This section includes Hi-Tuff Thermoplastic Polyolefin (TPO) Mechanically Fastened Roofing System, incorporates maximum 12’,10’,8’,6’ or 4’ wide white, gray or tan 45, 60, or 80mil thick scrim-reinforced membrane. Lexcor Insulation can be mechanically fastened to the roof deck. Adjoining sheets of membrane are overlapped approximately 3” and joined together with a minimum 1-1/2” wide heat weld. This system includes base Lexcan flashings, primary flashings to roof protrusions, and integral roofing control and expansion joints. Cant strips are not required for single ply applications.

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Word processing versions of this specification are available. Contact your Lexcan representative for further information.

This specification is presented as a guide only. The specifying authority remains responsible to verify all regulatory requirements and installation methods, including the suitability of a product or system for a particular application, other than those agreed upon in advance, made in writing and relating to a specific project.

This specification section includes performance, proprietary, and descriptive type descriptions; most choices are in square brackets [ ], edit text to avoid conflicting requirements.

# General

## SECTION INCLUDES

In this article, select the components or assemblies that are intended to be part of the content of this section and will not be included in other sections.

### Substrate preparation

### Sheathing over deck surface.

### Vapour retarder.

### Insulation.

### Membrane roofing.

### Membrane Accessories

### Membrane Flashings

### Roofing Accessories.

## RELATED SECTIONS

In this article, indicate those sections that inter-rely on this section. The listing below is only partial and should be edited to include those sections specific to the project that describes subjects or products that affect this section directly. No sections are listed for this is a Specification Guide and not part of a Building Specification. Typical Sections include: steel, concrete, wood deck, roof deck, wood blocking and curbing: wood nailers, sheet metal flashing and trim, roof hatches, unit skylights, plumbing specialties: roof drains, sumps, hoppers, HVAC: prefabricated curbs for equipment, electrical lighting protection.

### Section [05 31 23 - Steel Roof Decking]: Roof deck substrate.

### Section 06 10 13 - Wood Blocking and Curbing: [Wood nailers] [cant strips].

### Section 07 26 00 - Vapour Retarders.

### Section 07 27 00 - Air Barriers.

Include the following paragraph where reroofing is involved.

### Section 07 50 05 - Preparation For Re-roofing.

### Section 07 62 00 - Sheet Metal Flashing and Trim: Counter flashing and [\_\_\_\_\_].

### Section 07 63 00 - Sheet Metal Roof Specialties: Counter flashing and [\_\_\_\_\_].

### Section 07 72 33 - Roof Hatches: Counter flashing and [\_\_\_\_\_].

### Section 08 62 00 - Unit Skylights: Skylight frame [and integral curb]: Counter flashing and [\_\_\_\_\_].

### Section 08 45 23 - Translucent Panel Wall and Roof Assemblies: Counter flashing and [\_\_\_\_\_].

The following related work may be listed by Division rather than specific sections, due to the fact that the mechanical and electrical consultants are not necessarily "in-house" If section numbers are known, delete reference to Divisions.

### [Division 22 – Plumbing] [Section 22 42 01 - Plumbing Specialties]: Roof [hoppers] [sumps] [drains].

### [Division 23 – Heating, Ventilating, and Air-Conditioning (HVAC)] [Section [\_\_\_\_]]: Prefabricated curb for mechanical equipment.

### [Division 26 – Electrical] [Section [\_\_\_\_]]: Lightning protection.

## REFERENCES

Edit this article after editing the rest of this section. Only list reference standards below, that are included within the text of this section, when edited for a project specification - delete other references that do not apply. Comparable Canadian and US are listed for some products.

### [ASTM C578-13 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.]

### [ASTM C612-10 - Standard Specification for Mineral Fiber Block and Board Insulation.]

### [ASTM C726-12 - Standard Specification for Mineral Fiber Roof Insulation Board.]

### [ASTM C1002-07(2013) - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.]

### [ASTM C1177/C1177M-13 - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.]

### [ASTM C1396/C1396M-13 - Standard Specification for Gypsum Board.]

### [ASTM D6878/D6878M-13 - Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing.]

### [CSA-A231.1-06/A231.2-06 (R2010) - Precast Concrete Paving Slabs/Precast Concrete Pavers.]

### [CAN/ULC-S107-10 - Methods of Fire Tests of Roof Coverings.]

### [CAN/ULC-S701-11 - Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.]

### [CAN/ULC-S702-09 - Standard for Mineral Fibre Thermal Insulation for Buildings (Includes Amendment 1, 2012).]

### [CAN/ULC-S704-11 - Standard for Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.]

### [CRCA (Canadian Roofing Contractors' Association) - CRCA Roofing Specifications Manual.]

### [FM (Factory Mutual) - Roof Assembly Classifications.]

Edit the following paragraph to reference a provincial roofing association's manual.

### Province of [\_\_\_\_\_] Roofing Contractors Association - Roofing Specifications Manual.

### [ULC-BM-14 - Building Materials Directory (2014 Edition).]

## SYSTEM DESCRIPTION

### Assembly of components include Hi-Tuff TPO Mechanically Fastened Roofing System with [vapour barrier][vapour retarder], [fully adhered]and/or[mechanically attached] insulation, and TPO membrane sheets that are to be mechanically fastened to the roof deck with Lexgrip™ membrane fasteners and heat welded together, as well as all related roofing accessories in strict accordance with specifications and details approved by the roof system manufacturer.

## ADMINISTRATIVE REQUIREMENTS

### Section [ ]: Project management and coordination procedures.

### Coordination:

#### Coordinate with other work having a direct bearing on work of this section.

#### Coordinate the work with the installation of associated metal flashings, as the work of this section proceeds.

### Pre-installation Meetings:

#### Convene [one (1) week] [[\_\_\_\_] weeks] before starting work of this section.

#### Review preparation and installation procedures and coordinating and scheduling required with related work.

## SUBMITTALS

Do not request submittals if this specification section or drawings sufficiently describe the products of this section

### Section [ ]: Submission procedure

### Product Data: Provide characteristics on membrane materials, flashing materials, insulation, vapour retarders, [protective coating].

### Samples: Submit [two (2)], [<[\_\_\_\_\_] mm><<[\_\_\_\_\_] inch>>] in size illustrating [insulation] [coloured coating].

### Shop Drawings:

#### Tapered insulation, roof cricket infill, setting plan layout, and details.

#### Membrane layout on detailed roof plan, complete with full assembly section, vertical parapet details, joint or termination detail conditions, and conditions of interface with other materials.

### Manufactures field reports: Indicate procedures followed; ambient temperatures, humidity, wind velocity during application, [\_\_\_\_\_].

### Sustainable Design:

#### Section[ ]: LEED documentation procedures.

#### Provide required LEED documentation for Product [recycled content] [regional materials] [low-emitting materials].

#### Manufacturer's Certificate: Certify that Products meet or exceed [specified requirements].

## QUALITY ASSURANCE

### Roofing Contractor shall be an approved applicator of the roofing system supplier. The Prequalified contractors are: [\_\_\_\_\_].

### Workmen shall be trained and experienced in the installation of this type of roofing system and shall be under full time competent supervision.

### Comply with all industry recommended safety practices during construction.

### Perform Work to [CRCA Roofing Specifications Manual] [manufacturer's written instructions] [[\_\_\_\_] Manual]. Maintain [one (1) copy] [[\_\_\_\_] copies] of document on site.

## DESIGN *[REGULATORY]* REQUIREMENTS

Only include this article when required by applicable code criteria.

### Conform to applicable code for roof assembly fire hazard requirements.

Edit the following paragraphs as appropriate to code, Owner, or Owner's Insurance Underwriter requirements. Insurance underwriters will assess an Owner's building for floor and roof assembly types and determine insurance premiums accordingly. Delete paragraphs if inapplicable. The Roofing System must achieve a UL Class A, B or C

### [CAN/ULC-S107]: Class [A] Fire Hazard Classification.

The following paragraph are not yet Ontario Building Code requirement, applies to metal deck, and concrete assemblies only.

### The specified roofing assembly must have been successfully tested by a qualified testing agency to resist the design uplift pressures calculated according to

#### *ANSI/SPRI WD-1 "Wind Design Standard Practice for Roofing Assemblies” American Society of Civil Engineers (ASCE 7) International Building Code (IBC). Or*

#### *[FM]: Roof Assembly Classification, Class [1] Construction, wind uplift requirement of [1-60] [1-90], in accordance with FM 1-28 "Design Wind Loads" and complies with FMG Property Loss Prevention Data Sheet 1-29 for enhancements at the perimeter and corners.*

#### *CSA A123.21 and Provincial Building Code wind uplift requirements; obtain applicable wind isotachs and Building Code hourly wind velocity pressure for 1 in 50 year return value, necessary for the selection of the proper roof system design specific to this project.*

## DELIVERY, STORAGE, AND PROTECTION

### Deliver all roofing materials in original, unopened containers, complete with labels indicating brand name, contents, usage instructions and safety precautions. Membrane rolls are to be left in their unopened packaging until prior to install.

### Protect membranes from cuts, abrasion or other abuse that might adversely affect performance in service.

### Adhesives, sealants and flashing accessories are to be stored in a clean, dry area at a temperature between 5°C and 27°C. When the temperature is expected to fall below 5°C, outside heated storage boxes should be provided on the roof for temporary storage of adhesives and sealants.

### Protect insulation, vapour retarder and other materials subject to water damage while stored on the job-site by covering them with a weatherproof tarpaulin and keeping them a minimum 15 cm (6") off of the deck or ground.

## SITE CONDITIONS

### Ambient Conditions:

#### Do not apply roofing membrane during inclement weather or when ambient temperature falls below **-5** degrees C or above **30** degrees C.

#### Install each roof layer on a dry substrate, free of snow and ice. Use only dry materials and apply only during weather that will not introduce moisture into the system.

#### Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.

### Schedule and execute work to prevent leaks and excessive traffic on completed roof sections. Care should be exercised to provide protection for the interior of the building and to ensure water does not flow beneath any completed section of the membrane system.

## WARRANTY

### Contractor's Warranty: Provide two (2) year warranty on roofing, dated from time of Substantial Performance. The contractor will repair, at their expense, any leaks in the roofing membrane and membrane flashing including any related sheet metal work.

### Manufacturer's Warranty: Roof System Manufacturer shall provide a written [Lexguard Classic, Essential, and Ultimate] warranty on supplier's standard form for a period of [5, 10, 20, 25, 30] years from the date of roofing system completion.

### Projects with extended wind speed warranty coverage greater than 90 km/h and projects requiring a 20 year or greater Lexguard Ultimate warranty will require a design review by Lexcan’s design department.

### All membrane and accessory components must be Lexsuco Corporation products or approved equal.

# Products

SPECIFIER: Rigid roof support panels are commonly used on steel roof decks to provide a smooth surface and leveling layer for the air/vapour retarder in a conventional roofing system and act as a thermal barrier under insulation products. Please ensure specified support panels are approved by roof system manufacturer.

## VAPOUR RETARDER SUPPORT PANELS

### GLASS FACED GYPSUM BOARD: Panels composed of gypsum core, reinforced, faced with glass mat conforming to ASTM C1177, Standard Specification for Glass Mat *(Gypsum Substrate for Use as Sheathing.)*

#### Thickness: [6.4 mm (¼ in)], [12.7 mm (½ in)], [15.9 mm (⅝ in)]

#### Specified product: [coated], [non-coated] Georgia-Pacific Gypsum LLC; DensDeck or comparable product as supplied by Lexsuco Corporation.

### LIGHTWEIGHT CEMENTITIOUS PANELS: Low density, fibre reinforced, water resistant cement support panels.

#### Thickness: 11.1 mm (7/16 in)

#### Specified product: Dexcell Cement Roof Board or comparable product as supplied by Lexsuco Corporation.

## VAPOUR RETARDER

SPECIFIER: Lexcor self-adhesive vapour retarder membranes do not require primer on metal decking. However, usually requires primer for concrete decks. Self-adhered membrane cannot be used under insulation boards adhered with hot asphalt, Permate Kraft paper products will have to be considered in this type of application.

SPECIFIER: Lexshield self-adhesive vapour retarder adheres very well to a clean metal deck surface, no support panel is required.

### PRIMER ADHESIVE: Synthetic elastomeric based liquid adhesive used to bond self-adhesive membrane to [steel, concrete, wood] wood deck.

#### Specified product: Lexcor Multigrip Fire Retardant Primer by Lexsuco Corporation.

### POLYETHYLENE SHEET VAPOUR RETARDER: to CAN/CGSB -51.34-M86, sheet with moisture vapour transmission rate less than 2.4 ng/Pa•s• m2 (0.04 perms) when tested in accordance with ASTM E-96, procedure B Construction.

#### Thickness: [0.15 mm (6 mil)], [0.25 mm (10 mil)]

#### Specified product: Lexcor PE-[6,10] Vapour Retarder sealed with Lexcor Lexshield Tape by Lexsuco Corporation. Use Lexshield peel & stick Air and Vapour Barrier Membrane for protrusions and openings to secure vapour barrier continuity.

### POLYETHYLENE SELF ADHERED AIR/VAPOUR RETARDER: shall be a ‘peel and stick’ membrane consisting of cross laminated, high density polyethylene film laminated to a high tack, all temperature adhesive, backed with a [silicone release liner], [plastic release liner]. Vapour Barrier shall demonstrate a typical moisture vapour transmission rate of [11.5 ng/Pa•s• m2 (0.2 perms) when tested in accordance with ASTM E-96, procedure A, a typical tensile strength in excess of 48 kPa in accordance with ASTM D-882 and a minimum 180° peel strength of 400 g/cm after 6 weeks adhered to stainless steel at 22°C.

NOTE: Vapour Barrier membrane shall be appoved by manufacturer for installation down to -20°C (-4°F) without the aid of primers.

#### Thickness: 0.2 mm (8 mil)

#### Specified product: Lexcor LexShield™ Air/Vapour Barrier Membrane by Lexsuco Corporation.

### TEXTURED POLYETHYLENE SELF ADHERED VAPOUR RETARDER: Reinforced membrane with weaved polypropylene laminated to a non-weaved polyester top layer: moisture vapour transmission rate less than 2.4 ng/Pa•s• m2 (0.04 perms) when tested in accordance with ASTM E-96, procedure B Construction.

#### Thickness: 0.15 mm (6 mil)

#### Specified product: Lexcor Permate Stick Peel n’ Stick Type 1 Vapour Barrier by Lexsuco Corporation.

### ASPHALT LAMINATED REINFORCED KRAFT PAPER VAPOUR RETARDER: Fibreglass edge reinforced kraft Fibreglass edge reinforced Kraft vapour retarder conforming CAN/CGSB-51.33M89, Type II, *Vapour Barrier Sheet Excluding Polyethylene* to for Use in Building Construction.

#### Specified product: Lexcor Permate Vapour Barrier by Lexsuco Corporation.

### TWO PLIES OF NO. 15 ASPHALT PERFORATED FELT: Two plies of asphalt saturated organic roofing felt, perforated, conforming to CSA123.3-05, Type I, Asphalt Saturated Organic Roofing Felt, laminated and adhered to the substrate with hot asphalt.

#### Specified product: Lexcor No. 15 Perforated Roofing Felt by Lexsuco Corporation.

### MODIFIED BITUMEN MEMBRANE BASE SHEET: SBS roofing membrane, mopping grade, with [composite heavy-duty] [non-woven polyester reinforcement] [and glass mat], conforming to CGSB 37-GP-56M, *Membrane, Modified, Bituminous, Prefabricated and Reinforced for Roofing.*

#### Thickness: [2 mm (80-mil)] minimum

#### Specified product: [ ]

## INSULATION

### EXPANDED POLYSTYRENE INSULATION (EPS): An unfaced styrene polymer material produced by a mold/expansion process that results in coarse closed cells containing air. Insulation shall conform to CAN/ULC-S701, Type [1,2,3].

#### Thickness: [Base Layer size], [Top Layer size] [ ] *(can be specified as thick as 24”, typical sheet size is 48”x48” or 48”x96”. Shiplap can be added ½” or ⅝”.)* [mechanically attached, (4,6,8,10,12,16,20 fasteners/ board], [fully adhered]

#### Specified product: IZOLON expanded polystyrene insulation board by Fransyl Ltd.

NOTE: EPS should not be used under an adhered membrane when a solvent based adhesive is used. Consult a Lexcan Technical Representative for special installation instructions where solvent adhesives are used. EPS is available in the following strengths: 12 psi, 18 psi, 23 psi, 30psi, 40 psi and 60 psi.

### EXPANDED POLYSTYRENE PREFABRICATED INSULATION BOARD: High density panels composed of high-density closed-cell polyisocyanurate foam core with coated fibreglass facers. Panels shall conform to CAN/ULC S-704, factory laminated to an unfaced styrene polymer material produced by a mold/expansion process that results in coarse closed cells containing air. Insulation shall conform to CAN/ULC-S701, Type [1,2,3].

#### Thickness: [Base Layer Board Size]: 1220mm x 2440mm (4’- 0” x 8’- 0”) [mechanically attached, (4,6,8,10,12,16,20 fasteners/ board], [fully adhered]. Thickness, [50mm - 610mm] [2” – 24”] inches, [shiplapped edges all 4 sides]

#### Specified product: Izolon R+ (2 in 1) prefabricated insulation panel by Fransyl Ltd.

### POLYISOCYANURATE INSULATION: A rigid foam insulation produced from a chemical reaction between polyol and polymeric isocyanate that results in closed cells containing captive blowing agents. The foam core is integrally laminated to [organic felt paper, or inorganic fibreglass-reinforced facers]. Insulation shall conform to CAN/ULC S-704, *Standard for Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.*

#### Thickness: [Base Layer Board Size]: [(1220mm x 2440mm), (1220mm x 1220mm) (4’- 0” x 8’- 0”), (4’- 0” x 4’- 0”) [mechanically attached, (4,6,8,10,12,16,20 fasteners/ board], [fully adhered]. Thickness, [25mm - 115mm] [1” – 41/2”] inches.

#### Specified product: [Lexcor Isolex™, Lexcor Isolex™ II] manufactured by Lexsuco Corporation.

### TAPERED [CRICKET] INSULATION: Insulation panels are to measure 1220 mm (4') square and are to slope at the rate of 2%, with a minimum thickness of [50mm, 101.6 mm (4",2”) inches at the drains. Shiplapped edge 2”x 2”, panels are to be positioned and installed in accordance with the shop drawings.

#### Specified product: [Bizolon R+ (2 in 1) prefabricated insulation panel by Fransyl Ltd.], [Lexcor Isolex™, Lexcor Isolex™ II] by Lexsuco Corporation.

## COVERBOARDS

### HIGH DENSITY POLYISOCYANURATE PANEL: High density panels composed of high density closed cell polyisocyanaurate foam core with coated fibreglass facers. Panel shall be compliant with ASTM C 1289, Type II, Class 4, Grade 1, 2 and 3. Panels shall conform to CAN/ULC S-704, Standard for Thermal Insulation, Polyurethane, and Polyisocyanurate Boards, Faced.

### Thickness: 6.4 mm (1/4 in)

### Specified product: Lexcor Lexboard by Lexsuco Corporation.

## MEMBRANE MATERIALS

SPECIFIER: Lexcan and Hi-Tuff TPO membranes are available in highly reﬂective white, tan, and gray colours, in 45-mil, 60-mil and 80-mil thicknesses. (EXTRA High Slope with an additional flame retardant for higher-slope fire code approvals is also available). Sixteen special colours are also available (contact your local Lexcan representative for details). Hi-Tuff TPO is offered in 4, 5 and 6-ft perimeter sheets and 8, 10, and 12-ft ﬁeld sheets. All rolls come in 100’ lengths.

### Membrane: Thermoplastic Polyolefin (TPO) Membrane

#### Description: (White, Grey, Tan) Reinforced TPO roofing membrane. Formulated for long-term, direct exposure to the elements. Prefabricated membrane, conforming to ASTM D-6878, *Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing*.

#### Thickness: [1.1 mm (45 mil)][1.5 mm (60 mil)][2.0 mm (80 mil)]

#### Specified product: Lexcan Hi-Tuff TPO Membrane by Lexsuco Corporation.

## ADHESIVE MATERIALS

SPECIFIER: Lexcan Hi-Tuff TPO Bonding Adhesive – 5.6 m᷾² (60 ft²) per gallon finished surface. Coverage rates are average and may vary due to conditions on the job site. .

LEXCOR INSULTAC II: Membrane installation adhesive, low viscosity insulation adhesive is a two component, essentially VOC free, all purpose, low rise, polyurethane foamable adhesive that contains no solvents and sets in minutes. Application is quick and easy resulting in significant labor savings for the roofing contractor. See Lexcor Product Data sheet for packaging, coverage rates and list of dispensing equipment. In roof retrofit applications approved substrates shall be tested in conformance with “ANSI/SPRI IA-1 2010-Standard field test procedure for determining the mechanical uplift resistance of Insulation adhesives over various substrates.” Contact your Lexcan Representative for details.

### SOLVENT-BASED BONDING ADHESIVE: Solvent-based bonding adhesive used to attach membrane to substrate, either horizontally or vertically.

#### Specified Product: Lexcan Hi-Tuff TPO Bonding Adhesive by Lexsuco Corporation.

## INSULATION FASTENERS

### Description: Insulation securement screws are to be Factory Mutual listed and approved #12 diameter with round or flat head, corrosion treated to withstand 30 cycles of the Kesternich test with only a minimum amount of red rust showing. Fasteners must penetrate a minimum 19 mm (3/4") into steel decks or 25 mm (1") into wood decks. Holes for concrete anchors must be pre-drilled not less than 21 mm (1/2") deeper than the penetration depth of the fastener, with a drill bit recommended by the fastener manufacturer. Stress plates are to be 76 mm (3") diameter galvalume metal to fit screw.

### Specified Product: Lexcor Lexgrip™ Insulation Fasteners or [Lexcor Lexgrip™ Pre-Assembled Insulation Fasteners] treated with Cx-5 coating, complete with metal stress plate.

## WOOD NAILERS

### Description: Blocking and rough framing. No.1 Spruce conforming to National Grades Authority, Standard Grading Rules for Canadian Wood to CSA 0141-05. Wood for roofing to be pressure treated to CSA 080-97, Series (R2002). Plywood Sheathing to be exterior grade conforming to CSA 0121-M1978 or CSA 0151-M1978, select grade, good one side, thickness as indicated.

Select flashings compatible with membrane and associated materials. T-Joint Covers and pre-fabricated flashing accessories are also available.

## ACCESSORIES

### PARAPET/WALL FLASHING: TPO membrane as described in 2.5 cut to appropriate widths and lengths.

### FLASHINGS: Lexcan Hi-Tuff TPO Un-reinforced Membrane by Lexsuco Corporation.

### PERIMETER SECUREMENT: Lexcan Hi-Tuff TPO Stripbond II by Lexsuco Corporation

### COVERSTRIP: Lexcan Hi-Tuff TPO PS Coverstrip by Lexsuco Corporation.

### PRIMER: Lexcan Hi-Tuff TPO Primer by Lexsuco Corporation.

### MEMBRANE CLEANER: Lexcan Weathered Membrane Cleaner by Lexsuco Corporation.

### CUT EDGE SEALANT Lexcan Hi-Tuff TPO Cut Edge Sealant by Lexsuco Corporation.

### WATER CUT OFF MASTIC: Lexcan Universal Single Ply Sealant by Lexsuco Corporation.

### POURABLE SEALER: Lexcan Thermoplastic Pourable Sealer by Lexsuco Corporation.

### TERMINATION SEALER TAPE: Lexcan Water Cut-Off Tape by Lexsuco Corporation.

### TERMINATION BAR: Lexcan Termination Bar by Lexsuco Corporation.

### PIPE FLASHINGS: Lexcan Hi-Tuff TPO Pre-formed Pipe Boots or Split Pipe Boots by Lexsuco Corporation.

### IRREGULAR ROOF PROTRUSIONS: Lexcan Hi-Tuff TPO Molded Sealant Pockets and Lexcan Thermoplastic Pourable Sealer by Lexsuco Corporation.

### TRAFFIC PADS: Lexcan Hi-Tuff TPO Walkways by Lexsuco Corporation.

### ROOF EDGE AND FLASHING METAL: Lexcan Hi-Tuff TPO Metal, matching the colour of the membrane by Lexsuco Corporation.

## ROOF SYSTEM FLASHING ACCESSORIES

SPECIFIER: Most Lexcor accessories can be custom fabricated to suit the projects unique features. Roof drains can be pre-assembled complete with flow control inserts and maxflow seal to seal a retrofit roof drain to an existing drainpipe rapidly and efficiently. Vent stack flashings can be ordered extra long so that they can be fastened to roof deck to make up the length for R-30 insulation thicknesses. If standard sizes are used wood blocking curb shall need to be shown on a detail to the construction documents.

### VENT STACK FLASHING: Vent caps shall be sealed to the pipe with Lexcor Flash-Tite™ Drain and Vent Seals. Vent pipes shall be flashed to the roof membrane with two part, telescoping vent stack covers featuring an 18” high base flange and a 127mm (5”) Cap. Vent Stack flashing shall be fabricated from seamless spun aluminum. Caps and base flanges are to match the size of vent pipe. Install in strict accordance with manufacturer’s directions and flash into the roof membrane in accordance with the roofing membrane manufacturer’s directions and good roofing practice. Vent Stack Flashing as supplied by Lexsuco Corporation, Lexcor Flash-Tite™ Standard Vent Stack Covers (Seamless spun mill finish VB-418-Cap model SCA-4).

### VENT STACK FLASHING (B VENT): B-Vent Flashings shall be fabricated from a single piece of spun aluminum metal this is free from joints. Flashing stack is to be fourteen inches (12,14,18”) high complete with Rain Collar. Base flanges are to match the size of vent pipe. Install in strict accordance with manufacturer’s directions and flash into the roof membrane in accordance with the roofing membrane manufacturer’s directions and good roofing practice. B-Vent Stack Flashing as supplied by Lexsuco Corporation, Lexcor Flash-Tite™ B-Vent Flashings.

### ROOF DRAINS: New Construction drain hoppers shall be 2 mm thick seamless spun aluminum and feature a 430 mm (17") diameter flashing flange, 250 mm (10") downspout, membrane stop and clamping ring studs. [Drains shall also include an integral deck clamp assembly composed of a 65 mm thick cast aluminum hopper reinforcement ring welded to the hopper and adjustable aluminum deck clamp mounted on 4 stainless steel rods]. Drains shall come complete with separable cast aluminum membrane clamping ring, 178 mm (7”) high cast aluminum strainer [and spun aluminum Flow Control Insert].

#### Specified Product: Lexcor Flash-Tite™ NC Aluminum SuperDrains [with: Flash-Tite™ Integral Deck Clamp; Flash-Tite™ Flow Control Insert; Mechanical Joint Connector] by Lexsuco Corporation. Drain sizes to match drain pipe diameters.

### ROOF DRAINS: Retrofit drain hoppers shall be 2 mm thick seamless spun aluminum and feature a 430 mm (17") diameter flashing flange, 305 mm (12") downspout, membrane stop and clamping ring studs. Drains shall come complete with separable cast aluminum membrane clamping ring, 178 mm (7”) high cast aluminum strainer, stainless steel hardware [and spun aluminum Flow Control Insert].

#### Specified Product: Lexcor Flash-Tite™ RR Aluminum SuperDrains [with: Flash-Tite™ Integral Deck Clamp; Flash-Tite™ Flow Control Insert; Flash-Tite™ Drain and Vent Seal; Maxxflo Pipe Seal] by Lexsuco Corporation. Drain sizes to match drain pipe diameters.

### SUPPORTS: for Gas pipes; Structural Support Base shall consist of a Pressure moulded using a one or two part mix, utilising milled, sieved and graded Styrene Butadiene Rubber (SBR-Recycled Rubber). Accessory must be complete with 40mm x 20mm Aluminium Channel supplied recessed and bonded into the top face of the foot and BBJ insulclamps to support piping. Specified Product: Fix-it Foot Low 250 (250mm x 130mm x 50mm) supplied by Lexsuco Corporation.

### CONDUIT/PIPE SPLIT FLASHING: Two part stainless steel base and floating rain collar, complete with selvedge style seam, pre-applied seam sealant, stainless steel screws and nuts and EPDM rubber pipe seal strip. [Base flashing is to be insulated on the jobsite with moisture resistant rubber foam].

#### Specified Product: Lexcor Flash-Tite™ Conduit (Split) Flashing, model no. \_\_\_\_\_\_\_ by Lexsuco Corporation.

### HVAC & ELECTRICAL FLASHINGS : To be fabricated from seamless spun aluminum, complete with primer coated flanges. Use appropriate flashing for each application.

#### Specified Products: Lexcor Flash-Tite™ Electrical Wire Outlet Post [ 30 cm; 46 cm] high base, complete with rigid PVC cap fitting. Model no. \_\_\_\_\_\_ by Lexsuco Corporation.

#### Specified Products: Lexcor Flash-Tite™ Electrical Wire Socket or Switch Posts [ 30 cm; 46 cm] high base, complete with rigid PVC cap fitting. Model no. \_\_\_\_ by Lexsuco Corporation.

#### Specified Products: Lexcor Flash-Tite™ B-Vent Flashing, diameter to match chimney diameter, complete with adjustable galvanized steel rain collar by Lexsuco Corporation.

#### Specified Products: Lexcor Flash-Tite™ pre-fabricated mastic sealer pockets ("pitch pockets"). [130 mm (5"); 230 mm (9")] high x appropriate diameter to exceed diameter or width of protrusion by 50 mm (2"). Pockets to be sealed with Lexcan Pourable Sealer, a two-part urethane, self-levelling sealant by Lexsuco Corporation.

### ROOF HATCH UNIT[S]: Single leaf type, 762 mm x 914 mm [2’-6” x 3’-0”] inch size, listed by Lexcor: R-100 (Ladder Access) Roof Hatch.

This can be used for simple specifications, Short Form Specification sample. R-100G/DD/VG/SB/R20 (signifies a 30” x 36” galvanized steel hatch with double clear acrylic dome glazing, vandalproof grid, safety bar handle and R-20 insulation system.

**Metal Fabrication Alternatives:**

**G:** Grey primer coated Galvanized Steel; 14 ga. curb & door(s), 22 ga. door liners.

**A:** Mill finished Aluminum; 11 ga. curb & door(s), 18 ga. door liners.

**S:** Stainless Steel.

**C:** Copper (24 oz)

**F**: Galvanized Curb with Aluminum Lid.

**Other Options:**

**SB**: Safety Bar Handle.

**VG**: Vandal Guard.

**SS:** Stainless Steel Hardware.

**D:** Single clear acrylic dome glazing.

**DD**: Double clear acrylic dome glazing.

**DW**: Single white acrylic dome glazing.

**DDW:** Double dome; clear over white glazing.

16”: 16” (406 mm) high curb

18”: 18” (457 mm) high curb

24”: 24” (610 mm) high curb

**SR:** Safety Rail System

**R20**: R-20 Insulation System

**WGC**: Wind Gust Control Unit,

Minimum height the curb should be above the roof system is 8” I recommend that you go 12”

**Piston Forces**: Depending on the wind forces on the hatch if the force is pushing the door open from below then you want to choose the piston that (pulls the door closed)

#### Specified Product: Lexcor R-100G/WGC/SB/R30 by Lexsuco Corporation.

#### Steel Cover and Curb: 2.95 mm [11 gauge] thick primer coated galvanized steel and shall be neatly welded and ground at corners. Door shall have two layers of 66.1mm [2.6 inches] polyisocyanurate insulation; door liner shall be 18 gauge primer coated galvanized steel. Curb shall be *[<305mm; [12 inch]; 457mm [18 inch]; 610mm [24 inch] >> ]* high with two layers of 66.1mm [2.6 inch] polyisocyanurate insulation secured to the curb exterior. Curb shall have 89 mm [3.5 inch, pre-punched flanges. Curb and cap assembly shall be complete with extended flanges ready to receive roof flashings.

#### Roof Hatches Hardware:

##### Wind Gust Control Unit: shall be mounted on the inside of the hatch opposite to the steel hold open arm. Piston forces shall pull the door closed; or [push door open.

##### Roof hatch shall be completely assembled with heavy duty pintle, torsion bar operated doors, latching mechanism, *interior and/or [exterior]* padlock hasps and neoprene draft seal. Door shall be equipped with an steel hold open arm with foam rubber grip handle. All hardware shall be cadmium plated.

##### Hatch shall be equipped with 35mm [1’-3/8”] diameter Safety Bar coated with mil PVC colour coated roof safety green. Safety Bar shall be mounted on the *[right; left]* corner of hatch curb with out impeding operation of the door.

# Execution

## EXAMINATION

Select and edit the following paragraphs as appropriate to the deck type and project conditions. The following examination clauses are for new construction projects, contact your Lexcan representative for existing re-roofing Substrate Preparation.

### Verify actual site dimensions and location of adjacent materials prior to commencing work. Notify Consultant in writing of any conditions, which would be detrimental to installation.

### Verify deck is clean and smooth, free of depressions, waves, or projections, properly sloped to drains.

### Ensure mechanical and electrical systems have been co-ordinated and curbs have been constructed.

### Examine substrate for compliance of conditions that affect installation and performance of the roof system.

### Verify roof openings, curbs, pipes, conduit, sleeves, ducts, and vents through roof are solidly set, and wood blocking and nailing strips are in place.

Select either of the following paragraphs OR in combination.

## PREPARATION - CONCRETE DECK

### Fill surface honeycomb and variations with latex filler.

## PREPARATION - METAL DECK

### Install preformed sound absorbing glass fibre insulation strips supplied by Section 05 31 13, in acoustic deck flutes; to manufacturer's instructions.

The acceptability of applying gypsum sheathing to steel roof decks will be determined by local codes or UL, ULC or FM requirements.

### Lay with long side at right angle to flutes; stagger end joints; provide support at ends.

### Install sheathing on metal deck [using continuous mopping of adhesive on each flute].

### Mechanically fasten sheathing at [perimeter] [full roof area] of roof deck, [to a distance of [<1200 mm><<48 inches>>] in from edges] using [six (6)] [eight (8)] fasteners with washers per board.

### Cut sheathing cleanly and accurately at roof breaks and protrusions to provide smooth surface. Tape joints.

## PREPARATION - WOOD DECK

### Verify flatness and tight joints of wood decking.

### Seal joints of plywood with tape.

### Fill knot holes with latex filler.

## VAPOUR RETARDER SUPPORT PANELS INSTALLATION

Each vapour retarder method has its own method of application refer to Lexcor data sheet for the different application methods. Remove and add items that do not apply to the chosen vapour retarder installation instructions.

### Mechanically Fastened Support Panels

#### Mechanically fasten panels to steel deck using fasteners and plates listed in Section[2.6].[recommended by the membrane manufacturer].

#### On steel decks, ensure that the fasteners engage the top rib of the steel deck and penetrate through the deck a minimum of 19 mm (3/4 in).

#### On steel decks, place the long edge of the board parallel to and located on top rib of the deck for continuous support.

#### Follow the membrane manufacturer’s recommendation for number and spacing of fasteners.

#### Stagger end joints of adjacent boards and butt joints so that they are in moderate contact with each other.

#### Where slopes change direction cut boards cleanly. Avoid breaking boards to conform to the deck.

#### All concrete fasteners and anchors shall have a minimum penetration of 32 mm (1 1/4 in) and shall be approved for such use by the membrane manufacturer.

### Adhered Support Panels

#### Use only adhesive recommended by the membrane manufacturer to secure panel to the deck. Apply adhesive using tools and equipment as recommended by the membrane manufacturer.

## INSTALLATION OF VAPOUR RETARDER

Use following article when a self-adhesive vapour retarder is specified. Make sure that the substrate is approved for this type of installation.

### Application of Self Adhesive Vapour Retarder

#### Where the vapour retarder is applied to a support panel, use only vapour retarder support panels approved by the membrane manufacturer.

#### Where the self-adhesive vapour retarder is to be adhered to a cementitious panel, apply a light coat of primer as recommended by the membrane manufacturers.

#### All surfaces to be primed must be free of dust, or any residue that may hinder adhesion of the vapour retarder. Cover primed surfaces with vapour retarder as soon as possible.

Note: Consult membrane manufacturer for cold weather installation limitations and instructions

#### When applied directly to steel deck align the roll parallel to the flutes of the deck. Ensure that the vapour retarder overlaps are positioned on the top ribs of the deck and supported along their entire length.

#### Beginning at the bottom of the slope and without adhering the membrane, unroll onto the substrate for alignment. Do not immediately remove the release sheet.

#### Overlap each preceding sheet by 75 mm (3 in) at the side laps and 150 mm (6 in) at end laps. Stagger end laps by a minimum of 300 mm (12 in).

#### Once aligned peel back one end of the release sheet and adhere the exposed membrane to the substrate. Peel back the remaining release sheet at a 45º angle to avoid wrinkles in the membrane.

#### If the membrane is not properly aligned, do not adjust it. Instead, cut the roll and start again, making sure that it is properly aligned and that it overlaps the end of the misaligned piece by 150 mm (6 in).

#### Roll the self-adhesive vapour retarder onto the substrate with a 34 kg (75 lb) roller. Finish by aligning the edge of the roller with the lower end of the side laps and rolling up the membrane. Do not cut the membrane to remove air bubbles trapped under the laps. Squeeze out air bubbles by pushing the roller to the edge of the lap.

### Application of Heat Welded Vapour Retarder

Ensure roofing substrates and adjoining work or construction elements pose no fire hazards when heat welding equipment is used. Do not heat weld directly onto surfaces that are easily ignitable (wood or wood composites) or at locations where chimney or back draft effects could pull flames into concealed areas. Consult membrane manufacturer.

#### Primed surfaces must be dry when the vapour retarder is installed.

#### Heat weld the thermofusible vapour retarder onto the substrate in conformance with the manufacturer's written recommendations.

#### Unroll vapour retarder membrane dry onto substrate and align.

#### Overlap side laps a minimum of 75 mm (3 in) and end laps 150 mm (6 in). End laps shall be staggered a minimum of 300 mm (12 in). Begin work at bottom of slopes.

#### Torch membrane so a visible bead of bitumen appears as the membrane is unrolled, ensuring the vapour retarder's complete adherence.

#### Seal vapour retarder membrane at all perimeters, transitions and around each penetration to ensure continuity.

### Application of Polyethylene Vapour Retarder

#### Lay vapour retarder loose over support panel, or directly onto steel deck. Overlap all edges minimum of 100mm (4 in) and seal with butyl tape.

#### Where the polyethylene vapour retarder is applied directly to steel deck, align the roll parallel to the flutes of the deck. Ensure that the membrane overlaps are positioned on the top ribs of the deck and supported along their entire length.

#### Seal vapour retarder membrane at all perimeters, transitions and around each penetration to ensure continuity.

#### Seal the vapour retarder to the vertical surfaces at all roof penetrations, curbs and parapets.

### Installation of Fibreglass Reinforced Asphalt Coated Base Sheets

#### Starting at low point, and right angles to the slope, embed sheet in hot asphalt applied at a rate of 1 to 1.5 kg/m² (0.2 to 0.3 lb/ft²). Asphalt shall be Type [II] [III].

#### Overlap side laps by a minimum 75 mm (3 in) and end laps by 150 mm (6 in). Laps shall be staggered a minimum of 300 mm (12 in).

#### Coat the vapour barrier with hot asphalt applied at a rate of 1 to 1.5 kg/m² (0.2 to 0.3 lb/ft²). If asphalt is to be used to adhere the insulation, embed the specified insulation into the hot asphalt top coat.

#### Seal vapour retarder membrane at all perimeter transitions, and around each penetration to ensure continuity.

### Application of Kraft Laminated Vapour Retarder

Consult the manufacturer as needed for required instructions related to specified vapour retarder.

#### Apply vapour retarder to substrate with specified adhesive in conformance with the manufacturer's recommendations.

#### Overlap side laps a minimum of 100 mm (4 in) and end laps a minimum of 150 mm (6 in).

#### Seal side laps and end laps with recommended adhesive in conformance with manufacturer's recommendations.

#### Seal vapour retarder membrane at all perimeters, transitions and around each penetration to ensure continuity.

### Application of Type IV or Type VI Glass Ply Sheet

#### Starting at low point, at right angles to the slope, embed type IV or VI glass ply sheets in hot asphalt.

#### Asphalt shall be Type II, or III.

#### Interply mopping shall be applied at a rate of 1 kg/m² (0.2 lb/ft²).

#### Coat the vapour retarder with hot asphalt applied at a rate of 1 to 1.5 kg/m2 (0.2 to 0.3 lb/ft²).

#### If asphalt is to be used to adhere the insulation, embed the specified insulation into the hot asphalt top coat.

#### Seal vapour retarder membrane at all perimeters, transitions and around each penetration to ensure continuity.

### Installation of No. 15 Mopped Vapour Retarder

#### Starting at low point, at right angles to the slope, embed two plies of No. 15 perforated felt in hot asphalt. For 2-ply construction use side laps of ½ width of sheet plus 25 mm (1 in) and end laps of 150 mm (6 in).

#### Asphalt shall be Type II, or III. Interply mopping shall be applied at a rate of 1 kg/m².

#### Coat the vapour barrier with hot asphalt applied at a rate of 1 to 1.5 kg/m² (0.2 to 0.3 lb/ft²). If asphalt is to be used to adhere the insulation, embed the specified insulation into the hot asphalt top coat.

#### Seal vapour retarder membrane at all perimeters, transitions and around each penetration to ensure continuity.

## INSTALLATION OF INSULATION

### General

#### Where there is no support panel, install insulation so that long dimensions of the board are parallel with the flutes of the steel deck and fully supported on the top rib.

#### Butt edges in moderate contact with each other.

#### Stagger joints in insulation courses.

#### Insulation shall be neatly cut to fit around penetrations and projections.

#### Install tapered insulation around drains creating a drain sump.

#### Where more than one layer of insulation is used, stagger joints at least 300 mm (12 in) between layers.

#### Do not install more insulation board than can be covered with membrane by the end of the day or the onset of inclement weather.

### Mechanical Attachment

Follow the membrane manufacturer’s written instructions for the number and location of fasteners. Improper fastening, fastener type, density and fastener pattern may compromise the wind uplift resistance of the roofing system and result in wind uplift that can displace the insulation.

#### Mechanically fasten insulation through the vapour retarder and into the deck using fasteners and plates [*at the minimum rate of 1 fastener and plate per every 8 square feet (4 fasteners in a 4x8 board) for warranties up to 15 years. Projects with 20 year or greater warranties require the use of 6 fasteners and plates in a 4’x8’ board (1 per 5.333 sf)*], [see *Lexcan Table 2: required No. of insulation Fasteners.]* Ensure that plates have sufficient clamping force so as not to compromise the vapour retarder. Do not overdrive the screws.

#### The quantity and locations of the fasteners and plates shall cause the insulation boards to rest evenly on the roof deck/substrate so that there are no significant and avoidable air spaces between the boards and the substrate.

#### Each insulation board shall be installed tightly against the adjacent boards on all sides.

#### [*Fasteners are to have minimum penetration into structural deck recommended by the fastener manufacturer and the membrane manufacturer.]*

#### [*Use fastener tools with a depth locator and torque-limiting attachment as recommended or supplied by fastener manufacturer to ensure proper installation.]*

#### On steel decks, mechanically fasten insulation through the vapour retarder and into the steel deck using screws and plates listed in Section[2.6],or [approved by the membrane manufacturer.]

#### Ensure that all fasteners engage the top rib of the steel deck and penetrate through the deck a minimum of 19 mm (3/4 in).

#### All concrete fasteners and anchors shall have a minimum penetration of 32 mm (1 1/4 in) and shall be approved for such use by the membrane manufacturer.

#### All miscellaneous wood fasteners and anchors shall have a minimum penetration of 20 mm (13/16 in) and shall be approved for such use by the membrane manufacturer.

#### Where the deck is less than 20 mm (13/16 in) the fastener should be long enough to penetrate the full thickness of the deck or through the deck.

## INSTALLATION OF COVER BOARD

Cover board or separation layer is required over non-compatible insulation or substrates. Polystyrene insulation requires a separator between the membrane and the insulation to protect the insulation from distorting during the welding process.

### General

#### The cover board shall be installed directly over [expanded], [extruded], polystyrene (unless supplied with an approved, compatible facer).

#### Cover board shall be installed according to the membrane manufacturer’s instructions.

#### Cover board shall be neatly cut to fit around penetrations and projections.

#### Do not install more cover board than can be covered with membrane by the end of the day or the onset of inclement weather.

### Attaching Cover Board with a Low-Rise Polyurethane Foam Adhesive

#### Apply using equipment approved by the membrane manufacturer over properly installed and prepared substrates.

#### Consult membrane manufacturer for application rates and installation instructions.

### Mechanical Attachment

Use only fasteners approved by the membrane manufacturer for the particular deck type. Fasteners must meet the minimum pull-out resistance required by the membrane manufacturer. Consult the membrane manufacturer for minimum pull-out resistance requirements

#### On steel decks, mechanically fasten cover board through the insulation, vapour retarder, support layer and into the steel deck using screws and plates approved by the insulation manufacturer. Ensure that all fasteners engage the top rib of the steel deck and penetrate through the deck a minimum of 19mm.

#### On wood decks, fastener length shall be sufficient to penetrate 20 mm (13/16 in) into the roof deck. Where the deck is less than 20 mm (13/16 in) the fastener should be long enough to penetrate the full thickness of the deck or through the deck.

#### All concrete fasteners and anchors shall have a minimum penetration of 32 mm (1 1/4 in) and shall be approved for such use by the membrane manufacturer.

#### Ensure that plates have sufficient clamping force so as not to compromise the vapour retarder. Do not overdrive the screws.

#### Follow the membrane manufacturers written instructions for the number and location of fasteners. Improper fastening, fastener type, density and fastener pattern may compromise the wind uplift resistance of the roofing system and result in wind blow-off.

### Attaching Cover Board with Hot Asphalt

#### Apply hot asphalt to surface of heat resistant insulation and embed cover board. Asphalt shall be Type III and applied at the nominal rate of 1.5kg/m². Take necessary precautions to avoid damaging heat sensitive insulations.

#### Cover board size used with hot asphalt attachment shall not exceed 1.2m x 1.2 m (4 ft x 4 ft).

## INSTALLATION OF TPO MEMBRANE

### TPO Membrane Attachment

#### The surface of the insulation or substrate shall be inspected prior to installation of the roof membrane. The substrate shall be clean, dry, free from debris and smooth with no surface roughness or contamination. Broken, delaminated, wet or damaged insulation boards shall be removed and replaced.

#### Unroll membrane sheets and position according to the approved shop drawings. The membrane sheets shall be positioned over the substrate without stretching. [Outside perimeter sheets shall be brought flush to the base of the perimeter parapet or wall.], or [in the case of a roof edge, extend over the outside edge a minimum of 75mm (3”). Adjoining sheets are to overlap a minimum of 140mm (5.5”) on each side. End laps with out fasteners are to be lapped a minimum 76.5mm (3”).

#### [Lexgrip XHD], [Fasteners listed in Section (2.7)], are to be fastened 50mm (2”) in from the side edge of the perimeter. One edge o f the membrane sheet shall be secured to the structural deck and mechanical fasteners using fastening plates or bars shall also be secured to the structural deck and placed within the field splice. The fastening device shall be located within 13mm (½”) of the inside splice edge on heat welded splices. Spacing of fasteners is [6”, 12”] on centre.

#### The membrane overlaps shall be shingled with the flow of water where possible.

#### On steel decks, full-width rolls shall be fastened perpendicular to the direction of the steel deck flutes.

#### Hot-air weld overlaps according to the membrane manufacturer’s requirements.

#### Conduct seam test cuts at least 3 times per day.

### Securement around Rooftop Penetrations

#### Around all perimeters, at the base of walls, drains, curbs, vent pipes, or any other roof penetrations, fasteners and securement bars/discs/plates shall be installed in accordance with Lexcan details.

#### Fasteners shall clamp the membrane tightly to the substrate.

#### Membrane flashings shall extend 63 mm (2 1/2 in) past the disc and be hot-air welded to the deck membrane.

#### Inspect the surface of the insulation, or cover board substrate prior to the installation of the roofing membrane. Ensure the substrate shall be clean, dry, free from debris and smooth with no surface roughness or contamination.

#### Remove all broken, delaminated, wet or damaged insulation and cover boards and replace with new.

## HOT AIR WELDING OF SEAM OVERLAPS

### General

#### Field seams must be welded with an automatic hot air welder operated by an individual thoroughly trained and competent in the machine’s operation. Small work and repairs can be done efficiently with a hand welder; however, hand-held welders are not an accepted means of field seaming.

#### Hot air weld all seams a minimum of 38mm (1.5”) wide.

Dirty, dusty or contaminated membrane or membrane exposed for more than seven days prior to welding must be cleaned with TPO Weathered Membrane Cleaner. With a clean scrub pad saturated with TPO Weathered Membrane Cleaner, aggressively scrub the seam area of the roof membrane . Follow with a final on swipe pass, being careful not to re-deposit contaminants back onto the cleaned area. Ensure that the cleaner and adjacent bonding adhesive has completely flashed off before welding. Follow standard welding procedures with a 20% reduction in speed.

#### All membrane surfaces to be welded shall be clean and dry.

### Hand-Welding

#### Hand-welded seams shall be completed in two stages.

#### Hot-air welding equipment shall be allowed to warm up for at least one minute prior to welding.

#### The back edge of the seam shall be welded with a narrow but continuous weld to prevent loss of hot air during the final welding.

#### The nozzle shall be inserted into the seam at a 45 degree angle to the edge of the membrane. Once the proper welding temperature has been reached and the membrane begins to "flow," the hand roller is positioned perpendicular to the nozzle and rolled lightly.

### Machine Welding

#### When using this equipment, the manufacturer’s instructions shall be followed and local codes for electric supply, grounding and over current protection observed.

#### Dedicated portable generator is required. No other equipment shall be operated simultaneously off the generator.

#### Metal tracks may be used over the deck membrane and under the machine welder to minimize or eliminate wrinkles.

### Quality Control of Welded Seams

#### The Applicator shall check all welded seams for continuity with a seam probe. After heat welding, the all seams are to be checked for integrity. Any openings or “fishmouths” shall be repaired with a hand-held hot air tool fitted with a narrow nozzle tip and with a roller.

#### On-site evaluation of welded seams shall be made daily by the applicator at locations as directed by the membrane manufacturer’s representative. Samples of welded seams 25 mm (1 in) wide and the full depth of the seam shall be taken at least three times a day. Samples shall be pulled apart by the roofing contractor to test the quality of the welds. Correct welds display failure from shearing of the membrane prior to separation of the weld.

## EDGE TREATMENT

Treatment of the membrane edge of reinforced TPO membrane where reinforcing fabric has been exposed with the application of a bead of sealant over the edge of the lap. Cut-edge sealant is required consult the local technical representative on how it is to be applied.

### General

#### Prior to applying cut-edge sealant clean the membrane surfaces using membrane cleaner specified. All surfaces to be sealed must be clean, dry and free of oil, grease, dirt, or other contaminants.

#### Apply sealant in accordance with the membrane manufacturer’s instructions.

## MEMBRANE FLASHINGS

### General

#### Over the properly installed and prepared flashing substrate, apply adhesive in accordance with the membrane manufacturer’s printed instructions.

#### The adhesive shall be applied in smooth, even coats with no gaps, globs or similar inconsistencies.

#### Only an area which can be completely covered in the same day's operations shall be flashed.

#### The bonded sheet shall be pressed firmly in place with a hand roller or coarse broom.

#### No adhesive shall be applied in seam areas that are to be welded.

#### All panels of membrane shall be applied in the same manner, overlapping the edges of the panels as required by welding techniques.

### Perimeter Securement

#### The membrane must be secured at the perimeter of each roof level, roof section, expansion joint, curb, skylight, interior wall, penthouse, etc., at peaks, valleys and any angle change which exceeds 2’ per horizontal foot (16.7%) and at all other penetrations.

#### Install mechanical fixation bar or plate with approved fasteners into the structural deck at the base of parapets walls and curbs in accordance with the membrane manufacturer's printed instructions.

### Pressure Sensitive Perimeter Strip

#### Unroll and position the securement strip according to the approved shop drawings, over the insulation substrate where membrane securement is required.

#### Fasten in accordance with membrane manufacturer's instructions.

#### Position membrane and thoroughly clean the tape contact area.

#### Roller apply primer to the underside of the deck membrane in the area that will come in contact with the pressure sensitive tape.

#### Remove the release liner from the tape.

#### Once the primer has dried to the touch, roll the deck membrane onto the exposed tape and apply hand pressure to the splice area.

#### Roll the entire width of the TPO.

## TPO CLAD METAL BASE & EDGE FLASHINGS

### General

#### All flashings shall be installed concurrently with the roof membrane as the job progresses.

#### TPO clad metal flashings shall be formed and installed per the detail drawings.

#### Adjacent sheets of TPO clad metal shall be spaced 6.4 mm (1/4 in).

#### The joint shall be covered with 50 mm (2 in) wide aluminum tape. A 100 mm (4 in) minimum wide strip of flashing membrane shall be hot-air welded over the joint.

## WALKWAY INSTALLATION

### TPO Walkway

#### Roofing membrane to receive walkway shall be clean and dry.

#### Place chalk lines on deck sheet to indicate location of walkway.

#### Apply a continuous coat of adhesive to the deck sheet and the back of walkway in accordance with the manufacturer’s printed instructions.

#### Press walkway into place with a water-filled, foam-covered lawn roller.

#### Clean the deck membrane in areas to be welded.

#### Hot-air weld the perimeter of the walkway to the deck sheet.

#### Check all welds with a rounded screwdriver. Re-weld any inconsistencies.

Avoid placing walkway cover over welded membrane seams.

### Concrete Pavers

#### Weld the edges of a protection layer of membrane in place.

#### Place normal weight concrete pavers on the protection membrane.

#### Do not run pavers over bars

#### Pavers are not recommended for use as walkways where roof slopes exceed 16.7% (2" in 12”).

## TEMPORARY CUT-OFF

### GENERAL

#### All flashings shall be installed concurrently with the roof membrane in order to maintain a watertight condition as the work progress.

#### All temporary water stops shall be constructed to provide a watertight seal.

#### The membrane shall be carried into the water stop and water stop shall be sealed to the deck and/or substrate so that water cannot travel under the roofing.

#### The edge of the membrane shall be sealed in a continuous heavy application of sealant.

#### Membrane contaminated with sealant shall be cut out when work resumes.

## FIELD QUALITY CONTROL

### Only install as much vapour retarder and insulation as can be completely and properly covered by the water proofing membrane by the end of each work period.

Only include this article if special field inspection services will be involved.

### Obtain written report from manufacturer verifying compliance of Work, in handling, installing, applying, protecting and clearing of product.

### The Manufacturer’s representative will regularly review the fieldwork, to verify the satisfactory completion of the work in accordance with the Manufactures Membrane System Warranty.

### Once the project is in progress work will be continuous, weather permitting, until completion.

### Do not conceal or cover any phase of the work until after it has been inspected and approved by the Roof System Manufacturer.

### Roofing System Manufacturer (Lexcan) must be notified in writing that the project is ready for a Final Inspection within 120 days of substantial completion of the roofing system. All trades that have work to do on the roof must be completely finished. All TPO seams and details will be probed and voids will be clearly marked with a red crayon. If a Final Inspection indicates that deficiencies are still outstanding, then additional Final Inspections will be conducted until all work has been completed to the Manufactures satisfaction.

## CLEANING

This article is intended to supplement cleaning requirements specified in Division 01 sections. Edit this article to supplement Division 01 statements.

### In areas where finished surfaces are soiled by Work of this section, consult manufacturer of surfaces for cleaning advice and conform to their instructions.

## PROTECTION OF FINISHED WORK

### Protect building surfaces against damage from roofing work.

### Where traffic must continue over finished roof membrane, protect surfaces.

END OF SECTION