

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 The version in effect three (3) Business Days before the Submission Deadline shall apply.
- E1.1.3 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> |
|--------------------|---|
| E13.1 | Provision of roof replacement. Winnipeg Transit Department. |

E2. MATERIALS

E2.1 DIMENSIONAL LUMBER

- (a) This shall be construction grade spruce of the dimensions outlined in these Specifications.

E2.2 PLYWOOD SHEATHING

- (a) This shall be 1/2" construction D Grade spruce plywood.

E2.3 VAPOUR BARRIER

- (a) This shall be 1 ply Soprema Elastophene s/p with Soprema Sopraflash Stick for perimeter edges and around curbed openings.

E2.4 ROOFING INSULATION

- (a) 1 1/2" Soprema Colgrip polyisocyanurate insulation.
- (b) Expanded Polystyrene type ii with a minimum slop of 1/8" per foot and a minimum thickness of 2". This shall be as manufactured by Plastifab Ltd. Or Insulation Industries Ltd.

E2.5 INSULATION ADHESIVE

- (a) This shall be Insta-Stick as manufactured by Flexible Products Company Roofing Group and distributed by Brock White or Coltack Adhesive as distributed by Soprema.

E2.6 POURABLE SEALER

- (a) This shall be Lexcan 2 part Pourable Sealer or approved equal. This shall be used to fill all pitch boxes or as otherwise specified.

E2.7 MODIFIED BITUMEN MEMBRANE

- (a) This shall be the following:

(i) Membrane:

Soprema Colvent 810 self adhering base sheet membrane with a Sopraply Cap-560 cap sheet (heavy traffic) or approved equal.

(ii) Stripping:

Soprema Sopraflash Flam Stick self adhering base sheet with a Sopraply Cap-550 cap sheet or approved equal.

E2.8 RUBBERIZED MASTIC

- (a) This shall be Polyroof as manufactured by Tremco Ltd. or approved equal. All exposed rubberized asphalt shall be coated with aluminum paint.

E2.9 MODIFIED PRIMER

- (a) Soprema Elastocol 700 for use with the self adhesive membranes.

E2.10 CAULKING

- (a) This shall be Tremco Vulkem 931 or approved equal.

E2.11 ALUMINUM PAINT

- (a) This shall be Tremco Double Duty or approved equal.

E2.12 VENT STACKS

- (a) These shall be Insulated Stack Jack Flashings (with metal cap, not neoprene seal) SJ-20 as manufactured by Thaler.

E2.13 METAL FLASHING

- (a) The bays and cap flashing shall be a minimum of 24gauge in thickness. Finishes shall closely match the painted colour of the existing flashing. This shall be chosen from the range of Stelco 8000 series of colours.

E2.14 ACCESSORIES

- (a) All nails, bolts, screws and other fasteners etc. shall all be as recommended by the manufacturer of the materials for which they are to be used.

E2.15 SPLASH PADS

- (a) Splash Pads shall be 51" natural # 45-41001 as manufactured by Barkman Concrete Ltd.

E3. EXECUTION PROTECTION OF WORK AREA

E3.1 Work must be performed during weather conditions that will not adversely affect the performance of the new Work. Surfaces must be clean and dry prior to installation.

E3.2 Cover walls and adjacent Work where materials hoisted or used.

E3.3 Clean off drips and smears of bituminous material.

E3.4 Dispose of rainwater off roof and away from face of building until roof drains or hoppers installed and connected.

E3.5 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.

- E3.6 Examine roof decks and immediately inform Contract Administrator in writing of defects.
- E3.7 Prior to commencement of Work ensure:
- (a) Decks are firm, straight, smooth, dry, and swept clean of dust and debris.
 - (b) Curbs have been built.
 - (c) Roof drains have been installed at proper elevations relative to finished roof surface.
 - (d) Plywood and lumber nailer plates have been installed to walls and parapets as indicated.
- E3.8 Removal of Existing Roofing
- (a) Remove existing roofing system, curbs and cant strips as required to properly install new roofing system. Avoid damage to decks, drains, and other components on roofs.
 - (b) Provide temporary hoarding, other protection as may be required.
 - (c) Fully protect interior of building from water penetration from any cause.
 - (d) Prepare remaining surfaces to accept new roofing system.

E4. PREPARATION

- E4.1 If required, rooftop equipment, electrical and gas service lines, telephone lines, etc. must be disconnected, relocated and reconnected as required in accordance with all applicable codes and regulations to accommodate the Work without disrupting operations within the garage. Prior arrangement must be made with the Contract Administrator in the event a disruption of building operations is required.
- E4.2 Remove and dispose of all metal flashings as required.
- E4.3 Remove existing roofing system to the roof deck in the area shown on the attached drawing.
- E4.4 Remove and dispose of any equipment as designated by the owner and seal any resulting openings with prepainted 20 gauge, 1½" steel decking.
- E4.5 Prepare surface of existing roof 24" wide along the joint between the existing and new roof systems. Remove all loose and embedded gravel and ensure that the surface is sound, clean and dry.
- E4.6 Inspect and repair any deck deficiencies that would affect the installation and performance of the new roof system.
- E4.7 Fill and pack all open joints, cracks, seams, and openings in the deck.
- E4.8 Construct edge, expansion joint, projection, and equipment curb blocking and nailers to accommodate insulation thickness. Extend all curbs to a minimum height of 203 mm (8") above the finished roof surface.
- E4.9 All blocking to be pressure treated wood

E5. VAPOUR RETARDER

- E5.1 Install a two ply vapour retarder consisting of a high wet strength kraft laminate with asphalt and reinforced with glass fibre strands using full moppings of hot-applied Type II asphalt (C.S.A. A123.4M) with a coverage of 25 lb./100 sq. ft./ply.
- E5.2 Carry vapour retarder up all blocking and projections leaving sufficient material to envelop the insulation a minimum of 12".

- E5.3 Seal vapour retarder at all laps, projections, penetrations, and existing vapour retarders to ensure an airtight and vapour-tight seal.
- E5.4 At all junctions with existing roof assemblies, install water/vapour retarder cut-offs consisting of two plies of vapour retarder. Seal to new vapour retarder and carry it vertically between existing and new insulations, sealing it to the prepared surface of the existing roof membrane.

E6. INSULATION

- E6.1 Replace any area of damaged or deteriorated existing insulation. Fill all voids and cracks with soft fibreglass insulation.
- E6.2 Install a base layer of sloped closed cell polyisocyanurate foam composite board with hot-applied Type II asphalt with a minimum coverage of 25-lb./100 sq. ft. The insulation **MUST** be installed to ensure that water cannot pool in the newly replaced area.
- E6.3 Tightly butt all insulation panels in half lap fashion. Offset the pattern between layers so that no insulation joints are coincidental.
- E6.4 Leave no openings or gaps at projections or perimeters.
- E6.5 Complete vapour retarder envelope by sealing ends of vapour retarder to the top on the insulation with hot-applied asphalt.
- E6.6 At drains and scuppers, taper insulation for 24" in all directions to ensure positive drainage.
- E6.7 Install protection layer of ½" thick asphalt impregnated wood fibreboard in full moppings of hot-applied Type II asphalt with a coverage of 25 lb./100 sq. ft.

E7. FOUR PLY WATERPROOF ROOF MEMBRANE

- E7.1 Install 3"X3" wood cants at all projections, edges, and blocking.
- E7.2 Install four plies of No. 15 perforated asphalt felt, laid in shingle fashion from the lowest point, and at right angles to the drain to ensure that water does not flow against exposed edges. Utilize appropriate sized starter plies to ensure full four plies at beginning and end of application run.
- E7.3 Embed each ply into a full mopping of hot-applied Type II asphalt with coverage of 25-lb./100 sq. ft. Adhesive must not be applied over 10 ft. in advance of each roll of felt. The asphalt must cover each ply completely and each ply must be embedded firmly without wrinkles, or blisters. Dry felt must not contact dry felt at any location.
- E7.4 Stagger all end laps.
- E7.5 Fit plies into roof drain rims and secure clamping collars.
- E7.6 Terminate all plies at cant height.
- E7.7 Glaze membrane surface with a mopping of hot-applied Type II asphalt (C.S.A. A123.4M) with coverage of 30-lb./100 sq. ft.

E8. TIE - INS

- E8.1 Carry each subsequent ply of the new membrane approximately 3" farther onto the prepared surface of the existing membrane, mopping in securely with hot-applied adhesive. Tape final,

top ply on new membrane to existing membrane surface with two ply (6" and 12") reinforcing membrane and rubberized mastic.

E9. PLUMBING VENTS

- E9.1 Install K.S.H. dome roof flashings embedded into a generous bed of adhesive ensuring that coverage extends beyond the edge of stack extension flashing.
- E9.2 Place stack extension over vent and over-trowel with adhesive extending a minimum of 4" beyond the edge of the flange.
- E9.3 Strip in entire flange edge with 6" reinforcing membrane embedded in and top-dressed with adhesive.
- E9.4 Fit and seal PVC pipe section to the plumbing vent hub and insulate in accordance with the manufacturer's instructions.

E10. FLASHING ROOF DRAINS

- E10.1 Carry roofing membranes down into sump to edge of drain fitting.
- E10.2 Embed flashing flange into 3 mm thickness of sealing compound on top of roofing membrane.
- E10.3 Embed membrane flashings into heavy coatings of hot asphalt, sealant, extend plies onto roof beyond outer edge of flange in accordance with manufacturer direction.

E11. FLOOD COAT

- E11.1 Flood entire surface with hot-applied Type II asphalt (C.S.A. A123.4M) with a coverage of 55-lb./100 sq. ft.

E12. SURFACING

- E12.1 Spread commercial grade opaque gravel graded 3/8" to 5/8", washed, dried, free from foreign matter and sharp edges, smoothly and evenly into freshly applied flood coat with a coverage of 450 lb/sq. ft.

E13. METAL FLASHINGS

- E13.1 Cap flashings are to be 24 ga. galvanized sheet metal. The flashings are to conform to C.S.A.
- E13.2 The inside and outside faces are to extend down a minimum of 76 mm (3"). Fasten the cap flashing using weatherproof screws spaced not more than 610 mm (24") on centre.
- E13.3 Hem all free edges and seal all butts, joints and reglets with sealant.