

PART E
SPECIFICATIONS

PART E - SPECIFICATIONS**GENERAL****E1. APPLICABLE SPECIFICATIONS, STANDARD DETAILS AND DRAWINGS**

E1.1 *The City of Winnipeg Works and Operations Division Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.

E1.1.1 Division 2 - Standard Provisions, Provision CW 1100 of *The City of Winnipeg Works and Operations Division Standard Construction Specifications* shall apply to the Work.

E1.1.2 Further to GC:2.4(d), Specifications included in the Tender Package shall govern over *The City of Winnipeg Works and Operations Division Standard Construction Specifications*.

E1.2 The Drawings in Part F are applicable to the Work.

E1.3 The following Drawings are applicable to the Work:

<u>Drawing No.</u>	<u>Drawing</u>
R-1	Roof
D-1	Detail

E2. MATERIALS**E2.1 DIMENSIONAL LUMBER**

(a) This shall be construction pressure treated p.w.f. lumber of the dimensions as outlined under the Description of Work.

E2.2 PLYWOOD SHEATHING

(a) This shall be 1/2" pressure treated p.w.f. plywood

E2.3 DRYWALL SHEATHING

(a) This shall be 1/4" Dens-Deck as manufactured by Georgia Pacific or approved equal.

E2.4 DENS-DECK / INSULATION FASTENERS

(a) These are to be #12 Insul-Fix screws and 3" galvanized plates as manufactured by SFS Stadler or approved equal such as manufactured by Deck Fast.

E2.5 VAPOUR BARRIER

(a) This shall be one ply Soprema Elastophene Flam 2.2 and one ply Soprema Elastophene SP or approved equal.

E2.6 ROOFING ASPHALT

(a) Type 3 Asphalt softening points as per CSA A123.4M.

E2.7 ROOFING INSULATION

(a) This shall be 2 layers 2" Soprema Colgrip polyisocyanurate insulation

E2.8 INSULATION ADHESIVE

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

E2.9 POURABLE SEALER

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

E2.10 MODIFIED BITUMEN MEMBRANE

- (a) This shall be the following:
 - (i) Membrane:
Soprema Colvent 810 self adhering base sheet membrane with a Blue colored Sopraply Cap-560 cap sheet (heavy traffic) or approved equal.
 - (ii) Stripping:
Soprema Sopraflash torch applied base sheet with a Sopraply Cap-550 cap sheet or approved equal.

E2.11 MODIFIED PRIMER

- (a) This shall be Soprema Elastocol 500 primer for use with the Soprema torch grade membrane and Elastocol 700 for use with the self adhesive membranes.

E2.12 CAULKING

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

E2.13 ALUMINUM PAINT

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

E2.14 ROOF DRAINS

- (a) These shall be Zurn Z-100 standard drains with optional deck clamp, and cast dome. Size is to match existing plumbing. If the existing drains being replaced are control flow, then Zurn Z-100 control flow drains with optional deck clamp, and cast dome shall be used. Size is to match existing plumbing.

E2.15 VENT STACKS

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

E2.16 METAL FLASHING

- (a) The cap flashing shall be a minimum of 24 gauge in thickness. Finish is to match that already installed on the parapets of areas A3 and B3.

E2.17 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.

E2.18 ELECTRICAL FLASHING

- (a) These shall be the Flash-Tite Wire and Cable Flashing as manufactured by Lexcor.

E3. ROOFING PROCEDURES PAN AM POOL – AREAS C3, D3 & E3

- E3.1 Protect all new Work and the existing building and its contents against inclement weather. Supply and install equipment and enclosures necessary to provide this protection from beginning to completion of the Work.
- E3.2 Do not apply any roofing whatsoever during any inclement weather including when the temperature may fall lower than + 10 Celsius.
- E3.3 Do not expose roofing materials, vulnerable to water or sun damage, in quantities greater than can be weatherproofed in one day. Use only clean and dry materials and apply only during weather that will not introduce moisture into the roof system. This would include days of excessively high relative humidity. Undertake only that amount of roofing that can be completed as specified in the same day or prior to inclement weather forcing a shutdown of the operations.
- E3.4 Apply roofing over clean and dry surfaces and in accordance to C.R.C.A. and /or manufacturers guidelines and as amended herein.
- E3.5 Heat bitumen in accordance to the manufacturers recommendations. Do not exceed the flash point or finished blowing temperature. Apply bitumen at temperature recommended by manufacturer.
- E3.6 All materials on the roof are to be stored in such a manner as to prevent blow-offs during high winds as well as to protect from moisture.
- E3.7 Should the roofing operations be terminated during the day for unforeseen circumstances all exposed vapor barrier, felts or drywall **MUST** be fully glaze coated with bitumen prior to leaving the site that day.
- E3.8 Protect the surrounding surfaces against damage from the roofing operations. Where hoisting is necessary protect the buildings by hanging tarpaulins. Should equipment be parked on the surrounding lawn, it shall be protected with 3/4" plywood. Materials nor debris shall be stored or stock piled on adjoining roof areas that are not being replaced.
- E3.9 Provide protection for the public using walkways, grounds, entrances, etc., by using proper warning signs, hoarding, shelters, or barricades as agreed to by the Contract Administrator.
- E3.10 Where Work must or will continue over the finished roofing membrane, the roofer will protect it with plywood sheathing.
- E3.11 Removal of (opening up) existing roof membrane shall be done only after consultation with and agreement by the Contract Administrator. Remove only that portion that can be fully completed as specified within the same day Work period.
- E3.12 Employ qualified Mechanical Tradesmen to disconnect existing roof top units and to move the units to allow complete installation of roofing membrane, insulation and vapor barrier as specified herein. The same trades people shall be responsible for any required alterations, such as extending ducts or electrical, as is required to properly reconnect of the units. The roofer shall be held responsible for any damage to mechanical units from the roofing operations. Contact building tenants prior to any disconnections.
- E3.13 Notify Contract Administrator and ensure he has proper time to appear on site during application period. Failure to do so may result in the total rejection of all Work completed prior to notifying the Contract Administrator.
- E3.14 Inspect all roof decking prior to installation of roofing system and report all defects or unsuitable conditions to the Contract Administrator and correct deficiencies as directed.

- E3.15 The site shall be inspected prior to commencement of Work to ensure no current anomalies are present such as lawn damage, asphalt on walls, broken windows. etc. All anomalies shall be reported to the Contract Administrator. They shall then be recorded and photographed by both parties at that time. Should no anomalies be reported prior to Work commencing it shall be assumed that none existed prior to commencement.
- E3.16 Use only equipment in good working order including all thermometers and gauges. Locate equipment as instructed by the Contract Administrator. Maintain continuous supervision while kettles in operation.
- E3.17 All materials being used in the roofing assembly are to be fully bonded together. No sprinkle mopping of any adhesives or bitumen will be accepted. Layers of fiberboard shall be fully back mopped to ensure 100% adhesion.
- E3.18 All applicable safety regulations must be strictly followed at all times.

E4. DESCRIPTION OF WORK PAN AM POOL ROOF AREAS C3, D3 & E3

- E4.1 The existing sheet metal flashing shall be removed and discarded from site to an authorized grounds.
- E4.2 The existing roof assembly shall be removed to the deck and discarded from site to an authorized nuisance grounds. **Care must be taken when removing the tie in to the north south existing roof divider. The insulation has been mechanically fastened to allow it to be easily removed without damaging the underlying vapour barrier. The new vapour barrier MUST tie onto the existing barrier by a minimum of 12".**
- E4.3 The existing divider running north to south is to remain in place.
- E4.4 All existing curbs, sleepers and other lumber shall be discarded and replaced with new constructed from the specified lumber.
- E4.5 **ALL** loose vapor barrier shall be scraped from the deck and also discarded as above. The roof deck is to then be swept clean of all dirt and debris.
- (a) NOTE: ALL LOADS OF DEBRIS REMOVED FROM SITE SHALL BE PROPERLY TARPED**
- E4.6 Temporarily disconnect and remove mechanical units as required to allow roofing operations to continue. Ensure all units are in working condition prior to removal. Should the unit be malfunctioning advise the Contract Administrator prior to removal. If this is not done the Contractor may be held responsible for the repair of the unit. Use only qualified mechanical trades people for these operations.
- E4.7 All plumbing vents shall be extended at this time. Existing cast hubs shall be removed (as required) and the appropriate length black ABS extensions securely clamped to the existing plumbing using Fernco couplers.
- E4.8 Install 1/4" Dens-Deck drywall. Mechanically fasten to meet factory Mutual 90 m.p.h. wind uplift ratings. This is to be a minimum of 12 screws and plates per 4' x 8' sheet (3 rows of 4). The outside edge screws shall be 4" from the outside edge of the sheets. The perimeter edges shall have the number of fasteners increased by 50% and the outside corners shall be increased by 75%. The perimeter edge distance is defined as the lesser of:
- (a) 10% of the building width or,
- (b) 40% of the eave height, with a minimum of 4'.

- E4.9 Torch adhere the new vapour barrier to the Dens-Deck. No primer shall be used for this application. **Apply no heat to the Dens Deck to eliminate silicon bleed.** The bottom ply shall be the Elastophene Flam 2.2 and the top ply shall be the Elastophene SP (sanded side face up). All wood Work shall be completed after both plies are installed. **Two ply Elastophene Flam 2.2 stripping shall be installed up and onto the top of the concrete wall panels. Coat all concrete with the specified primer.** A 24" width of 1/2" pwf plywood shall be installed along the north and south edges in lieu of the Dens Deck. Install new pressure treated plywood on the walls of area C3 and carry the vapour barrier 8" up the new plywood.
- E4.10 All existing parapet blocking shall be removed and discarded. New parapets shall be constructed using 2x6 pressure treated studs and plates with 1/2" pressure treated plywood on both sides. The pony wall shall be fully insulated with batt insulation. The parapets shall be securely fastened in place with #12 Deck Fast screws 16" on center. The walls shall be fabricated with a level top plate. In other word the studs shall be cut to the appropriate lengths to follow the slope of the steel deck. The top of the parapet shall be at the same elevation as the parapets already installed on area A3 and B3. Confirm on site that this height will ensure a that the parapet is a minimum of 6" above the top of the finished new roof.
- E4.11 In the case of area C3 the existing blocking shall also be discarded and the new blocking will consist of 2 layers of pwf 2x6 lumber on flat and a single layer of 1/2" pwf plywood sandwiched between the two layers. The new blocking is to cantilever past the edge of the roof so that it extends to the outside face of the new siding. A new drip flashing is to be incorporated for this area. The existing siding shall also be replaced with new prefinished siding of a similar profile. Siding shall be a minimum of 24 gauge. Fasten with matching color hex head screws. Cover walls with Tyvek and tape all joints prior to the installation of the siding.
- E4.12 All curb blocking shall be a minimum of 8" up above the top of the finished roofing.
- E4.13 Two new 12" wide overflow scuppers shall be installed on each roof area in similar locations to that of areas A3 and B3. The exact locations shall be determined on site by the Contract Administrator.
- E4.14 All pitch boxes shall be replaced with wood curbs wherever possible. These shall be constructed as detailed. All items entering the curbs shall do so through the sides. The curbs shall be designed so as to ensure any entry points are a minimum of 8" off the roof. The curbs shall be fully insulated and a plywood and metal cover installed.
- E4.15 Install new roof control joints in the locations indicated on the roof plan. Control joints shall be constructed from 2x6 pwf framing with 1/2" pwf plywood on either side. Stud spacing shall be no greater than 24". The cavities shall be filled with batt insulation. The control joints shall be securely fastened in place with 4" Deckfast screws spaced 24" on center.
- E4.16 Adhere the base layer of 2" Colgrip insulation to the vapour barrier using the specified adhesive. The application of the adhesive must be done in strict accordance to the manufacturers guidelines so as to obtain a minimum uplift equal to 90 m.p.h.
- E4.17 Adhere the top layer of 2" Colgrip insulation using the same adhesion guidelines as for the first layer.
- E4.18 Adhere the modified bitumen base sheet to the insulation. Ensure no wrinkles are present and that all side and end laps are properly sealed. Install screws and plates spaced 12" on centre around the perimeter edge of the roofs as well as 12" on centre around all curbs, sleepers, and other such roof projections. The membrane stripping shall cover all plates. Fasteners and fastening shall be as required by Soprema.

- E4.19 Install Soprema 6" Firestop along all parapet roof connections as well as around all curbed openings as required to eliminate risk of fire. The membrane shall extend 3" up the vertical and 3" onto the top of the insulation.
- E4.20 Loose lay the expanded polystyrene insulation into the space between the existing insulation and the new control joints at the tie in to adjoining roof areas not being replaced at this time. Loose lay a layer of Soprema Soprabase over the expanded polystyrene and secure all in place with the specified screws and plates. This shall be mechanically fastened so that it can be easily removed later to allow a continuation of the vapour barrier.
- E4.21 Apply the torch applied modified bitumen base sheet stripping in strict accordance to manufacturers guidelines. All blocking is to first be coated with the appropriate primer. The stripping shall be terminated 1" down the outside face of the concrete wall panels. Corner gussets shall be installed on all inside and outside corners.
- E4.22 Set the base flanges of the Thaler Stackjacks in a bed of mastic. Seal in with a single ply of torch applied base sheet membrane. The ABS riser shall extend 1/2" above the top of the base and a bead of sealant is to then be applied to the top lip of the riser and the top cap installed.
- E4.23 Install the Flash-Tite Wire and Cable Flashing wherever any cables penetrate the roof. Insulate the vent with polyurethane insulation.
- E4.24 Torch adhere the cap sheet to the base sheet once again ensuring no wrinkles are present and that a minimum of 1/8" asphalt flow is present along the edges of all laps. Excessive seepage is not acceptable.
- E4.25 Torch apply the cap sheet stripping in strict accordance to the manufacturers guidelines. The stripping shall be carried to the outside face of the parapets and 12" up the adjoining walls.
- E4.26 Install the new cap flashing on all parapets in the same manner as that already installed on area A3 and B3. Install new cap flashing on all sleepers and roof dividers.
- E4.27 All vent curbs shall be filled with spray in place polyurethane foam insulation. The insulation shall be installed to the top of the curb so as to drain moisture out.
- E4.28 Reinstall all roof top units. Extend all duct work, gas lines, and electrical as required to allow proper installation.
- E4.29 Reconnect and insulate all ducts. Coat with an appropriate fibrated emulsion. Coat all surfaces with aluminum paint.
- E4.30 Insulate the underside of all drain bowls with spray in place polyurethane foam insulation. Pressurized froth packs are to be used. Insulate the drain lines with pvc jacketed insulation for a distance of 12' from the drain bowls. Ensure a proper barrier connection between the existing drain insulation if present and the new at the 12' termination. If no existing insulation is present then seal to the drain plumbing.