

Part 1 General

1.1 REFERENCES

- .1 American National Standards Institute (ANSI)
 - .1 ANSI/NPA A208.1-[1999], Particleboard, Mat Formed Wood.
- .2 American Society for Testing and Materials International (ASTM)
 - .1 ASTM A653/A653M-[05a], Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanealed) by the Hot-Dip Process.
 - .2 ASTM C36/C36M-[03], Standard Specification for Gypsum Wallboard.
 - .3 ASTM C578-[05a], Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
 - .4 ASTM C1289-[05a], Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
 - .5 ASTM D1761-[88(2000)], Standard Test Methods for Mechanical Fasteners in Wood.
 - .6 ASTM D5055-[05], Standard Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists.
 - .7 ASTM D5456-[05a], Standard Specification for Evaluation of Structural Composite Lumber Products.
- .3 Canada Green Building Council (CaGBC)
 - .1 LEED Canada-NC Version 1.0-[2004], LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.
- .4 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-11.3-[M87], Hardboard.
 - .2 CAN/CGSB-51.32-[M77], Sheathing, Membrane, Breather Type.
 - .3 CAN/CGSB-51.34-[M86], Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
 - .4 CAN/CGSB-71.26-[M88], Adhesive for Field-Gluing Plywood to Lumber Framing for Floor Systems.
- .5 Canadian Standards Association (CSA International)
 - .1 CSA A123.2-[03], Asphalt Coated Roofing Sheets.
 - .2 CAN/CSA-A247-[M86], Insulating Fiberboard.
 - .3 CSA B111-[1974(R2003)], Wire Nails, Spikes and Staples.
 - .4 CAN/CSA-G164-[M92(R2003)], Hot Dip Galvanizing of Irregularly Shaped Articles.
 - .5 CSA O112 Series-[M1977(R2006)], CSA Standards for Wood Adhesives.
 - .6 CSA O121-[M1978(R2003)], Douglas Fir Plywood.
 - .7 CSA O122-[06], Structural Glued-Laminated Timber.
 - .8 CSA O141-[05], Softwood Lumber.
 - .9 CSA O151-[04], Canadian Softwood Plywood.
 - .10 CSA O153-[M1980(R2003)], Poplar Plywood.

- .11 CAN/CSA-O325.0-[92(R2003)], Construction Sheathing.
- .12 CSA O437 Series-[93(R2006)], Standards on OSB and Waferboard.
- .6 Forest Stewardship Council (FSC)
 - .1 FSC-STD-01-001-[2004], FSC Principle and Criteria for Forest Stewardship.
 - .2 FSC-STD-20-002-[2004], Structure and Content of Forest Stewardship Standards V2-1
 - .3 FSC Accredited Certified Bodies.
- .7 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber [2005].
- .8 South Coast Air Quality Management District (SCAQMD), California State (SCAQMD)
 - .1 SCAQMD Rule 1113-[04], Architectural Coatings.
 - .2 SCAQMD Rule 1168-[05], Adhesives and Sealants Applications.
- .9 Truss Design and Procedures for Light Metal Connected Wood Trusses, Truss Plate Institute of Canada.
- .10 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S706-[97], Mineral Fibre Thermal Insulation for Buildings.

1.2 SUBMITTALS

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

1.3 QUALITY ASSURANCE

- .1 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Plywood, in accordance with CSA standards.

Part 2 Products

2.1 FRAMING AND STRUCTURAL MATERIALS

- .1 Lumber: unless specified otherwise, 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 Forestry Stewardship Council (FSC) certified.
- .2 Framing and board lumber: in accordance with NBC.
- .3 Furring, blocking, nailing strips, grounds, rough bucks, cants, curbs, fascia backing and sleepers:
 - .1 S2S is acceptable for all work.
 - .2 Board sizes: "Standard" or better grade.
 - .3 Dimension sizes: "Standard" light framing or better grade.

- .4 Post and timbers sizes: "Standard" or better grade.

2.2 PANEL MATERIALS

- .1 Indoor Environmental Quality
 - .1 SCAQMD Rule 1168, Adhesives and Sealants Applications.
- .2 Plywood, OSB and wood based composite panels: to CAN/CSA-O325.0.
 - .1 Forest Stewardship Council (FSC) certified.
- .3 Douglas fir plywood (DFP): to CSA O121, standard construction.
 - .1 Forest Stewardship Council (FSC) certified.
- .4 Canadian softwood plywood (CSP): to CSA O151, standard construction.
 - .1 Forest Stewardship Council (FSC) certified.
- .5 Poplar plywood (PP): to CSA O153, standard construction.
 - .1 Forest Stewardship Council (FSC) certified.
- .6 Interior mat-formed wood particleboard: to ANSI 208.1.
 - .1 Forest Stewardship Council (FSC) certified.
- .7 Mat-formed structural panelboards (OSB wafer): to CAN3-O437.0.
 - .1 Forest Stewardship Council (FSC) certified.
- .8 Insulating fiberboard sheathing: to CAN/CSA-A247.
- .9 Glass fibre board sheathing: non-structural, rigid, faced, fiberglass, insulating exterior sheathing board.
- .10 Isocyanurate sheathing: to ASTM C1289, faced.
- .11 Expanded polystyrene sheathing: to ASTM C578.
- .12 Gypsum sheathing: to ASTM C36/C36M.
- .13 Electrical equipment mounting boards:
 - .1 ¾" Plywood G1S, DFP or CSP grade, square edge.

2.3 ACCESSORIES

- .1 Exterior wall sheathing paper: to CAN/CGSB-51.32 single ply, spunbonded olefin type coated impregnated as indicated.
- .2 Polyethylene film: to Section 07 26 00 – Vapour Retarders.
- .3 Sill Gasket Air seal: closed cell polyurethane or polyethylene.
- .4 Sealants: Section 07 92 00 – Joint Sealing.
- .5 General purpose adhesive: to CSA O112 Series.
- .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, explosive actuated fastening devices, recommended for purpose by manufacturer.
- .9 Joist hangers: minimum 1 mm thick sheet steel, galvanized ZF001 coating designation.
- .10 Roof sheathing H-Clips: formed "H" shape, thickness to suit panel material, type approved by Contract Administrator.

2.4 FASTENER FINISHES

- .1 Galvanizing: to CAN/CSA-G164, use galvanized fasteners for exterior work, pressure-preservative, fire-retardant, treated lumber.

Part 3 Execution

3.1 INSTALLATION

- .1 Comply with requirements of NBC 2010 Part 3 supplemented by following paragraphs.
- .2 Install members true to line, levels and elevations, square and plumb.
- .3 Construct continuous members from pieces of longest practical length.
- .4 Install spanning members with "crown-edge" up.
- .5 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.
- .6 Install wall sheathing in accordance with manufacturer's printed instructions.
- .7 Install roof sheathing in accordance with requirements of NBC.
- .8 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.
- .9 Install furring to support siding applied vertically where there is no blocking and where sheathing is not suitable for direct nailing.
 - .1 Align and plumb faces of furring and blocking to tolerance of 1:600.
- .10 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.
- .11 Install wood cants, fascia backing, nailers, curbs and other wood supports as required and secure using galvanized fasteners.
- .12 Use dust collectors and high quality respirator masks when cutting or sanding wood panels.

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 Use nailing disks for soft sheathing as recommended by sheathing manufacturer.

3.3 SCHEDULES

- .1 Roof sheathing:
 - .1 Plywood, DFP or CSP sheathing grade (SHG) T&G edge, 16 mm thick, unless otherwise indicated.
- .2 Electrical equipment mounting boards:
 - .1 Plywood, DFP or CSP grade, (G1S) select square edge 16 mm thick, unless otherwise indicated.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 American National Standards Institute:
 - .1 ANSI A118.9: Specification for Cementitious Backer Units.
- .2 American Society for Testing and Materials International (ASTM)
 - .1 ASTM C 954: Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 inch to 0.110 inch in Thickness.
 - .2 ASTM C 1002: Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
 - .3 ASTM C 1280: Standard Specification for Application of Gypsum Sheathing.
 - .4 ASTM C 1325: Standard Specification for Non-Asbestos Fiber-Mat Reinforced Cement Interior Substrate Sheets.
 - .5 ASTM D 226: Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
 - .6 ASTM E 84: Standard Test Method for Surface Burning Characteristics of Building Materials.
 - .7 ASTM E119: Test Method for Fire Tests of Building Construction and Materials.
 - .8 ASTM E 1677: Standard Specification for an Air Retarder (AR) Material or System for Low-Rise Framed Building Walls.

1.2 SUBMITTALS

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

1.3 QUALITY ASSURANCE

- .1 Fire Resistance Rated Assembly Characteristics: Provide materials and construction identical to those tested in accordance to ASTM E 119 by an independent testing and inspection agency acceptable to authorities having jurisdiction.
 - .1 Fire Resistance Ratings: Indicated by design designations from UL Fire Resistance Directory.

1.4 DELIVERY, STORAGE, AND HANDLING

- .1 All materials shall be delivered in their original unopened packages and stored in an enclosed shelter providing protection from damage and exposure to the elements. WARNING: Store all Cement Board flat. Panels are heavy and can fall over, causing serious injury or death. Do not move unless authorized.

Part 2 Products

2.1 WALL SHEATHING

- .1 Cementitious Fiber-Mat Reinforced Sheathing: ASTM C 1325, ANSI A118.9, cementitious backer.

- .1 Product: Subject to compliance with requirements, provide DUROCK Brand Cement Board by United States Gypsum Company.
- .2 Type and Thickness: ½" (12 mm) thick.
- .3 Size: 48" by 96" (610 mm x 1220 mm).

2.2 FASTENERS

- .1 General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and application.
- .2 Nails: 11-gauge hot-dipped galvanized roofing nails, sized to suit.
- .3 Wood Screws: DUROCK Brand Wood or USG Sheathing WF screws, sized to suit, with corrosion-resistant coating.
- .4 Screws for Fastening Gypsum Sheathing to Cold-Formed Metal Framing: DUROCK Brand Steel or USG Sheathing SF steel drill screws, sized to suit, with corrosion-resistant coating.
 - .1 For steel framing less than 0.0329 inch thick, attach sheathing to comply with ASTM C 1002.
 - .2 For steel framing from 0.033 to 0.112 inch thick, attach sheathing to comply with ASTM C 954.

2.3 MISCELLANEOUS MATERIALS

- .1 Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, rubberized-asphalt compound, bonded to a high-density, cross-laminated polyethylene film.
- .2 Primer for Flexible Flashing: Product recommended by manufacturer of flexible flashing for substrate.

2.4 SUBSTITUTIONS:

- .1 Refer to Section 01 33 00 – Submittal Procedure, subsection 2.2.

Part 3 Execution

3.1 INSTALLATION, GENERAL

- .1 Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- .2 Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction, unless otherwise indicated.
- .3 Coordinate wall sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.
- .4 Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.

3.2 GYPSUM SHEATHING INSTALLATION

- .1 Comply with ASTM C 1280, GA-253 and manufacturer's written instructions.
 - .1 Fasten sheathing to wood framing with screws.
 - .2 Fasten sheathing to cold-formed metal framing with screws.
 - .3 Install boards with a 3/8-inch gap where non-load-bearing construction abuts structural elements.
 - .4 Install boards with a 1/4-inch gap where they abut masonry or similar materials that might retain moisture, to prevent wicking.
- .2 Apply fasteners so heads bear tightly against face of sheathing boards but do not cut into facing.
- .3 Horizontal Installation: Abut ends of boards over centers of studs, and stagger end joints of adjacent boards not less than one stud spacing. Attach boards at perimeter and within field of board to each stud.
 - .1 Space fasteners approximately 8 inches o.c. and set back a minimum of 3/8 inch from edges and ends of boards.
 - .2 For sheathing under stucco cladding, boards may be initially tacked in place with screws if overlying self-furring metal lath is screw-attached through sheathing to studs immediately after sheathing is installed.
- .4 Vertical Installation: Install board vertical edges centered over studs. Abut ends and edges of each board with those of adjacent boards. Attach boards at perimeter and within field of board to each stud.
 - .1 Space fasteners approximately 8 inches o.c. and set back a minimum of 3/8 inch from edges and ends of boards.
 - .2 For sheathing under stucco cladding, boards may be initially tacked in place with screws if overlying self-furring metal lath is screw-attached through sheathing to studs immediately after sheathing is installed.

3.3 FLEXIBLE FLASHING INSTALLATION

- .1 Apply flexible flashing where indicated to comply with manufacturers written instructions.
 - .1 Prime substrates as recommended by flashing manufacturer.
 - .2 Lap seams and junctures with other materials at least 4 inches, except that at flashing flanges of other construction, laps need not exceed flange width.
 - .3 Lap flashing over weather-resistant building paper at bottom and sides of openings.
 - .4 Lap weather-resistant building paper over flashing at heads of openings.
 - .5 After flashing has been applied, roll surfaces with a hard rubber or metal roller to ensure that flashing is completely adhered to substrates.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 American National Standards Institute (ANSI)
 - .1 ANSI A208.1-[99], Particleboard.
 - .2 ANSI A208.2-[02], Medium Density Fibreboard (MDF).
 - .3 ANSI/HPVA HP-1-[2004], Standard for Hardwood and Decorative Plywood.
- .2 American Society for Testing and Materials International (ASTM)
 - .1 ASTM E1333-[96(2002)], Standard Test Method for Determining Formaldehyde Concentrations in Air and Emissions Rates from Wood Products Using a Large Chamber.
- .3 Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI)
 - .1 Architectural Woodwork Quality Standards Illustrated, 8th edition, Version 1.0 [2003].
- .4 Canada Green Building Council (CaGBC)
 - .1 LEED Canada-NC Version 1.0-[2004], LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.
- .5 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-11.3-[M87], Hardboard.
- .6 Canadian Plywood Association (CanPly)
 - .1 The Plywood Handbook [2005].
- .7 Canadian Standards Association (CSA International)
 - .1 CSA B111-[74(R2003)], Wire Nails, Spikes and Staples.
 - .2 CAN/CSA-G164-[M92(R2003)], Hot Dip Galvanizing of Irregularly Shaped Articles.
 - .3 CSA O121-[M89(R2003)], Douglas Fir Plywood.
 - .4 CAN/CSA O141-[91(R1999)], Softwood Lumber.
 - .5 CSA O151-[04], Canadian Softwood Plywood.
 - .6 CSA O153-[M1980(R2003)], Poplar Plywood.
 - .7 CSA Z760-[94], Life Cycle Assessment.
- .8 Forest Stewardship Council (FSC)
 - .1 FSC-STD-01-001-[2004], FSC Principle and Criteria for Forest Stewardship.
- .9 National Hardwood Lumber Association (NHLA)
 - .1 Rules for the Measurement and Inspection of Hardwood and Cypress [1998].
- .10 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber [2005].

- .11 South Coast Air Quality Management District (SCAQMD), California State (SCAQMD)
 - .1 SCAQMD Rule 1113-[04], Architectural Coatings.
 - .2 SCAQMD Rule 1168-[05], Adhesives and Sealants Applications.
- .12 Underwriters Laboratories of Canada (ULC)
 - .1 CAN4-S104-[80(R1985)], Standard Method for Fire Tests of Door Assemblies.
 - .2 CAN4-S105-[85(R1992)], Standard Specification for Fire Door Frames, meeting the Performance Required by CAN4-S104.

1.2 SUBMITTALS

- .1 Shop Drawings Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
 - .1 Indicate details of construction, profiles, jointing, fastening and other related details.
 - .2 Indicate materials, thickness, finishes and hardware.

1.3 QUALITY ASSURANCE

- .1 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Plywood, in accordance with CSA standards and AWMAC custom grade.
- .3 Wood fire rated frames and panels: listed and labelled by an organization accredited by Standards Council of Canada in conformance with CAN4-S104 and CAN4-S105 for ratings specified or indicated.

1.4 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, handle, store and protect materials in accordance with Section 01 61 00 - Common Product Requirements
 - .1 Protect materials against dampness during and after delivery.
 - .2 Store materials in ventilated areas, protected from extreme changes of temperature or humidity.

Part 2 Products

2.1 LUMBER MATERIAL

- .1 Softwood lumber: unless specified otherwise, S4S in accordance with following standards:
 - .1 CAN/CSA-O141.
 - .2 NLGA Standard Grading Rules for Canadian Lumber.
 - .3 AWMAC premium grade, moisture content as specified.
 - .4 Forest Stewardship Council (FSC) certified.
- .2 Machine stress-rated lumber is acceptable.
- .3 Hardwood lumber: in accordance with following standards:
 - .1 National Hardwood Lumber Association (NHLA).

- .2 AWMAC custom grade, moisture content as specified.
- .3 Forest Stewardship Council (FSC) certified.

2.2 PANEL MATERIAL

- .1 Douglas fir plywood (DFP): to CSA O121, standard construction.
 - .1 Forestry Stewardship Council (FSC) certified.
 - .2 Urea-formaldehyde free.
- .2 Canadian softwood plywood (CSP): to CSA O151, standard construction.
 - .1 Forestry Stewardship Council (FSC) certified.
 - .2 Urea-formaldehyde free.
- .3 Hardwood plywood: to ANSI/HPVA HP-1.
 - .1 Forestry Stewardship Council (FSC) certified.
 - .2 Urea-formaldehyde free.
- .4 Poplar plywood (PP): to CSA O153, standard construction.
 - .1 Forestry Stewardship Council (FSC) certified.
 - .2 Urea-formaldehyde free.
- .5 Particleboard: to ANSI A208.1.
 - .1 Forestry Stewardship Council (FSC) certified.
 - .2 Urea-formaldehyde free.
- .6 Hardboard: to CAN/CGSB-11.3.
 - .1 Forestry Stewardship Council (FSC) certified.
 - .2 Urea-formaldehyde free.
- .7 Medium density fibreboard (MDF): to ANSI A208.2, density 640-800 kg/m³.
 - .1 Forestry Stewardship Council (FSC) certified.
 - .2 Urea-formaldehyde free.
 - .1 Medium density fibreboard
 - .1 Forestry Stewardship Council (FSC) certified.
 - .2 Urea-formaldehyde free.
- .8 Low density fibreboard: to CSA-A247M.
 - .1 Forestry Stewardship Council (FSC) certified.
 - .2 Urea-formaldehyde free.
- .9 Decorative overlaid composite panels.
 - .1 Decorative overlay, heat and pressure laminated with suitable resin to 12.7 mm thick particleboard MDF 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 Edge finishing: matching melamine and polyester overlay edge strip with self-adhesive.

2.3 ACCESSORIES

- .1 Nails and staples: to CSA B111; galvanized to CAN/CSA-G164 for exterior work, interior humid areas and for treated lumber; plain finish elsewhere.
- .2 Wood screws: electroplated, type and size to suit application.
- .3 Splines: wood, plastic, metal.
- .4 Adhesive: recommended by manufacturer.
 - .1 Adhesives: maximum VOC limit 30g/L.

Part 3 Execution

3.1 INSTALLATION

- .1 Do finish carpentry to Quality Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC), except where specified otherwise.
- .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.

3.2 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° scarf type joint.
 - .4 Install door and window trim in single lengths without splicing.
- .3 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.
- .4 Shelving.
 - .1 Install shelving on shelf brackets, where indicated.
- .5 Hardware.
 - .1 Install cabinet and miscellaneous hardware as indicated.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 American National Standards Institute (ANSI)
 - .1 ANSI/NPA A208.1, Particle board.
 - .2 ANSI A208.2, Medium Density Fiberboard (MDF) for Interior Applications.
 - .3 ANSI/HPVA HP-1, Standard for Hardwood and Decorative Plywood.
- .2 Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI)
 - .1 Architectural Woodwork Quality Standards Illustrated.
- .3 American Society for Testing and Materials (ASTM)
 - .1 ASTM E1333, Standard Test Method for Determining Formaldehyde Concentrations in Air and Emission Rates From Wood Products Using a Large Chamber.
- .4 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-71.20, Adhesive, Contact, Brushable.
- .5 Canadian Standards Association (CSA)
 - .1 CSA B111, Wire Nails, Spikes and Staples.
 - .2 CSA O112.4, Standards for Wood Adhesives.
 - .3 CSA O121, Douglas Fir Plywood.
 - .4 CSA O141, Softwood Lumber.
 - .5 CSA O151, Canadian Softwood Plywood.
 - .6 CSA O153, Poplar Plywood.
- .6 National Hardwood Lumber Association (NHLA)
 - .1 Rules for the Measurement and Inspection of Hardwood and Cypress.
- .7 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber.

1.2 QUALITY ASSURANCE

- .1 Provide Certificate of Quality Compliance upon completion of Fabrication, in accordance with Architectural Woodwork Manufacturer's Association of Canada (AWMAC) quality standards.
- .2 Provide Certificate of Quality Compliance upon satisfactory completion of installation.

1.3 SUBMITTALS

- .1 In accordance with Section 01 33 00 - Submittal Procedures.

- .2 Indicate details of construction, profiles, jointing, fastening and other related details.
Scales:
 - .1 profiles full size, details 1/2 full size.
- .3 Indicate all materials, thicknesses, finishes and hardware.
- .4 Indicate locations of service outlets in casework, typical and special installation conditions, and connections, attachments, anchorage and location of exposed fastenings.
- .5 Submit duplicate colour samples of laminated plastic for colour selection.
- .6 Submit duplicate samples of laminated plastic joints, edging, cutouts, and postformed profiles.

1.4 SHOP DRAWINGS

- .1 Submit shop drawings
- .2 Indicate details of construction, profiles, jointing, fastening and other related details.
 - .1 Scales: profiles, details 1/2 full size.
- .3 Indicate locations of service outlets in casework, typical and special installation conditions, and connections, attachments, anchorage and location of exposed fastenings.

1.5 QUALITY ASSURANCE

- .1 Work shall be in accordance with the Grade or Grades specified of the *Architectural Woodwork Standards*.
- .2 Qualification:
 - .1 Firm (woodwork manufacturer) with no less than 5 years of production experience similar to a specific project, whose qualifications indicate the ability to comply with the requirements of this Section.
 - .2 The woodwork manufacturer must have at least one project in the past 5 years where the value of the woodwork was within 20 percent of the cost of woodwork for this Project.

1.6 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, handle, store and protect materials of this section in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Deliver materials only when the project is ready for installation and the Contractor has provided a clean storage area.
 - .1 Delivery of architectural millwork shall be made only when the area of operation is enclosed, all plaster and concrete work is dry and the area broom clean.
 - .2 Maintain indoor temperature and humidity within the range recommended by the Architectural Woodwork Standards for the location of the project.

1.7 SCHEDULING

- .1 Coordinate fabrication, delivery, and installation with the Contractor and other applicable trades.

1.8 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 00 – Cleaning and Waste Management.

Part 2 Products

2.1 MATERIALS

- .1 Softwood lumber: unless specified otherwise, S4S, moisture content 19 % or less in accordance with following standards:
 - .1 CAN/CSA-O141.
 - .2 NLGA Standard Grading Rules for Canadian Lumber.
 - .3 AWMAC premium grade, moisture content as specified.
- .2 Machine stress-rated lumber is acceptable for all purposes.
- .3 Hardwood lumber: moisture content 10% or less in accordance with following standards:
 - .1 National Hardwood Lumber Association (NHLA).
 - .2 AWMAC premium grade, moisture content as specified.
- .4 Douglas fir plywood (DFP): to CSA O121, standard construction.
 - .1 Urea-formaldehyde free.
- .5 Canadian softwood plywood (CSP): to CSA O151, standard construction.
 - .1 Urea-formaldehyde free.
- .6 Hardwood plywood: to ANSI/HPVA HP-1.
 - .1 Urea-formaldehyde free.
- .7 Poplar plywood (PP): to CSA O153, standard construction.
 - .1 Urea-formaldehyde free.
- .8 Birch plywood: to AWMAC Natural.
 - .1 Urea-formaldehyde free.
- .9 Hardboard: to CAN/CGSB – 11.3.
 - .1 Urea-formaldehyde free.
- .10 Medium density fibreboard (MDF): to ANSI A208.2, density 769 kg/m³
 - .1 Urea-formaldehyde free.
 - .2 Must meet the performance requirements of ANSI A208.2

- .11 Laminated plastic: to CAN3-A172, Section 06 47 00 – Plastic Laminate Finishes.
- .12 Thermofused Melamine: to NEMA LD3 Grade VGL.
 - .1 High wear resistant thermofused melamine: equal or exceed 400 cycles (Minimum standard for HPL abrasion test).
- .13 Nails and staples: to CSA B111.
- .14 Wood screws: steel plain, type and size to suit application.
- .15 Splines: wood.
- .16 Sealant: Section 07 92 00 – Joint Sealing.
- .17 Glazing: provide glazing to the requirements of Section 08 80 00 – Glazing.

2.2 MANUFACTURED UNITS

- .1 Kitchen Casework: Fabricate caseworks to AWMAC custom quality grade.
 - .1 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.
 - .2 Casework bodies (ends, divisions, and bottoms):
 - .1 Melamine: 19 mm thickness; colour: To be determined by Contract Administrator.
 - .2 Edge banding: Melamine all exposed edges.
 - .3 Backs:
 - .1 Hardboard, 6 mm thickness; colour: To be determined by Contract Administrator.
 - .4 Base:
 - .1 Fir plywood marine base, 19 mm thickness.
- .2 Kitchen Casework Drawers: Fabricate drawers to AWMAC custom grade supplemented as follows:
 - .1 Sides and Backs and Bottoms:
 - .1 Melamine: 19 mm thickness; colour: To be determined by Contract Administrator.
 - .2 Edge banding: Melamine all exposed edges.
 - .2 Fronts:
 - .1 Melamine: Melamine: 19 mm thickness; colour: To be determined by Contract Administrator.
 - .2 Edge banding: Melamine all exposed edges.
- .3 Kitchen Casework Doors: Fabricate doors to AWMAC custom grade supplemented as follows:
 - .1 Melamine: 19 mm thickness; colour: To be determined by Contract Administrator.

- .2 Edge banding: Melamine all exposed edges. 3mm edging on doors where indicated,
- .4 Kitchen Casework Shelving: Fabricate shelving to AWMAC custom grade supplemented as follows:
 - .1 Melamine: 19 mm thickness for shelves up to 32" long; colour: To be determined by Contract Administrator.
 - .2 Melamine: 25 mm thickness for shelves more than 32" long; colour: To be determined by Contract Administrator.
 - .3 Edge banding: Melamine all exposed edges.
- .5 Closet Shelving: Fabricate shelving to AWMAC custom grade supplemented as follows:
 - .1 Melamine: 19 mm thickness for shelves up to 32" long; colour: To be determined by Contract Administrator.
 - .2 Melamine: 25 mm thickness for shelves more than 32" long; colour: To be determined by Contract Administrator.
 - .3 Edge banding: Melamine all exposed edges.
- .6 Gym Storage Casework: Fabricate caseworks to AWMAC custom grade supplemented as follows:
 - .1 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.
 - .2 Casework bodies (ends, divisions, and bottoms):
 - .1 G2S plywood: 19 mm thickness; clear stain.
 - .2 Edge banding: 25 mm deep hardwood edge, thickness to suit; Clear stain.
 - .3 Backs:
 - .1 Hardboard, 6 mm thickness; Clear stain
 - .4 Base:
 - .1 Fir plywood marine base, 19 mm thickness.
- .7 Gym Storage Shelving: Fabricate shelving to AWMAC custom grade supplemented as follows:
 - .1 G2S plywood: 19 mm thickness for shelves up to 32" long; clear stain.
 - .2 G2S plywood: 25 mm thickness for shelves up to 32" long; clear stain.
 - .2 Edge banding: 25 mm deep hardwood edge, thickness to suit; Clear stain.
- .8 Benches:
 - .1 89 mm laminated fir top, clear stain finish.
- .9 Hardware:
 - .1 Door and Drawer rolls, hinges, slides, locks, pulls, knobs shelf rest, standards, rods track shall be in accordance with CAN/CGSB-69.25-M90/ANSI/BHMA A156.9 and Section 08 70 05 – Cabinet and Miscellaneous Hardware.

2.6 FABRICATION

- .1 .Set nails and countersink screws apply wood filler to indentations, sand smooth and leave ready to receive finish.
- .2 Shop install cabinet hardware for doors, shelves and drawers. Recess shelf standards unless noted otherwise.
- .3 Shelving to cabinetwork to be adjustable unless otherwise noted.
- .4 Provide cutouts for plumbing fixtures, inserts, appliances, outlet boxes and other fixtures.
- .5 Shop assemble work for delivery to site in size easily handled and to ensure passage through building openings.
- .6 Obtain governing dimensions before fabricating items which are to accommodate or abut appliances, equipment and other materials.
- .7 Ensure adjacent parts of continuous laminate work match in colour and pattern..
- .8 Comply with NEMA LD 3, Annex A.
- .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 sink cutouts.
- .10 Form shaped profiles and bends as indicated, using post forming grade laminate to laminate manufacturer's instructions.
- .11 Use straight self-edging laminate strip for flatwork to cover exposed edge of core material. Chamfer exposed edges uniformly at approximately 20 degrees. Do not mitre laminate edges.
- .12 Apply laminate backing sheet to reverse side of core of plastic laminate work.
- .13 Apply laminated plastic liner sheet to interior of cabinetry where indicated.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify the adequacy and proper location of any required backing or support framing.
- .2 Verify that mechanical, electrical, plumbing, and other building components affecting work in this Section are in place

3.2 INSTALLATION

- .1 Do architectural woodwork to Quality Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC), except where specified otherwise.
 - .1 Installation shall conform to the AWS Grade of the items being installed.
- .2 Install prefinished millwork at locations shown on drawings. Position accurately and secure in place, level, plumb and square.
- .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 Apply water resistant building paper over wood framing members in contact with masonry or cementitious construction.
- .7 Fit hardware accurately and securely in accordance with manufacturer's written instructions.

3.3 INSTALLATION LAMINATES

- .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 oc, 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.

3.4 ADJUSTING & TOUCH UP

- .1 Before completion of the installation, the installer shall adjust all moving and operating parts to function smoothly and correctly.
- .2 All nicks, chips, and scratches in the finish shall be filled and retouched. Damaged items that cannot be repaired shall be replaced.

3.5 CLEANING

- .1 Clean millwork and cabinet work inside cupboards and drawers, and outside surfaces.

3.6 PROTECTION

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

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 ISSFA-2, "Classification And Standards Publication of Solid Surfacing Material".
- .2 ANSI Z124-3 for vanities and Z124-6 for kitchen sinks.
- .3 NSF Standard 51 for use in both splash and food service areas.
- .4 Canadian Standards Association (CSA).
- .5 ASTM G21 "Fungal Resistance", Method [A] [B], no growth.
- .6 ASTM G22 "Bacterial Resistance", no growth.
- .7 Stain Resistance, ANSI Z124-6-5.2 1997.

1.2 DESIGN REQUIREMENTS

- .1 Design Load: Deflection limited to 1/360.
- .2 Design items with sufficient strength for handling stresses.

1.3 SUMMARY

- .1 This section includes the following horizontal and trim solid surface product types:
 - .1 Countertops as indicated, including trim and material needed for a complete installation.

1.4 DEFINITION

- .1 Solid surface is defined as nonporous, homogeneous material maintaining the same composition throughout the part with a composition of acrylic polymer, aluminum trihydrate filler and pigment.

1.5 SUBMITTALS

- .1 In accordance with 01 33 00 – Submittal Procedures
- .2 Shop Drawings: Indicate design parameters, adjacent construction, materials, dimensions, thickness, fabrication details, tolerances, jointing methods, method of support, anchorages, integration with plumbing fixtures and connections, and colors.
- .3 Samples: Submit two, 2 inch by 2 inch (51mm x 51mm) samples representative of colors, patterns, textures, finishes and edge treatments. Approved samples will be retained as a standard for the work.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Protect against dampness and damage during and after delivery.
- .2 Store in ventilated areas, protected from extreme changes of temperature or humidity.

1.7 QUALITY ASSURANCE

- .1 Fabricator/Installer Qualifications: Company specializing in fabricating and installing solid surfacing fabrications similar in complexity to those required in this project, including specific requirements indicated.
- .2 Source Limitations: Obtain solid surfacing fabrications through one source.
- .3 Fire-Test-Response Characteristics: Provide solid surfacing fabrications with the following surface-burning characteristics as determined by testing identical products per ASTM E 84 by UL 723 or another testing and inspecting agency acceptable to authorities having jurisdiction:
 - .4 Flame-Spread Index: 25 or less.
 - .5 Smoke-Developed Index: 450 or less.

1.8 DELIVERY, STORAGE AND HANDLING

- .1 A. Deliver, store, handle, and protect materials in accordance with manufacturer's written instructions.
 - .1 Provide protective coverings of suitable material. Take special precautions at corners.

1.9 PROJECT CONDITIONS

- .1 Environmental Limitations: Do not deliver or install solid surfacing fabrications until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at design levels during the remainder of the construction period.
- .2 Field Measurements: Verify that field measurements are as indicated on Shop Drawings.

1.10 SEQUENCING

- .1 Sequence work to permit installation of adjacent affected construction, plumbing rough-in.
- .2 Coordinate sizes and locations of plumbing, cut-outs and other related Work specified in other Sections to ensure that interior architectural woodwork can be supported and installed as indicated.

1.11 WARRANTY

- .1 Warranty: Provide manufacturer's 10 year limited warranty covering replacement of the material except for non-covered conditions as follows:
 - .1 Minor stains, scratches, water spots, and burns which may be corrected by techniques covered in the manufacturer's Use and Care Guide.
 - .2 Failure of solid surfacing joint material.
 - .3 Failure due to structural failure of base cabinets or other solid surfacing substrate construction.
 - .4 Use for purposes other than indoor finish material.
 - .5 See manufacturer's warranty for complete details.

Part 2 Products

2.1 ACCEPTABLE MANUFACTURER AND PRODUCTS

- .1 Acceptable Manufacturer
 - .1 Dupont Canada, P.O. Box 2200, Streetsville, Mississauga, Ontario, Canada L5M 2H3, Tel: 1 (800) 387-2122
- .2 Acceptable Product
 - .1 Corian® solid surfaces by DuPont

2.2 SUBSTITUTIONS:

- .1 Refer to Section 01 33 00 – Submittal Procedure, subsection 2.2.

2.3 MATERIALS

- .1 Solid polymer components
 - .1 Cast, nonporous, filled polymer, not coated, laminated or of composite construction with through body colors meeting ANSI Z124.3 or ANSI Z124.6, having minimum physical and performance properties specified.
 - .2 Superficial damage to a depth of 0.010 inch (.25 mm) shall be repairable by sanding and/or polishing.
- .2 Thickness: ½" (13 mm)
- .3 Edge treatment: As indicated.
- .4 Backsplash: Coved

2.4 ACCESSORIES

- .1 Joint adhesive:
 - .1 Manufacturer's standard one- or two-part adhesive kit to create inconspicuous, nonporous joints.

- .2 Sealant:
 - .1 Manufacturer's standard mildew-resistant, UL-listed silicone sealant in colors matching components.
- .3 Sink/lavatory mounting hardware:
 - .1 Manufacturer's standard bowl clips, panel inserts and fasteners for attachment of undermount sinks/lavatories.
- .4 Conductive tape:
 - .1 Manufacturer's standard aluminum foil tape, with required thickness, for use with cutouts near heat sources.
- .5 Insulating felt tape:
 - .1 Manufacturer's standard for use with conductive tape in insulating solid surface material from adjacent heat source.

2.5 FABRICATION

- .1 Assemble work at shop following manufacturer's printed fabrication instructions and deliver to job ready for installation. Manufacture in largest practical pieces for handling and shipping without seams.
- .2 Shop assembly
 - .1 Fabricate components to greatest extent practical to sizes and shapes indicated, in accordance with approved shop drawings and manufacturer's printed instructions and technical bulletins.
 - .2 Form joints between components using manufacturer's standard joint adhesive without conspicuous joints.
 - .1 Reinforce with strip of solid polymer material, 2" wide.
 - .3 Provide factory cutouts for plumbing fittings and bath accessories as indicated on the drawings.
 - .4 Rout and finish component edges with clean, sharp returns.
 - .1 Rout cutouts, radii and contours to template.
 - .2 Smooth edges.
 - .3 Repair or reject defective and inaccurate work.

2.6 FINISHES

- .1 Color: Natural Grey
- .2 Finish:
 - .1 Provide surfaces with a uniform finish.
 - .2 Semigloss; gloss range of 20–50.

Part 3 Execution

3.1 EXAMINATION AND PREPARATION

- .1 Examine substrates and conditions, with fabricator present for compliance with requirements for installation tolerances and other conditions affecting performance of work.
- .2 Proceed with installation only after unsatisfactory conditions have been corrected.
- .3 Preparation: Take field measurements.

3.2 INSTALLATION

- .1 Install components plumb, level and rigid, scribed to adjacent finishes, in accordance with approved shop drawings and product data.
 - .1 Provide product in the largest pieces available.
 - .2 Form field joints using manufacturer's recommended adhesive, with joints inconspicuous in finished work.
 - .1 Exposed joints/seams shall not be allowed.
 - .3 Reinforce field joints with solid surface strips extending a minimum of 1 inch on either side of the seam with the strip being the same thickness as the top.
 - .4 Cut and finish component edges with clean, sharp returns.
 - .5 Rout radii and contours to template.
 - .6 Anchor securely to base cabinets or other supports.
 - .7 Align adjacent countertops and form seams to comply with manufacturer's written recommendations using adhesive in color to match countertop.
 - .8 Carefully dress joints smooth, remove surface scratches and clean entire surface.
 - .9 Install countertops with no more than 1/8-inch (3 mm) sag, bow or other variation from a straight line.
- .2 Coved backsplashes and applied sidesplashes:
 - .1 Install applied sidesplashes using manufacturer's standard color-matched silicone sealant.
 - .2 Adhere applied sidesplashes to countertops using manufacturer's standard color-matched silicone sealant.
- .3 Coved backsplashes and sidesplashes:
 - .1 Provide coved backsplashes and sidesplashes at all walls and adjacent millwork.
 - .2 Fabricate radius cove at intersection of counters with backsplashes to dimensions shown on the drawings.
 - .3 Adhere to countertops using manufacturer's standard color-matched Joint Adhesive.

3.3 REPAIR

- .1 Repair or replace damaged work which cannot be repaired to architect's satisfaction.

3.4 CLEANING AND PROTECTION

- .1 Cleaning:
 - .1 Clean and polish fabrications in accordance with manufacturer's instructions.
 - .2 Promptly remove excessive mastic and seam adhesive.
 - .3 Clean tops and splashes in accordance with manufacturer's recommendations.
- .2 Protection:
 - .1 Do not permit construction near unprotected surfaces.

3.5 REPAIR

- .1 Repair or replace damaged work which cannot be repaired to Contract Administrator's satisfaction.

END OF SECTION