

Part 1 General

1.1 Related Sections

- .1 Section 01330 - Submittal Procedures.

1.2 References

- .1 Canadian Standards Association (CSA)
 - .1 CSA O80 Series-97, Wood Preservation

1.3 Quality Assurance

- .1 Each piece of lumber to be identified by CSA O322 certified stamp.

1.4 Certificates

- .1 Submit certificates in accordance with Section 01330 - Submittal Procedures.
- .2 For products treated with preservative by pressure impregnation submit following information certified by authorized signing officer of treatment plant:
 - .1 Moisture content after drying following treatment with water-borne preservative
 - .2 Acceptable types of paint, stain, and clear finishes that may be used over treated materials to be finished after treatment

1.5 Waste Management and Disposal

- .1 Separate and recycle waste materials.
- .2 Do not dispose of preservative treated wood through incineration.
- .3 Dispose of unused wood preservative material at official hazardous material collections site.
- .4 Do not dispose of unused preservative material into sewer system, into streams, lakes, onto ground or in other location where they will pose health or environmental hazard.

Part 2 Products

2.1 Materials

- .1 Preservative: to CSA-O80 Series, for Silvertone finish.

Part 3 Execution

3.1 Application: Preservative

- .1 Treat parking fence wood posts and rails to CSA O80 Series with Silvertone preservative.

3.2 Application: Field Treatment

- .1 Remove chemical deposits on treated wood to receive applied finish.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 Canadian Standards Association (CSA International)
 - .1 CSA B111-974(R1998), Wire Nails, Spikes and Staples.
 - .2 CAN/CSA-G164-M92(R1998), Hot Dip Galvanizing of Irregularly Shaped Articles.
 - .3 CSA O121-M1978(R1998), Douglas Fir Plywood.
 - .4 CAN/CSA-O141[91(R1999), Softwood Lumber.
 - .5 CSA O151-M1978(R1998), Canadian Softwood Plywood.
 - .6 CAN/CSA-O325.0-[92(R1998)], Construction Sheathing.
- .2 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber 2000.

1.2 QUALITY ASSURANCE

- .1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Plywood identification: by grade mark in accordance with applicable CSA standards.
- .3 Plywood, OSB and wood based composite panel construction sheathing identification: by grademark in accordance with applicable CSA standards.

1.3 WASTE MANAGEMENT AND DISPOSAL

- .1 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .2 Do not dispose of preservative treated wood through incineration.
- .3 Do not dispose of preservative treated wood with materials destined for recycling or reuse.
- .4 Dispose of treated wood, end pieces, wood scraps and sawdust at sanitary landfill approved by Contract Administrator.
- .5 Dispose of unused wood preservative material at official hazardous material collections site approved by Contract Administrator.
- .6 Do not dispose of unused preservative material into sewer system, into streams, lakes, onto ground or in other locations where they will pose health or environmental hazard.

Part 2 Products

2.1 LUMBER MATERIAL

- .1 Lumber: unless specified otherwise, softwood, S4S, moisture content 19% or less in accordance with following standards:
 - .1 CAN/CSA-O141.
 - .2 NLGA Standard Grading Rules for Canadian Lumber.
- .2 Furring, blocking, nailing strips, grounds, rough bucks, 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 PANEL MATERIALS

- .1 Douglas fir plywood (DFP): to CSA O121, standard construction.
- .2 Canadian softwood plywood (CSP): to CSA O151, standard construction.
- .3 Plywood, OSB and wood based composite panels: to CAN/CSA-O325.

2.3 ACCESSORIES

- .1 Nails, spikes and staples: to CSA B111.
- .2 Bolts: [12.5] mm diameter unless indicated otherwise, complete with nuts and washers.
- .3 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 FINISHES

- .1 Galvanizing: to CAN/CSA-G164, use galvanized fasteners for exterior work, interior highly humid areas.

Part 3 Execution

3.1 INSTALLATION

- .1 Comply with requirements of NBC, supplemented by the following paragraphs.
- .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 fascia backing, nailers, curbs and other wood supports as required and secure using [galvanized] [steel] fasteners.
- .6 Install wood backing, dressed, tapered and recessed slightly below top surface of roof insulation for roof hopper.
- .7 Install sleepers as indicated.
- .8 Use caution when working with particle board. Use dust collectors and high quality respirator masks.

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.

3.3 SCHEDULES

- .1 Provide electrical equipment backboards for mounting electrical equipment as indicated. Use 19 mm thick plywood on 19 x 38 mm furring around spacing, perimeter and at maximum 300 mm intermediate

END OF SECTION

Part 1 General

1.1 QUALITY ASSURANCE

- .1 Execute the work of this Section by fully equipped, expert craftsmen, highly skilled in millwork fabrication.
- .2 Quality of work and materials: Unless otherwise specified, comply with the requirements for Premium Grade in accordance with the 2005 AWI/AWMAC Architectural Woodwork Quality Standards Illustrated Eighth Edition Version 2 (AWI/AWMAC QSI).

1.2 DEFINITIONS

- .1 Exposed Surfaces: Surfaces exposed to view. Surfaces visible when doors and drawers are closed, backs of hinged doors and edges of hinged doors when opened.
- .2 Semi-Exposed Surfaces: Surfaces that become visible when drawers and doors are opened.
- .3 Concealed Surfaces: Surfaces not visible after installation.

1.3 DELIVERY, STORAGE, AND HANDLING

- .1 Store work in a temperature and humidity controlled area.
- .2 Protect fire-retardant materials against high humidity and moisture.
- .3 Provide protective coverings of suitable material for plastic laminate items; take special precautions at corners.
- .4 Provide dry storage areas. Stack materials with 150 mm (6") clearance off the floor.

1.4 SUBMITTALS

- .1 Shop Drawings: Show large scale details of construction. Indicate profiles of members, jointing, fastening, strapping, cut-outs for mechanical and electrical services and related items.
- .2 Samples: Duplicate 150 mm x 150 mm (6" x 6") samples of plastic laminate veneers for review, show colours and details of edging, forming and construction.

Part 2 Products

2.1 MATERIALS

- .1 Wood members: Clean, seasoned, straight, square and true on all four sides. Comply with minimum size and tolerances of CSA 0141. Grade-mark all wood materials. Kiln dry wood materials for interior use to a moisture content of 4 to 8%, and 7 to 10% for exterior use.
- .2 Plywood: Veneer core plywood.

- .1 Douglas Fir plywood: CSA 0121; Western Softwood Plywood: CSA 0151. Exposed two sides shall be Grade S2S, and exposed one side shall be Grade S1S.
- .2 Hardwood Plywood: CSA 0115, Type II (Type I for high humidity conditions). Exposed faces of Good Sequence Matched, selected veneers, and unexposed faces of Sound Grade, So, veneers.
- .3 Birch Faced Hardwood Plywood: CSA 0115, Good Sequence Matched, Select White or Select Red.
- .3 Particleboard: ANSI A208.1, 720 kg/m³ (45 lb/ft³) density, mat formed wood particleboard.
- .4 Concealed Framing: NLGA, S-Dry No. 1 grade Ontario White Pine or Douglas Fir, comply with BCLMA Construction grade.
- .5 Sealer: Water-repellant, low VOC, clear, colourless, penetrating wood sealer, compatible with final finish.
- .6 Hardboard: CGSB 11-GP-3, impregnated, pressed wood with a tempering compound and polymerized by baking.
- .7 Glue For Wood Assemblies: CSA 0112 Series, polyvinyl adhesive.
- .8 Plastic Laminate: NEMA LD-3, high pressure paper base decorative laminates. Unless otherwise specified, use the following:
 - .1 Horizontal Postform Work: Grade HGP, 1 mm (0.040") thick.
 - .2 Horizontal Flat Work: Grade HGS, 1.2 mm (0.048") thick.
 - .3 Vertical Postform Work: Grade VGP, 0.7 mm (0.028") thick.
 - .4 Vertical Flat Work: Grade VGS, 0.7 mm (0.028") thick.
 - .5 Chemical-Resistant: Grade HGP, 1 mm (0.040") thick.
 - .6 Backing Sheet: Grade BK, same thickness as facing sheets, sanded one face and manufactured by the same manufacturer as the facing sheet.
 - .7 Plastic Laminate Colours:
 - .1 Type 1: Antique Bronze LS D493-60 by Wilsonart
 - .2 Type 2: Mission Sage 4848-38 by Wilsonart
- .9 Melamine Board: Melamine resin impregnated paper, thermally fused to particle board or MDF core.
 - .1 Type 1: Colour to be selected by Contract Administrator.
 - .2 Type 2: Colour to be selected by Contract Administrator.

.3 Cabinet Hardware: In accordance with the Drawings.

2.2 FABRICATION - GENERAL

- .1 As far as practical, shop assemble work for delivery to site ready for installation and in size easily handled and to ensure passage through building openings. Leave ample allowance for fitting and scribing on the job.
- .2 Fabricate work square and to the required lines. Recess and conceal fasteners and anchor heads. Fill with matching wood plugs.
- .3 Make each unit rigid and self supporting, suitable for individual removal.
- .4 Provide wood members free from bruises, blemishes, mineral marks, knots, shake and other defects and select for colour, grain and texture. Machine and hand sand surfaces exposed in the finished work to an even, smooth surface free from defects detrimental to appearance.
- .5 Finish exposed edges and curves smooth. Keep contrast in colour and grain in adjoining materials to a minimum.
- .6 Provide running members in the maximum lengths obtainable. Provide thickness of members in maximum dressed size of standard lumber. Where thickness or width indicated is not available in hardwoods, use glue laminations to obtain sizes required.
- .7 Spline or key solid boards 150 mm (6") and wider and glue under pressure. Unless otherwise specified or indicated, book-match veneered faces, using selected and approved veneers. Provide unexposed backs of veneers having the same physical characteristics as the face veneer.
- .8 Design and fabricate work to allow for expansion and contraction of the materials. Unless otherwise specified, work shall be glued, and blind screwed or nailed. Properly frame material with tight, hairline joints and hold rigidly in place. Use glue blocks where necessary.
- .9 Conceal joints and connections wherever possible. Locate prominent joints where directed. Glue and pin mortise and tenon joints. Intermediate joints between supports will not be permitted. Set and fill surface nails. Prevent opening-up of glue lines in the finished work.
- .10 Comply with glue Manufacturer's recommendations for lumber moisture content, glue shelf life, pot life, working life, mixing, spreading, assembly time, time under pressure and ambient temperature.
- .11 Provide exposed and grain of solid members and edges of exposed plywood with matching solid edging at least 6 mm (¼") thick.
- .12 Seal finish carpentry wood items before they leave the fabricating shop. For surfaces to receive a natural or stain finish ensure that the sealer is compatible with the final finish. Co-operate with Division 9 Section Painting and obtain written approval of proposed sealer.
- .13 Fit shelf, door, drawer, gable and cabinet edges and other edges with 13 mm (½") hardwood edging prior to application of laminated plastic edging or subsequent finishing.

- .14 Set nails and screws, apply wood filler to indentations, sand smooth and prepare to receive finish. Clean, ensure surfaces are free of dust.

2.3 FABRICATION - CABINETS

- .1 Framing: Solid stock framing assembled with machined dovetailed, mortised tenoned or blind dado joints adequately glued and secured with screws.
- .2 Countertops: Provide cut-outs for sinks, fitments and services as required.
- .3 Gables: Attach gables to framing with tongue and groove. Reinforce connections with supplementary metal angles. Route gables to receive shelf standards and fixed shelving's. Provide plastic laminate finished wood cleats for closet shelving and coat rod installation.
- .4 Backs: Conceal joints behind framing, rout backs into end gables.
- .5 Bottoms: Attach bottoms to front rails with tongue and groove.
- .6 Doors: Flush overlay construction.
- .7 Drawers: Solid stock fronts, backs, sides, dividers, and plywood bottoms. Joints glued.
 - .1 Fronts: 19 mm ($\frac{3}{4}$ ") thick
 - .2 Backs: 13 mm ($\frac{1}{2}$ ") thick.
 - .3 Dividers: 6 mm ($\frac{1}{4}$ ") thick.
 - .4 Sides: 15 mm (e") thick, dovetail joints to fronts, grooved joints to backs.
 - .5 Bottoms: 9 mm (d") thick, grooved into front and sides.
- .8 Shelving: Apply plastic laminate to visible edges, except that adjustable shelves shall be edged on front and back.
- .9 Base: Solid stock of height equal to base in room.

2.4 FABRICATION - PLASTIC LAMINATE FACED WORK

- .1 Factory apply plastic laminate to interiors of all cabinetwork except drawers, but including drawer fronts and shelves, including underside of cabinets.
- .2 Edge band doors, drawers, gables and all visible edges of plywood and particle board components with plastic laminate to match faces, strips same width as plywood or particle board.
- .3 Apply backing sheet to laminated flatwork. Apply uniform coating of sealer on exposed edges. Provide backing sheet of sufficient thickness to compensate stresses caused by the facing sheet.

- .4 Self edge straight-line-edging with flat work material and radius corners with post-forming material; apply with same adhesive as facing sheet. Chamfer edges uniformly at approximately 20 degrees using machine router.
- .5 Locate joints at 2400 to 3000 mm (8' to 10') o.c. Accurately fit members together to provide tight and flush butt joints, in true planes. Provide 6 mm (¼") blind spline and approved type draw bolts; one draw bolt for widths up to 150 mm (6") at maximum 450 mm (18") centres for widths exceeding 150 mm (6"). Colour-match adjoining units.
- .6 Provide cut-outs as required for inserts, fixtures and fittings. Use radiused corners and chamfer edges around cut-outs to avoid chipping laminate.
- .7 Post-form laminate work to details indicated. Provide same core and laminate profiles to provide continuous support and bond for the entire surface.
- .8 Assemble work, true and square. Arrange adjacent parts of continuous laminate work to match in colour and pattern.

2.5 FABRICATION - TRIM

- .1 Trim members shall be of sizes and profiles indicated. Trim members shall be slow-fed work, free from chatter and other machine marks.
- .2 Provide trim over 60 mm (2½") wide with backs ploughed or kerfed. Mitre all joints. Carefully machine drum-sand exposed flat surfaces. Minimize sanding on the job.

Part 3 Execution

3.1 INSTALLATION

- .1 Set and secure materials and components in place, rigid, straight, level, plumb and square with hairline joints. Scribe neatly to adjoining surfaces; install blocking and fillers required. Secure units using concealed fasteners.
- .2 Provide matching scribing closer strips between units and walls or similar surfaces.
- .3 Provide heavy duty fixture attachments for wall mounted cabinet work.
- .4 Apply sealant between units and adjacent wall and floor surface, around sills, pipes and escutcheon plates and similar areas to seal and finish installation, in accordance with Section 07900 – Joint Sealants.
- .5 Make allowances around perimeter where fixed objects pass through or project into carpentry work to permit normal movement without restriction.
- .6 Touch up cut edges and surfaces with sealer.
- .7 Apply water resistant building paper or bituminous coating over wood framing members in contact with cementitious construction.
- .8 After installation, adjust operating hardware for proper fit and function.

- .9 Protect finished surfaces by approved means. Do not remove until immediately before Substantial Performance.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01330 - Submittal Procedures.
- .2 Section 01780 - Closeout Submittals.

1.2 REFERENCES

- .1 American National Standards Institute (ANSI)
 - .1 ANSI 208.1-99, Particleboard.
 - .2 ANSI A208.2-02 Medium Density Fibreboard (MDF) for Interior Applications.
- .2 American Society for Testing and Materials International, (ASTM)
 - .1 ASTM D2832-92(R1999), Standard Guide for Determining Volatile and Nonvolatile Content of Paint and Related Coatings.
 - .2 ASTM D5116-97, Standard Guide For Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products.
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-71.20-M88, Adhesive, Contact, Brushable.
- .4 Canadian Standards Association (CSA International)
 - .1 CSA O112-M1977(R2001), Standards for Wood Adhesives.
 - .2 CSA O112.5-1.1-Series-M-1977(R2001), Urea Resin Adhesives for Wood (Room- and High-Temperature Curing).
 - .3 CSA O112.7-1.1-Series M-1977(R2001), Resorcinol and Phenol-Resorcinol Resin Adhesives for Wood (Room- and Intermediate-Temperature Curing).
 - .4 CSA O121-M1978(R1998), Douglas Fir Plywood.
 - .5 CAN/CSA O141-91(R1999), Softwood Lumber.
 - .6 CSA O151-M1978(R1998), Canadian Softwood Plywood.
 - .7 CSA O153-M1980(R1998), Poplar Plywood.
- .5 Environmental Choice Program (EPC)
 - .1 CCD-044-[95], Adhesives.
 - .2 CCD-045-[95], Sealants and Caulking Compounds.
 - .3 CCD-048-[95], Surface Coatings Recycled Water-borne.
 - .4 CCD-047a-[98], Paints - Surface Coatings.
 - .5 CCD-048b-[98], Stains - Surface Coatings.
 - .6 CCD-048c-98, Varnishes - Surface Coatings.
- .6 National Electrical Manufacturers Association (NEMA)
 - .1 NEMA LD3-2000, High Pressure Decorative Laminates.
- .7 Scientific Equipment and Furniture Association (SEFA)

- .1 SEFA 8-99, Laboratory Furniture.

1.3 SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01330 - Submittal Procedures.
 - .2 Submit two] copies of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01330 - Submittal Procedures. Indicate VOC's for adhesives, solvents and cleaners.
- .2 Samples:
 - .1 Submit samples in accordance with Section 01330- Submittal Procedures.
- .3 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation instructions.
- .4 Closeout Submittals:
 - .1 Provide maintenance data for laminate work for incorporation into manual specified in Section 01780 - Closeout Submittals.

1.4 QUALITY ASSURANCE

- .1 Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .3 Pre-installation Meetings: Conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Section 01310 - Project Management and Co-ordination.

1.5 DELIVERY, STORAGE, AND HANDLING

- .1 Storage and Protection:
 - .1 Deliver, handle, store and protect materials of this section in accordance with Section 01610 - Basic Product Requirements.
 - .2 Maintain relative humidity between 25 and 60% at 22 degrees C during storage and installation.

Part 2 Products

2.1 MATERIALS

- .1 Laminated plastic for flatwork: to NEMA LD 3.
 - .1 Type: General purpose.
 - .2 Grade: VGL.

- .3 Size: 1.27 mm thick.
- .4 Colour / Pattern / Finish: as per drawing specification and selection by contract administrator
- .2 Laminated plastic for backing sheet: to NEMA LD 3.
 - .1 Type: Backer.
 - .2 Grade: BKL.
 - .3 Size: not less than 0.5 mm thick or same thickness as face laminate.
 - .4 Colour: same colour as face laminate.
- .3 Plywood core: to CSA O121 solid two sides, Grade A, 19 mm thick.
- .4 Particleboard core: to ANSI 208.1, Grade LD-2, 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.
 - .1 Test for acceptable VOC emissions in accordance with ASTM D2369 and ASTM D2832.
- .6 Sealer: water resistant sealer or glue acceptable to laminate manufacturer.
 - .1 Test for acceptable VOC emissions in accordance with ASTM D2369 and ASTM D2832.
- .7 Sealants: in accordance with section 07 92 10.
 - .1 Test for acceptable VOC emissions in accordance with ASTM D2369 and ASTM D2832.
- .8 Draw bolts and splines: as recommended by fabricator.

2.2 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 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 where indicated.

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 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 arrises.
- .7 For site application, offset joints in plastic laminate facing from joints in core.

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