

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 01 33 00 – Shop Drawings, Data Products and Samples
- .2 Section 01 61 00 – Common Product Requirements
- .3 Section 01 74 21 – Construction/Demolition Waste Management and Disposal
- .4 Section 06 20 00 – Finish Carpentry
- .5 Section 09 91 23 – Interior Painting

1.2 REFERENCES

- .1 American National Standards Institute/National Particleboard Association (ANSI/NPA)
 - .1 ANSI/NPA A208.1-2009, Particleboard.
- .2 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.
 - .3 ASTM C578-11a, Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation. ASTM C1289-11, Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
 - .4 ASTM C1396/C1396M-11, Standard Specification for Gypsum Board.
 - .5 ASTM D1761-06, Standard Test Methods for Mechanical Fasteners in Wood.
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-11.3-M87, Hardboard.
 - .2 CAN/CGSB-51.32-M77, Sheathing, Membrane, Breather Type.
- .4 CSA International
 - .1 CAN/CSA-A247-M86(R1996), Insulating Fiberboard.
 - .2 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.
 - .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 CSA O325-07, Construction Sheathing.
 - .8 CSA O437 Series-93(R2011), Standards on OSB and Waferboard.
 - .9 CAN/CSA-Z809-08, Sustainable Forest Management.
- .5 Forest Stewardship Council (FSC)
 - .1 FSC-STD-01-001-2004, FSC Principle and Criteria for Forest Stewardship.
- .6 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber 2010.

- .7 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
 - .1 SCAQMD Rule 1113-A2011, Architectural Coatings.
 - .2 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.
- .8 Sustainable Forestry Initiative (SFI)
 - .1 SFI-2010-2014 Standard.
- .9 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S706-09, Standard for Wood Fibre Insulating Boards for Buildings.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Shop Drawings, Data Products and Samples.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for [wood products and accessories] and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of BC, Canada.
- .4 Sustainable Design Submittals:
 - .1 Construction Waste Management:
 - .1 Submit project Waste Management Plan 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 Regional Materials: submit evidence that project incorporates required percentage 10% of regional materials and products, showing their cost, distance from project to furthest site of extraction or manufacture, and total cost of materials for project.
 - .3 Wood Certification: submit manufacturer's Chain-of-Custody Certificate number for CAN/CSA-Z809 or FSC or SFI certified wood.
 - .4 Low-Emitting Materials:
 - .1 Submit listing of adhesives and sealants and paints and coatings used in building, showing compliance with VOC and chemical component limits or restriction requirements.

1.4 QUALITY ASSURANCE

- .1 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board. Plywood, particleboard, OSB and wood based composite panels in accordance with CSA and ANSI standards.
- .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.

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.
- .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.
- .4 Develop Construction Waste Management Plan related to Work of this Section.
- .5 Packaging Waste Management: remove for reuse of pallets, crates, padding, and 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 FRAMING STRUCTURAL AND PANEL MATERIALS

- .1 Description:
 - .1 Sustainability Characteristics:
 - .1 Lumber, Finger Jointed Lumber, CAN/CSA-Z809 or FSC or SFI certified.
 - .2 Plywood. Particleboard OSB urea-formaldehyde free, CAN/CSA-Z809 or FSC or SFI certified.
 - .2 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.
 - .3 Glued end-jointed (finger-jointed) lumber NLGA Special Products Standard SPS, are acceptable for blocking, cants, etc.
 - .4 Framing and board lumber: in accordance with NBC and VBBL.
 - .5 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.
 - .6 Plywood, OSB and wood based composite panels: to CSA O325.
 - .7 Douglas fir plywood (DFP): to CSA O121, standard construction.
 - .8 Canadian softwood plywood (CSP): to CSA O151, standard construction.
 - .9 Poplar plywood (PP): to CSA O153, standard construction.
 - .10 Interior mat-formed wood particleboard: to ANSI/NPA 208.1.
 - .11 Mat-formed structural panelboards (OSB wafer): to CAN O437.

- .12 Insulating fiberboard sheathing: to CAN/CSA-A247 CAN/ULC-S706.
- .13 Glass fibre board sheathing: non-structural, rigid, faced, fiberglass, insulating exterior sheathing board.
- .14 Isocyanurate sheathing: to ASTM C1289, faced.
- .15 Expanded polystyrene sheathing: to ASTM C578.
- .16 Gypsum sheathing: to ASTM C1396/C1396M.

2.2 ACCESSORIES

- .1 Exterior wall sheathing paper: to CAN/CGSB-51.32 laminated type coated.
- .2 Polyethylene film: to CAN/CGSB-51.34, Type 1, 0.15 mm thick.
- .3 Air seal: closed cell polyurethane or polyethylene.
- .4 Sealants: in accordance with Section 07 92 00 - Joint Sealants.
 - .1 Sealants: VOC limit 250 g/L maximum to SCAQMD Rule 1168.
- .5 General purpose adhesive: to CSA O112.9.
 - .1 VOC limit 70 g/L maximum to SCAQMD Rule 1168.
- .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, recommended for purpose by manufacturer.
- .9 Nailing discs: flat caps, minimum 25 mm diameter, minimum 0.4 mm thick, sheet metal, fibre, formed to prevent dishing. Bell or cup shapes not acceptable.
- .10 Fastener Finishes:
 - .1 Galvanizing: to ASTM A123/A123M, use galvanized fasteners for exterior work.
- .11 Wood Preservative:
 - .1 Coating: in accordance with manufacturer's recommendations for surface conditions:
 - .1 Coatings: VOC limit 350 g/L maximum to SCAQMD Rule 1113.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for product installation in accordance with manufacturer's written 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 PREPARATION

- .1 Treat surfaces of material with wood preservative, before installation.
- .2 Apply preservative by dipping, or by brush to completely saturate and maintain wet film on surface for minimum 3 minute soak on lumber and one minute soak on plywood.
- .3 Re-treat surfaces exposed by cutting, trimming or boring with liberal brush application of preservative before installation.
- .4 Treat material as indicated:
 - .1 Wood cants, fascia backing, curbs, nailers, sleepers on roof deck.
 - .2 Wood furring on outside surface of exterior masonry and concrete walls.

3.3 INSTALLATION

- .1 Install members true to line, levels and elevations, square and plumb.
- .2 Construct continuous members from pieces of longest practical length.
- .3 Install spanning members with "crown-edge" up.
- .4 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.
- .5 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.
- .6 Install furring to support siding applied vertically where there is no blocking and where sheathing is not suitable for direct nailing. Align and plumb faces of furring and blocking to tolerance of 1:600.
- .7 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.
- .8 Install wood cants, fascia backing, nailers, curbs and other wood supports as required and secure using galvanized fasteners.
- .9 Install sleepers as indicated.
- .10 Use dust collectors and high quality respirator masks when cutting or sanding wood panels.
- .11 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
- .12 Countersink bolts where necessary to provide clearance for other work.
- .13 Use nailing disks for soft sheathing as recommended by sheathing manufacturer.

3.4 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 11 55 – 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 11 55 – General Instructions.
- .3 Waste Management: separate waste materials for 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.

3.5 PROTECTION

- .1 Protect installed products and components from damage during construction. Repair damage to adjacent materials caused by rough carpentry installation.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 01 33 00 – Shop Drawings, Data Products and Samples
- .2 Section 01 61 00 – Common Product Requirements
- .3 Section 01 74 21 – Construction/Demolition Waste Management and Disposal
- .4 Section 06 10 00 – Rough Carpentry
- .5 Section 07 92 00 – Joint Sealants
- .6 Section 09 91 23 – Interior Painting

1.2 REFERENCES

- .1 American National Standards Institute (ANSI)
 - .1 ANSI A208.1-09, Particleboard.
 - .2 ANSI A208.2-09, Medium Density Fibreboard (MDF) for Interior Applications.
 - .3 ANSI/HPVA HP-1-10, American National Standard for Hardwood and Decorative Plywood.
- .2 Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI)
 - .1 Architectural Woodwork Quality Standards, 1st edition, 2009.
- .3 ASTM International ASTM A123/A123M-09, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .4 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-11.3-M87, Hardboard.
- .5 CSA International
 - .1 CSA B111-74(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 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 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber 2010.
- .8 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
 - .1 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.
- .9 Sustainable Forestry Initiative (SFI)
 - .1 SFI-2010-2014 Standard.

- .10 Underwriters Laboratories of Canada (ULC)
 - .1 CAN/ULC-S104-10, Standard Method for Fire Tests of Door Assemblies.
 - .2 CAN/ULC-S105-09, Standard Specification for Fire Door Frames.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Shop Drawings, Data Products and Samples.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for plywood particleboard OSB MDF and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit two copies of WHMIS MSDS in accordance with Section 01 35 33 - Health and Safety Requirements, Section 01 35 43 - Environmental Procedures.
- .3 Shop Drawings: Submit drawings stamped and signed by professional engineer registered or licensed in Province of BC, Canada.
 - .1 Indicate details of construction, profiles, jointing, fastening and other related details.
 - .2 Indicate materials, thicknesses, finishes and hardware.
- .4 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Samples will be returned for inclusion into work.
 - .3 Submit duplicate 300 x 300 mm samples of MDF.
- .5 Certifications: submit certificates signed by manufacturer certifying materials comply with specified performance characteristics and physical properties.
- .6 Sustainable Design Submittals:
 - .1 Construction Waste Management:
 - .1 Submit project Waste Management Plan 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.
 - Recycled Content:
 - .3 Submit listing of recycled content products used, including details of required percentages or recycled content materials and products, showing their costs and percentages of post-consumer and post-industrial content, and total cost of materials for project.
 - .2 Regional Materials: submit evidence that project incorporates required percentage 10% of regional materials and products, showing their cost, distance from project to furthest site of extraction or manufacture, and total cost of materials for project.
 - .3 Wood Certification: submit manufacturer's Chain-of-Custody Certificate number for CAN/CSA-Z809 or FSC or SFI certified wood.
 - .1 Submit manufacturer's FSC Chain-of-Custody Certificate number.
 - .4 Low-Emitting Materials:
 - .1 Submit listing of adhesives and sealants used in building, showing compliance 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, and laminate adhesives used in building, stating that they contain no urea-formaldehyde.

1.4 QUALITY ASSURANCE

- .1 Lumber by grade stamp of agency certified by Canadian Lumber Standards Accreditation Board (CLSAB).
- .2 Plywood, particleboard, OSB and wood based composite panels to CSA and ANSI standards.
- .3 Wood fire rated frames and panels: listed and labelled by an organization accredited by Standards Council of Canada to CAN/ULC-S104 and CAN/ULC-S105.

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.
- .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 products from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Develop Construction Waste Management Plan related to Work of this Section.
- .5 Packaging Waste Management: remove for reuse of pallets, crates, padding, and 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: S4S, moisture content 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 custom grade, moisture content as specified.
 - .5 Machine stress-rated lumber is acceptable.
 - .6 Hardwood lumber: moisture content 12% or less in accordance:
 - .1 National Hardwood Lumber Association (NHLA).
 - .2 AWMAC [custom] [premium] grade, moisture content as specified.
 - .3 CAN/CSA-Z809 or FSC or SFI certified.
- .2 Panel Material: urea-formaldehyde free
 - .1 CAN/CSA-Z809 or FSC or SFI certified.
 - .2 Douglas fir plywood (DFP): to CSA O121, standard construction.
 - .3 Canadian softwood plywood (CSP): to CSA O151, standard construction.
 - .4 Hardwood plywood: to ANSI/HPVA HP-1.

- .5 Poplar plywood (PP): to CSA O153, standard construction.
- .6 Particleboard: to ANSI A208.1.
- .7 Hardboard: to CAN/CGSB-11.3.
- .8 Medium density fibreboard (MDF): to ANSI A208.2, density 640-800 kg/m³.
- .9 Low density fibreboard: to CSA-A247M.
- .10 Decorative overlaid composite panels.
 - .1 Decorative overlay, heat and pressure laminated with suitable resin to 12.7 mm thick particleboard MDF urea-formaldehyde free 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 Furniture finish: wood grain pattern solid colour selected by Departmental Representative.
 - .4 Edge finishing: matching melamine and polyester overlay edge strip with self-adhesive edges dadoed or saw kerfed to take plastic "T" moulding in width and colour to match melamine finish edge filler to provide a smooth surface for paint finish.

2.2 ACCESSORIES

- .1 Nails and staples: to CSA B111; galvanized to ASTM A123/A123M for exterior work, interior humid areas and for treated lumber; plain finish elsewhere.
- .2 Wood screws: plain, type and size to suit application.
- .3 Splines: wood.
- .4 Adhesive and Sealants: in accordance with Section 07 92 00 - Joint Sealants.
 - .1 VOC limit 70 g/L maximum to SCAQMD Rule 1168 GS-36.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for wood products installation in accordance with manufacturer's written 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 finish carpentry to Quality Standards of (AWMAC).
- .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.

3.3 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 degrees scarf type joint.
 - .4 Install door and window trim in single lengths without splicing.
- .3 Interior and exterior frames:
 - .1 Set frames with plumb sides and level heads and sills and secure.
- .4 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.
- .5 Stairs:
 - .1 Install stairs to location and details as indicated.
- .6 Handrails, wall rails and bumper rails.
 - .1 Install handrails, wall rails and bumper rails in locations indicated.
 - .2 Make joints hair line, dowelled and glued.
 - .3 Install support brackets as indicated.
 - .4 Install brackets at ends and at 1200 mm on centre minimum at intermediate spacings.
 - .5 Install metal backing plates between studs at bracket locations to ensure proper support for brackets and bolts or self-tapping screws.
 - .6 Secure using counter sunk screws plugged with matching wood plugs.
- .7 Shelving:
 - .1 Install shelving on shelf brackets.

3.4 INSTALLATION OF TRIM

- .1 Standing and running trim:
 - .1 Exterior:
 - .1 Grade: clear smooth.
 - .2 Solid stock: western red cedar species.
 - .2 Interior:
 - .1 Grade: clear K.D.
 - .2 Solid stock: select douglas fir species.

3.5 INSTALLATION OF FRAMES

- .1 Interior frames:
 - .1 Grade: clear K.D.
 - .2 Frames to be solid wood douglas fir species.
 - .3 Construction:
 - .1 Profile: as detailed.
 - .2 Corner: as detailed.

3.6 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 11 55 – 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 11 55 – General Instructions.
- .3 Waste Management: separate waste materials for 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.

3.7 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by finish carpentry installation.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 01 33 00 – Shop Drawings, Data Products and Samples
- .2 Section 01 74 21 – Construction/Demolition Waste Management and Disposal
- .3 Section 06 20 00 – Finish Carpentry
- .4 Section 06 47 00 – Plastic Laminate Finishing
- .5 Section 07 92 00 – Joint Sealants
- .6 Section 09 91 23 – Interior Painting

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-1-10, 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 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 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 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) 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-A2011, 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 - Shop Drawings, Data Products and Samples.
- .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 33 - Health and Safety Requirements, Section 01 35 43 - Environmental Procedures.
- .3 Shop Drawings:
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of BC, Canada.
 - .2 Indicate details of construction, profiles, jointing, fastening and other related details.
 - .1 Scales: profiles full size, details half full size.
 - .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.
- .4 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Samples will be returned for inclusion into work.
 - .3 Submit duplicate samples of hardwood softwood: sample size 300 x 300 mm.
 - .4 Submit duplicate samples of laminated plastic for colour selection.
 - .5 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 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.
Recycled Content:
 - .3 Submit listing of recycled content products used, including details of required percentages or recycled content materials and products, showing their costs and percentages of post-consumer and post-industrial content, and total cost of materials for project.
 - .2 Regional Materials: submit evidence that project incorporates required percentage 10% of regional materials and products, showing their cost, distance from project to furthest site of extraction or manufacture, and total cost of materials for project.
 - .3 Wood Certification: submit manufacturer's Chain-of-Custody Certificate number for CAN/CSA-Z809 or FSC or SFI certified wood.
 - .1 Submit manufacturer's FSC Chain-of-Custody Certificate number.
 - .4 Low-Emitting Materials:
 - .1 Submit listing of adhesives and sealants and 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, and 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.
- .4 Mock-ups:
 - .1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control.
 - .1 Shop prepare one base cabinet unit wall cabinet counter top shelving unit convector cabinet, complete with hardware and shop applied finishes, and install where directed by Departmental Representative.
 - .2 Allow 24 hours for inspection of mock-up by Departmental Representative before proceeding with Work.
 - .3 When accepted, mock-up will demonstrate minimum standard for Work.
 - .4 Do not proceed with work prior to receipt of written acceptance of mock-up by Departmental Representative.
 - .5 Mock-up may remain as part of finished work.

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. 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 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 related to Work of this Section.
- .5 Packaging Waste Management: remove for reuse of pallets, crates, padding, and 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 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 custom grade, 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, CSA Z760-94 Life Cycle Assessment.
- .4 Hardwood lumber: moisture content 12% or less in accordance with following standards:
 - .1 National Hardwood Lumber Association (NHLA).
 - .2 CAN/CSA-Z809 or FSC or SFI certified.
 - .3 AWMAC custom grade, moisture content as specified.
- .5 Douglas fir plywood (DFP): to CSA O121, standard construction, CAN/CSA-Z809 or FSC or SFI certified.
 - .1 Plywood resin to contain no added urea-formaldehyde.
- .6 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.
- .7 Hardwood plywood: to ANSI/HPVA HP-1, CAN/CSA-Z809 or FSC or SFI certified.
 - .1 Plywood resin to contain no added urea-formaldehyde.

- .8 Poplar plywood (PP): to CSA O153, standard construction, CAN/CSA-Z809 or FSC or SFI certified.
 - .1 Plywood resin to contain no added urea-formaldehyde.
- .9 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.
- .10 Birch plywood: to AWMAC Select White, CAN/CSA-Z809 or FSC or SFI certified.
 - .1 Plywood resin to contain no added urea-formaldehyde.
- .11 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 CAN/CSA-Z809 or FSC or SFI certified.
- .12 Hardboard:
 - .1 To CAN/CGSB-11.3, CAN/CSA-Z809 or FSC or SFI certified.
 - .2 Hardboard resin to contain no added urea-formaldehyde.
- .13 MDF (medium density fibreboard) core: to ANSI A208.2, Grade 16mm thick, density 769 kg/m³, 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.
- .14 Laminated plastic for flatwork: to NEMA LD3, Grade VGL, Type HD, 1.27 mm thick; based on solid, colour range with matt finish.
- .15 Laminated plastic for postforming work: to NEMA LD3, Grade VGL, Type HD 1.27 mm thick, based on solid, colour range with matt finish.
- .16 Laminated plastic backing sheet: Grade BK, Type HD minimum of 0.5 mm thick or same thickness as face laminate.
- .17 Laminated plastic liner sheet: Grade GP, Type HD, 1.016 mm thick, white colour.
- .18 Thermofused Melamine: to NEMA LD3 Grade VGL.
 - .1 High wear resistant thermofused melamine: equal or exceed 400 cycles (Minimum standard for HPL abrasion test).
- .19 Nails and staples: to CSA B111.
- .20 Wood screws: steel, type and size to suit application.
- .21 Splines: wood.
- .22 Sealant: in accordance with Section 07 92 00 - Joint Sealants
 - .1 Sealants: VOC limit 250 g/L maximum to SCAQMD Rule 1168. SPEC NOTE: For the following paragraph refer to laminate manufacturers' technical manuals for correct adhesive.
- .23 Laminated plastic adhesive:
 - .1 Adhesive: contact adhesive to CAN/CGSB-71.20.
 - .2 Adhesives: VOC limit 30 g/L maximum to SCAQMD Rule 1168.
 - .3 Clear Wood Finishes: VOC limit 350 g/L maximum to SCAQMD Rule 1113.
 - .4 Paints: VOC limit 50 g/L maximum to SCAQMD Rule 1113.

.24 Solid Surfacing:

- .1 Solid Polymer Surfacing: ANSI Z124.6, cast, nonporous, proprietary polymer, composite construction, through body colours, stain resistant to domestic chemicals and cleaners. Colour and pattern from manufacturers standard range by the Departmental Representative.

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 S2S is acceptable.
 - .2 Board sizes: "standard" or better grade.
 - .3 Dimension sizes: "standard" light framing or better grade.
 - .4 Urea-formaldehyde free.
- .3 Framing SPF species, NLGA 2 grade.
- .4 Case bodies (ends, divisions and bottoms).
 - .1 Softwood and poplar plywood DFP or CSP grade, square edge, 19 mm thick.
 - .2 Hardwood plywood:
 - .1 Thickness: 19 mm.
 - .2 Number of plies: minimum 5.
 - .3 Face veneer: white birch species, premium grade, cut as noted on drawing.
 - .4 Back veneer: white birch species, custom grade, rotary cut, unless noted on the drawing.
 - .5 Bond: Type II.
 - .6 Sanding: regular sanding.
 - .7 Grain direction: as noted on drawing.
 - .3 Solid wood: as noted on drawings.
- .5 Backs:
 - .1 Softwood and poplar plywood DFP or CSP grade, square edge, 12 mm thick.
 - .2 Hardwood plywood:
 - .1 Thickness: 12 mm.
 - .2 Number of plies: 5.
 - .3 Face veneer: to match bodies as specified.
 - .4 Back veneer: to match bodies as specified.
 - .5 Bond: Type II.
 - .6 Sanding: regular sanding.
 - .7 Grain direction as noted on drawing.
- .6 Shelving:
 - .1 Softwood and poplar plywood DFP or CSP grade, square edge, 19 mm thick. Hardwood plywood:
 - .1 Thickness: 19 mm.
 - .2 Number of plies: 5 minimum.
 - .3 Face veneer: to match bodies as specified.

- .4 Back veneer: to match bodies as specified.
- .5 Bond: Type II.
- .6 Sanding: regular sanding.
- .7 Grain direction as noted on drawing.
- .2 Edge banding: provide 10 mm thick solid matching wood strip on plywood particleboard edges 12 mm or thicker, exposed in final assembly.
- .2 Drawers:
 - .1 Fabricate drawers to AWMAC custom grade supplemented as follows:
 - .2 Sides and Backs:
 - .1 Hardwood plywood:
 - .1 Thickness: 12 mm.
 - .2 Number of plies: 5.
 - .3 Face veneer : white birch species, premium grade, cut, matching as noted on drawings.
 - .4 Back veneer: white birch species, custom grade, rotary cut, matching as noted on drawings.
 - .5 Bond: Type II.
 - .6 Sanding: regular sanding.
 - .7 Grain direction: as noted on drawing.
 - .2 Solid wood: as noted on drawings.
 - .3 Bottoms:
 - .1 Hardwood plywood:
 - .1 Thickness: 12 mm.
 - .2 Number of plies: 5.
 - .3 Face veneer: white birch species, premium grade, cut, matching as noted on drawings.
 - .4 Back veneer: white birch species, custom grade, cut, matching as noted on drawings.
 - .5 Bond: Type II.
 - .6 Sanding: regular sanding.
 - .7 Grain direction as noted on drawings.
 - .4 Fronts:
 - .1 Hardwood plywood:
 - .1 Thickness: 19 mm.
 - .2 Number of plies: 5.
 - .3 Face veneer: white birch species, premium grade, cut, matching as noted on drawings.
 - .4 Back veneer: white birch species, custom grade, rotary cut, matching as noted on drawings.
 - .5 Bond: Type II.
 - .6 Sanding: regular sanding.
 - .7 Grain direction as noted on drawings.

- .3 Casework Doors:
 - .1 Fabricate doors to AWMAC premium custom grade supplemented as follows:
 - .1 Softwood and poplar plywood DFP or CSP grade, square edge, 19 mm thick.
 - .2 Hardwood plywood:
 - .1 Thickness: 19 mm.
 - .2 Number of plies: 5.
 - .3 Face veneer: white birch species, grade, premium cut, matching as noted on drawings.
 - .4 Back veneer: white birch species, custom grade, rotary cut, matching as noted on drawings.
 - .5 Bond: Type II.
 - .6 Sanding: regular sanding.
 - .7 Grain direction: as noted on drawings.

2.3 FABRICATION

- .1 Set nails and countersink screws apply plain 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. 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.
- .8 Form shaped profiles and bends as indicated, using postforming grade laminate to laminate manufacturer's instructions.
- .9 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.
- .10 Apply laminate backing sheet to reverse side of core of plastic laminate work.
- .11 Apply laminated plastic liner sheet where indicated.

2.4 FINISHING

- .1 Finish in accordance with Section 09 91 23 - Interior Painting.

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 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 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 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 11 55 – 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 11 55 – General Instructions.
 - .1 Clean millwork and cabinet work inside cupboards and drawers and outside surfaces.
 - .2 Remove excess glue from surfaces.

- .3 Waste Management: separate waste materials for 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 and 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

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 01 33 00 – Shop Drawings, Data Products and Samples
- .2 Section 01 74 21 – Construction/Demolition Waste Management and Disposal
- .3 Section 06 20 00 – Finish Carpentry
- .4 Section 06 40 00 – Architectural Woodwork
- .5 Section 09 91 23 – Interior Painting

1.2 REFERENCES

- .1 American National Standards Institute (ANSI)
 - .1 ANSI 208.1-09, Particleboard.
- .2 ASTM International
 - .1 ASTM D2832-92(R2011), Standard Guide for Determining Volatile and Nonvolatile Content of Paint and Related Coatings.
 - .2 ASTM D2369-10e1, Standard Test Method for Volatile Content of Coatings.
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-71.20-M88, Adhesive, Contact, Brushable.
- .4 CSA International
 - .1 CSA O112.10-08, Evaluation of Adhesives for Structural Wood Products (Limited Moisture Exposure).
 - .2 CSA O121-08, Douglas Fir Plywood.
 - .3 CSA O151-09, Canadian Softwood Plywood.
 - .4 CSA O153-M1980(R2008), Poplar Plywood.
 - .5 CAN/CSA-Z809-08, Sustainable Forest Management.
- .5 Forest Stewardship Council (FSC)
 - .1 FSC-STD-01-001-2004, FSC Principle and Criteria for Forest Stewardship.
- .6 Green Seal Environmental Standards (GS)
 - .1 GS-36-11, Commercial Adhesives.
- .7 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS). National Electrical Manufacturers Association (NEMA)
 - .2 ANSI/NEMA LD-3-05, High Pressure Decorative Laminates (HPDL).
- .8 Scientific Equipment and Furniture Association (SEFA)
 - .1 SEFA 8-99, Laboratory Furniture.

- .9 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
 - .1 SCAQMD Rule 1113-A2011, Architectural Coatings.
 - .2 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.
- .10 Sustainable Forestry Initiative (SFI)
 - .1 SFI-2010-2014 Standard.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 – Shop Drawings, Data Products and Samples.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for laminate, adhesive, and core materials and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit two copies of WHMIS MSDS in accordance with Section 01 35 33 - Health and Safety Requirements, Section 01 35 43 - Environmental Procedures. Indicate VOC=s for adhesives in g/L.
- .3 Samples:
 - .1 Submit for review and acceptance of each unit. Samples will be returned for inclusion into work.
 - .2 Submit duplicate samples of joints, edging, cutouts and postformed profiles.
- .4 Certifications: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
- .5 Sustainable Design Submittals:
 - .1 Construction Waste Management:
 - .1 Submit project Waste Management Plan 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 Regional Materials: submit evidence that project incorporates required percentage 10% of regional materials and products, showing their cost, distance from project to furthest site of extraction or manufacture, and total cost of materials for project.
 - .3 Wood Certification: submit manufacturer's Chain-of-Custody Certificate number for CAN/CSA-Z809 or FSC or SFI certified wood.
 - .4 Low-Emitting Materials:
 - .1 Submit listing of composite wood products used in building, stating they contain no added urea-formaldehyde resins, and laminate adhesives used in building, stating they contain no urea-formaldehyde.
 - .2 Submit listing of adhesives and sealants and sealers used in building, showing compliance with VOC and chemical component limits or restrictions requirements.

1.4 CLOSEOUT SUBMITTALS

- .1 Provide maintenance data for laminate work for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.5 QUALITY ASSURANCE

- .1 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .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 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.6 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.
- .3 Storage and Handling Requirements:
 - .1 Store materials indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect laminate, adhesive, and core materials from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Develop Construction Waste Management Plan related to Work of this Section and in accordance with Section.
- .5 Packaging Waste Management: remove for reuse of pallets, crates, padding, and 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 Laminated plastic for flatwork: to NEMA LD3.
 - .1 Type: general purpose.
 - .2 Grade: HGS.
 - .3 Size: 1.016, 1.27 mm thick.
 - .4 Colour: To be selected from manufacturer's standard colour range.

- .5 Pattern: solid.
- .6 Finish: matt.
- .2 Laminated plastic for postforming work: to NEMA LD3.
 - .1 Type: postforming.
 - .2 Grade: HGP.
 - .3 Size: 1.016, 1.27mm thick.
 - .4 Colour: integral colour throughout.
 - .5 Pattern: solid.
 - .6 Finish: matt.
- .3 Laminated plastic for backing sheet: to NEMA LD3.
 - .1 Type: backer.
 - .2 Grade: BKH.
 - .3 Size: not less than 0.5 mm thick or same thickness as face laminate.
 - .4 Colour: same colour as face laminate.
- .4 Laminated plastic for liner: to NEMA LD3.
 - .1 Type: cabinet liner.
 - .2 Grade: CLS.
 - .3 Size: 1.016mm thick
 - .4 Colour: white.
- .5 Plywood core: to CSA O121, CSA O151 or CSA O153 solid two sides, 19mm thick.
 - .1 CAN/CSA-Z809 or FSC or SFI certified.
 - .2 Ensure plywood core is urea-formaldehyde, free Particleboard core: to ANSI 208.1, sanded faces, of thickness indicated.
 - .3 CAN/CSA-Z809 or FSC or SFI certified.
 - .4 Ensure particleboard core is urea-formaldehyde free.
- .6 Laminated plastic adhesive: contact adhesive to CAN/CGSB-71.20 resorcinol resin adhesive to CSA O112.10 polyvinyl adhesive to CSA O112.10 two component epoxy thermosetting adhesive or as recommended by Laminate Manufacturer for use and substrate.
 - .1 Test for acceptable VOC emissions in accordance with ASTM D2369 and ASTM D2832.
- .7 Sealer: water resistant sealer or glue acceptable to laminate manufacturer.
 - .1 Test for acceptable VOC emissions to ASTM D2369 and ASTM D2832.
 - .2 VOC limit: 200 g/L maximum to SCAQMD Rule 1113.
 - .3 Chemical restrictions to SCAQMD Rule 1113.
- .8 Sealants: Silicone based, refer to Section 07 92 00 – Joint Sealant.
 - .1 Test for acceptable VOC emissions to ASTM D2369 and ASTM D2832.
 - .2 Draw bolts and splines: as recommended by fabricator.

2.2 FABRICATION

- .1 Comply with NEMA LD3, 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 2400 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 flatwork to cover exposed edge of core material. Chamfer exposed edges uniformly at approximately 20 degrees. 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 where indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for laminate, adhesive, and core materials installation in accordance with manufacturer's written 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 MANUFACTURER'S INSTRUCTIONS

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

3.3 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 on centre, 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.

- .6 Site apply laminated plastic to units as indicated. Adhere laminated plastic over entire surface. Make corners with hairline joints. Use full sized laminate sheets. Make joints only where approved. Slightly bevel arises.
- .7 For site application, offset joints in plastic laminate facing from joints in core.

3.4 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 11 55 – 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 11 55 – General Instructions.
 - .1 Clean to NEMA LD3, Annex B.
 - .2 Remove traces of primer, caulking, epoxy and filler materials and clean doors and frames.
- .3 Waste Management: separate waste materials for 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.

3.5 PROTECTION

- .1 Cover finished laminated plastic wood veneered surfaces with heavy kraft paper or put in cartons during shipment.
- .2 Protect installed laminated surfaces in accordance with manufacturer's written recommendations.
 - .1 Remove protection only immediately before final inspection.
- .3 Protect installed products and components from damage during construction.
- .4 Repair damage to adjacent materials caused by laminate, adhesive, and core materials installation.

END OF SECTION