

Part 1 General**1.1 RELATED SECTIONS**

- .1 Division 01- General Requirements.
- .2 Section 07 62 00 - Sheet Metal Flashing and Trim.
- .3 Section 07 92 00 – Joint Sealants.

1.2 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM).
 - .1 ASTM C1396-11, Standard Specification for Gypsum Wallboard.
 - .2 ASTM D41-05, Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.
 - .3 ASTM D312-00(2006), Asphalt Used in Roofing.
 - .4 ASTM D2178-04, Asphalt Glass Felt Used in Roofing and Waterproofing.
 - .5 ASTM D6162-00a(2008), Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fibre Reinforcements.
 - .6 ASTM D6163-00(2008), Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fibre Reinforcements.
 - .7 ASTM D6164-11, Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.
- .2 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB-37.5-M89, Cutback Asphalt Plastic Cement.
 - .2 CGSB 37-GP-15M-84, Application of Asphalt Primer for Asphalt Roofing, Dampproofing and Waterproofing.
 - .3 CGSB 37-GP-19M-85, Cement, Plastic, Cutback Tar.
 - .4 CAN/CGSB-37.29-M89, Rubber-Asphalt Sealing Compound.
 - .5 CGSB 37-GP-56M-80b(A61985), Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing.
 - .6 CAN/CGSB-51.33-M89, Vapour Barrier Sheet, Excluding Polyethylene, for Use in Building Construction.
- .3 Canadian Roofing Contractors Association (CRCA).
 - .1 CRCA Roofing Specifications Manual-2011.
- .4 Department of Justice Canada (Jus).
 - .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .5 Factory Mutual (FM Global).
 - .1 FM Approvals - Roofing Products.
- .6 Health Canada / Workplace Hazardous Materials Information System (WHMIS).
 - .1 Material Safety Data Sheets (MSDS).

- .7 Transport Canada (TC).
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .8 Underwriters Laboratories' of Canada (ULC).
 - .1 CAN/ULC-S704-11, Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.

1.3 PERFORMANCE REQUIREMENTS

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

1.4 SUBMITTALS

- .1 Submittals in accordance with Section 01 00 10 – General Instructions.
- .2 Submit two copies of most recent technical roofing components data sheets describing materials' physical properties.
- .3 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 35 29.06 – Health and Safety Requirements.
 - .1 Indicate VOC content for:
 - .1 Primers.
 - .2 Asphalt.
 - .3 Sealers.
- .4 Submit shop drawings in accordance with Section 0100 10 – General Instructions.
- .5 Submit shop drawings indicating flashing, control joints, and metal gutter connection details for roofing system.
- .6 Manufacturer's Installation Instructions: indicate special precautions required for seaming the membrane.
- .7 Manufacturer's field reports.
- .8 Reports: indicate procedures followed ambient temperatures and wind velocity during application.
- .9 Submit the following documentation to support Sustainable considerations:
 - .1 Product Data – MSDS,, Spec Sheet, Product Label, post consumer and post industrial recycled content, weight, VOC compliance, Environmental Certification if available. (materials)

1.5 QUALITY ASSURANCE

- .1 Submit laboratory test reports in accordance with Section 01 00 10 – General Instructions.
- .2 Submit laboratory test reports certifying compliance of bitumen, primers, adhesives and roofing membrane with specification requirements.
- .3 General Contractor to provide third party verification of workmanship at manufacturing stage and after installation to ensure issuance of the membrane manufacturer's extended warranty and assemblies water tightness.

- .4 Convene pre-installation meeting one week prior to beginning roofing work, with roof contractor's representative & contractors roofing inspector to:
 - .1 Verify project requirements.
 - .2 Review installation and substrate conditions.
 - .3 Co-ordination with other building sub-trades.
 - .4 Review manufacturer's installation instructions and warranty requirements.

1.6 HEALTH AND SAFETY

- .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 – Health and Safety Requirements.

1.7 STORAGE AND HANDLING

- .1 Provide and maintain dry, off-ground weatherproof storage.
- .2 Store membrane in upright position. Store membrane rolls with selvage edge up.
- .3 Remove only in quantities required for same day use.
- .4 Store sealants at +5 degrees C minimum.
- .5 Handle roofing materials in accordance with manufacturer's written directives, to prevent damage or loss of performance.
- .6 Store and manage hazardous materials in accordance with Section 01 35 29.06 – Health and Safety Requirements.

1.8 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 00 10 – General Instructions.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper, plastic, polystyrene, and corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .4 Separate for reuse and recycling and place in designated containers Steel, Metal, Plastic waste in accordance with Waste Management Plan.
- .5 Place materials defined as hazardous or toxic in designated containers.
- .6 Handle and dispose of hazardous materials in accordance with CEPA regulations.
- .7 Clearly label location of salvaged material's storage areas and provide barriers and security devices.
- .8 Ensure emptied containers are sealed and stored safely.
- .9 Divert unused metal materials from landfill to metal recycling facility as approved by Departmental Representative.
- .10 Unused coating material must be disposed of at official hazardous material collections site as reviewed by Departmental Representative.
- .11 Unused adhesive, sealant and asphalt materials must not be disposed of into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.

- .12 Dispose of unused adhesive material at official hazardous material collections site approved by Departmental Representative.
- .13 Dispose of unused sealant material at official hazardous material collections site approved by Departmental Representative.
- .14 Dispose of unused asphalt material at official hazardous material collections site approved by Departmental Representative.
- .15 Fold up metal banding, flatten and place in designated area for recycling.

1.9 ENVIRONMENTAL REQUIREMENTS

- .1 Do not install roofing when temperature remains below -5 degrees C for solvent-based adhesives. Co-ordinate with Manufacturer's instructions.
- .2 Minimum temperature for mopped applications is -5 degrees C. Co-ordinate with Manufacturer's instructions.
- .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.

Part 2 Products

2.1 GENERAL

- .1 Roofing system: Prefabricated Roof Assembly, compatible primer if recommended by membrane manufacturer, Modified Bituminous Membrane Roofing "patch" applied as per manufacturers recommendations and reviewed as well as inspected by a third party roofing consultant.

2.2 MEMBRANE

- .1 Additional watertight membrane to be applied between adjacent units to ensure watertight seal. Method and material to be confirmed with Departmental representative. Prior to confirming with Departmental representative method and material choice is to be reviewed by third party roofing consultant as well as product manufacturer.

2.3 ADHESIVE

- .1 Adhesive is to be as per manufacturers instructions.

2.4 SEALERS

- .1 Plastic cement: asphalt, to CAN/CGSB-37.5.
- .2 Sealing compound: to CAN/CGSB-37.29, rubber asphalt type.
- .3 Sealants: Caulking - see Section 07 92 10 - Joint Sealing.

Part 3 Execution

3.1 WORKMANSHIP

- .1 Do examination, preparation and roofing Work in accordance with Roofing Manufacturer's Specification Manual and CRCA Roofing Specification Manual, and to FM I90 Rating system.

- .2 Do priming for asphalt roofing in accordance with CGSB 37-GP-15M.
- .3 The interface of the walls and roof assemblies will be fitted with durable rigid material sheet metal providing connection point for continuity of air barrier.
- .4 Assembly, component and material connections will be made in consideration of appropriate design loads.

3.2 EXAMINATION OF ROOF

- .1 Inspect with Departmental Representative roof conditions including construction joints, gutters, downspouts, plumbing vents and ventilation outlets to determine readiness to proceed.
- .2 Prior to beginning of work ensure:
 - .1 Decks are firm, straight, smooth, dry, free of snow, ice or frost, and swept clean of dust and debris. Do not use calcium or salt for ice or snow removal.
- .3 Do not install roofing materials during rain or snowfall.

3.3 PROTECTION

- .1 Cover walls, walks 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 Protect roof from traffic and damage. Comply with precautions deemed necessary by Departmental Representative.
- .5 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.
- .6 Metal connectors and decking will be treated with rust proofing or galvanization.

3.4 FIELD QUALITY CONTROL

- .1 Inspection and testing of roofing application will be carried out by testing laboratory designated by Departmental Representative.

3.5 VERIFICATION

- .1 Verification requirements in accordance with Section 01 35 29.05 Health and Safety Requirements, 01 35 43 Environmental Procedures, Section 01 00 10 – General Instructions, and include:
 - .1 Materials and resources.
 - .2 Storage and collection of recyclables.
 - .3 Construction waste management.
 - .4 Resource reuse.
 - .5 Recycled content.
 - .6 Local/regional materials.
 - .7 Wood.
 - .8 Low-emitting materials.

3.6 OPERATION REQUIREMENTS

- .1 Operational requirements in accordance with Section 01 00 10 – General Instructions:
 - .1 Preventive maintenance and schedules.
 - .2 Repair and maintenance materials and instructions.

3.7 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 complying with their documented instructions.
- .3 Repair or replace defaced or disfigured finishes caused by work of this section.

END OF SECTION