Bottoms:
 - .1 Hardboard: type 2, 6 mm thick.
 - .4 Fronts:
 - .1 Particleboard, 19mm thick, plastic laminate all faces and edges.
 - .5 Sides
 - .1 Manufactured metal drawer side and slide system that includes attachment provisions for back and bottom and hardware mounting brackets for drawer face that facilitates tool-free drawer face attachment and removal.
 - .6 Drawers shall require no more than 22 N to be opened and closed
- .3 Casework Doors:
 - .1 Fabricate doors to AWMAC custom grade supplemented as follows:
 - .2 Particleboard, 19mm thick, plastic laminate all faces and edges
- .4 Countertops:
 - .1 Fabricate countertops to AWMAC custom grade supplemented as follows:
 - .2 Laminated Plastic for flatwork on front surface, front edge, and all edges of interior openings
 - .3 Hardwood plywood:
 - .1 Thickness: 19 mm
 - .2 Number of plies: 7
 - .3 Core: veneer
 - .4 Bond: Type II
 - .5 Shop sanded exterior grade
 - .6 Laminated plastic backing sheet on back surface

2.3 FABRICATION

- .1 Fabricate to AWMAC Custom grade.
- .2 Cabinet style: flush overlay.
- .3 Set nails and countersink screws, apply plain wood filler to indentations, sand smooth and leave ready to receive finish.

- .4 Shop install cabinet hardware for doors, shelves and drawers. Recess shelf standards unless noted otherwise.
- .5 Shelving to cabinetwork to be adjustable unless otherwise noted.
- .6 Provide cutouts for plumbing fixtures, inserts, appliances, outlet boxes and other fixtures.
- .7 Shop assemble work for delivery to site in size easily handled and to ensure passage through building openings.
- .8 Obtain governing dimensions before fabricating items which are to accommodate or abut appliances, equipment and other materials.
- .9 Ensure adjacent parts of continuous laminate work match in colour and pattern.
- .10 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.
- .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 and where indicated.

2.4 CABINET HARDWARE

- .1 Shelf rests: to CAN/CGSB 69.25-M90 ANSI/BHMA A156.9-1982 brushed chrome finish, B04081.
- .2 Adjustable recessed shelf standards: to CAN/CGSB 69.25-M90 ANSI/BHMA A156.9-1982 brushed chrome finish, B04071.
- .3 Cabinet hinges: to CAN/CGSB 69.25-M90 ANSI/BHMA A156.9-1982 concealed, brushed chrome finishes, B01601. Two (2) per door up to 915 mm, three (3) per door up to 1500 mm.
- .4 Door and drawer pulls: wire D-pulls, 140 mm centres, 8mm diameter, brushed stainless steel finish
- .5 keyed locks for all drawers and doors, keyed alike, brushed chrome finish.
- .6 paper towel holder, reuse existing

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 and after receipt of written approval to proceed from Departmental Representative

3.2 INSTALLATION

- .1 Do architectural woodwork to AWMAC Custom Grade.
- .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 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 plastic laminate counter back 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.
- .9 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 or approved by Departmental Representative
 - .5 Slightly bevel arises.
- .10 For site application, offset joints in plastic laminate facing from joints in core.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 00 10 – General Instructions
 - .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 00 10 – General Instructions.
 - .1 Clean millwork, cabinet work, outside surfaces, inside cupboards, drawers.
 - .2 Remove excess glue from surfaces.
- .3 Waste Management: separate waste materials for reuse recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.4**PROTECTION**

- .1 Protect millwork 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.

END OF SECTION
