

Part 1 General

1.1 REFERENCE STANDARDS

- .1 ASTM International (ASTM)
 - .1 ASTM A123/A123M-17, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - .2 ASTM A153/A153M-16a, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - .3 ASTM A653/A653M-20 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .2 American Wood-Preservers' Association (AWPA)
 - .1 AWPA M4-15, Standard for the Care of Preservative-Treated Wood Products.
- .3 Canadian Standards Association (CSA International)
 - .1 Can/CSA O80 Series-15(R2020), Wood Preservation, Includes Update No. 1 (2017) and Update No. 2 (2019).
 - .2 CSA O80.20-1.1-M97(R2002), This Standard applies to the fire-retardant treatment of lumber by pressure processes.
 - .3 CSA O80.27-1.1-M97(R2002), This Standard covers the fire-retardant treatment of Douglas Fir, hardwood, softwood, and Poplar plywood by pressure processes.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit Submittal submissions: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Quality assurance submittals:
 - .1 Submit certificates in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 For products treated with fire-retardant by pressure impregnation submit following information certified by authorized signing officer of treatment plant:
 - .1 Information listed in AWPA M2 and revisions specified in CSA O80 Series, Supplementary Requirement to AWPA M2 applicable to specified treatment.
 - .2 Moisture content after drying following treatment with fire-retardant.
 - .3 Acceptable types of paint, stain, and clear finishes that may be used over treated materials to be finished after treatment.

1.3 QUALITY ASSURANCE

- .1 Regulatory Requirements:
 - .1 Each panel, board, or bundle of fire-retardant treated material to bear ULC label indicating Flame Spread Classification (FSC), and smoke developed.

1.4 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements, with AWWA M4, with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with product category, manufacturer's name and address.
- .3 Waste Management and Disposal:
 - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

Part 2 Products

2.1 FIRE-RETARDANT TREATED MATERIALS AND APPLICATION

- .1 Provide good one side (G1S) fire retardant treated lumber for interior use conforming to CSA O80 Series standards use category F1 and clause 9.9, to provide the following characteristics when tested in accordance with CAN/ULC-S102:
 - .1 Flame Spread Classification: FSC 25.
 - .2 Smoke developed of not more than: 300.
- .2 Kiln dry fire retardant treated products after treatment to the following moisture contents:
 - .1 Plywood: 15%.
 - .2 Lumber: 19%.
- .3 Size: 1219 x 2438 mm x thickness as indicated in the drawings.

2.2 CORROSION PROTECTION FOR CONNECTORS AND FASTENERS FOR USE WITH TREATED WOOD

- .1 Connectors: steel sheet galvanized in accordance with ASTM A653 to minimum G185 coating or galvanized post fabrication to ASTM A123.
- .2 Fasteners: Hot dip galvanized to ASTM A153/A153M Class C and D.

2.3 PRESERVATIVE FOR FIELD TREATMENT

- .1 Type recommended by manufacturer to suit specified pressure treated products.

Part 3 Execution

3.1 CONSTRUCTION

- .1 Treat materials by pressure impregnation with fire-retardant chemicals in accordance with CSA O80.20 and CSA O80.27.
- .2 All fire-retardant treatment shall be done at factory. No fire-retardant application shall be done on site, with the exception of cut edges requiring treatment.
- .3 Use connectors and fasteners with specified corrosion protection in all construction with treated wood products.

3.2 FIELD TREATMENT (FIELD CUT EDGES ONLY)

- .1 Comply with AWPA M4 and revisions specified in CSA O80 Series, Supplementary Requirements to AWPA M2.
- .2 Re-treat surfaces exposed by cutting, trimming, or boring with liberal brush application of recommended preservative before installation.
- .3 Remove chemical deposits on treated wood to receive applied finish.

END OF SECTION

Part 1 General

1.1 REFERENCE STANDARDS

- .1 CSA Group (CSA)
 - .1 CSA B111-1974 (R2003), Wire Nails, Spikes and Staples.
 - .2 CSA O121-17, Douglas Fir Plywood.
 - .3 CSA O141-05 (R2009), Softwood Lumber.
 - .4 CSA O151-17, Canadian Softwood Plywood.
 - .5 CAN/CSA-O325.0-07, Construction Sheathing.
- .2 National Research Council Canada (NRC)
 - .1 National Building Code of Canada 2015 (NBC).
- .3 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber 2010.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

1.3 MAINTENANCE MATERIAL SUBMITTALS

- .1 Extra Stock Materials:
 - .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 305 mm intermediate

1.4 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.

1.5 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 in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Replace defective or damaged materials with new.

- .4 Develop Waste Reduction Workplan and Construction Waste Management Plan related to Work of this Section and in accordance with Section 01 74 19 - Waste Management and Disposal.
- .5 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

Part 2 Products

2.1 MATERIALS

- .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:
 - .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.
- .3 Panel Materials:
 - .1 Douglas fir plywood (DFP): to CSA O121, standard construction.
 - .1 Urea-formaldehyde free.
 - .2 Canadian softwood plywood (CSP): to CSA O151, standard construction.
 - .1 Urea-formaldehyde free.
 - .3 Plywood, OSB and wood based composite panels: to CAN/CSA-O325.
 - .1 Urea-formaldehyde free.
- .4 Wood Preservative:
 - .1 Surface-applied wood preservative: clear, copper naphthenate or 5% pentachlorophenol solution, water repellent preservative.
 - .2 Pentachlorophenol use is restricted to building components that are in ground contact and subject to decay or insect attack only. Where used, pentachlorophenol-treated wood must be covered with two coats of an appropriate sealer.
 - .3 Structures built with wood treated with pentachlorophenol and inorganic arsenicals must not be used for storing food nor should the wood come in contact with drinking water.

2.2 ACCESSORIES

- .1 Fasteners: to CAN/CSA-G164, for exterior work, interior highly humid areas, and fire-retardant treated lumber.
- .2 Nails, spikes, and staples: to CSA B111.
- .3 Bolts: 13 mm diameter unless indicated otherwise, complete with nuts and washers.

- .4 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, recommended for purpose by manufacturer.
- .5 Sealants: in accordance with Section 07 92 10 – Joint Sealants.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for rough carpentry installation in accordance with manufacturer's written instructions.
 - .1 Proceed with installation only after unacceptable conditions have been remedied.

3.2 INSTALLATION

- .1 Comply with requirements of National Building Code of Canada (NBC), supplemented by the following paragraphs.
- .2 Install members true to line, levels, and elevations, square and plumb.
- .3 Install spanning members with “crown-edge” up.
- .4 Install furring and blocking as required to space-out and support casework, cabinets, wall and ceiling finishes, facings, and other work as required.
- .5 Align and plumb faces of furring and blocking to tolerance of 1:600.
- .6 Install rough bucks, nailers, and linings to rough openings as required to provide backing for frames and other work.
- .7 Install backing, nailers, and other wood supports as required and secure using steel fasteners.
- .8 Use caution when working with particle board. Use dust collectors and high quality respirator masks.
- .9 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
- .10 Countersink bolts where necessary to provide clearance for other work.
- .11 Frame, anchor, fasten, tie, and brace members to provide necessary strength and rigidity.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
 - .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 74 00 - Cleaning.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 American National Standards Institute (ANSI)
 - .1 ANSI/HPVA HP-1-2009, Standard for Hardwood and Decorative Plywood.
 - .2 ANSI/NPA A208.1-2009, Particleboard.
- .2 Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI)
 - .1 Architectural Woodwork Quality Standards Illustrated, 1st edition, 2009.
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-71.20-M88, Adhesive, Contact, Brushable.
- .4 Canadian Standards Association (CSA International)
 - .1 CSA B111-74(R2003), Wire Nails, Spikes and Staples.
 - .2 CSA B651-18; Accessible Design for the Built Environment, Includes Errata 1 (2020)
 - .3 CSA O112.4 Series-M1977(R2006), Standards for Wood Adhesives.
 - .4 CSA O121-08(R2013), Douglas Fir Plywood.
 - .5 CSA O141-05(R2009), Softwood Lumber.
- .5 National Electrical Manufacturers Association (NEMA)
 - .1 ANSI/NEMA LD-3-2005, High-Pressure Decorative Laminates (HPDL).
- .6 National Hardwood Lumber Association (NHLA)
 - .1 Rules for the Measurement and Inspection of Hardwood and Cypress 2011.
- .7 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber 2010.

1.2 PERFORMANCE REQUIREMENTS

- .1 Perform architectural casework work in accordance with the recommendations of the "Architectural Woodwork Quality Standards Illustrated" of the Architectural Woodwork Institute and Architectural Woodwork Manufacturers Association of Canada (AWMAC), 2009 Edition, together with authorized additions and amendments, Custom Grade.
- .2 Where modifications to the AWMAC Quality Standards are included in this project specification, then such modifications shall govern in case of conflict.
- .3 Materials and installation shall be in metric measurement as specified.

1.3 SUBMITTALS

- .1 Provide Submittal submissions: in accordance with Section 01 33 00 - Submittal Procedures.

- .2 Provide shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
 - .1 Indicate details of construction, profiles, jointing, fastening and other related details.
 - .1 Scales: profiles full size, details half full size.
 - .2 Indicate materials, thicknesses, finishes and hardware.
 - .3 Indicate locations of service outlets in casework, typical and special installation conditions, and connections, attachments, anchorage and location of exposed fastenings.
- .3 Provide samples in accordance with Section 01 33 00 - Submittal Procedures.
 - .1 Provide duplicate samples: sample size 300 x 300 mm or 600 mm long unless specified otherwise.
 - .2 Provide two (2) samples of each wood species for review.
 - .3 Provide duplicate colour samples of laminated plastic for colour selection.
 - .4 Provide duplicate samples of laminated plastic joints, edging, cutouts and postformed profiles.
- .4 Quality assurance submittals:
 - .1 Manufacturer's Instructions: manufacturer's installation instructions.

1.4 QUALITY ASSURANCE

- .1 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Plywood, particleboard, OSB and wood based composite panels in accordance with CSA and ANSI standards.
- .3 Delivery, Storage, and Handling:
 - .1 Deliver, handle, store and protect materials of this section in accordance with Section 01 61 00 - Common Product Requirements.
 - .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.
- .4 Waste Management and Disposal:
 - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - 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 NLGA Standard Grading Rules for Canadian Lumber.

- .3 AWMAC custom grade, moisture content as specified.
- .2 Hardwood lumber: moisture content 6% or less in accordance with following standards:
 - .1 National Hardwood Lumber Association (NHLA).
 - .2 AWMAC custom grade, moisture content as specified.
- .3 Douglas fir plywood (DFP): to CSA O121, standard construction.
 - .1 Urea-formaldehyde free.
- .4 Hardwood plywood: to ANSI/HPVA HP-1.
 - .1 Urea-formaldehyde free.
- .5 Engineered Combination core – 5 ply veneer: to ANSI A208-1
 - .1 Urea-formaldehyde free.
- .6 Laminated plastic for flatwork: to NEMA LD3, Grade VGL, Type HD, 1.6 mm thick; based on solid, woodgrain, printed pattern, and metallic, colour range with satin, matt, textured, and embossed finish.
 - .1 Colour and finish: from manufacturer's complete range.
- .7 Laminated plastic backing sheet: Grade BK, Type HD not less than 0.5 mm thick or same thickness and colour as face laminate.
- .8 Thermofused Melamine: to NEMA LD3 Grade VGL.
 - .1 High wear resistant thermofused melamine: equal or exceed 400 cycles (Minimum standard for HPL abrasion test).
 - .2 Colour: from manufacturer's complete range.
- .9 Nails and staples: to CSA B111.
- .10 Wood screws: plain, type and size to suit application.
- .11 Splines: wood and metal.
- .12 Sealant: in accordance with Section 07 92 00 - Joint Sealants.
- .13 Laminated plastic adhesive:
 - .1 Adhesive: contact adhesive to CAN/CGSB-71.20.
 - .1 Maximum VOC limit 250 g/l.
 - .2 Adhesives urea-formaldehyde free.

2.2 MANUFACTURED UNITS

- .1 Casework:
 - .1 Fabricate caseworks to AWMAC custom quality grade.
 - .2 Furring, blocking, nailing strips, grounds, and rough bucks
 - .1 S2S is acceptable for concealed products.
 - .2 Board sizes: "standard" or better grade.
 - .3 Dimension sizes: "standard" light framing or better grade.

- .4 Urea-formaldehyde free.
- .3 Case bodies (ends, divisions and bottoms).
 - .1 Particleboard, grade, square edge, 19mm thick. Laminated with high pressure laminate on exposed ends and thermofused melamine on concealed interiors.
- .4 Backs:
 - .1 Particleboard, grade, square edge, 19mm thick. Laminated with high pressure laminate on exposed ends and thermofused melamine on concealed interiors.
- .5 Shelving:
 - .1 Particleboard, laminated with thermofused melamine, 19 mm thick.
 - .2 Edge banding: provide matching colour PVC, 3 mm thickness.
- .6 Toe Kick:
 - .1 Particleboard, 19 mm thick, laminated with high-pressure plastic laminate.
- .7 Colours:
 - .1 PL-2: Tafisa HPL M2004 'Winter Fun!'
 - .2 PL-3: Formica: ColorCore White CC0949 Matte58
- .2 Drawers:
 - .1 Fabricate drawers to AWMAC custom grade supplemented as follows:
 - .2 Sides and Backs.
 - .1 Thermofused melamine: 15 mm thick.
 - .3 Bottoms:
 - .1 Thermofused melamine: 15 mm thick.
 - .4 Fronts:
 - .1 Particleboard, 19 mm thick, laminated with high-pressure plastic laminate.
 - .1 Exposed finish: high-pressure plastic laminate
 - .2 Semi-exposed surface: plastic laminate.
 - .3 Edges: banded with 3 mm PVC edge, colour to match exposed faces.
 - .5 Colours:
 - .1 PL-2: Tafisa HPL M2004 'Winter Fun!'
- .3 Casework Doors:
 - .1 Fabricate doors to AWMAC custom grade supplemented as follows:
 - .2 Plywood, 19 mm thick, laminated with high-pressure plastic laminate.
 - .1 Exposed finish: high-pressure plastic laminate
 - .2 Semi-exposed surface: plastic laminate.
 - .3 Edges: banded with 3 mm PVC edge, colour to match exposed faces.
 - .3 Colours:
 - .1 PL-2: Tafisa HPL M2004 'Winter Fun!'
 - .2 PL-3: Formica: ColorCore White CC0949 Matte58

- .4 Countertops
 - .1 High-pressure plastic laminate: edged with plastic laminate unless indicated otherwise on details. Backsplash and sidesplash to match countertop unless indicated otherwise on drawings.
 - .2 Colours:
 - .1 PL-1: Arborite P-344-IM 'Inukshuk Grey'

2.3 MANUFACTURED FRAMES

- .1 Solid wood and profile as shown in drawings.
 - .1 Grade: Custom.
 - .2 Frames to be solid wood, birch species.
 - .3 Construction: as detailed.
- .2 Accessories:
 - .1 Reglet Z-reveal drywall trim, clear anodized aluminum.

2.4 FABRICATION

- .1 Assemble cabinets in flush overlay style.
- .2 Set nails and countersink screws apply plain wood filler to indentations, sand smooth and leave ready to receive finish.
- .3 Shop install cabinet hardware for doors, shelves and drawers. Recess shelf standards unless noted otherwise.
- .4 Shelving to cabinetwork to be adjustable unless otherwise noted.
- .5 Provide cutouts for plumbing fixtures, inserts, appliances, outlet boxes and other fixtures.
- .6 Shop assemble work for delivery to site in size easily handled and to ensure passage through building openings.
- .7 Obtain governing dimensions before fabricating items which are to accommodate or abut appliances, equipment, and other materials.
- .8 Ensure adjacent parts of continuous laminate work match in colour and pattern.
- .9 Veneer laminated plastic to core material in accordance with adhesive manufacturer's instructions. Ensure core and laminate profiles coincide to provide continuous support and bond over entire surface. Use continuous lengths up to 2400 mm. Keep joints 600 mm from cutouts.
- .10 Use straight self-edging laminate strip for flatwork to cover exposed edge of core material. Chamfer exposed edges uniformly at approximately 20 degrees. Do not mitre laminate edges.
- .11 Apply laminate backing sheet to reverse side of core of plastic laminate work.

2.5 **HARDWARE**

- .1 Hinges: European concealed hinges, 110 degree opening. Only screw fastened hardware will be accepted, no friction fit hardware will be accepted. Use plastic insertion dowels to receive screws of hinge baseplates.
 - .1 Acceptable manufacturers: Hettich, Blum, Hafele or Richelieu.
- .2 Drawer slides: full extension, bearing type, secured to sides of drawers and to gable, 45kg static load capacity, integral stop, self-closing
 - .1 Acceptable product: Accuride 3832, or Knappe & Vogt 8400.
- .3 Shelf standards: Safety shelf support pin for 5mm diameter holes, steel pin with mounded on clear plastic.
- .4 Pulls: to CSA B651; 170 x 40 mm pull, metal, brushed nickel finish; "D" style pull.
 - .1 Acceptable manufacturers: Hettich, Blum, Hafele or Richelieu.
- .5 Cabinet locks: Cam type cylinder lock. Satin nickel finish. Install where shown on details. Key locks that are in the same room alike.
- .6 Clear plastic silencers to be installed on all cabinet doors.

Part 3 **Execution**

3.1 **INSTALLATION**

- .1 Do architectural woodwork to Quality Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC), except where specified otherwise.
- .2 Install prefinished millwork at locations shown on drawings. Position accurately, level, plumb straight.
- .3 Fasten and anchor millwork securely. Provide heavy duty fixture attachments for wall mounted cabinets.
- .4 Use draw bolts in countertop joints.
- .5 Scribe and cut as required to fit abutting walls and to fit properly into recesses and to accommodate piping, columns, fixtures, outlets or other projecting, intersecting or penetrating objects.
- .6 At junction of plastic laminate counter back splash and adjacent wall finish, apply small bead of sealant.
- .7 Apply water resistant building paper over wood framing members in contact with masonry or cementitious construction.
- .8 Fit hardware accurately and securely in accordance with manufacturer's written instructions.

- .9 Site apply laminated plastic to units as indicated. Adhere laminated plastic over entire surface. Make corners with hairline joints. Use full sized laminate sheets. Make joints only where indicated or approved. Slightly bevel arises.
- .10 For site application, offset joints in plastic laminate facing from joints in core.
- .11 Coordinate installation of continuous wood blocking behind adjustable shelving units. Attach standards to studs at a maximum spacing of 400mm on centre. Adjustable shelf shall extend a maximum of 100mm beyond the final standard, install standard as required.

3.2 CLEANING

- .1 Proceed in accordance with Section 01 74 00 - Cleaning.
- .2 Clean millwork and cabinet work, inside cupboards and drawers and outside surfaces.
- .3 Remove excess glue from surfaces.

3.3 PROTECTION

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

END OF SECTION