TEST REPORT

REPORT NUMBER: 3179893TOR-226 V-PVCCM
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EVALUATION CENTER
Intertek
6225 Kenway Drive
Mississauga, Ontario L5T 2L3

RENDERED TO

Artistic Skylight Domes Ltd.
2 Guided Court
Etobicoke, ON M9V 4K6

Attention: Nenzio Ferrazzo

PRODUCT EVALUATED: V-PVCCM Venting Skylights
EVALUATION PROPERTY: Physical Tests

Report of Testing for Artistic Skylights Domes Ltd. on V-PVCCM curb-mounted venting plastic skylights for compliance with the applicable requirements of the following criteria: AAMA/WDMA/CSA 101/I.S.2/A440-08 *"NAFS North American Fenestration Standard/Specification for windows, doors, and skylights"* and AAMA/WDMA/CSA 101/I.S.2/A440S1-09, *Canadian Supplement*.

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Report of Testing for Artistic Skylights Domes Ltd. on V-PVCCM curb-mounted venting plastic skylights for compliance with the applicable requirements of the following criteria: AAMA/WDMA/CSA 101/I.S.2/A440-08 *"NAFS North American Fenestration Standard/Specification for windows, doors, and skylights"* and AAMA/WDMA/CSA 101/I.S.2/A440S1-09, *Canadian Supplement*.

2 Introduction

Intertek has conducted performance testing for Artistic Skylight Domes Ltd. on two V-PVCCM curb-mounted venting plastic skylights for the Intertek Certification Program.

(A) 22-1/4"×67"

(B) 48"×48"

The skylights were submitted to the Intertek laboratory in Mississauga, Ontario on November 6, 2009. Testing was conducted in accordance with the standard methods of AAMA/WDMA/CSA 101/I.S.2/A440-08 *"NAFS North American Fenestration Standard/Specification for windows, doors, and skylights"* and AAMA/WDMA/CSA 101/I.S.2/A440S1-09, *Canadian Supplement*. This evaluation began November 6, 2009 and was completed February 3, 2010.

3 Test Specimen

3.1. SPECIMEN AND ASSEMBLY DESCRIPTION

Designations:

(CAN)
- A - Class R-PG1200 (metric)-Size Tested 673×1876 mm - SKP/RW
- B - Class R-PG960 (metric)-Size Tested 1327×1324 mm - SKP/RW

(US)
- A - Class R-PG25-Size Tested 26.5×73.9 in - SKP/RW
- B - Class R-PG20-Size Tested 52.3×52.2 in - SKP/RW

Model:
- V-PVCCM Skylight

Type:
- Curb-mounted, aluminum capped, plastic frame venting plastic dome skylight

Manufacturer:
- Artistic Skylight Domes Ltd., 2 Guided Court, Etobicoke ON M9V 4K6

Condition:
- New and undamaged

Overall Frame Size:

Skylight No.	Overall (outside dim.)	
	Width	Height
A	673 mm (26-1/2")	1876 mm (73-7/8")
B	1327 mm (52-1/4")	1324 mm (52-1/8")

Frame:
- Extruded vinyl main frame members (Vinyl Profile Ltd. Die No. V-413) with mitred and welded corners.

Frame (cont'd):

- Installation: The unit was installed onto a 2x6 wood support frame with 1/2" plywood sheathing secured to one face, simulating a flat roof surface, the frame measuring 2438 mm (96") square overall. The skylight was installed over a centrally located opening, its perimeter lined with 2x6 wood members on the interior, and 2x6 wood members on the exterior forming a curb on the surface of the "roof".

Skylight No.	Size of Curb Opening	
	Width	Height
A	559 mm (22")	1762 mm (69-3/8")
B	1222 mm (48-1/8")	1222 mm (48-1/8")

- The order of installation was as follows:
  The exterior of the plywood was faced with self-adhering peel-and-stick waterproofing membrane, the membrane continuing up the sides of the curb members and across the exterior face, terminating at the edge of the curb opening. Joints in the membrane were lapped over each other, the membrane being applied using a torch.

- Sections of angle-shaped brake formed 0.46 mm (0.018") thick aluminum flashing were installed along the curb, the 111 mm (4-3/8") leg of the flashing partially covering the side of the curb while the 16 mm (5/8") return partially covered the exterior face of the curb. Along the head and sill, one piece of full length flashing was used, along each jamb, two sections were used per jamb, the sections lapped over one another by 13 mm (1/2"). The flashing was retained by 1-5/8" long roofing nails installed through the short leg of the flashing into the face of the curb. The corners of the flashing were folded such that, at each end of the head, the flashing terminated in a triangular shaped drip edge extending outboard of the end of the head section of curb (in a plane parallel to the side of the curb along the head). These triangular-shaped ends measured 76 mm (3") wide by 70 mm (2-3/4") deep, the rear edge corresponding to the rear edge of the flashing. To the exterior of the triangular-shaped folded ends, the flashing was wrapped around the corner of the curb and overlapped the jamb flashing and retained by a roofing nail. At the sill, the corners of the flashing were folded so that the jamb flashing terminated in a rectangular shaped drip edge extending outboard of the end of the jamb section of curb. These rectangular ends measuring 25.4 mm (1") wide by 70 mm (2-3/4") deep, the rear edge corresponding to the rear edge of the flashing. To the exterior of the rectangular-shaped folded ends, the flashing was wrapped around the corner of the curb and overlapped the sill flashing and was retained by a roofing nail.

- The exterior face of the curb was fitted with an adhesive-backed closed cell foam tape gasket measuring 19 mm wide by 9.5 mm thick (3/4"×3/8"), its corners butted together. This gasket was applied to the exterior face of the curb such that it covered the joint formed between the flashing edge and the underlying membrane.

Frame (cont'd):

- The skylight frame was installed onto the curb, the foam gasket sandwiched between the exterior face of the curb and the backside of the skylight frame. The skylight frame was secured to the curb using #10×1-1/2" hex head self-drilling tek screws complete with a composite metal flat washer with a rubber gasket bonded to the underside of it.

Skylight No.	Number of Installation Fasteners (To curb)	
	Head / Sill Nailing Fin	Jamb Nailing Fin
A	2	5
B	5	5

- For test purposes, the plywood surface (roof surface) was tested for air leakage and water penetration resistance in the horizontal orientation.

Note: *For air tightness testing only, the inside perimeter of the skylight support frame opening was sealed with red air barrier tape to the inside perimeter of the PVC skylight frame such that the 2x6 curb-to-PVC skylight frame joint was sealed as well as the joint between the 2x6 curb, the plywood sheathing, and 2x6 wood support members lining the opening. The tape was removed for water tightness testing.*

Sash:

- Members: Extruded aluminum members having mitred corners supported by two metal chevron keys per corner fitted to tracks on the exterior face, the outer key fastened to the corresponding sash member with a #8×1/2" pan head self-drilling tek screw. The corners were sealed between the glazing gasket and outer corner key with silicone on the exterior, and between the weather-strip kerf (including the kerf) and the back edge of the sash along the inside of the corner. The inside perimeter of the sash was fitted with a vinyl cap having mitred corners.
- An angle-shaped metal clip at the top of each stile was retained by the corresponding corner key retaining screw. These clips measured 32 mm (1-1/4") wide with a 32 mm (1-1/4") long leg covering/retaining the head of the hinge pin, and a 19 mm (3/4") long leg fastened to the face of the sash over the corner key.
- Aluminum Cap- Extruded aluminum cap members (Bon L Die No. PA-37250) having welded mitred corners

Skylight No.	Sash Size	
	Width mm (in.)	Height mm (in.)
A	692 (27-1/4")	1894 (74-9/16")
B	1346 (53)	1346 (53)

Locks and Hardware:

- Hinges: The sash was operated on two 5.2 mm (13/64") thick galvanized steel knurled nails (one per stile), each measuring 130 mm (5-1/8") long overall, fitted through openings at the top of each stile and engaging an internal port running the length of the head, the nails secured in the ports with silicone applied to the knurled portion. The openings at the end of each stile measured 6.8 mm (17/64") in diameter and were located 7.9 mm (5/16") on centre down from the top end of each stile. The head on each nail measured 11 mm (7/16") in diameter, the shank of the nail being knurled for 68 mm (2-11/16"), the knurling starting 51 mm (2") below the head.

- Operator: The sash was operated by a chain type roto gear hardware module (Truth Hardware Part No. 42.65) fastened to the sill using two #10×2" pan head "'allthread" screws and to the adjacent wood 2x6 curb member with using two #8×2" flat head screws. The operator was located such that its chain was equi-distant from each jamb. The operator was sealed to the sill about the punched opening for the chain with silicone. The chain engaged a sash bracket (Truth Hardware Part# 40470) via a detachable sash pin (Truth Hardware Part# 20642). The sash bracket was fastened to the sash sill rail using two #8×1/2" pan head self-drilling tek screws.

Drainage:

- Frame surface to frame cavity: None (original holes along frame members sealed with silicone).
- Frame cavity to exterior: Two 4.8 mm (3/16") diameter holes per frame member were sealed with silicone.

Weather-stripping:

- The exterior face of the frame was single weather-stripped with a co-extruded flexible vinyl glazing gasket onto which adhesive-backed closed cell foam tape was applied, having butted corners. The tape measured 19 mm wide by 3.2 mm thick (3/4"×1/8").
- The interior face of the sash was single weather-stripped with kerf-inserted flexible vinyl bulb gasket (Vinyl Profiles Part No. V-75) having butted corners, the corners sealed with silicone.

Glazing:

- Two domed layers of nominally 3.2 mm (0.125") thick acrylic plastic (Plaskolite) with a 6.4 mm (1/4") air space, the two layers separated about the perimeter with double sided adhesive backed closed cell foam tape (continuous at three corners) measuring 9.5 mm wide by 6.4 mm thick (3/8"×1/4") sandwiched between the layers The tape joint at the fourth corner was sealed with silicone.

Glazing Method:

- Laid in glazed on the interior on a bed of silicone measuring nominally 13 mm (1/2") wide applied on a co-extruded flexible vinyl glazing gasket (Vinyl Profiles Part No. V-76), and retained with the extruded aluminum capping on the exterior, double-sided adhesive backed closed cell foam tape measuring 9.5 mm wide by 3.2 mm thick (3/8"×1/8") being sandwiched between the exterior domed layer and the back side of the aluminum capping. The corners of the exterior domed layer were also sealed to the back-side of the capping with silicone. The aluminum cap was fastened to the skylight sash using #8×3/4" self-drilling tek screws, installed through the side of the capping.

Skylight No.	Number of Aluminum Cap Fasteners	
	Head/Sill	Jambs
A	3	6
C	6	6

Drawings:

- *Plan and Cross-Section Drawing:*
  Artistic Skylight Domes drawing V-PVCCM, undated

- *Component Drawings:*
  Vinyl Profiles Ltd. Drawing No. V-413, titled “Curb Mount Frame”, dated March 24, 2009
  Spectra Aluminum Products Die No. SS-1631, titled “Sash Frame”, dated Jan/13/2000
  Vinyl Profiles Ltd. Drawing V-130, titled “Artistic Skylight Domes-Sash Thermal Cover”, undated
  BonL Canada Inc. Die No. PA-37250, untitled, dated Nov/01/1995

Drawings are enclosed with this report in Appendix A.

4 Testing and Evaluation Methods

The Unit Skylight (glazed with plastic) (SKP/RW) as described in this report was tested to the Residential (R) Performance Class as follows: (The skylight met the Gateway Performance Requirements, by virtue of meeting the higher (optional) performance grades to which they was tested):

- Minimum Gateway Test Size: 500 mm × 1100 mm
- Maximum Allowable Air Leakage: 1.5 L/s•m² (0.3 cfm/ft²)
- Minimum Water Pressure: 140 Pa (2.9 psf)
- Minimum Design Pressure: 720 Pa (15 psf)
- Minimum Structural Pressure: 1440 Pa (30 psf)

The skylights were tested for compliance to the above test criteria in order to achieve the Gateway Performance Designation of Class R-PG15 / R-PG720. The skylights tested had an overall size as follows:
A- 673 mm wide by 1876 mm high (26-1/2" × 73-7/8")
B- 1327 mm wide by 1324 mm high (52-1/4" × 52-1/8")

Performance testing was conducted in order to meet the overall Optional Performance requirements as follows:

A- 22-1/4" × 67"

- Optional Water Pressure: 580 Pa (12 psf)
- Optional Water Pressure (Canada): 730 Pa (15.2 psf)
- Optional Positive Design Pressure: 3840 Pa (80 psf)
- Optional Negative Design Pressure: 1200 Pa (25 psf)
- Optional Positive Structural Test Pressure: 7680 Pa (160 psf)
- Optional Negative Structural Test Pressure: 2400 Pa (50 psf)
- Canada (only) Air Infiltration/Exfiltration Level: A2

B- 48" × 48"

- Optional Water Pressure: 580 Pa (12 psf)
- Optional Water Pressure (Canada): 730 Pa (15.2 psf)
- Optional Positive Design Pressure: 1200 Pa (25 psf)
- Optional Negative Design Pressure: 960 Pa (20 psf)
- Optional Positive Structural Test Pressure: 2400 Pa (50 psf)
- Optional Negative Structural Test Pressure: 1920 Pa (40 psf)
- Canadian (only) Air Infiltration/Exfiltration Level: A3

DEVIATION FROM THE TEST STANDARD

Testing was not initiated at the minimum Gateway grade levels for the SKG-R class of skylights in all incidences of testing. As testing was performed in conjunction with other skylight test standards, the skylight was tested to the Optional Performance Grades of AAMA/WDMA/CSA 101/I.S.2/A440-08. By default, the minimum Gateway requirements were met by virtue of meeting the requirements at higher test levels.

4.1. OPERATING FORCE TEST (Clause 5.3.1.1)

The Operating Force Test was performed and evaluated in accordance AAMA/WDMA/CSA 101/I.S.2/A440-08, *"Standards/Specifications for windows, doors and unit skylights*", Section 5.3.1.1.

The Operating Force test was measured with a torque wrench applied on the rotary knob, with the handle removed. The forces required to initiate motion of the operable panel from both the fully open and fully closed positions, as well as the force required to maintain motion to the opposite limits of travel, were measured.

4.2. AIR LEAKAGE RESISTANCE TEST (Clause 5.3.2)

The Air Leakage Resistance test was performed in accordance with 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*."

Air infiltration and exfiltration tests were performed using test pressures of 75 Pa (1.57 psf). The maximum air leakage rate was calculated and compared to the allowable air leakage.

4.3. WATER PENETRATION RESISTANCE TEST (Clause 5.3.3)

The Water Tightness test was conducted and evaluated in accordance AAMA/WDMA/CSA 101/I.S.2/A440-08, Section 5.3.3.4, in conjunction with ASTM E331-00, "*Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference*".

The Water Tightness test was performed with the skylight installed into a make-shift roof opening as installed by the client, the installation details contained herein. For the water penetration test, the roof was placed at a 15° incline from horizontal at the specified pressure differential and a water spray rate of at least 204 L/m² per hour (5.0 US gal/ft² per hour). The test duration was 15 minutes.

4.3 UNIFORM LOAD TEST (Clause 5.3.4)

4.3.1 Uniform Load Deflection Test (Clause 5.3.4.2)

The Uniform Load Deflection test was conducted in accordance with ASTM E330-02, "*Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference*," Procedure A.

The Deflection test was performed in both the positive and negative directions. A load equal to one-half the anticipated allowable load was applied and held for one minute. Deflection measurements were taken at the mid-span and ends of a jamb. The load was then released and deflection readings were taken after a recovery period of not less than one minute nor more than five minutes at zero load. The test specimen was evaluated for permanent damage. The anticipated allowable load was then be applied and held for one minute. Deflection readings were taken. The load was then released; deflection readings were taken after a recovery period of not less than one minute nor more than five minutes at zero load. The test specimen was evaluated for failure or permanent deformation of any part of the skylight that would cause any operational malfunction.

4.3.2 Uniform Load Structural Test (Clause 5.3.4.3)

The Uniform Load Structural Test was conducted in accordance with ASTM E330-02, "*Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference*," Procedure A.

The Structural test was performed in both the positive and negative directions. A load equal to one-half the structural test pressure was applied and held for one minute. Permanent deflection measurements were taken at the mid-span and ends of a jamb. The load was then released and deflection readings were taken after a recovery period of not less than one minute nor more than five minutes at zero load. The test specimen was evaluated for permanent damage. The structural test pressure was then be applied and held for one minute. Deflection readings were taken. The load was then released; Permanent deflection readings were taken after a recovery period of not less than one minute nor more than five minutes at zero load. The test specimen was evaluated for failure or permanent deformation of any part of the skylight that would cause any operational malfunction.

4.4 THERMOPLASTIC CORNER WELD TEST (Clause 5.3.6.2)

Corner weld tests were conducted in accordance with Clause 5.3.6.2 of the AAMA/WDMA/CSA 101/I.S.2/A440-08. Each corner sample was mounted in a test fixture as per Figure 12 of the standard. The frame corners were loaded as per Figure 12 with a gradually increasing load until breakage of the corner occurred. When loaded to failure, the break shall not extend along the entire weld line.

4.5 DISTRIBUTED LOAD TEST (Clause 5.3.6.6.2)

The Distributed Load Test was conducted in accordance with the distributed Load Test described in AAMA/WDMA/CSA 101/I.S.2/A440-08, Section 5.3.6.6.2. The skylights must resist a minimum load of 240 Pa (5.0 psf), including the weight of the operable sash.

5 Testing and Evaluation Results

5.1 Operating Force Test (Clause 5.3.1)

A- V-PVCCM 22-1/4"×67"	*Force applied to sash roto-operator*
Maximum measured force to initiate opening:	7.0 N (1.5 lbf)
Maximum measured force to initiate closing:	3.7 N (0.8 lbf)
Maximum measured force to maintain motion	4.3 N (1.0 lbf)

B- V-PVCCM 48"×48"	*Force applied to sash roto-operator*
Maximum measured force to initiate opening:	7.8 N (1.8 lbf)
Maximum measured force to initiate closing:	2.1 N (0.5 lbf)
Maximum measured force to maintain motion	4.6 N (1.0 lbf)

Maximum allowable force to initiate motion (US):	Report Only
Maximum allowable force to maintain motion (US):	45 N (10 lbf)
Maximum allowable force to initiate motion (Canadian):	90 N (20 lbf)
Maximum allowable force to maintain motion (Canadian):	45 N (10 lbf)

The V-PVCCM skylight **MET** the US and Canadian Operating Force performance requirements of AAMA/WDMA/CSA 101/I.S.2/A440-08.

5.2 Air Leakage Resistance Test (Clause 5.3.2)

A- V-PVCCM 22-1/4"×67"	
Air Leakage – 75 Pa (1.57 psf)	
Net infiltration:	0.88 L/s (1.87 cfm)
Total Skylight Area	1.311 m² (14.11 ft²)
Air Leakage Rate:	0.67 L/s·m² (0.133 cfm/ft²)
Air Exfiltration – 75 Pa (1.57 psf)	
Net exfiltration:	0.05 L/s (0.10 cfm)
Total Skylight Area	1.311 m² (14.11 ft²)
Exfiltration rate:	0. 04 L/s·m² (0.007 cfm/ft²)

B – V-PVCCM 48"×48"	
Air Leakage – 75 Pa (1.57 psf)	
Net infiltration:	0.14 L/s (0.30 cfm)
Total Skylight Area	1.812 m² (19.51 ft²)
Air Leakage Rate:	0.08 L/s·m² (0.015 cfm/ft²)
Air Exfiltration – 75 Pa (1.57 psf)	
Net exfiltration:	0.33 L/s (0.69 cfm)
Total Skylight Area	1.812 m² (19.51 ft²)
Exfiltration rate:	0.18 L/s·m² (0.035 cfm/ft²)

Maximum allowable air leakage rate:	1.5 L/s·m² (0.3 cfm/ft²)
Maximum allowable air leakage rate (Canadian A2):	1.5 L/s·m² (0.3 cfm/ft²)
Maximum allowable air leakage rate (Canadian A3):	0.5 L/s·m² (0.1 cfm/ft²)

The V-PVCCM 22-1/4×67 skylight **MET** the performance levels (as well as **A2** Canadian Infiltration/Exfiltration Levels) specified in AAMA/WDMA/CSA 101/I.S.2/A440-08 for Air Leakage Resistance.

The V-PVCCM 48×48 skylight **MET** the performance levels (as well as **A3** Canadian Infiltration/Exfiltration Levels) specified in AAMA/WDMA/CSA 101/I.S.2/A440-08 for Air Leakage Resistance.

5.3 Water Penetration Resistance Test (Clause 5.3.2)

A- V-PVCCM 22-1/4"×67"	
Pressure Differential	730 Pa (15 psf)
Skylight Inclination Angle	0° and 15°
Results:	No water leakage observed.
B – V-PVCCM 48"×48"	
Pressure Differential	730 Pa (15 psf)
Skylight Inclination Angle	0° and 15°
Results:	No water leakage observed.

The V-PVCCM skylights **MET** the minimum Gateway Water Penetration Resistance requirement at 140 Pa (2.9 psf), and the Optional Performance requirement for Residential class at 580 Pa (12 psf) in AAMA/WDMA/CSA 101/I.S.2/A440-08. Additionally, the skylight system met the maximum water penetration resistance requirements for Canadian applications at 730 Pa (15.2 psf).

5.4 Uniform Load Test (Clause 5.3.2)

Uniform Load Deflection Test - A- V-PVCCM 48"×48"		
Member	Jamb	
Span Length	1823 mm (71-3/4")	
Allowable Deflection	Report only	
Test Pressure*	***Positive Load***	***Negative Load***
	+3840 Pa (+80 psf)	-1200 Pa (-25 psf)*
Maximum Net Deflection	0.23 mm (0.009")	6.66 mm (0.262")
Note	** Negative Load test data was recorded at -2160 Pa (-45 psf) rather than -1200 Pa (-25 psf)*	
Post-test Details	After the test loads were released, the skylight was inspected and there was found to be no failure or permanent deformation of any part of the skylight that would cause any operational malfunction.	

Uniform Load Deflection Test - B – V-PVCCM 48"×48"		
Member	Jamb	
Span Length	1187 mm (46-3/4")	
Allowable Deflection	Report only	
Test Pressure*	***Positive Load***	***Negative Load***
	+1200 Pa (+25 psf)	-1200 Pa (-25 psf)*
Maximum Net Deflection	0.30 mm (0.012")	2.96 mm (0.117")
Note	*** Negative Load test data was recorded at -1200 Pa (-25 psf) rather than -960 Pa (-20 psf)*	
Post-test Details	After the test loads were released, the skylight was inspected and there was found to be no failure or permanent deformation of any part of the skylight that would cause any operational malfunction.	

5.4 Uniform Load Tests (cont'd)

Uniform Load Structural Test - A- V-PVCCM 22-1/4"×67"		
Member	Jamb	
Span Length	1823 mm (71-3/4")	
Allowable Residual Deflection (0.4% × span)	7.29 mm (0.287″)	
Test Pressure	***Positive Load***	***Negative Load***
	+7680 Pa (+160 psf)	-2400 Pa (-50 psf)
Residual Net Deflection	0.17 mm (0.007")	0.09 mm (0.004")
Post-test Details	After the test loads were released, the skylight was inspected and there was found to be no failure or permanent deformation of any part of the skylight that would cause any operational malfunction.	

Uniform Load Structural Test - B – V-PVCCM 48"×48"		
Member	Jamb	
Span Length	1187 mm (46-3/4")	
Allowable Residual Deflection (0.4% × span)	4.75 mm (0.187″)	
Test Pressure	***Positive Load***	***Negative Load***
	+2640 Pa (+55 psf)*	-2000 Pa (-41.8 psf)**
Residual Net Deflection	3.39 mm (0.133")	0.61 mm (0.024")
Note:	** Residual deflection measurements at Positive Load were taken at ±2640 Pa instead of ±2400 Pa*	
Note:	*** Residual deflection measurements at Positive Load were taken at ±2000 Pa instead of ±1920 Pa*	
Post-test Details	After the test loads were released, the skylight was inspected and there was found to be no failure or permanent deformation of any part of the skylight that would cause any operational malfunction.	

The V-PVCCM skylights met the minimum Gateway Uniform Load Structural Test (200% of Design Pressure) performance requirements at ±1440 Pa (±30 psf). The skylights met the optional performance requirements as specified in AAMA/WDMA/CSA 101/I.S.2/A440-08 as follows:

Skylight No.	Structural Load Achieved	
	Positive Load	Negative Load
A	+7680 Pa (+160 psf)	-2400 Pa (-50 psf)
B	+2400 Pa (+50 psf)	-1920 Pa (-40 psf)

The V-PVCCM skylights qualify for the design loads as follows:

Skylight No.	Design Loads	
	Positive Load	Negative Load
A	+3840 Pa (+80 psf)	-1200 Pa (-25 psf)
B	+1200 Pa (+25 psf)	-960 Pa (-20 psf)

5.5 Thermoplastic Corner Weld Test (Clause 5.3.6.2)

Frame- Break did not extend along entire weld line.

The skylights met the performance requirements specified in AAMA/WDMA/CSA 101/I.S.2/A440-08 for thermoplastic corner weld test.

5.6 Distributed Load Test (Clause 5.3.6.6.2)

A - V-PVCCM 22-1/4 × 67	
Applied Test Load (Total weight including sash):	240 Pa (5 psf)
Sash Weight	15.9 kg. (35.0 lbs)
Sash Area	1.34 m² (14.1 ft²)
Additional weight to be added	16.1 kg. (35.5 lbs)
Test Details	The sash and hardware supported the applied uniformly distributed load of 240 Pa (5.0 psf) for a duration of 10 seconds without failure. The sash properly and fully closed at the conclusion of the test. There was no failure of screws, track, hinges, or permanent deformation of support arms.
Compliance	PASS

B - V-PVCCM 48 × 48	
Applied Test Load (Total weight including sash):	240 Pa (5 psf)
Sash Weight	19.78 kg. (43.6 lbs)
Sash Area	1.85 m² (19.88 ft²)
Additional weight to be added	25.3 kg (55.8 lbs)
Test Details	The sash and hardware supported the applied uniformly distributed load of 240 Pa (5.0 psf) for a duration of 10 seconds without failure. The sash properly and fully closed at the conclusion of the test. There was no failure of screws, track, hinges, or permanent deformation of support arms.
Compliance	PASS

The V-PVCCM skylights **MET** the performance requirements specified in AAMA/WDMA/ CSA 101/I.S.2/A440-08 for the distributed load test for the Residential class of units skylights (glazed with glass).

6 Conclusion

When tested to the requirements in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-08 *"NAFS North American Fenestration Standard/Specification for windows, doors, and skylights"* and AAMA/WDMA/CSA 101/I.S.2/A440S1-09, *Canadian Supplement,* the V-PVCCM skylights described and tested herein achieved the following Performance Designations:

Primary Designator

(CAN)
- A - Class R-PG1200 (metric)-Size Tested 673×1876 mm - SKP/RW
- B - Class R-PG960 (metric)-Size Tested 1327×1324 mm - SKP/RW

(US)
- A - Class R-PG25-Size Tested 26.5×73.9 in - SKP/RW
- B - Class R-PG20-Size Tested 52.3×52.2 in - SKP/RW

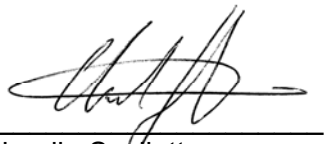
Secondary Designator

A Positive Design Pressure = +3840 Pa (+80 psf)
Negative Design Pressure = -1200 Pa (-25 psf)
Water Penetration Resistance (US only) = 580 Pa (12 psf)
Water Penetration Resistance (Canada only) = 730 Pa (15.2 psf)
Canadian Air Leakage Resistance (Infiltration/Exfiltration) = A2

B Positive Design Pressure = +1200 Pa (+25 psf)
Negative Design Pressure = -960 Pa (-20 psf)
Water Penetration Resistance (US only) = 580 Pa (12 psf)
Water Penetration Resistance (Canada only) = 730 Pa (15.2 psf)
Canadian Air Leakage Resistance (Infiltration/Exfiltration) = A3

INTERTEK

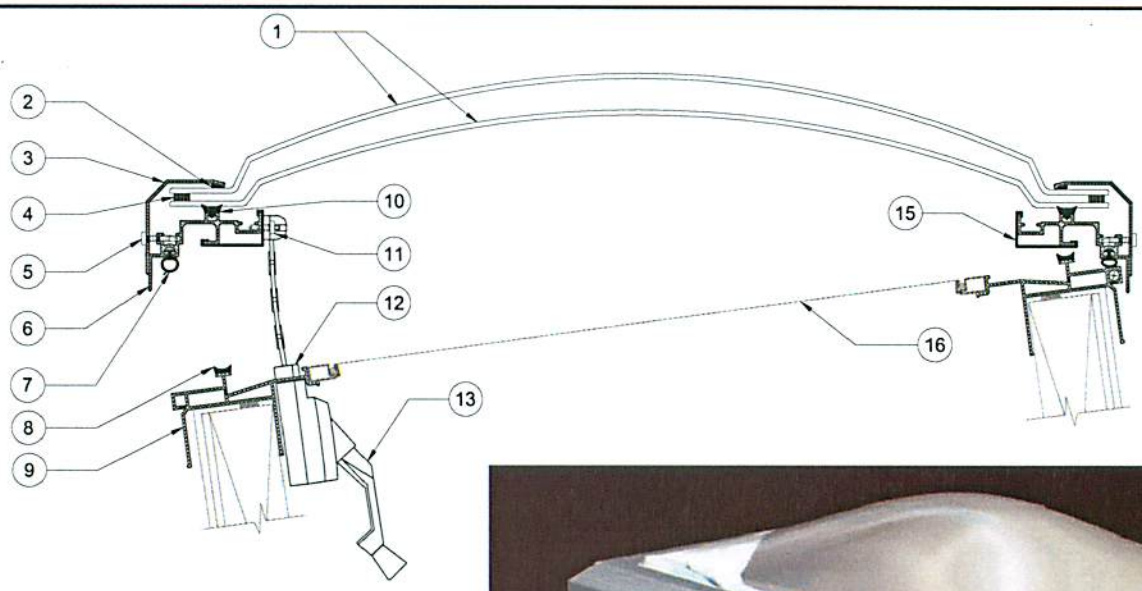
Tested by Mustafa Swalah, Ryan Huynh and Claudio Sacilotto

Reported by: 
Claudio Sacilotto
Physical Testing Services

Reviewed by: 
Ryan Huynh
Physical Testing Services

Appendix A – Parts List / Drawings

(Parts List / Drawings – 5 pages)



MODEL V-PVCCM (CURBMOUNT VENTING – ACRYLIC DOME GLAZING)

	DETAIL
UNIT 1: DOUBLE DOME	1 – CLEAR ⅛" THK.
	2 – CLEAR ⅛" THK.
UNIT 2: DOUBLE DOME	1 – TRANSPARENT BRONZE ⅛" THK.
	2 – CLEAR ⅛" THK.
UNIT 3: DOUBLE DOME	1 – CLEAR ⅛" THK.
	2 – TRANSLUCENT WHITE ⅛" THK.
UNIT 4: TRIPLE DOME	1 – CLEAR ⅛" THK.
	2 – CLEAR ⅛" THK.
	3 – CLEAR ⅛" THK.
UNIT 5: TRIPLE DOME	1 – TRANSPARENT BRONZE ⅛" THK.
	2 – CLEAR ⅛" THK.
	3 – CLEAR ⅛" THK.
UNIT 6: TRIPLE DOME	1 – CLEAR ⅛" THK.
	2 – CLEAR ⅛" THK.
	3 – TRANSLUCENT WHITE ⅛" THK.

PARTS LIST

MODEL V-PVCCM (CURBMOUNT VENTING – ACRYLIC DOME GLAZING)

PARTICULAR	MANUFACTURER
1. ACRYLIC GLAZING	PLASKOLITE INC., U.S.A.
2. ⅜" x ¼" DOUBLE FACE VINYL FOAM GLAZING TAPE	GASKA TAPE INC., PART # 623012020
3. EXTRUDED ALUMINUM RETAINING FRAME-MEDIUM (6063-T5 ALLOY)	BON-L , DIE # PA-37250
4. ¼" x ⅜" DOUBLE FACE VINYL GLAZING TAPE	GASKA TAPE INC., PART # 623025022
5. #8 – 18 X ¾" ASSEMBLY SCREW	ROBERTSON, CANADA
6. EXTRUDED ALUMINUM SASH FRAME (6063-T5 ALLOY)	SPECTRA, DIE # SS-1631
7. BULB GASKET (FLEXIBLE PVC-UV STABLE)	VINYL PROFILES LTD., # V-75
8. CO-EXTRUDED RUBBER DRAFT SEAL	EXTRUSION PROFILES INC.
9. EXTRUDED RIGID THERMAL PVC CURB MOUNT FRAME	VINYL PROFILES LTD., DIE # V-413
10. SANTOPRENE CUP GASKET (UV STABLE)	VINYL PROFILES LTD., # V-76
11. #8 – 18 X ½" ASSEMBLY SCREW	ROBERTSON, CANADA
12. CHAIN DRIVE OPERATING MECHANISM	TRUTH HARDWARE, U.S.A.
13. TELESCOPING POLE-HOOK / HANDLE	TRUTH HARDWARE, U.S.A.
14. EXTRUDED RIGID PVC SASH THERMAL FRAME COVER (UV STABLE)	VINYL PROFILES LTD., # V-130
15. INSECT SCREEN	PHIFER WIRE PRODUCTS, INC., USA

Artistic
SKYLIGHT DOMES LTD

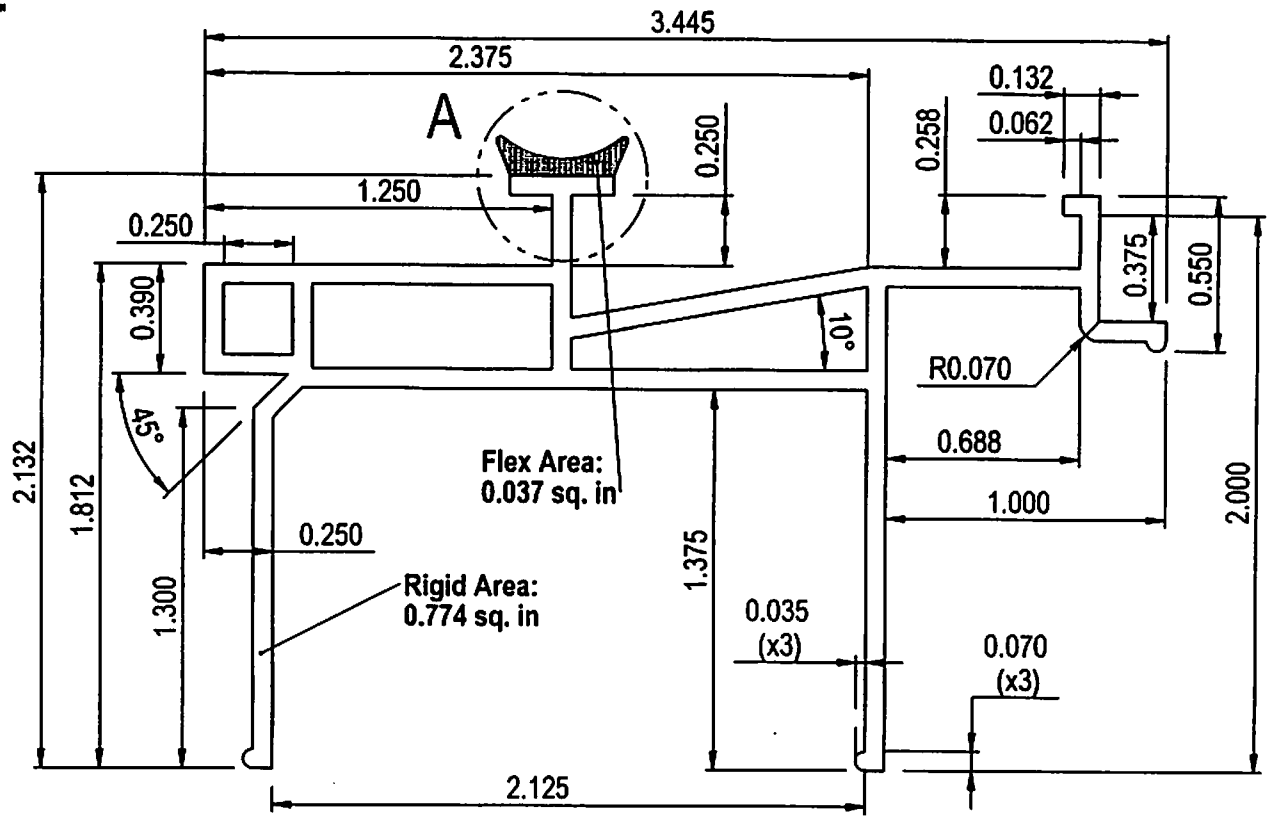
2 Guided Court
Etobicoke, Ontario, Canada M9V 4K6
E-mail: artistic@istar.ca
Web: www.artisticskylight.com

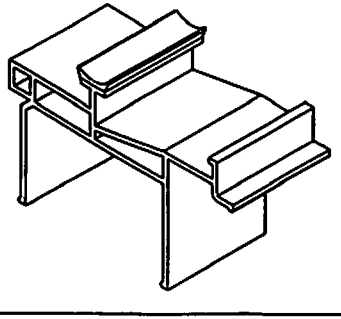
SKYLIGHT MODEL:

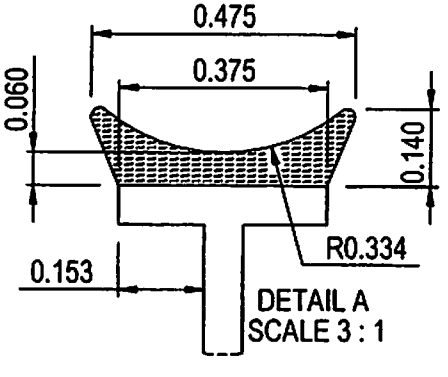
V-PVCCM

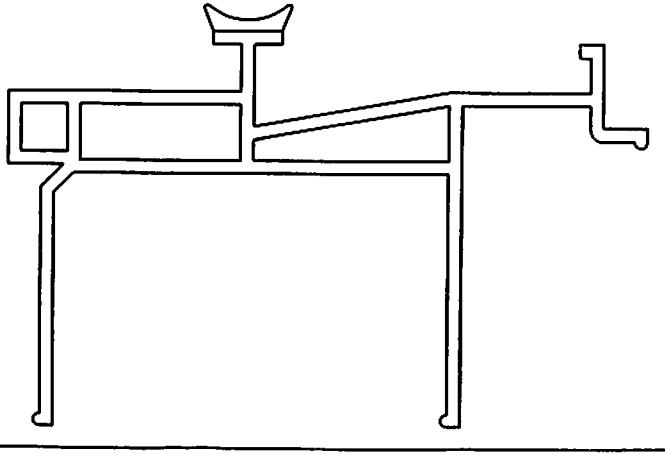
Vinyl Profiles Ltd.	Customer: Artistic		Date: March 24, 2009	Die #: V-413
CUSTOM EXTRUSION	Part Name: Curb Mount Frame		Scale: 1.5:1	Rack #: ---
166 ROMINA DR. VAUGHAN ONT. L4K 4Z7	Drawing #: V-413	Part#: 328C	Drawn By: S. Q	Area : 0.811 sq. in
Tel: 1-905-669-0336 1-905-669-0337 Fax: 1-905-669-0380	Material: Dual PVC	Color: WHT 143 / Flex-65	Approved By:	Unit: Inch

Wall Thinkness: 0.070"
Typ. Radii: 0.015"







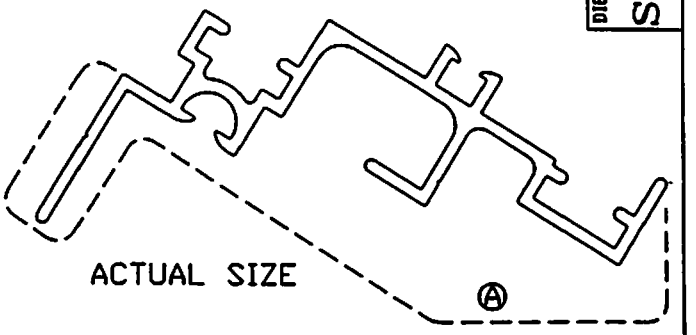


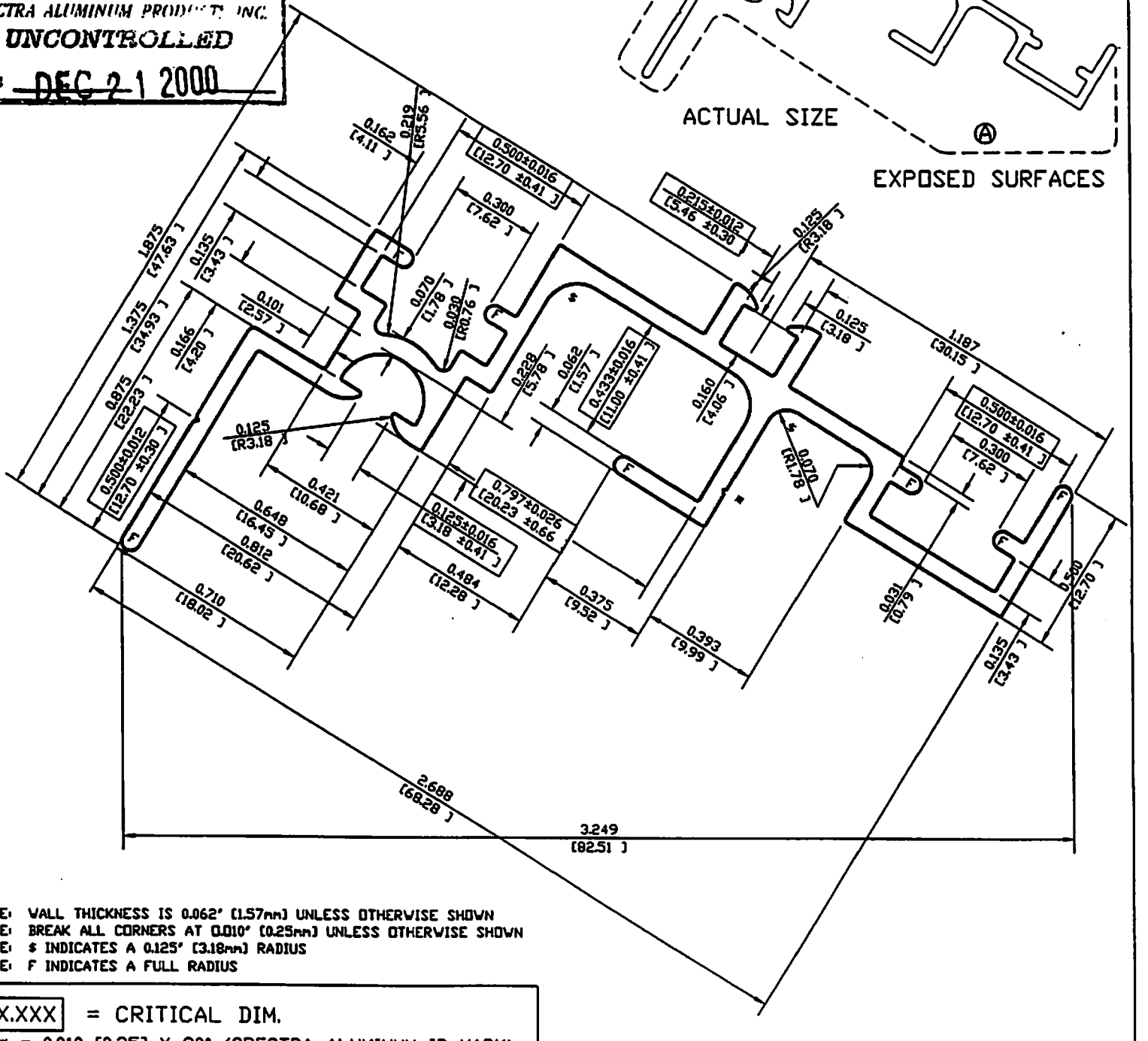
SCALE: 1:1

DESCRIPTION: SASH FRAME	PROPOSAL#: SP-11740	DIE NO. SS-1631
CUSTOMER # 01187233	CUSTOMER: ARTISTIC SKYLIGHTS	

	LET.	REVISION	BY:
NOV/14/00	A	EXPOSED SURFACES ADDED	S.B.

SPECTRA ALUMINUM PRODUCTS INC.
UNCONTROLLED
Date: DEC 21 2000





NOTE: WALL THICKNESS IS 0.062" [1.57mm] UNLESS OTHERWISE SHOWN
NOTE: BREAK ALL CORNERS AT 0.010" [0.25mm] UNLESS OTHERWISE SHOWN
NOTE: $ INDICATES A 0.125" [3.18mm] RADIUS
NOTE: F INDICATES A FULL RADIUS

X.XXX = CRITICAL DIM.
* = 0.010 [0.25] X 90° (SPECTRA ALUMINUM ID MARK)

NOTE: STANDARD ALUMINUM ASSOCIATION TOLERANCES APPLY UNLESS OTHERWISE SPECIFIED.

ING: WEIGHT ☒	PIECE: ☐	ALLOY: CHECK P.O.	TEMPER: T5	
PRESS NO.: 1	CONT'R: 6"	PKT.: 3/4"	EXT. RATIO	
BACKER NO.: BA-1631-1		DIE SIZE: 8" x 1"		
BOLSTER NO.: EO-1D		BACKER SIZE: 8" x 3"		
GUAGE:	NITROGEN: ☐	CAV.: 1		
DWN. BY: S.B.	SCALE: 2:1	DATE: JAN/13/2000		

SPECTRA
ALUMINUM PRODUCTS INC

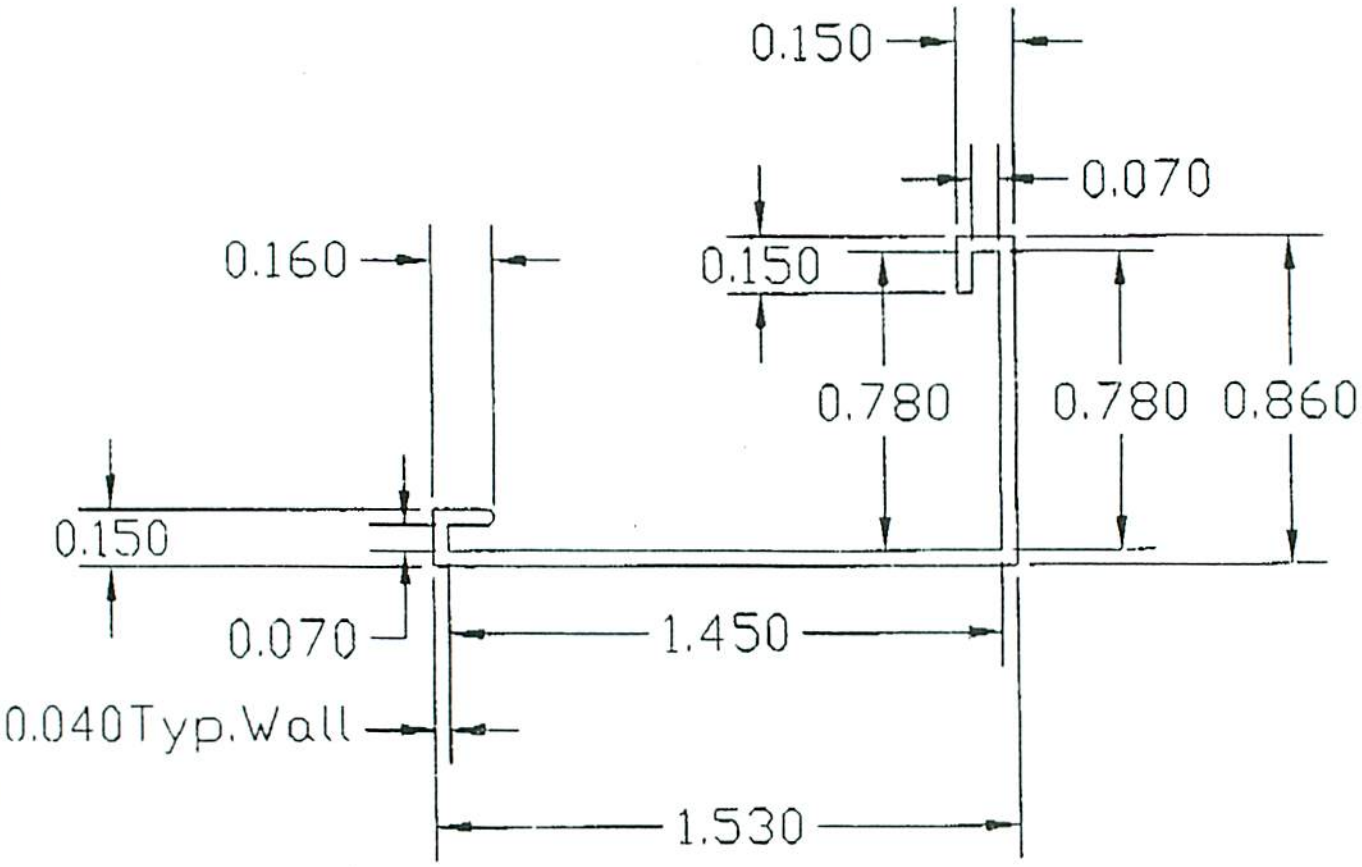
EST. AREA: 0.471 sq.in 303.87 sq.mm	OUT. PER.	In	mm
OUT. PER.: 14.280 In 362.71 mm	FACTOR:		
EST. WT.: 0.556 lbs/ft. 0.826 kg/m	C.C.D.:	In	mm

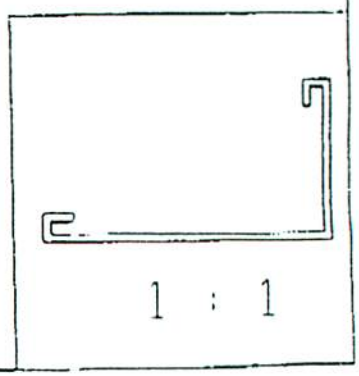
Vinyl Profiles Ltd.

120 Norfinch Drive Unit 6,
North York, Ont. M3N 1X3
Tel: 416-739-6336
Fax: 416-739-7070

Artistic Skylight Domes - Sash Thermal Cover

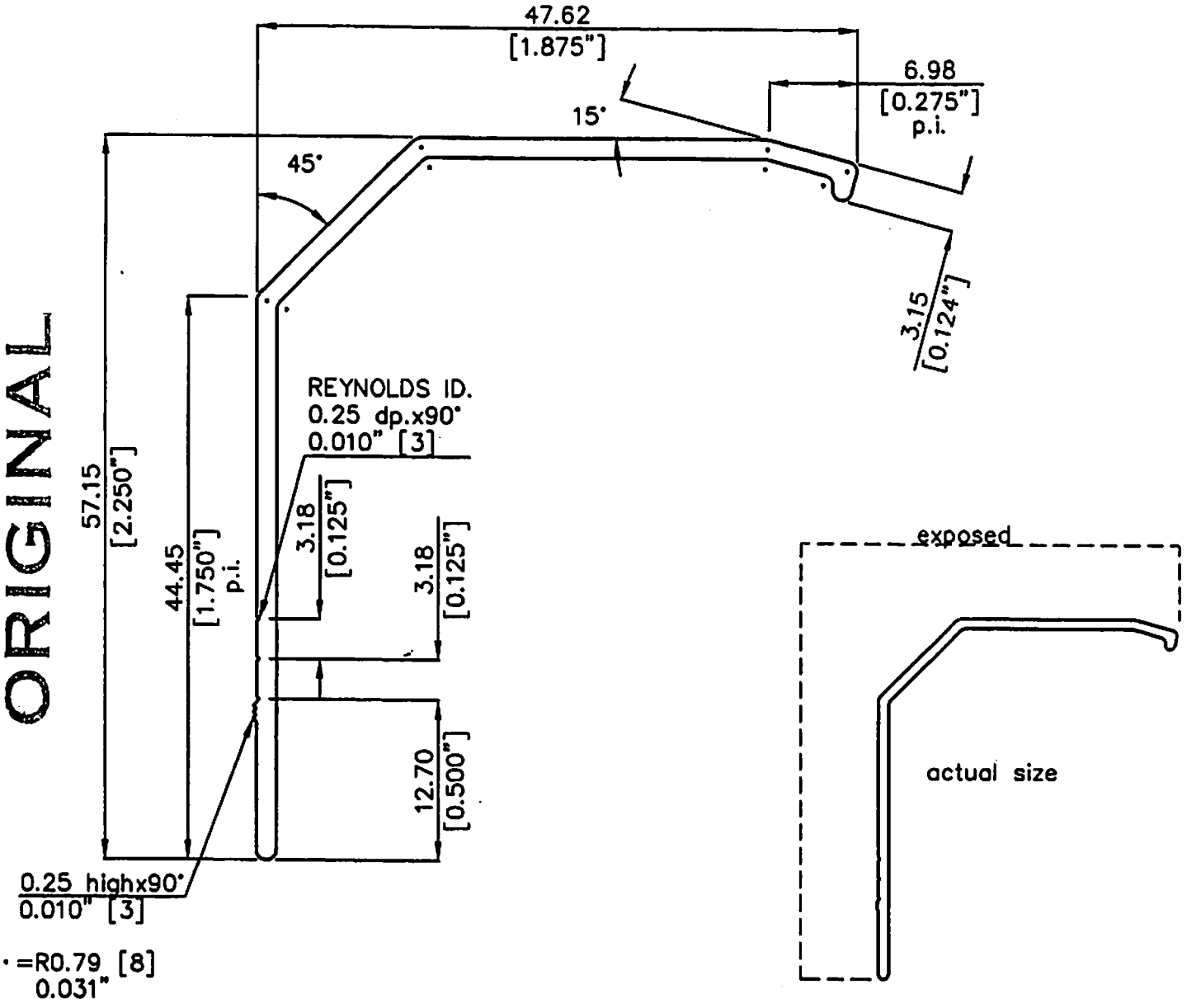
V-130





PROPOSAL NO.	CUSTOMER	DIE NO.
	ARTISTIC SKYLIGHT	PA-37250

ORIGINAL



· =R0.79 [8]
0.031"

VENDOR:	DATE ORDERED:	DATE DUE:	P.O.#:

ITEM	ACCOUNT #	QTY	COPY NO.	DESCRIPTION	TOTAL $
1					

Rev. #	Revision	Date	Rev. #	Revision	Date

CUSTOMER PART #:		RomiShape ☐	DESCRIPTION: DOME CAP						
CONTAINER: 7"	DIE TYPE: D+B	BACKER: 37250	UNMARKED THICKNESS:		1.27	mm	0.050	Inches	
NO. CAVITIES: 2	RING: 9" STEP	BOLSTER: 1B-25428	UNMARKED RADII:		FULL	mm	FULL	Inches	
DIE RATIO: 81	DIE PLATE: 13/4	SUB-BOL: —	DRAWN: FORBIE	AREA:	154	mm^2	0.238	$Inches^2$	
DIE STACK: 9x4	FEEDER: PIF	SHIM: —	SCALE: 2:1	MASS:	0.425	kg/m	0.286	lbs/ft	
Sharp corner tolerance: + 0.40 mm 0.016 Inches			DATE: NOV/01/1995	PERIMETER:	197.9	mm	7.791	Inches	
Standard Aluminum Association tolerances apply unless otherwise stated			ALLOY: 6063	EXT. PER:	—	mm	—	Inches	
Bon L Canada Inc. AURORA, ONTARIO PICKERING, ONTARIO RICHMOND HILL, ONTARIO STE. THERESE, QUEBEC			CLASS: SOLID	FACTOR:	466	metric	27	Imperial	
			DISKETTE:	C.C.D.:	73	mm	2.87	Inches	