

**PART E**  
**SPECIFICATIONS**

## PART E - SPECIFICATIONS

### GENERAL

#### E1. APPLICABLE SPECIFICATIONS, STANDARD DETAILS AND DRAWINGS

- E1.1 *The City of Winnipeg Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.
- E1.1.1 *The City of Winnipeg Standard Construction Specifications* is available in Adobe Acrobat (.pdf) format on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division internet site at <http://www.winnipeg.ca/matmgt>.
- E1.1.2 Further to GC:2.4(d), Specifications included in the Bid Opportunity shall govern over *The City of Winnipeg Standard Construction Specifications*.
- E1.2 The following Drawings are applicable to the Work:

<u>Drawing No.</u>	<u>Drawing</u>
A-1	Roof Plan
A-2	Roof Plan Section B-B
A-3	Section A-A New Edge Detail
A-4	Roof Drain Termination

#### E2. OUTLINE SPECIFICATIONS

- E2.1 Strip existing asphalt and gravel roof membrane assembly including existing gravel stop flashings at the perimeter down to the deck and dispose of same. Remove only that portion of roof that can be completely re-roofed in the same day.
- E2.2 Provide and install new blocking for edge detail along the perimeter as per Roof Edge Detail, Drawing No. A-3.
- E2.3 Over a clean dry deck, free of voids, sharp protrusions etc., carefully install a vapour retarder membrane, peel and stick such as Soprapap'r or approved equal over a primed roof deck substrate. Apply Vapour Retarder to substrate with adhesive specified and in accordance with manufacturer's recommendation and application instructions. All end and side laps must be properly rolled. A two ply mopped vapour retarder is approved for this application with the first ply nailed and the second ply fully mopped.
- E2.4 Over the vapour retarder membrane, install by mechanically fastening 3.0 inches Poly Isocyanurate Sopraboard Factory Laminated Insulation Panels or approved equal rigid insulation with fasteners of sufficient length to penetrate the substrate a minimum of one (1") inch. Fasteners shall be a minimum of six (6) fasteners along the perimeter and four (4) on the field of roof for each 4' x 4' Insulation Panel. Insulation shall be laid in a brick pattern with joints staggered and tightly butted. No gaps would be permitted on this application.

- E2.5 Over the insulation, install a new two ply base and cap sheet, SBS modified bituminous membrane both plies torched and as per manufacturers recommendations and application instructions. Base and Cap Sheet shall be SBS minimum 180 gr/m<sup>2</sup>.
- E2.6 Base Flashing shall be installed along perimeter and at all projections and in accordance with recommendations of the membrane manufacturer.
- E2.7 Supply and install new metal flashing around base of elevator room roof as per drawing.
- E2.8 Ensure qualified tradesman for any mechanical, electrical work related to Air Handling Roof Top Unit.
- E2.9 Adjust/provide proper blocking, curbs etc. to accommodate changes resulting from the increased roof insulation. Provide new blocking all around where necessary, adjust drains, vent pipes and other projections by providing sleeves/extensions.

The Contractor shall take all necessary precautions to ensure a safe Work place and maintain/erect warning signs and barriers to alert public, and users attending the facility. All roofing Work shall be in accordance with Workplace, Safety and Health Rules and Regulations and all applicable codes, Laws and By-laws.

### **E3. SCOPE OF WORK DETAILS**

Work described in this Section shall pertain to roof Area "A" as indicated in Roof Plan Drawing No. A-1 and entails the removal of existing BUR down to deck including metal flashings and cap flashing at Parapet and re-roofing with a two (2) ply SBS modified bituminous membrane completed with three (3") inches of Poly Isocyanurate insulation over a properly primed substrate.

- E3.1 Strip existing BUR roof membrane assembly down to deck including "wood blocking" approximately 16" from outside edges removing only that portion of roof that can be completely re-roofed in the same day.
- E3.2 Examine deck to ensure there are no deteriorated areas and advise Owner immediately if any rotten decking is uncovered. Do not apply new roof membrane over weak ad/or deteriorated wood deck or make repairs without the confirmation of the Owner.
- E3.3 Any deteriorated roof decking shall be replaced with new deck materials matching existing and installed using good construction practices/techniques.
- E3.4 Install new edge detail as per Roof Edge Detail.
- E3.5 Over a dry, clean deck, free of voids, sharp protrusions and other contaminants install a self adhesive Vapour Retarder as per Manufacturer's Specifications and application instructions. Ensure the substrate is approved for the installation.
  - (a) Starting at slope bottom, unroll each roll dry. Do not immediately remove protective film of paper. Let stand for a few minutes before re-rolling.
  - (b) Once aligned, re-roll one end towards centre.
  - (c) Using the tip of a sharp blade, cut through surface of protective film without cutting membrane.
  - (d) Remove small length of protective film and unroll exposed membrane for initial adherence. Unroll the membrane (one half a time) while removing the protective film. Ensure surface remains smooth. Avoid wrinkling or warping. If roll is not properly aligned, do not push to one side or another. Instead, cut roll and realign properly. End joints must overlap by 50 mm.

- (e) Overlap adjacent rolls 50 mm. Overlap all end joints by 50 mm. Stagger end laps by at least 300 mm.
- (f) Complete vapour retarder fastening by rolling over the entire surface as it is installed with 34 kg (75-lb) rollers; roll along each centre and each overlap and finish along sides by aligning roller edge to lower part of overlap. Watch for air pockets beneath end joints. Do not lance; instead roll air towards edge of seams.

E3.6 Install rigid polyisocyanurate by mechanically fastening and with recommendations/practices. Supply and install new drip edge flashing, with fasteners minimum 16 inches on centre. Prime with compatible primes before applying base sheet. Flashing shall be of sufficient length on the vertical to cover any exposed fascia board resulting from this change.

E3.7 Install base sheet extending membrane a minimum of 6 inches over the edge of roof using manufacturer's specifications and application instructions.

Note: Ensure roofing substrates and adjoining Work, parapets etc. pose no fire hazard during use of torch equipment. Do not torch onto old wood substrates, etc.

- (a) Unroll base sheet at drain level with first side lap lined up with drain centre (parallel to roof edge).
- (b) Torch base sheet entirely onto prepared substrate. Overlap side laps by 75 mm along lines provided to this end, and overlap end laps by 150 mm. Stagger end joints by a minimum of 300 mm.
- (c) Torch sufficiently and continuously to avoid wrinkles, air pockets or fishmouths. In cold weather, adjust welding time to obtain homogenous seam (it may be necessary to slow down in certain cases.)
- (d) Cut off corners at end laps to be covered by the next roll.

E3.8 Install Base Sheet Flashing Installation consistent with this type of re-roofing as reinforcement strip at perimeters and all projections.

- (a) Cut off corners at end laps to be covered by the next roll.
- (b) Provide a smooth application free of wrinkles, fishmouths, air pockets or tears.

E3.9 Install Cap Sheet Torch applied 180 Gr. minimum completed with granular finish colour to be determined by Owner.

- (a) Once base sheet is applied and no defects are apparent, proceed with cap sheet installation.
- (b) Begin with double-selvage starter roll. If starter roll is not used, side laps covered in granules must be degranulated by embedding side laps in torch-heated bitumen over a [75]-[100] mm width.
- (c) Unroll cap sheet at drain. Carefully align first side lap (parallel to roof edge).
- (d) Weld cap sheet onto base sheet with torch recommended by membrane manufacturer. During application, simultaneously melt both designated contact surfaces so a bead of bitumen is apparent as cap sheet unrolls.
- (e) Avoid overheating.
- (f) Make sure joints between the two layers are staggered by at least 300 mm.
- (g) Overlap cap sheet side laps by [75]-[100] mm and end laps by 150 mm. Cut off corners at end laps to be covered by next roll. All overlap surfaces must be granule-free or degranulated.

- (h) Complete perfect welds between two membranes. Leave no zone unwelded. In cold weather, adjust welding time to obtain homogenous seam (it may be necessary to slow down in certain cases.)
  - (i) Once cap sheet is installed, carefully check all overlapped joints.
- E3.10 Install new pre-finished cap flashings at the Parapet.
- E3.11 All materials specified shall be new and of the best quality. All materials shall be stored, handled and applied etc. in accordance with Manufacturer's instructions and recommendations.
- E3.12 The Contractor shall:
- (a) Ensure the operator (s) of the equipment are adequately trained and that proper fire fighting equipment be readily available in case of fire. Fire extinguishers must be in good working condition and be on the job Site at all times. For the best type of fire extinguisher, the Contractor shall consult the local fire authorities.
  - (b) Propane tanks should be solidly held in an upright position and a minimum of ten feet (10') from where torching is done. Workers other than torch operators should stay at least three feet (3') from flame. Remove propane tank(s) from job Site at end of each day's Work.
  - (c) Check all fittings, hoses, torch heads, etc. before using torching equipment. When torching onto combustible materials or around open areas or in areas where you cannot see the flame contact, do not heat directly – **Use the torch and flop method.**
  - (d) **NEVER LEAVE A LIGHT TORCH UNATTENDED. PROPERLY INSPECT ALL WORK COMPLETED FOR POSSIBLE SMOLDERING FIRES.**
  - (e) The Contractor shall provide, maintain and erect warning signs and barriers to alert public using the facility.
  - (f) When torch is not in use, always place it on its support with head pointing upwards. At all times, and especially before leaving job Site, ensure that there are no smoke emissions which could be a sign of smoldering materials. At the end of each day, check inside the building before leaving. Job planning must allow for employee presence on the roof at least one hour after torch application.
- E3.13 Contractor shall provide a written guarantee stating that the modified bituminous roof and flashing will stay in place and remain lead proof for a period of five years form the date of Final Certificate of Completion.