

1 General

1.1 **SUMMARY**

.1 Section Includes

- .1 Labour, Products, equipment and services necessary to complete the Work of this section.

1.2 **REFERENCES**

.1 Conform to the latest edition of the following:

- .1 ASTM C1177/C1177M, Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
- .2 CGSB 37-GP-56M, Membrane Modified, Bituminous, Prefabricated, and Reinforced for Roofing.
- .3 CAN/CSA A247, Insulating Fibreboard.
- .4 CRCA: Canadian Roofing Contractors Association
- .5 FM: Factory Mutual Engineering Corporation (FM): "Loss Prevention Data, Insulated Steel Deck I-28", and FM "Approval Guide"

1.3 **SUBMITTALS**

.1 Shop Drawings: Submit the following for review in accordance with Section 01 33 00:

.1 Product data for the following:

- .1 Two-ply modified bitumen base flashing membrane
- .2 Roof Board
- .3 Roof insulation
- .4 Tapered boards
- .5 Air/Vapour Barrier
- .6 Adhesive
- .7 Roof drains
- .8 Sample Appendix RR - "Total Systems Warranty" and OIRCA - "Standard Form of Warranty"

.2 Layouts

- .1 Insulation and fastener layout
- .2 Layout of tapered insulation
- .3 Layout of building area indicating roofing sequence, equipment set up and material laydown area

.3 Documented evidence of up-to-date, ongoing risk management program.

- .2 Submit cold weather construction procedures and methods of protection in writing which will be initiated, provided and maintained when ambient temperature falls below 0°C (32°F), to ensure proper application of the Work, per the requirements of this section.

1.4 **PERFORMANCE REQUIREMENTS**

- .1 Design criteria for materials and roofing construction: In accordance with the requirements of Factory Mutual Approval "Class 1-90" as listed in the following Roof Nav approved FM Assemblies: Steel Deck Areas FM Assembly #310312-257529-0.
- .2 Provide Products that are compatible with one another under field conditions, as demonstrated by roofing manufacturer.
- .3 Provide watertight roofing system capable of resisting specified uplift pressures, thermally induced movement and exposure to weather without failing during the specified warranty period.
- .4 Shop Drawings for Sloped Insulation: Indicate degree of slope and layout of sloping insulation on roof surfaces. Ensure positive drainage to roof drains.

1.5 **CERTIFICATES**

- .1 Manufacturer Certificates: Signed by roofing manufacturer verifying that installer is approved, authorized or licensed by manufacturer to install specified Products.
- .2 Installer Certificates: Signed by installer verifying that they have the specified qualifications described below.
- .3 Copy of manufacturer's 30 year warranty.
- .4 Factory Mutual layout and number of fasteners.
- .5 Certificates
 - .1 Copy of roofing system manufacturer's FM test data certifying compliance with Factory Mutual Approval "Class 1-90" for overall roof assembly as specified herein.
 - .2 Copy of roofing system manufacturer's ULC "Fire Resistance Ratings" listing certifying compliance with Underwriters Laboratories of Canada minimum "Class A" rating and CAN/ULC-S126-M for the roof covering materials assembly as specified herein.
 - .3 Copy of insulation manufacturer's ULC listing certifying insulation's compliance with specified requirements.

1.6 **QUALITY ASSURANCE**

- .1 Manufacturer: qualified manufacturer having roofing systems listed by UL and approved for use by Factory Mutual.
- .2 Design criteria for materials and roofing system construction: In accordance with the requirements of "ULC Class A" when determined in conformance with CAN/ULC S107 Standard Methods of Tests for Roof Coverings.

- .3 Work Force: Skilled, competent and experienced roofing tradesmen and foremen supervisors fully conversant with standards, methods and techniques required for the installation of the roofing system specified herein.
- .4 Manufacturer: Qualified manufacturer having roofing systems listed by UL and approved for use by Factory Mutual.
- .5 Applicator Qualifications
 - .1 Member in good standing of the Canadian Roofing Contractors Association (CRCA) with a minimum of three years experience in installing the specified roofing system, and has specialized equipment in proper operating condition to perform the Work in accordance with manufacturer's printed instructions.
 - .2 The applicator shall have been trained and approved by the manufacturer of roofing system to be installed.

1.7 **PRE-INSTALLATION MEETINGS**

- .1 Conduct pre-installation meeting.
- .2 Meeting: Prior to commencement of deck installation, review and document methods and procedures related to roof deck and roofing system construction, including the following:
 - .1 Participants: Authorized representatives of the Contractor, Construction Manager, Owner, roofing Subcontractor, roofing manufacturer, and installers of roof accessories and roof-mounted equipment.
 - .2 Review methods and procedures related to roofing installation, including manufacturer's written installation instructions.
 - .3 Review construction schedule and confirm availability of Products, Subcontractor personnel, equipment and facilities.
 - .4 Review deck installation criteria and finishes for conformance with roofing system criteria, including issues of flatness and fastening.
 - .5 Review structural loading conditions and limitations of roof deck both during and after roofing application.
 - .6 Review flashing details, special roofing details, roof drainage, roof penetrations, equipment curbs, and other conditions affecting roofing installation.
 - .7 Review governing regulatory requirements, and requirements for insurance and certificates as applicable.
 - .8 Review safety requirements, including temporary fall-arrest measures.
 - .9 Review field quality control procedures.

1.8 **DELIVERY, STORAGE AND HANDLING**

- .1 Deliver materials to the Site, properly protected, with manufacturers' seals and labels intact. Carefully unload and place in temporary storage facilities in a manner to prevent damage thereto.

- .2 Store materials listed below at the Site within temporary sheds or trailers. Do not use wet, damp, frozen or damaged materials. Stack rolls of felt and modified bitumen roll material on one end on wooden pallets. Storage sheds or trailers for the following materials must be well sealed and heated to at least five degrees warmer than the exterior ambient temperature to ensure materials remain dry:
 - .1 two-ply modified bitumen membrane
 - .2 Sealants
 - .3 Adhesives
 - .4 Other materials which are adversely affected by cold weather
- .3 Do not store more than one day's supply of materials on the roof at any time. On roof, stack materials on pallets at least 100 mm above roof surface, and completely cover with incombustible waterproof tarpaulin whenever Work is interrupted, at the end of each Working Day, or when there is precipitation of any kind.
 - .1 Securely tie covering to the pallets in such a way as to be weathertight and to prevent tarpaulin from blowing off in a windstorm.
 - .2 Manufacturers' plastic covers and shrinkwrap covers are not acceptable for Project site storage.
 - .3 Avoid storing materials in high piles.
- .4 Distribute materials stored on the roof to stay within designated live load limits of the roof construction. Provide ample bases under equipment and materials to distribute the weight to conform to these live-load limits. Do not store materials on, or transport materials across, completed roof areas.
- .5 Do not lift rigid insulation in slings which will damage insulation edges. Remove damaged insulation and replace with new material.

1.9 **PROTECTION**

- .1 Protect workers and property in accordance with the Occupational Health and Safety Act.
- .2 Protect the Work of this section from damage. Replace damaged Work which cannot be satisfactorily repaired, restored or cleaned.
- .3 Where hoisting or pumping occurs adjacent to building surfaces, hang tarpaulins to protect walls and other surfaces. Locate kettle so smoke will not discolour adjacent building surfaces.
- .4 Have a 9 kg dry chemical fire extinguisher fully charged and in operable condition at every location where open flames are used.
- .5 Protection covering: Place a 19 mm thick plywood underlaid with 25 mm thick polystyrene insulation board adhered to same, over all roofed areas when working from, or over, such roof surfaces. Provide such protection below hoist rigs, ladders, pallets of material, and in other circumstances where the roofing membrane is exposed to potential damage. Also provide protection under hoist, etc., on top of exposed metal deck.

- .6 Plan the Work such that travel with buggies, etc., over completed roofing system does not occur. If travel over completed roofing systems cannot be avoided, then protect roofing as specified above.

- .7 Do not store materials on new roofing.

1.10 **ENVIRONMENTAL REQUIREMENTS**

- .1 Do not apply any roofing materials during inclement weather.
- .2 Comply with manufacturer's recommendations for minimum and maximum temperatures and humidity during application.
- .3 Do not install Products when temperatures are below -10 degrees C.
- .4 Consider effects of wind chill on adhesives, and ensure they will not prematurely set before proper adhesion takes place.
- .5 Keep water-based Products from freezing. Do not apply water-based Products if temperatures are below 0 degrees C.

1.11 **MAINTENANCE**

- .1 The Manufacturer shall issue a non-prorated warranty for a period of twenty-five years. All components from the vapour retarder up shall be covered under this warranty.
- .2 Warranty shall include inspections in years 2 and 5, 10 & 15 of the warranty. The following duties shall be carried out at no extra cost to the Owner as required, by the Manufacturer.
 - .1 Sealing of flashing seams
 - .2 Filling of pitch pockets
 - .3 Repairs to blisters and ridges
 - .4 Caulking at metal details as required
 - .5 Written inspection report
 - .6 Removal of light debris from the roof and premises
 - .7 Cleaning of drain screens.
- .3 The manufacturer shall provide an Infra-red Analysis of the new roof prior to the end of the 2nd year of the warranty.
- .4 Documentation shall be provided that the manufacturer has personnel to carry out above noted warranty requirements and has a history of providing these for a minimum of 5 years.

1.12 **WARRANTY**

- .1 Submit in duplicate copies, two warranty provisions which shall run concurrently commencing from period specified in the general conditions. Carry all costs associated with warranties:

- .1 Standard workmanship warranty (by Roofing Contractor): Warrant the roofing and flashing membranes against workmanship defects for a period of two years and agree to promptly make good, at no increase in Contract Price, any defects which occur or become apparent within the Warranty Period; such defects to include but not to be restricted to leakage, failure to stay in place, lifting and deformations. Temporary repairs done during inclement weather shall be replaced with permanent Work as soon as weather permits. Use Ontario Industrial Roofing Contractors' Association "Standard Form of Warranty".
- .2 Total systems warranty (by roofing material manufacturer): Warrant the roofing and flashing membranes and components of the roofing system from defects caused by workmanship and material deficiencies for a period of twenty-five years and agree to promptly make good, at no increase in Contract Price, any defects which occur or become apparent within the Warranty Period; such defects to include but not to be restricted to leakage, failure to stay in place, lifting and deformations. Temporary repairs done during inclement weather shall be replaced with permanent Work as soon as weather permits. Warranty shall be on Appendix R - Total Roofing System Warranty appended to this section or manufacturer's warranty (pre-approved by Consultant). The warranty shall cover the cost of labour, workmanship and material to restore the roof to a watertight condition. Warranty shall be issued by the Supplier of roofing components, herein referred to as "Roofing Warrantor".

2 Products

- .1 Roofing system is to be provided by one of the following manufacturers:

- .1 Soprema Canada
- .2 Holcim Elevate (Formerly Firestone)
- .3 Johns Manville
- .4 Or accepted equivalent

2.2 MATERIALS

- .1 General: Obtain written acceptance from the roof membrane supplier/roof Warrantor, that all proposed roof materials/components are approved for use in warranted roof assemblies. Submit to Consultant for record.
 - .1 Verify all materials are compatible before proceeding with the work.
- .2 Roofing Membrane: Two ply modified bituminous membrane roofing as follows:
 - .1 Base Sheet: To CGSB 37.56-M, Styrene butadiene styrene (SBS) modified base sheet consisting of a composite polyester/fibreglass reinforcement saturated and coated with Styrene Butadiene Styrene (SBS) modified asphalt.
 - .2 Acceptable Products:
 - .1 SOPRAPLY BASE 520 by Soprema
 - .2 SBS Mod Bit 180 by Holcim Elevate
 - .3 DynaPly Base by Johns Manville

- .4 Or accepted equivalent
- .3 Base Sheet Membrane for Flashing and Parapet: Membrane composed of SBS modified bitumen and non-woven polyester or fiberglass reinforcement. The surface is covered with a thermofusible plastic film and the underface is covered with a release protection film. The surface shall be marked with three (3) chalk lines to ensure proper roll alignment.
 - .1 Acceptable Products:
 - .1 Sopraflash Flam Stick by Soprema
 - .2 Basegard SA Holcim Elevate
 - .3 Dynagrip Base SA by Johns Manville
 - .4 Or accepted equivalent
 - .4 Cap Sheet Membrane and Cap Sheet Roofing Flashing: Styrene butadiene styrene (SBS) modified bitumen reinforced saturated sheets. Top side self-protected with coloured mineral granules, having 10.547 oz/yd² (250 g/m²) non-woven, polyester reinforcement. Mineral granules colour shall be "Highly Reflective White" with solar reflectance index of not less than 78 when calculated according to ASTM E1980. Provide extra coloured mineral granules to match colour of cap.
 - .1 Acceptable Products:
 - .1 Sopraply Traffic Cap 560 by Soprema
 - .2 Elevate SBS 250 by Holcim Elevate
 - .3 DynaCap by Johns Manville
 - .4 Or accepted equivalent
- .3 Roof Board: To ASTM C1177/C1177M. Non-structural square edged, exterior gypsum panel having silicone treated gypsum core, with front and back faces penetrated with inorganic glass fibre mats and having non-asphaltic, highly filled proprietary heat-cured coating on one side.
 - .1 Thickness: 13 mm
 - .2 Roof Board Fasteners: Corrosion resistant, self-tapping screw type fasteners complete with 75 mm diameter metal lap plate, minimum 32 mm long to provide penetration into substrate (upper steel deck surface) and conforms to FM Class I-90 fastener requirements in accordance with FM 4450 and FM 4470. Provide one fastener per 0.3716 m² of roof board.
- .4 Roof Insulation:
 - .1 Polyisocyanurate foam rigid roof insulation board, minimum compressive strength of 170 kPa (25 psi), Type 3, Class 2, manufactured with HCFC free blowing agent bonded to inorganic, coated glass facers on top and bottom surface during the manufacturing process meeting the requirements of CAN/ULC-S126 and CAN/ULC-S107 and to CAN/ULC-S704 and CAN/ULC-S770 for Long Term Thermal Resistance (LTTR) R-values.

- .2 Tapered Insulation: Of the same type as insulation used, Factory mitred and cut tapered panels, valley corners and crickets as required to provide slopes in areas shown. Minimum slope to be 2%. Tapered insulation shall be free of imperfections, damaged edges and corners. Use of fragmented boards is not permitted.
- .3 Tapered Insulation Adhesive: By tapered insulation manufacturer.
- .5 Air/Vapour Barrier:
 - .1 Self-adhesive membrane composed of SBS modified bitumen, with a surface screen made of high-density polyethylene laminated between two layers of polyethylene films. The self-adhesive under face of membrane to be protected with a silicone plastic release film.
- .6 Roofing Nails: To CAN/CSA B111 and ASTM F 1667. Spiral type galvanized steel roofing nails with minimum 25 mm diameter steel top cap and minimum 3 mm diameter shank, long enough to penetrate 38 mm into wood and 20 mm into plywood.
- .7 Termination Bars: Continuous 3 mm thick x 25 mm wide ANSI Type 304 stainless steel bar, drilled at 8 inches (200 mm) on centres for fastener fixing. Stainless steel shall comply with ASTM A167, ASTM A 276 and ASTM A 666 as applicable.
- .8 Cant Strips: To CAN/CSA A247, Type 1. 75 mm x 75 mm x 38 mm, pre-cut, asphalt impregnated fibreboard laminated type roof cants having minimum 248 kg/m³ density and minimum 6 psi (41.369 KPa) tensile strength.
- .9 Roofing Tape: To ASTM D5749. 150 mm wide, self-adhesive, glass fibre mesh reinforced kraft paper tape type roof insulation tape.
- .10 Saturated glass fibre roofing felts; to ASTM D2178-88a, Type 4.
- .11 Primer:
 - .1 Primer composed of SBS synthetic rubber, adhesive resins and VOC-free solvents as recommended by membrane manufacturer. Used as primer to improve the adhesion of self-adhesive membranes.
- .12 Sheet Metal Flashing
 - .1 Refer to Section 07 60 00 Flashing and Sheet Metal.
- .13 Pavers:
 - .1 Precast concrete pavers: 35 MPa, air entrained, in size of 600 x 600 x 50 mm, smooth finish, square edges, complying with CSA A23.1.
- .14 Roof Drain:
 - .1 Thaler Metal Industries Inc. "RD-4A"; Altra Metal Specialties Inc. "ABD-AR-CR" or accepted equivalent, aluminum body complete with underdeck clamping ring and stainless steel securement bolts with double nuts. Refer to Contract Drawings for drain sizes and number of control flow slots.
 - .2 Provision of adaptors for connection to roof drain bodies is specified in Division 22 – Plumbing.

3 Execution

3.1 **EXAMINATION**

- .1 Inspect existing conditions to ensure they are suitable for roofing work to begin. Do not proceed until unacceptable conditions are corrected.
- .2 Ensure substrate is solid, clean, dry and free of any contaminants prior to commencing any roofing work.
- .3 Examine substrates to receive the Work and ensure that work of other sections is complete and that there are no conditions which adversely affect the Work.
- .4 Inspect completed roof deck and ensure that defect of level or construction is corrected before proceeding with the Work.
- .5 Verify that roof drains have been set and installed by the mechanical trade in accordance with manufacturer's instructions. Report discrepancies to the Consultant so that they are corrected.
- .6 Ensure items projecting through roof are solidly set and reglets and nailing strips are in place.
- .7 Inspect wood blockings, curbs and cants. Do not install roofing over such items if method of attachment is inadequate to withstand stresses imposed by thermal movement of roofing components.
- .8 Notify the Consultant immediately of unsatisfactory conditions. Do not proceed with the Work until unsatisfactory conditions have been corrected.
- .9 Commencement of the Work implies acceptance of surfaces and conditions.

3.2 **PREPARATION**

- .1 Prime metal surfaces. Review underside of steel deck to assess location of conduits and other obstructions prior to commencing mechanical securement. Ensure that steel deck is clean and free of rust, moisture, debris frost, snow, ice, water, debris, extraneous matter and other substances which could affect the performance of the Work.
- .2 Prime vertical surfaces with asphalt primer commencing at the top of the cant strip to the reglet or highest point as detailed. Allow sufficient time for the asphalt primer to cure and ensure that primer does not run into the building or stain wall faces.

3.3 **INSTALLATION**

- .1 General
 - .1 Install roofing in accordance with the Contract Drawings, this Section, reviewed Shop Drawings, requirements of authorities having jurisdiction, CRCA Roofing Specifications Manual and the manufacturer's printed specifications. Comply with warranty requirements.
 - .2 Coordinate with other trades to expedite the Contract Schedule.
 - .3 Install roofing over a clean dry deck, free of moisture, dirt, ice and debris. Use only dry materials and apply only during weather that will not introduce moisture

- into the roofing system. Remove from Site, materials condemned or rejected and replace such materials no additional cost.
- .4 Apply roofing only when the air and surface temperatures are in accordance with manufacturer's recommendations.
 - .5 In case of rainfall during roofing, dispose of rainwater off roof and away from face of building until roof drains and hoppers are installed and connected.
 - .6 Provide incidental items which are not otherwise specified or indicated on the Contract Drawings, but which are required by good industry practice or by implication and required to provide complete roofing and flashing systems.
 - .7 Apply isolation coating to prevent electrolysis between dissimilar metals, or metal to masonry and metal-concrete contact.
 - .8 Complete roofing Work in a continuous fashion as surfaces are readied and weather conditions permit.
- .2 Air/Vapour Barrier
- .1 Prime underlay board and adhere roof air/vapour barrier over thermal barrier underlay. Overlap vapour barrier minimum 100 mm for side laps and 150 mm for end laps or as recommended by manufacturer.
 - .2 Extend air/vapour barrier under cant strips and blocking. Extend to perimeter and deck protrusions.
 - .3 Seal roof vapour retarder to wall air/vapour barrier system with flexible flashing membranes to ensure continuity of building air/vapour barrier envelope.
- .3 Base Layer Insulation
- .1 Prior to installation of insulation, examine the vapour barrier and make good damaged vapour barrier.
 - .2 Install to achieve required total insulation thickness over vapour barrier. Cut and fit to within 19 mm of projections and penetrations.
 - .3 Place insulation boards in moderately tight contact at joints between boards and abutting surfaces.
 - .4 When cutting insulation board, cut completely through board thickness. Do not break or tear insulation board to fit detail. Any areas of insulation system having voids will be rejected.
 - .5 Do not cut off insulation in straight lines at end of a Work period. Allow stepped boards for tothing-in.
 - .6 Install only as much insulation as can be covered in 1 Day.
- .4 Tapered Insulation.
- .1 Fully adhere tapered fibreboard with adhesive in conformance with manufacturer's written recommendations, layout as indicated on drawings to create positive drainage.

- .2 Fit insulation tight to roof penetrations
- .3 Accurately cut tapered fibreboard to form hips, valleys, saddles, crickets and where it abuts vertical surfaces.
- .5 Roof Board
 - .1 Install roof boards with long edges bearing on and parallel to top flutes, so that edges are supported. Stagger roof board end and edge joints minimum 150 mm or as recommended by manufacturer.
 - .2 Adhere roof boards to metal deck using adhesive as recommended by manufacturer's written instructions. Mechanically fasten the first layer of roof insulation to meet Factory Mutual 1-90 requirements Apply overall pressure to ensure full adhesion. Do not slide into place.
 - .3 Do not leave gypsum roof sheathing exposed overnight or during rain, snow or heavy dew. Reject sheathing which shows signs of having been wetted.
- .6 Two Ply Roofing Membrane
 - .1 Install two plies of roof membrane in shingle fashion, starting at roof low point. Apply membrane perpendicular to overlay board joints. Conform to manufacturer's recommended method.
 - .2 Overlap starter strips 660 mm with first ply, then overlap each succeeding ply 625 mm.
 - .3 Place ply sheets to ensure water will flow over or parallel to, but not against, exposed edges.
 - .4 Shingle in direction to shed water. Extend ply membranes over and terminate beyond cants and cut evenly.
 - .5 Embed plies in bitumen, at a minimum rate of 1.2 L/m², and solidly coating each ply for full width.
 - .6 Ensure complete and continuous seal and contact between bitumen and ply membranes, including ends, edges and laps without wrinkles, fish mouths or blisters.
 - .7 Do not step or walk on felts during or immediately after application until bitumen has set.
 - .8 Install each ply so that it shall be firmly and uniformly set, without voids, into bitumen. Thoroughly and effectively broom or roll each membrane application to ensure full adhesion.
 - .9 Lap ply membrane ends 150 mm. Stagger end laps 1.0 metres minimum.
 - .10 Overlap previous day's work 600 mm, as required.
 - .11 Terminate all ply layers to outer edge of roof perimeter.
- .7 Cap Sheet Flashing
 - .1 Install flashings to ensure the roof is watertight at the end of each Working Day.

- .2 Extend flashing membrane minimum 150 mm over roof membrane.
- .3 Extend flashing membranes minimum 200 mm up vertical surfaces.
- .4 Secure flashings at 200 mm O.C. Secure vertical flashings through termination bar.
- .5 Overcoat lap edges with end lap stripping adhesive and membrane.
- .6 Tie-in leading edge of elastomeric sheet flashing with stripping ply membrane embedded between alternate courses of stripping ply mastic.
- .8 Flashing Roof Drains
 - .1 Carry layers of roofing felts down into sump to edge of drain fitting.
 - .2 Embed flashing flange into 3 mm thickness of sealing compound on top of roofing felts.
 - .3 Embed 2 plies of felt and carry each ply over metal flange and onto roof beyond sump for 100 and 200 mm respectively.
 - .4 Lap joints 100mm, remove wrinkles and buckles
- .9 Roof Drains
 - .1 Install roof drains supplied under Work of Division 23..
 - .2 Ensure that roof drains are set to permit drainage, and properly secured. Cut and slope insulation at each drain to form a sump and to accommodate flashing immediately surrounding drain.
 - .3 Locate roof drains on metal deck at low points determined after the roof deck has been installed.
 - .4 Ensure that installation of drain and membrane is performed in accordance with recommendations of drain manufacturer.

3.4 **FIELD QUALITY CONTROL**

- .1 Manufacturer's Field Service: arrange for manufacturer's technical representative to regularly inspect the roofing application and confirm that the roofing system installation is in strict accordance with manufacturer's recommendations in writing to the Architect, General Contractor and the Owner's Representative.

3.5 **CLEANING**

- .1 Clean drains, gutters and downspouts of debris, ensuring free drainage.
- .2 Clean adjacent roof surfaces, levels and ground level areas of debris and excess Products.
- .3 Clean and make good to the Consultant's acceptance surfaces damaged in connection with this work. Pay the cost of replacing finishes or materials that cannot be satisfactorily cleaned.

- .4 At completion of the work remove debris, equipment and excess materials from the site. On completion of the work check roof drains and ensure their cleanliness and proper function.

3.6

PROTECTION

- .1 Temporary protection of membrane to be provided to prevent mechanical damage or damage from spillage of oils or solvents until such time as permanent protection is provided.
- .2 Prohibit traffic of kind over unprotected waterproof membranes. Do not allow backfill to be placed against unprotected waterproof membranes.
- .3 Protect, immediately after application, by means acceptable to the Consultant, waterproofing systems install as part of the Work until covered by the work of other Sections. Provide temporary ballast to hold insulation in place.

End of Section

TOTAL SYSTEM WARRANTY

The Two Ply Modified Bituminous Membrane Roofing System consists of roofing Products supplied by the Roofing Supplier and an approved method of installing those Products. The Roofing Supplier hereby warrants that Roofing Supplier's supplied Products used in the Roofing System, as applied to the building specified below, will be free from defects in materials or workmanship and that the installation of those Products will be free from defects in workmanship. In the event that said Roofing System fails due to defects in materials or workmanship within a period of 10 years from the date installation is completed, the Roofing Supplier will, at its option, make repair or replacement of said Roofing System including the cost of the component roofing Products and the installation thereof.

This warranty does not cover structural damage to the roof physically inflicted by accidents, man-made causes, acts of God, acts of nature and the like or damage arising through misuse, abuse or use of said Roofing System in any way other than that specifically recommended by the roofing manufacturer.

This express warranty is in lieu of all other warranties expressed or implied, whether by law or otherwise, and the Roofing Supplier's liability shall not extend beyond the Warranty Period. The Owner's sole and exclusive right and remedy and the Roofing Supplier's sole obligation for any failure of the Roofing System shall be as provided under this warranty. The Roofing Supplier shall not be liable for consequential damages of any nature arising from failure of the Roofing System. In no event shall the Roofing Supplier's liability under this warranty or otherwise exceed the original cost to the Owner of the Roofing System including the cost of the component Roofing Products and the installation thereof.

This warranty will extend to the Owner identified below for the building specified upon the Owner's acceptance of its terms. It shall not be assignable but shall re-issue to subsequent owners during the Warranty Period for the balance of the Warranty Period upon their acceptance of its terms by written signature on a duplicate form and its submittal to the Roofing Supplier.

Claims under this warranty should be directed to the Roofing Supplier:

Building Owner

Address of Building

Area of Building

Date Installation Complete

AGREED

Date Final Inspection and Approved

THE ROOFING SUPPLIER
(REFERRED TO IN SECTION 07 52 00 AS
"ROOFING WARRANTOR")

By _____
Building Owner

By _____
Serial Number

End of Section