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RENDERED TO

Artistic Skylight Domes Ltd.
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Attention: Nenzio Ferrazzo

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

Report of Testing for Artistic Skylights Domes Ltd. on GV-PVCCM curb-mounted venting glass 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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2 Introduction

Intertek has conducted performance testing for Artistic Skylight Domes Ltd. on two GV-PVCCM curb-mounted fixed glass 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 9, 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 16, 2009 and was completed April 13, 2009.

3 Test Specimen

3.1. SPECIMEN AND ASSEMBLY DESCRIPTION

Designations:

- (CAN)
 - A - Class R-PG1200 (metric)-Size Tested 693×1894 mm - SKG/RW
 - B - Class R-PG1200 (metric)-Size Tested 1346×1346 mm - SKG/RW
- (US)
 - A - Class R-PG25-Size Tested 27.3×74.6 in - SKG/RW
 - B - Class R-PG25-Size Tested 53.0×53.0 in - SKG/RW

Model: • GV-PVCCM Skylight

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

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

Condition: • New and undamaged

Frame

Overall Size:

Skylight No.	Width	Height
A	693 mm (27-1/4")	1894 mm (74-9/16")
B	1327 mm (52-1/4")	1324 mm (52-1/8")

Frame: • Extruded vinyl main frame members (Extrusion Profiles 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")	1759 mm (69-1/4")
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 Nailing Fin	Jamb Nailing Fin
A	2	5
B	5	5

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	693 (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:

- None (original slots along sill 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:

- Sample A- Factory sealed glazing unit having an exterior sheet of nominally thick 4 mm glass, an interior sheet of laminated 3mm/3mm and a metal spacer with a 9.8 mm (3/8") air gap. Overall IG thickness was 20.3.
 - Sample B- Factory sealed glazing unit having an exterior sheet of nominally thick 4 mm tempered glass, an interior sheet of laminated 3mm/3mm and a metal spacer with a 9.5 air gap.. Overall IG thickness was 17.5 mm .
-

- Glazing Method:**
- Laid in glazed on the interior on a bed of silicone applied to and underlying kerf-inserted rubber 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 6.4 mm wide by 3.2 mm thick (1/4"x1/8") was sandwiched between the exterior face of the sealed unit and the back side of the aluminum capping. The aluminum cap was fastened to the skylight frame using #8x3/4" self-drilling tek screws, installed through the side of the capping. Neoprene shims, secured by a dab of caulking, were fitted between the edge of the sealed unit and the down-turned leg of the capping, located at mid-width and approximately 38 mm (1-1/2") on centre from the adjacent corner. The shims measured 38 mm long by 25.4 mm wide by 4.8 mm thick (1-1/2"x1"x3/16").

Skylight No.	Number of Aluminum Cap Fasteners	
	Head/Sill	Jambs
A	3	8
B	5	5

Skylight No.	Number of Neoprene Shims	
	Head/Sill	Jambs
A	2	3
B	3	3

- Drawings:**
- Plan and Cross-Section Drawing:
Artistic Skylight Domes drawing GV-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 glass) (SKG/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 (as measured by the sash):

A- 693 mm wide by 1894 mm high (27-1/4" × 74-9/16")

B- 1346 mm wide by 1346 mm high (53" × 53")

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: 3600 Pa (75 psf)
- Optional Negative Design Pressure: 1200 Pa (25 psf)
- Optional Positive Structural Test Pressure: 7200 Pa (150 psf)
- Gateway Negative Structural Test Pressure: 2400 Pa (50 psf)
- Canada (only) Air Infiltration/Exfiltration Level: Fixed

B- 48" × 48"

- Optional Water Pressure: 580 Pa (12 psf)
 - Optional Water Pressure (Canada): 730 Pa (15.2 psf)
 - Optional Positive Design Pressure: 5040 Pa (105 psf)
 - Optional Negative Design Pressure: 1200 Pa (25 psf)
 - Optional Positive Structural Test Pressure: 10080 Pa (210 psf)
 - Optional Negative Structural Test Pressure: 2400 Pa (50 psf)
 - Canadian (only) Air Infiltration/Exfiltration Level: Fixed
-

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- GV-PVCCM 22-1/4" x67"	<i>Force applied to sash roto-operator</i>
Maximum measured force to initiate opening:	10.2 N (2.3 lbf)
Maximum measured force to initiate closing:	4.4 N (1.0 lbf)
Maximum measured force to maintain motion	9.8 N (2.2 lbf)

B- GV-PVCCM 48" x48"	<i>Force applied to sash roto-operator</i>
Maximum measured force to initiate opening:	21 N (4.8 lbf)
Maximum measured force to initiate closing:	2 N (0.5 lbf)
Maximum measured force to maintain motion	18 N (4.0 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 GV-PVCCM skylight **MET** the (US and Canada) Operating Force performance requirements of AAMA/WDMA/CSA 101/I.S.2/A440-08.

5.2 Air Leakage Test (Clause 5.3.2)

A- GV-PVCCM 22-1/4"x67"	
Air Infiltration – 75 Pa (1.57 psf)	
Net infiltration:	0.09 L/s (0.20 cfm)
Total Skylight Area	1.313 m ² (14.13 ft ²)
Air Leakage Rate:	0.07 L/s·m ² (0.016 cfm/ft ²)
Air Exfiltration – 75 Pa (1.57 psf)	
Net exfiltration:	0.28 L/s (0.59 cfm)
Total Skylight Area	1.313 m ² (14.13 ft ²)
Exfiltration rate:	0.2 L/s·m ² (0.049 cfm/ft ²)
B – GV-PVCCM 48"x48"	
Air Infiltration – 75 Pa (1.57 psf)	
Net infiltration:	0.19 L/s (0.40 cfm)
Total Skylight Area	1.812 m ² (19.51 ft ²)
Air Leakage Rate:	0.1 L/s·m ² (0.020 cfm/ft ²)
Air Exfiltration – 75 Pa (1.57 psf)	
Net exfiltration:	0.42 L/s (0.89 cfm)
Total Skylight Area	1.812 m ² (19.51 ft ²)
Exfiltration rate:	0.2 L/s·m ² (0.05 cfm/ft ²)
Maximum allowable air leakage rate:	1.5 L/s·m ² (0.3 cfm/ft ²)
Maximum allowable air leakage rate (Canadian Fixed):	0.2 L/s·m ² (0.04 cfm/ft ²)

The GV-PVCCM skylights **MET** the performance levels (as well as FIXED 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 5.3.3)

A- GV-PVCCM 22-1/4"x67"	
Pressure Differential	730 Pa (15.2 psf)
Skylight Inclination Angle	0° and 15°
Results:	No water leakage observed.

B – GV-PVCCM 48"x48"	
Pressure Differential	730 Pa (15.2 psf)
Skylight Inclination Angle	0° and 15°
Results:	No water leakage observed.

The GV-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 5.3.4)

Uniform Load Deflection Test - A- GV-PVCCM 22-1/4" x67"		
Member	Stile	
Span Length	1778 mm (70")	
Allowable Deflection	Report only	
Test Pressure*	Positive Load	Negative Load
	+3600 Pa (+75 psf)	-1200 Pa (-25 psf)
Maximum Net Deflection	2.18 mm (0.086")	3.75 mm (0.148")
Post-test Details	After the test loads were released, the sliding door was inspected and there was found to be no failure or permanent deformation of any part of the sliding door that would cause any operational malfunction.	

Uniform Load Deflection Test - B – GV-PVCCM 48" x48"		
Member	Stile	
Span Length	1270 mm (50")	
Allowable Deflection	Report only	
Test Pressure*	Positive Load	Negative Load
	+5270 Pa (+110 psf)*	-1440 Pa (-30 psf)**
Maximum Net Deflection	3.20 mm (0.126")	3.44 mm (0.135")
Note:	* Positive Load pressure was measured at -5270 Pa instead of -5040 Pa	
Note:	** Positive Load pressure was measured at -1440 Pa instead of -1200 Pa	
Post-test Details	After the test loads were released, the sliding door was inspected and there was found to be no failure or permanent deformation of any part of the sliding door that would cause any operational malfunction.	

5.4 Uniform Load Tests (cont'd)

Uniform Load Structural Test - A- GV-PVCCM 22-1/4"x67"		
Member	Stile	
Span Length	1778 mm (70")	
Allowable Residual Deflection (0.4% × span)	7.11 mm (0.280")	
Test Pressure	Positive Load	Negative Load
	+7200 Pa (+150 psf)	-2400 Pa (-50 psf)
Residual Net Deflection	-0.19 mm (-0.007")	0.20 mm (0.008")
Post-test Details	After the test loads were released, the sliding door was inspected and there was found to be no failure or permanent deformation of any part of the sliding door that would cause any operational malfunction.	

Uniform Load Structural Test - B – GV-PVCCM 48"x48"		
Member	Stile	
Span Length	1270 mm (50")	
Allowable Residual Deflection (0.4% × span)	5.08 mm (0.200")	
Test Pressure	Positive Load	Negative Load
	+10080 Pa (+210 psf)	-2520 Pa (-52.5 psf)
Residual Net Deflection	0.93 mm (0.037")	0.13 mm (0.005")
Note:	* Negative Load pressure was measured at -2520 Pa instead of -2400 Pa	
Post-test Details	After the test loads were released, the sliding door was inspected and there was found to be no failure or permanent deformation of any part of the sliding door that would cause any operational malfunction.	

The GV-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	+7200 Pa (+150 psf)	-2400 Pa (-50 psf)
B	+10080 Pa (+210 psf)	-2400 Pa (-50 psf)

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

Skylight No.	Positive Load	Negative Load
A	+3600 Pa (+75 psf)	-1200 Pa (-25 psf)
B	+5040 Pa (+105 psf)	-1200 Pa (-25 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 - GV-PVCCM 22-1/4"×67"	
Applied Test Load (Total weight including sash):	240 Pa (5 psf)
Sash Weight	36.9 kg (81.4 lbs)
Sash Area	1.47 m ² (15.83 ft ²)
Additional weight to be added	None
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.

B – GV-PVCCM 48"×48"	
Applied Test Load (Total weight including sash):	240 Pa (5 psf)
Sash Weight	52.63 kg (116 lbs)
Sash Area	1.82 m ² (19.56 ft ²)
Additional weight to be added	None
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.

The GV-PVCCM skylights **MET** the distributed load test performance requirements specified in AAMA/WDMA/CSA 101/I.S.2/A440-08 for the Residential class of 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 G-PVCCM skylights described and tested herein achieved the following Performance Designations:

Primary Designator

- (CAN) A - Class R-PG1200 (metric)-Size Tested 693×1895 mm - SKG/RW
B - Class R-PG1200 (metric)-Size Tested 1346×1346 mm - SKG/RW
- (US) A - Class R-PG25-Size Tested 27.3×74.6 in - SKG/RW
B - Class R-PG25-Size Tested 53.0×53.0 in - SKG/RW

Secondary Designator

- A Positive Design Pressure = +3600 Pa (+75 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) = A3
- B Positive Design Pressure = +5040 Pa (+70 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) = A3

INTERTEK

Tested by Mustafa Swalah, Ryan Huynh and Claudio Sacilotto

Reported by:



Claudio Sacilotto
Physical Testing Services

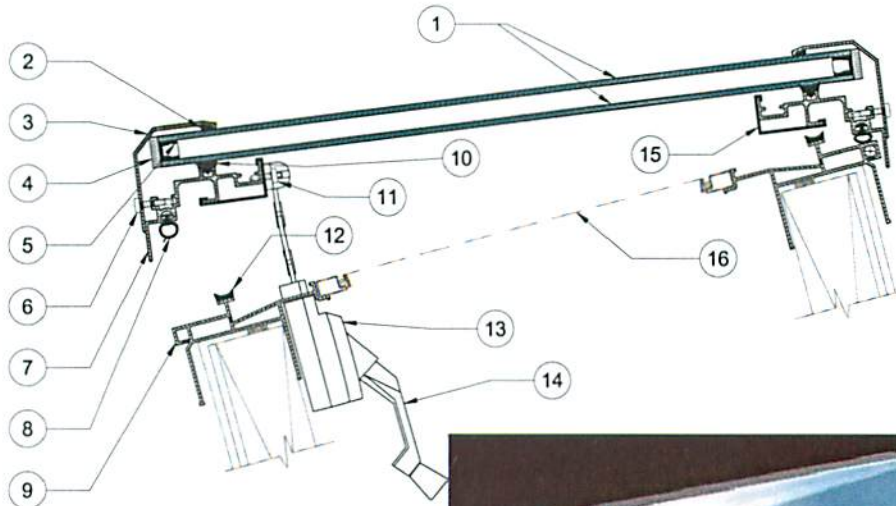
Reviewed by:



Ryan Huynh
Physical Testing Services

Appendix A – Parts List / Drawings

(Parts List / Drawings – 5 pages)



MODEL GV-PVCCM (CURBMOUNT VENTING - GLASS GLAZING)

	DETAIL
UNIT 1: LOW-e ON THIRD SURFACE	1 - CLEAR TEMPERED 2 - CLEAR TEMPERED
UNIT 2: LOW-e ON THIRD SURFACE	1 - BRONZE TEMPERED 2 - CLEAR TEMPERED
UNIT 3: LOW-e ON THIRD SURFACE with ARGON GAS FILL	1 - CLEAR TEMPERED 2 - CLEAR TEMPERED
UNIT 4: LOW-e ON THIRD SURFACE with ARGON GAS FILL	1 - BRONZE TEMPERED 2 - CLEAR TEMPERED
UNIT 5: LOW-e ON SECOND SURFACE	1 - CLEAR TEMPERED 2 - CLEAR LAMINATED (0.030)
UNIT 6: LOW-e ON SECOND SURFACE	1 - BRONZE TEMPERED 2 - CLEAR LAMINATED (0.030)
UNIT 7: LOW-e ON SECOND SURFACE with ARGON GAS FILL	1 - CLEAR TEMPERED 2 - CLEAR LAMINATED (0.030)
UNIT 8: LOW-e ON SECOND SURFACE with ARGON GAS FILL	1 - BRONZE TEMPERED 2 - CLEAR LAMINATED (0.030)



PARTS LIST

MODEL GV-PVCCM (CURBMOUNT VENTING - GLASS GLAZING)

PARTICULAR	MANUFACTURER
1. GLASS GLAZING	GUARDIAN INDUSTRIES CORP., U.S.A.
2. 3/8" x 3/8" DOUBLE FACE VINYL FOAM GLAZING TAPE	GASKA TAPE INC.
3. EXTRUDED ALUMINUM RETAINING FRAME-MEDIUM (6063-T5 ALLOY)	BON-L, DIE # PA-37250
4. NEOPRENE SETTING BLOCK (3/4"x1"x1 1/2") BACK ADHERED	COMBI-FAB PRODUCTS
5. ALUMINUM SPACER WITH POLYSULFIDE SEALANT	TRIPLE SEAL LTD.
6. #8 - 18 X 3/4" ASSEMBLY SCREW	ROBERTSON, CANADA
7. EXTRUDED ALUMINUM SASH FRAME (6063-T5 ALLOY)	SPECTRA, DIE # SS-1631
8. BULB GASKET (FLEXIBLE PVC-UV STABLE)	VINYL PROFILES LTD., # V-75
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 3/4" ASSEMBLY SCREW	ROBERTSON, CANADA
12. CO-EXTRUDED RUBBER DRAFT SEAL	EXTRUSION PROFILES INC.
13. CHAIN DRIVE OPERATING MECHANISM	TRUTH HARDWARE, U.S.A.
14. TELESCOPING POLE-HOOK / HANDLE	TRUTH HARDWARE, U.S.A.
15. EXTRUDED RIGID PVC SASH THERMAL FRAME COVER (UV STABLE)	VINYL PROFILES LTD., # V-130
16. INSECT SCREEN	PHIFER WIRE PRODUCTS, INC., USA

SKYLIGHT MODEL:

GV-PVCCM

Artistic
SKYLIGHT DOMES LTD

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



Vinyl Profiles Ltd.
 CUSTOM EXTRUSION
 166 NOMINA DR. VILVICHAN CNV LAK 427
 TEL: 1-800-665-0036
 FAX: 1-800-665-0037
 E-Mail: info@vinylprofiles.com

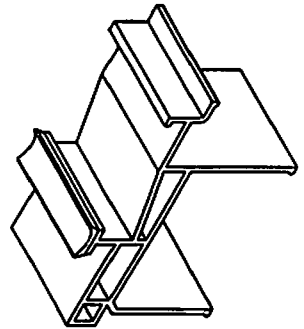
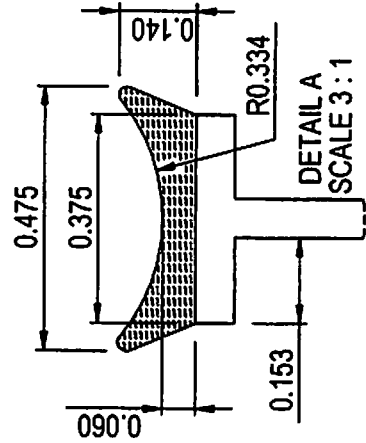
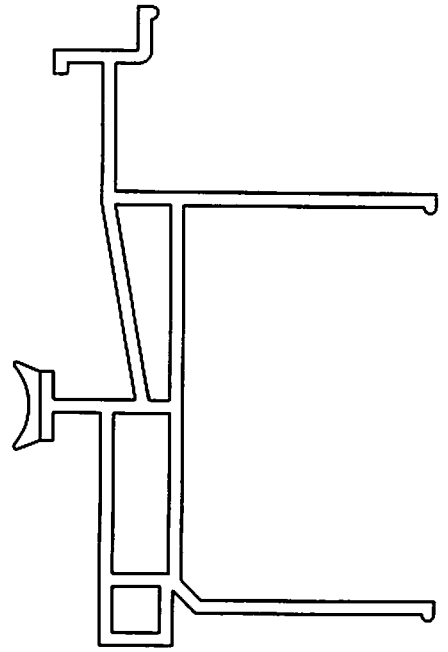
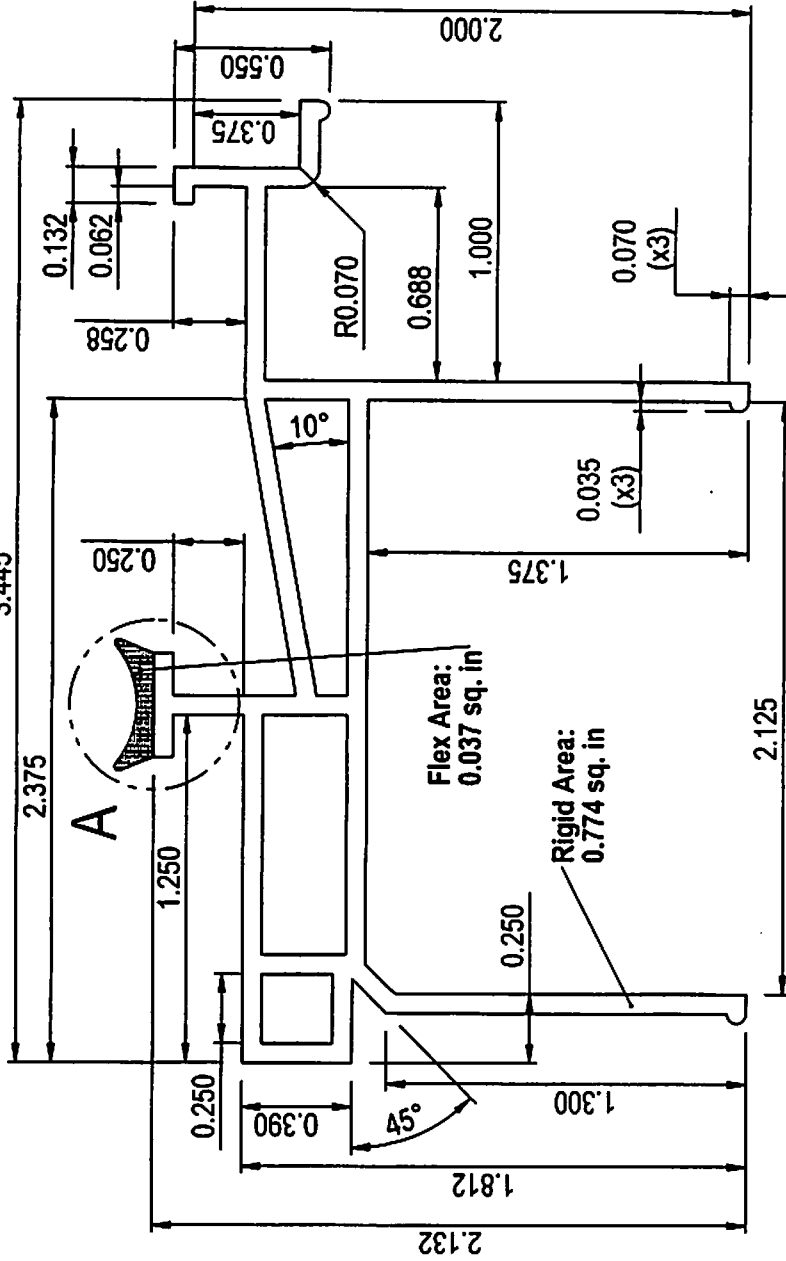
Customer: Artistic
Part Name: Curb Mount Frame
Drawing #: V-413
Material: Dual PVC

Part#: 328C
Color: WHT 143 / Flex-65

Date: March 24, 2009
Scale: 1.5:1
Drawn By: S. Q
Approved By:

Die #: V-413
Rack #: ---
Area: 0.811 sq. in
Unit: Inch

Wall Thickness: 0.070"
 Typ. Radii: 0.015"



SCALE: 1:1

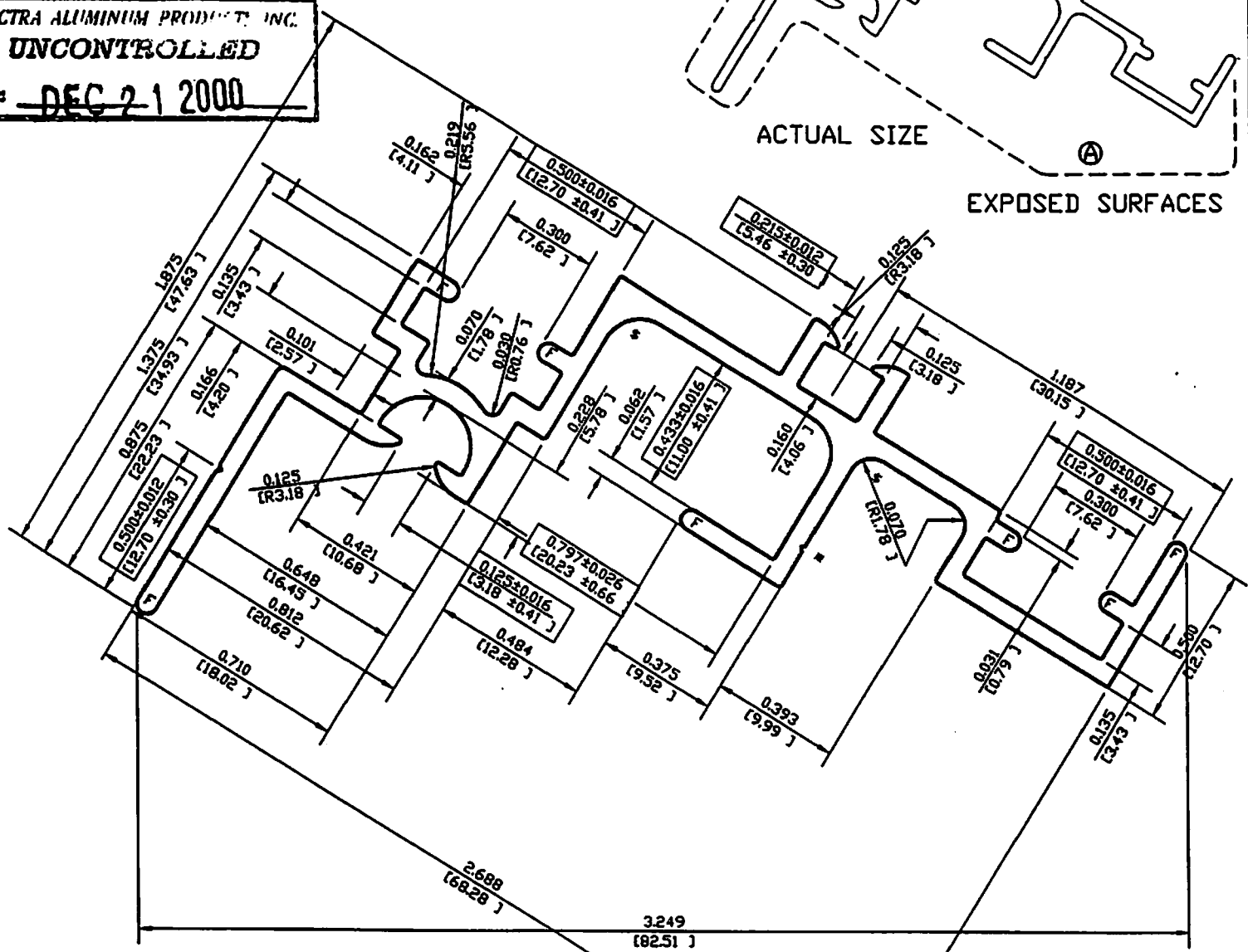
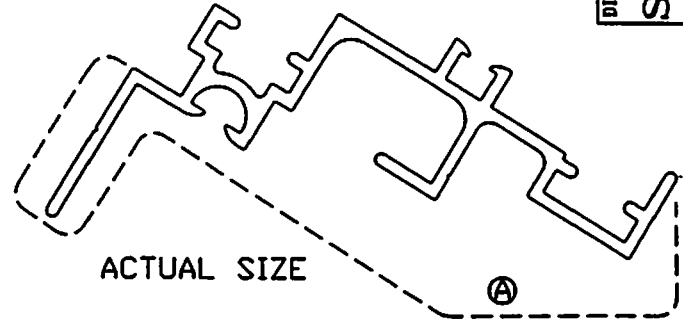
DESCRIPTION: **SASH FRAME** PROPOSAL#: **SP-11740**

CUSTOMER # **01187233** CUSTOMER: **ARTISTIC SKYLIGHTS**

DIE NO. **SS-1631**

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

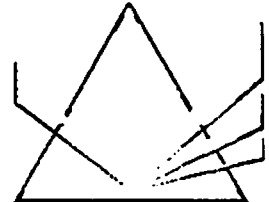
SPECTRA ALUMINUM PRODUCTS, INC.
UNCONTROLLED
 Date: **DEC 21 2000**



- 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.



SPECTRA
 ALUMINUM PRODUCTS INC

ING: 1	WEIGHT: <input checked="" type="checkbox"/>	PIECE: <input type="checkbox"/>	ALLOY: CHECK P.D.	TEMPER: TS
PRESS NO.: 1	CONT'R: 6"	PKT.: 3/4"	EXT. RATIO	
BACKER NO.: BA-1631-1	DIE SIZE: 8' x 1'			
BOLSTER NO.: ED-1D	BACKER SIZE: 8' x 3'	EST. AREA: 0.471 sq.in 303.87 sq.mm	DUT. PER. in mm	
GUAGE:	NITROGEN: <input type="checkbox"/>	CAV.: 1	DUT. PER.: 14.280 in 362.71 mm	FACTOR:
DW: BY S.B.	SCALE: 2:1	DATE: JAN/13/2000	EST. VT.: 0.556 lbs/ft. 0.826 kg/m	C.C.D.: in mm

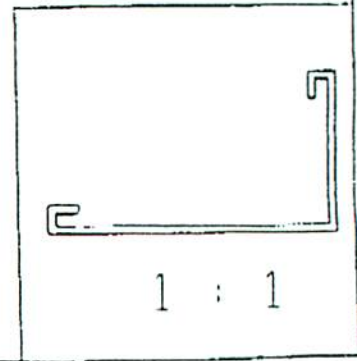
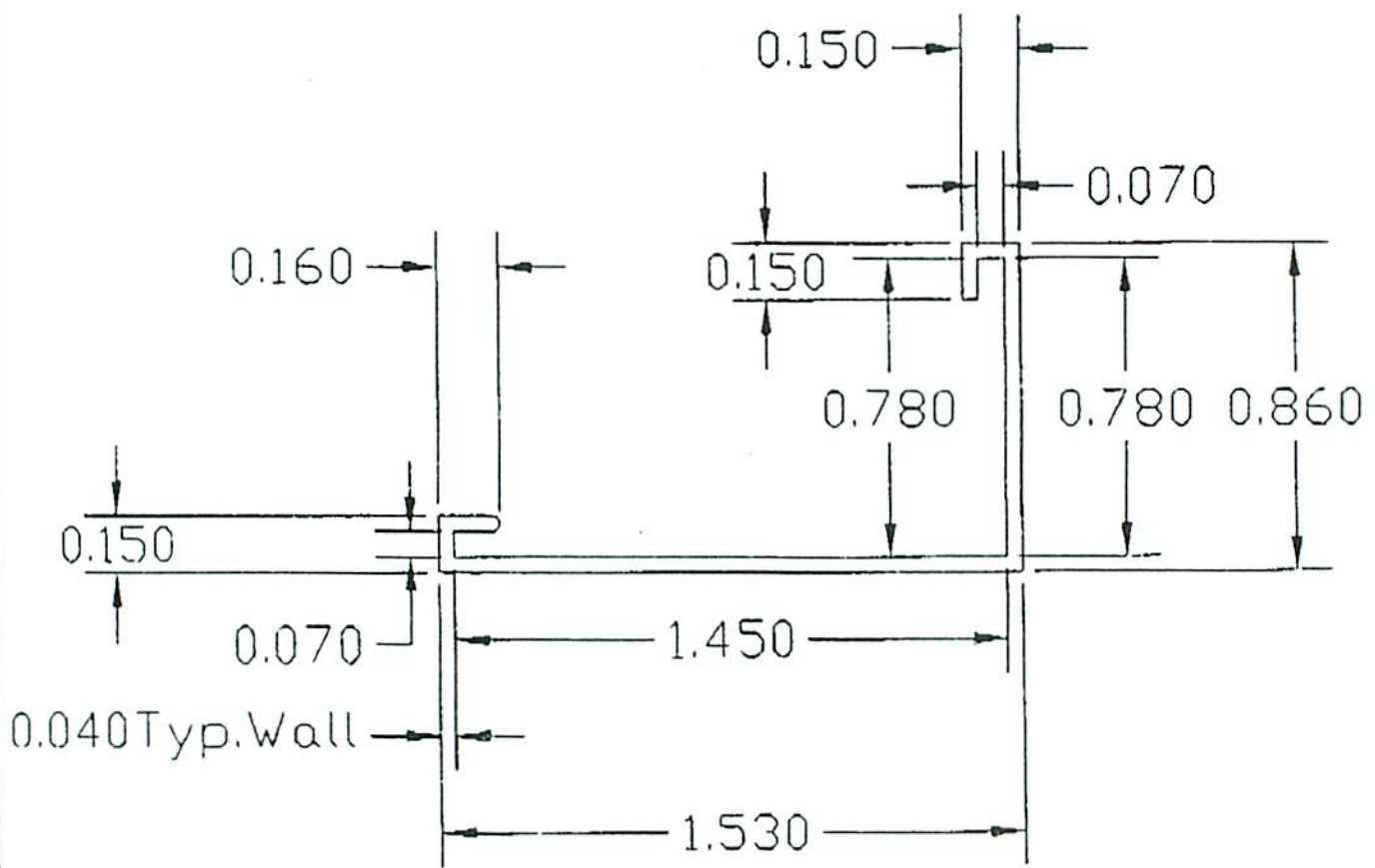


Vinyl Profiles Ltd.

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

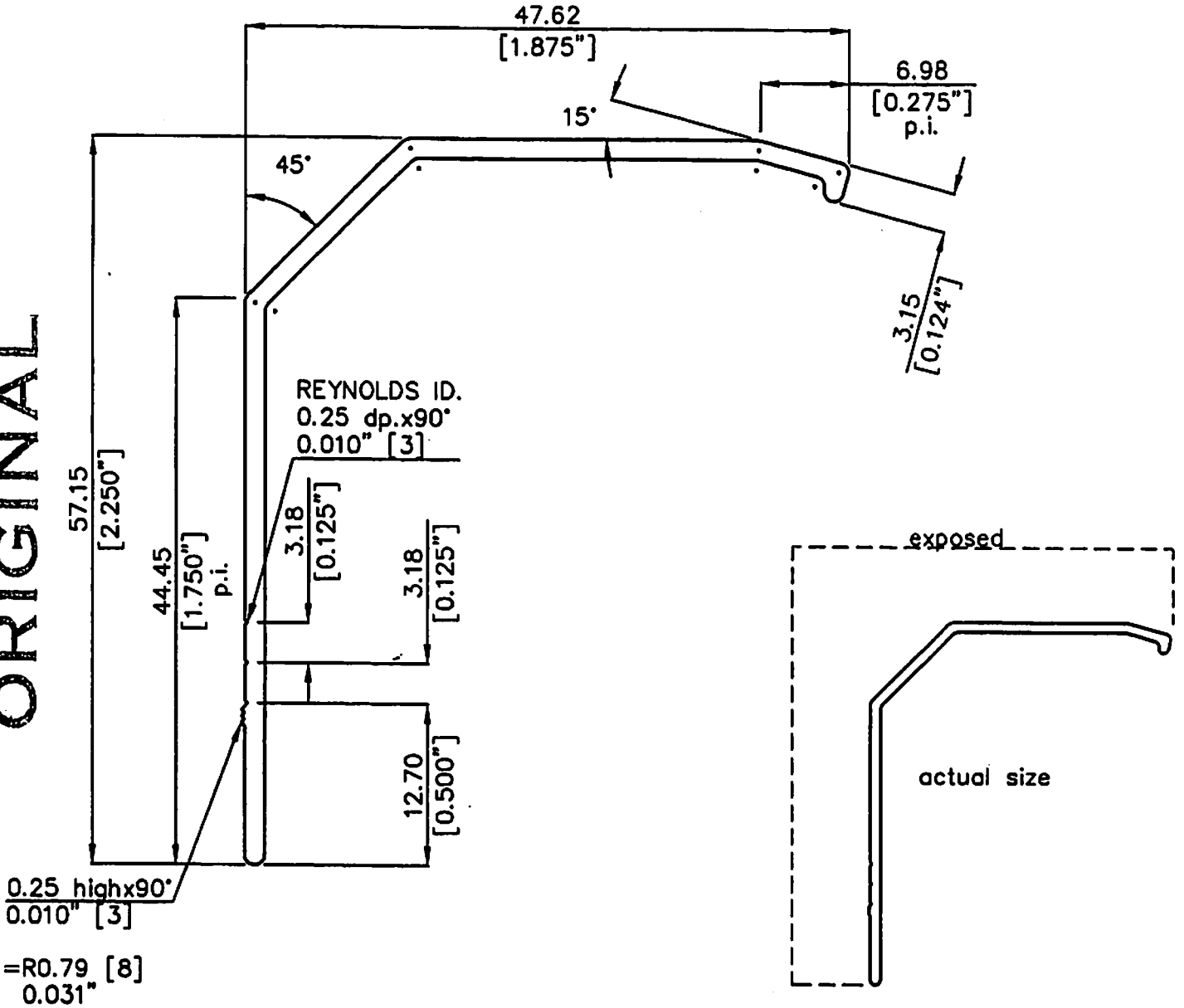
Artistic Skylight Domes - Sash Thermal Cover

V-130



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

ORIGINAL



VENDOR:		DATE ORDERED:		DATE DUE:		P.O.#:	
ITEM	ACCOUNT #	QTY	COPY NO.	DESCRIPTION			TOTAL \$
1							
Rev. #	Revision		Date	Rev. #	Revision		Date
CUSTOMER PART #			RomiShape <input type="checkbox"/>	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
DIE STACK:	9x4	FEEDER:	PIF	SHIM:	-	AREA:	154 mm ² 0.238 inches ²
Sharp corner tolerance: + 0.40 mm 0.016 inches				SCALE:	2:1	MASS:	0.425 kg/m 0.286 lbs/ft
Standard Aluminum Association tolerances apply unless otherwise stated				DATE:	NOV/01/1995	PERIMETER:	197.9 mm 7.791 inches
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