

TEST REPORT

AAMA/WDMA/CSA 101/I.S.2/A440-11

AAMA/WDMA/CSA 101/I.S.2/A440-08

REPORT No.: 1554.02-109-12

RENDERED TO: POCAHONTAS ALUMINUM COMPANY, INC.
Pocahontas, AZ

PRODUCT TYPE: PVC Patio Door, Type XO

SERIES / MODEL: PD10WW

Test	Specimen #1 Summary of Results
Primary Product Designator	Class R-PG25 1816 x 2019 (72 x 80) - SD
Design Pressure	±1200 Pa (±25.06 psf)
Air Infiltration	0.6 L/s/m ² (0.11 cfm/ft ²)
Canadian Air Infiltration/Exfiltration Level	A2
Water Penetration Resistance Test Pressure	260 Pa (5.43 psf)

Test Completion Date: 4/25/2018

Reference must be made to Report No. 1554.02-109-12, dated 4/8/2019 for complete test specimen description and detailed test results.

CLIENT INFORMATION: POCAHONTAS ALUMINUM COMPANY, INC.
2001 Industrial Dr
Pocahontas, AZ 72455

TEST LABORATORY: Molimo, LLC
1410 Eden Road
York, Pennsylvania 17402
717-900-6034

PROJECT SUMMARY:

PRODUCT TYPE: PVC Patio Door, Type XO

SERIES/MODEL: PD10WW

PROJECT SUMMARY:

Molimo, LLC was contracted to perform testing on the above referenced product. The results are tested values and were secured by using the designated test methods. This product was originally tested by VEKA, Inc. as the Series/Model PD10WW Patio Door. This report is a reissue of Report No. 1554.01-109-12 in the name of Pocahontas Aluminum Company, Inc. through written authorization by VEKA, Inc.

A summary of the rating achieved for the specimen tested are shown in the table below.

SPECIMEN	SPECIFICATION	PRODUCT RATING
1	101/I.S.2/A440-08 & 11	Class R-PG25 1816 x 2019 (72 x 80) - SD

PROJECT DETAILS:

Test Dates: 4/24/2018 – 4/25/2018

Test Record Retention End Date: 4/25/2022

Test Location: VEKA, Inc. test facility in Fombell, PA. In accordance with AAMA 205.01, calibration of manufacturers' test equipment is documented under Report No. 1552.01-109-12.

Test Specimen Source: The test specimen was provided by the client. Representative samples of the test specimen will be retained by Molimo for a minimum of four years from the test completion date.

Drawing Reference: The test specimen drawings were supplied by the client. The test specimen construction was verified by Molimo and was found to be representative of the product tested. Test specimen drawings are located in Appendix C of this report, the complete drawing packet of test specimen drawings are on file with Molimo, LLC.

WITNESSES:

The following representatives witnessed all or part of the testing.

Name	Company
Doug Merry	VEKA, Inc.
Cornell Charles	VEKA, Inc.
Joseph Allison	Molimo, LLC

TEST METHODS:

AAMA/WDMA/CSA 101/I.S.2/A440-11, *NAFS 2011 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

AAMA/WDMA/CSA 101/I.S.2/A440-08, *NAFS - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

CSA A440S1-09, *Canadian Supplement to AAMA/WDMA/CSA 101/I.S.2/A440, NAFS - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

TEST SPECIMEN DESCRIPTION:**PRODUCT SIZES:**

Overall Size:	1816 mm x 2019 mm (71-1/2" x 79-1/2")
Overall Area:	3.7 m ² (39.5 ft ²)
Panel:	940 mm x 1969 mm (37" x 77-1/2")
Screen Size:	927 mm x 1991 mm (36-1/2" x 78-3/8")

FRAME CONSTRUCTION:

Material:	Extruded PVC
Corner Details:	Miter cut and thermally welded
Fixed stile:	The fixed meeting stile was fastened to the head / sill with four #8 x 3" truss head screws, two at each end. Each intersection was sealed with silicone sealant. A snap-fit interlock was then applied to the fixed stile.
Equal lite:	The equal lite adaptors were coped, snap fit and sealed with silicone at the head and sill of the fixed lite.
Roller track:	Drop-in extruded aluminum roller track

PANEL CONSTRUCTION:

Material:	Extruded PVC
Corner Details:	Miter cut and thermally welded

TEST SPECIMEN DESCRIPTION: (Continued)
REINFORCEMENT:

Drawing Number	Material	Location
RFPD03SOM	Formed Steel	Lock Stile, Interlocking Stile
RFCV01SOM	Formed Steel	Fixed Meeting Stile

GLAZING DETAILS: *No conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen can be made.*

Glass Type: 3/4" IG

Glazing Construction: (exterior to interior)

1/8" thick tempered glass

1/2" butyl with composite substrate spacer system, single sealed

1/8" thick tempered glass

Glazing Method: The panel and the fixed lite were exterior glazed against a double sided adhesive glazing tape and secured with rigid vinyl glazing beads.

Glazing Bite: 1/2"

Daylight Opening:

Panel: 822 mm x 1851 mm (32-3/8" x 72-7/8")

Fixed DLO: 816 mm x 1851 mm (32-1/8" x 72-7/8")

WEATHERSTRIPPING:

Description	Quantity	Location
0.187" backed by 0.270" high center fin pile	2 Rows	Lock stile, top rail, bottom rail
0.187" backed by 0.270" high center fin pile	1 Row	Interlocking stile, fixed meeting stile interlock

TEST SPECIMEN DESCRIPTION: (Continued)
DRAINAGE:

Description	Quantity	Location
1" wide by 1/8" high weepslot	4	Exterior sill face, one 3" from each end, through two walls
1" wide by 3/16" high weepslot	4	Interior sill track (below glazing tower), one 1-1/2" from each end, through two walls
1/2" wide by 1/8" high weepslot	4	Exterior sill face, one 1-1/2" from each end, draining the screen track
1-1/2" wide by 1/4" deep weep notch	2	Each end of aluminum roller track

HARDWARE:

Description	Quantity	Location
Handle/lock assembly with mortise lock	2	Lock stile with keeper on the mating jamb. Lock assembly was fastened to the stile and stile reinforcement with two #8 x 1-5/8" truss head screws.
Dual steel roller assembly	2	Bottom rail, one at each end

SCREEN CONSTRUCTION:

Frame Material:	Formed Aluminum
Mesh Type:	Fiber
Corner Construction:	Miter cut and secured with metal corner keys
Mesh Attachment Method:	Flexible vinyl spline

INSTALLATION: The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 1/8" shim space. The exterior perimeter of the window was sealed to the buck with silicone sealant.

Location	Anchor Description	Anchor Spacing
Integral nail fin	#8 x 2" truss head screw	Spaced approximately 10" on center, and starting in each corner going through the fin and into the wood buck
Lock side jamb	#10 x 3-1/2" long fastener	Two through the keeper at the jamb

TEST RESULTS: The temperature during testing was 19°C (67°F).

OPERATING FORCE: (per ASTM E 2068)

Test	Results	Allowable
Initiate Motion	58 N (13 lbf)	135 N (30 lbf)
Maintain Motion (Opening)	58 N (13 lbf)	90 N (20 lbf)
Maintain Motion (Closing)	58 N (13 lbf)	90 N (20 lbf)
Locks / Latches	67 N (15 lbf)	100 N (22.5 lbf)

Note 1: The operating force results listed above represent the maximum force measured among all sash tested.

AIR LEAKAGE TESTING: (per ASTM E 283)

Test	Results	Allowable
Infiltration @ 75 Pa (1.57 psf)	0.6 L/s/m ² (0.11 cfm/ft ²)	1.5 L/s/m ² (0.30 cfm/ft ²)
Exfiltration @ 75 Pa (1.57 psf)	0.6 L/s/m ² (0.11 cfm/ft ²)	1.5 L/s/m ² (0.30 cfm/ft ²)

Canadian Air Infiltration Rating: A2

Note 2: The specimen tested meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440 for air leakage resistance.

WATER PENETRATION TESTING: (per ASTM E 547)

Test	Results	Allowable
260 Pa (5.43 psf)	Pass	No Leakage

Note 3: Water Penetration testing was performed with and without an insect screen.

TEST RESULTS: (Continued)

UNIFORM LOAD TESTING: (per ASTM E 330)

Design Pressure Test	Results	Allowable
Deflection measured at the meeting stile +1200 Pa (+25.06 psf) -1200 Pa (-25.06 psf)	37.8 mm (1.49") 33.8 mm (1.33")	Report Only

Structural Test	Results	Allowable
Permanent Set measured at the meeting stile +1800 Pa (+37.59 psf) -1800 Pa (-37.59 psf)	5.5 mm (0.22") 1.8 mm (0.07")	7.9 mm (0.31") 7.9 mm (0.31")

Note 4: The deflections reported are not limited by AAMA/WDMA/CSA 101/I.S.2/A440 for this product designation and is recorded for information purposes only.

Note 5: All loads were held for 10 seconds.

Note 6: Tape and film were used to seal against air leakage. In our opinion, the tape and film did not influence the results of the test.

SECONDARY TESTING:

Test	Results	Allowable
FORCED ENTRY RESISTANCE per ASTM F 8422 Type: A – Grade: 10	Pass	No Entry
THERMOPLASTIC CORNER WELD	Pass	Meets as stated
DEGLAZING per ASTM E 987 Operating Direction – 320 N (70 lbf) Remaining Direction – 230 N (50 lbf)	Pass Pass	Meets as stated Meets as stated
INSECT SCREEN SERVICEABILITY per ASTM E 1748 Outward Direction – 60 N (13 lbf)	Pass	Remain in test unit

General Note: All testing was performed in accordance with reference test methods.

This report is reissued in the name of Pocahontas Aluminum Company, Inc. through written authorization from VEKA, Inc. to whom the original report was rendered. The original Report Number is 1554.01-109-12.

A copy of this report, detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation will be retained by Molimo, LLC for the entire test record retention period. At the end of this retention period, the service life of this report will expire.

Results obtained are tested values and were secured by using the designated test methods. This test report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen(s) tested. This report may not be reproduced, except in full, without the written permission of Molimo, LLC.

For MOLIMO, LLC:

Joseph E. Allison
Regional Project Manager

Michael D. Stremmel, P.E.
Senior Project Engineer

JEA:jld

Attachments (pages): This report is complete only when all attachments listed are included.

Appendix-A: Alteration Addendum (1)

Appendix-B: Air Seal Location (1)

Appendix-C: Drawings (4)

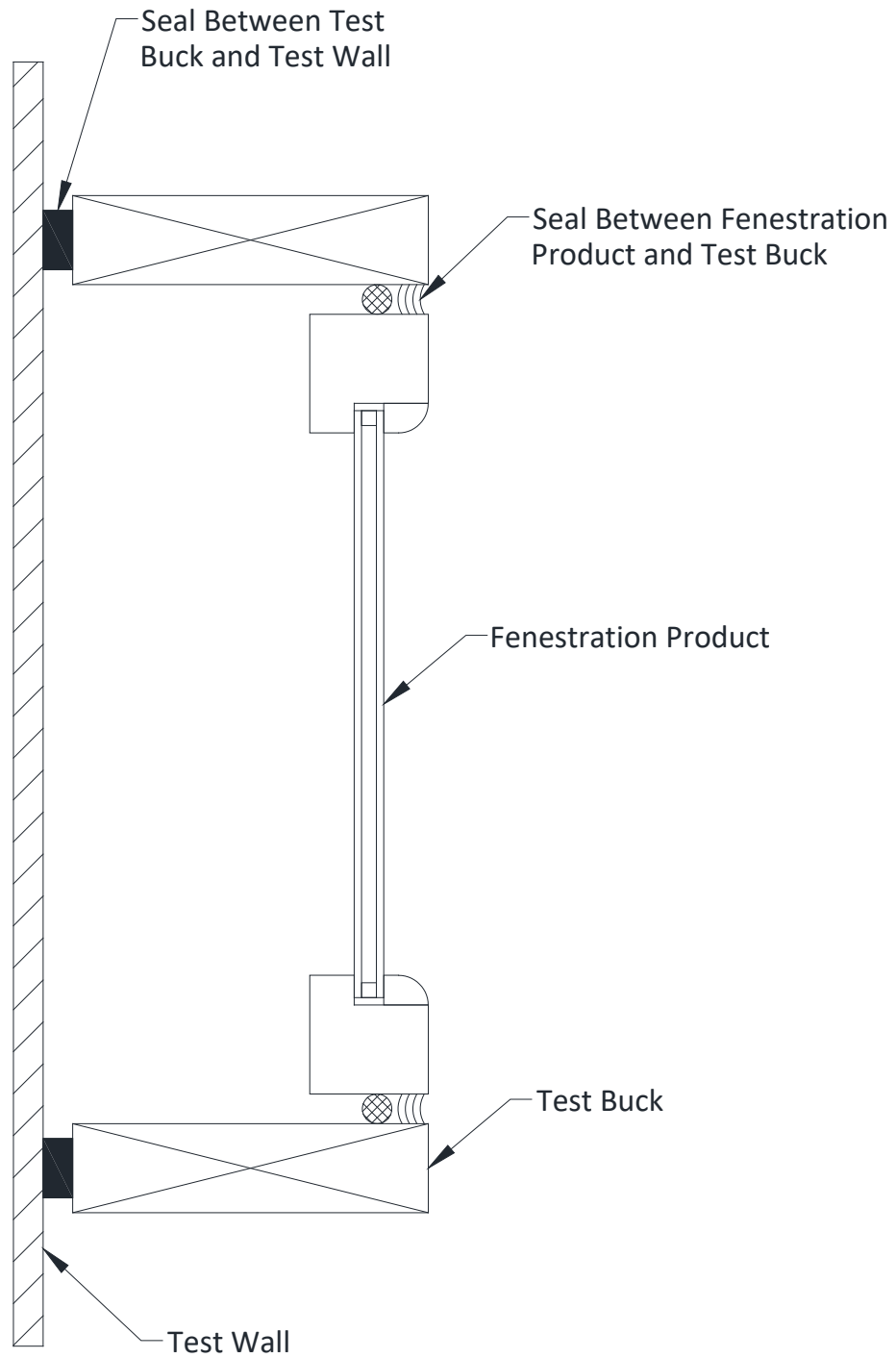
Appendix A

Alteration Addendum

No alterations were performed.

Appendix B

Air Seal Location



Appendix C

Drawings



BILL OF MATERIALS

PRIME PATIO DOOR (PD10WW)

NOTE: THIS BILL OF MATERIALS REFLECTS THE SYSTEM AS TESTED. DEVIATION FROM THE BILL OF MATERIALS IS NOT RECOMMENDED BY VEKA INC. AND MAY REDUCE THE PERFORMANCE OF THE FINISHED PRODUCT.

<u>PVC PROFILES:</u>	<u>PART #</u>	<u># PER UNIT</u>	<u>SOURCE</u>
FRAME	PD1001/PD1001J	4	VEKA
COMMON SASH	SR1175	3	VEKA
EXTERIOR INTERLOCK	SR1174	1	VEKA
INTERIOR INTERLOCK	SR1176	1	VEKA
GLAZING BEAD (1" GLASS)	BV51/BV50	8	VEKA
GLAZING BEAD (3/4" GLASS)	BV81	8	VEKA
INTERLOCK ADAPTOR	SR1177	1	VEKA
EQUAL GLASS ADAPTOR (OPT.)	PD1013	2	VEKA
 <u>ALUMINUM PROFILES</u>			
ROLLER TRACK	PDA1018	1	VEKA
 <u>REINFORCING PROFILES:</u> NOTE: Reinforcing is mandatory in all sash verticals. For other cases, refer to test reports in technical manual.			
FRAME (PD1001)			
ROLLER RAIL (SR1175)	RF PD03 SO M	A/R	VEKA
SASH VERTICALS (SR1175, SR1176)	RF PD03 SO M	3	VEKA
SASH VERTICAL (SR1174)	RF CV01 SO M	1	VEKA
 <u>HARDWARE:</u>			
HANDLE SET	683	1	AMESBURY
DEADLATCH ASSEMBLY	555	1	AMESBURY
KEEPER	2153	1	AMESBURY
MULTI-PT LOCK	2817	1	AMESBURY
KEEPER	2447	1	MESBURY
ROLLER	TA-78 (END ADJUST)	2	AMESBURY
1/2" HOLE PLUG	I-R134	2	AMESBURY
 <u>GLAZING:</u>			
GLAZING SHIM	1/8 X 1" X 1"	A/R	TREMCO
DOUBLE FACE GLAZING TAPE	1/16" X 1/2"	A/R	ARLON
	1/16" X 1/2"	A/R	NORTON
	1/16" X 1/2"	A/R	VENTURE
SILICONE SEALANT	NOVAFLEX**	A/R	NOVAGUARD
LIQUID BACK BEDDING	SBC1M150	A/R	NOVAGUARD
SILICONE	896	A/R	PECORA
	5733	A/R	SCHNEE MOREHEAD
	899	A/R	DOW CORNING

Molimo Architectural Product Testing
Report #: 1554.01-109-12
Date: 5/14/2018
By: J. Allison



BILL OF MATERIALS

PRIME PATIO DOOR (PD10WW)

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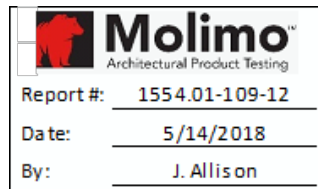
WEATHERSTRIPPING:

ALL	.180-.187	FS78170-187 (WHITE)	A/R	SCHLEGEL
WEATHERPILE	.180-.187	3018W (WHITE)	A/R	ULTRAFAB
	.180-.187	47118-187 (GRAY)	A/R	AMESBURY

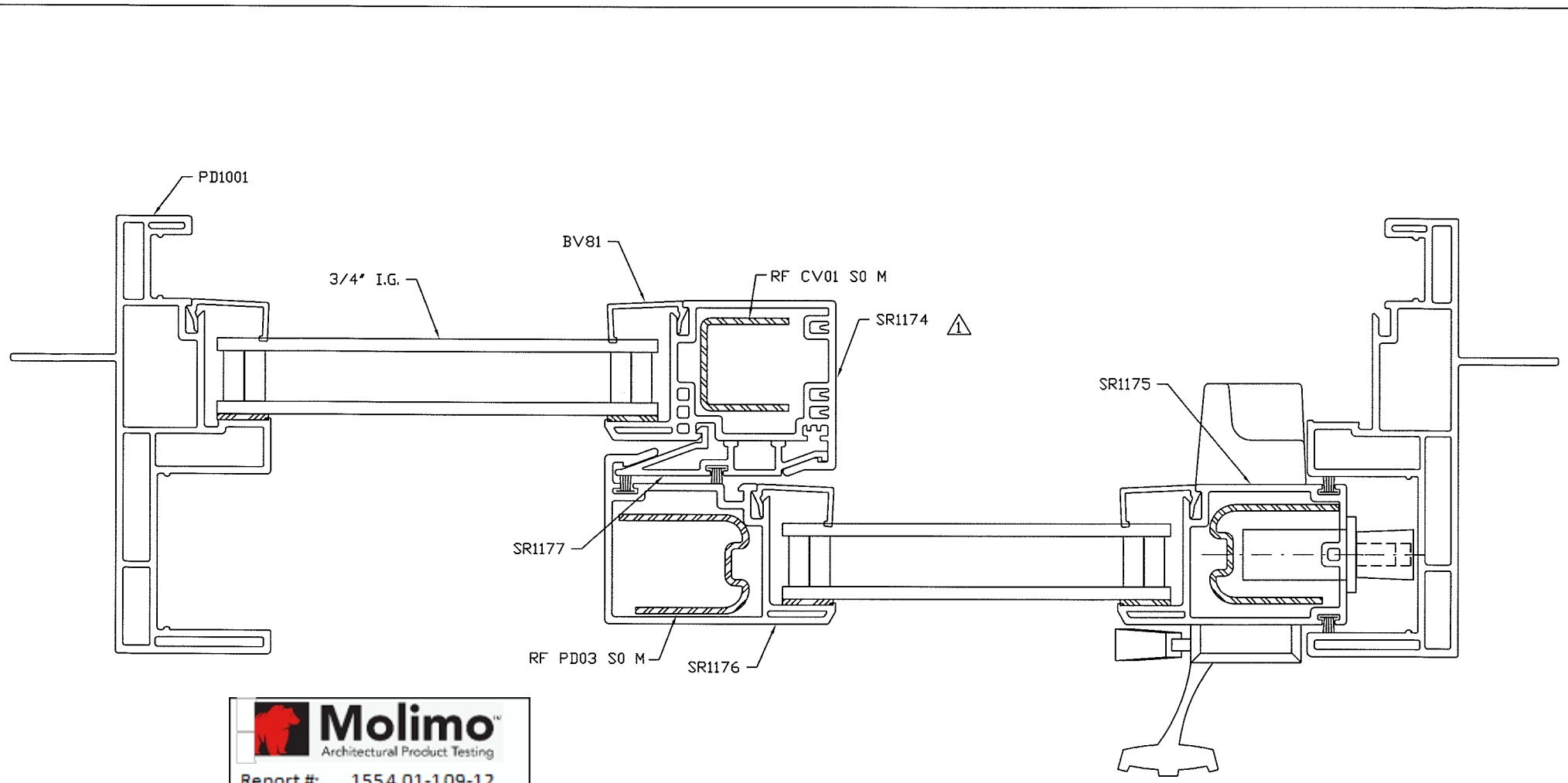
SCREWS:

NOTE: All screws are zinc plated or stainless steel sheet metal type, unless otherwise noted.

ROLLER	#8 X 1/2 FHP	4	MERCHANTS
KEEPER	#8 X 1" PHP B-POINT (FOR TRANSPORT ONLY)	2	MERCHANTS
	#8 X 3" PHP AB-POINT (WOOD JAMB INSTALLATION)	2	MERCHANTS
	#8 X 1-1/2" SELF DRILL PHP (MOUNTING PLATE ATTACHMENT)	2	MERCHANTS



* = HARDWARE SET INCLUDES SCREWS
 ** = COLOR
 A/R = AS REQUIRED



Molimo
Architectural Product Testing

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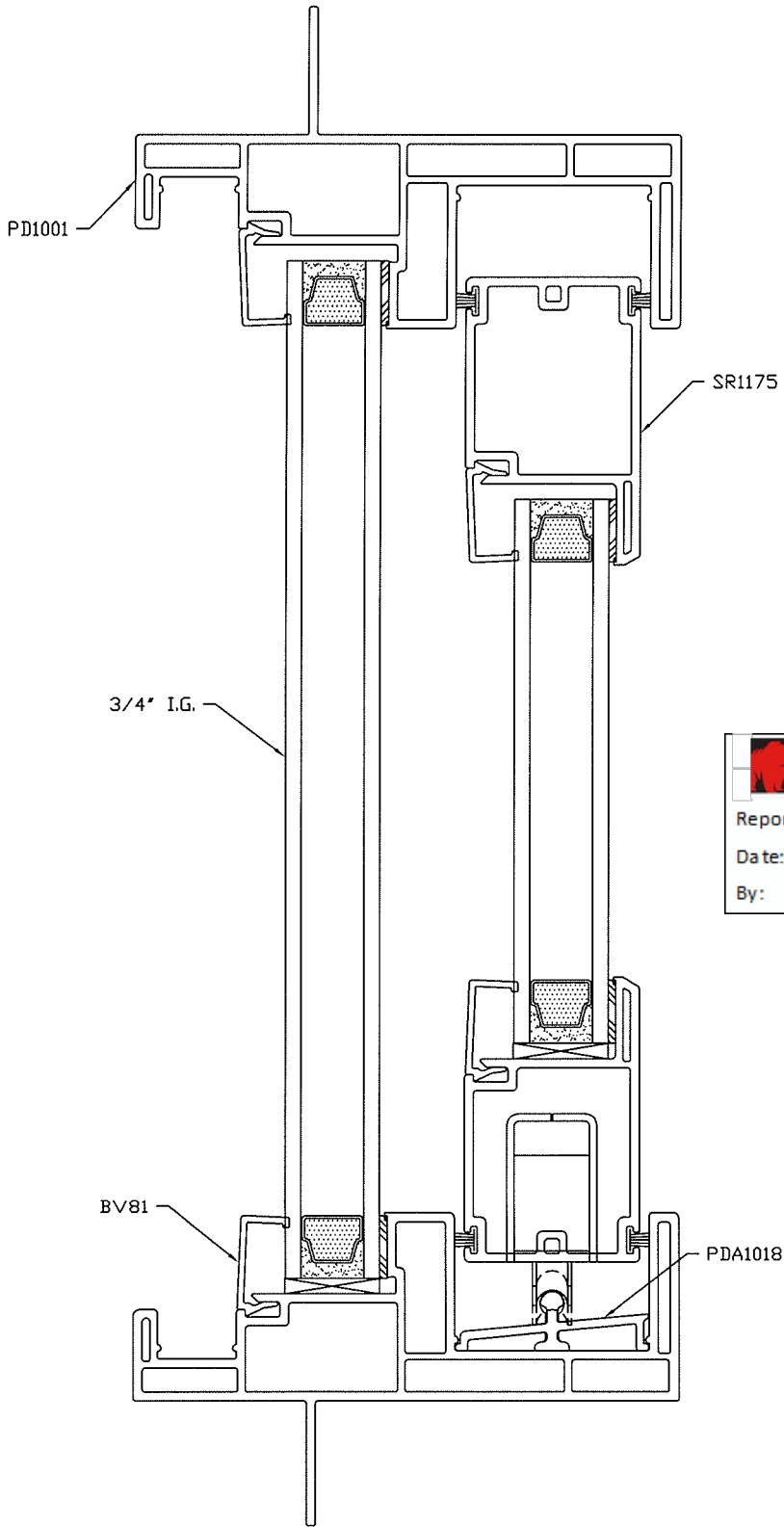
By: J. Allison

VEKA
VEKA INC.
100 VEKA DRIVE
FOMBELL, PA 16123

DRAWN: BTN	DATE: 13 OCT 00	SCALE: FULL
CHK'D:	DATE:	APPV'D:
TITLE PATIO DOOR PD10WW HORIZONTAL ASSEMBLY		DWG. #PD10WW-H

	REVISIONS	DATE
1	UPDATED SR1174	12 SEPT 02

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Molimo
Architectural Product Testing

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REVISIONS		DATE

DRAWN: BTN	DATE: 13 OCT 00	SCALE: FULL
CHK'D:	DATE:	APPV'D:
TITLE	PATIO DOOR PD10WW VERTICAL ASSEMBLY	DWG. #PD10WW-V