

## 1.0 GENERAL

### 1.1 References

- .1 Comply with all standards mentioned in this specification, unless more stringent requirements are given herein.
- .2 American National Standards Institute (ANSI)
  - .1 ANSI A208.1-[09], Particleboard.
  - .2 ANSI A208.2-[09], Medium Density Fibreboard (MDF) for Interior Applications.
  - .3 ANSI/HPVA HP-1-[10], American National Standard for Hardwood and Decorative Plywood.
  - .4 ANSI/BHMA A156.16 Auxiliary Hardware.
  - .5 ANSI/ASME 18.6.1 R2012 Wood Screws (Inch Series).
- .3 ASTM International
  - .1 ASTM A 153/A 153M-16, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
  - .2 ASTM E 1333-[14] Standard Test Method for Determining Formaldehyde Concentrations in Air and Emission Rates from Wood Products Using a Large Chamber.
  - .3 ASTM F 1667-13 Standard Specification for Driven Fasteners: Nails, Spikes and Staples.
- .4 Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI)
  - .1 Architectural Woodwork Quality Standards, 2<sup>nd</sup> edition, 2014.
- .5 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-11.3-M87, Hardboard.
- .6 Canadian Standards Association (CSA)
  - .1 CSA B111-74 (R1998), Wire Nails, Spikes and Staples (Wire Nails, Plugs and Jumpers).
  - .2 CSA O112.4-M1977 (R2006), Standards for Wood Adhesives.
  - .3 CSA O115-M1982 (R2001), Hardwood and Decorative Plywood.
  - .4 CSA O121-08 (R2013), Douglas Fir Plywood.
  - .5 CAN / CSA-O141-05 (R2014), Softwood Lumber.
  - .6 CSA O151-14 Canadian Softwood Plywood.
  - .7 CSA O153-FM1980 (R2014), Poplar plywood.
- .7 National Hardwood Lumber Association (NHLA)
  - .1 Rules for the Measurement and Inspection of Hardwood and Cypress, January 1996.

- .8 National Lumber Grading Commission (NLGA)
  - .1 Classification Rules for Canadian Lumber, 2000.
- .9 Canadian General Standards Board (CGSB)
  - .1 CGSB 51-GP-51M (Feb.81), Polyethylene Sheet for Use in Building Construction
- .10 Underwriters Laboratories of Canada (CAN/ULC)
  - .1 CAN/ULC-S102, Standard Method of Test for Surfaces Burning Characteristics of Building Materials and Assemblies.
  - .2 CAN/ULC-S109-03, Flame Tests of Flame Resistant Fabrics and Films
- .11 Forest Stewardship Council (FSC)
  - .1 FSC-STD-01-001-2012, FSC Principle and Criteria for Forest Stewardship
- .12 South Air Quality Management District, California State (SCAQMD)
  - .1 SCAQMD Rule 1113-11, Architectural Coatings
  - .2 SCAQMD Rule 1168-05, Adhesives and Sealants Applications

## 1.2 Action and Informational Submittals

- 1 Provide submittals in accordance with **Section 01 33 00** and the following requirements:
  - .1 **Shop drawings :**
    - .1 Clearly indicate construction details, profiles (full size), jointing, fastening and other related details (half size).
    - .2 Submit contract hardware list; indicate specified hardware, including make, model, material, function, finish and other pertinent information.
    - .3 Drawings of structural elements and their supporting elements to be signed and sealed by a professional engineer, member of the Northwest Territories and Nunavut Association of professional Engineers and Geoscientists (NAPEG).
  - .2 Submit required samples in accordance with **Section 01 33 00 - Submittal Procedures:**

## 1.3 Source Quality Control

- .1 All Lumber to be grade stamped by an agency certified by CLSAB (Canadian Lumber Standards Accreditation Board).
- .2 Plywood shall be identified by grade mark in accordance with applicable CSA standards.
- .3 Pressure treated woods: as indicated.

## 1.4 Product Delivery, Storage and Handling

- .1 Protect materials against dampness during and after delivery.
- .2 Store materials in ventilated areas, protected from extreme changes of temperature or humidity, on raised platforms.
- .3 Store packaging flat horizontally. Do not remove guards between components before starting installation.

## 1.5 Waste Management

- .1 Separate waste materials for disposal, re-use and recycling in accordance with **Section 01 74 19**.

## 2.0 PRODUCTS

### 2.1 General

- .1 All adhesives used in the fabrication of plywood, composite wood and plastic laminate products shall not contain urea formaldehyde.
- .2 For basic metal materials and finishes see **Section 05 50 00**.

### 2.2 Wood, Untreated Lumber Material

- .1 **Soft wood (lumber):**
  - .1 Unless specified otherwise, untreated softwood, S4S, (milled 4 sides), shall have moisture content 19% or less in accordance with CAN/CSA-O141 and NLGA requirements for classification.
  - .2 Machine stress-rated lumber is acceptable for all purposes.
  - .3 Forest Stewardship Council (FSC) certified.
  - .4 Glued end-jointed lumber is not acceptable.
- .2 **Wood furring, as well as blocking, nailing strips, grounds, rough bucks and sleepers, etc.:**
  - .1 Finish: S2S acceptable.
  - .2 Board sizes: "Standard" or better grade.
  - .3 Dimension sizes: "Standard light framing", grade "Standard" or better.
  - .4 Post and timber sizes (square wood pieces): "Standard" or better grade.
  - .5 Forest Stewardship Council (FSC) certified.

### 2.3 Hardwood

- .1 **Hardwood lumber:** as per NHLA and AWMAC requirements, moisture content of maximum 7%, (premium grade).
- .2 Forest Stewardship Council (FSC) certified.
- .3 Exposed finished hardwood elements detailed in Plans: solid white birch. To finish with varnish as per **Section 09 91 00**.

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- 2.4 **Wood, Treated Lumber Material:** as per 2.2 and 2.3 above, pressure treated with water resistance preservatives : chromated copper arsenate, with water-repellant additives in emulsion for treatment in closed vacuum cylinder, to obtain net retention of 6.4 kg/m<sup>3</sup> of wood, as per CSA O80 Series. After treatment, dry material so that moisture content does not exceed 19%.
- 2.5 **Panels:**
- .1 **Douglas fir plywood (DFP):** in accordance with CSA O121, "construction" classification, "standard" category, watertight classification (exterior grade). For exterior work, structural work, floors, etc. Forest Stewardship Council (FSC) certified and urea formaldehyde free.
  - .2 **Canadian softwood plywood (CSP) (SPF – Spruce-Pine-Fir):** to CSA O151, "construction" classification, "standard" category. as per CSA O151; for exterior and interior work, nailing strips, rough carpentry, structural work. Forest Stewardship Council (FSC) certified and urea formaldehyde free.
  - .3 **Hardwood plywood:** to CSA O115. Forest Stewardship Council (FSC) certified and urea formaldehyde free.
  - .4 **Poplar plywood:** complies with CSA O153, classification "construction", category "standard". Forest Stewardship Council (FSC) certified and urea formaldehyde free.
  - .5 **Hardboard (OSB):** in accordance with CAN / CGSB-11.3.
  - .6 **Medium Density Fibreboard:** to ANSI A208.2 and having a density of 769 kg / m<sup>3</sup>, urea formaldehyde free and Forest Stewardship Council (FSC) certified.
  - .7 **Fire Retardant Plywood Board:** pressure-treated with fire retardant to meet Underwriters Laboratories FR-S rating or a flame spread and smoke index rating denoting a surface-burning characteristic rating of 25 or less for flame spread and smoke developed, bearing the Underwriters Laboratories label or stamp attesting to the FR-S rating or flame spread and smoke index rating, and to the fact that it also meets the American Wood Protection Association (AWPA) P50, U1, UCFA for interior Type A (HT) use, kiln-dried to a maximum moisture content of 15%, with no VOC's and no Formaldehyde, complying with the following standards and rules:
    - .1 Canadian Building Code Compliant Pressure-Impregnated FRTW
    - .2 Underwriters Laboratories® of Canada (ULC®)
      - .1 CAN/ULC-S102: Surface Burning Characteristics of Building Materials and Assemblies
      - .2 CAN/ULC-S102.2: Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies
    - .3 GREENGUARD Gold Certified
    - .4 It may be replaced by regular plywood painted with flame retardant paint, so that it meets the same standards, requirements and performance of the products specified above. A special formula colourless preservative giving wood very low hygroscopicity, corrosion protection, non blooming properties besides fire resistance, paintability and stainability. Treated wood is UL
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classified as "FRS". After treatment, dry material so that moisture content does not exceed 19%.

- .8 **Pressure Treated Plywood Panel, Water Resistant** : in accordance with CSA O121, "construction" classification, "standard" category, watertight classification, pressure treated with water resistance preservatives ; chromated copper arsenate, with water-repellant additives in emulsion for treatment in closed vacuum cylinder, to obtain net retention of 6.4 kg/m<sup>3</sup> of wood, as per CSA O80 Series.
- .9 All plywood as per CSA O325.0, standard construction, where applicable, with maximum moisture content of 8% at time of manufacture.

## 2.6 Support :

- .1 **Douglas fir plywood (Douglas fir)**: complies with CSA O121, "construction" classification, "standard" category; thickness as drawings.
- .2 **Lumber**: Unless otherwise indicated, softwood, S4S (4-side bleached), with a moisture content not exceeding 19%, and complying with the following standards and rules:
  - .1 CAN / CSA-O141.
  - .2 NLGA, Classification Rules for Canadian Lumber.

## 2.7 Adhesives

- .1 **All-purpose adhesive for construction**: polyurethane based adhesive, for strong construction use.
- .2 **Adhesive for wood**: polyvinyl acetate latex or urethane based adhesives for wood products.
- .3 **Adhesive for wood, mastic type**: synthetic rubber-based, general use.

## 2.8 Accessories

- .1 Nails and staples: to CSA B111; galvanized to CAN / CSA-G164. Galvanized for outdoor structures, interior structures in damp locations and treated wood structures; with ordinary finish for other works.
- .2 Wood screws: steel, to CSA B33.4 standard, with ordinary finish. Of type and size suitable for the destination.
- .3 Keys: made of metal.
- .4 Adhesive: recommended by the manufacturer.
- .5 Use the least toxic sealants and adhesives that meet the requirements of this section.

- .6 Wood preservative for water resistance (for touch-ups on treated wood and plywood): water repellent preservative for cut surfaces of treated wood, 2% copper naphthenate solution, colour "Soft Green", ignition point 38°C min. After treatment, dry material so that moisture content does not exceed 19%.

- .6 For glass accessories see **Section 08 80 50**.

## 2.9 Use of the panels

- .1 Nailing stock for mechanical and electrical equipment must be 19mm fire retardant plywood. Refer to mechanical and electrical drawings for their location.
- .2 Frame in wood elements 19 x 38 mm @ 300 mm c / c for nails bottom of mechanical and electrical equipment when applicable.
- .3 Integrated Furniture: See **Section 06 40 00 – Architectural Wood and Plastic work**.

## 3.0 EXECUTION

### 3.1 General

- .1 Comply with requirements of the Canadian National Building Code (CNB), current edition, supplemented by the following articles.
- .2 Execute finish carpentry to AWI / AWMAC / WI quality standards, as prescribed in "Architectural Woodwork Standards".
- .3 Install members true to lines, levels and elevations, square and plumb.
- .4 Use only sound, thoroughly seasoned materials of the longest practical lengths and sizes to minimize jointing. Use materials free from warp, which cannot be easily corrected by anchoring and attachment. Sort out and discard warped materials and materials with other defects, which would impair the quality of the work.
- .5 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
- .6 Countersink bolts where necessary to provide clearance for other work.
- .7 Drown the head of finishing nails. If screws are used to secure the elements, install the screws in countersunk, round and carefully drilled holes, and close the holes with matching wood plugs.
- .8 Fit this work to other work; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds and similar supports to allow proper attachment of other work. Verify dimensions shown and take measurements before proceeding with the work.

- .9 Use galvanized fasteners for all exterior work and for work in humid areas.
- .10 Install prefabricated items according to manufacturer's recommendations.
- .11 Install plastic items according to notes on drawings.
- .12 Replace exposed woodwork that has suffered damage to its surface, including hammer blows or other marks that could affect the aesthetics of the building.

### 3.2 Application of Wood Preservatives

- .1 Pressure treat lumber and plywood used in exterior walls, roof, etc. or in contact with concrete, with wood preservative, before installation, in accordance with CSA O80 Series F97. For a thorough impregnation of preservative, puncture the posts and studs with the permacised incision method (GEN-II) before treatment.
- .2 Re-treat surfaces exposed by cutting, trimming or boring with liberal brush application of preservative before installation.
- .3 Remove with fine sandpaper chemical deposits on treated wood to receive applied finish.

### 3.3 Nailing strips, nailing bases and sub-frames

- .1 Install sub-frames, nailing strips and trim around bays to support frames and other structures.
- .2 Install nailing strips behind all wall mounted equipment and accessories, including interior handrails, bathroom accessories, clothes hooks, shelves, fixed furniture and millwork.
- .3 Nailing strips construction: 19 mm thick plywood attached to steel studs. The 19 mm plywood must be continuous behind the elements to be fixed.
- .4 Coordinate the location of nailing strips before the construction of the partitions.

### 3.4 Mounting panels for electrical and mechanical equipment

- .1 Provide and install panels necessary for mounting electrical and mechanical equipment as indicated on drawings.
- .2 Install panels on partition surface or exposed structural elements as appropriate.
- .3 Where applicable, install on a 19 x 38 mm wooden frame reinforced with elements of the same dimensions at intervals of not more than 300 mm.
- .4 Provide adequate fastening to support appliances and electrical boxes.
- .5 Paint as described in **Section 09 91 00 – Paints**.

3.5     **Cleaning**

- .1       Perform cleaning as per **Section 01 74 11**.
- .2       Remove soil, stain, and extraneous materials from exposed surfaces of items installed by this Section. Leave adjacent surfaces and areas of work clean and free of any soiling, debris, or damage caused by work of this Section.

**End of Section**



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## 1.0 GENERAL

### 1.1 References

- .1 Comply with all standards mentioned in this specification, unless more stringent requirements are given herein.
- .2 American National Standards Institute (ANSI)
  - .1 ANSI A208.1-2009, Particleboard
  - .2 ANSI A208.2-2009, Medium Density Fiberboard (MDF).
  - .2 ANSI/NEMA LD3-2005, High Pressure Decorative Laminates
  - .3 ANSI) HPVA HP-1-2010, American National Standard for Hardwood and Decorative Plywood
  - .4 ANSI/ASME B18.6.1-1981 R2008, Wood Screws (Inch Series)
  - .5 ANSI/BHMA A156.9-2010, Cabinet Hardware
  - .6 ANSI/BHMA-A156.11-2010, Cabinet Locks
  - .7 ANSI/BHMA A156.16-2002, Auxiliary Hardware
  - .8 ANSI/BHMA A156.18-2012, Materials and Finishes
  - .9 ANSI/BHMA A156.20-2006 (R2012) , American National Standard for Strap and Tee Hinges and Hasps
- .3 American Society for Testing and Materials (ASTM)
  - .1 ASTM E 1333-14, Standard Test Method for Determining Formaldehyde Concentrations in Air and Emission Rates From Wood Products Using a Large Chamber.
  - .2 ASTM D 2832-92 R1999, Standard Guide for Determining Volatile and Nonvolatile Content of Paint and Related Coatings.
  - .3 ASTM D 5116-97, Standard Guide For Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products.
- .4 Architectural Woodwork Manufacturers Association of Canada (AWMAC)
  - .1 Architectural Woodwork Standards (AWMAC AWS), 2014.
- .5 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-11.3-M87, Hardboard.
  - .2 CAN/CGSB-71.20-M88, Adhesive, Contact, Brushable.
  - .3 CAN/CGSB-71.19-M88, Adhesive, Contact, Sprayable.
- .6 Canadian Standards Association (CSA)
  - .1 CSA B111-74 (R1998), Wire Nails, Spikes and Staples (Wire Nails, Plugs and Jumpers).
  - .2 CSA O112.4-M1977 (R2006), Standards for Wood Adhesives.
  - .3 CSA O112.5-Series-M-1977 (R2006), Urea Resin Adhesives for Wood (Room- and High-Temperature Curing).

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- .4 CSA O112.7-Series M-1977 (R2006), Resorcinol and Phenol Resorcinol Resin Adhesives for Wood (Room and Intermediate Temperature Curing).
  - .5 CSA O115-M1982 (R2001), Hardwood and Decorative Plywood.
  - .6 CSA O121-08 (R2013), Douglas Fir Plywood.
  - .7 CAN / CSA-O141-05 (R2014), Softwood Lumber.
  - .8 CSA O151-14 Canadian Softwood Plywood.
  - .9 CSA O153-FM1980 (R2014), Poplar plywood.
  - .10 CAN/CSA-Z809-[08(R2013)], Sustainable Forest Management.
  - .7 Environmental Choice Program (ECP)
    - .1 ECP-44-92, Adhesives.
    - .2 ECP-45-92, Sealants and Caulking.
    - .3 ECP-76-98, Coatings.
  - .8 International Organization for Standardization (ISO)
    - .1 ISO 14040-97, Environmental Management - Life Cycle Assessment - Principles and Framework.
    - .2 ISO 14041-98, Environmental Management - Life Cycle Assessment - Definition of Purpose and Scope and Inventory Analysis.
  - .9 National Electrical Manufacturers Association (NEMA)
    - .1 NEMA LD-3-95.
  - .10 National Hardwood Lumber Association (NHLA)
    - .1 Rules for the Measurement and Inspection of Hardwood and Cypress, January 1996.
  - .11 National Lumber Grading Commission (NLGA)
    - .1 Classification Rules for Canadian Lumber, 2000.
  - .12 South Air Quality Management District, California State (SCAQMD)
    - .1 SCAQMD Rule 1113-11, Architectural Coatings
    - .2 SCAQMD Rule 1168-05, Adhesives and Sealants Applications
  - .13 Green Seal Environmental Standards (GS)
    - .1 GS-11-2015, Paints, Coatings, Stains and Sealers.
    - .2 GS-36-2013, Adhesives for Commercial Use.
  - .14 Sustainable Forestry Initiative (SFI)
    - .1 SFI-2015-2019 Standard and Rules.
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- .15 All architectural woodwork components to be manufactured in accordance with AWMAC's quality of choice standards and the specific requirements set out in this section.

### 1.3 Action and Informational Submittals

- .1 Provide submittals in accordance with **Section 01 33 00** and the following requirements:
- .1 **Shop drawings :**
    - .1 Clearly indicate construction details, profiles (full size), jointing, fastening and other related details (half size).
    - .2 Submit contract hardware list; indicate specified hardware, including make, model, material, function, finish and other pertinent information.
    - .3 Drawings must indicate location of required openings in storage furniture for utilities connection, typical and special installation conditions, connections, accessories and anchors, and location apparent fasteners.
  - .2 **Manufacturer's instructions :**
    - .1 Submit manufacturers' pre-printed instructions for the installation of casework hardware.
  - .3 **Extra materials, special tools and spare parts:**
    - .1 Supply minimum 2 examples of the following:
      - .1 Each type of operating casework hardware (e.g. hinges, locks, latches, levelling guides, drawer slides, etc).
      - .2 Each type of drawer and door handle.
      - .3 Each type of special tool required for installation, adjustment, and maintenance of casework and accessories, if applicable.
    - .2 Supply minimum 20 examples of the following:
      - .1 Each type of door and drawer bumper.
      - .2 Each type of adjustable shelf support.
  - .4 **Operation and maintenance data :** for plastic laminate surfaces and hardware.
- .2 Submit required samples in accordance with **Section 01 33 00 - Submittal Procedures:**
- .1 Unless otherwise noted below, submit a sample of each of the products described in this section.
  - .2 Submit a 75mm x 100mm sample of melamine coated panels.
  - .3 Submit a full depth, 200mm width sample of varnished solid wood white birch windows sill.

### 1.4 Pre-installation meeting

- .1 Prior to enclosing framing, convene a meeting of contractor, casework fabricator, casework installer, framing subcontractor and Departmental Representative.
- .1 Review locations of backing required for casework installation as shown on shop drawings

- and as necessary for installation.
- .2 Review method of attachment for backing to wall system.
- .3 Review coordination with other affected sections.

### 1.5 Source Quality Control

- .1 All Lumber to be grade stamped by an agency certified by CLSAB (Canadian Lumber Standards Accreditation Board).
- .2 Plywood shall be identified by grade mark in accordance with applicable CSA standards.
- .3 Pressure treated woods: as indicated.

### 1.6 Product Delivery, Storage and Handling

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

### 1.7 Waste Management

- .1 Separate waste materials for disposal, re-use and recycling in accordance with **Section 01 74 19**.

## 2.0 PRODUCTS

### 2.1 General

- .1 All adhesives used in the fabrication of composite wood and plastic laminate products shall not contain urea formaldehyde.
- .2 For basic metal materials and finishes see **Section 05 05 00**.

### 2.2 Wood, Untreated Lumber Material

- .1 **Soft wood (lumber):**
  - .1 Unless specified otherwise, untreated softwood, S4S, (milled 4 sides), shall have moisture content 19% or less in accordance with CAN/CSA-O141 and NLGA requirements for classification.
  - .2 Machine stress-rated lumber is acceptable for all purposes.
  - .3 Forest Stewardship Council (FSC) certified.
  - .4 Glued end-jointed lumber is not acceptable.
- .2 **Wood furring, as well as blocking, nailing strips, grounds, rough bucks and sleepers, etc.:**
  - .1 Finish: S2S acceptable.
  - .2 Board sizes: "Standard" or better grade.

- .3 Dimension sizes: "Standard light framing", grade "Standard" or better.
- .4 Post and timber sizes (square wood pieces): "Standard" or better grade.
- .5 Forest Stewardship Council (FSC) certified.

### 2.3 Hardwood

- .1 Hardwood lumber: as per NHLA and AWMAC requirements, moisture content of maximum 7%, (premium grade).
- .2 Forest Stewardship Council (FSC) certified.
- .3 Species: white birch, or as indicated, to receive varnish as per **Section 09 91 00**).

### 2.4 Poplar plywood: complies with CSA O153, classification "construction", category "standard".

### 2.5 Medium Density Pressed Particleboard: in accordance with ANSI A208.2 and having a density of 769 kg / m<sup>3</sup>. In general, all exposed surfaces of furniture will be covered with laminated plastic and all concealed surfaces will be covered with white melamine. Thicknesses as per plans.

### 2.6 Russian plywood panels composed entirely of thin folds in white birch

- .1 Thickness of the panels indicated on the drawings
- .2 Veneer 1/32: white birch

### 2.7 Medium Density Pressed Particleboard Covered with Melamine

- .1 Wood panel : particleboard: See **above**.
- .2 Melamine: as per ANSI/NEMA LD3 standard LQ1, melamine resin impregnated decorative sheet thermally fused to both faces of particleboard core.
- .3 Sides: plastic covering of the same color.
- .4 Colour and texture: as selected by Departmental Representative

### 2.8 Plastic Laminate (PL) Sheet, Regular

- .1 Plastic laminate, complies with CAN3-A172, General Purpose Class, Type 5, 1.2 mm thick, suitable for covering vertical surfaces as well as horizontal surfaces.
  - .1 Plastic laminate backing sheet: compatible with the type of plastic laminate as used, same thickness as facing sheet, sanded on one face, regular backing grade 9GP-BK-R), suitable for covering vertical surfaces as well as horizontal surfaces.
  - .2 Product chart must contain a large choice of textures and colours, including a large choice of bright solid colours (including dark grey, medium grey, light grey, deep turquoise, light turquoise, moss green, light green, sun yellow and orange) a large choice of wood grains

and a large choice of geometric patterns.

.3      **12 Colours and textures**, to be selected by the Departmental Representative:

## 2.9      **Plastic Laminate (PL) Compact Counters**

- .1      Solid Surface Panels. as per ANSI / NEMA LD3-2005, High Pressure Decorative Laminates, Smooth Surface, Phenolic, refer to drawings for location and type.
- .2      Adhesive recommended by the manufacturer.
- .3      Minimize joints. Acceptable seams when there is a change of direction of the material or when the span is longer than a solid sheet of solid surface.
- .4      Unless indicated otherwise in the drawings, provide 3 mm chamfers for all exposed edges and corners.
- .5      Product chart must contain a large choice of textures and colours, including a large choice of bright solid colours (including dark grey, medium grey, light grey, deep turquoise, light turquoise, moss green, light green, sun yellow and orange) a large choice of wood grains and a large choice of geometric patterns.
- .6      **2 Colours and textures**, to be selected by the Departmental Representative:

2.10      **Stainless Steel Sheets and Stainless Steel Elements:** 304 Series Stainless Steel, No. 4 Finish, 16 gauge.

2.11      **Aluminum plates:** natural clear anodized finish, thickness as drawings.

## 2.12      **Adhesives**

- .1      Use the least toxic sealants and adhesives that meet the requirements of this section.
- .2      **All-purpose adhesive for construction:** polyurethane based adhesive, for strong construction use.
- .3      **Adhesive for wood:** polyvinyl acetate latex or urethane based adhesives for wood products.
- .4      **Adhesive for wood, mastic type:** synthetic rubber-based, general use.
- .5      **Laminate Adhesive:** urea-formaldehyde adhesive to CSA O112.5, contact adhesive to CAN / CGSB-71.20, resorcinol adhesive to CSA O112.7, polyvinyl adhesive to CSA standard O112.4, two component thermosetting epoxy adhesive.
  - .1      VOC emission tests to be performed in accordance with ASTM D 2369 and ASTM D 2832.
  - .2      Acceptable products: products meeting PCE-44.

## 2.13 Accessories

- .1 Nails and staples: to CSA B111; galvanized to CAN / CSA-G164. Galvanized for outdoor structures, interior structures in damp locations and treated wood structures; with ordinary finish for other works.
- .2 Wood screws: steel, to CSA B33.4 standard, with ordinary finish. Of type and size suitable for the destination.
- .3 Keys: made of metal.
- .4 Sealant: see **Section 07 92 00 - Joint Sealants**.
- .5 For glass accessories see **Section 08 80 50**.

## 2.14 Shelves

- .1 Shelves of dimensions as indicated on drawings, Medium Density Pressed Particleboard panels covered with white melamine on all visible surfaces, including all banks and fields.
- .2 Rack mount supports (see "Hardware" of this section of the specifications), dimensions as per drawings, ensure that the shelves exceed supports of 50 mm maximum.
- .3 The shelves will be wall mounted, provide nailing bases accordingly, refer to the requirements of **Section 06 20 00 –Carpentry**

## 2.15 Windows sill

- .1 Supply and install the white birch solid wood window sill in the direction of the smallest section (see drawing), dimensions as drawings. Use the longest possible sections.
- .2 When screws are used, practice clean milling and insert wood plugs matching the wood of the sill.
- .3 Sand the sill to ensure a smooth and smooth finish without any bumps.
- .4 Varnish as specified in **Section 09 91 00**.

## 2.16 Suspended Artwork

- .1 Translucent polycarbonate panels specially formulated for exterior applications, lightweight, colored, flammability resistant, high impact strength, UV resistant, complying with CAN/ULC 102.2.
  - .1 Thickness: 13mm.
  - .2 Artworks dimensions : 1220 mm X 1220mm maximum each, 4 units. Exact dimensions and shape to be confirmed by the Departmental Representative.
  - .3 Finish: Sandstone
  - .4 4 colours to be selected by the Departmental Representative

- .5 Provide laser cutting by the manufacturer. Digital drawing of artwork will be provided by Departmental Representative.
- .6 Fasteners: provide suspension hardware system compatible with the polycarbonate panels and the surface from which they will be suspended. Provide a minimum of 12 units of fasteners per suspended artwork.

#### 2.17 Casework fabrication – general

- .1 Varnished or painted wood elements: Sand finish nail heads and fill holes with a paste to be resurfaced and sand until a smooth finish is achieved. When using screws, use clean milling and insert matching end caps. If the item is varnished wood, choose matching wood plugs to the adjacent wood.
- .2 Install at the factory fittings for doors, shelves, drawers, etc. Unless otherwise indicated, the rack mount supports will be installed on the surface.
- .3 Unless otherwise specified, cabinet shelves shall be adjustable.
- .4 Make necessary openings for plumbing fixtures, inserts, accessories, electrical outlet boxes and other appliances.
- .5 When assembling items to be delivered to the site at the factory, take into account the difficulties in handling the structures and the free space in the openings of the buildings.
- .6 The elements in which appliances, equipment and other equipment must be built-in or to be contiguous to these appliances must be made to the appropriate dimensions, obtained beforehand.
- .7 The colors and patterns of the laminate sheets to be abutted shall be uniform.
- .8 Laminate to be bonded to substrate in accordance with adhesive manufacturer's instructions. It must marry perfectly the support and adhere to it all over its surface. The sheets used must be up to 3000 mm in length and must not have joints within 600 mm of the opening provided for a sink.
- .9 Post formable grade laminate to be profiled or curved as indicated in accordance with laminate manufacturer's instructions.
- .10 The exposed edges of the substrate shall be covered with a laminate strip for flat surfaces. Exposed rims should be chamfered evenly at about 20 °. The edges of the laminate should not be mitered.
- .11 A compensation sheet must be placed on the underside of the support.
- .12 An interior liner shall be installed in the cabinets and at the locations indicated.



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2.18 Casework Accessories

- .1 Use one manufacturer's product for all similar items.
- .2 **Furniture hardware:** compliant with ANSI/BHMA-A156.9, A156.11, A156.16, A156.18 and A156.20, as applicable, first quality, including but not limited to, the following items; unspecified colors or finishes are to be selected by the Departmental Representative:
  - .1 **Rack mount** for shelving, heavy duty double standard with 2" vertical intervals and 1" long slots providing superior carrying strength for commercial shelving need, 1600 mm length, white finish.
  - .2 **Heavy-Duty steel Bracket** for shelving, for double mounting lever, 370 mm length, white finish.
  - .3 **Heavy-Duty Clip Top Hinge** - 107° opening angle, nickel plate steel, strait-arm and self-closing mechanism.
  - .4 **Self-adhesive nylon bumpers**, 3/8 " diameter, provide two pads per door at least and 760mm c/c on the height, opening side. Provide four pads per drawer.
  - .5 **Drawer slides**, full extension, pretension, mechanism in close position with lock lever, steel ball bearing, side capacity: 25kg/551lbs, for 600mm length, white (30) finish.
  - .6 **Heavy-duty extensions and drawer slides**, Extra-heavy-duty, for large module and pull-out stairs, full extension pretension, mechanism in close position with lock lever, steel ball bearing, side capacity: 150 to 550 lbs, length as per woodwork module requirement, white (30) finish.
  - .7 **Steel handle**, compliant with BHMA, length overall dimension 97mm, projection overall dimension 30mm, with rounded ends, satin chrome finish.
  - .8 **Lock for drawers and cabinets**, disc tumbler mechanism, 19mm diameter, 10mm cam throw, solid brass nickel finish, provide three keys per lock. All the locks of the furniture in one room will be activated by one type of key.
    - .1 Strike Plate, solid brass nickel finish, 12 x 1 x 60 mm
  - .9 **Circular cable grommets**, diameter overall 60mm, white.
  - .10 **Round Closet Rods**, chrome 1" and 1-1/4", 18 Gauge, variable length.
  - .11 **Closed Round Rod Support**, diameter 1 1/4" - Screw Mount, chrome.
  - .12 **Heavy-duty Caster**, Industrial Gray Thermoplastic Rubber Caster, Heavy-duty, load capacity 112 kg, total height 126 mm, wheel diameter 102 mm, mounting plate, swivel without brake.

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- .13 **Kick down door holder**, spring mechanism engages with simple pressure of the foot height 133 mm, color finish silver.
  - .14 **Secret gate latch**, interchangeable left or right-hand mounting, single-acting, reversible, supplied with dummy knob, bolt activated by pressing the concealed button on the side of the latch case, overall dimensions of 51 x 17x 82 mm, finish polish nickel.
  - .15 **Pivot out Waste bin** for Base Cabinets. Large-capacity bin with a shallow depth, ideal for installation in front of pipes. Full access when opened. Lid remaining inside cabinet when door is open, clipping ring on top holding bag in place, for 1 x 18 liters bin capacity, for interior cabinet dimensions 419 mm in width X203mm in depth X 457mm in height, white.
  - .16 **Double pull-out waste container** for Base Cabinets, full extension slides for complete access and easy removal of bins for emptying or cleaning, heavy-duty wire frame, for 2 x 42 liters bin capacity, for interior cabinet dimensions 425 mm maximum, polymer white bins.
  - .17 **Double metal utility hook**, oval escutcheon, curved double hook, chrome plated, 54 mm projection, 81 mm height, width 19 mm, for under-mounted with 2 counter-sunk screws.
  - .18 **Single metal utility hook**, oval escutcheon, curved single hook, chrome plated, 54 mm projection, 81 mm height, width 19 mm, for surface-mounting with 2 counter-sunk screws.
  - .19 **Magnetic latch door lock**, finish white plastic, provide 10 magnetic keys.
  - .20 **90° metal bracket**, steel and zinc coated, 29 width X 2mm thickness, 200 X 200mm.
  - .21 **Heavy duty shelf bracket**, steel, shop painted white, 29 width X 300 depth X 210mm height.
  - .22 **Mop and broom rack**, 18-8, type-304, 22-gauge (0.8mm) stainless steel with satin finish. Unit shall be 610mm long with 3 spring-loaded rubber cam holders.
  - .23 **Anti-slip adhesive tape**, grease and water resistant, 51mm width, color: grey.

### 3.0 EXECUTION

#### 3.1 General

- .1 Comply with requirements of the Canadian National Building Code (CNB), current edition, supplemented by the following articles.
- .2 Execute finish carpentry to AWI / AWMAC / WI quality standards, as prescribed in "Architectural Woodwork Standards".
- .3 Install members true to lines, levels and elevations, square and plumb.

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- .4 Use only sound, thoroughly seasoned materials of the longest practical lengths and sizes to minimize jointing. Use materials free from warp, which cannot be easily corrected by anchoring and attachment. Sort out and discard warped materials and materials with other defects, which would impair the quality of the work.
  - .5 Do not work with particle board without taking necessary precautions. Use dust collectors and high quality respirator masks when cutting or sanding wood panels.
  - .6 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
  - .7 Countersink bolts where necessary to provide clearance for other work.
  - .8 Fit this work to other work; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds and similar supports to allow proper attachment of other work. Verify dimensions shown and take measurements before proceeding with the work.
  - .9 Use galvanized fasteners for all exterior work and for work in humid areas.
  - .10 Install prefabricated items according to manufacturer's recommendations.
  - .11 Install plastic items according to notes on **drawings**.

### 3.2 Examination

- .1 Verify work by other trades that is related to the work of this Section and report in writing to the Departmental Representative any defects that may affect the work of this Section.

### 3.3 Installation of Finish Carpentry and Millwork

- .1 Install prefinished millwork at locations shown on **drawings**. Position accurately, level, plumb straight according to dimensions, plans, details and instruction furnished by the fabricator.
- .2 Fasten and anchor millwork and its components securely. Provide heavy duty fixture attachments for hanger bar.
- .3 Use draw bolts and splines in countertop joints. Make flush hairline joints.
- .4 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.
- .5 Provide holes for shelf supports at each 50 mm or as indicated.
- .6 Fit hardware accurately and securely in accordance with the manufacturer's directions.

3.4     **Cleaning**

- .1     Perform cleaning as per **Section 01 74 11**.
- .2     Remove soil, stain, and extraneous materials from exposed surfaces of items installed by this Section. Leave adjacent surfaces and areas of work clean and free of any soiling, debris, or damage caused by work of this Section.

**End of Section**