

**DIVISION 1**

**00020 SPECIFICATION INDEX**

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## DIVISION 1 - GENERAL REQUIREMENTS - SPECIFICATIONS

### SUMMARY OF WORK

### Section 01011

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## 1.0 GENERAL

### 1.1 DOCUMENTS

This section of the specifications forms part of the contract documents and is to be read, interpreted and coordinated with all other parts.

### 1.2 SUMMARY OF WORK

This section of Work includes furnishing of all labor, materials, services and equipment necessary to provide a replacement roofing system for the office / warehouse roof area on the Nanaimo Transportation Services Building located at 6400 Applecross Road Nanaimo, British Columbia. The work included is as shown on the roof plan and on the attached drawings and; all as specified herein.

#### .1 General scope of work includes, but is not limited to, the following:

- .1 Removal and disposal of the existing gravel ballast, extruded polystyrene insulation, wood cants, sleepers, plates, redundant equipment, and equipment curbs, etc. **and;**
- .2 Removal and disposal of all existing, metal flashings, penetration flashings, drains, vents, plumbing & electrical flashing jacks, etc. **and;**
- .3 Supply and installation of new two ply SBS roofing system including but not limited to additional wood blocking at parapets, sleepers, and curbs for height of new sloped and flat format polyisocyanurate insulation fastened to the wood deck as well as one layer of asphalt core board insulation overlay board adhered with two part urethane adhesive **and;**
- .4 Supply and installation of new metal flashings at all roof perimeters up stands and roof penetration hardware, new drains & roof penetration hardware, supply and installation of proprietary supports for all roof top cables and pipes, **and;**
- .5 Supply and installation of four new skylights that match the existing skylight type and size and a sleeper pad for the attachment of the antenna tower near the existing location.
- .6 Unfasten and reposition the opening direction of the existing roof hatch and refasten, as per owner's directions, **all as specified herein.**
- .7 Supply and installation of three new spun copper roof drains on existing adjoining roof area Bay No. 4. Owner will provide new interior plumbing lines to the ponded locations for the new drains.

**.2 New Roofing Installation Outline:**

- .1 Supply and installation of new two ply SBS membranes base and cap sheet membranes, torched applied, onto one layer of asphalt core overlay board adhered to mechanically attached sloped and flat format polyisocyanurate insulation to RGC Standards over reinforced kraft vapour retarder, all as detailed and as specified herein; **and**
- .2 Soprema Inc. **or** IKO Industries Ltd. two ply SBS membranes base sheet and cap sheet membrane torched applied to one layer of asphalt core overlay board. All remaining roofing system components, insulation, vapour retarder are to be mechanically attached to RGC standards. Fastener plate & screw patterns and installation methods **MUST** conform to these specifications and RGC standards application procedures; **and**
- .3 Supply and installation of new metal flashing at all perimeters, curbs and equipment sleepers, new cable and pipe hardware flashing at all roof deck protrusions and penetrations, as well as new manufacturers proprietary supports for pipes and cables.; **and**
- .4 Supply and installation of wood blocking at existing parapet perimeter to maintain 100mm (3.5") above the finished roof surface at parapet walls. Supply and install new treated wood blocking for damaged or rotted equipment sleepers and curbs. Removal and relocation of existing roof hatch and supply and installation of new skylight domes, **all as specified herein.**

**.3 Existing Roofing System as determined by cut tests:**

**West End Main Roof Area:**

- 1) Gravel ballast, 25mm (12") thick extruded polystyrene insulation, two ply SBS roofing membrane adhered to base sheet nailed to the existing flat wood deck.

**East End Main Roof Area:**

- 2) Gravel ballast, 25mm (12") thick extruded polystyrene insulation, two ply SBS roofing membrane adhered to base sheet nailed to the existing sloped (1%) wood deck.

### 1.3 ENVIROMENTAL REQUIREMENTS

- .1 Requirements of RCABC - RGC Standards and Manufacturer shall be followed for acceptable weather conditions during application of the roofing system.
- .2 Do not carry out roofing operations during wet weather. Do not apply roofing to wet surfaces or when rain is imminent.
- .3 Existing Conditions (roof top equipment operation): Proceed with the new work of this section only when temporary lines are securely installed and are performing as per interior requirements.
- .4 Coordinate metal flashing and trim work with the installation of roofing, drains, nailers, curbs etc.
- .5 Interior Protection: The interior of the building and its contents shall be at all times protected from damage consequential to the execution of this contract and any repairs or claims for damage shall be the sole responsibility of the Contractor.
- .6 Protect adjacent work and surfaces from splashes sprays or spills. Keep grounds around project clean on a daily basis.
- .7 Under no circumstances shall any portion of the roof be left open to the weather overnight. Ensure all portions are sealed watertight before leaving the roof. The roofing assembly to the completed base sheet and base stripping and acceptable night seal must be installed and completed each day.
- .8 The use of radios, iPods and music devices other than those meant for work communication purposes are not permitted and will not be tolerated.
- .9 Do not store tools, materials, etc. on top of roof-top mechanical equipment. Keep roof-top equipment clean of all roofing debris.
- .10 Supply and maintain a portable toilet on site for use of the workers in a designated location. The toilets shall be maintained in a clean, sanitary, secure and safe manner at all times.
- .11 Smoking on roof or anywhere other than owner designated areas is **not** permitted.

#### 1.4 REFERENCE DOCUMENTS

- .1 The Contractor shall provide, at the site, one copy of each of the following documents for general reference.
- .2 Contract documents as listed under the Agreement.
- .3 Project specifications, reviewed shop drawings, all addendums issued for project, a set of sloped insulation layout drawings as provided by the sloped insulation manufacturer.
- .4 Worker's Compensation Board of British Columbia (Work Safe) Accident Prevention Regulations.
- .5 Latest addition of RGC Roofing Practices Manual and or continuous access to manual on Roofing Contractors Association of BC web site: [www.rcabc.org](http://www.rcabc.org)

## **DIVISION 1 - GENERAL REQUIREMENTS**

### **PROJECT COORDINATION**

### **Section 01041**

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#### **1.5 PROJECT MEETINGS**

- .1 As required by the Consultant or Owner Representative, the Contractor shall call site meetings at regular intervals to which all invited sub trades (if any) must attend. The owner representative will provide physical space and make arrangements for the meeting. The Owner's representative (Project Officer) will chair the meetings and shall prepare and distribute the minutes of such meetings. Minutes shall be distributed within seventy-two (72) hours of the meeting date.
- .2 Special project meetings may be called at the request of the Owner's Representative, Consultant, or the Contractor.

#### **1.6 SECURITY**

- .1 No security will be provided or compensation paid by the Owner for material, equipment, or work stolen, lost, damaged or destroyed. The Contractor shall be responsible for watching the work & equipment at all times and for making good all deficiencies at no extra cost to the contract sum.
- .2 Subcontractors shall make their own arrangements to ensure the security of their own equipment, materials and work in cooperation with the Contractor.
- .3 The Contractor shall designate areas of the site as, indicated on the site plan, to be used as temporary lock fast stores and subcontractors shall comply with the Contractor's instructions in this regard.

#### **1.7 CONSTRUCTION SAFETY**

- .1 The Contractor shall comply with all applicable laws and regulations of federal, Provincial and municipal authorities concerning construction safety.
- .2 The Contractor shall comply with Worker's Compensation Act of British Columbia Accident Prevention Regulations (Work Safe latest editions) and shall provide all necessary safety requirements as prescribed by the Act for his work.
- .3 Precautions shall be taken to prevent the overloading of any part of the existing structure, during the progress of the work and damage resulting from such overloading shall be made good at the expense of the Contractor.

### **1.8 CREW SIZE & CONTINUITY OF WORK**

- .1 During roofing removal and installation of new roofing the Contractor shall maintain a minimum crew of 8 workers with qualifications as specified in section 1.6.3. Exceptions for crew size will only be made during sheet metal installation. Safety monitors, if utilized, do not constitute 'workers with qualifications'. Sheet metal installation shall follow completion of other work by no more than 5 working days.
- .2 With due allowance for inclement weather, the Contractor shall diligently pursue total completion of the project in the best possible time.
- .3 The cap sheet installation shall follow base sheet installation within one week.

### **1.8 ENVIROMENTAL CONDITIONS**

- .1 Weather conditions permissible for roofing are subject to the discretion of the roofing contractor and the Consultant, except that in no case shall roofing work be carried out under the following conditions:
- .2 When temperature of the substrate or air is lower than or is forecast to drop below 2 degrees during the course of the work.
- .3 During wet weather forecast imminent wet weather, or when site conditions have been adversely affected by recent wet weather.



## **DIVISION 1 - GENERAL REQUIREMENTS**

### **1.10 GENERAL INSTRUCTIONS**

**Section 01220**

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#### **.1 RELATED SECTIONS**

- .1 Mechanical Division 15 – Section 15700 Heating Ventilating, and Air Conditioning Equipment.
- .2 Electrical Division 16 – Section 16100 Wiring Methods.

#### **.2 REFERENCES**

- .1 Roofing Contractors Association of British Columbia (RCABC), Roofing Practices Manual (RPM), latest edition.
- .2 CGSB 37-GP-56M, Membrane, Modified Bituminous, Prefabricated and Reinforced for Roofing.
- .3 Membrane Manufacturers, Technical Manual, latest edition.

#### **.3 CONTINGENCY ALLOWANCES**

- .1 The Owner has a reserve contingency allowance in place to cover unforeseen circumstances as noted below.
- .2 All extra cost items to be approved by owner or owner representative and must be supported by invoices and / or approved change orders. The cash allowance is intended for, but not limited to the following items:
  - .1 Rotted or deteriorated structural members, other than perimeter wood blocking and curbs

#### **.4 DELIVERY, STORAGE, AND HANDLING**

- .1 Deliver and store materials in original sealed containers with all Manufacturers' labels intact. Store and keep dry all materials, accessories, elevated from contact with ground, roof or deck and from moisture and protected from weather with purpose-made tarps. Polyethylene other non-breathable plastic coverings are not acceptable. Ensure materials and tarps are secure from severe winds. Do not rely on Manufacturer's packaging for weather protection.

**1.10 GENERAL INSTRUCTIONS**

**Section 01220**

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**DELIVERY, STORAGE AND HANDLING (continued)**

- .1 Carefully remove and store in secure manner existing duct cladding (brown flashing) and custom manufactured ductwork supports for reuse after replacement of roofing and flashings..
- .2 Store all insulation materials so as to keep dry and avoid condensation under material wrappers and weather protection.
- .3 Store membrane rolls upright in strict accordance with the Membrane Manufacturer's published instructions. Do not stack pallets more than one high.
- .4 Store membrane rolls, etc. in heated enclosures prior to use where climatic conditions warrant and as recommended by the Manufacturer; bring only enough rolls for immediate use to the work area.
- .5 Store all combustible materials away from heat and open flame.
- .6 Do not stockpile materials or equipment, or operate equipment so as to overload the structure in any way. Any damage from overloading the deck or its supporting members shall be repaired or replaced at the Contractor's own expense.

**1.9 GUARANTEES**

- .1 Provide a written RCABC Guarantee Corp. 10 Year "Roof Star" Guarantee that commences from the date of an Approved Final Inspection Report. All costs for this Guarantee, including inspection to be included in the tender submitted; **and** in addition provide a 10 year SBS membrane manufacturer's material warranty, at no cost to the owner.
- .2 Provide copies of all final project guarantees and warranties to Regional District of Nanaimo at 6400 Applecross Road Nanaimo, British Columbia V9V 1K8.  
**Attention:** Project Manager **Mr. Darren Marshall**, as a condition of Final Acceptance of this project.
- .3 Inspections on this project is pre-assigned to:  
  
J. Watson Roofing Consulting Inc.,  
224 Seafield Road, Victoria, BC V9C 1S5  
Telephone: cell - 250-634-4392 Office Phone: 250-391-7887 Fax: 250-3917887  
Email: jwatson1@telus.net

## DIVISION 1 - GENERAL REQUIREMENTS

### 1.11 SUBMITTALS

#### Section 01300

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Preferred format for all submittals is as .PDF or .doc electronic files whenever possible.

#### .1 Prestart Meeting Submittals

- .1 Obtain and provide at the Prestart Meeting written certification from the Membrane Manufacturer certifying that the installer is approved by Manufacturer for installation of the specified system and supply of the required warranty documents.
- .2 Provide a list of all personnel who may be working on the site and copies of all trade qualifications of workers assigned to the project at the Prestart Meeting.
- .3 Product data: At the Prestart Meeting Submit 2 sets of Manufacturer's technical product data, published installation instructions and maintenance recommendations for each type of roofing product to be used.
- .4 Prepare and submit 2 copies of a written Strategic Material Application in Flame Sensitive Locations (SMAFSL) Plan, as outlined in 1.10, to the Owner's Representative and Consultant, detailing the methods of application and material to be used in identified flame sensitive areas at the Prestart Meeting. SMAFSL to include installation practices around building air intake locations.
- .5 Submit two sets of standard metal flashing colour samples for selection by the Owner at the Prestart Meeting.

#### .2 Other Submittals

- .1 For changes to the specified work submit shop drawings detailing construction details, assembly, profiles, materials, and installation for conditions requested by the Consultant.
- .2 Provide sheet metal flashings shop drawings to consultant for review prior to fabrication.
- .3 Submit written weekly and or daily work schedules, via e-mail or fax, as required by the Consultant or Owner's Representative, prior to the start of work in each area. Verbal communication or phone messages only will not be acceptable.

## DIVISION 1 - GENERAL REQUIREMENTS

### 1.12 CONSTRUCTION SCHEDULE

#### Section 01310

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#### .1 GENERAL SCHEDULES

- .1 Immediately following the award of the contract and **before** commencement of the Work on the work site, the Contractor shall convene a meeting at the site with the Owner's representative (The Consultant(s), Subtrades (if any) in attendance. At this meeting, the roof replacement and deck repair work sequence as well as scheduling will be discussed and finalized in detail including priorities, timing of existing service interruptions and the like; special project procedures and any questions with respect to the roof replacement and deck repairs, scheduling or procedures will be brought forward and clarified,
- .2 In order to improve the roof replacement and deck repair schedule, modifications to the construction schedule may be suggested by the Owner's representative, Consultant(s) or the Contractor before and during the roof replacement and deck repairs and such modifications may be implemented by mutual agreement.

#### .2 COMPLETION SCHEDULE

- .1 It is the intention that this project be substantially completed by the **30<sup>th</sup> day of September 2016**.

#### .3 CREW SIZE & CONTINUITY OF WORK

- .1 During roofing removal and installation of new roofing the Contractor shall maintain a minimum crew of eight (8) workers with qualifications as specified in section 1.6.3. Exceptions for crew size will only be made during sheet metal installation. Safety monitors, if utilized, do not constitute 'workers with qualifications'. Sheet metal installation shall follow completion of other work by no more than seven (7) working days.
- .2 With due allowance for inclement weather, the Contractor shall diligently pursue completion of the project in the best time possible.
- .3 SBS Membrane cap sheet installation shall immediately follow base sheet installation within seven (7) days.

## DIVISION 1 - GENERAL REQUIREMENTS

### 1.13 QUALITY CONTROL

### Section 01400

Page 1 of 1

#### .1 GENERAL

- .1 For the work, obtain primary materials from a single Manufacturer, which has produced products and systems successfully for not less than 10 years. Submit job references on request of the Consultant. All materials shall be only as recommended or accepted by the primary Membrane Manufacturer.
- .2 Contractor shall be experienced in the application of the materials and shall supply job references, and client references upon request, to show modified bitumen installation experience of similar size and scope of this project for at least 5 years. Client references to be supplied on request.
- .3 Contractor's Field Supervision: Contractor must maintain full time supervisor and same foreman on the job site during all times when roofing work is in progress. Supervisor must have roofing qualification and have a minimum 10 years' experience in roofing work similar in nature and scope of specified roofing. Roofing crew makeup shall be trade qualified journeyman roofers in the ratio of no more than 1 to 3 (at least one journeyman to three labours). Qualifications may be reviewed prior to award of contract and will be reviewed on site.
- .4 Prior to commencement of the work, the Consultant, the Roofing Contractor, the Roofing Contractor's Foreman and the Owner's Representative shall meet on site (the Pre-Start Meeting) to review the materials, details, work schedule and the Owner's requirements.  
A Manufacturer's Representative shall visit the site during start-up to assist & ensure that the installers and the Consultant/Inspector are instructed in the most up-to-date and correct membrane installation procedures
- .5 A copy of the complete specifications, drawings, submittals and addenda shall be on site at all times.
  - .1 The project foreman must be familiar with all aspects of the specifications and all personnel must read and understand the contents of the specification prior to the start of work.
  - .2 Replacement of project designated foreman and key qualified roofing journey persons will not be permitted without prior written approval from the roofing consultant.
- .6 Advise all project suppliers to deliver materials to site **only** when the roofing crew is on site.

## DIVISION 1 - GENERAL REQUIREMENTS

### 1.14 TEMPORARY FACILITIES and CONTROLS / SITE SECURITY

Section 01500

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- .1 Site Access: Site Access: From exterior by Contractor supplied, installed and maintained ladders. Electrical connection is available at site for power related tools and or chargers.
- .2 Parking is restricted to essential company vehicles, cranes & bins only. Worker vehicles shall **only** be parked at owner designated location onsite. (Parking is available in adjacent parking lot).
- .3 Notify Owner's Representative, Consultant, of intent to start work at least three (3) days prior to commencing any work. Provide daily notification of any changes in work schedule.
- .4 The building occupants **will be** sensitive to noise, vibration, dust or any logistical activity that prevents ready access to the building. The Contractor is to cooperate and communicate with the Owner's Representatives and onsite maintenance personnel regarding the location of equipment, materials or personnel, so as to minimize the impact to occupants and the operation of the facility as much as possible.
- .5 FIRE PREVENTATIVE MEASURES
  - .1 The Contractor is to use this section of the specifications as a guide for the development of a risk assessment evaluation and a Strategic Material Application in Fire Sensitive Location Plan (SMAFSL). The Contractor is not to rely solely on these specifications for fire hazard assessment and appropriate work procedures.
  - .2 The Contractor shall make himself familiar with the construction of the building prior to and during the scope of work, as well as with the actual use and occupancy of the building in determining appropriate Fire Safety Plans. Consultation with the Owner's Representative, their designate and Tenants shall form an integral part of the Fire Safety Plan. The SMAFSL shall include installation practices around building air intake locations.
  - .3 Proposals for the use of alternate materials and or installation practices, prior to work, or as encountered, are to be submitted to the Consultant prior to implementation.
  - .4 Proposals to modify the materials or installation practices are designed to specifically address installation fire concerns and not to be considered an opportunity to change the specified membrane system or generate extra costs.
  - .5 A SMAFSL Plan based on the Contractor's installation knowledge, familiarity with the building and the building use, and documented consultation with the Owner's Representative shall form part of a plan to be supplied by the successful bidder at the Prestart Meeting. A copy of this plan is to be submitted to the Owner's Representative and Consultant and be available upon request for review by any other regulatory agency.
  - .6 Comply with Owner's instructions for obtaining Hot Works Permits where required.

**1.14 TEMPORARY FACILITIES and Section 01500 Page 2 of 2**  
**CONTROLS / SITE SECURITY (continued)**

- .7 Comply with or exceed RCABC Safety Precautions - Torching for Modified Bituminous Systems as described in the RCABC Roofing Practices Manual, Tab 5.0.1. Deficiencies in Fire Extinguisher Requirements will not be tolerated.
- .8 Where torches are used for drying or application, a minimum of one 10 lb. ABC fire extinguisher with current charge tags intact is required for each torch on the roof, the extinguisher at all times shall be within 20' (6m) of the worker using the torch. Workers shall be able to demonstrate verbal competence in the use of the extinguisher upon request of the Consultant.
- 9 In addition to fire extinguisher requirements set out in paragraph 1.10.8, there shall be a fully charged water hose extended to the roof level for use while hot work is underway. In the event that water service is not readily available at least one "2A Rated Hand Operated Pressurized Water Extinguisher" shall be at roof level.
- .10 All work involving propane torch application of roofing materials shall conform to the British Columbia Fire Code, Section 5.2 "Hot Works", 2006 or latest version. Take particular note of the mandatory Fire Watch Requirements of this section. Fire watch personnel shall have at their disposal a hand held infra-red non-contact thermometer to aid in identifying hotspots and must be used as part of the fire watches duties
  - .1 Make fire watch records available for review on request to the Owner's Representative, Consultant / Inspector or any other regulatory agency.
  - .2 Fire watch shall be 1 hour minimum from time of torch extinguishment or as directed by the Owner.
- .11 Leaving materials and equipment stored at a reroofing site can result in a potentially dangerous situation, subsequently, the following additional procedures are to be followed:
  - .1 Secure roofing materials or equipment on the building when the roofing crew is not on site.
  - .2 No materials are to be left on the ground overnight. Where materials must be stored on the ground overnight a security guard must be posted to patrol the site.
  - .3 Propane tanks are to be secured or removed on a daily basis. Torches are to be removed from propane bottles and secured at the end of each workday.
  - .4 All ladders accessing the site must be removed and secured each night. All ladder type hoists must be secured or removed to prevent others from accessing the roof site.
  - .5 Garbage bins to be removed on a regular basis. Consult and cooperate with the Owner's Representative so that bins do not interfere with building operations or deliveries.

## DIVISION 1 - GENERAL REQUIREMENTS

### 1.15 MATERIAL AND EQUIPMENT

#### Section 01600

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#### 1. REFERENCES

- .1 Roofing Contractors Association of British Columbia (RCABC), Roofing Practices Manual (RPM), latest edition.
- .2 CGSB 37-GP-56M, Membrane, Modified Bituminous, Prefabricated and Reinforced for Roofing.
- .3 Soprema Inc. & IKO Industries Ltd. Technical Manuals, latest editions.

#### 2. DESIGN STANDARD

- .1 CGSB 37-GP-56M, high performance Modified Bituminous Membranes , listed as accepted for use in the RGC Roof Star Guarantee Program have been selected for this project. The specifications are based on products that comply with this standard.
- .2 Other Manufacturers of similar products with similar performance characteristics are invited to submit proposals through the Roofing Contractor at the time of tender.
- .3 All accessory materials must be supplied and / or approved in writing by the project designated roofing consultant / Inspector. Proposals must include product technical data sheets or site-specific descriptions and printed manufacturer's installation instructions and must comply fully with the experience and job reference requirements of Section 1.6 Quality Assurance of these specifications.

#### 3. ROOFING MATERIALS

- .1 **Standards:** conform to RCABC Guarantee Standards and appropriate CSA, CGSB, and ASTM standards for materials used in specified roofing system; use only materials listed in RCABC Accepted Material Listing in the RCABC.s Roofing Practices Manual
- .2 Use winter-grade or summer grade materials correctly in accordance with the manufacturer's specified temperature parameters for such applications.
- .3 Membrane Accessories: Use only primers, adhesives, sealants and mastics supplied and or approved by the membrane manufacturer.
- .4 Alternative Membranes Materials: Membrane Manufacturers and suppliers are invited to submit and apply for membrane approvals for use on this project. Applications are to be presented in a format that facilitates comparison to defined requirements.



## **DIVISION 1 - GENERAL REQUIREMENTS**

### **1.16 CONTRACT CLOSEOUT**

#### **Section 01700**

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#### **1. PROTECTION AND FINAL CLEAN UP**

- .1 Protect finished roof areas from damage and ensure that only authorized traffic and persons are allowed on roof until after final inspection.
- .2 During roofing protect buildings and grounds from debris and equipment. Site is to be kept in a neat, tidy, safe and workmanlike condition at all times.
- .3 Upon completion, site is to be left in a clean condition to the complete satisfaction of the Owner's Representative. Clean all spills, splatters etc. caused during the Roof Replacement. Remove and dispose of all debris, wrappers etc. and verify that all drains are functioning properly.

#### **2. DOCUMENT SUBMITTALS**

- .1 Maintenance manuals, administrative documentation, as built drawings, etc. shall be delivered to the owner representative in accordance with Administrative Documentation.
- .2 Submit all required material prior to Final Application for Payment.
- .3 Provide a copy of all final project guarantees & warranties to, J. Watson Roofing Consulting Inc., as a condition of Final Acceptance of this project.
- .4 Submit a final statement of accounting providing the total adjusted Contract Price, all previous payments, and any monies remaining due. Consultant shall issue a final change order that reflects any approved adjustments to the Contract Price not previously made.

#### **3. INSPECTION**

- .1 Refer to Supplementary General Conditions.
- .2 In preparation for application for Certificate of Substantial Performance, carefully inspect the Work and ensure that it is complete, that all major and minor roofing as well as sheet metal deficiencies are complete, defects are corrected, building is clean and in condition for occupancy.
- .3 Notify the Owners Representative and Consultant in writing, of the satisfactory completion of the Work and request a final inspection.

## DIVISION 2 - SITEWORK

### DECONSTRUCTION, DEMOLITION WASTE Section 02052 MANAGEMENT & DISPOSAL

Page 1 of 2

#### 2.1 DEMOLITION

- .1 Cooperate with Owner's Representative so that occupants are properly notified and Owner's operations are not unduly disturbed.
- .2 Arrange and coordinate with owner for scheduling for the **temporary disconnection and reconnection of rooftop units, duct work and gas lines where and when necessary. Provide owner forces minimum of 72 hour notice for disconnection.**
- .3 Use only purpose made chutes, cranes or other pre-approved method for removal of old materials from roofs areas to ground. Take precautions to control dust around chutes and disposal bins. Tarp bins as necessary. Keep area around chute and garbage bin broom-clean at all times.
- .4 All roof areas used for loading and access are to be protected. Any damage to building or roof areas as a result of their use or to building components will be corrected and paid for by the Roofing Contractor.
- .5 Remove only as much roofing as can be covered with temporary water tight membranes on the same day.
  - .1 Under no circumstances shall any portion of the roof be left open to the weather overnight. Ensure all portions are watertight before leaving the roof. The roofing assembly, to the completed base sheet and base stripping, must be installed and completed each day.
- .6 Inspect the prepared deck, and if defects or depressions are found to exist that will seriously affect drainage, make proposals to the Consultant for correcting such defects.
- .7 When installing additional wood plates or blocking on parapet walls to receive flashings ensure positive slope to the inside of the building.
- .8 As part of the fire safety plans and fire prevention measures, appropriate to the membrane "system" and prior to the installation of asphalt core boards and base stripping, install fire prevention tape at all junctions or gaps in overlay boards or any location where the contractor feels the entry of flame could have negative effects. Apply tape in 65 mm. widths to membrane substrate with approximately half on either side of the joint or transition that is being protected.

**1.0 DEMOLITION (Continue)**

- .9 Remove existing metal flashing, SBS roofing membrane, fiberboard, insulation, deteriorated wood plates on main and mechanical roof areas including all roof protrusion flashings (drains, vents, plumbing stacks, etc.).
- .10 Carefully remove all debris remaining from the previous roof system and sweep and vacuum all drains free of debris.
- .11 Carefully Inspect the existing board deck and visible wood framing for damage and replace all damaged materials with new replacement materials of equal or better quality.
- .12 Carefully dis-connect ductwork and provide temporary hook-ups (connections) **if required**, by use of flex pipe or by other, pre-approved by consultant / owner representative, means in order to maintain appropriate essential service levels for both intake and exhaust services for CONTINUOUS operation of building. Note: Reconnect ductwork chases and seal to industry standards upon completion of new roofing and flashing. **Disconnection and reconnection of communication aerial and gas lines, to permit installation of new roof assembly will be the owner's responsibility.**
- .13 Remove all equipment protrusion or penetration flashings that may be identified by owner / consultant representatives as redundant (no longer required). Fill all openings in deck with matching materials in order to comply with Building Code Standards. Equipment, including redundant roof curbs, sleepers, vent flashing, cable & pipe flashing, etc.

## **DIVISION 6 – WOOD & PLASTICS**

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### **ROUGH CARPENTRY**

### **Section 06100**

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#### **1.1 SECTION INCLUDES**

- .1 Materials and installation procedures for plywood sheathing, dimensional lumber for replacement of wood blocking, curbs, and sleepers, etc.

#### **1.2 RELATED SECTIONS**

- .1 Section 07535 Modified Bituminous Sheet Roofing
- .2 Section 07213 Board Insulation & Insulation Overlay Boards.
- .3 Section 07900 Sealants.

#### **1.3 REFERENCES**

- .1 Canadian General Standards Board: 37-GP-56M.
- .2 CSA A123.21-04 Standard Test Method for the Dynamic Wind Uplift Resistance
- .3 Roofing Contractors Association of BC (RCABC): listed in the RGC Accepted Materials List of the RGC Roofing Practices Manual.
- .4 Health Canada / Workplace Hazardous Materials Information System (WHMIS).
  - .1 Material Safety Data Sheets (MSDS).

## **2 PRODUCTS**

### **2.1 WOOD SHEATHING, DIMENSION LUMBER, CURBS AND CANTS**

- .1 Where required, plywood for sheathing shall be 12.7mm (1/2") or as existing or detailed, whenever in direct contact with any masonry materials, plywood shall be preservative pressure treated. Existing cant strips and blocking to be removed in order to install new wood members at roof perimeters.

- .2 Dimension lumber for perimeters, sleepers and penetration curb replacement etc.: Hemlock / Fir, factory vacuum-pressure impregnated with disodium octaborate tetrahydrate (DOT) preservative to A WPA C9-99 to obtain an average net retention of 2.7 kg/m<sup>3</sup>B<sub>2</sub>O<sub>3</sub> (0.17 pcf) by assay.
- .3 Wood for exposed sleepers: borate treated solid wood cut to shape or CCA treated plywood with appropriate support blocking as detailed.
- .4 Nails: spiral or ring type, hot dip galvanized or stainless steel and of a suitable length for the purpose. Screws for attachment of plywood or lumber to steel substrates, studwork or suitable for the purpose.
  - .1 Use only drill type fasteners for attaching sheathing or blocking to concrete or masonry. Do not use power actuated fastening devices without the written consent of the Consultant.
  - .2 Use only Hot Dipped Galvanized or stainless steel 304 or 316 fasteners to attach CCA treated wood.
- .5 Wood Blocking used for extending height of low curbs and or sleeper heights shall be borate treated solid wood cut to shape or CCA treated plywood with appropriate support blocking.

## DIVISION 7 – THERMAL AND MOISTURE PROTECTION

### **BOARD INSULATION AND INSULATION OVERLAY BOARDS**

Section 07213

Page 1 of 2

#### 1.1 SECTION INCLUDES

- .1 Materials and installation procedures for use of Polyisocyanurate Insulation for both Flat and Sloped formats as well as for Asphalt Core Boards.

#### 1.2 RELATED SECTIONS

- .1 Section 06100 Rough Carpentry – Plywood Sheathing, wood blocking, wood plates, wood sleepers, 75mm fir tongue & groove wood decking, etc.
- .2 Section 07535 Modified Bituminous Sheet Roofing.

#### 1.3 REFERENCES

- .1 Canadian General Standards Board: CAN / ULC S704-0151-26-M.86 faced polyisocyanurate ridged insulation.
- .2 CSA A123.21-04 Standard Test Method for the Dynamic Wind Uplift Resistance
- .3 Underwriters Laboratories of Canada (ULC) listed as to external fire exposure only (ULC S107).
- .4 Roofing Contractors Association of BC (RCABC): listed in the RGC Accepted Materials List of the RGC Roofing Practices Manual.

## PART 2 PRODUCTS

### 2.1 FLAT / SLOPED RIGID INSULATION

- .1 Flat format Polyisocyanurate Insulation shall be minimum of 37.7 mm (1-1/2”) thick, comply with ULC- S704-10 & CAN/CGSB-51.26-M86 and shall be listed as Accepted Material in Tab 2.2 of the RCABC RGC Roofing Practices Manual.
- .2 Sloped Format Insulation shall be a minimum thickness of 37.7mm (1-1/2”) at edge of drain and scuppers wells, shall slope to existing interior roof drain & scupper locations and conform with Polyisocyanurate Insulation to Can/ULC-S704-10 & CAN/CGSB-51.26-M86, precut and tapered to provide minimum positive slope of 1% (1/8” in 12”), shall be listed as an Accepted Material in Tab 2.2 of the RGC Roofing Practices Manual.

**BOARD INSULATION AND INSULATION OVERLAY BOARDS** (Continued)

**Section 07213**

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**2.2 INSULATION OVERLAY BOARD**

- .1 Insulation overlay board for protection layer over the prepared sloped and flat insulation, shall be asphalt core boards, one layer of 4.8 mm (3/16") thickness, adhered with two part urethane adhesive to RCABC standards with joints staggered from previous insulation layer and rows by a minimum of 300 mm (12"). Insulation overlay board shall be listed as an Accepted Material in Tab 2.2 of the RCABC RGC Roofing Practices Manual.

**PART 3 EXECUTION**

**3.1 INSULATION INSTALLATION**

- .1 Lay sloped format polyisocyanurate insulation over flat insulation base layer and vapour retarder on wood deck, stagger and offset joints a minimum of 300mm (12") from previous rows.
- .2 Install sloped format as per insulation manufacturers layout, minimum of 25mm (1") thickness at drain wells, at minimum of 1% (1/8" in 12") sloped continuing to outside walls.  
Note: Drain well dimensions are 1200mm x 1200mm (4 ft. x 4 ft.)
- .3 Mechanically attach polyisocyanurate insulation with RGC accepted & manufacturers approved Proprietary plates & fasteners in compliance with RGC Roof Star Guarantee Standards.

**3.2 OVERLAY BOARD INSTALLATION**

- .1 Remove waterproof covers only prior to installation. Do not incorporate any wet, damp or damaged materials into the roof system.
- .2 Install only components that can be covered with roof membrane on the same day.
- .3 Install one (1) layer of 4.8 mm thick by 1.22 m x 2.44 m, asphalt core board acceptable to membrane manufacturer staggered a minimum 100mm (12") from adjacent board layer and rows. Adhere with two part urethane adhesive to insulation in 150mm (6") ribbons and to RCABC - RGC Guarantee Standards.
- .4 Upon conclusion of each working period, exposed surfaces and edges of the insulation shall be sealed and rendered watertight by temporary seal. This seal shall be removed and disposed of on resumption of work. Ensure the transition is smooth and does not impede drainage.

**DIVISION 7 – THERMAL AND MOISTURE PROTECTION**

**MODIFIED BITUMINOUS MEMBRANES  
AND ACCESSORIES**

**Section 07535**

**Page 1 of 9**

**1.1 SECTION INCLUDES**

- .1 Materials and installation procedures for Modified Bituminous Membranes.

**1.2 RELATED SECTIONS**

- .1 Section 06100 Rough Carpentry – Plywood Sheathing, wood blocking, wood plates, wood sleepers, etc.
- .2 Section 07213 Board Insulation & Insulation Overlay Boards.
- .3 Section 07900 Sealants.

**1.3 REFERENCES**

- .1 Canadian General Standards Board: 37-GP-56M.
- .2 CSA A123.21-04 Standard Test Method for the Dynamic Wind Uplift Resistance
- .3 Roofing Contractors Association of BC (RCABC): listed in the RGC Accepted Materials List of the RGC Roofing Practices Manual.
- .4 Health Canada / Workplace Hazardous Materials Information System (WHMIS).
  - .1 Material Safety Data Sheets (MSDS).

**1.4 SUBMITTALS**

- .1 Submit product samples & data sheets in accordance with Section 01300 – Submittal Procedures. Include:
  - 1. Product characteristics
  - 2. Performance criteria
  - 3. Limitations
- .2 Submit proof of manufacturer’s CCMC Listing, Listing number and material acceptance listing with Roofing Contractors Association of BC (RCABC).



**MODIFIED BITUMINOUS MEMBRANES  
AND ACCESSORIES**

**Section 07535**

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**PART 2 PRODUCTS**

**2.1 MEMBRANES**

- .1 Bituminous solvent-based primer for torch applied membranes: ELASTOCOL 500 as manufactured by Soprema Inc.; **or** IKO Modified Bitumen Primer by IKO Industries Ltd
- .2 Polymer non-bituminous solvent-based primers for self-adhesive membranes, ELASTOCOL STICK as manufactured by Soprema Inc.; **or** SAM Adhesive by IKO Industries Ltd.
- .3 Roof Membrane Base Sheet: SBS modified bitumen sheet, 3 mm thick, mass 3.8 kg/M2, conforming to CAN/CGSB 37-GP-56M (9~ Draft), thermofusible film top and bottom surface, ELASTOPHENE FLAM GF 3.0mm thick as manufactured by Soprema Inc. **or** 3.0 mm thick, mass 3.8 kg/M2, conforming to CAN/CGSB 37-GP-56M (9~ Draft), Torchflex TF-95-FF Base thermofusible film top and bottom as manufactured by IKO Industries Ltd.
- .4 Base Sheet Flashing (Stripping): SBS modified bitumen sheet, 3.0 mm thick, conforming to CGSB 37-GP-56M, with thermofusible film top and bottom, SOPRALENE FLAM 180 as manufactured Soprema Inc.: or 3.0 mm thick, mass 3.17 kg/M2, conforming to CAN/CGSB 37-GP-56M (9~ Draft), film top and bottom as manufactured by IKO Industries Ltd.
- .5 Base Sheet "SELF ADHERING" Flashing (Stripping) for use in flame sensitive areas only: SBS modified bitumen sheet, 3.0 mm thick, mass 2.8 kg/M2, conforming to CGSB 37-GP-56M, with thermofusible film on top and self-adhesive surface, on the bottom, Sopralene FLAM STICK, as manufactured Soprema Inc. or Armourbond 180, 3.0 mm thick, mass 3.45 as manufactured by IKO Industries Ltd.
- .6 Roof Membrane Cap Sheet: SBS modified bitumen sheet 4.0mm thick (nominal) thermofusible bottom surface, granulated top surface, conforming to CGSB37-GP-56M, Sopralene 180 GR manufactured by Soprema Inc. Color to be light Grey; **or** 4.0mm thick (nominal), mass 4.82 Torchflex TP – 180 Cap Sheet as manufactured by IKO Industries Ltd. Color to be mid Grey. Note: Utilize 4.0mm thick SBS granulated cap sheet 250 GR. with sanded bottom surface applied in membrane Manufacturer's approved membrane adhesive.
- .7 Fire Protection: For additional protection in flame sensitive locations, as determined by the contractor, a 165 mm (6 1/2") wide tape consisting of a glass fleece reinforcement and SBS modified bitumen shall be installed. Tape as recommended by the membrane manufacturer.

**MODIFIED BITUMINOUS MEMBRANES  
AND ACCESSORIES**

**Section 07535**

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**2.2 MEMBRANE ACCESSORIES**

- .1 Bituminous solvent-based primer for torch applied membranes acceptable for use by primary membrane manufacturer.
- .2 Polymer non-bituminous solvent-based primers for self-adhesive membranes:
- .3 Membrane Underlay Board for use over asphalt contaminated surfaces: semi-rigid waterproof sheet with a rubber filled asphalt core, sandwiched with 2 layers of fiberglass reinforcement, with a thermofusible poly film finish. Sheet shall be 4.8 mm thick by 1.22 m x 2.44 m.
- .4 Roof Mastic for installation beneath hardware flanges and for use when installing mastic and granules at the base of flanged flashings: Mastic type as required by the Membrane manufacturer's "system" criteria.
- .5 General-purpose caulking: **FLEXIBLE SEAL** as distributed by Pro-Line Construction Materials Ltd. or All Weather Products.
- .6 Liquid Membrane Detailing: For difficult to flash details as directed by consultant: Liquid-applied two-component PMMA coating c/w woven polyester reinforcement Manufacturers Accepted Proprietary Flashing System.
  - .1 The use of the specialty flashing system shall be specifically approved in advance by the membrane manufacturer for each application.
- .7 Roofing Assembly Attachment: To be mechanically attached with insulation plates & screws through asphalt core board and the existing cover board & insulation, to a minimum of 75mm ( $\frac{3}{4}$ " ) inch of penetration into existing deck. Mechanically attach to RCABC pattern for board size used

**2.3 VENTS, PIPES, ALUMINUM ROOF PENETRATION FLASHINGS**

- .1 Use "Hot Weld" products as manufactured by Menzies Metals or pre-approved alternative.
- .2 Replace all plumbing jacks, with new Aluminum roof penetration hardware. Penetration hardware to be a minimum of 8" above finished roof.
  - .1 Plumbing stacks shall have Aluminum caps of appropriate size and fit. Caps are to be securely fastened to the stack **or** incorporate an EPDM membrane skirt & clamp.

**VENTS, PIPES, ALUMINUM ROOF PENETRATION FLASHINGS (Continued)**

- .2 Plumbing pipes inside hardware to be minimum 8” above finished roof. Extend plumbing piping or cut back as necessary.
- .3 Prime top surface of all metal flanges, including sheet leads and allow to dry for 24 hours prior to installation.
- .4 Set flanges of drains and metal penetration flashings in a full bed of mastic and secure in. Place.
- .5 Over flanges, etc. apply a 30” square piece of base sheet target flashing centered over the protrusion turned 45° to membrane direction and fully torch in place.

**2.4 CAST, SPUN COPPER OR ALUMINUM DRAINS**

- .1 Install fully adhered base membrane sheet in roof drain well.
- .2 Copper or aluminum Insert Drains: Install new “Hot Welded” drains at existing locations and where indicated on sloped insulation drawing and provided 75mm (3”) Blue Seal drain seal connector or approve alternative.
- .3 Thoroughly wire brush both sides of copper flanges, prime and allow drying a minimum 24 hours.
- .4 Apply full bed of mastic to underside of copper drain & scupper flange, set drain / scupper in place and mechanically attach with minimum 6 fasteners.
- .5 Install base sheet stripping “target flashing” centered over the drain / scupper and cut out to 1” outside of drain bowl flange to full bottom of sump. Fully torch the membrane flashing.

**2.5 SKYLIGHTS**

- .1 Acrylic Dome fixed AOF – 6 - Bronze with brown outside fastened frame – Columbia Skylights. sized to fit the existing skylight curbs.
- .2 Install new skylights as per skylight manufacture guidelines, with manufacture approved seals, and fasteners. New skylights are to be sized to fit the existing skylight curbs.

**PART 3 EXECUTION**

**3.1 INSTALLATION**

**.1 FLAME PROTECTION UNDERLAYMENT INSTALLATIONS**

- .1 Apply only membranes approved for specific use by the membrane manufacturer and in compliance with RCABC Fire Safety Recommendations.
- .2 Ensure continuous coverage on exposed wood decks of all combustible materials and seal with manufacturers recommended fire guard tape at all roof perimeters deck protrusions and openings.
- .3 Self-adhesive modified bituminous membranes shall only be installed when ambient temperature meets or exceeds the manufacturers printed product installation temperatures. Install vapour retarder membrane as per RGC Guarantee Standards C7 Tab 2.1.3 Page 3 of the RGC Roofing Practices Manual.

**.2 BASE SHEET INSTALLATION**

- .1 Unroll membranes before use and allow sheets to relax for minimum 20 minutes or longer in colder weather conditions as recommended by the Membrane Manufacturer.
- .2 Install base sheet in strict accordance with the Membrane Manufacturer's instructions, The Membrane Manufacturer's printed instructions form an integral part of the installation portion of the specifications.
- .3 Install Self-Adhesive base sheet membrane around the perimeter of roof, curbs, up-stands, etc. as flame protection (pre-strip) before installing field of roof.
- .5 Self-Adhesive base sheet side laps shall be 75mm (3") and end laps 150mm (6").
- .6 Provide a smooth application, free of voids, wrinkles, fish mouths or tears, if minor repair patches are required, ensure patches extend minimum 6" beyond defect, and are neat, square to membrane direction and fully bonded to the base sheet.
- .7 The roofing assembly to the completed base sheet and base stripping must be installed and completed each day, **no exceptions**.

**.3 BASE SHEET FLASHING INSTALLATION**

- .1 Upon completion of the first ply of membrane and before application of the second ply, provide membrane flashing at all up-stands, curbs, penetrations, etc. that have **not been** previously pre-stripped with self-adhered membranes.
- .2 Prime all appropriate substrates and allow to dry.
  - .1 All surfaces that are contaminated by asphalt shall be overlaid with a Cover board suitable to the manufacturer. Cover boards can be designed to receive either torch applied or self-adhering base sheet stripping plies.
- .3 Cut membrane in 1 meter (roll width) pieces by the length to suit the detail and install one ply of membrane flashing to vertical surfaces and carefully seal to the base sheet. All base sheet stripping shall be applied from 4" onto the flat surface of the roof up and over parapets and extend down the outside face of the exterior edge minimum 100mm (4").
- .4 In areas that have been determined to be flame sensitive install "SELF ADHERING" or "ADHERED WITH MASTIC" base sheet flashing stripping as applicable with appropriate primer or adhesive as per Manufacturer's instructions.
- .5 In these locations ensure through careful planning that the poly facer on the field base sheet is defeated away from the actual point of installation. Do not defeat the poly facer in flame sensitive locations.
- .6 All self-adhering base sheets are to be installed using procedures and techniques (hand rolling) as per Manufacturer's printed installation.
- .7 Install membrane gussets at all locations required by Membrane Manufacturer's written membrane manual installation instructions.
- .8 Base sheet stripping plies shall be nailed at the top edge or the outside supports as applicable.
- .9 Install base sheet stripping in one piece over equipment sleepers and terminate 100mm (4") onto roof field membrane.

#### **.4 CAP SHEET INSTALLATION**

- .1 Cap sheet installations shall follow base sheet installation by a maximum of one (1) week. "Phased" construction will not be acceptable under any circumstances.
- .2 Drain Sumps: Torch install cap membrane in drain sumps to edge of copper drain bowl or cast bowl flange, butter off and install mastic and granules to finish.
- .3 Start at the low point and in the same direction as the base sheet.
- .4 Unroll and allow sheets to relax, align sheets and staggering from the base sheet below by a minimum of 300mm (12") from side as well as end laps and clip / bevel corners.
- .5 Re-roll Cap Sheet Membranes from both ends, prior to torching and after alignment.
- .6 Ensuring that membrane is aligned properly, fully torch weld the cap sheet to the base sheet. During this application, both surfaces shall be simultaneously melted, forming a bead of molten asphalt that is pushed in front of the roll being applied. Immediately after torching cap sheet while it is still hot, use a clean trowel or hard rubber roller to seal end laps and T-joints; do not use roofer's torching cane.
- .7 Granulated Cap Sheet shall have side laps of 75mm (3") and end laps of 150mm (6"). Surface granules on end laps must be embedded prior to installation of the following sheet.
- .8 After installation of the cap sheet check the seal on all membrane laps with a trowel. Avoid excessive asphalt bleed out in side and end laps.
- .9 Provide a smooth application free from wrinkles, fish-mouths and tears. If minor repair patches are required, ensure patches are full roll width, neat, square with rounded corners and fully bonded to the cap sheet.
- .10 For surface repairs to membrane granules (if or when required) and to seal low or unusual roof detail configurations embed matching granules in PMMA Liquid Applied Membrane such as Alsan RS as Manufactured by Soprema Inc. or Parapro PMMA 123 Flashing Resin Liquid Applied Membrane as Manufactured by Siplast, OR other pre-approved alternate.

**.5 CAP SHEET FLASHING INSTALLATION**

- .1 Cut cap sheet membrane in 1 meter (roll width) pieces by the length to suit the detail. Extend onto the horizontal surface a minimum of 150mm (6"). Side laps shall be 75mm (3") and staggered a minimum of 100mm (4") with laps of the base sheet.
- .2 Using a chalk line lay out a straight line on the cap sheet surface, parallel to the roof edge 150mm (6") inside the roof from the base of the cant or plane change.
- .3 Using a torch and a round nosed trowel or a purpose made de-granulating tool, embed the cap sheet granules into the heated bitumen, from the chalk line to the edge of the sheet.
- .4 SBS Membrane Flam granulated cap sheet flashing shall be torch welded directly on to the base sheet proceeding from bottom to top. Ensure a neat and uniform bond.
- .5 Cap sheet stripping shall be applied to extend down the interior vertical face from the top outside edge of the curb onto the flat portion of the roof a minimum of 150mm (6").

## DIVISION 7 – THERMAL AND MOISTURE PROTECTION

### METAL FLASHING AND TRIM      Section 07620

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#### 1.1 RELATED WORK

- .1 Section 06100 Rough Carpentry – Plywood Sheathing, wood blocking, wood plates, wood sleepers, 75mm fir tongue & groove wood decking, etc.
- .2 Section 07535 Modified Bituminous Sheet Roofing & Accessories
- .3 Section 07900 Sealants

#### 1.2 REFERENCES

- .1 ASTM A653/A653M-06 SS Grade 33, Z275 (G90) coating. 0.64 mm (0.0252”), 24 (gauge) galvanized steel sheet. Thickness tolerance as per ASTM A924/A924M-06 ± 0.08mm (0.003”) for sheet widths not exceeding 1500mm (60”).
- .2 RGC Roofing Practices Manual. Roofing Contractors Association of British Columbia (RCABC).
- .3 Mechanical Contractors Association & Heating Refrigeration Air Conditioning Contractors of Canada.

#### 1.3 SAMPLES

- .1 Submit manufacturer’s standard product samples of sheet metal and metal cladding material, colours and finishes.

## 2 PRODUCTS

### 2.1 SHEET METAL FLASHING, PIPE & CABLE SUPPORTS

- .1 24 ga. sheet steel galvanized steel to ASTM A525, ZF275 coating, pre-finished with Silicone Modified Polyester (SMP) 2-Coat system, Finish minimum of 5 micron (0.2mil) primer plus a 20 micron (0.8) mil top coat. Top side dry film thickness to be a minimum 20 microns (0.8mil) or pre-approved alternative, standard color as chosen by owner. **or**
- .2 24 ga. sheet steel galvanized steel to ASTM A525, ZF275 coating, and pre-finished with 70% Polyvinylidene Fluoride resin (PVFD) 2- coat system. Finish minimum of 5 micron (0.2mil) primer plus a 20 micron (0.8) mil top coat. Top side dry film thickness to be a minimum 20 microns (0.8 mil).



**METAL FLASHING AND TRIM**

**Section 07620**

**Page 2 of 2**

**2.2 CABLE & PIPE SUPPORTS & EXTENSIONS**

- .1 Install Manufacturers proprietary cable & pipe supports in order to adequately support all roof top equipment/lines, etc. Use MIFAB manufactured cable and pipe supports as detailed in accompanying project OR pre-approved alternate.

**2.3 METAL FLASHING FABRICATION & INSTALLATION**

- .1 All metal flashings shall be installed to RCABC Guarantee Corp. standards and RCABC flashing details. 24 ga. sheet steel galvanized steel to ASTM A525, ZF275 and use standing seams and S-Lock seams where standing seams are impractical, sloped to the interior of the roof.
- .2 Carefully remove existing metal base flashing around bottom perimeter of siding on inside walls of main roof area and install new base flashing skirt under existing reglet flashing upon completion of roofing membrane and membrane flashing .
- .4 Form cap & base flashings to RCABC details, square, true, and accurate to size, free from distortion and other defects detrimental to appearance or performance.
- .5 Provide for thermal movement of flashings and materials with which it comes in contact.
- .6 Metal flashing outside perimeter clips (minimum 30" in length per 10 ft. length) fastened at 300mm (12") o/c and 75 mm (3") maximum from hook of the clip with non-corrosive screws suitable for the purpose. Cladding screw fasteners with neoprene washers, suitable for the purpose, Refer to RCABC Minimum Standard A6.10 latest revision. All anchoring shall meet or exceed RCABC standards. Use concealed fastening on outside faces unless otherwise approved by Consultant.
- .7 All exposed edges of flashing shall be hemmed a minimum of 3/4" for rigidity. Metal flashings are to be securely anchored to continuous blocking or nailers using continuous clips for attachment fasteners at 12" c/c and 3" maximum from hook of the clip with exterior screw fasteners suitable for the purpose. Apply sealant to all exposed cut edges on metal flashing standing seams.
- .8 Flash sleepers, roof edge base flashing, curb openings, parapet walls and all items projecting through roofing as detailed. Ensure that no flashings pond water and that all drain to the interior of the roof area.
- .9 Install settlement caps and or RCABC accepted stack flashing termination and similar round penetrations through the roof.

**DIVISION 7 – THERMAL AND MOISTURE PROTECTION**

**CAULKING & SEALANTS**

**Section 07900**

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**1.2 RELATED WORK**

- .1 Section 06100 Rough Carpentry –Wood blocking, wood plates, wood sleepers, etc.
- .2 Section 07535 Modified Bituminous Sheet Roofing.
- .3 Section 07620 Metal Flashing and Trim.

**1.3 MATERIALS / SEALANT**

- .1 Sealants for other than membrane work shall be one part, moisture cure, polyurethane, Tremco DYMONIC or Schnee-Morehead 5M7100 PERMATHANE. Silicone based sealants shall not be used on this project.
- .2 FLEXIBLE SEAL General-purpose caulking as distributed by Slegg Construction Materials Ltd. or Materials Ltd. or All Weather Products.
- .3 ALSAN RS Flashing System as manufactured by Soprema Inc. Liquid-applied two-component PMMA coating complete with woven polyester reinforcement.

**1.4 EXECUTION**

- .1 All surfaces to receive sealant must be prepared according to the Sealant Manufacturer's printed instructions.
- .2 Apply sealant between flashings and dissimilar construction materials. Apply sealant neatly and hand tool all joints.
- .3 Do not use gum pan type flashings unless expressly instructed to do so in writing by the Consultant.

END OF SECTION