

Part 1 General

1.1 RELATED WORK

- .1 Metal Flashing and Trim: Section 076200.
- .2 Joint Sealers: Section 079210.

1.2 References

- .1 American Society for Testing and Materials (ASTM)
 - .1 ASTM C 36-95b, Specification for Gypsum Wallboard.
- .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 CGSB 37-GP-15M-76, Application of Asphalt Primer for Asphalt Roofing, Dampproofing and Waterproofing.
 - .4 CGSB 37-GP-19M-76, Cement, Plastic, Cutback Tar.
 - .5 CAN/CGSB-37.29-M89, Rubber-Asphalt Sealing Compound.
 - .6 CGSB 37-GP-56M-80, Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing.
 - .7 CAN/CGSB-51.20-M87 Thermal Insulation, Polystyrene, Boards and Pipe Covering.
- .3 Canadian Standards Association (CSA)
 - .1 CSA A123.4-[M1992], Bitumen for Use in Construction of Built-Up Roof Coverings and Dampproofing and Waterproofing Systems.
 - .2 CSA A231.1-[1972], Precast Concrete Paving Slabs.
 - .3 CAN/CSA-A247-[M86], Insulating Fibreboard.
 - .4 CSA A284-[1976], Mineral Aggregate Thermal Roof Insulation.
 - .5 CSA O121-[M1978], Douglas Fir Plywood.
 - .6 CSA O151-[M1978], Canadian Softwood Plywood.

1.3 Shop Drawings

- .1 Submit shop drawings in accordance with Section 01330 - Submittal Procedures.
- .2 Indicate flashing, control joints, tapered insulation details.
- .3 Provide layout for tapered insulation.

1.4 Storage and Handling

- .1 Provide and maintain dry, off-ground weatherproof storage.

- .2 Store rolls of felt and membrane in upright position. Store membrane rolls with selvage edge up.
- .3 Remove only in quantities required for same day use.
- .4 Place plywood runways over work to enable movement of material and other traffic.
- .5 Store sealants at +5EC minimum.
- .6 Store insulation protected from daylight and weather and deleterious materials.

1.5 Environmental Requirements

- .1 Do not install roofing when temperature remains below -18EC for torch application, or -10EC to manufacturers' recommendations for mop application.
- .2 Minimum temperature for solvent-based adhesive is -5EC.
- .3 Install roofing on dry deck, free of snow and ice, use only dry materials and apply only during weather that will not introduce moisture into roofing system.

1.6 Protection

- .1 Fire Extinguishers: maintain one stored pressure rechargeable type with hose and shut-off nozzle, ULC labeled for A, B and C class protection.
- .2 Maintain fire watch for 1 hour after each day's roofing operations cease.

1.7 Warranty

- .1 For the Work of this Section 07550 - Modified Bituminous Roofing, the 12 months warranty period prescribed in General Conditions "C" is extended to 24 months.
- .2 Contractor hereby warrants that modified bituminous roofing and membrane flashings will stay in place and remain leakproof in accordance with General Conditions, but for two years.

1.8 Compatibility

- .1 Compatibility between components of roofing system is essential. Provide written declaration to Contract Administrator stating that materials and components, as assembled in system, meet this requirement.

1.9 Quality Assurance

- .1 Submit laboratory test reports.

Part 2 Products

2.1 Deck Primer

- .1 Asphalt primer: to CGSB 37-GP-9Ma.

2.2 Vapour Retarder

- .1 Base sheet vapour retarder: to CGSB 37-GP-56M, Styrene-Butadiene-Styrene (SBS) elastomeric polymer glass reinforcement, weighing 100 g/m².

2.3 Membrane

- .1 Base sheet: to CGSB 37-GP-56M, Styrene-Butadiene-Styrene (SBS) elastomeric polymer poly reinforcement, weighing 180 g/m².
 - .1 Type 1, fully adhered.
- .2 Cap sheet: to CGSB 37-GP-56M, Styrene-Butadiene-Styrene (SBS) elastomeric polymer poly reinforcement, weighing 250 g/m².
 - .1 Type 1, fully adhered.

2.4 Bitumen

- .1 Asphalt: to CSA A123.4, Type 2.

2.5 Polystyrene Insulation

- .1 To CAN/CGSB-51.20, Type 4, thickness as indicated, square edges. Only polystyrene insulations listed on CGSB Qualified Products List (51 GP Series) are acceptable for use on this project.
- .2 Type 2 (EPS) for slopes only.

2.6 Sealers

- .1 Plastic cement: asphalt, to CAN/CGSB-37.5 coal tar, to CGSB 37-GP-19M.
- .2 Sealing compound: to CAN/CGSB-37.29, rubber asphalt type.

2.7 Fasteners

- .1 Covering to steel deck: No. 10 flat head, self tapping, Type A or AB, cadmium plated screws to CSA B35.3.
- .2 Insulation to deck: fasteners and plates must meet Factory Mutual 4470 Standard for wind uplift and corrosion resistance.
- .3 -slip finish with 51 mm plain margin around perimeter.

Part 3 Execution

3.1 Workmanship

- .1 Do roofing work in accordance with applicable, standard in Canadian Roofing Contractors Association (CRCA) Roofing Specifications Manual .Do priming for asphalt roofing in accordance with CGSB 37-GP-15M.

3.2 Protection

- .1 Cover walls 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 Protect roof from traffic and damage. Comply with precautions deemed necessary by [Contract Administrator] [Consultant].
- .6 At end of each day's work or when stoppage occurs due to inclement weather, provide protection for completed work and materials out of storage.

3.3 Examination of Roof Decks

- .1 Examine roof decks and immediately inform Contract Administrator.
- .2 Prior to commencement of work ensure:
 - .1 Decks are firm, straight, smooth, dry, free of snow, ice or frost, and swept clean of dust and debris.
 - .2 Curbs have been built.
 - .3 Roof drains have been installed at proper elevations relative to finished roof surface.
 - .4 Plywood and lumber nailer plates have been installed to deck, walls and parapets as indicated.

3.4 Deck Covering

- .1 Mechanically fasten to steel deck with screws spaced 400 mm o/c each way.
- .2 Place with long axis of each sheet transverse to steel deck ribs, with end joints staggered and fully supported on ribs.

3.5 Vapour Retarder (Concrete/Gypsum Board/Plywood Deck)

- .1 Embed vapour retarder in hot bitumen spread at rate of 1.2 kg/m².

3.6 Exposed Membrane Roofing Application

- .1 Insulation: fully adhered, adhesive application.
 - .1 Adhere insulation to laminated vapour barrier using solvent-based adhesive.
 - .2 Place boards in parallel rows with ends staggered, and in firm contact with one another.
 - .3 Cut end pieces to suit.
- .2 Insulation: fully adhered, bitumen application.
 - .1 Embed insulation in 1 to 1.5 kg/m² mopping of bitumen.

- .2 Place boards in parallel rows with ends staggered, and in firm contact with one another.
- .3 Cut end pieces to suit.
- .3 Tapered insulation application.
 - .1 Mop insulation to vapour retarder and top layer of insulation to bottom layer with hot asphalt at rate of 1 kg/m².
 - .2 Install tapered insulation as second insulation layer, in accordance with shop drawings. Stagger joints between layers 150 mm minimum.
- .4 Base sheet application.
 - .1 Starting at low point of roof, perpendicular to slope, unroll base sheet, align and reroll from both ends.
 - .2 Unroll and embed base sheet in uniform coating of asphalt applied at rate of 1.2 kg/m², at 230EC.
 - .3 Unroll and torch base sheet onto substrate taking care not to burn membrane or its reinforcement or substrate.
 - .4 Lap sheets 75 mm minimum for side and 150 mm minimum for end laps.
 - .5 Application to be free of blisters, wrinkles and fishmouths.
- .5 Cap sheet application.
 - .1 Starting at low point on roof, perpendicular to slope, unroll cap sheet, align and reroll from both ends.
 - .2 Unroll and embed cap sheet in uniform coating of asphalt applied at rate of 1.2 kg/m², EVT at point of contact.
 - .3 Unroll and torch cap sheet onto base sheet taking care not to burn membrane or its reinforcement.
 - .4 Lap sheets 75 mm minimum for side laps and 150 mm minimum for end laps. Offset joints in cap sheet 300 mm minimum from those in base sheet.
 - .5 Application to be free of blisters, fishmouths and wrinkles.
 - .6 Do membrane application in accordance with manufacturer's recommendations.
- .6 Flashings.
 - .1 Complete installation of flashing base sheet stripping prior to installing membrane cap sheet.
 - .2 Torch base and cap sheet onto substrate in 1 metre wide strips.
 - .3 Lap flashing base sheet to membrane base sheet minimum 150 mm and seal by mopping or torch welding.
 - .4 Lap flashing cap sheet to membrane cap sheet 250 mm minimum and torch weld.
 - .5 Provide 75 mm minimum side lap and seal.
 - .6 Properly secure flashings to their support, without sags, blisters, fishmouths or wrinkles.
 - .7 Do work in accordance with manufacturer's recommendations.
- .7 Roof penetrations.

- .1 Install roof drain pans, vent stack covers and other roof penetration flashings and seal to membrane in accordance with the manufacturer's recommendations and details.

3.7 Field Quality Control

- .1 Inspection and testing of roofing application will be carried out by testing laboratory designated by Contract Administrator.
- .2 Contract Administrator will pay for tests.

END OF SECTION