

**Part 1 GENERAL**

1.1 REFERENCES

- .1 American National Standards Institute (ANSI), latest edition.
    - .1 ANSI A208.1, Particleboard, Mat Formed Wood
  - .2 American Society for Testing and Materials (ASTM), latest edition
    - .1 ASTM A 36/A 36M, Specification for Structural Steel
    - .2 ASTM A 653/A 653M, Specification for Sheet Steel, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanealed) by the Hot Dip Process.
    - .3 ASTM D 1761, Standard Test Methods for Mechanical Fasteners in Wood
    - .4 ASTM D 5055, Prefabricated Wood I-Joists
    - .5 ASTM D 5456, Evaluation of Structural Composite Lumber Products
  - .3 Canadian General Standards Board (CGSB), latest edition
    - .1 CAN/CGSB-11.3-M, Hardboard
    - .2 CAN/CGSB-51.32-M, Sheathing, Membrane, Breather Type
    - .3 CAN/CGSB-51.34-M, Vapour Barrier, Polyethylene Sheet for Use in Building Construction
    - .4 CAN/CGSB-71.26-M, Adhesive for Field-Gluing Plywood to Lumber Framing for Floor Systems
  - .4 Canadian Standards Association (CSA), latest edition
    - .1 CAN/CSA-A82.27-M, Gypsum Board
    - .2 CSA-B111, Wire Nails, Spikes and Staples
    - .3 CAN/CSA-G164-M, Hot Dip Galvanizing of Irregularly Shaped Articles
    - .4 CSA-O112 Series-M, CSA Standards for Wood Adhesives
    - .5 CSA O121-M, Douglas Fir Plywood
    - .6 CAN/CSA-O122-M, Structural Glued-Laminated Timber
    - .7 CAN/CSA-O141, Softwood Lumber
    - .8 CSA-O151-M, Canadian Softwood Plywood
    - .9 CSA-O153-M, Poplar Plywood
    - .10 CAN/CSA-O325.0, Construction Sheathing
    - .11 CAN3-O437 Series, Standards on OSB and Waferboard
  - .5 National Lumber Grades Authority (NLGA), latest edition
    - .1 Standard Grading Rules for Canadian Lumber
  - .6 'Truss Design and Procedures for Light Metal Connected Wood Trusses', Truss Plate Institute of Canada, latest edition
- 1.2 QUALITY ASSURANCE
- .1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board, such as the certification standards for use in Canada.

- .2 Plywood, particleboard, OSB and wood based composite panels in accordance with CSA and ANSI standards.

### 1.3 WASTE MANAGEMENT AND DISPOSAL

- .1 Set aside damaged wood and dimensional lumber off-cuts for approved alternative uses (e.g. bracing, blocking, cripples, bridging). Store this separated reusable wood waste convenient to cutting station and area of work.
- .2 Separate metal, plastic, wood and corrugated cardboard-packaging in accordance with the Waste Management Plan and place in designated areas for recycling.
- .3 Do not burn scrap on-site.
- .4 Fold up metal banding, flatten, and place in designated area for recycling.

## Part 2 PRODUCTS

### 2.1 FRAMING AND STRUCTURAL MATERIALS – All materials used in air barrier envelope will have 0% added urea formaldehyde. Maximum moisture content to be 19%. Refer to section 01 47 15 Sustainable Requirements.

- .1 Lumber: unless specified otherwise, softwood, S4S, moisture content 19% (S-dry) or less in accordance with following standards:
  - .1 CAN/CSA-O141.
  - .2 NLGA Standard Grading Rules for Canadian Lumber.
- .2 Glued end-jointed (finger-jointed) lumber NLGA Special Products Standard.
- .3 Glulam in accordance with Structural Glued-Laminated Timber CAN/CSA-O122.
- .4 Wood I-Joists and I-Joist blocking in accordance with Prefabricated Wood I-Joists ASTM D 5055.
- .5 Structural Composite Lumber (SCL) in accordance with Evaluation of Structural Composite Lumber Products ASTM D 5456.
- .6 Framing and board lumber: in accordance with NBC and drawings, except as follows:
- .7 Furring, nailing strips, grounds, rough bucks, cants, curbs, fascia backing and sleepers:
  - .1 Board sizes: "Standard" or better grade.
  - .2 Dimension sizes: "Standard" light framing or better grade.
  - .3 Blocking of I-Joists to use I-Joist materials.
  - .4 Post and timbers sizes: "Standard" or better grade.

### 2.2 PANEL MATERIALS

- .1 All panel material used inside of the air barrier envelope plane shall have 0% added formaldehyde content, relative to naturally occurring content. Plywood, OSB and wood based composite panels: to CAN/CSA-O325.0.

- .2 Douglas fir plywood (DFP): to CSA-O121, standard construction.
- .3 Canadian softwood plywood (CSP): to CSA-O151, standard construction.
- .4 Poplar plywood (PP): to CSA-O153, standard construction.
- .5 Interior mat-formed wood particleboard: to ANSI 208.1.
- .6 Mat-formed structural panelboards (OSB wafer): to CAN3-O437.0.
- .7 Insulating fiberboard sheathing: to CAN/CSA-A247.

#### 2.4 ACCESSORIES

- .1 Typical sill separator between concrete foundation and bottom of exterior wall framing: flexible polyethylene foam gasketing strip, 6mm thick x 140mm (1/4" x 5 1/2"), in continuous and maximum lengths. Dow Weathermate Sill Seal.
- .2 Air barriers and vapour barriers as specified in Section 07 25 00.
- .3 Air seal: closed cell polyurethane or polyethylene.
- .4 Sealants: refer to section 07 92 00
- .5 Subflooring adhesive to CGSB-71.26 and general purpose adhesive to CSA-O112 Series. Refer to section 01 47 15 Sustainable Requirements for VOC information.
- .6 Nails, spikes and staples: to CSA-B111.
- .7 Joist hangers: minimum 1 mm thick sheet steel, galvanized ZF001 coating designation.
- .8 Roof sheathing H-Clips: formed "H" shape, thickness to suit panel material, type as noted and approved by Contract Administrator.

#### 2.5 FASTENER FINISHES

- .1 Galvanizing: to CAN/CSA-G164, use hot-dipped galvanized fasteners for exterior Work, interior highly humid areas, pressure-preservative, fire-retardant, treated lumber.

#### 2.6 WOOD PRESERVATIVE

- .1 ACQ or Borate treated lumber only. No chromium or arsenic allowed, including CCA or ACA treated wood.

#### 2.7 CONCRETE BOARD SHEATHING

- .1 Cementitious fiber-mat reinforced sheathing to ASTM C 1325, ANSI A118.9, cementitious backer, 1220 (4') wide x 2440 (8') long x thickness indicated on drawings. Acceptable product: Durock cement board.
- .2 Provide corrosion-resistant fasteners as recommended by the manufacturer.

## 2.8 EQUIPMENT BACKBOARDS

- .1 Electrical and telephone equipment backboards: Provide backboards for mounting service equipment/panels, 19mm (3/4") thick CSP x 1220 (4') x2440 (8'), at heights and at locations as required. Secure to wall stud locations or to block walls. Prime and paint exposed face side and edges as per Section 09 90 00.

## Part 3 EXECUTION

### 3.1 PREPARATION

- .1 Store products in a manner to prevent moisture ingress, damage or deterioration.

### 3.2 INSTALLATION

- .1 Comply with Code requirements (latest edition).
- .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 and select exposed framing for appearance. Install lumber and panel materials so that grade-marks and other defacing marks are concealed or are removed by sanding where materials are left exposed.
- .5 Install subflooring with panel end-joints located on solid bearing, staggered at least 600 mm. In addition to mechanical fasteners, secure subflooring panels to joists using glue and screws. Place continuous adhesive beads of glue in accordance with manufacturer's instructions; single-bead on each joist and double-bead on joists where panel ends butt.
- .6 Install sheathing in accordance with manufacturer's printed instructions and the Code.
- .7 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.
- .8 Unless otherwise noted, install vertical furring to support horizontal siding, where there is no blocking and/or where sheathing is not suitable for direct nailing. Align and plumb faces of furring and blocking to tolerance of 1:600.
- .9 Install rough bucks, nailers, and linings to rough openings as required to provide backing for frames and as required for the Work.
- .10 Install wood cants, fascia backing, nailers, curbs, sleepers, and other wood supports as required and secure using galvanized fasteners.
- .11 Use caution when working with particleboard. Use dust collectors and high quality respirator masks.

### 3.3 ERECTION

- .1 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.

- .2 Countersink bolts where necessary to provide clearance for the Work.
- .3 Use nailing disks for soft sheathing as recommended by sheathing manufacturer.

### 3.4 BASE FRAMES FOR LOCKERS

- .1 Using 38 x 89 studs @ 600 o.c. (on edge), frame a base platform to suit each locker grouping and sheathe the top surface only with 13 CSP exterior plywood. Width to match the total number of lockers and depth to be 75 (3") less than the locker depth (as a front toe kick space). Refer to drawings for locker groupings and locations. Finish base similar to that as scheduled in each room.

### 3.5 HANDLING AND USE OF TREATED LUMBER

- .1 Handle treated material to avoid and minimize damage or field fabrication.
- .2 Treat all cuts or damage to surfaces of treated material with a clear preservative to CSA 080. Ensure all abrasions, nail and spike holes, are thoroughly saturated with preservative.

### 3.6 WORKMANSHIP

- .1 Construct all Work to details, using adequate fastening methods to ensure solid, durable, finished Work, suitable for the purpose intended.
- .2 Do all nailing and fastening neatly, evenly, and thoroughly.
- .3 Install all members true to line, level, and plumb.
- .4 Use members of longest possible length to minimize joints.

**END OF SECTION**

- Part 1 GENERAL**
- 1.1 RELATED SECTIONS
- .1 Section 06 40 00 - Architectural Woodwork
  - .2 Section 08 14 00 – Wood Doors
  - .3 Section 08 80 00 –Glazing
  - .4 Section 09 90 00 - Painting
- 1.2 REFERENCES
- .1 American National Standards Institute (ANSI), latest edition.
    - .1 ANSI A208.1, Particleboard, Matformed Wood
    - .2 ANSI A208.2, Medium Density Fibreboard (MDF)
  - .2 Architectural Woodwork Manufacturers Association of Canada (AWMAC), latest edition
    - .1 AWMAC Quality Standards for Architectural Woodwork
  - .3 Canadian General Standards Board (CGSB), latest edition
    - .1 CAN/CGSB-11.3-M, Hardboard
  - .4 Canadian Standards Association (CSA), latest edition
    - .1 CSA B111, Wire Nails, Spikes and Staples
    - .2 CAN/CSA-G164-M, Hot Dip Galvanizing of Irregularly Shaped Articles
    - .3 CSA O115-M, Hardwood and Decorative Plywood
    - .4 CSA O121-M, Douglas Fir Plywood
    - .5 CAN/CSA O141, Softwood Lumber
    - .6 CSA O151-M, Canadian Softwood Plywood
    - .7 CSA O153-M, Poplar Plywood
  - .5 National Hardwood Lumber Association (NHLA), latest edition
    - .1 Rules for the Measurement and Inspection of Hardwood and Cypress
  - .6 National Lumber Grades Authority (NLGA), latest edition
    - .1 Standard Grading Rules for Canadian Lumber
  - .7 Underwriters Laboratories of Canada (ULC), latest edition
    - .1 CAN4-S104-M, Fire Tests of Door Assemblies
    - .2 CAN4-S105-M, Fire Door Frames
- 1.3 SUBMITTALS
- .1 Submit shop drawings in accordance with Section 01 33 00 and indicate all materials, thicknesses, finishes, hardware, and details of construction, profiles, jointing, fastening and other related details.
  - .2 Upon request, submit MSDS for each applicable panel product to verify formaldehyde-free content to LEED requirements in Section 01 47 15.
- 1.4 SAMPLES
- .1 Upon request, submit samples in accordance with Section 01 33 00.
- 1.5 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, handle, store and protect materials in accordance with Section 01 60 00.
- .2 Protect materials against dampness during and after delivery.
- .3 Store materials in ventilated areas, protected from extreme changes of temperature or humidity.

#### 1.6 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 and to maximum extent economically possible.
- .2 Separate wood waste and place in designated areas in categories as follows for recycling: Solid wood/softwood/hardwood, composite wood, treated, painted, or contaminated wood. Place in designated areas for re-use on-site, and in the categories as follows: sheet materials larger than 1200x1200, framing members larger than 1200, multiple offcuts of any large size.
- .3 Set aside damaged wood for acceptable alternative uses (e.g. bracing, blocking, cripples, bridging, finger-joining, or ties). Store separated reusable wood waste convenient to cutting station and area of Work.
- .4 Separate corrugated cardboard and place in designated areas for recycling. Fold up metal banding, flatten, and place in designated area for recycling.
- .5 Do not burn scrap at on-site.

#### 1.7 QUALITY ASSURANCE

- .1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board, such as the certification standards for use in Canada, including: the CSA Sustainable Forest Management Standard (CSA); the Forest Stewardship Council's Principles and Standards (FSC); and the Sustainable Forestry Initiative (SFI), or other approved agency, where possible.

#### 1.8 WARRANTY

- .1 Provide a written one (1) year warranty to cover any defects in manufacture, materials, workmanship, and installation, from the Date of Substantial Performance.

### Part 2 PRODUCTS

#### 2.1 LUMBER MATERIAL

- .1 Softwood lumber: S4S with moisture content of 19% or less, and in accordance with latest edition of the following:
  - .1 CAN/CSA O141
  - .2 NLGA Standard Grading Rules for Canadian Lumber
  - .3 AWMAC custom grade quality
- .2 Machine stress-rated lumber is acceptable for all purposes
- .3 Material to have 0% added urea formaldehyde (NAUF)
- .4 Hardwood lumber: with moisture content of 6% or less, and in accordance with latest edition of the following:
  - .1 National Hardwood Lumber Association (NHLA)
  - .2 AWMAC custom grade quality

## 2.2 PANEL MATERIAL

- .1 Douglas fir plywood (DFP): to CSA O121, standard construction.
- .2 Canadian softwood plywood (CSP): to CSA O151, standard construction.
- .3 Hardwood plywood: to CSA O115.
- .4 Poplar plywood (PP): to CSA O153, standard construction.
- .5 Particleboard: to ANSI A208.1
- .6 Hardboard: to CAN/CGSB-11.3. Hardboard must be manufactured such that formaldehyde emissions do not exceed 0.05 ppm, 180g/m<sup>3</sup> when tested in accordance with ASTM E 1333, Standard Test Method for Determining Formaldehyde Levels From Wood Products Under Defined Test Conditions Using a Large Chamber;
- .7 Medium density fibreboard (MDF): to CAN3-A247M, ANSI A208.2, density: 640-800 kg/m<sup>3</sup>. Product must be manufactured such that formaldehyde emissions do not exceed 0.30 ppm (0.260 m<sup>2</sup>/m<sup>3</sup>) when tested in accordance with ASTM E1333.
- .8 All panel material used inside of the air barrier envelope shall have 0% added urea formaldehyde content (NAUF), relative to naturally occurring content. Manufacturing process must adhere to Lifecycle Assessment Standards as ISO 14040/14041 LCA Standards.

## 2.3 INTERIOR TRIM

- .1 Unless otherwise noted on drawings, provide interior trim as follows and to details indicated on the drawings.
  - .1 Solid maple or birch stock, clear grade, where a clear or stain finish is scheduled.
  - .2 MDF or pine, paint grade, where a paint finish is scheduled.

## 2.4 WOOD STRIP CEILING AND BULKHEAD TREATMENT

- .1 Wood strips: 9mm thick x 89mm wide (3/8"x 3.5") solid S4S maple, clear Grade AA. Locations: where indicated on the drawings and as detailed. See Section 09 90 00 for finishing.
- .2 Install material as detailed and in as continuous lengths as possible. Neatly mitre join cut edges together. Where material returns around corners and edges, mitre joints neatly.

## 2.5 ACCESSORIES

- .1 Nails and staples: to CSA B111 or latest; galvanized to CAN/CSA-G164 or latest for exterior Work, interior humid areas, and for treated lumber; plain finish elsewhere.
- .2 Wood screws: to CSA B35.4 or latest plain, type and size to suit application.
- .3 Splines: wood.
- .4 Adhesive: recommended by manufacturer such that formaldehyde emissions do not exceed 0.05 ppm 180 g/m<sup>3</sup>.
- .5 Use least toxic sealants, adhesives, sealers, and finishes necessary to comply with requirements of this section.

## 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 cleanly 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 joint.
    - .4 Install door and window trim in single lengths without splicing.
  - .3 Wood door frames, casings, and trim.
    - .1 Shim out finished door frames so sides are plumb and heads are level; secure to substrate behind.
    - .2 Let door frames and casings extend down to floor; baseboard to terminate into side of casing typical. Mitre casing joints carefully at jamb/head locations.
    - .3 Use finishing nails and nail set to countersink below surface of trim. Fill nail holes caused by temporary fixing with filler matching wood in colour. Sand flush to make ready for final finishing as per Section 09 90 00.
    - .4 Ease all exposed edges of custom wood frames, trim, and casings, typically.
  - .4 Shelving: Install shelving on shelf brackets as specified, where applicable.
  - .5 Hardware.
    - .1 Verify that door and frame components are ready to receive Work and dimensions are as indicated on shop drawings.
    - .2 Verify that appropriate power supply is available to power operated devices.
    - .3 Beginning of installation means acceptance of existing conditions.
  - .6 For steel doors, install hardware in accordance with manufacturer's instructions and requirements of Canadian Steel Door and Frame Manufacturers Association.
    - .1 Use templates provided by hardware item manufacturer.
  - .7 Wood Doors
    - .1 Install doors in accordance with manufacturer's instructions.

- .2 Machine cut relief for hinges and coring for handsets and cylinders.
- .3 Trim door width by cutting equally on both jambs. Trim fire door width from lock edge only, to a maximum of 5mm.
- .4 Trim door height by cutting equally on top and bottom edges to a maximum of 19mm. Trim fire door height at bottom edge only, to a maximum of 15mm.
- .5 Undercut doors to a maximum of 6mm above finished floor.
- .6 Prepare doors to receive finish hardware in accordance with AWMAC requirements.
  - .1 Conform to AWMAC requirements for fit tolerances. Maximum diagonal distortions: 1.5mm measured with straight edge, corner to corner.
  - .2 Coordinate installation of glass and glazing. Install door louvers, as scheduled on Door schedule or on Mechanical Drawings.

END OF SECTION

## Part 1 GENERAL

### 1.1 REFERENCES

- .1 AWMAC (Architectural Woodwork Manufacturers' Association of Canada) - Quality Standards for Architectural Woodwork, latest edition.

### 1.2 QUALITY ASSURANCE

- .1 Perform Work to "Custom" quality standards, as set out by AWMAC.
- .2 Lumber Grading: NLGA.
- .3 Lumber identification by grade stamp of an agency certified by the Canadian Lumber Standards Accreditation Board for use in Canada, including: the CSA Sustainable Forest Management Standard (CSA); the Forest Stewardship Council's Principles and Standards (FSC); and the Sustainable Forestry Initiative (SFI), or other approved agency.

### 1.3 SUBMITTALS

- .1 All submittals shall conform to Section 01 33 00.
- .2 Shop drawings shall clearly indicate all materials, finishes, colours, component profiles, fastening methods, assembly methods, joint details, hardware, and accessories.
- .3 Upon request by the Contract Administrator, submit a material sample and a millwork sample (one of each of the units and/or colours specified).
- .4 Submit MSDS for each product to verify formaldehyde free content and VOC content to LEED requirements in Section 01 47 15.

### 1.4 WARRANTY

- .1 Provide a written manufacturer's warranty for the maximum period possible, for each type of material specified in this Section, to cover all defects in materials and manufacture.
- .2 Provide a one (1) year written installer's warranty to cover all defects in installation and workmanship, from the Date of Substantial Performance.

## Part 2 PRODUCTS

### 2.1 SOLID WOOD MATERIALS

- .1 Softwood Lumber: CSA O141; 'Custom' grade in accordance with AWMAC; maximum moisture content of 6 percent
- .2 Hardwood Lumber: 'Custom' grade in accordance with AWMAC; max. moisture content of 6 percent.
- .3 Solid wood trim, nosings, edgings, etc. as detailed and specified in this Section; clear grade.

### 2.2 SHEET/PANEL MATERIALS

- .1 All sheet/panel materials shall have 0% added urea formaldehyde (NAUF) in addition to naturally occurring content in these materials.
- .2 Softwood Plywood: CSA O121, Douglas Fir veneer core; CSA 0151, Canadian Softwood Plywood; CSA 0153, Poplar Plywood veneer core, sanded both sides with Hardwood Plywood: CSA O115; 'Good' grade in accordance with AWMAC; 'G1S' where not exposed or where one side is exposed to view; 'G2S' where both sides are exposed to view. Where birch or maple plywood is specified, a 'select' appearance grade designation is required.
- .3 Medium Density Fibreboard (MDF) ANSI A-208.2 2-198, minimum density 700 kg/m<sup>3</sup> (84 psf), factory pre-sanded faces of thickness indicated.
- .4 Particleboard: Industrial Grade 'M2', medium density panels, 640-800 kg/m<sup>3</sup> (40-50 lb/ft<sup>3</sup>). Panel core to comply with 0% added urea formaldehyde (NAUF).
- .5 Melamine Panels: melamine resin-impregnated decorative sheet, thermally-fused to a rigid, standard particleboard core with low pressure. Standard of Acceptance: cabinet grade,

standard 'white' or 'maple' finish both sides, unless otherwise noted. Panel core to comply with 0% added urea formaldehyde (NAUF).

- .6 Hardboard: CGSB 11-GP-3M; Type 2, tempered grade.
- .7 Baltic Birch plywood: Face Grade "BB" w/ type 2 hot press glue bond, 13mm (1/2") thick, 9-ply.

### 2.3 LAMINATE MATERIALS

- .1 Plastic Laminate to CAN3-A172, latest edition: Commercial Grade to suit application; thicker horizontal grade for countertop/horizontal surfaces and thinner vertical grade for vertical surfaces typically. Standard of Acceptance: Wilsonart, Formica, Arborite, Pionite, Nevamar. Colour to be selected from full range available with Sparkle or Crystal finish for horizontal surfaces and Matte finish for vertical surfaces.
- .2 Laminate Backing Sheet to CAN3-A172-M79, latest edition; undecorated plastic laminate to same thickness as facing sheet. Colour to be selected from range available.
- .3 Laminate edge banding around doors & drawers, unless otherwise noted: Laminate to match adjacent vertical laminate finish on doors & drawers.
- .4 PVC edge banding at casework, shelves, (and doors & drawers where noted): 0.5mm PVC as manufactured by Canada Woodtape Inc., in standard stock colour range where adjacent panel finish is solid colour, or in custom colour range where adjacent panel finish is wood veneer.
- .5 Magnetic Laminate on wall surfaces: 1mm thick decorative laminate for use as magnetic marker board to MLB grade. Acceptable manufacturers: Formica, Abet Laminati.

### 2.4 SOLID SURFACE MATERIALS

- .1 **S1 Quartz:** Approximately 94% siliceous sands and quartz, and 6% inert bonding agent of structural polyester resins and pigments. Highly compacted to a hardness of 6 - 7 on the Moh's scale, completely hygienic, non-porous, and non-absorbent surface (0.015%). Bump resistant, wear resistant (ASTM C 501), chemical resistant (ASTM C 560), stain resistant, moisture resistant, and of uniform colour and cleanliness. Acceptable products: 'Quartzforms' (dist. by Marco Products by W group, tel: 204.694.7800), Formica 'Stone', or Wilsonart 'Quartz'. Locations: Reception 103, and where detailed on drawings.
  - .1 Colour: One colour with polished surface finish, to be selected by Contract Administrator from full standard range.
  - .2 Thickness: 19 (3/4"), unless otherwise noted
  - .3 Adhesive: low VOC type as recommended by the manufacturer, to create inconspicuous, nonporous joints.
  - .4 Joint sealer: low VOC type and colour to match material colour selected by Contract Administrator. Acceptable product: Latisil Tile and Stone Sealant by Laticrete International Inc..
- .2 **S2 Solid polymer:** Solid, nonporous, filled polymer, not coated, laminated or of composite construction with homogenous through body colours meeting ANSI Z124.3 or ANSI Z124.6, and having the minimum physical and performance properties to comply with ASTM D 638, D 790, D 785, D2583, D 696, G 155, D 570, and >85 hardness on Rockwell 'M' scale. Superficial damage to 0.25 mm (0.010") depth shall be repairable by sanding and/or polishing. Acceptable products: Dupont Corian, Formica Solid Surfacing, or Wilsonart Solid Surface. Locations: Washrooms and Change Rooms, and where detailed on drawings.
  - .1 Colour: One colour with polished surface finish to be selected by Contract Administrator from full standard range.
  - .2 Thickness: 13 (1/2"), unless otherwise noted
  - .3 Edge treatment: 38mm (1 1/2") high, 'Eased' profile, unless otherwise detailed.
  - .4 Adhesive: low VOC type as recommended by the manufacturer, to create inconspicuous, nonporous joints.
  - .4 Sealant: manufacturer's standard mildew-resistant, FDA-compliant, NSF 51-compliant and UL-listed silicone sealant in colours to match components.

## 2.5 ACCESSORIES

- .1 Adhesive: Water base contact type with low or zero VOC's.
- .2 Fasteners: Size and type to suit application.
- .3 Bolts, Nuts, Washers, Lags, Pins, and Screws: size and type to suit application.
- .4 Door Bumpers: self-stick rubber bumpers on back face of cabinet doors typical.
- .5 Wall Bumpers: wall-mounted self-stick rubber bumpers typical on door handles where they open against a wall.
- .6 Cork surfacing: fine-grained natural cork roll, 6mm (1/4") thick x height x length to suit; refer to drawings for sizes. Fully adhere to a clean, dry substrate with a water-based contact adhesive.

## 2.6 HARDWARE

- .1 Finish: All hardware to have dull chrome finish unless otherwise noted.
- .2 Drawer and Door Pulls: 96mm metal 'D' pull – Richelieu #33205, in 195 brushed nickel finish.
- .3 Medium-duty drawer slides: each drawer to have one pair of 45 kg/100lb. load rated, 3/4 extension, epoxy coated slides with nylon rollers and self-closing action.
  - .1 Grass 6020 and 6022, Accuride 3132 Eclipse-EC, Hettich FR 6142.
- .4 Heavy-duty ball drawer slides: each drawer over 300mm/12" high to have one pair of 68 kg/150 lb. load rated, full extension, ball bearing type slides.
  - .1 Grass VS603, Accuride 4034 Heavy Duty.
- .5 Keyboard tray slides: 34kg/75 lb. rated, Accuride 2109 Suspended slide.
- .6 Hinges: 125 degree opening, self-closing, clip on, Blum #75M5580, Hettich Intermat 9944. Use 3 hinges on doors larger than 500 x 810mm (20" x 32").
- .7 Cabinet Locks: National Lock#M4-7054C, removable core, disk tumbler, cam style with strike. EACH CABINET DOOR AND DRAWER TO HAVE A CABINET LOCK. Keying schedule to be confirmed but allow for separate keying in each room and 3 copies of each key.
- .8 Elbow Cabinet Catch: Ives 2MB 26D, Richelieu 3675-26.
- .9 Case door silencers: rubber, clear, 3M #SJ5032, Richelieu HP 303-11.
- .10 Wiring grommets: black colour, 50mm diameter, Hafele 429.94.310.
- .11 Continuous stainless steel, medium gauge hinges: Stanley #478993 & 478999.
- .12 Pilaster supports: pre-drilled at 1 1/4" o.c. with 5mm diameter, injection-moulded polycarbonate with non-tip feature.
- .13 Glass shelf supports for predrilled holes: Hafele 287.26.454 .
- .14 Intermediate Shelf Brackets: Heavy duty, baked enamel finish; Hager 1799
- .15 Continuous piano hinges: stainless steel, length to suit application.
- .16 Hidden countertop supports (from pony wall): steel plate, 13 (1/2") thick x 64 (2.5") wide x 533 (21") long, with 5 mounting points min. Milled with a chamfered front 'safe edge' and prefinished with a white textured powder coat finish. Single and double cantilever style, as detailed on the drawings. 'Forward L' brackets by Centerline Brackets (tel. 1.888.960.3854).

## 2.7 GENERAL FABRICATION

- .1 Site measure and fabricate casework to AWMAC 'Custom' grade designation.
- .2 Shop assemble casework for delivery to Site in units that are easily handled and permit passage through building openings.
- .3 Cabinet toe spaces shall be finished same as cabinet faces. All toe spaces to have rubber base as specified, unless otherwise noted.
- .4 Doors, drawer fronts, gables, and shelves: 19 (3/4") mm thick, unless otherwise noted.
- .5 When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.
- .6 Maximize use of plastic laminate from the full, uninterrupted sheet sizes available. Make corners/joints snug and locate countertop butt joints a minimum of 600 mm from sink cutouts.
- .7 Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.

- .8 Fabricate countertops to sizes as required for base cabinets. At right angle corners, provide a 45-degree mitre joint in the countertop. At end walls, return backsplash to front of counter.
- .9 Secure all backsplashes to the countertop and leave side splashes loose.
- .10 Provide sufficient wood blocking attachments for wall-mounted items.
- .11 Site measure and provide cutouts as required for plumbing fixtures, inserts, appliances, outlet boxes, and any other fixtures and fittings.
- .12 Install rubber bumpers on doors.
- .13 Seal all surfaces as specified to have a finish and those that contact cementitious materials.
- .14 Interior window sills: (as applicable and as detailed) 18mm (11/16") G1S plywood core with plastic laminate finish on all exposed faces and a solid birch or maple nosing as detailed, with a clear shop finish .

## 2.8 TYPE 'C1' MILLWORK (Reception 103 and as detailed on drawings)

All cabinetry to AWMAC standards, custom quality:

- .1 Door and drawer fronts: 18mm (11/16") Grade 'M2' particleboard core, with a plastic laminate finish on both faces (assume combination of wood veneer colour laminate and solid colour laminate) and on all edges to match.
- .2 Drawer boxes: 13mm (1/2") prefinished melamine panels (white) with PVC edge banding on the top edges. Drawer bottoms: 6mm (1/4") prefinished melamine panel (white) with a hardboard core.
- .3 Concealed casework carcass, bottoms, and gables: 19mm (3/4") prefinished melamine panels with PVC edge banding on all edges to match.
- .4 Cabinet backs: 19mm (3/4") prefinished melamine (maple)
- .5 Cabinet base blocking: 19mm (3/4") G1S plywood.
- .6 Shelving: 19mm (3/4") prefinished melamine (maple) with PVC edge banding on front edge to match. Where shelf spans exceed 900mm (36"), secure a continuous 19x50mm (3/4"x2") vertical nosing with matching finish, to the front shelf edge so the top is flush with the top of the shelf, to resist sagging.
- .7 Countertops, gables, backsplashes, nosings, and aprons: G1S Douglas Fir plywood core substrate (19mm (3/4") thick at horizontal surfaces and 13 (1/2") thick at vertical surfaces). 'S1' Quartz countertop finish, and plastic laminate finish combinations, as detailed on drawings.

## 2.9 TYPE 'C2' MILLWORK (Washrooms & Change Rooms, and as detailed on drawings)

All cabinetry to AWMAC standards, custom quality:

- .1 Door and drawer fronts: 18mm (11/16") Grade 'M2' particleboard core, with a plastic laminate finish on both faces (assume solid colour laminate) and on all edges to match.
- .2 Drawer boxes: 13mm (1/2") prefinished melamine panels (white) with PVC edge banding on the top edges. Drawer bottoms: 6mm (1/4") prefinished melamine panel (white) with a hardboard core.
- .3 Concealed casework carcass, bottoms, and gables: 19mm (3/4") prefinished melamine panels with PVC edge banding on all edges to match.
- .4 Cabinet backs: 19mm (3/4") prefinished melamine (white)
- .5 Cabinet base blocking: 19mm (3/4") G1S plywood.
- .6 Shelving: 19mm (3/4") prefinished melamine (white) with PVC edge banding on front edge to match. Where shelf spans exceed 900mm (36"), secure a continuous 19x50mm (3/4"x2") vertical nosing with matching finish, to the front shelf edge so the top is flush with the top of the shelf, to resist sagging.
- .7 Countertops, backsplashes, and aprons, where applicable: 19mm (3/4") G1S Douglas Fir plywood core substrate (double layer for spans > 900mm), with 'S2' solid polymer surfacing on countertops, backsplashes, nosings, and where detailed on drawings.

## 2.10 TYPE 'C3' MILLWORK (Other areas, as detailed on drawings)

All cabinetry to AWMAC standards, custom quality:

- .1 Door and drawer fronts: 18mm (11/16") Grade 'M2' particleboard core, with a plastic laminate finish on both faces (assume wood veneer colour laminate) and on all edges to match.
- .2 Drawer boxes: 13mm (1/2") prefinished melamine panels (white) with PVC edge banding on the top edges. Drawer bottoms: 6mm (1/4") prefinished melamine panel (white) with a hardboard core.
- .3 Casework carcass, bottoms, and gables: 19mm (3/4") prefinished melamine panels with PVC edge banding on all edges to match.
- .4 Cabinet backs: 19mm (3/4") prefinished melamine (white)
- .5 Cabinet base blocking: 19mm (3/4") G1S plywood.
- .6 Shelving: 19mm (3/4") prefinished melamine (white) with PVC edge banding on front edge to match. Where shelf spans exceed 900mm (36"), secure a continuous 19x50mm (3/4"x2") vertical nosing with matching finish, to the front shelf edge so the top is flush with the top of the shelf, to resist sagging.
- .7 Countertops, backsplashes, and aprons, where applicable: 19mm (3/4") G1S Douglas Fir plywood core substrate (double layer for spans > 900mm), with plastic laminate finish (assume patterned colour in a crystal finish) on countertops, backsplashes, nosings, and where detailed on drawings.

## 2.11 FABRICATION OF SOLID SURFACE MATERIALS

- .1 Refer to drawings and millwork details for locations and profiles for each solid surface material type. Follow written installation instructions from the manufacturer and reinforce seams as required.
- .2 Cut panels accurately to the required shapes and dimensions.
- .3 Fabricate with tight, hairline joints. Mitre joints accurately and cleanly, where horizontal surfaces meet the same vertical surfaces typically.
- .4 Cut holes for sinks, faucets, and other items as necessary. Cutouts shall be made with sharp tools as recommended by the manufacturer. Radius and smooth edges on top and bottom around a cutout typically.
- .5 Fabricate exposed edges to an eased profile, unless otherwise noted or detailed.

## Part 3 EXECUTION

### 3.1 GENERAL INSTALLATION

- .1 Install Work in accordance with AWMAC Custom quality standard.
- .2 Generally install millwork that goes to the floor after finished flooring Work is complete and sealed; coordinate with Contractor and other trades.
- .3 Set and secure all materials and components in place, to be rigid, plumb, and square.
- .4 Provide sufficient wood blocking attachments for wall-mounted items.
- .5 Use draw bolts in countertop joints.
- .6 Carefully scribe cabinetwork against other building components, leaving gaps no greater than 1.5 mm (0.06") maximum.
- .7 Apply small beads of sealant at all junctions between countertops and backsplashes, and between gables/shelves and adjacent wall finishes.
- .8 Apply water resistant building paper or bituminous coating over any wood construction in contact with masonry or other cementitious materials.
- .9 Site measure and provide cutouts as required for plumbing fixtures, inserts, appliances, outlet boxes, and any other fixtures and fittings.
- .10 After casework installation, fit and adjust operating hardware for cabinet doors, drawers, shelves, and all other moving parts.
- .11 When millwork installation is complete, clean off any excess substances and touch up all paint or stain finishes.
- .12 Provide two chrome wire 'D' pull, same as specified above except 150 (6") long, for each accessible toilet stall. Locate these pulls horizontally, with one on the inside face of the stall

door so that its midpoint is 250mm from the hinged side of the door and 920mm above the finished floor, and as required by the Building Code. Locate the second pull on the outside face of the stall door, 250mm from the latch side of the door at the same height.

### 3.2 SOLID SURFACE INSTALLATION

- .1 Clean substrates to receive solid surface materials and remove all loose and foreign matter.
- .2 All edges to be joined shall be straight, smooth, and clean. Follow written installation instructions from the manufacturer and reinforce seams as required.
- .3 Adhere solid surface materials with continuous beads of adhesive, as recommended by the manufacturer.
- .4 Set solid surface materials plumb and level; align adjacent pieces in the same plane.
- .5 Install with tight, hairline joints.
- .6 Fill joints between pieces and between pieces and adjacent Work with adhesive or joint sealer as recommended by manufacturer; finish smooth and flush.
- .7 Maximum variation from level and plumb is 3mm (1/8") in 3050 (10').
- .8 Maximum variation in plane between adjacent pieces at joints is 1.5mm (1/16").
- .9 Cutouts shall be made with sharp tools as recommended by the manufacturer. Radius and smooth edges on top and bottom around a cutout typically.
- .10 Clean all finished surfaces in accordance with manufacturer's instructions.
- .11 Protect installed surfaces with non-staining sheet coverings until Substantial Performance.

**END OF SECTION**