



P R O D U C T - S P E C

Drylight™ Skylight Specification

Section 08600 – Skylights

May 2011

This PRODUCT-SPEC is intended to provide specifiers with guidelines to properly specify Versico's Drylight Skylight.

PART I GENERAL

1.01 SECTION INCLUDES

A. Skylight

A factory-fabricated skylight that encapsulates a double dome plastic glazing assembly and fuses it to a seamless reaction injection molded polyurethane frame. This manufacturing process of homogeneously joining two like materials negates the affects of thermal expansion and contraction and assures a permanent weather tight bond requiring no sealants or tapes.

B. Pre-fabricated skylight curbs

1.02 REFERENCE STANDARDS

- | | | |
|----|---------------|--|
| A. | ASTM D1929-96 | Standard Test Method for Determining Ignition Properties of Plastics |
| B. | ASTM D2843-99 | Standard Test Method for Density of Smoke from the Burning or Decomposition of Plastics |
| C. | ASTM D638-03 | Standard Test Method for Tensile Properties of Plastic |
| D. | ASTM D790-03 | Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials |
| E. | ASTM D635-98 | Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position |
| F. | ASTM E283-04 | Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen |



- G. ASTM E547-00 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference
- H. ASTM E331-00 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
- I. ASTM E330-02 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference

1.03 QUALITY ASSURANCE

A. The installation shall be accordance with the manufacturer's written installation instructions.

B. Fire-Test-Response Characteristics

Provide plastic sheets identical to those tested for the following fire-test-response characteristics, in accordance with the ASTM test method indicated below, by UL or other testing and inspecting agencies acceptable to authorities having jurisdiction. Identify plastic sheets with approximate markings of applicable testing and inspecting organization.

1. Self-Ignition Temperature: 650 degrees Fahrenheit (343 degrees Celsius) or greater when tested in accordance with ASTM D 1929 on plastic sheets in the thickness intended for use.
2. Smoke density of 15% or less when tested in accordance with ASTM D 2843 on plastic sheets in the thickness intended for use.
3. Relative-Burning Characteristics: As follows, when tested in accordance with ASTM D 635:
 - a. Acrylic: Burning rate of 2.5 inches (64 mm) per minute or less when tested on plastic glazing indicated below with a nominal thickness of 0.060 inch (1.5 mm) or the thickness intended for use.
 - b. Polycarbonate (when specified): Burning extent of 1 inch (25 mm) or less when tested on plastic glazing indicated below with a nominal thickness of 0.060 inch (1.5 mm) or the thickness intended for use.

1.04 SUBMITTALS

A. Submit under provisions of Section 01300, Submittals.

B. Product Data – submit manufacturer's data sheets on each product to be used including preparation instructions and installation criteria. For each type of skylight specified, include all pertinent details relative to size, thermal characteristics, glazing type, materials, etc.

C. Shop drawings – shop drawings must be submitted to Versico by the Versico Authorized Roofing Contractor along with a completely executed Copy-A-Job Approval Request (Page 1 of Versico's Request For Warranty form) for approval of the roofing system application (including installation of the Drylight Skylights). Approved shop drawings are required for inspection of the roof and on projects where on-site technical assistance is requested.

Shop drawings must include:

1. Outline of roof and size
2. Deck type (for multiple deck types)
3. Location and type of **all** penetrations (including all skylights)
4. Perimeter and penetration details
5. Key plan (on multiple roof areas) with roof heights indicated

When field conditions necessitate modifications to the originally approved shop drawings, a copy of the shop drawing outlining all modifications must be submitted to Versico for revision and approval prior to inspection and warranty issuance.

D. **Copy-B – Inspection and Warranty Request** (Page 2 of the Versico Request for Warranty form)

After project completion, a Copy-B Inspection and Warranty Request, must be submitted to Versico to schedule the necessary inspection and acceptance of the project prior to issuance of the Versico warranty.

1.05 GENERAL JOB SITE CONSIDERATIONS

- A. Material Safety Data Sheets (MSDS) must be on location at all times during transportation, storage and application of materials. The applicator shall follow all safety regulations as recommended by OSHA and other agencies having jurisdiction.
- B. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by the manufacturer for optimum results. Do not install products under environmental conditions outside the manufacturer's absolute limits.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to the job site under provisions of Section 01600.
- B. Store and protect products under provisions of Section 01600 and in accordance with manufacturer's instructions.
- C. Deliver products to the job site in the manufacturer's original, unopened containers – dry, undamaged, and with seals and labels intact.
- D. Store products in a weather-protected environment, clear of ground and moisture, and in a manner to prevent damage.
- E. Store and dispose of solvent-based materials, and materials used with solvent-base materials, in accordance with requirements of local authorities having jurisdiction.

1.07 WARRANTY

Skylight Warranty – The skylight warranty of the Versico Drylight Skylight shall be covered by the respective Versico Total System Warranty. Certain restrictions apply. Check curb and flashing requirements. The warranty shall include the repair or replacement of work that exhibits defects in materials or workmanship and include weathertight and leak-free performance. "Defects" is defined as uncontrolled leakage of water.

PART II PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer:

Versico
P.O. Box 1289
1285 Ritner Highway
Carlisle, PA 17013
Toll free: 800-992-7663
Web: www.versico.com
- B. Product substitutions of other manufacturers proposed as equivalent must be submitted with supporting technical data and samples for written architectural approval ten (10) days prior to bid date.

2.02 MATERIALS

A. FRAME

1. **Outer Frame** – Aliphatic polyurethane (UV stabilized) reaction injection molded retaining angle with condensate gutter that encapsulates the double dome glazing assembly homogeneously, without mitering or welding.

B. PLASTIC SHEETS - CLEAR

1. **Acrylic** – ASTM D 4802, thermoformable acrylic (methacrylate), Category C-2 or CC-2 Type UVA (formulated with ultraviolet light absorber) with Finish 1 (smooth or polished), unless otherwise noted.
2. **Polycarbonate** – Extruded thermoformable polycarbonate, category C-1 or CC-1, Type UV resistant, burglar resistance rated per UL 972 with average impact strength of 12 – 16 ft-lb/inch (638 – 850 J/m) of width when tested per ASTM D 256, Test Method A (Izod).

C. CURBS/CURB ADAPTERS

1. **Component SIP** (structural insulated panel)

Component SIP curbs shall be unassembled and insulated with 3.50" of high density EPS, rated at R-12, laminated to an outer wall of 0.4375" exterior grade OSB sheathing and an inner wall of 0.125" Masonite[®] board with a white melamine facer.

When assembled on site, the 9" high curb shall be fastened to the roof deck with 1-1/4" long, 0.125" diameter wood screws and 18 gauge galvanized steel "L" brackets – 1.50"L (horizontal leg) x 2.00"H (vertical leg) x 2.75"W (width).

The galvanized steel "L" brackets shall be installed on each side of the curb as follows:

- a. One bracket shall be installed at each end of a curb wall section (at each corner).
- b. Additional brackets shall be installed along the length of the curb spaced 24" on center maximum from the corner brackets.
- c. The wood screws used to fasten the "L" brackets must penetrate the wall of the SIP curb and the base wood nailer 3/4" minimum. A minimum of two fasteners shall be installed on both the horizontal leg and the vertical leg of the "L" Bracket.

Preformed TPO/PVC flashing sleeves and fully quick applied EPDM curb flashing are available to flash and weatherproof the curb, which must be fully encapsulated with the suitable membrane material.

2. **Field fabricated** (framing shall be minimum 1.50 inches wide) **or pre-fabricated**

Factory curbs shall be assembled, self-flashing units with all corners mitered and welded; 1.50" thick, 3 pound density, rigid fiberglass insulation shall be sandwiched between the outer shell and inner liner and a wood nailer shall be provided at the top of each side. Standard curbs shall be 11.00" tall with a 3.00" wide horizontal flashing flange at the bottom. Curbs shall be metal and offered as two types:

- a. Galvanized Steel – 18 gauge outer shell and 22 gauge inner liner.
- b. Mill Finish Aluminum – .050 outer shell and .025 inner liner.

If a galvanized metal curb is used, preformed TPO/PVC flashing sleeves and fully quick applied EPDM curb flashing are available to flash and weatherproof the curb, which must be fully encapsulated with the suitable membrane material.

If a self-flashing aluminum curb is used, only the curb flange shall be flashed in accordance with the skylight manufacturer's detail.

3. **Curb Adapters**

Curb adapters are manufactured from minimum 18 ga Mill Finish Aluminum and shall be assembled with all corners mitered and welded. Adapters are insulated with 1.00" thick high density fiberglass insulation with a white plastic waterproof facer attached. The curb adapter represents a structural transition assembly that will allow standard Drylight sizes to be installed on existing curbs by others.

D. **THERMAL BREAK**

The entire polyurethane frame of the skylight acts as a thermal barrier. No metal framing is exposed.

E. **VHB (Very High Bonding) TAPE**

A fully cured, synthetic rubber tape used to seal the double-dome glazing assembly.

F. **FASTENERS**

Zinc electroplated with coated heads (used to fasten the skylight to the curb).

2.03 **PLASTIC SKYLIGHT UNITS**

A. **General**

A factory-fabricated, curbed or curb-mounted unit consisting of plastic glazing encapsulated within an injection molded polyurethane frame designed to be flashed into a specified roofing system or to mount on a separate roof curb supplied by others.

B. **Curb** – Factory-fabricated or supplied by others.

C. **Curb Adapter**-Factory-fabricated

D. **Condensation Control** -Skylights shall be manufactured with integral internal gutters to collect condensation.

E. **Thermal Break**- Skylights shall be manufactured with a low conductivity polyurethane retainer frame (no metal parts) that minimizes transfer of exterior temperatures to inside components.

F. **Size** – refer to table below:

Factory Curbed Units				Curb Mounted Units	
SIP Curbs		Metal Curbs			
Model No.	Inside Curb or Roof Opening Dimensions	Model No.	Inside Curb or Roof Opening Dimensions	Model No.	Outside Curb Dimensions Required
CDD9 4040	40.00" X 40.00"	CDD11 4545	45.00" X 45.00"	CMDD 4848	48.00" X 48.00"
CDD9 5260	52.00" X 64.00"	CDD11 5769	57.00" X 69.00"	CMDD 6072	60.00" X 72.00"
CDD9 4088	40.00" X 88.00"	CDD11 4593	45.00" X 93.00"	CMDD 4896	48.00" X 96.00"

G. Glazing

- a. Thermoformed Acrylic
 - a. Inner Glazing Color: Clear, transparent or white (translucent) acrylic.
 - b. Outer Glazing Color: Bronze, tinted or clear (transparent) acrylic.
- b. Thermoformed Polycarbonate
 - a. Inner Glazing Color: Clear, transparent or white (translucent) acrylic.
 - b. Outer Glazing Color: Bronze, tinted or clear (transparent) acrylic.

2.04 OTHER RELATED PRODUCTS – ACCESSORIES

- A. **Flashing Boots (Sleeves)** for roof curbs, of applicable membrane material (PVC/TPO), are available from the manufacturer.
- B. **Quick Applied EPDM Curb Flashing** is available for use with EPDM roof membrane installations.
- C. **Security Grills/Fall Protection Screens** are available for use with the skylights as deterrents to break-ins as well as to help meet OSHA safety requirements.

2.05 FABRICATION

- A. Fabricate seamless skylight frame through reaction injection molding (RIM) process, encapsulating a double dome glazing assembly.
- B. Provide thermoplastic gutter for capture of internal condensation.
- C. Ensure glazing is free of visual distortions or defects and that factory attachment to curb (when applicable) is secure and weather tight.
- D. Ensure all components of the factory-fabricated curb are fitted and secure and seal all metal joints by heliarc welding.

2.06 FINISHES

The polyurethane skylight frame is available in black or white COLO-FAST[®] polyurethane satin finish.

PART III INSTALLATION

3.01 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting skylight performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

Metal Protection shall be as follows:

- A. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose.

- B. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.
- C. Where aluminum will contact pressure-treated wood, separate dissimilar materials by methods recommended by manufacturer.

3.03 INSTALLATION

A. General

- Comply with the manufacturer's written instructions for protecting, handling, and installing skylight components.
- B. Coordinate with installation of the roof deck and other substrates to receive skylight units.
 - C. Coordinate with installation of vapor barriers, roof insulation, roofing, and flashing as required to assure that each element of the work is performed properly and that combined elements are waterproof and weathertight. Anchor units securely and adequately to supporting structural substrates to withstand lateral and thermal stresses as well as inward and outward loading pressures.

3.04 CLEANING

Remove temporary coverings and any protection used at adjacent work areas. Repair or replace any damaged products that have been installed, and clean exposed surfaces in accordance with the manufacturer's instructions.

- A. Clean all exposed surfaces (including frame and glazing) using non-abrasive materials and methods recommended by the manufacturer. Remove and replace work that cannot be successfully cleaned.
- B. Reclean as necessary to prevent damage. Protect completed work from damage and deterioration and inspect immediately before final inspection by the manufacturer.

3.04 PROTECTION

Protect installed product and finished surfaces from damage during construction.

END OF SECTION 08600

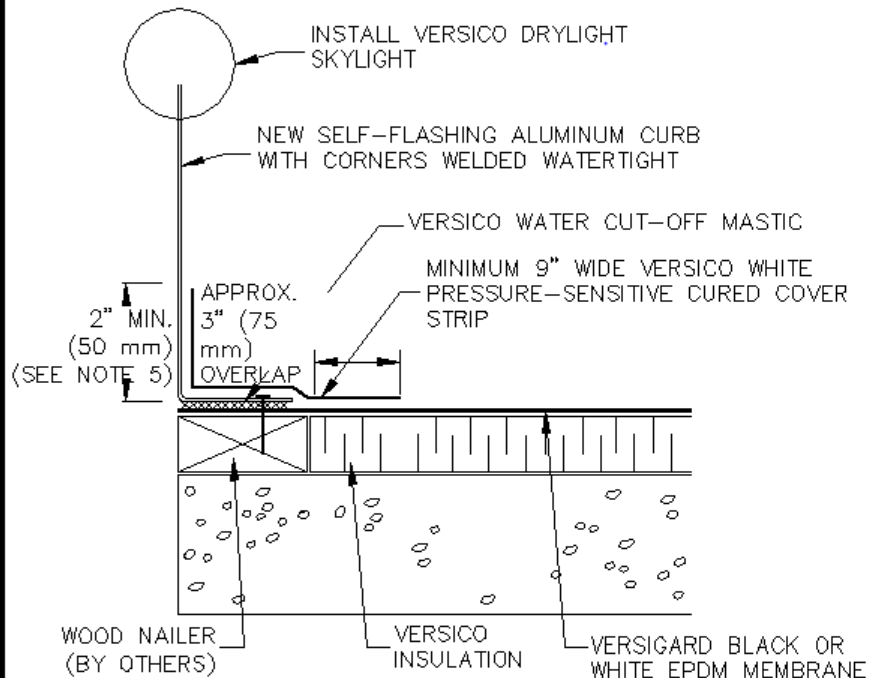
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800-992-7663
<http://www.versico.com>

LIMITED FOR USE ON PROJECTS WITH MAX. 15-YEAR WARRANTY



NOTES:

1. AN ALUMINUM CURB MUST BE USED. A GALVANIZED CURB IS NOT ACCEPTABLE.
2. WOOD NAILER MUST EXTEND PAST TOTAL WIDTH OF METAL CURB DECK FLANGE.
3. CONSULT THE RESPECTIVE MANUFACTURER OF THE SELF-FLASHING METAL CURB FOR PROPER SECUREMENT. WATER CUT-OFF MASTIC MUST BE HELD UNDER CONSTANT COMPRESSION.
4. PRESSURE-SENSITIVE CORNERS CANNOT BE INSTALLED ON THIS DETAIL DUE TO INCOMPLETE COVERAGE OF THE METAL FLANGE AT CORNERS.
5. FLASHING DOES NOT NEED TO BE EXTENDED VERTICALLY IF FLANGE WIDTH IS SUFFICIENT TO PROVIDE MINIMUM SPLICE BEYOND FASTENER.

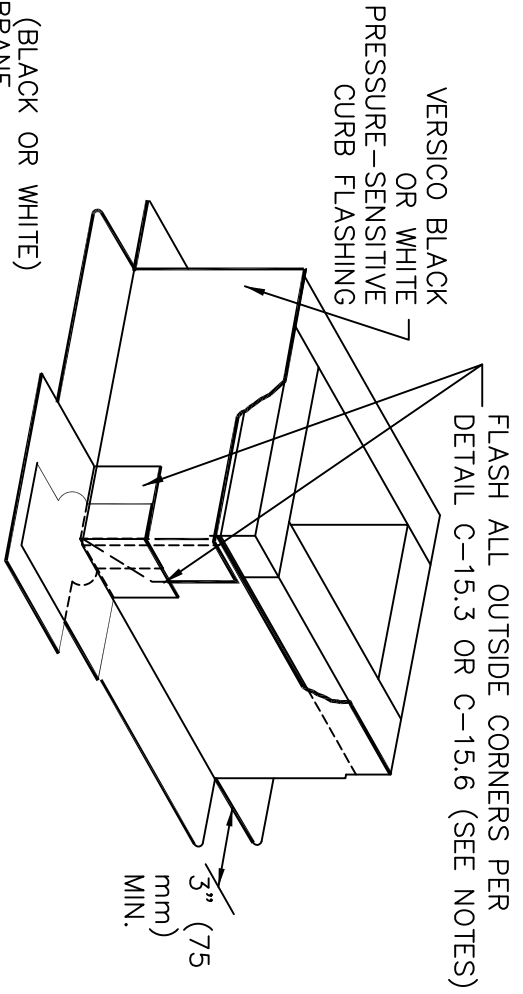
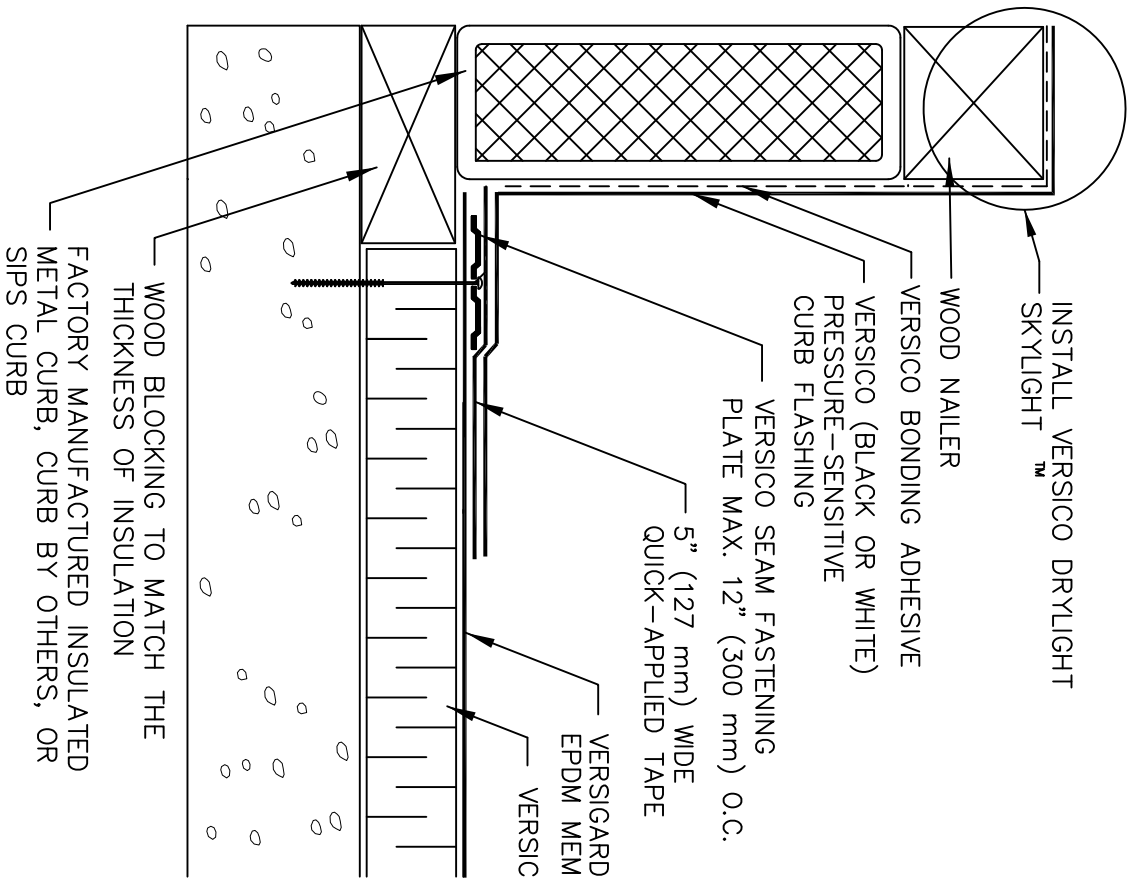


VERSICO SKYLIGHT SYSTEM
SELF-FLASHING METAL CURB - EPDM

SKYLIGHT DETAIL

SL - 5D

LIMITED FOR USE ON PROJECTS WITH MAX. 20-YEAR WARRANTY



NOTES:

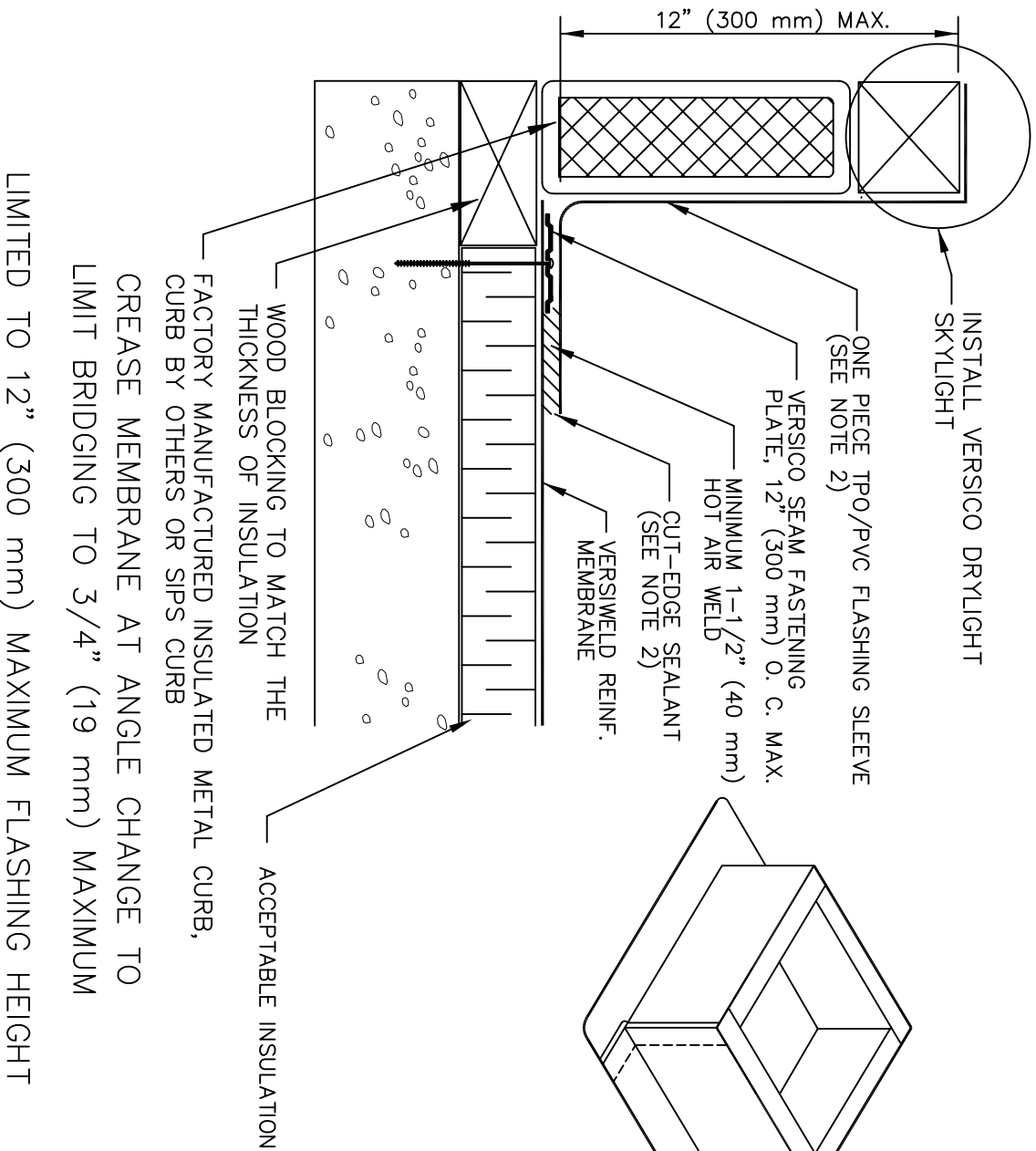
1. AN ALUMINUM OR GALVANIZED FACTORY MANUFACTURED CURB MAY BE USED.
2. POLYMER SEAM PLATES ARE REQUIRED IN LIEU OF SEAM FASTENING PLATES FOR MECHANICALLY-FASTENED ROOFING SYSTEMS OVER STEEL DECKS.
3. IF VERTICAL SPlice IS NOT LOCATED AT CORNER, 6" (150 mm) WIDE QUICK-APPLIED UNCURED EPDM FLASHING MUST BE CENTERED OVER FIELD SPlice AT ANGLE CHANGE.
4. FASTENING PLATES MAY BE INSTALLED VERTICALLY.
5. APPLY PRIMER PRIOR TO INSTALLING QA SEAM TAPE.
6. LAP SEALANT IS REQUIRED ON CUT EDGES OF REINFORCED MEMBRANE.



VERSICO SKYLIGHT SYSTEM
PRESSURE-SENSITIVE EPDM
CURB FLASHING

SKYLIGHT DETAIL
SL-5E

LIMITED FOR USE ON PROJECTS WITH MAX. 20-YEAR WARRANTY



ONE PIECE TPO/PVC FLASHING SLEEVE

NOTES:

1. AN ALUMINUM OR GALVANIZED FACTORY MANUFACTURED CURB MAY BE USED.
2. FLASHING MEMBRANE FASTENED APPROXIMATELY 12" ON CENTER.
3. APPROXIMATELY 1/8" (3 mm) BEAD OF CUT-EDGE SEALANT IS REQUIRED ON THE CUT EDGES OF THE TPO/PVC FLASHING SLEEVE.
4. REFER TO SPECIFICATION FOR ACCEPTABLE VERSICO FASTENERS AND PLATES.

LIMITED TO 12" (300 mm) MAXIMUM FLASHING HEIGHT



VERSICO SKYLIGHT SYSTEM
PRE-FABRICATED TPO/PVC FLASHING SLEEVE

SKYLIGHT DETAIL

SL-5F