

## **02070 RENOVATIONS & ALTERATIONS**

### **1 GENERAL**

#### **1.1 Related Documents**

- .1 Drawings, General Conditions, and Supplemental General Conditions.

#### **1.2 Section Includes**

- .1 Provide all labour, materials, methods, equipment and accessories to complete all demolition, renovations, alterations, removals, etc. to existing building.
  - .1 Remove, replace existing exterior wall sheathing, windows
  - .2 Remove, existing wall finishes, framing, millwork as indicated on drawings
  - .3 Remove, replace existing partitions, doors, frames, etc. indicated, as indicated on drawings
  - .4 Remove, replace existing floor coverings, base, etc. indicated, required. Prepare remaining floor surfaces as required for new floor coverings application scheduled.
  - .5 Remove, dispose, relocate, reinstall existing fixtures, accessories, fitments, equipment, etc. as indicated, required.
  - .6 Other work, demolition, renovation, alteration, removal, etc. indicated, required.,
  - .7 Existing roofing as per specifications of assigned sub-contract
- .2 Coordinate work of trades, schedule elements of demolition, alterations, renovation work by procedures, methods to expedite completion.
- .3 All work in existing building indicated, required must be sequenced to meet Construction Phasing requirements as indicated, required.
- .4 Cut, move, remove items as required for access, allow demolition, alterations, renovations, new work to proceed:
  - .1 Repair, removal of hazardous, unsanitary conditions.
  - .2 Removal of abandoned items, items serving no useful purpose, abandoned piping, wiring, etc.
  - .3 Removal of unsuitable, extraneous material not marked for salvage, abandoned furnishings, equipment, debris, rotted wood, rusted metals, deteriorated concrete.
  - .4 Cleaning of existing surfaces, removal of surface finishes required to install new Work, finishes.
- .5 Patch, repair, refinish existing items, surfaces to remain to new specified condition for each material, with approved transition to adjacent new construction.

#### **1.3 Related Sections**

- .1 Structural Dwgs: Structural work required.
- .2 Division 15,16:Removal, disconnection, reconnection, capping-off, relocating, rerouting, replacing mechanical services, electrical work, fixtures, etc.
- .3 All Sections: As required, indicated to complete the work.
- .4 City: Removal, re-installation of movable furniture, equipment, etc.

#### **1.4 Examination**

- .1 Examine all areas undergoing, involved in, connected with renovation, alteration, demolition work. Examine Site, determine nature, extent of materials existing.

#### **1.5 Alterations Cutting & Protection**

- .1 Assign work of moving, removal, cutting and patching to trades qualified to perform work in manner to cause least damage to each type of work.
- .2 Provide means of returning surfaces to appearance of new work.

- .3 Perform cutting, removal work to remove minimum necessary, in manner to avoid damage to adjacent work.
- .4 Cut finish surfaces, masonry, plaster, metals, etc. by methods to terminate surfaces in straight lines, at natural points of division.
- .5 Perform cutting, patching as specified, as required for all trades except mechanical, electrical piping, ductwork, conduit penetrations.
- .6 Protect existing finishes, equipment, adjacent work scheduled to remain, etc. from damage.
- .7 Discoveries of construction, furnishing, articles having historic, private value shall remain in City possession;
  - .1 Promptly notify City.
  - .2 Protect discovery from damage from elements, Work.
  - .3 Contract Administrator will promptly advise City decision for discovery disposition.
  - .4 Store items retained by City in secure, dry location on site.
  - .5 Dispose items City releases off site.

## **2 PRODUCTS**

### **2.1 Materials for Patching, Extending & Matching**

- .1 Provide same products, types of construction in existing structure required to patch, extend, match existing work.
- .2 Perform patching, extending, matching as required to make Work complete, consistent to identical quality standards of products, finishes, type of construction existing.

## **3 EXECUTION**

### **3.1 Performance**

- .1 Patch, extend existing work using skilled mechanics capable of matching existing quality of workmanship.
- .2 Ensure quality patched, extended work not less than specified for new work.

### **3.2 Adjustments**

- .1 Patch floors, walls, ceilings with finish materials to match existing where partitions removed.
- .2 Rework floors, ceilings to provide smooth planes without breaks, steps, bulkheads where Request instructions from Contract Administrator for method of making transition where extreme change of plane two inches or more occurs.
- .3 Trim, refinish existing doors if required to clear new floor finishes.

### **3.3 Damaged Surfaces**

- .1 Patch, replace any portion existing finished surface found damage, lifted, discoloured, shows other imperfections, etc. with matching material.
- .2 Provide adequate support of substrate prior to patching finish.
- .3 Refinish patched portion of painted, coated surfaces to produce uniform colour.
- .4 Refinish entire surface to nearest intersection where existing surface finish cannot be matched.

### **3.4 Transition from existing to new work**

- .1 Make smooth, approve transition where new work abuts, finishes flush with existing work.
- .2 Ensure patched work matches existing adjacent work in texture, appearance with patch, transition invisible at distance five feet.
- .3 Terminate existing surface along straight lines at natural division line, provide approved trim when finished surfaces cut in manner preventing smooth transition with new work.

### **3.5 Renovation / Alteration**

- .1 Phase all renovation, alteration, demolition operations to suit City requirements.
- .2 Notify City sufficiently ahead of time before work commences to permit preparation for vacating different areas, particular areas requested.
- .3 Suspend, accelerate work if requested, resume work when City gives permission for operations in area to resume.
- .4 Comply with all requirements Section 8 of National Building Code in performance of Work.
- .5 Provide shoring, bracing, etc. to existing structure with ample strength to carry superimposed loads safely, without deflection.
- .6 Provide suitable measures to contain all dust & debris to area under renovation.
- .7 Ensure existing building areas maintain in secure manner where affected by work.
- .8 Provide adequate protection to persons, property. Execute work in manner to avoid interference with use of, passage to, from adjoining building areas, facilities.
- .9 Demolish masonry, concrete walls by saw cutting in small section.
- .10 Remove concrete, masonry, stone, etc. by individual pieces, lower carefully.
- .11 Cut holes in existing concrete, masonry, etc. by saw cutting, core drilling only.
- .12 Wet concrete, other similar material by hose spray during demolition, removal, prevent dust spread. Provide water, necessary connection. Do not flood rooms, damage floors.
- .13 Remove, replace existing floor finishes, adhesives, etc. indicated, only to extent required for new work in existing building, as directed by Contract Administrator. Prepare floor substrate surfaces to level stipulated by flooring manufacturer & supplier

### **3.6 Cleaning**

- .1 Remove, legally dispose off site daily, when directed, all surplus materials, debris, waste, etc. existing materials, items not required by City, not required for work, etc. resulting from demolition, removals, etc.
- .2 Perform periodic, final cleaning specified, required.
  - .1 Clean City occupied areas daily, when requested, as directed by City representative.
  - .2 Clean spillage, overspray, heavy collection of dust in City occupied areas immediately.
- .3 Clean areas, make surfaces ready for successive trades at completion each Section work.
- .4 Provide final cleaning in conjunction with Contractor, return City occupied space to City in **condition suitable for City use at completion of alteration, renovation work in each area.**

**End of Section**

## 04050 GRANULAR BASE

### 1 GENERAL

#### 1.1 Related Documents

- .1 Drawings, General Conditions, and Supplemental General Conditions
- .2 Section 02070 renovations and Alterations

#### 1.2 Section Includes

- .1 Rough Grading to parking area adjacent to the building to the south to establish correct slopes as shown on drawings
- .2 Provision of granular base to parking area adjacent to the building to the south

### 2 PRODUCTS

#### 2.1 Materials

- .1 Granular base: sound, hard, durable, crushed aggregate free from clay, organic material, frozen material and other deleterious materials to meet the following Province of Manitoba gradation:

<u>Sieve Designation</u>	<u>% Passing</u>
19 mm	100
15.6 mm	80-100
4.75 mm	40-70
2.00 mm	25-55
0.425 mm	15-30
0.075 mm	8-15

- .2 Liquid Limit: ASTM D4318-84 Maximum 25.
- .3 Plasticity Index: ASTM D4318-84 Maximum 6.
- .4 Los Angeles ASTM C131-81 (1987) Gradation 'A'. Max. % loss by weight: 45.

### 3 EXECUTION

#### 3.1 Inspection of Underlying Sub-base or Sub-grade

- .1 Do not place granular base until sub-grade surface is inspected and approved by Contract Administrator.

#### 3.2 Placing

- .1 Place material only on clean unfrozen surface, properly shaped and compacted and free from snow and ice.
- .2 Place using methods which do not lead to segregation or degradation of aggregate.
- .3 Base 6" thick layer granular
- .4 For spreading and shaping material, use spreader boxes having adjustable templates or screeds which will place material in uniform layers of required thickness.
- .5 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.
- .6 Remove and replace that portion of layer in which material becomes segregated during spreading.

#### 3.3 Compaction Equipment

- .1 Compaction equipment must be capable of obtaining required densities in materials on project.

### **3.4 Compacting**

- .1 Compact to density not less than 100% corrected maximum dry density.
- .2 Shape and roll alternately to obtain smooth, even and uniformly compacted base.
- .3 Apply water as necessary during compacting to obtain specified density. If material is excessively moist, aerate by scarifying with suitable equipment until moisture content is corrected.
- .4 In areas not accessible to rolling equipment, compact to specified density with mechanical tampers approved by Contract Administrator.

### **3.5 Finish Tolerances**

- .1 Finished base surface to be within plus or minus 3/8" of established grade and cross section but not uniformly high or low.
- .2 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.

### **3.6 Proof Rolling**

- .1 For proof rolling use roller of 45400 kg gross mass with four pneumatic tires each carrying 11350 kg and inflated to 620 kPa. Four tires arranged abreast with centre to centre spacing of 915 mm maximum.
- .2 Contract Administrator may authorize use of other acceptable proof rolling equipment.
- .3 Proof roll top of base upon completion of fine grading and compaction.
- .4 Make sufficient passes with proof roller to subject every point on surface to three separate passes of loaded tire.
- .5 Where proof rolling reveals areas of defective sub-grade:
  - .1 Remove base, sub-base and sub-grade materials to depth and extent directed by Contract Administrator.
  - .2 Backfill excavated sub-grade with approved common material and compact in accordance with this section.

### **3.7 Maintenance**

- .1 Maintain finished base in condition conforming to this section until succeeding material is applied or until acceptance by Contract Administrator.

**End of Section**

## **04200 UNIT MASONRY**

### **1 GENERAL**

#### **1.1 Related Documents**

- .1 Drawings, General Conditions and Supplement General Conditions.

#### **1.2 Section Includes**

- .1 Provide all labour, materials, methods, equipment and accessories to complete all unit masonry at west side.
  - .1 Pointing
  - .2 Cleaning.
- .2 Install products provide by other Sections.
  - .1 Structural Drawings: Loose steel lintels in masonry.
  - .2 All Sections: Miscellaneous building components in masonry.

#### **1.3 Related Sections**

- .1 Structural Dwgs: Reinforcing steel for masonry lintels.

#### **1.4 Regulatory Requirements**

- .1 Perform masonry work, unless specified otherwise, in accordance with:
  - .1 CSA A179-M1990 Mortar and Grout for Unit Masonry.

#### **1.5 Material Delivery, Storage, Handling**

- .1 Deliver materials in ample time for examination, testing.
- .2 Deliver, store cement, lime, other manufactured materials in unbroken packages, other approved suitable containers, plainly marked, labeled with manufacturer's name and brand.
- .3 Protect perishable materials, store in weathertight structures on floors maximum 12" above adjoining grade.
- .4 Deliver, handle materials to prevent inclusion of foreign material, damage of materials by water, or breakage.
- .5 Store materials on suitable raised platforms under waterproof tarpaulings.
- .6 Store aggregates in clean bins, on platforms having hard clean surfaces.
- .7 Remix aggregates as per grading requirements should segregation occur.
- .8 Thaw frozen aggregates before using. Permit aggregates (and aggregates produced or manipulated by hydraulic methods) to drain for 12 hours before use.

#### **1.6 Cold Weather Requirements**

- .1 Take following precautions preparing, using mortar when air temperature is below 5<sup>0</sup>C, in accordance with CAN3-S304.
  - .1 Heat sand slowly, evenly, do not scorch. Do not use scorched sand having reddish cast in mortar.
  - .2 Heat water to maximum 70<sup>0</sup>C.
  - .3 Maintain mortar temperature between 5<sup>0</sup>C and 50<sup>0</sup>C after combining heated ingredients until used.
  - .4 Protect mortar from rain, snow.
- .2 Protect, heat masonry to maintain air temperature above 0<sup>0</sup>C on both sides of walls during construction, for 48 hours after when air temperature is below -4<sup>0</sup>C.
- .3 Erect windbreaks to prevent differential freezing of walls when air temperature above -4<sup>0</sup>C.
- .4 Maintain dry unfrozen beds for masonry, use dry, unfrozen masonry units only. Do not wet masonry units in winter.

- .5 Take down, rebuild masonry damaged by frost.

## **2 PRODUCTS**

### **2.1 MATERIALS**

- .1 Water: to CSA A179-M1976, clean, fresh, potable, free of acid, alum, oils, alkalis, salts, organic or mineral matter, other deleterious substances.
- .2 Portland cement: to CAN/CSA-A5/A8/A362-M88, normal, type 10.
- .3 Masonry cement: to CAN/CSA-A5/A8/A362-M88, type H.
- .4 Hydrated lime: to ASTM C207.
- .5 Sand aggregate: to CSA A82.56-M1976, approved colour.
  - .1 Joint 1/2" and thicker: 100% pass No.4 sieve, not over 10-30% pass No. 50 sieve.
  - .2 Average thickness joint: 100% pass No.8 sieve, not over 15-30% pass No. 50 sieve.
  - .3 Joints 1/4" to 3/8" 100% pass No. 12 sieve.
- .6 Use same materials, brands, aggregate source for entire work to ensure colour uniformity, other mix characteristics.

### **2.2 Mortar Types**

- .1 Pointing mortar: one (1) part Portland cement, three (3) parts clean, sharp sand.

### **2.3 Mixing Mortars**

- .1 Make lime putty from hydrated lime. Add water to hydrated lime minimum 24 hours before mixing with other materials.
- .2 Prevent excessive evaporation from putty when stored more than 24 hours before use.
- .3 Control, accurately maintain specified water, material proportions mixed on site by approved measuring methods.
- .4 Prepare mortars in volume batches for use before initial set takes place, maximum 45 minutes before delivery to points of use.
- .5 Do not re-temper mortars, discard initial set mortar. Do not use mixed mortar after two (2) hours.
- .6 Mix mortars in mechanically operated, drum type batch mixers allowing uniformly controlled addition of water. Allow minimum five minutes mixing time, two minutes mixing dry materials, three minutes for continuous mixing after water added.
- .7 Do not permit mixed materials volume per batch to exceed manufacturer's rated capacity of mixer drum.
- .8 Empty drum completely before placing succeeding batch.
- .9 Hand mix in mortar mixing boxes only where materials, water quantities can be accurately controlled.
- .10 Rake, turn over materials by dry mix method, ensure all cementations materials distributed thoroughly, evenly throughout batch. Gradually add water to obtain thoroughly mixed mortar of required plasticity.
- .11 Mix all waterproofing agents, additives, etc. specified, to meet requirements, in accordance with manufacturer's recommendations.
- .12 Pre-hydrate pointing mortar by mixing to damp mass, retaining form when pressed into a ball, not flow under trowel. Allow to stand minimum one hour, maximum two hours, remix with additional water to produce mortar of proper consistency for pointing.

### **3 EXECUTION**

#### **3.1 Preparation**

- .1 Obtain, make ready and prepare all materials. Cause no delays to scheduling.

#### **3.2 Workmanship**

- .1 Make all joints uniform in thickness, straight, inline, with mortar compressed to form concave joints.
- .2 Allow exposed joints to set until excess water removed, tool with round jointer to smooth, compressed, uniformly formed joints.
- .3 Strike joints flush where concealed in walls, where walls receive plaster board, insulation, other applied material except paint, similar thin finish coating.
- .4 Point masonry by filling holes, cracks in exposed mortar joints. Cut out defective joints refill solidly with mortar, tool to form neat concave joint.

#### **3.3 Existing Building**

- .1 Co-operate with Section 02070, other Sections for alterations, renovations to existing adjoining building.
- .2 Make good, make corrections to, patch existing masonry work, etc. as indicated, required. Use materials to match existing as required.

#### **3.4 Cleaning Masonry**

- .1 Thoroughly clean exposed interior, exterior masonry surfaces, including surfaces to be finished, painted or unpainted.
- .2 Remove excess mortar, smears on completion using wood paddles, scrapers.
- .3 Scrub masonry surfaces using non-acid cleaning solution, type not harmful to masonry, "Sure Kleen" manufacture. Verify acceptable solution with masonry unit manufacturer. Clean trial test area, obtain approval to proceed.
- .4 Perform cleaning in accordance with solution manufacturer instructions.
- .5 Repeat cleaning operations until work satisfactory.

#### **3.5 Clean Up**

- .1 Clean up rubbish, debris resulting from work promptly, as work proceeds, at conclusion, at other time directed by contractor. Remove from the job site.
- .2 Leave floor slabs broom clean, mortar droppings cleaned from all surfaces to satisfaction of Contractor.

**End of Section**



## 05127 Pre-Finished Metal Cladding

### 1. GENERAL

#### 1.1 Work Included

- .1 Work includes supply and installation of metal cladding systems.

#### 1.2 System Description

- .1 Provide building cladding system to physical dimensions shown on Drawings.

#### 1.3 Performance Requirements

- .1 Install cladding to allow for thermal movement of component materials caused by ambient temperature range of 80 C without causing buckling, failure of joint seals, undue stress on fasteners or other detrimental effects.
- .2 Building shall be watertight.
- .3 Provide for positive drainage of condensation occurring within wall construction and water entering at joints, to exterior face of wall in accordance with NRC "Rain Screen Principles".

#### 1.4 Submittals

- .1 Submit shop drawings in accordance with General Conditions.
- .2 Indicate connection details and anchorage details, framed openings, and accessories.
- .3 Describe requirements of other systems of components related to this work, but provided by others. Obtain necessary information required to detail this work including methods of integration and securing.
- .4 Submit colour samples for all prefinished items.

### 2. PRODUCTS

#### 2.1 Materials

- .1 Exterior wall covering: 24 gauge pre-finished steel panels, 900 mm coverage. Cladding fabricated from ASTM A653M structural quality Grade 230 galvanized steel, with Z275 zinc coating, as designated by ASTM A653M. Prepaint with HMD system.
- .2 Profile: VicWest CL725R or equivalent.
- .3 Material for flashings: Prefinished steel G90/Z275 coating and shall be 24 gauge prefinished.
- .4 Pipe Flashing: All penetrations through roof and walls to be satisfactorily flashed and weatherproofed. Where possible, Dektite pipe flashings are to be used.

#### 2.2 Fabrication

- .1 Accurately fit and rigidly frame together joints and corners. Match components carefully to produce continuity of line and design. Make joints and connections exterior weathertight. Coordinate location of visible joints.

### 3. EXECUTION

#### 3.1 Cleaning

- .1 Clean all surfaces.

**END OF SECTION**

## **06200 ROUGH CARPENTRY**

### **1 GENERAL**

#### **1.1 Related Documents**

- .1 Drawings, General Conditions, and Supplemental General Conditions.

#### **1.2 Section Includes**

- .1 Provide all labour, materials, methods, equipment and accessories to complete all carpentry, framing, general work.
- .2 Blocking, girts.
- .3 Furring, strapping, nailing strips.
- .4 Centering to masonry openings.
- .5 Wood bucks, anchors.
- .6 Rough builders hardware.
- .7 Plywood protection panels, miscellaneous plywood.
- .8 General caulking, sealants.
- .9 Temporary protection.
- .10 Work required in conjunction with Section 02070.

#### **1.3 Install products provided by other sections:**

- .1 Section 06400: Millwork.
- .2 Section 08100: Hollow metal doors, Wood Doors, pressed steel frames.
- .3 Section 08710: General finish hardware, hardware in doors.
- .4 Section 08800: Windows & Glazing

#### **1.4 Related Sections**

- .1 Section 02070: Alterations, Renovations.
- .2 Section 06400: Millwork.
- .3 Section 08100: Hollow metal doors, pressed steel frames.
- .4 Section 09250: Gypsum Board system.
- .5 Section 09900: Painting & Finishing

#### **1.5 Quality Assurance**

- .1 Ensure lumber bears agency grading stamp certified by Canadian Lumber Standards Accreditation Board (CLS).
- .2 Ensure plywood bears grading mark in accordance with applicable CSA standards.

#### **1.6 Regulatory Requirements**

- .1 Perform carpentry work to CAN3-O86-M84, CAN3-O86S1/O86.1S1-87.

#### **1.7 Material Delivery, Storage, Handling**

- .1 Do not deliver lumber long before required.
- .2 Stack lumber, plywood to protect from ground moisture, elements.
- .3 Do not store lumber within structure during wet trades, until work is reasonably dry.

## **2 PRODUCTS**

### **2.1 Lumber**

- .1 Softwood lumber: to CAN /CSA 0141-91, conforming to Standard Grading Rules for Canadian Lumber, 1980 and supplement No. 1 1981 set by National Lumber Grades Authority (NLGA), National Building Code 1990, Part 9.
- .2 Moisture content below 19%, air seasoned to average 15%.
- .3 Glue end-jointed (finger joint) lumber not acceptable.
- .4 Dimension lumber:
  - .1 Light framing: S4S, species group S-P-F, Construction grade.
  - .2 Furring, strapping, blocking, grounds, rough bucks, nailing strips, curbs, sleepers, etc.: S2S, S4S where required, indicated, species group S-P-F, No. 2 grade.
- .5 Dimension sizes: light framing grade.
- .6 Board sizes: Standard or Better grade.

### **2.2 Panel Materials**

- .1 Panel materials: 4'-0" x 8'-0" panels, sizes indicated, thickness indicated, minimum thicknesses in accordance with NBC 1985, Part 9:
- .2 Douglas Fir plywood (DFP): to CSA 0121-M1978, Good 2 sides grade, waterproof glues, square edges.
- .3 Canadian Softwood plywood (CSP): to CSA 0151-M1978, Sheathing grade, S2S, square edges.

### **2.3 Accessories**

- .1 Nails, spikes, staples: to CSA B111-1974.
- .2 Fasteners: proprietary, manufacturer recommended for purpose:
  - .1 To hollow masonry use toggle bolts.
  - .2 To solid masonry, concrete use expansion shields, lag bolts.
  - .3 To steel use bolts or power actuated fasteners.
- .3 Rough hardware: bolts, nuts, washers, lags, pins, screws: hot dip galvanized, sizes required, indicated, minimum 1/2" Diameter.
- .4 Wood preservative: to CSA 080-1983, surface applied, water repellent wood preservative, coloured, copper naphthenate, 5% pentachlorophenol base.
- .5 Caulking compound: one component, colour matched to adjacent materials, silicone, polyurethane, acrylic base, Dow manufacturer 795 silicone sealant, Vulkem manufacturer No. 116 urethane sealant, Tremco manufacture No. 555 acrylic sealant.

## **3 EXECUTION**

### **3.1 Preparation**

- .1 Obtain, make ready, prepare all materials. Cause no delays to scheduling.

### **3.2 Workmanship**

- .1 Comply with requirements of National Building Code of Canada.
- .2 Perform work with skilled mechanics, well secured, nailed, spiked, bolted, screwed, Cut out, prepare for electrical, mechanical items in rough wood framing.
- .3 Arrange, join, fix carpentry work so shrinkage movement will not impair strength, appearance of finished work, cause damage to contiguous materials.
- .4 Provide tolerance at connections, compensate for irregularities, settlements, other movements by approved methods.
- .5 Align finished sub-surface to vary not more than 1/8" from plane of surfaces of adjacent framing, furring members of all framing members to receive wall, ceiling surfaces.

### **3.3 Fastening**

- .1 Use nails, spikes of dimension required for nailing. Ensure penetration into supporting member not less than one-half nail, spike length used. Remove, replace incorrectly sized nails, spikes.
- .2 Minimize splitting, stagger nails in direction of grain, keep nails well in from edges.
- .3 Drill holes for bolting 1/8" larger than bolt diameter, straight, true from one side. Ensure bolt threads do not bear on wood.
- .4 Install washers under bolt heads bearing on wood, under all nuts.
- .5 Pre-drill holes for lag screws, wood screws same diameter as root of thread. Enlarge holes to shank diameter for shank length. Do not hammer lag screws, wood screws.

### **3.4 Blocking, Bucks, Nailers, Girts**

- .1 Provide rough wood bucks, nailers, blocking as required, indicated.
- .2 Use Minimum 1 1/2" thick material secured 12" from ends of members, uniformly spaced 4'-0" o.c.
- .3 Countersink fasteners to provide clearance for other work.
- .4 Install fitment, cabinet, casework fittings, bucks nominal 1" thick stock, door bucks nominal 2" thick stock, bucks, blocking for window frames nominal 2" thick stock.
- .5 Build up blocking above nominal stock dimension to required thickness cut from nominal stock, dimensioned lumber.
- .6 Erect bucks plumb, true, in line at exact location. Support bucks in masonry construction with metal anchors.
- .7 Install wood blocking, fixing, etc. in steel stud wall systems for wall mounted fixtures, fittings, accessories, etc. in co-operation with Section 09260.

### **3.5 Furring, Strapping, Nailing Strips**

- .1 Provide wood furring, strapping for applied facings, other work indicated.
- .2 Erect furring in thickness indicated, minimum 2" wide, spaced 16" o.c.
- .3 Set furring plumb, square, true to dimension, securely attached to walls, framing. Fasten furring attached to wood, steel framing every bearing.
- .4 Fasten furring to masonry, concrete walls with metal expansion bolts, approved metal clip fasteners, toggle bolts, piston type power actuated nails.
- .5 Install grounds rigid, in perfect alignment, using long straight edge, string lines.
- .6 Erect plumb, level with shimming as required.

### **3.6 Installing Millwork**

- .1 Confer with Section 06400, establish sizes, dimensions, extent of millwork.
- .2 Notify Section 06400 when structure sufficiently dry, ready to receive interior millwork. Ensure millwork not delivered unduly long before required for installation.
- .3 Ensure millwork sealed, primed immediately on arrival at job site, alternately arrange with Section 09900 to prime at millwork plant.
- .4 Erect millwork in correct, indicated location, level, aligned, plumbed, loose items, members correctly located, securely fixed.
- .5 Draw sections tightly together to form hairline joints.
- .6 Set nails, screws, fastening, conceal screw bolts, bolts with wood plugs in exposed surfaces. Smooth, sand with fine garnet paper ready for finishing. Fit temporary protective covers on millwork.
- .7 Co-operate with division 15, 16 for installation of mechanical, electrical items, fixtures in millwork.
- .8 Fit, scribe millwork to adjoining drywall, other finished surfaces in approved manner.
- .9 Install wood window, borrowed light frames, etc. square, plumb. Shim, fasten to wood bucks, framing.
- .10 Install standing, running mouldings, trim, window stools, around door frames on drywall surfaces after drywall is completely finished, dry.
- .11 Set trims, mouldings, etc. with even margins, use metal splines at corners of wide trim. Prevent joint openings.

### **3.7 Installing Hollow Metal Work**

- .1 Set pressed steel frames in correct position, elevation in perfect alignment, plumb, level, square.
- .2 Brace frames rigidly in position for building in walls.
- .3 Install temporary horizontal wood spreader at third points to maintain frame width. Provide vertical support at centre of head for openings over 4'-0" wide. Remove temporary spreaders after frames built-in.
- .4 Make allowance for deflection of structure. Ensure structural loads not transmitted to frames.
- .5 Fit throat return flanges tight to finished wall surfaces. Caulk gaps over 1/16" to Contract Administrator approval.
- .6 Install doors, hardware in accordance with hardware templates, manufacturer instructions.
- .7 Allow maximum 1/4" clearance over finished floor surface, top of carpet. Allow for floor fluctuations.
- .8 Leave wrapping, factory applied protection on finish hardware. Replace on completion of hardware installation if removed.
- .9 Adjust operable parts for correct function.
- .10 Install sidelight, transom panels in frames as indicated, directed with concealed fasteners to Contract Administrator approval.
- .11 Touch up marked, abraded surfaces with same primer after installation.
- .12 Protect hollow metal from damage, weather after installation.
- .13 Install grilles, louvers provided by Mechanical drawings and specifications.

### **3.8 Installing Miscellaneous Specialties**

- .1 Install miscellaneous specialties, equipment, accessories, etc. not requiring specialist, factory trained mechanic installation, to manufacturer directions using qualified personnel.
- .2 Remove, relocate, re-install existing equipment, specialties, etc. indicated, required, as directed in conjunction with Section 02070, other Sections.
- .3 Bed, Caulk plumbing, accessories recessed in wall surfaces, finishes with mildew resistant silicone caulking compound.

### **3.9 Caulking**

- .1 Ensure joints, spaces to be caulked are clean, dry, free of dust, loose mortar, other foreign materials.
- .2 Clean metal surfaces of oxidation film, rust, mill, scale, weld splatter, paint, other contaminate by appropriate non-damaging methods. Remove oils, greases, with non-staining solvents, Xylol, Methyl Ethyl solutions.
- .3 Protect adjacent, other surfaces from damage from caulking materials, abrasive cleaning, wire brushing, grinding etc.
- .4 Form joints no less than 1/4 " in depth, 3/16 " in width, no more than 3/4" wide. Obtain Contract Administrator written approval of type of sealant required, if joint does not meet these requirements.
- .5 Fill joints more than 1/2" deep to within 1/4" of surface with closed cell foam, round polyethylene rod, 30% greater than joint width. Compress, install joint backing with tool gauge to controlled depth. Install rod with concave surface to sealant.
- .6 Apply sealant, caulking compound by caulking gun, nozzle size, Shape to properly form caulking bead, with sufficient pressure to fill all voids.
- .7 Ensure caulking brads smooth, free of ridges, wrinkles, sags, air pockets, voids, embedded impurities, properly adhered, shaped to slight concave.
- .8 Employ mechanics skilled in this type of work.

### **3.10 Cleaning**

- .1 Clean up rubbish, debris resulting from work promptly as work proceeds, at completion, at other times directed by Contractor. Remove from jobsite

**End of Section**

## **06400 MILLWORK**

### **1 GENERAL**

#### **1.1 Related Documents**

- .1 Drawings, General Conditions, and Supplemental General Conditions..

#### **1.2 Section Includes**

- .1 Provide all labour, materials, methods, equipment, accessories to complete exterior, interior woodwork, millwork, finish carpentry.
- .2 Casework, counters, cupboards, shelving units, shelving, Coat hooks
- .3 Storage room, miscellaneous wood shelving.
- .4 Finish surfaces, plastic laminate surfaces.
- .5 Rough hardware required for millwork screws, nails, bolts, connectors.
- .6 Finish hardware for cabinets and casework.
- .7 Cutting, preparing openings in millwork for other Sections.
- .8 Priming, sealing specified, required.
- .9 Temporary protection to millwork.
- .10 Work in conjunction with Section 02070.
- .11 Install products provided by other Sections.
- .12 Division 15:Mechanical fixtures, sink, dishwasher, built-in millwork.
- .13 Division 16:Electrical fixtures, etc. built in millwork.

#### **1.3 Related Sections**

- .1 Section 02070: Renovations, alterations.
- .2 Section 09900: Finish painting, staining.
- .3 Division 15: Mechanical fixtures, items, connections to millwork.
- .4 Division 16: Electrical fixtures, items, connections to millwork.

#### **1.4 Shop Drawings**

- .1 Submit the shop drawings.
- .2 Indicate items, material quantities in related, dimensioned positions to full size, large scale details, elevations minimum 1/4" to 1'-0" scale.
- .3 Indicate the finish, fixing methods, construction details where applicable. Indicate mechanical, electrical items, where hardware unusual, miscellaneous items, etc.
- .4 Indicate the connection and disconnection points of dismantled "knock-down" items. Mark each item for reconnection.
- .5 Indicate Contract Administrator door numbers for door frames, details, etc.

#### **1.5 Quality Assurance**

- .1 Ensure lumber bears agency grading stamp certified by Canadian Lumber Standards Accreditation Board (CLS).
- .2 Ensure Plywood bears grading mark in accordance with applicable CSA Standards.
- .3 Provide the facilities to Contract Administrator to examine millwork undergoing fabrication and assembly.

#### **1.6 Regulatory Requirements**

- .1 Construct millwork to Architectural Woodwork Manufacturers Association of Canada (AWMAC) "Quality Standards for Architectural Woodwork", 1991.

#### **1.7 Material Delivery, Storage, Handling**

- .1 Protect millwork; keep under cover during fabrication & in transit.
- .2 Do not deliver millwork long before required.
- .3 Enclose items undergoing lengthy transportation in sturdy wood crates, fully protect contents, and prevent moisture infiltration.

- .4 Ensure crating in accordance with requirements of Carriers involved. Take adequate protection against damage in transit, on handling.
- .5 Clearly mark each grate, carton, package in exterior with identification of items, intended location in building.
- .6 Do not store millwork within structure during plastering, wet trades, etc. until work reasonably dry, ready for millwork.
- .7 Examine the areas where millwork is to be stored. Notify Contractor of conditions unsuitable for millwork.
- .8 Verify humidity in building with moisture reading instruments if doubt exists that building sufficiently dry, ready to receive millwork.
- .9 Store millwork in dry warehouse conditions if millwork items manufactured before required on site due to any cause.
- .10 Do not store in damp, humid conditions.
- .11 Bear costs for damage caused from such warehousing, storing.
- .12 Confer with Contractor to designate place in premises for reception of millwork.
- .13 Peruse means of access into building ensure large items will enter intended location without hindrance.
- .14 Sectionalize millwork for passage through doors, stairs, corridors, etc. Inform Contractor of difficult delivery, liaise for openings to be left in walls, etc.
- .15 Prefit items together in millwork factory.
- .16 Place millwork on wood skids provided by Section 06100, above floor in manner to prevent warpage, undue stress.
- .17 Examine materials delivered, ascertain no items damaged.

## **1.8 Warranty**

- .1 Guarantee surfaces free from blisters, delaminations, warpage, other failures, defects.
- .2 Replace, re-install, refinish without cost, FOB job site.

## **2 PRODUCTS**

### **2.1 Lumber**

- .1 Softwood lumber: to CSA 0141-1970 National Lumber Grades Authority requirements, selected for natural, paint finishes scheduled, indicated, Douglas Fir, Ponderosa Pine, Spruce species, AWMAC Custom Quality grade.
- .2 Hardwood lumber: to National Hardwood Lumber Association (NHLA) requirements, species indicated, scheduled for natural finish schedules, AWMAC Custom Quality grade.
- .3 Moisture content: kiln dried to average 6-8 percent interior work.

### **2.2 Panel Materials**

- .1 Douglas Fir plywood: to CSA 0121-M1978, Good 2 Sides (G2S) grade, waterproof glues, thickness indicated.
- .2 Western softwood plywood: to CSA 0151-M1978, Good 1 Side, sound 1 side (G1S, S1S), thickness indicated.
- .3 Mat formed wood particle board: to CAN3-0188. 1-M78, Type 2, Industrial Grade R, minimum 45 pound core density, density required for finish applied, uniform light colour, thickness indicated, required.
- .4 Melamine faced plastic laminate panel: to CAN3-A172-M79, 0.18mm thick melamine resin impregnated decorative sheet fused to Industrial grade "R" mat formed particle board both sides (G2S), one side with backing sheet (G1S), 1/4", 1/2", 5/8", 3/4" panel thick, sizes and thickness indicated, required, 0.51mm thick factory applied edge banding where indicated, required, colour, finish selected by Contract Administrator, Arborite "Cladboard", Formica "MPC".

- .5 Edging tape: pre-glued polyester tape edge banding (site), shop applied with hot melt adhesive, colour, pattern to match face.
- .6 Plastic laminate: to CAN3-A172-M79, Post Forming (PF) Type 2 grade where indicated, 0.030" thick, solid, patterned, colour pattern, finishes indicated, selected by Contract Administrator, "Nevamar", "Arborite", "Formica", "Wilsonart" manufacturer selected by Contract Administrator.
- .7 Plastic laminate backing sheets: Backing grade, Regular GP-MK-R, 0.045", 0.030" thick as required to match face thickness.
- .8 Plastic laminate: to CAN3-A172-M79, Self-Supporting (GP-SS) Solid Grade, 1/2" thick, gloss finish, Nevamar manufacture "Fountain Head", colour, pattern selected by Contract Administrator.

### **2.3 Accessories**

- .1 Nails, spikes and staples: to CSA B111-1974, spiral thread.
- .2 Galvanized: exterior work, interior highly humid areas, treated lumber.
- .3 Plain finish: interior work.
- .4 Draw bolts, splines, etc: fabricator standard.
- .5 Rough hardware: bolts, nuts, washers, lags, pins, screws, draw bolts, hot dip galvanized.
- .6 Glues, cements, adhesives: to CSA 0112 Series M77, first grade industrial quality, purpose made, water, heat proof for countertops.

### **2.4 Cabinet hardware**

- .1 Provide all finish hardware, accessories, etc. required, indicated in details, etc. to Contract Administrator approval.
- .2 Pulls: Ives 37PA28, rod.
- .3 Hinges: Blum 91A650 series, concealed with cover cap, spring hinge, self-closing.
- .4 Drawer slides: K&V No. 1300 (drawer size to 24"x 18"x 6").K&V No.1429 (drawer size over 24"x 18"x 6").
- .5 Shelf standards: K&V No. 255.
- .6 Shelf supports: K&V No. 256 x Quantity.
- .7 Wall handrail brackets to match existing.
- .8 Other hardware indicated, required.

## **3 EXECUTION**

### **3.1 Preparation**

- .1 Take site measurements for millwork, other fabrication, establish sizes where dimension not available.
- .2 Verify figures indicated before laying out work.
- .3 Make deliveries in sufficient time for installation by Section 06100 as scheduled.

### **3.2 Fabrication**

- .1 Fabricate millwork, finish carpentry work to AWMAC Standards, Custom Quality Grade.
- .2 Perform manufacture, fabrication using skilled, capable craftsmen, first class materials.
- .3 Fabricate millwork, finish carpentry true, square, aligned as detailed, required.
- .4 Construct members from pieces long as possible.
- .5 Make ample allowance for site cutting, fitting required.
- .6 Join assemblies to hairline joints secured with concealed nails, screws, draw bolts, splines fully set, mortise and tenon joints, dadoes, dovetails, glue blocks, other acceptable methods. Allow for shrinkage.
- .7 Assemble at mill as practical, deliver ready for installation.



- .8 Ensure expose millwork, finish carpentry work without defect, rough construction in exposed parts unless grading, species allows.
- .9 Apply compensating backing to rear face unsupported surfaces covered with glue-on facing materials, laminated plastic, etc.
- .10 Co-operate, verify details, dimensions, locations of items, cut, prepare openings, etc. in millwork for other Sections:
- .11 Section 10050: Specialties attached, built-in.
- .12 Division 16: Electrical fixtures, outlets, etc.
- .13 Provide required ventilation where refrigerators, counter top burners, compressors, similar items built-in, adjacent to cabinet work.
- .14 Build removable access panels required in millwork for servicing, installation, maintenance of electrical, mechanical items, valves, traps, etc.

### **3.3 Cabinet, Casework Etc.**

- .1 Fabricate cabinet, casework to detail in accordance with AWMAC conventional construction, Premium Grade, unless specified otherwise.
- .2 Fabricate cabinet, casework bodies, gable ends, gables, bottoms, fixed, adjustable shelving from 3/4" thick melamine (G2S), 1/4" thick masonite backs
- .3 Fabricate concealed framing, gate frames, etc. from minimum 3/4" thick spruce, pine, fir.
- .4 Fabricate face frames minimum 3/4" thick, tight joints fully glued, nailed to case bodies. Provide for scribing where indicated, required.
- .5 Assemble cases, machine, dovetail, mortise and tenon, dado, rout joints. House related edges, members minimum 1/4". Construct cabinet, casework cases as indicated.
- .6 Construct counter tops, splashbacks, edgings, facing, etc. indicated, required.
- .7 Apply plastic laminate to wood particle board core materials of counter tops, edges, splash backs, other surfaces indicated, required to CAN3-A172-M79 Appendix A, Contract Administrator approval.
- .8 Ensure adjacent parts continuous laminate match in colour, pattern.
- .9 Use continuous lengths up to 8'-0", keep joints minimum 2'-0" from sink cut-outs, other openings, terminations, etc.
- .10 Cover exposed flatwork core edges as indicated on details.
- .11 Apply straight self-edging plastic laminate strips to exposed end edges formed to top, splashback profile.
- .12 Use draw bolts, connectors, splines, etc. in countertop, horizontal surface joints, spaced maximum 16" o.c., in from edges. Make flush, hairline joints.
- .13 Cut out openings for sinks, plumbing, electrical fixtures, insert, appliances, other items, etc. in counter tops, splash backs, edges, other surfaces indicated, required. Locate where directed.
- .14 Fabricate cabinet, casework drawer fronts from 3/4" thick plywood (G2S) with plastic laminate 6 sides.
- .15 Construct drawer sides, backs from minimum 5/8" thick melamine, bottoms from 1/4" thick tempered masonite.
- .16 Fabricate drawers with lock shoulder front, dadoed back, plowed in bottom glued to shaper rounded top sides.
- .17 Equip drawers on metal drawer slides.
- .18 Fabricate flush doors from 3/4" thick plywood (G2S) with plastic laminate 6 sides.
- .19 Install hardware indicated, scheduled, required to doors, shelves, drawers, etc. Recess shelf standards for adjustable shelving where indicated, required.

### **3.4 Shelving, Miscellaneous fitments**

- .1 Fabricate miscellaneous, fixed, adjustable shelving units from minimum 3/4" thick melamine (G2S) panels.

- .2 Apply edge banding matching shelving material on all exposed edges.
- .3 Sand, prepare exposed wood surfaces for finishes scheduled, indicated.

**3.5 Finishing**

- .1 Arrange with Section 09900 as necessary, to prime, seal woodwork, millwork prior to delivery to site.
- .2 Sand expose mouldings, surfaces, etc. by machine, hand to smooth, even surface, ready to receive finish.

**End of Section**

## **07200 MODIFIED BITUMINOUS ROOFING**

### **1. GENERAL**

#### **1.1 Work Included**

- .1 Conventional, 2-ply modified bituminous roofing.

#### **1.2 References**

- .1 CAN2-51.32M – Sheathing, Membrane, Breather Type
- .2 CGSB 51-GP-20M – Thermal Insulation Extruded, Expanded Polystyrene

#### **1.3 System Description**

- .1 Conventional roof system: two-ply torched on conventional SBS membrane system with insulation and gypsum board on steel deck.

#### **1.4 Qualifications**

- .1 Applicator: Contractor specializing in performing the Work of this Section with three (3) years documented experience and approved by system Manufacturer.
- .2 Work of this Section to conform to Manufacturer's instructions.

#### **1.5 Manufacturer's Representative**

- .1 The roofing material Manufacturer shall delegate a representative to visit the Work at commencement of Work and periodically during Work in progress.
- .2 At all times permit and facilitate access to the Work Site and roofs to the Manufacturer's Representative.

#### **1.6 Delivery, Storage, and Handling**

- .1 Deliver, store, protect, and handle Products to Site under provisions of the General Specifications Section.
- .2 Deliver Products in Manufacturer's original containers, dry, undamaged, seals and labels intact.
- .3 Store Products in weather-protected environment, clear of ground and moisture.
- .4 Stand roll materials on end.

#### **1.7 Environmental Requirements**

- .1 Do not apply roofing membrane during inclement weather.
- .2 Do not apply roofing membrane to damp or frozen deck surface.
- .3 Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during the same day.

#### **1.8 Warranty**

- .1 Provide warranty in accordance with General Specification but for a period of five (5) years.

### **2. PRODUCTS**

#### **2.1 Membrane Materials**

- .1 Membrane Air/Vapour Barrier: Soprema, torch-on.
- .2 Membrane Base Sheet, Base and Cap Sheet Flashing: Soprema Sopralene Flam 180.

- .1 Description: Roofing membrane with a non-woven polyester reinforcement and thermofusible SBS modified bitumen. Both sides shall be protected by a thermofusible plastic film. This membrane is to be applied by torching only.
- .2 Components:
  - .1 Reinforcement: non-woven polyester, 180 g/m<sup>2</sup>
  - .2 Thermofusible elastomeric bitumen: mix of selected bitumen and SBS thermoplastic polymer.
- .3 Membrane Cap Sheet Flashing: Soprema Sopralene Flam 250 GR.
  - .1 Description: Roofing membrane with a non-woven polyester reinforcement and thermofusible SBS modified bitumen. The top side shall be self-protected with coloured granules. The underside shall be protected by a thermofusible film. This membrane is to be applied to torching only.
  - .2 Components:
    - .1 Reinforcement: 250 g/m<sup>2</sup> of non-woven polyester
    - .2 Elastomeric asphalt: mix of selected bitumen and SBS thermoplastic polymer.
- .4 Torchable Self-Adhesive Membrane: "Sopraflam".

## 2.2 Sheet Materials

- .1 Gypsum board: CSA A82.27, sheathing grade, 13 thick, uncoated faces, fire rated.
- .2 Torchable overlay: recovery board "Sopraboard" two (2) layers as per Drawings, thickness as indicated.

## 2.3 Insulation

- .1 CGSB 51-GP-20M, flat, Type 4 extruded polystyrene board with skin surface, Roofmate by Dow Chemical. Total thickness of 125 mm. Other acceptable Manufacturers: Celfortec.
- .2 Sloped, Type 2 expanded polystyrene board. Minimum thickness: 13mm. Acceptable Manufacturers: Dow Chemical, Celfortec.

## 3. EXECUTION

### 3.1 Preparation

- .1 Gypsum board: Screw gypsum board to metal deck. Butt ends and edges tight. Butt ends over firm bearing.
- .2 Insulation: Install two (2) layers of insulation, maximum thickness of 75 mm per layer; stagger joints of second layer with joints of first layer. Butt insulation tight with adjacent boards at all edges.
- .3 Torchable board: Mop on two (2) layers of recovery board. Offset joints of first layer of recovery board with joints of insulation. Offset joints of second layer of recovery board with joints of first layer.

### 3.2 Roof Membrane

- .1 Install roofing membrane to Manufacturer's written instructions.
- .2 Base sheet Installation
  - .1 Base sheet membrane shall be unrolled dry on torchable overlay panels for alignment.
  - .2 Base sheet shall be torch welded on torchable overlay, in accordance with recommendations of the membrane Manufacturer. Base sheet shall have side laps of 75 mm and end laps of 150 mm.
  - .3 Make sure the membrane is properly welded, without air pockets, wrinkles, fishmouths, or tears.

- .4 Torch welding speed varies depending on the weather. In cold conditions, it slows down, in warm and dry conditions, it speeds up.
- .3 Base sheet flashing installation
  - .1 Surface where membrane is applied shall receive an asphalt primer coating at the rate of 0.25 L/m<sup>2</sup>. Primer must be dry before application of the base sheet flashing.
  - .2 Base sheet shall be laid in strips 1 m wide to the vertical surfaces, extending on to the flat surface of the roof a minimum of 100 mm. Side laps shall be 75 mm and shall be staggered a minimum of 100 mm with the laps of the base sheet in order to avoid excessive thickness.
  - .3 Base sheet shall be torch welded directly on its support from bottom to top. Torch welding shall soften the underside of the base sheet without overheating, resulting in a uniform adhesion over the entire surface. When allowed by the support, the base sheet top edge shall be nailed on 300 mm centres.
- .4 Cap sheet installation
  - .1 Once the base sheet and stripping has been applied and does not show any defects, the cap sheet can then be laid.
  - .2 Cap sheet shall be unrolled starting from the lowest point of the roof. Cap sheet shall be rerolled from both ends prior to torching. Care must be taken to ensure alignment of the first roll (parallel with the edge of the roof).
  - .3 Cap sheet shall be torch welded on to the base sheet membrane. During this application, both surfaces shall be simultaneously melted, forming an asphalt bead that shall be pushed out in front of the cap sheet.
  - .4 Avoid overheating.
  - .5 Base sheet and cap sheet shall be staggered a minimum of 300 mm.
  - .6 Cap sheet shall have side laps of 75 mm and end laps of 150 mm.
  - .7 Make sure the two (2) membranes are properly welded without unwelded areas.
  - .8 After installation of the cap sheet, check all lap seams on the cap sheet.
  - .9 For aesthetics, care should be taken to avoid excessive asphalt seepage along the joints.
- .5 Cap sheet flashing installation
  - .1 Cap sheet stripping shall be laid in strips 1 m wide. There must be at least 150 mm of cap sheet overlap on the deck. Side laps shall be 75 mm and shall be staggered a minimum of 100 mm from cap sheet laps and base sheet laps, in order to avoid excessive thickness.
  - .2 Cap sheet stripping shall be torch welded directly on its base sheet, proceeding from bottom to top. Torching shall soften the two membranes and ensure a uniform weld. Use a degranulator.
- .6 Walkway installation
  - .1 Install over addition cap sheet (granulated) ply.
  - .2 Install adhesive between 10° to 35°C and as per Manufacturer's instructions.

### **3.3 Cleaning**

- .1 Remove bituminous markings from finished surfaces.
- .2 In areas where finished surfaces are soiled caused by Work of this Section, consult Manufacturer of surfaces for cleaning advice and conform to their documented instructions.
- .3 Repair or replace defaced or disfigured finish due to Work of this Section.

### **3.4 Protection**

- .1 Protect building surfaces against damage from roofing Work.

- .2 Where traffic must continue over finished roof membrane, protect surfaces.

### **3.5 Coordination with Other Trades**

- .1 Coordinate with electrical and mechanical sub-trades for making all penetrations through roofing weather- and moisture-tight.

**End of Section**

## 07900 SEALANTS & CAULKING

### 1 GENERAL

#### 1.1 Related Sections

- .1 Metal Doors and Frames: Section 08110.
- .2 Windows and Glazing: Section 8800

#### 1.2 Work Included

- .1 Supply and installation of all sealant and backing materials as required.

#### 1.3 Environmental Conditions

- .1 Sealant and substrate materials to be minimum 5°C.
- .2 Should it become necessary to apply sealants below 5°C, consult sealant manufacturer and follow their recommendations.

#### 1.4 Reference Standards

CAN 19-GP-13M - "Sealing Compound, One Component, Elastomeric, Chemical Curing"  
CGSB 19-GP-22M - "Sealing Compound, One Component, Silicone Base, Chemical Curing" - Mildew Resistant.  
CGSB 19-GP-17M - Sealing Compound, One Component, Acrylic Emulsion Base.

#### 1.5 Warranty

Provide a three year warranty under provisions of the Conditions of Stipulated Price Contract.

Warranty: Include coverage of installed sealants and accessories which fail to achieve air tight and watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

### 2 PRODUCTS

#### 2.1 Materials

- .1 Primers: type recommended by sealant manufacturer.
- .2 Joint Fillers:
  - General: compatible with primers and sealants, oversized 30 to 50%.
  - Polyethylene, urethane, neoprene or vinyl: extruded closed cell foam, Shore A hardness 20, tensile strength 140 to 200 kPa.
  - Neoprene or butyl rubber: round solid rod, Shore A hardness 70.
  - Polyvinyl chloride or neoprene: extruded tubing with ¼" minimum thick walls.
  - Impregnated precompressed polyurethane foam sealant tape. Acceptable Product: Emseal "Grayflex".
- .3 Bond Beaker:
  - pressure sensitive plastic tape, which will not bond to sealants.
  - Sealants:
    - Sealant shall be UV resistant and ozone resistant, capable of supporting their own weight: conforming to CAN2-19.13M82.
    - Sealants for vertical and horizontal non-traffic bearing joints, to Table 1, CGSB19-GP-23.
    - Colour of sealants: to match adjacent surface. Colours to be selected by the Contract Administrator, form standard colour range.
    - Joint Cleaner: xylol, methylethyleketon or non-corrosive type recommended by sealant manufacturer and compatible with joint forming materials.

#### 2.2 Acceptable Products

For all non-traffic bearing joints unless indicated otherwise Dow Corning No. 795.  
For Sealing of Vapour Barrier: Latex Acoustic Caulk  
For sealing to bituminous materials: Poly-Bitume Caulk

### **3 EXECUTION**

#### **3.1 Preparation**

Remove dust, paint, loose mortar and other foreign matter. Dry joint surfaces.

Remove rust, mill scale and coatings from ferrous metals by wire brush, grinding or sandblasting.

Remove oil, grease, and other coatings from nonferrous metals with joint cleaner.

Prepare concrete, glazed, and vitreous surfaces to sealant manufacturer's instructions.

Examine joint sizes and correct to achieve depth ratio  $\frac{1}{2}$  of joint width with minimum width and depth of  $\frac{1}{4}$ ", maximum width 1".

Install joint filler to achieve correct joint depth.

Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.

Apply bond breaker tape where required to manufacturer's instructions.

Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.

#### **3.2 Application**

Apply sealants, primers, joint fillers, bond breakers, to manufacturer's instructions. Apply sealant using gun with proper size nozzle. Use sufficient pressure to fill voids and joints solid. Superficial pointing with skin bead is not acceptable.

Apply sealant to joints between door, window frames to adjacent building components, around perimeter of every external opening, to control joints in concrete slabs and where indicated.

**End of Section**



## **08100 Hollow Metal Doors**

### **1 GENERAL**

#### **1.1 Work Included**

- .1 Non-rated rolled steel frames.
- .2 Non-rated hollow steel doors.

#### **1.2 Related Sections**

- .1 Door Hardware: Section 08710
- .2 Painting: Field painting of frames: Section 09900.
- .3 Renovations & alterations: Section 02070

#### **1.3 References**

- .1 Canadian Steel Door and Frame Manufacturers Association - Manufacturing Standard for Steel Doors and Frames.

#### **1.4 Quality Assurance**

- .1 Conform to requirements of Canadian Steel Door and Frame Manufacturers Association Standards.

#### **1.5 Shop Drawings & Product Data**

- .1 Submit shop drawings and product data.
- .2 Indicate on shop drawings, frame configuration, anchor types and spacings, location of cutouts for hardware, reinforcement and finish.
- .3 Indicate on shop drawings, door elevations, internal reinforcement, and closure method, and location of cutouts for glazing.

### **2 PRODUCTS**

#### **2.1 Acceptable Manufacturers**

- .1 Macotta
- .2 Allmar
- .3 Shanahans

#### **2.2 Frames**

- .1 Type/Size: as shown on Drawings and Schedules.
- .2 Frames: 16 Ga. cold rolled sheet steel with ZF75F Colourbond coating.
- .3 Bumpers: Resilient rubber.
- .4 Anchors: purpose made to rigidly secure frames, 3 per jamb.
- .5 Mortar Guard Boxes: 22 Ga. welded in place.
- .6 Primer: zinc chromate type.

#### **2.3 Doors**

- .1 Reinforcement for hardware:
  - .1 Locks: minimum 16 Ga. steel.
  - .2 Butts: minimum 10 Ga. steel.
  - .3 Flush Bolts: minimum 10 Ga. steel.
  - .4 Door Closures: minimum 14 Ga. steel.
  - .5 Door Holders: minimum 14 Ga. steel.
  - .6 Glazing Stops: minimum 14 Ga. rolled steel channel shape, butted corners; 5/8" high profile; prepared for countersink screws.

## **2.4 Fabrication / Frames**

- .1 Fabricate frames as welded unit.
- .2 Fabricate frames with hardware reinforcement plates welded in place. Provide mortar guard boxes.
- .3 Prepare frame for silencers. Provide three single silencers for single doors.
- .4 Attach channel spreaders at bottom of frames for shipping.
- .5 Reinforce exterior frames at lock side, to prevent frame distortion.

## **2.5 Fabrication / Doors**

- .1 Fabricate hollow metal doors and panels in accordance with requirements of "Canadian Manufacturing Standards for Steel Doors and Frames" produced by the Canadian Steel Door and Frame Manufacturer's Association and as indicated on Drawings.
- .2 Reinforce and prepare doors to receive hardware. Refer to Section 08710 for hardware requirements.
- .3 Each exterior hollow metal door to be supplied complete with a full length 10 Ga. anti-intrusion plate welded to latch side of door.

## **3 EXECUTION**

### **3.1 Installation**

- .1 Install doors and frames in accordance with Canadian Steel Door and Frame Manufacturers Association standards.
- .2 Install roll formed steel reinforcement channels between two abutting frames. Anchor to structure and floor.
- .3 After installation, touch up all scratched or damaged surface and prime.
- .4 Insulate all frames exposed to the exterior where shown on drawings.

### **3.2 Tolerances**

- .1 Maximum Diagonal Distortion: 5/64" measured with straight edge, corner to corner.

**End of Section**

## **08210 WOOD DOORS**

### **1 GENERAL**

#### **1.1 Related Documents**

- .1 Drawings, General Conditions, Division 1 General Requirements.

#### **1.2 Section Includes**

- .1 Provide all labour, materials, methods, equipment, accessories to complete supply of plastic laminate-faced solid-core wood doors
- .2 Wood solid core doors.
- .3 Door hardware listed.

#### **1.3 Shop Drawings**

- .1 Submit shop drawings. Indicate doors, quantities, where hardware unusual, minimum 1/2" to 1'-0" scale.
- .2 Indicate wood species, finish, door type, Contract Administrator door numbers, location.

#### **1.4 Material Delivery, Storage, Handling**

- .1 Protect Doors; keep under cover during fabrication & in transit.
- .2 Do not deliver Doors long before required.
- .3 Enclose items undergoing lengthy transportation in sturdy wood crates, fully protect contents, and prevent moisture infiltration.
- .4 Ensure crating in accordance with requirements of Carriers involved. Take adequate protection against damage in transit, on handling.
- .5 Clearly mark each crate, carton, package in exterior with identification of items, intended location in building.

### **2 PRODUCTS**

#### **2.1 Materials**

- .1 Door materials: to CAN/CSA-0132.2-Series 90, kiln dried to 6-8% moisture content. Ponderosa Pine, Spruce species, AWMAC Custom Quality grade.
- .2 Wood particle board core: to CAN3-0188.1-M1978, Type 2, Grade E, 28 pound cubic foot density, lineal expansion 0.20% maximum, single panel thickness, minimum 1 1/2" stiles, 2 1/2" rails bonded to core, minimum 1/2" hardwood edge bands to match face veneer, ready for painting and installation of hardware.
- .3 Adhesive: to CSA 0112 Series-M77, Type 1 waterproof, Type 2 water resistant, urea resin.
- .4 Facing: High pressure plastic Laminate: 'Medium Oak' woodgrain

### **3 EXECUTION**

#### **3.1 Fabrication**

- .1 Fabricate doors to CAN/CSA-0132.2-Series 90, AWMAC Standards, Architectural grade.
- .2 Fabricate wood section of doors by hot pressed process method.
- .3 Flush door construction: particleboard core, plywood crossband back veneer subfaces, suitable for painting.
- .4 Allowable warpage: after fabricated, plus, minus 1/4".

**End of Section**

## 08210 ALUMINUM ENTRANCE DOORS & FRAMES

### 1 GENERAL

#### 1.1 Work Included

- .1 Provide all labour, materials, methods, equipment, accessories to complete aluminum entrance doors, frames work.
- .2 Design, fabrication, installation.
- .3 Aluminum exterior entrance, interior vestibule doors, sidelight door frames.
- .4 Glass, glazing aluminum entrance, vestibule doors, framing
- .5 Brake metal sections, formed aluminum flashing, aluminum sills to fixed glazing.
- .6 Finish process to exposed aluminum.
- .7 Accessories, related fittings, gaskets, fasteners, anchoring devices, thermal break materials.
- .8 Glazing beads, seals, gaskets, tape, base shims.
- .9 Caulking, sealants, backup materials.
- .10 Steel, aluminum sub-framing, attachment, reinforcing items, anchors, clips indicated, required.
- .11 Back priming of metal surfaces.
- .12 Shop priming steel sub-framing, reinforcing, attachment steel.
- .13 Protective coating on finished aluminum, glass.
- .14 Glass, glazing relocated existing aluminum framing, doors.
- .15 Cleaning down aluminum, glass at completion of installation.

#### 1.2 Related Documents

- .1 Drawings, General Conditions, Division 1 General Requirements.
- .2 Section 04200: Masonry.
- .3 Section 06200: Wood blocking.
- .4 Section 08710: Supply of finish hardware.

#### 1.3 Design Criteria

- .1 Design entrances, doors, glazing systems, frames to:
  - Limit stress in aluminum, structural components to 90 Mpa under maximum load.
  - Limit lateral deflection under full design load, to maximum L/200 clear span, or glass manufacturer's limitations, whichever is less.
  - Withstand maximum wind pressure, suction loads acting normal to plane of surface, in accordance with National Building Code of Canada including "Climatic Information for Building Design in Canada, Chapter 1, Supplement to NBC.
- .2 Allow for areas of high positive, negative pressures created by configuration of building, proximity to adjacent areas, structures.
- .3 Limit deflection of any member in direction parallel to wall plane not to exceed 75% design clearance dimension between that member, glass, other part immediately below.
- .4 Permit adequate freedom of thermal movement, minimize stress on sealants. Allow for expansion, contraction of members.
- .5 Limit air infiltration, exfiltration to maximum 0.06 cfm/sq.ft., tested to ASTM E283.
- .6 Exclude water penetration to ASTM E331, to test pressure of 8 psf.
- .7 Design, verify maximum glass sizes, thickness, strength, etc., for glass types specified, to support design, maximum allowable uniform static loads, using design factor of 2.5.

#### 1.4 Regulatory Requirements

- .1 Design, detail, fabricate to National Association of Architectural Metal Manufacturers (NAAMM) Standards.
- .2 Comply with requirements Manitoba Building Code, 1998.
- .3 Perform welding work to CSA W59-M1989 Welded Steel Construction.
- .4 Make field connections to CAN/CSA-S16.1-M89.

### 1.5 Shop Drawings

- .1 Submit shop drawings.
- .2 Indicate materials, profiles in large scale, construction of various parts, methods of joining, thickness, types of materials, finishes, anchorage details, joints, welds, fastenings, gaskets, sealants, reinforcement, glazing, adjacent materials, pertinent information for co-ordination.

### 1.6 Samples

- .1 Submit samples requested by Contract Administrator.

### 1.7 Material Delivery, Storage & Handling

- .1 Store materials to manufacturer instructions, above grade on dunnage protected from weather, construction activities.
- .2 Prevent damage to materials during handling, storage, application.
- .3 Remove, replace damaged, defective materials.

### 1.8 Warranty

- .1 Provide written guarantee all work furnished, installed free of defects in materials, workmanship, remain watertight.
- .2 Provide written guarantee for sealed units against failure of hermetic seal for period five (5) years from manufacture. Mark date of manufacture unobtrusively on interior right hand bottom corner of each unit. Date no more than one (1) month prior to installation date.

## 2 PRODUCTS

### 2.1 Materials

- .1 Aluminum extrusions: Aluminum Association alloy AA6063-T5.
- .2 Sheet, plate aluminum: Aluminum Association alloy AA1100, natural anodized finish.
- .3 Steel reinforcement: to CAN/CSA-G40.21, grade 300W.
- .4 Fasteners: exposed, stainless steel type 300 series colour matched to adjacent surfaces, concealed, type 400 cadmium plated.
- .5 Weatherstrip: replaceable, metal backed pile cloth, manufacturer standard.
- .6 Aluminum isolation coating: to CGSB 1-GP-108c, alkali resistant, bituminous paint.
- .7 Shop primer to steel: to CGSB 1-GP-40M.
- .8 Weathering, glazing gaskets: closed cell elastomer or durometer appropriate to function.
- .9 Thermal barrier: two part, chemically cured high density polyurethane.
- .10 Caulking:
  - Backup material: closed cell flexible Ethafoam rod, size required.
  - Exterior caulking, sealant: to CGSB 19-GP-9a.

### 2.2 Glass Materials

- .1 Plate glass: to CAN-2-12.3-M76, float plate, 1/4" thick minimum, required thickness, clear.
  - .1 Transom glazing in vestibule door frames.
- .2 Safety glass: to CAN 2-12.1-M79, CAN 2-12.4M76.
  - .1 Float plate, 6 mm thick minimum, required thickness, clear, tempered.
    - .1 Interior vestibule doors, sidelights.
    - .2 Heat absorbing glass, tempered.
      - .1 Hermetically sealed units scheduled.
    - .3 Coated glass, tempered.
      - .1 Hermetically sealed units scheduled.
- .3 Heat absorbing glass: to CAN 2-12.4-M76, float plate, 1/4" thick minimum, required thickness.
  - .1 Grey tint, AFG Glass Inc. manufacture, Grey Float.
- .4 Coated glass: hard "Low-E" emissivity coating, hot sprayed high vacuum applied metallic oxide low emissivity coating on one surface, AFG Glass Inc. manufacture, "Comfort-ES", applied to float plate glass, safety glass as scheduled, indicated.
- .5 Hermetically sealed units: to CAN2 2-12.8-M76, perimeter "warm edge" spacers.
  - .1 Factory sealed, double glazed units, 1" thick, 1/2" air spaces, inner light Low-E coated, tempered safety glass with coating on surface 3, outer light tempered heat absorbing glass, **additional exterior protective pane: 'Lexan'**

- .1 Exterior entrance doors, sidelights.
- .2 Factory sealed, double glazed units, 1" thick, 1/2" air space, inner light Low-E coated float plate glass with coating on surface 3, outer light heat absorbing glass, **additional exterior protective pane: 'Lexan'**

- .1 Exterior transom glazing.

## 2.3 Products

- .1 Aluminum doors: Kawneer manufacture, resinous coating finish scheduled.
  - .1 Exterior Aluminum doors shall be 360 Insulclad series
  - .2 Interior Aluminum doors shall be 350 series
- .2 Provide 10" bottom rail, 8-1/4" centre rail.
- .3 Provide interlocking snap-in type stops for dry glazing. Do not use exposed screws to secure stops.
- .4 Fabricate, provide thermally broken, face cover stops for hermetically sealed double units, 1" thick in exterior doors.
- .5 Prepare doors for hardware scheduled. Mortise, cut-out, recess, drill, tap to template.
- .6 Construct corners by sigma deep penetration weld, mechanical fastenings.

## 2.4 Aluminum Frames

- .1 Kawneer manufacture, flush glazing system, natural anodized finish.
  - .1 Exterior entrance frames, sidelight, transoms: "Tri-Fab II 451T", thermally broken.
- .2 Fabricate frames to profile, 4-1/2" deep, 2" wide or 1-3/4" wide as required, exterior frames with screw, spline joinery, interior frames with shear block joinery, to configuration, design as indicated, required.
- .3 Fabricate interior aluminum framing for single glazing 1/4" thick, exterior frames for hermetically sealed unit glazing 1" thick.
- .4 Provide glass framing members for flush glazing all sides, with through sight lines, no projecting stops on face joints.
- .5 Provide fully resilient settings of glass with extruded, closed cell gaskets both sides of glass.
- .6 Fabricate aluminum trim, flashing, related components, etc. to profile, detail indicated, required.
- .7 Apply metal backed pile cloth weatherstripping to frame heads, jambs at door openings.

## 2.5 Aluminum Finishes

- .1 All exposed aluminum shall be given an anodic oxide treatment to obtain an Architectural Class II finish in accordance with the Aluminum Association Specification AA-M12C22 A31. Colour shall be #17 clear anodized.

## 2.6 Fabrication

- .1 Weld, cut, drill, fit joints prior to finishing. Weld with electrodes, by methods recommended by aluminum manufacturer.
- .2 Prevent distortion, discolouration of exposed faces, grind, weld areas smooth, restore mechanical finish before finish treatment.
- .3 Shop fabricate doors, frames to profiles, sizes indicated, required. Assemble work with various parts, assemblies ready for erection. Trial fit work not assembled, ensure proper, expeditious field assembly.
- .4 Make allowances for deflection of structure. Ensure structural loads not transmitted to framing. Allow for expansion, contraction of framing members.
- .5 Accurately fit intersecting members to flush hairline, weather tight joints mechanically interlocked together. Conceal fastenings.
- .6 Provide structural steel, aluminum, stainless steel reinforcement required for adequate strength, stiffness, connections.
- .7 Prepare doors, frames for hardware. Mortise, cut out, reinforce, drill and tap doors, frames to templates. Reinforce with aluminum plate.
- .8 Isolate aluminum from direct contact with dissimilar metals, concrete and masonry.

## **2.7 Shop Painting**

- .1 Finish steel clips, reinforcing steel, etc. with steel primer to CGSB 1-GP-40M.

## **3 EXECUTION**

### **3.1 Examination**

- .1 Co-ordinate work with work of other Sections.
- .2 Provide items for placing during installation of other Sections work at proper time. Avoid delays in work.
- .3 Place items, inserts, anchors accurately in relation to final location of aluminum components.

### **3.2 Installation**

- .1 Perform work with factory approved installers with recognized experience for handling, erection, installation of work.
- .2 Perform work in accordance with manufacturer instructions.
- .3 Set, secure aluminum work plumb, square, level at correct elevation in alignment with adjacent work, free from warp, superimposed loads. Fasten rigidly in position, permit minimum deflection, movement of frames. Make allowances for deflection of structure to ensure that structural loads are not transmitted to frames.
- .4 Anchor component parts to transmit wind loading, other stresses to anchorage system.
- .5 Install metal, matching aluminum flashing detailed, required for weather tight installation.
- .6 Seal joints in concealed manner between aluminum, masonry, concrete, other construction.
- .7 Install doors and hardware in accordance with hardware templates and manufacturer's instructions. Place, set thresholds bedded in caulking compound.
- .8 Adjust operable parts for correct function prior to glazing. Install, connect lock cylinders, other hardware provided by Section 08710.

### **3.3 Glazing**

- .1 Glaze interior aluminum framing, doors with single glazing.
- .2 Glaze exterior aluminum doors with double glazing.
- .3 Remove, replace improperly set glass, glass not meeting trade requirements.
- .4 Allow for full thermal movement, expansion/contraction of glass on perimeter of frames, between glass, glazing stops.
- .5 Employ procedures, methods established by Flat Glass Jobbers Association, published in the Association's glazing manual, as standards required for work.
- .6 Clean surfaces to be glazed, to receive caulking.
- .7 Provide full resilient setting for glass. Ensure assemblies interlock to provide positive retention for glass on either side, in event of breakage.
- .8 Install glazing system in complete accordance with manufacturer's directions.

### **3.4 Caulking & Sealing**

- .1 Provide all caulking, sealing, gasketing for weather tight installation.
- .2 Apply sealants as recommended by manufacturer.
- .3 Set backup material depth required, apply caulking compounds, tool smooth, slightly concave surface.
- .4 Protect aluminum, surrounding materials with masking tape, remove tape before compound finally sealed. Remove excess caulking materials.
- .5 Colour of caulking to match aluminum finish.

### **3.5 Protection**

- .1 Protect glass from mortar, concrete, paint, alkali, masonry washes, other deleterious substances by approved methods. Remove, replace stained, damaged glass.
- .2 Protect exposed aluminum surfaces with factory applied, easily removable protective film. Provide other protection required.
- .3 Remove protection when no longer required.
- .4 Remove mortar, plaster, fireproofing, other deleterious material from surfaces of aluminum immediately.
- .5 Mark glass with suitable tapes, flags, paper. Maintain warning signs on frames until directed otherwise. Do not use alkaline materials to mark glass.

**3.6 Cleaning**

- .1 Clean down work, remove fingermarks, glazing compound, other marks from glass, aluminum framing system materials, adjacent materials, at completion of installation. Provide protection.

**END OF SECTION**



## 08710 FINISH HARDWARE

### 1 GENERAL

#### 1.1 Work Included

- .1 Hardware for hollow metal doors.

#### 1.2 Related Sections

- .1 Steel Doors and Frames: Section 08110

#### 1.3 References

- .1 ULC - List of Equipment and Materials, Volume 2.
- .2 Standard hardware location dimensions in accordance with Canadian metric guide for Steel Doors and Frames (Modular Construction) prepared by Canadian Steel Door and Frame Manufacturer's Association.

#### 1.4 Co-ordination

- .1 Coordinate work of this Section with other directly affected sections involving manufacturer of and internal reinforcement for door hardware.
- .2 Supply templates to manufacturers of components affected by hardware.

#### 1.5 Regulatory Requirements

- .1 Conform to applicable code for requirements applicable to fire rated doors, frames and hardware.

#### 1.6 Shop Drawings

- .1 Indicate on shop drawings, locations and mounting heights of each type of hardware.
- .2 Hardware list shall list each door individually and shall list hardware for each door as a described item, not by a code. Hardware list shall be in terminology understandable by a layman.
- .3 Supply templates to door and frame manufacturer to enable accurate sizes, locations of cut outs, and reinforcement for hardware.
- .4 Provide product data on specified hardware as requested.
- .5 Submit 1 copy of manufacturers' catalogue cuts of each item, with hardware list.
- .6 Put parts lists, manufacturers instructions, and catalogue cuts into maintenance.

#### 1.7 Delivery & Storage

- .1 Store hardware in locked, dry area in individual packages or like groups.

### 2 PRODUCTS

#### 2.1 Hardware Items

- .1 Door locksets and latchsets, acceptable products: Schlage or compatible
- .2 Exterior Doors only: 'Best' Hardware only
- .3 Use one manufacturer's products only for all similar items.
- .4 All locksets and latchsets shall have 5" backset unless indicated otherwise. Dead bolt shall have 2 ¾" backset.
- .5 Contractor to be responsible to ensure that all lock cylinders compatible with existing keyways.

#### 2.2 Door Hardware

- .1 See door schedule and hardware list.

#### 2.3 Fasteners

- .1 Supply all fastening devices for installation and operation of hardware.
- .2 All exposed fasteners to be finished to match hardware.
- .3 Use fasteners compatible with material through which they pass.

**2.4 Keying**

- .1 Door locks to be keyed to match existing City Grandmaster system, and keyed alike.
- .2 Supply 4 keys for each lock. Supply 3 master keys.
- .3 Stamp keying code numbers on keys and cylinders.
- .4 Provide construction cores.
- .5 Provide all permanent cores and keys to Contract Administrator.

**2.5 Hardware List**

- .1 Refer to Architectural Drawing A8.1 for hardware list.

**3 EXECUTION**

**3.1 Inspection**

- .1 Verify that door and frame components are ready to receive work and dimensions are as required.
- .2 Beginning of installation means acceptance of existing conditions.
- .3 After installation, suppliers representative to inspect all hardware.

**3.2 Installation**

- .1 Install hardware in accordance with manufacturer's instructions.
- .2 Use the templates provided by hardware item manufacturer.
- .3 Maintain the following mounting heights for doors, from finished floor to centre line of hardware item:
  - .1 Locksets: 40"
  - .2 Dead Locks: 60"
  - .3 Exit Devices: 40"

**End of Section**

## **08800 Windows and Glazing**

### **1 GENERAL**

#### **1.1 Work Included**

- .1 Frames
- .2 Glazing
- .3 Installation

#### **1.2 Related Sections**

- .1 Carpentry and Framing: Section 06200
- .2 Sealants and Caulking: Section 7900

#### **1.3 Reference Standards**

- .1 CANA440.90.1 A3 B3 C5, I – min. 55

### **2 PRODUCTS**

#### **2.1 Frames**

- .1 Type/Size: as shown on Drawings and Schedules.
- .2 Multi-chamber PVC

#### **2.2 Glazing**

- .1 Lexan Exterior light – (pane 1,2)
- .2 Hermetically sealed double-glazing with Low 'E'-pane 5 (pane 3-6)
- .3 Warm edge
- .4 Hermetically sealed dual glaze

### **3 EXECUTION**

#### **3.1 Installation**

- .1 Installation by Section 06200

**End of Section**

## 09250 GYPSUM BOARD

### 1 GENERAL

#### 1.1 Work Included

- .1 Interior wall finish

#### 1.2 Quality Assurance (Environmental Requirements)

- .1 Maintain temperature minimum 10°C, maximum 21°C for 48 hours prior to and during application of gypsum boards and joint treatment, and for at least 48 hours after completion of joint treatment.
- .2 Apply board and joint treatment to dry, frost free surfaces.

### 2 PRODUCTS

#### 2.1 Materials

- .1 Standard board: to ASTM C 36 regular.
- .2 Steel drill screws: to ASTM C 1002.
- .3 Stud adhesive: to CAN/CGSB-71.25 ASTM C 557.
- .4 Laminating compound: as recommended by manufacturer, asbestos-free.
- .5 Casing beads, corner beads, and edge trim: to ASTM C 1047, metal with Z275 zinc finish, 0.5 mm base thickness, perforated flanges, one piece length per location.
- .6 Joint compound: to ASTM C 475, asbestos-free.
- .7 Joint tape.

#### 2.2 Acceptable Products

- .1 Domtar Construction Materials.
- .2 Canadian Gypsum Co. Limited.
- .3 Westroc Industries.

### 3 EXECUTION

#### 3.1 Erection

- .1 Do application and finishing of gypsum board in accordance with ASTM C 840 except where specified otherwise.
- .2 Do application of gypsum sheathing in accordance with ASTM C 1280.

#### 3.2 Application

- .1 Do not apply gypsum board until bucks, anchors, blocking, electrical and mechanical work are approved.
- .2 Apply single layer gypsum board to framing using screw fasteners for first layer, laminating adhesive screw fasteners for second layer. Maximum spacing of screws 12" o/c.
- .3 Apply 1/2" diameter bead of acoustic sealant continuously around periphery or each face of partitioning to seal gypsum board/structure junction where partitions abut fixed building components. Seal full perimeter of cut-outs around electrical boxes, ducts, etc., in partitions where perimeter sealed with acoustic sealant.

#### 3.3 Installation

- .1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 6" o/c.
- .2 Where top of partitions abut steel liner on underside of roof, finish top of gypsum board with a square nose trim.
- .3 Splice corners and intersections together and secure to each member with 3 screws.

- .4 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound installed according to manufacturer's directions and feathered out onto panel faces.
- .5 Finish corner beads, control joints and trim as required with two coats of joint compound and one coat of taping compound, feathered out onto panel faces.
- .6 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board so as to be invisible after surface finish is completed.
- .7 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .8 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.

**End of Section**

## **09510 ACOUSTIC CEILING SYSTEM**

### **1 GENERAL**

#### **1.1 Related Documents**

- .1 Drawings, General Conditions and Division 1 General Requirements.

#### **1.2 Section Includes**

- .1 Provide all labour, materials, methods, equipment, accessories to complete acoustical ceiling systems.
- .2 Acoustical lay-in panels.
- .3 Metal suspension systems.
- .4 Edge suspension system.
- .5 Hangers.
- .6 Cutting panels for other Sections.
- .7 Exposed metal suspension, edge mouldings, trim, etc. for panels, valances, borders, etc. in acoustic panel, gypsum wallboard ceiling systems.

#### **1.3 Related Sections**

- .1 Section 09260:Gypsum board ceilings.
- .2 Division 15: Mechanical louvers, grills.
- .3 Division 16: Lighting fixtures, etc.

#### **1.4 Design Criteria**

- .1 Design suspension system, components for maximum deflection 1/360 of span to ASTM C635 deflection test.

#### **1.5 Shop Drawings**

- .1 Submit shop drawings.
- .2 Indicate all types acoustical materials, details of different components of suspension, attachment systems, location, design of tile units, methods of installation.
- .3 Show sizes, arrangement acoustical materials on reflected ceiling plans, relating to lighting fixtures, other items.

#### **1.6 Samples**

- .1 Submit samples of any, all materials requested, prepaid to Contract Administrator office.
- .2 Submit samples of acoustic material for approval prior procurement.

#### **1.7 Maintenance Instructions / Materials**

- .1 Provide City typed, printed instructions for cleaning, servicing, maintenance of materials.
- .2 Leave City unopened cartons surplus panels.
- .3 Provide City one carton each panel size, type installed for every twenty cartons used.

#### **1.8 Material Delivery, Storage & Handling**

- .1 Deliver materials in suitable containers, prevent damage.
- .2 Prevent damage to materials during handling, storage.
- .3 Remove, replace damaged, defective materials.

#### **1.9 Environmental Conditions**

- .1 Maintain minimum, uniform temperature 150C, humidity 20- 40% before, during, after installation.
- .2 Commence installation after building enclosed, wet work completed, dry.
- .3 Store acoustic materials in work areas 48 hours prior to installation.

### **2 PRODUCTS**

## **2.1 Materials**

- .1 Suspension system: to ASTM C635, non fire rated, two directional, exposed tee bar grid, consisting of:
  - .1 Main tees: die cut, double web, rectangular bulb, 15/16" exposed flanges, with rolled cap, 11/2" deep minimum, cross tee holes 6" o.c., integral, reversible splices.
  - .2 Cross tees: die cut, rectangular bulb, 15/16" exposed flanges with rolled cap, 11/4" deep minimum, extended web positive interlock to main tee web, lower flange extended, offset.
  - .3 Edge mouldings, trim: manufacturer standard to match exposed grid components, uniform width, c/w back up plates.
- .2 System LAT-1: angle wall moulding, 3/4" x 3/4". (USG M7).
- .3 Systems components: 25 gauge commercial quality cold rolled steel, electro-galvanized coated, prefinished.
- .4 Exposed component finish: to CGSB 1-GP-118, factory finished, high grade baked enamel, non fading, non yellowing, low gloss.
- .5 Colour: suspension systems, low gloss white.
- .6 Hangers: minimum 12 US gauge, galvanized steel wire, minimum 3/16" diameter, zinc coated mild steel pencil rod for required extra support.
- .7 Splices, clips, retainer clips, wire ties, etc: to manufacture standard.

## **2.2 Acceptable manufacturers:**

- .1 Donn Products, Standard "DX Fast-Loc" system, Bailey Metal Products Standard B.E. Safe-T-Loc system.
- .2 Acoustical panels - (LAT-1): to CAN2-92. 1-M77, Federal Specification SS-A118b, Class 25, ULC S-102, NRC rang 0.55-0.65, STC rang 40-44 to AIMA, incombustible, mineral content, 5/8" thick, 24" x 48", sizes indicated, required, square edged, factory applied, matte white, latex paint surface, perforated, Armstrong manufacture, Minaboard "Cortega" pattern.

## **3 EXECUTION**

### **3.1 Examination**

- .1 Examine preparatory work of other Sections.
- .2 Report unsatisfactory conditions, defects.
- .3 Proceed when defects, unsatisfactory conditions corrected.
- .4 Ensure temperature, humidity conditions as specified.

### **3.2 Preparation**

- .1 Verify measurements, dimensions on site. Co-operate with other Sections.
- .2 Obtain, make ready, prepare all materials. Cause no delays to scheduling.
- .3 Erect ceiling suspension system after anchors, blocking, sound, fire barriers, electrical, mechanical work above ceiling examined, by Contract Administrator.

### **3.3 Installing Suspension System**

- .1 Erect suspension system grid at heights indicated, to ASTM C636 in accordance with manufacturer printed directions, with skilled mechanics.
- .2 Layout ceiling center line both ways, provide balanced borders at room perimeter to reflected ceiling plan.
- .3 Co-ordinate suspended system with location related components, mechanical, electrical fixtures etc. Co-operate with Division 15, Division 16.
- .4 Establish ceiling elevation using laser level, transit. Install edge moulding to correct ceiling height, at walls, columns, ceiling closures, bulkheads.
- .5 Support suspension system main tees at 4'-0" o.c. maximum, with hanger wire, pencil rod from building structure.
- .6 Install cross tees at right angles to main tees, main tees be non-cumulative.
- .7 Interlock cross tees to main tees for rigid assembly.

- .8 Frame openings for light fixtures, air diffusers, at changes in ceiling heights.
- .9 Ensure completed assembly supports all super-imposed loads, including panels, appurtenances, electrical, mechanical fixtures.
- .10 Maximum permissible deflection, 1/360 of span.
- .11 Set suspended grid work level to within 1/8" in 12'-0".
- .12 Ensure straightness, tolerance, bow, camber, twist of any suspension system member does not exceed values in NACA publication.
- .13 Level members with supporting hanger tensioned to prevent any subsequent downward movement when ceiling loads imposed.
- .14 Do not kink, bend hanger wires to level system tie-in channel.
- .15 Ensure no apparent angular displacement one tee to another.
- .16 Ensure exposed surfaces of suspension system level, flush, all joints tight, straight, true.
- .17 Install edge mouldings, trim with flush, hairline joints, corners mitred.
- .18 Install exposed metal suspension, edge mouldings, trim for valances, border panels in acoustic panel, gypsum wallboard ceilings to match.

### **3.4 Install Acoustic Panels**

- .1 Install acoustic panels in suspended grid systems, edge panel not less than 50% panel width.
- .2 Scribe acoustic panels to fit adjacent work. But joints tight, terminate edges with moulding.
- .3 Neatly cut, drill, fit around electrical, mechanical fixtures, other items protruding through acoustical ceilings.

### **3.5 Clean up and Protection**

- .1 Clean up rubbish, debris, packaging resulting from work promptly, as work proceeds, at conclusion at other times directed by contractor. Remove from jobsite.
- .2 Clean down all materials, leave free of grime, dirt, finger prints, other evidence of work.
- .3 Remove, replace, repair scratched, otherwise damaged acoustical panels, other component material to Contract Administrator approval.
- .4 Clean repair floors, walls, other adjacent surfaces stained, marked, otherwise damaged by work. Leave in perfect condition.

**End of Section**



## 09665 RESILIENT SHEET FLOORING

### 1 GENERAL

#### 1.1 Related Documents

- .1 Drawings, General Conditions and Supplemental General Conditions.

#### 1.2 Section Includes

- .1 Provide all labour, materials, methods, equipment, accessories to complete resilient sheet flooring.
- .2 Resilient sheet floor covering.
- .3 Cushioned Vinyl Flooring
- .4 VCB to resilient sheet flooring, carpeted areas.
- .5 Heat welded seams.
- .6 Adhesives for floor covering, VCB.
- .7 Cleaning, buffing on completion.

#### 1.3 Related Sections

- .1 Renovations & Alterations: Section 02070
- .2 Carpet: Section 09685

#### 1.4 Samples

- .1 Submit samples of any, all materials requested, prepaid to Contract Administrator Office.

#### 1.5 Maintenance Instructions, Materials

- .1 Provide typed, printed instructions for cleaning, servicing, maintenance of materials provided, to City. Place in hard cover, Acco clip binder.
- .2 Deliver 5% quantity overage, full width rolls, cuttings over 10 sq. ft. each colour, pattern, type flooring material for maintenance use. Store where directed. Clearly identify each packing to location, material.
- .3 Maintenance materials to be same production run as installed materials.

#### 1.6 Material Delivery, Storage, Handling

- .1 Store materials in original, undamaged condition.
- .2 Prevent damage to materials during handling, storage.
- .3 Store in rooms, areas to be covered 48 hours prior to installation.

#### 1.7 Environment

- .1 Ensure ambient temperature of areas to receive flooring minimum 21C, 72 hours prior to, maintained during, for 72 hours after installation.
- .2 Verify by test, CM dampness meter moisture content of concrete less than 2.5% by weight prior to installation.
- .3 Provide adequate ventilation.

## 2 PRODUCTS

### 2.1 Materials

- .1 Resilient sheet flooring: to CSA A126.3-M1984, Grade 1, Type 2, homogeneous sheet vinyl, heavy gauge minimum total thickness 0.080", reinforced PVC backing, PVC wear layer, 6'-6" wide rolls, lengths required for installation, total thickness pattern, **Tarkett** Inc. manufacture, "**Optima**" pattern, ERV parent (Western) Ltd. distributor. Colours selected by Contract Administrator from complete range.
- .2 Cushioned vinyl Flooring: **Taraflex 'Actionsport 45'**
- .3 Resilient base: CAN/CSA A126.5-M87, Type 3 vinyl, top set, coved, 1/8" thick, 6" high, rolls, complete with premoulded end stops, **Johnsonite** manufacture, colours selected by Contract Administrator from full, complete colour range in varying quantities each colour, wrapped corners.
  - .1 Adhesive: factory approved.
- .4 Sub-floor filler: self-levelling underlayment, premixed Elsro manufacture "Ardex K-15".
- .5 Patch filler: trowellable underlayment, leveling, shim coating floor patch, Elsro manufacture "Ardex K-55".

- .6 Substrate primer: manufacturer approved for substrate, flooring, Elsro manufacture " Ardex P-82".
- .7 Install Naplock at VCB/Carpet seam to manufacturers specifications.
- .8 Adhesive: factory approved for flooring type.
- .9 Heat welding rod: manufacturer standard, colour matched to Contract Administrator approval.
- .10 Sealant, wax: factory approved, colour matched to flooring surface.
- .11 Polyethylene sheet: to CAN 2-51.33-M77, Type 2.

## **2.2 Colour**

- .1 Provide colours, patterns, sheen selected, approved by Contract Administrator.
- .2 Allow minimum two colour selection.

## **3 EXECUTION**

### **3.1 Examination**

- .1 Examine surfaces prepared to receive flooring, base.
- .2 Report defects, unsuitable conditions.
- .3 Proceed only when defects, unsuitable conditions corrected.

### **3.2 Preparation**

- .1 Obtain, make ready, prepare all materials. Cause no delays to scheduling.
- .2 Thoroughly clean surfaces of all dust, dirt, grease, paint, other foreign material before flooring, base installed.
- .3 Prepare substrate surface in accordance with flooring material manufacturer's directions.
- .4 Fill cracks, other openings, depressions in substrate with sub-floor filler mix featheredged. Level uneven joints, rough areas, etc.
- .5 Sweep, vacuum floors clean. Prime chalky, dusty concrete.
- .6 Ensure substrate in acceptable condition prior to installation. Float out holes, cracks & changes in elevation. To preclude telegraphing through to finish. Ensure adequate feathering slopes to preclude telegraphing through to finish.

### **3.3 Flooring Installation**

- .1 Install Sheet Vinyl Flooring as per Manufacturers printed install instructions
- .2 Install flooring with fully trained, experienced applicators, approved by manufacturer.
- .3 Spread adhesive with spreader, trowel with 3/32" notches 1/8" apart.
- .4 Waterproof by coving, welding seams, corners where scheduled for coved base.
- .5 Lay sheets immediately after adhesive spread.
- .6 Leave seams 1/8" apart, or butted, later groove with chamfering machine.
- .7 Heat weld seams with vinyl welding rod in accordance with manufacturer directions. Do not chemical seam weld.
- .8 Roll flooring with minimum 100 lb. roller, immediately after laying. Remove air bubbles.
- .9 Bring flooring surfaces to dry buffed finish with power scrubber as recommended by manufacturer, to Contract Administrator approval.

### **3.4 Protection**

- .1 Protect work of others from damage resulting from work.
- .2 Allow no traffic on seamless flooring for minimum 48 hours after installation.
- .3 Apply polyethylene sheet protection over floor areas where required, directed by Contract Administrator.

### **3.5 Clean Up**

- .1 Clean flooring, rubber base at completion with neutral cleaners, when directed by Contract Administrator as recommended by manufacturer.
- .2 Clean up rubbish, debris resulting from work promptly as work proceeds, at conclusion, at other time directed by Contractor. Remove from job site.

**End of Section**

## **09685 CARPET**

### **1 GENERAL**

#### **1.1 Related Documents**

- .1 Drawings, General Conditions, and Supplemental General Conditions.

#### **1.2 Section Includes**

- .1 Provide all labour, materials, methods, equipment, accessories to complete carpet work.
  - .1 Carpet, underlay, carpet base.
  - .2 Naplock, accessories.
  - .3 Seaming materials, heat bond tape.
  - .4 Extra materials.
  - .5 Maintenance instructions, material.
  - .6 Adhesives.

#### **1.3 Related Sections**

- .1 Section 09665: Resilient flooring, VCB to carpet areas scheduled.

#### **1.4 Shop Drawings**

- .1 Submit shop drawings.
- .2 Indicate seaming diagrams layout, naplock location, etc.

#### **1.5 Samples**

- .1 Submit samples of any, all materials requested, prepaid to Contract Administrator office.
- .2 Install sample carpet area, indicating seaming, layout, accessories, etc. as accepted installation standard.

#### **1.6 Quality Assurance**

- .1 Be recognized by carpet manufacturer, as competent installer.
- .2 Submit substantiation of capability for supply, installation of carpeting, names of previous projects, quantity of carpet installed, etc. if required by Contract Administrator.

#### **1.7 Maintenance Instructions/Materials**

- .1 Provide typed, printed instructions for cleaning, servicing, maintenance of materials provided, to City.
- .2 Place in hard cover, Acco clip binder.
- .3 Provide City 5% quantity overage, rolled, sewn in burlap bag.
- .4 Bag, hand surplus material, cuttings, etc. over 144 sq.in. to City for repair.

#### **1.8 Material Deliver, Storage, Handling**

- .1 Deliver materials to site in protective, waterproof coverings, each roll identified to dye lot, location, seals, labels intact.
- .2 Store in locked, dry, enclosed area on pallets.
- .3 Protect from weather, construction activity.
- .4 Store carpet, adhesives in room, areas to be covered 48 hours prior to installation.

#### **1.9 Environment**

- .1 Ensure ambient temperature of areas, surfaces to receive carpet 180 C, or warmer 48 hours prior to application, maintained during, for 8 hours after installation.

#### **1.10 Warranty**

- .1 Provide written guarantee for carpet, installation against deterioration of backing, delamination, failure of seams, edges, loose installation, unraveling, stretching or wrinkling, fading, other defects detrimental to appearance, performance for period five (5) years from date of Substantial Performance.

## **2 PRODUCTS**

### **2.1 Material**

- .1 Carpet: to CGSB 4-129-Amdt Apr 77, commercial type for direct glue-down installation, manufacturer's first quality, uniform in colour, pattern, texture, suitable for cutting without unraveling at edges, creating pattern mismatch, discontinuity.
- .2 Refer to Room Finish Schedule, Colour Schedules, etc. for locations, colours, carpet accents, etc. of carpet types specified.
  - .1 Carpet, CPT-1: **Patcraft** manufacture; **Splash 10060**, Colour: **#60514 Cannonball**
- .3 Provide colour in same quality of carpet by one manufacturer.
- .4 Ensure all carpet of same colour is design dyed, of one dye lot.
- .5 Adhesive: release type, carpet manufacturer approved.
- .6 Binder bars, binder edge moulding: aluminum, type recommended by carpet manufacturer, approved by Contract Administrator.
- .7 Seaming tapes, sealant, threads, etc.: types approved by carpet manufacturer.
- .8 Carpet grippers: type approved by carpet manufacturer.
- .9 Subfloor filler: Ardex manufacture, "K-15", "K-55", premixed filler, floor patch.

## **3 EXECUTION**

### **3.1 Examination**

- .1 Examine preparatory work of other Sections. Report defects, unsuitable conditions.
- .2 Ensure substrate dry, free of foreign material, liquid or solid state.
- .3 Proceed only when defects, unsuitable conditions corrected.

### **3.2 Preparation**

- .1 Obtain, make ready, prepare all materials. Cause no delays to scheduling.
- .2 Take site measurements required for work.
- .3 Prepare substrate surfaces in accordance with carpet manufacturer directions.
- .4 Fill cracks, holes, other openings, etc. with sub floor filler, patch filler, build up areas at junction with different material thicknesses, depressions with sub floor filler, featheredged. Level uneven joints, rough areas, etc.
- .5 Clean, vacuum surfaces. Remove deleterious substances.

### **3.3 Installation**

- .1 Install carpeting on orientation bench with experienced carpet installers in strict accordance with manufacturer's instructions.
- .2 Install carpeting after painting, work of other Sections completed which may cause damage to carpet.
- .3 Layout carpet, locate joints, seams as recommended by carpet manufacturer, approved by Contract Administrator before cutting.
- .4 Install carpet by direct glue-down method, loose laid where indicated, required.
- .5 Unroll carpeting to proper length.
- .6 Allow approximately 1 1/2" overlap each joint, double cut seams.
- .7 Keep pile lay, dye lot each length in same direction, ensure proper match.
- .8 Install binder bars, binder edge moulding around perimeter at exposed carpet edges. Secure with cement adhesive, approved fasteners.
- .9 Select seam nearest centre of room, state against walls in corridors after area dry fitted.
- .10 Rough cut around obstructions. Flip back half each width, full length. Do not allow material to shift. Seal edges of cut-outs.
- .11 Protect exposed edges where carpet abuts other floor materials. Install binder edge moulding, fasten with contact adhesive.
- .12 Seal every edge in installation with seam sealer.
- .13 Lay carpet in room, area using maximum width material.
- .14 Install carpet border, accent, pattern areas in conjunction with main carpet area, in strict accordance with carpet manufacturer directions, site representative instructions to Contract Administrator approval.

- .15 Provide carpet rooms, areas full lengths, cross seams not acceptable.
- .16 Obtain prior Contract Administrator approval where cross seam unavoidable.
- .17 Cut to size, install VCB 6" high, in areas where scheduled.

**3.4 Clean Up**

- .1 Remove dirt, scraps, etc. from surface of carpet on completion.
- .2 Clean carpet with broom, beater-type vacuum cleaner.
- .3 Remove soil spots, excessive adhesive on carpet with proper spot remover.
- .4 Cut off loose pieces face yarn with sharp scissors.
- .5 Leave installation clean, in perfect condition for review by Contract Administrator.
- .6 Clean up rubbish, debris resulting from work promptly as work proceeds, at completion, at other times directed by Contractor. Remove from job site.

**3.5 Protection**

- .1 Protect installed carpet from subsequent work by other Sections.
- .2 Allow no traffic on carpet minimum 24 hours after installation.
- .3 Lay protective paper over completed carpeting. Lap joints minimum 4", seal. Remove when directed.

**End of Section**

## **09900 PAINTING & FINISHING**

### **1 GENERAL**

#### **1.1 Work Included**

- .1 The work shall include the furnishing of all labour, materials, and equipment necessary to complete the painting work indicated.

#### **1.2 Acceptable manufacturers**

- .1 materials, workmanship and all items affecting the work of this section is to be in accordance with Canadian Painting Contractors Association (CPCA) "Architectural Painting Specification Manual".
- .2 Prior to ordering paints, submit to the Contract Administrator for review a complete schedule of paint materials proposed for use. This schedule shall include manufacturers name, brand name or code number, type and recommended application.

#### **1.3 Colour Schedule**

- .1 Paint colours shall be as selected by the Contract Administrator.
- .2 Prior to commencement of work, the Contract Administrator with furnish three (3) copies of colour schedule.

#### **1.4 Delivery**

- .1 Deliver paint materials in sealed original labelled containers, bearing manufacturers name, type of paint, brand name, colour designation and instructions for mixing or reducing.

#### **1.5 Storage**

- .1 Provide adequate storage facilities. Store paint materials at a minimum ambient temperature of 8 C and in a well ventilated area.
- .2 Take all precautionary measures to prevent fire hazards and spontaneous combustion.

#### **1.6 Environmental Conditions**

- .1 Ensure surface temperatures or the surrounding air temperature is above 5 C before applying finishes. Minimum application temperatures for latex paints for interior work is 7 C and for exterior work 10 C.
- .2 Provide adequate continuous ventilation and sufficient heating facilities to maintain temperatures above 7 C for 24 hours before, during and 48 hours after application of finishes.
- .3 Provide minimum 25 foot candles of lighting on surfaces to be finished.
- .4 Do not apply paint finish in areas where dust is being generated.

#### **1.7 Protection**

- .1 Adequately protect other surfaces from paint and damage. Make good any damage as a result of inadequate or unsuitable protection.
- .2 Furnish sufficient drop cloths, shields and protective equipment to prevent spray or droppings from fouling surfaces not being painted.
- .3 Place cotton waste, cloths and material which may constitute a fire hazard in closed metal containers and remove daily from site.
- .4 Remove all electrical plates, surface hardware, fittings and fastenings, prior to painting operations. These items are to be carefully stored, cleaned and replaced on completion of work in each area. Do not use solvent that may remove the permanent lacquer finish to clean hardware.

## **2 PRODUCTS**

### **2.1 Materials**

- .1 Paint materials to be products of a single manufacturer.
- .2 All painting materials shall be the best quality and shall be accepted by the Contract Administrator.
- .3 Paint shall not be settled, caked or thickened in the container, shall be readily dispersed with a paddle to a smooth consistency, and shall have excellent application properties.
- .4 Paint shall arrive on the job colour-mixed except for tinting of undercoats and possible thinning.
- .5 All thinning and tinting materials shall be as recommended by the manufacturer for the particular material thinned or tinted.
- .6 Mixed colours shall match colour selection made by the Contract Administrator prior to application of the coating.
- .7 Paint shall be ready mixed except field catalyzed coatings. Process pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating.
- .8 Paint shall have good flow and brushing properties; capable of drying or curing free of streaks or sags.
- .9 Paint Accessory Materials: Linseed oil, shellac, turpentine, and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.
- .10 Acceptable manufacturers: Pratt & Lambert Paints; Benjamin Moore; Sherwin Williams.

## **3 EXECUTION**

### **3.1 Conditions of Surfaces**

- .1 Thoroughly examine all surfaces schedule to be painted prior to commencement of work. Report in writing to the Contract Administrator any condition that may potentially affect proper application. Do not commence until all such defects have been corrected.
- .2 Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below maximums established by the paint manufacturer.
- .3 Beginning of installation means acceptance of existing surfaces.

### **3.2 Preparation of Surfaces**

- .1 Galvanized surfaces: remove surface contamination and oils from surfaces and wash with solvent. Apply a coat of etching type primer.
- .2 Zinc coated surfaces: remove surface contamination and oils from surfaces and prepare for priming in accordance with metal manufacturers recommendations.
- .3 Remove stains caused by weathering of corroding metals from concrete with a solution of sodium metasilicate after being thoroughly wetted with water. Allow to thoroughly dry.
- .4 Steel and iron surfaces: remove grease, rust, scale, dirt and dust from surfaces. Where heavy coatings of scale are evident, remove by wire brushing, sandblasting or any other necessary method. Ensure all steel surfaces are satisfactory before paint finishing.
- .5 Unprimed Steel Surfaces: clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts and nuts are similarly cleaned. Prime surfaces to identify defects. Prime paint after defects have been remedied.
- .6 Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate, rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.

### **3.3 Applications**

- .1 Apply paint and other finishes in accordance with good trade practice.
- .2 Finishes specified are intended to cover surfaces satisfactorily when applied in accordance with manufacturer's recommendations.
- .3 Apply each coat at the proper consistency.
- .4 Each coat of paint is to be slightly darker than the preceding coat unless otherwise acceptable to the Contract Administrator.
- .5 Sand lightly between coats to achieve required finish.
- .6 Do not apply finishes on surfaces that are not sufficiently dry.
- .7 Allow each coat of finish to dry before a following coat is applied, unless directed otherwise by manufacturer.

### **3.4 Cleaning**

- .1 As work proceeds and upon completion, promptly remove all paint where spilled, splashed or spattered.
- .2 During the progress of work keep the premises free from any unnecessary accumulation of tools, equipment, surplus materials and debris.
- .3 Upon completion of work leave premises neat and clean, to the satisfaction of the Contract Administrator.

### **3.5 Painting and Finishing Schedule**

- .1 Interior Painting: Primed Metal Surfaces: 1 coat enamel undercoat, 2 coats alkyd semi-gloss enamel
- .2 Gypsum Board: 1 coat alkyd primer sealer, 2 coats alkyd eggshell enamel

**End of Section**