

TEST REPORT # **T1248-3D**

DATE: July 9, 2019

CLIENT: **Artistic Skylight Domes**
255 Regina Road
Woodbridge, Ontario
L4L 8M3
Contact: Nenzio Ferrazzo

SAMPLE ID: Model G-CU-P-CF-FF (30 DEG)

SAMPLE DESCRIPTION: Aluminum Pyramid Continuous Fixed Skylight having four sets of intermediate parallel rafters and triangulated end rafters forming an overall pyramid shape. The skylight was glazed with three rectangular insulating glass units (IGU) of the same nominal dimensions per side, with a right angle triangle-shaped IGU at each end per side. At each end, the skylight was glazed with an isosceles triangle-shaped IGU having two equal sides and a wider base dimension.

Width: 1257 mm (49-1/2"); Length: 3661 mm (144-1/8"); See pages 5 for full description.

SAMPLING PROCEDURES: See page 3 for the sampling procedure.

DATE OF RECEIPT: February 12, 2019

DATE(S) OF TESTING: April 14 to May 23, 2019.

TESTING REQUESTED: **Testing to the mandatory requirements of AAMA/WDMA/CSA 101/I.S.2/A440-17 NAFS - North American Fenestration Standard / Specification for windows, doors and skylights.** As this type of skylight is outside of the scope of the above standard, no product designation can be assigned. However, the test program followed the intent of the standard.

TEST RESULTS: See page 4 for the test results.

CONTENTS: Test report pages 1 through 12, appendix A1 through A18.

TESTING PERFORMED
AT:

QAI Laboratories Ltd., Toronto.

Tested by: David Wren

Reported by



David Wren
Senior Technician

Reviewed by



Neil Dumont
Fenestration Reviewer

Sampling Plan/Procedures:

One unused, Aluminum Pyramid Continuous Skylight was provided by the client as a typical production sample and examined at the QAI laboratory to determine compliance with the submitted documentation, then tested from April 14 to May 23, 2019 as being representative of the model covered in this report.

Test Conditions:

QAI Laboratories Ltd. (QAI) was retained by Artistic Skylight Domes to perform testing in accordance with the mandatory test requirements of AAMA/WDMA/CSA 101/I.S.2/A440-17 NAFS - North American Fenestration Standard / Specification for windows, doors and skylights on a representative sample of a 1257 mm (49-1/2") x 3661 mm (144-1/8") pyramid continuous aluminum fixed skylight glazed with dual-glazed insulating glass units (IGU).

This report includes tests performed on a specimen of specific dimensions. Actual product performance may be affected by variations in the products dimensions, assembly details and installation method. The drawings supplied by Artistic Skylight Domes were verified by QAI for the unit tested and are shown in Appendix A.

The test specimen was installed by the client into a simulated wood roof deck test section, complete with curb, as described below. Adhesive-backed closed cell foam gasket tape measuring 19 mm (3/4") wide by 9.5 mm (3/8") thick was applied to the top of the curb around its perimeter (along the inner edge of the curb) prior to the sample installation. The cold form curb frame was complete with a perimeter kerf inserted neoprene bulb with fin weatherstrip along its underside that was positioned adjacent to and to the exterior of the above mentioned closed cell foam gasket. The large silicone cap bead (GE SCS2000 structural silicone) was applied along the cold form curb frame-to-wood curb joint along the interior once the skylight was installed. The skylight curb frame was fastened to the side of the curb using #10 x 2" long hex-head self-drilling tek screws (Master Gripper MDP #JS1000) complete with a neoprene washer bonded to a flat stainless steel washer. There were four fasteners per end on nominal 343 mm (13-1/2") centres, and nine fasteners per long side on nominal 432 mm (17") centres.

The simulated wood roof deck test section measured nominally 2464 mm (97") wide and 4865 mm (191-1/2") long. It was fabricated from 2x6 SPF wood framing sheathed with 15.9 mm (5/8") plywood. A centrally located curb was fastened to the deck surface and underlying framing, and was fabricated from doubled-up 2x8 SPF lumber. The inside of the curb was open to below, the opening measuring 1089 mm (42-7/8") wide by 3486 mm (137-1/4") long. The underlying framing of the deck section consisted of a 2x6 perimeter frame, two doubled-up 2x6 members (orientated parallel to the ends of the skylight) spanning two opposing long sides of the perimeter frame. These doubled up 2x6 members being centrally located, spaced 3496 mm (137-5/8") apart. Two doubled-up 2x6 members (parallel to the long edges of the skylight) spanned the above mentioned 2x6 members, and were centrally located and spaced 1089 mm (42-7/8") apart. These doubled-up 2x6's were aligned with, and supported, the above mentioned curb. The plywood sheathing was further supported by 2x6 members spanning the long doubled-up 2x6 members and the parallel adjacent perimeter 2x6 members, seven per long side nominally 406 mm (16") apart on centre. They were positioned between the doubled up 2x6 members that were parallel to the ends of the skylight. The deck surface was further supported by two 2x6 members at each end, 1134 mm (44-5/8") apart on centre, parallel to the long edge of the deck, and spanning the doubled-up 2x6 members parallel to the ends of the skylight and the adjacent parallel perimeter frame member. The deck surface and curb were covered with an impermeable self-adhered membrane, the membrane covering the top and sides of the deck, continuing up the sides of the curb and wrapping around the top edge of the curb. The perimeter of the skylight curb frame was also sealed to the underlying self-adhered membrane along the sides of the curb with air-barrier tape. The roof deck test section was supported on legs, the surface of the deck nominally 1220 mm (48") from the floor.

The underside of the test deck was enclosed beneath the curb opening with a chamber fabricated from 2x4 SPF framing and OSB sheathing. The chamber was sealed so that positive and negative test pressures could be applied to it and the associated skylight. The chamber also provided access for observations during the water penetration resistance test.

Product Ratings:

Table 1: Summary of test results

Test Name	AAMA/WDMA/CSA 101/I.S.2/A440-17 NAFS - North American Fenestration Standard / Specification for windows, doors and skylights Result:
Air Leakage Resistance Test (ASTM E283) Test Date and Time: May 14/19 11 am Temperature During Test: 23.5°C Barometric Pressure During Test: 976 kPa	Pressure differential = 75 Pa Fixed Level Requirement = Max. 0.2 L/s/m ² (0.04 cfm/ft ²) Infiltration result = 0.165 L/s/m ² (0.032 cfm/ft ²) - Fixed Level Exfiltration result = 0.146 L/s/m ² (0.029 cfm/ft ²) - Fixed Level
Water Penetration Resistance Test (ASTM E547) Test Date and Time: May 15/19 12 pm Temperature During Test: 23.5°C Water Application Rate: 1.492 L/min	Maximum pressure differential = 720 Pa (DP 100 – 15 psf) Observations: No leakage or trapped water.
Uniform Load Deflection Test at Design Pressure (ASTM E330 – Procedure A) Test Date and Time: May 22/19 1 pm Temperature During Test: 23.5°C Load Duration (+ve WL): 60 sec. Load Duration (-ve WL): 10 sec. Use of Tape or Film: No Effect of Tape/Film: N/A	Maximum pressure differential = 3360 Pa (DP 70 - 71 psf) Component Measured: Intermediate Rafter Span = 540 mm (21-1/4") Maximum Deflection (+ve WL)= 0.01 mm (0.0005") Maximum Residual Deflection (+ve WL) = 0.64 mm (-0.0025") Maximum Deflection (-ve WL)= -0.03 mm (-0.001") Maximum Residual Deflection (-ve WL)= -0.01 mm (-0.0005") Observations: No damage. Maximum Allowable Deflection (1/175 of span) at Design Load= 3.08 mm (0.121")
Uniform Load Structural Test (ASTM E330 – Procedure A) Test Date and Time: May 23/19 8 am Temperature During Test: 23.5°C Load Duration (+ve WL): 60 sec. Load Duration (-ve WL): 10 sec. Use of Tape or Film: No Effect of Tape/Film: N/A	Design pressure = 3360 Pa (DP 70) Component Measured: Intermediate Rafter Span = 540 mm (21-1/4") Maximum Pressure Differential (+ve WL)= 6720 Pa (140 psf) Maximum Residual Deflection (+ve WL) = 0.01 mm (0.0005") Maximum Pressure Differential (-ve WL)= 5040 Pa (105 psf) Maximum Residual Deflection (-ve WL)= -0.01 mm (-0.0005") Observations: No damage. Maximum Allowable Residual Deflection = 1.63 mm (0.064")

Performance Classification: N/A for Skylights
Performance Grade: PG 70
Maximum Size Tested: 1257 mm wide x 3661 mm high (49-1/2" x 144-1/8")
Primary Designator:
N/A- This skylight type is beyond the scope of the standard

Secondary Designator:

Positive Design Pressure (DP) = 3360 Pa (70 psf)
Negative Design Pressure (DP) = -3360 Pa (-70 psf)
Water Penetration Resistance Test Pressure = 720 Pa (15 psf)
Canadian Air Infiltration / Exfiltration = Fixed Level

Note: AAMA/WDMA/CSA 101/I.S.2/A440-17, Clause 9.2.5: The air, water and structural tests were performed on test specimens installed per the method outlined in the test conditions section of this report. The test procedures are designed to test the performance of the test specimen only and are not used to test the performance of the installation, in particular the perimeter sealant joint and the anchoring of the assembly. However, products not installed according to the installation method described in this report may not perform to an equivalent performance level.

Description:

Aluminum Pyramid Continuous Fixed Skylight		
Frame:	Description:	<p><u>Base (Curb Frame):</u> Extruded aluminum cold form curb frame members (CanArt Drawing titled "COLD FORM CURB FRAME", Proposal No. S-15978 dated 07/08/2005).</p> <p>Curb frame corners were mitred and tack welded on the exterior of the corner, with the inclined portion of the joint fully welded on the exterior and sealed with silicone.</p> <p>On the inside of the corner, both inclined legs were fully welded (the legs that take the thermal breaks) as well as the vertical portion that takes the condensation gutter (the backside of this vertical portion was also sealed with silicone).</p> <p>On the underside, the corner was fully welded.</p> <p>Where the rafters intersected the curb frame, the glazing leg of the curb frame was notched.</p> <p>Curb Frame dimensions: Width: 1257 mm (49-1/2"); Length: 3661 mm (144-1/8").</p> <p><u>Skylight Framing- Long Edges:</u> Along each long edge, four equal-size inclined (inwards at 30° to horizontal) and parallel extruded aluminum intermediate rafters (Artistic Skylight Domes Drawing titled "Alumicor 2x3 Rafter), measuring 603 mm (23-3/4") long overall, spanned a ridge rafter (Artistic Skylight Domes Drawing titled "Alumicor 2x3 Purlin) and the cold form curb frame, the intermediate rafters running perpendicular to the ridge rafter and curb frame. The intermediate rafters were each notched at the curb frame end, the notch measuring 56 mm (2-3/16") long by 51 (2") wide. The two middle intermediate rafters were spaced 787 mm (31") apart o/c, with the flanking intermediate rafters spaced 783 mm (30-13/16") apart o/c from the adjacent middle rafters. The ends of each long edge had a rafter (Artistic Skylight Domes Drawing titled "Alumicor 2x3 Purlin) inclined in two planes towards the apex at each end of the ridge rafter. At the lower ends, the rafters were each fastened to the curb frame using two #8 x 19 mm (3/4") long pan head self-drilling tek screws (See Photo #6). At the ridge rafters, the intermediate and end rafters were fastened to the ridge rafter using a section of 3.2 mm (1/8") thick aluminum angle, measuring 45 mm (1-3/4") wide for the intermediate rafters, and 48 mm (1-7/8") wide for the end rafters, fitted into the end of the rafter cavity. One leg of the angle measured 48 mm (1-7/8") long and was tack-welded into the end of the intermediate rafter (two tack-welds per vertical edge and two at the top edge), and into the end of the end Rafters with two per top and bottom edge. The 25 mm (1") leg of the angle (slightly bent downwards) was fastened to the top edge of the rafter using two #8 x 19 mm (3/4") long pan head self-drilling tek screws, on either side of the screw-port, with the heads sealed with silicone. Two #10 x 76 mm (3") long hex-head self-drilling tek screws, each complete with a flat washer having a neoprene washer bonded to its underside, (See Photo #7) secured each rafter to the adjacent ridge rafter. The fasteners passed through the ridge rafter and into the above mentioned angle bracket (See Photo #8) in the end of the intermediate or end rafter. At the top of the rafter profile, intersecting rafters were welded together across the pressure plate screw-port portion of the extrusion, with an infill piece of 3.2 mm (1/8") thick aluminum plate bridging the gap between adjacent screw-port legs (See Photo #9). The tops of the box section of the intersecting rafters were also welded together (See Photo #9). The ends of the intermediate and end rafters were sealed to the adjacent ridge rafter across the glazing cavity. Additionally, the intersecting sides of the ridge rafters and the end rafters were welded together along the outside edge of the corner joint (See Photo #10).</p>

Aluminum Pyramid Continuous Fixed Skylight (Continued)

<p>Frame:</p>	<p>Description:</p>	<p><u>Skylight Framing- Ends:</u> The ends of the sample were triangular in shape, with the two equal-length rafters (Artistic Skylight Domes Drawing titled "Alumicor 2x3 Purlin) inclined in two planes towards the apex at the end of the ridge rafter, so that the rafters at the ends sloped towards each other and towards the ends of the respective ridge rafter. At the lower ends, the rafters were each fastened to the curb frame using two #8 x 19 mm (3/4") long pan head self-drilling tek screws. At the apex, the intersecting end rafters were welded together along the outside edge of the corner joint and across the pressure plate screw-port portion of the extrusion (See Photo #11 and #12). The outer glazing legs of the intersecting rafters were also welded together along the apex.</p> <p><u>Assembly of Skylight Framing Sections:</u> The long edge sections of the skylight were joined at the adjacent ridge rafters using formed modified 'V'-shaped connection plates (Artistic Skylight Domes Drawing titled "Ridge Connector Plate"). The connection plates were formed from 3.2 mm (1/8") thick aluminum plate, measuring 64 mm (2-1/2") wide. Each leg of the connector bracket was fastened to the adjacent ridge rafter using two #10 x 15.9 mm (5/8") long hex-head tek screws. Four connector brackets secured the two ridge rafters together, one adjacent to each of the four sets of intermediate rafters (See Photo #7).</p> <p>The triangular end sections were fastened to the ends of the long edge sections, forming the corners of the skylight, using smaller formed modified 'V'-shaped connection plates (Artistic Skylight Domes Drawing titled "Hip Connector Plate"). The connection plates were formed from 3.2 mm (1/8") thick aluminum plate, measuring 51 mm (2") wide. Each leg of the connector plate was fastened to the side of the adjacent corner rafters using two #10 x 15.9 mm (5/8") long self-drilling hex-head tek screws. Two connector plates secured the adjacent rafters together at each corner, 108 mm (4-1/4") and 483 mm (19") o/c down from the apex (See Photo #13). At the curb end of each corner, the adjacent rafters were joined using a brake-formed 'V'-shaped connector plate formed from 27 ga aluminum sheet. It measured 95 mm (3-3/4") long with 51 mm (2") long legs, sealed to the rafters with silicone across the top end and long edges. It was located 102 mm (4") o/c up from the curb end of the rafter (See Photo #14) and fastened using one #8 x 12.7 mm (1/2") long self-drilling pan-head tek screw per leg.</p> <p>The adjacent ridge rafters were sealed with silicone to each other along their length in the cavity of their apex. The corner rafters were sealed with silicone to each other along their length in the cavity of their apex as well. The ridge apex cavity and corner apex cavities were filled with mineral wool insulation. These cavities were capped with a formed aluminum closure panel of brake-formed 27 ga aluminum sheet (See Photo #15), the intersections being lapped and fastened using 3.2 mm (1/8") dia. rivets, and sealed with silicone between the laps as well as a cap bead applied following assembly, rivet heads were also sealed with silicone. Rigid PVC hollow rectangular spacers (See Photo #12) were fastened to the glazing leg of the rafters not taking glazing as support for the aforementioned aluminum closure panel. The spacers were fastened to the glazing leg using #8 x 12.7 mm (1/2") long self-drilling pan-head tek screws. There were two per end rafter approximately 76 mm (3") from each end, and along the ridge rafters spaced 560 mm (22") to 60 mm (30") apart o/c. The fasteners were installed through a 9.5 mm (3/8") dia. port drilled in the top side wall. The edges of the closure panel were glazed onto the pvc spacer of the adjacent rafters using 3.8 mm (0.150") thick by 9.5 mm (3/8") wide butyl shim tape (Tremco Polyshim II) having a 3.2 mm (1/8") dia. shim. The closure panels were retained along their long edges with pressure plates complete with glazing gaskets. Once the trim caps were fitted to the pressure plates, the edge of the trim caps were sealed to the underlying closure panel with a cap bead of silicone.</p>
----------------------	---------------------	--

Aluminum Pyramid Continuous Fixed Skylight (Continued)		
Frame (Continued):	Description:	<p>Assembly of Skylight Framing Sections (Continued):</p> <p>A formed heavy gauge (22 ga) aluminum cap flashing was fitted to the ridge apex cavity and corner apex cavities (See Photo #16), with the cavities between the underlying closure panel and aluminum cap flashing being filled with mineral wool insulation prior to installation of the cap flashing. The cap flashing was brake-formed to wrap around edge of the trim caps, the edge of the cap flashing terminating adjacent to the glazing. The cap flashing was fastened to this edge of the trim caps using 3.2 mm (1/8") dia rivets, one either side of the intermediate rafter trim caps and one adjacent to the end rafter trim caps. The cap flashing was also notched at the intersecting rafter trim caps, a cap bead of silicone sealing the cap to the underlying trim caps. At mid-width, the joint along the ridge cap flashing was sealed with silicone then bridged by a formed 137 mm (5-3/8") splice plate centred over the joint and sealed to the underlying cap flashing with silicone sandwiched between the cap flashing and splice plate followed by a cap bead of silicone applied to the edges of the splice plate. The splice plate was fastened to the underlying cap flashing and trim caps using 3.2 mm (1/8") dia rivets, six per edge plus one at each corner into the edge of the underlying trim caps. The cap flashing covering the corner apex cavities were notched where they overlapped the retaining frame (See Photo #17), with the end of the cap flashing also curled closed against the retaining frame. At the ridge, the corner apex cavity cap flashing was lapped over each other, then a triangular formed cover plate was fastened over the upper ends of the corner apex cap flashing (See Photo #16), silicone sandwiched between the cap flashing and the triangular cover plate. The corner apex cavity cap flashing was secured to the sides of the underlying trim caps adjacent to the retaining frame using a 3.2 mm (1/8") dia rivet per side. The ridge cap flashing was installed and sealed to the underlying corner apex cavity cap flashings and triangular cover plate with silicone sandwiched between the layers of flashing. The layers of cap flashing were secured to each other and/or the underlying trim caps with 3.2 mm (1/8") dia rivets. All rivet heads were sealed with silicone.</p> <p>Following assembly, the visible cap flashing joints at the ends of the ridge cap flashing to triangular cover plate and corner apex cap flashings were sealed with a cap bead of silicone (See Photo #16). The edges of the corner apex cap flashings were also sealed to the adjacent glazing with a cap bead of silicone, and to the underlying retaining frame including across the ends.</p>
Thermal Break- Curb Frame:	Description:	Extruded PVC thermal break (Drawing titled "Curb thermal Break") was fitted to the lower leg of the curb frame prior to the installation of the rafters.
Condensation Gutter/Thermal Break- Curb Frame:	Description:	<p>Extruded PVC combination condensation gutter and thermal (Vinyl Profiles Ltd. Die No. V79-1) was fitted to the inside perimeter of the curb frame and secured to it using #8 x 12.7 mm (1/2") long pan head self-drilling tek screws complete with a neoprene washer bonded to a flat stainless steel washer. There were four fasteners per end located on nominally 330 mm (13") centres and nine per long side located on nominally 405 mm (16") to 460 mm (18") centres</p> <p>The combination condensation gutter and thermal break had the leg with the co-extruded flexible vinyl cup gasket removed at the snap-groove (see above mentioned drawing).</p> <p>Thermal Break outer dimensions: Width: 1164 mm (45-13/16"), Length: 3561 mm (140-3/16").</p>
	Joints:	Corners were mitred and thermally welded.

Aluminum Pyramid Continuous Fixed Skylight (Continued)		
Glazing Method:	Interior:	Laid-in glazed on 3.8 mm (0.150") thick by 9.5 mm (3/8") wide butyl shim tape (Tremco Polyshim II) having a 3.2 mm (1/8") dia. shim.
	Exterior:	<p><u>Retainer Frame:</u> Extruded aluminum retainer frame (CanArt Drawing titled "COLD FORM CURB FRAME", Proposal No. S-15979 dated 06/29/2005) was fitted to the curb frame on the exterior, and fastened to the sides of the curb frame using #10 x 51 mm (2") long hex head self-drilling tek screws complete with a neoprene washer bonded to a flat stainless steel washer. There were twenty fasteners per side and eight per end. They were located nominally 230 mm (9") o/c between the intermediate rafters, and 165 mm (6-1/2") apart o/c between the end rafters and adjacent intermediate rafters, as well as across the ends of the skylight. The corners of the aluminum retainer frame were mitred and fully welded. Butted joints between the sections of retainer frame (two per long edge and one per end) were fully sealed with silicone. At the butt joints, a formed 18 ga aluminum tab (See Photo #19) measuring 83 mm (3-1/4") long by 51 mm wide (2") was tack-welded to the backside of one end of the retainer frame, the tab centred on the joint so that the adjacent section of retainer frame received the tab. As well, the retainer frame was sealed to the curb frame about its perimeter with silicone.</p> <p>The retainer frame was complete with a kerf-inserted rubber glazing gasket (Artistic Skylight Domes Drawing titled "Alumicor Spline Gasket"), sealed at the corners with silicone on the backside of the retainer frame.</p> <p><u>Pressure Plates:</u> Along all rafters 51 mm (2") wide extruded aluminum pressure plates (Artistic Skylight Domes Drawing titled "Alumicor 2" Channel") were fitted to each of the rafters and retained using 1/4"-20 x 19 mm (3/4") long pan-head bolts. Along all rafters, a rubber gasket (Artistic Skylight Domes Drawing titled "Alumicor Screw Channel Gasket") was fitted to the pressure plate screw channel. The pressure plates were complete with a kerf-inserted rubber glazing gasket (Artistic Skylight Domes Drawing titled "Alumicor Spline Gasket"). Along both edges. Intermediate rafter pressure plates had square ends while the end rafter pressure plates had mitred ends. The ridge rafter pressure plates spanned the intermediate and end rafter pressure plates. All pressure plate fastener heads were liberally sealed with silicone to the pressure plate following fastener installation. Following pressure plate installation, the ends were sealed to adjacent pressure plates and retaining frame sections.</p> <p>There were six fasteners per intermediate rafter 152 mm (6") apart o/c, with the end fasteners 25 mm (1") o/c from the adjacent inboard fastener. At the curb end, the fastener was 38 mm (1-1/2") o/c from the end of the pressure plate. At the ridge end, the fastener was 102 mm (4") o/c from the end of the pressure plate.</p> <p>There were seven fasteners along the ridge rafters, 152 mm (6") apart o/c, with the end fasteners 25 mm (1") o/c from the adjacent inboard fastener.</p> <p>There were six fasteners along the end rafters, 152 mm (6") apart o/c, with the top fasteners 76 mm (3") o/c from the adjacent inboard fastener.</p> <p><u>Trim Caps:</u> Extruded aluminum trim caps (Artistic Skylight Domes Drawing titled "Alumicor 2" Snap Cap") were fitted to the pressure plates. The trim caps fitted to the intermediate rafter pressure plates were notched where they overlapped the retaining frame (See Photo #20), with the end of the trim caps also curled closed against the retaining frame. Following installation of all trim caps, the ends were liberally sealed with silicone to the adjacent trim caps, ridge closure panel, and curb retaining frame. Along the long edges of the trim caps, the trim caps were sealed to the underlying pressure plate gasket and glazing unit or closure panel with a large cap bead of silicone (except to the top edge of the glazing units at the ridge, where no cap bead of silicone was applied).</p>

Aluminum Pyramid Continuous Fixed Skylight (Continued)		
Glazing Method (Continued):	Setting Blocks:	Each glazing unit was supported by two neoprene setting blocks spaced nominally 405 mm to 470 (16" to 18-1/2") apart o/c for the intermediate units, 305 mm (12") for the end glazing units along the long edges, and 735 mm (29") apart o/c for the glazing units at the ends. The blocks were adhesive backed and were applied to the flat surface of the angle-shaped extrusion. The setting blocks measured 44.5 mm (1-3/4") x 25.4 mm (1") x 6.4 mm (0.250").
Glazing:	Description:	Two nominal 6 mm thick sheets of tempered glass, 14.3 mm (9/16") airspace, with an overall thickness of 25.4 mm (1").
Drainage:	Condensation Gutter/Thermal Break:	None
	Curb Frame:	3.6 mm (9/64") diameter holes drained the lower leg surface (glass channel) to the retainer frame cavity. On each end of the skylight, two holes per end were located nominally 290 mm (11-1/2") o/c from the adjacent corner. Along the long edges of the skylight, three holes per side were located nominally 230 mm (9") o/c from the adjacent corner and at mid-width.
	Retainer Frame:	Two 3.6 mm (9/64") diameter holes along each retainer frame end, 140 mm (5-1/2") o/c inboard of the adjacent retainer frame corner, drained the retainer frame cavity to the exterior. Three 3.6 mm (9/64") diameter holes along each retainer frame long side, 152 mm (6") o/c inboard of the adjacent retainer frame corner, and one at mid-width, drained the retainer frame cavity to the exterior.
Additional Sealant Applied Following Assembly (GE SCS2000 Structural Silicone)	Retainer Frame:	The upper edge of the retainer frame was sealed with silicone to the exterior glazing layer with a full perimeter cap bead, including across the ends of the trim caps and corner apex cap flashing. The butted joints of adjacent retainer frame sections were also sealed with a cap bead of silicone.
	End Rafter Corner Apex Cap Flashing:	Corner apex cap flashing of rafters at ends of long edges as well as those at skylight ends were sealed with silicone to the exterior glazing layer from end to end with a cap bead, continuous across ends to retainer frame cap bead and ridge cap flashing cap bead.
	Intermediate Rafter Trim Caps:	Intermediate rafter trim caps were sealed with silicone to the exterior glazing layer from end to end with cap bead, continuous across ends to retainer frame cap bead and ridge cap flashing cap bead.
	Ridge Cap Flashing:	The ridge cap flashing was not sealed to the exterior glazing layer. However, the exposed ridge cap flashing-to-corner apex cap flashing joints were sealed with a cap bead of silicone. The triangular end cover plates were also sealed to the ridge cap flashing and corner apex cap flashing with a cap bead of silicone.

MODIFICATIONS:

- Seal exposed retainer frame butted joints between sections of retainer frame.
- Perimeter of curb frame sealed to underlying self-adhered membrane on sides of curb with air barrier tape.
- Sealed condensation gutter weeps.
- Added missing glass channel weeps (three per long edge, two per end).

CONCLUSION:

QAI Laboratories Ltd., with lab facilities located in Toronto, Ontario, performed testing in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-17 NAFS - North American Fenestration Standard / Specification for windows, doors and skylights on a representative sample of an Artistic Skylight Domes Model G-CU-P-CF-FF (30 DEG) Aluminum Pyramid Continuous Fixed Skylight. As this type of skylight is outside the scope of the aforementioned standard, no product designation could be assigned. The skylight described and tested here-in achieved the ratings based on the intent of the standard.

Test results in this report may not be reproducible in the field. Test results relate only to those products tested.

See Table 1 for a summary of test results and window ratings. The sample tested was found to comply with the applicable requirements and obtained test results as reported in Table 1 of this report.

Report Revision History

Date	Revision	Change Description	Initials
July 9, 2019	0	Original Report	DW

Photos



Photo 1- Test sample setup



Photo 2- Test sample setup



Photo 3- Curb frame corner weld details.



Photo 4- Curb frame corner weld details.



Photo 5- Curb frame corner weld details.



Photo 6- Curb frame to rafter fasteners- two per end of rafter.



Photo 7- Ridge rafter to intermediate rafter fasteners. and 'V'-shaped ridge rafter connection plate.



Photo 8- Angle bracket at ridge end of intermediate rafters.



Photo 9- Infill piece of 3.2 mm (1/8") thick aluminum plate bridging the gap between adjacent screw-port legs. The tops of the box section of the intersecting rafters were also welded together.



Photo 10- Intersecting sides of the ridge rafters and the end rafters were welded together along the outside edge of the corner joint



Photos 11 and 12- The intersecting end rafters were welded together across the pressure plate screw-port portion of the extrusion and along the outside edge of the corner joint. The outer glazing legs of the intersecting rafters were also welded together along the apex.



Photos 13 and 14- Two 'V'-shaped 3.2 mm thick aluminum connector plates secured the adjacent rafters together at each corner. At the curb end of each corner, the adjacent rafters were joined using a brake-formed 'V'-shaped connector plate formed from 27 ga aluminum sheet.



Photo 15- Aluminum closure panels at apex corner rafters and ridge rafters, riveted in place with joints sealed with silicone.



Photo 16- Aluminum cap flashing at apex corner rafters and ridge rafters, riveted in place with joints sealed with silicone. Triangular formed cover plate also riveted in place with joints sealed with silicone.



Photo 17- Aluminum cap flashing notched for retaining frame the end of the cap flashing also curled closed against the retaining frame.



Photo 18- Aluminum trim cap curled closed against the retaining frame, sealed to retaining frame and glazing with silicone. Retaining butt joint also sealed with cap bead of silicone.



Photo 19- Formed 18 ga aluminum tab on backside of retainer frame at butt joints.



Photo 20- Aluminum trim cap notched and curled closed at retaining frame end.