

PART 1 - GENERAL**1.1 RELATED REQUIREMENTS**

- .1 Section 06 20 00 – Finish carpentry.
- .2 Section 07 62 00 – Metal flashing and trim.
- .3 Section 07 92 00 – Joint sealants.

1.2 REFERENCE STANDARDS

- .1 ASTM International
 - .1 ASTM C 1177/C 1177M-08, Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
 - .2 ASTM C 1396/C 1396M-11, Standard Specification for Gypsum Wallboard.
 - .3 ASTM D 2178-04, Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-37.5-M89, Cutback asphalt plastic cement.
 - .2 CGSB 37-GP-9Ma-83, Primer asphalt, unfilled for asphalt roofing, dampproofing and waterproofing.
 - .3 CAN/CGSB-37.29-M89, Rubber-Asphalt sealing compound.
 - .4 CAN/CGSB-51.34-FM86 (C1988), Vapour barrier, polyethylene sheet for use in building construction.
- .3 CSA International
 - .1 CSA A231.1/A231.2-FM06(R2010), Precast concrete paving slabs/precast concrete pavers.
 - .2 CSA O121-F2008, Douglas fir plywood.
 - .3 CSA O151-F09, Canadian softwood plywood.
- .4 Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .5 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S701-11, Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.
 - .2 CAN/ULC-S706-09, Standard for Wood Fibre Insulating Boards for Buildings.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Fiches techniques
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for liquid applied elastomeric roofing membrane for protected and include product characteristics, performance criteria, physical size, finish and limitations.
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- .3 Product Data:
 - .1 The submitted shop drawings must bear the seal and signature of a competent engineer recognized or authorized to practice in the province of Quebec, Canada.
 - .2 Indicate the following on the drawings:
 - .1 Flashing.
 - .2 Roof penetrations.
 - .3 Junctions executed on site.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground, indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect dampproofing materials from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Waste Management and Disposal:
 - .1 Waste Management and Disposal
 - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.
 - .2 Packaging Waste Management: remove for reuse of pallets, crates, padding, and packaging materials in accordance with Section 01 74 19 - Waste Management and Disposal.

1.5 SITE CONDITIONS

- .1 Ambient Conditions:
 - .1 Cold applied rubberized bitumen membranes must be installed only when ambient and surface temperatures are within limits prescribed by manufacturer.
 - .2 It is forbidden to install the cold applied rubberized bitumen membrane when the air temperature and the substrate temperature are below 5 degrees Celsius, or when the wind produces an equivalent cooling effect.
 - .3 The substrate must be dry, free from snow and ice. Use only dry materials, and apply them only when atmospheric conditions will not cause moisture infiltration into the waterproofing layers.
- .2 Safety: comply with the requirements of Workplace Hazardous Materials Information System (WHMIS) for handling, storage and disposal of rubberized bitumen, sealants, layers base and caulking.

1.6 WARRANTY

- .1 The existing roof was completely repaired in November 2014. The roofer's 5-year warranty (Entreprises J. Veilleux et fils inc.) has expired. The 20 year warranty from the membrane manufacturer, Tremco, is active until November 2034 and must be maintained
 - .2 For the work covered by this section 07 56 14 – Protected Liquide Elastomeric Roofing Membrane cold application system, the warranty period of 12 months is extended to 24 months.
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PART 2 - PRODUCTS**2.1 MATERIAL COMPATIBILITY**

- .1 It is essential that system components and adjoining materials are compatible with each other. Provide the Departmental Representative with a written declaration certifying that the materials and components of the system are compatible with existing materials.
- .2 In order to maintain the manufacturer's warranty for existing materials, only Tremco products will be accepted.

2.2 BASE MEMBRANE SHEET

- .1 Roofing membrane for protected membrane roofing system, one component modified polyurethane bitumen membrane, for cold trowel application to vertical surfaces, conforming to ASTM C 836-89, having the following characteristics:
 - .1 Elongation at break (ASTM D412-92) : 700 % on vertical surfaces.
 - .2 Traction resistance (ASTM D 412-92) : 17,5 kg/cm² on vertical surfaces.
 - .3 Hardness (shore 00) (ASTM D2240-86) 85 à 90 % for vertical surfaces.
 - .4 Water vapor transmission (ASTM E96-80) 0,26 metric perms for vertical surfaces.

2.3 MEMBRANE FLASHING

- .1 Membrane flashing composed of a mixture of EPDM and SBR polymer reinforced with a polyester woven fabric, for cold adhesion to the base layer, having the following characteristics:
 - .1 Polymer ratio : 30 EPDM parts for 70 SBR parts.
 - .2 Thickness (ASTM D-751) : 1.14 + 1,12 mm.
 - .3 Hardness (shore A) : 65 to 75.
 - .4 Breaking Strength (ONCG 37-GP-52M) : MD 1446N (500 N min).
 - .5 Tear Resistance (ONCG 37-GP-52M) : MD 313 N (35 N min.).
 - .6 Resistance to Dynamic Shocks (ONGC-37-GP-52M) : at 23°C : pass (cote 3), at -10°C : pass (cote 3).

2.4 REINFORCEMENT FOR JOINTS

- .1 Vinyl coated woven glass mesh membrane having the following characteristics.
 - .1 Size : en rouleaux.
 - .2 Colour : green.
 - .3 Width: 152 or 305 mm.
 - .4 Tear Resistance at 21,1°C : W 140 lb/po.
- .2 Adhesive for glass mesh membrane, one-component elastomeric sealant solvent free, having the following characteristics:
 - .1 Traction resistance @ 25°C (ASTM D412-87) : 207 to 345 kPa.
 - .2 Elongation at 25°C (ASTM D412-87) : 1 000 %.

2.5 SEPARATION SHEET

- .1 Glass felt impregnated with bitumen: in accordance with ASTM D 2178, type IV.
 - .2 Polyethylene film: in accordance with CAN / CGSB-51.34, type 1, 0.125 mm thick.
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2.6 POLYSTYRENE INSULATION

- .1 Existing polystyrene insulation.

2.7 FASTENERS

- .1 Fastening of the membrane to a steel support: flat head tapping screws, cadmium, number 10, type A or, AB.

2.8 FILTER CLOTH

- .1 Existing filter cloth.

2.9 BALLAST

- .1 Existing ballast.

2.10 PREFABRICATED EQUIPMENT BASE

- .1 Prefabricated and insulated equipment base, tubular steel insulated with polyurethane with anchor plate, sleeve 356 mm high x 89 mm outside diameter and anchor plate 305 x 305 x 10 mm, complete with " a steel angle for mounting brackets 50 x 50 x 6 mm, aluminum sealing sleeve 1.6 mm thick.
- .2 Plastic cement recommended by the manufacturer.

2.11 PRECAST MASTIC BLOCKS

- .1 System composed of precast borders and pourable sealant made of moisture-hardening polyester resin. Hot chimney system.
- .2 Primer recommended by the manufacturer.
- .3 Sealant and structural adhesive recommended by manufacturer.

PART 3 - EXECUTION**3.1 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for protected liquid elastomeric roofing membrane cold application system in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 EXAMINATION OF ROOF DECKS

- .1 Examine the roof deck and inform the Departmental Representative of any defect, without delay and in writing.
 - .2 Before starting work, check the following items :
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- .1 The deck is solid, level, smooth, dry and free of snow, ice and frost, and any other contaminant; remove dust and debris with a broom.
- .2 The border walls have already been built.
- .3 The drains have been installed at the appropriate level in relation to that of the finished work.
- .4 The sleeves, vents, pipes and other penetrations of the support intended to receive the work prescribed in this section are correctly and securely installed.
- .5 The nailing plywood or lumber plates have been installed on walls and parapets as indicated.

3.3 PREPARATION – PROTECTION MEASURES

- .1 Cover walls, walks, sloped roofs and adjacent work where materials hoisted or used.
- .2 Use warning signs and barriers. Maintain in good order until completion of Work.
- .3 Clean off drips and smears of bituminous material immediately.
- .4 Dispose of rain water off roof and away from face of building until roof drains or hoppers installed and connected.
- .5 Metal flashing around vents and pipes of mechanical installations: provide a standard elastomeric reinforcing sheet, and install it around the vents and membrane penetrations. Position the sheet and seal it with rubberized bitumen and a clamping collar. For substrate penetrations, use prefabricated metal sleeves.
- .6 Tar sleeves: place the tar sleeves over the membrane. Glue a standard elastomeric reinforcement sheet into the membrane and cover the sleeve flange. Fill the sleeve with rubberized bitumen or plastic mastic, so that water can evacuate.

3.4 INSTALLATION OF THE PREFABRICATED SUPPORT ROOF SLEEVES

- .1 Install prefabricated supports according to manufacturer's written instructions and shop drawings.
- .2 Fasten the sleeve securely to the deck. Use appropriate fasteners. Use a mortar to cover the anchors and smooth out the surface.
- .3 Apply rubberized bitumen membrane and reinforcement. Treat the membrane seal. Apply a sealant joint.
- .4 Install the weatherproofing sleeve using plastic cement
- .5 Apply a rubberized bitumen membrane and reinforcement to the base of the sleeve. Apply a sealant joint.

3.5 MEMBRANE

- .1 Apply the rubberized bitumen in cold application and install the flashings and the reinforcing fabric, in accordance with the CAN / CGSB-37.51 standard and the manufacturer's recommendations.
 - .2 Maintain air barrier continuity of building envelope.
 - .3 Treat joints according to manufacturer's recommendations.
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3.6 INSULATION INSTALLATION

- .1 Lay and adjust the insulation panels.

3.7 FILTER CLOTH INSTALLATION

- .1 Poser Install a continuous layer of filter cloth, without adhesion, on the insulation; overlap the joints by at least 300 mm..
- .2 Cut the filter cloth around the equipment bases; raise the filter cloth against the vertical wall of the crossings, and cover it with a flashing.

3.8 BALLAST ET AND PROTECTION FACING

- .1 Distribute the stone ballast as soon as possible after the installation of the filter cloth, at a rate of at least 75 kg / m².
- .2 Place stone ballast so as to obtain a layer of uniform thickness over the entire surface. Encroach the stone by at least 100 mm over the base of the metal flashings.
- .3 If necessary, spread more stone on the perimeter of the surface, over a minimum width of 1200 mm, in order to bring the ballast density to 125 kg / m².

3.9 PROTECTION OF FINISHED WORKS

- .1 Before installing the protection panels, make sure that the waterproofing membrane is not damaged.

3.10 CLEANING

- .1 Cleaning during work: carry out cleaning work in accordance with section 01 74 00 - Cleaning.
 - .1 Leave the premises clean at the end of each working day.
- .2 Final cleaning: remove surplus materials and equipment, waste, tools and equipment from site, in accordance with section 01 74 00 - Cleaning.
- .3 Check that the drains are free and that they are functioning correctly. Clear the site of surplus materials, debris and equipment.
- .4 Waste management: sort waste for reuse / reuse and recycling, in accordance with section 01 74 19 - WASTE MANAGEMENT AND DISPOSAL.
 - .1 Remove recycling bins and skips from site and dispose of materials at appropriate facilities..

END OF SECTION
