

PART 1 - GENERAL

1.1 Description of Work

- .1 Furnish all materials, labour and facilities necessary to fabricate, finish and install all furnishings and cabinetry as indicated on the drawings and in specifications.
- .2 Cut and drill as indicated by Mechanical and Electrical Sections for their fixtures, pipes and boxes. Coordinate the installation and assembly of the cabinets to allow for the work of Mechanical and Electrical.
- .3 The supply, installation and connection of all service fixtures, light fixtures, switches and electrical and communication fixtures shall be by Mechanical and Electrical Sections, respectively.
- .4 All work shall be done in accordance with Architectural Woodwork Manufacturer's Association of Canada (AWMAC), Quality Standards for Architectural Woodwork - latest version.

1.2 Related Sections

- .1 Section 01 33 00 - Submittal Procedures.
 - .2 Section 01 35 73 - Procedures for Deconstruction of Structures.
 - .3 Section 01 61 00 - Common Product Requirements.
 - .4 Section 01 45 00 - Quality Control.
 - .5 Section 05 50 00 - Metal Fabrications.
 - .5 Section 06 65 00 - Solid Polymer Fabrications.
 - .6 Section 07 92 00 - Joint Sealers.
 - .7 Section 08 14 10 - Wood Doors.
 - .8 Section 08 70 05 - Cabinet and Miscellaneous Hardware.
 - .9 Section 09 91 99 - Painting for Minor Works.
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1.3 References

- .1 American National Standards Institute (ANSI)
 - .1 ANSI A208.1-1999, Particleboard.
 - .2 ANSI A208.2-1994, Medium Density Fiberboard (MDF).
- .2 Architectural Woodwork Manufacturers Association of Canada (AWMAC)
 - .1 Architectural Woodwork Quality Standards Illustrated, 2003 Edition, published by Architectural Woodwork Manufacturers Association of Canada (AWMAC) and the Architectural Woodwork Institute (AWI).
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-71.20-M88, Adhesive, Contact, Brushable.
- .4 Canadian Standards Association (CSA)
 - .1 CSA O112.4-M1977(R1999), Standards for Wood Adhesives.
 - .2 CSA O115-M1982(R2001), Hardwood and Decorative Plywood.
 - .3 CAN/CSA-O141-91 (R1999), Softwood Lumber.
 - .4 CSA O151-M1978 (R1998), Softwood Plywood.
 - .5 CSA Z760-94, Life Cycle Assessment.
- .5 National Hardwood Lumber Association (NHLA)
 - .1 Rules for the Measurement and Inspection of Hardwood and Cypress, January 1996.
- .6 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber 2000.
- .7 LEED-NC, Version 2.1, Environmental Quality Credit 4.4.

1.4 Shop Drawings

- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Indicate details of construction, profiles, jointing, fastening and other related details.
 - .1 Scales: profiles, details ½ full size.
 - .3 Indicate materials, thicknesses, finishes and hardware.
 - .4 Indicate locations of service outlets in casework, typical and special installation
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- .4 (Cont'd)
conditions, and connections, attachments,
anchorage and location of exposed fastenings.
- .5 Architectural woodwork shall be manufactured
and/or installed to the specified AWMAC
Quality Standards and shall be subject to an
inspection at the plant and/or site by an
appointed inspector, approved by the local
AWMAC Chapter. Inspection costs shall be
included in the tender price for this project.
Shop drawings may be submitted to the AWMAC
Chapter office for review before work
commences. Work that does not meet AWMAC
Quality Standards, as specified, shall be
replaced, reworked and/or refinished by the
architectural woodworker, at no additional
cost to the Departmental Representative. The
architectural woodworker shall furnish the
Departmental Representative with a two (2)
year maintenance bond to the full value of the
architectural woodwork sub-contract,
certifying that the architectural woodwork has
been manufactured and/or installed in
accordance with the standards incorporated in
the AWMAC Quality Standards Manual, (edition
in effect at time of tender). If the woodwork
contractor is an AWMAC member in good
standing, a two (2) year AWMAC Guarantee
Certificate will be issued instead of the
maintenance bond. The maintenance
bond/Guarantee shall cover replacing,
reworking and/or refinishing to make good
defects in architectural woodwork due to
faulty workmanship or defective materials
supplied by the architectural woodworker,
which appear during a two (2) year period
following the date of substantial completion.

1.5 Samples

- .1 Submit samples in accordance with Section
01 33 00 - Submittal Procedures.
- .2 Submit duplicate samples: sample size 300 x
300 mm or 300 mm long unless specified
otherwise.
- .3 Submit duplicate colour samples of laminated
plastic for colour selection.

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

1.7 Waste Management and Disposal

- .1 Separate and recycle waste materials in accordance with Section 01 35 73 - Procedures for Deconstruction of Structures Reduction Workplan, to the maximum extent economically possible.
 - .2 Separate wood waste in accordance with the Waste Management Plan and place in designated areas in the following categories for recycling: Solid wood/softwood/hardwood, composite wood, treated, painted, or contaminated wood.
 - .3 Separate wood waste in accordance with Waste Management Plan and place in designated areas in the following categories for re-use on site: sheet materials larger than 300, framing members larger than 600, multiple off cuts of sizes larger than 300.
 - .4 Set aside damaged wood for acceptable alternative uses (e.g. bracing, blocking, cripples, bridging, finger-joining, or ties). Store this separated reusable wood waste convenient to cutting station and area of work.
 - .5 Separate corrugated cardboard in accordance with Waste Management Plan and place in designated areas for recycling.
 - .6 Do not burn scrap at the project site.
 - .7 Fold up metal banding, flatten, and place in designated area for recycling.
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PART 2 - PRODUCTS

2.1 Requirements

- .1 Composite Wood and agrifiber products must contain no added urea-formaldehyde resins.

2.2 Materials

- .1 Softwood lumber: unless specified otherwise, S4S, moisture content 15% or less in accordance with following standards:
 - .1 CAN/CSA-O141-91 (R1999).
 - .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 The manufacturing process must adhere to Lifecycle Assessment (LCA) Standards as per CSA Z760-94 94 Life Cycle Assessment.
 - .4 Hardwood lumber: moisture content 9% or less in accordance with following standards:
 - .1 National Hardwood Lumber Association (NHLA).
 - .2 AWMAC premium grade, moisture content as specified.
 - .5 Canadian softwood plywood (CSP): to CSA O151-M1978 (R1998), standard construction.
 - .6 Hardwood plywood: to CSA O115-M1982(R2001). White ash veneer.
 - .7 Birch plywood: to AWMAC Natural.
 - .8 Baltic Birch Plywood: to aWMAC natural. Highest Quality FSC certified Grade B-B.
 - .9 MDF (medium density fibreboard)core: to ANSI A208.2-1994, Grade M2, 19 mm thick density 769 kg/m².
 - .1 Medium density fibreboard must:
 - .1 Meet the performance requirements of ANSI A208.2-1994.
 - .2 Be manufactured without formaldehyde.
 - .3 Contain at least 15% recycled materials by weight.
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- .10 Nails and staples: to CSA B111-1974 (R1998) (R1998).
- .11 Wood screws: plain, type and size to suit application.
- .12 Splines: wood.

2.3 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 for exposed areas.
 - .2 Board sizes: "Standard" or better grade.
 - .3 Dimension sizes: "Standard" light framing or better grade.
 - .3 Case Bodies: (ends, divisions and bottoms)
 - .1 Baltic Birch Plywood (Grade BB):
 - .1 Thickness: 19mm
 - .2 Core: Birch
 - .3 Sanding: Smooth
 - .4 Grain Direction: Vertical
 - .2 Base cabinets shall have 19mm thick douglas fir plywood toe kick finished with base as per drawings.
 - .4 Backs: Dadoed
 - .1 Hardwood Plywood, where exposed
 - .1 Thickness: 13mm
 - .2 Face Veneer: White Birch, plain sawn, rotary cut
 - .3 Core: veneer core
 - .4 Bond: Type 2
 - .5 Sanding: Regular Sanding
 - .6 Grain Direction: Vertical
 - .5 Shelving.
 - .1 Baltic Birch Plywood (Grade BB):
 - .1 Thickness: 19 mm.
 - .2 Core Baltic Birch
 - .3 Sanding: Smooth
 - .4 Grain Direction: Vertical
 - .2 Edging: All edges to be left exposed and lightly sanded.
 - .6 Fronts - Doors, Drawers:
 - .1 Baltic Birch Plywood (Grade BB):
 - .1 Thickness: 19mm
 - .2 Core: Baltic Birch
 - .3 Sanding: Smooth
 - .4 Grain Direction: Vertical

- .1 (Cont'd)
 - .6 Fronts - Doors, Drawers:(Cont'd)
 - .2 Edging: All edges to be left exposed and lightly sanded.
 - .7 Wall Paneling:
 - .1 Baltic Birch Plywood (Grade BB):
 - .1 Thickness: 17mm
 - .2 Core: Baltic Birch
 - .3 Sanding: Smooth
 - .4 Grain Direction: Vertical
 - .2 Edging: All edges to be left exposed and lightly sanded.
 - .8 Counter Tops
 - .1 Solid polymer countertops: provide where indicated.
 - .1 Install solid polymer counter top as recommended by material supplier and top fabricator. Strapping and supports for solid polymer surface shall be 19mm plywood strips as recommended by product manufacturer; provided and installed by top fabricator.

2.4 Fabrication

- .1 Fabricate cabinets in units of modular sections with demountable fastenings of joints for ease of relocation.
 - .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 in 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.
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- .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 3000 mm. Keep joints 600 mm from sink 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.
- .12 Apply laminated plastic liner sheet to interior of cabinetry.
- .13 Size cabinets so that fillers are not greater than 75 mm, unless otherwise noted.
- .14 Exposed surface fasteners and capping of exposed gable ends is not acceptable.

2.5 Finishing

- .1 Refer to Section 09 91 99 - Painting for Minor Works. Provide the INT 6.4 M finish.

2.6 Delivery and Storage

- .1 Completed items shall not be delivered to the site until the portion of the building into which it is to be placed is clean and secure as approved by Departmental Representative.
 - .2 Before installation of this trade commences, areas shall be finished with flooring, a minimum of one coat of paint on the wall and all overhead work complete.
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PART 3 - EXECUTION

3.1 Installation

- .1 Install all portions of work in close cooperation with other trades.
 - .2 Provide all cut outs through work as required by other trades.
 - .3 Do architectural woodwork to Quality Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC), except where specified otherwise.
 - .4 Install prefinished millwork at locations shown on drawings. Position accurately, level, plumb straight.
 - .5 Fasten and anchor millwork securely, using a minimum of two fasteners per cabinet. Provide heavy duty fixture attachments for wall mounted cabinets.
 - .6 Fasten adjacent cabinets together. Provide plastic plugs over fasteners.
 - .7 Use draw bolts in countertop joints.
 - .8 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.
 - .9 At junction of counter back splash and adjacent wall finish, apply small bead of sealant.
 - .10 Fit hardware accurately and securely in accordance with manufacturer's written instructions.
 - .11 For site application, offset joints in plastic laminate facing from joints in core.
 - .12 After installation, adjust operating hardware for proper operation.
 - .13 Install miscellaneous hardware and products as specified and indicated.
 - .14 Cut out and install grommets where indicated.
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3.2 Cleaning

- .1 Clean millwork and cabinet work inside cupboards and drawers and outside surfaces.
- .2 Remove excess glue from surfaces.

3.3 Protection

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

PART 1 - GENERAL

1.1 Scope of Work

- .1 Work included in this Section includes counter tops

1.2 Related Sections

- .1 Section 06 40 00 - Architectural Woodwork.
- .2 Section 07 92 00 - Joint Sealers.
- .3 Section 08 70 05 - Cabinet and Miscellaneous Hardware.

1.3 References

- .1 American National Standards Institute (ANSI) Publications:
 - .1 A136.1-1967 - Organic Adhesives for Installation of Ceramic Tile.
- .2 American Society for Testing and Materials (ASTM) Publications:
 - .1 D256-84 - Test Methods for Impact Resistance of Plastics and Electrical Insulating Materials.
 - .2 D570-81 - Test Method for Water Absorption of Plastics.
 - .3 D638-84 - Test Method of Tensile Properties of Plastics.
 - .4 D696-79 - Test Method for Coefficient of Linear Thermal Expansion of Plastics.
 - .5 D1499-84 - Recommended Practice for Operating Light-and- Water Exposure Apparatus (Carbon-Arc Type) for Exposure of Plastics.
 - .6 E84-84a - Test Method for Surface Burning Characteristics of Building Materials.

1.4 Samples

- .1 Samples: minimum 50 mm x 50 mm duplicate samples shall be submitted for approval in accordance with Section 01 33 00 - Submittal Procedures. Samples shall indicate manufacturer's full range of color and pattern variation.
 - .2 Product Data: Product data shall be submitted in accordance with the section. Product data shall indicate product description,
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- .2 Product Data:(Cont'd)
fabrication information and compliance with
specified performance requirement.

1.5 Shop Drawings

- .1 Shop drawings shall be submitted for approval
in accordance with Section 01 33 00 -
Submittal Procedures.
- .2 Shop drawings shall indicate dimensions,
component sizes, thickness, fabrication
details attachment provisions and coordination
requirements with adjacent work.

1.6 Product Delivery Handling & Storage

- .1 Materials shall not be delivered to project
site until areas are ready for installation.
Materials shall be stored indoors and handled
to prevent damage to finished surfaces.
Protective coverings shall be provided to
prevent physical damage or staining following
installation for duration of project.

1.7 Closeout Submittals

- .1 Maintenance data shall be submitted
indicating manufacturer's care, repair and
cleaning instructions and maintenance for for
incorporation into manual specified in Section
01 78 00 - Closeout Submittals.

1.8 Warranty

- .1 Manufacturer's standard warranty against
defects in materials, excluding damages caused
by physical or chemical abuse or excessive
heat, shall be provided. Warranty shall
provide for material and labor for replacement
or repair of defective material for a period
of ten years after component installation.

1.9 Quality Assurance

- .1 Manufacturer: Twenty (20) years minimum
experience manufacturing products comparable
to those specified in this section.
 - .2 Installer: Five (5) years minimum experience
installing products comparable to those
specified in this section.
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PART 2 - PRODUCTS

2.1 Materials

- .1 Components shall be cast, filled acrylic, not coated, laminated or of composite construction, meeting ANSI Z124-1980 and FS WW-P-541E/GEN. Material shall have minimum physical and performance properties specified. Superficial damage to a depth of 1/32 inch shall be repairable by sanding or polishing.
- .2 Material shall be thickness and color specified herein.
- .3 Edge treatment for tops shall be radius as detailed.
- .4 Performance Characteristics:

<u>Property</u>	<u>Requirements (min or max)</u>	<u>Test Procedure</u>
Tensile Strength	5000 psi min	ASTM D638
Tensile Modulus	1.0 x 10 ⁶ psi min	ASTM D638
Flexural Strength	7000 psi min	ASTM D790
Flexural Modulus	1.0 x 10 ⁶ psi min	ASTM D790
Elongation	0.3% min	ASTM D638
Hardness	90-Rockwell "M" scale min	ASTM D758
	52-Barcol Impressor min	ASTM D2583
Thermal Expansion	3.5 x 10 ⁻⁶ in/in/deg C.max 1.95 x 10 ⁻⁶ in/in/deg F. max	ASTM D696
Color Stability	No change, 100 hours min	NEMA LD3-3.10
Wear and Cleanability	Passes	ANSI Z124.3
Abrasion Resistance	No loss of pattern max weight loss (1000 cycles)=0.9g	NEMA DL3-3.01 ANSI Z124.3
Boiling Water Surface Resistance	No change	NEMA LD3-3.05
High Temperature Resistance	No change	NEMA LD3-3.06

.4 Performance Characteristics:(Cont'd)			
Impact Resistance			ASTM D256,
Method A			
Notched Izod	0.24 ft-lbs min		ASTM D3029
Gardner	9.0 ft-lbs min		
Ball Drop			NEMA LD3-303
1/4" sheet	36" min, 1/2 lb ball, no failure		
1/2" sheet	140" min, 1/2 lb ball, no failure		
3/4" sheet	200" min, 1/2 lb ball, no failure		
Bowls (point impact)	No cracks or chips		ANSI Z124.3 and 124.6
Stain Resistance	Passes		ANSI Z124.3
Weatherability	No change, min 1000 hours		ASTM D1499
Fungi and Bacteria	No attack		ASTM G21, ASTM G22
Specific Gravity	1.6 min		
Water Absorption	24 hours	Long Term	ASTM D570
Weight	0.05	0.50 (1/4")	
(% max)	0.10	0,90 (3/4")	
Flammability			ASTM E84
Solid Colors	1/4"	1/2"	3/4"
Flame Spread	25 max	25 max	25 max
Smoke Developed	30 max	30 max	30 max
Class	1	1	
Pittsburgh Protocol Toxicity (as used by NY state)	solids-80 grams minimum rating particulate patterns - 65 gms minimum		"LC50" Test

2.2 Accessory Products

- .1 Joint Adhesive: Joint adhesive shall be two-part adhesive kit to create inconspicuous, non-porous joints by chemical bond.
- .2 Panel Adhesive: Panel adhesive shall be neoprene based panel adhesive meeting ANSI

- .2 Panel Adhesive:(Cont'd)
A136.1, Underwriter's Laboratories (UL)
listed.
- .3 Sealant: Sealant shall be mildew-resistant,
ULC listed silicone sealant in colors matching
components per Section 07 92 00 - Joint
Sealers.
- .4 Conductive Tape: Conductive tape shall be
manufacturer's standard foil tape, 4 mils
thick, applied around the edges of cutouts
containing hot or cold appliances.
- .5 Insulation Felt Tape: Insulating tape shall
be manufacturer's standard product for use
with conductive tape to insulate solid polymer
surfaces from hot or cold appliances.

2.3 Fabrication

- .1 Components shall be factory fabricated to the
greatest extent practical to sizes and shapes
indicated, in accordance with approved shop
drawings. Joints shall be formed between
components using manufacturer's standard joint
adhesive. Joints shall be reinforced with 50
mm wide strips of solid polymer material.
Factory cutouts shall be provided for plumbing
fittings and bath accessories as indicated on
the drawings. Component edges shall be cut and
finished with clean, sharp returns. Contours
and radii shall be routed to template, with
edges smooth. Defective and inaccurate work
shall be rejected. inlay work shall be
performed in accordance with manufacturer's
product data, using acrylic or methacrylate
inlay material and color indicated on the
drawings.
 - .2 Finished surfaces shall received a uniform
matte finish with a gloss range of 5-20.
 - .3 Thermoforming shall comply with
manufacturer's product data. Molds shall be
constructed of plywood in "male/female"
sections matching component shapes. Component
parts shall be shaped prior to joining and
finishing. Pieces shall be cut to finished
dimensions with edges sanded and nicks and
scratches removed. Heat the entire component
uniformly between 275-325°F during forming.
Prevent blistering, whitening and cracking of
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- .3 (Cont'd)
solid polymer material during forming.
Defective material shall be rejected.
- .4 Coved backsplashes shall be shop fabricated
with 13 mm radius cove at intersection of
counters and backsplashes and intersection of
backsplash and endsplashes.

PART 3 - EXECUTION

3.1 Installation

- .1 Components shall be installed plumb, level
and rigid. Field joints shall made using
specified adhesives, with joints inconspicuous
in the finished work. Sinks and lavatory bowls
shall be attached to counter tops using
manufacturer's recommended sealant, adhesive
and mounting hardware.
- .2 Back and end splashes shall be mounted as
indicated on the drawings. Splashes shall be
adhered using color matched silicone sealant.
- .3 Components shall be cleaned after
installation and covered to protect against
damage during completion of the remaining
project items. Components damaged after
installation by other trades will be repaired
or replaced at the General Contractor's cost.
Component supplier will provide a
repair/replace cost estimate to the General
Contractor who shall approve estimate before
repairs are made.