



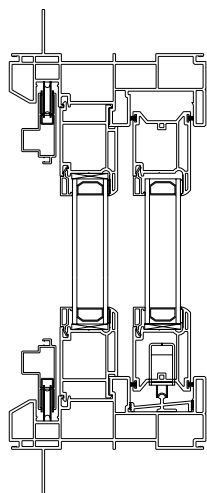
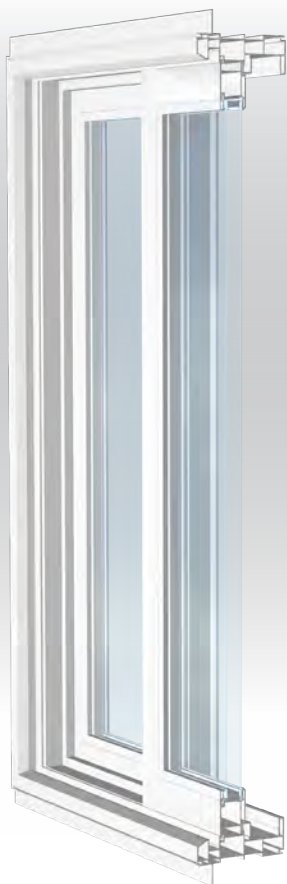
SUBMITTAL PACKAGE

PD21 – Patio Door

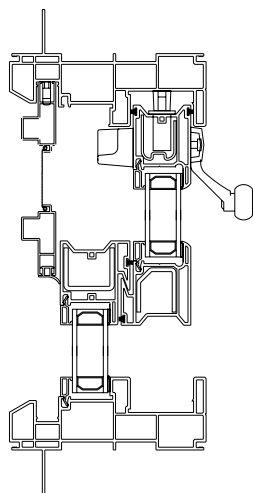
Core Sheet	Page 2
Thermal Report	Page 3-5
Structural Report	Page 6-18
Impact Report	Pages 19-55
Light Commercial Structural Report	<i>Pending</i>
Warranty	Page 56
Installation Instructions	Page 57
Flashing Detail	Page 58-62
Operating Instructions	<i>Pending</i>

FEATURES and BENEFITS

- Made in the USA of 100% U.S. components
- Lead free
- EnergyStar® rated and labeled
- Aesthetically-pleasing exterior frame design
- All-welded frame and sash
- DP50 performance levels
- Dual weatherstripping
- Can accommodate triple-pane glass unit
- Field reversible (prior to installation)
- Full 1 1/4" integral nail fin
- Internal weep system
- Keyed lock handle set (optional)
- Impact-rated grade 50 performance available
- 4 9/16" jamb depth
- Stainless steel, tandem ball-bearing adjustable rollers, lock and striker (standard)
- Twelve gauge steel reinforcing
- Multi-point locking system
- White, beige and clay vinyl and matching hardware finish
- XO, OX, OXO, OXXO configurations
- 12'-0" two-panel center operating units available in a one-piece frame



Side View



Top View

PERFORMANCE

THERMAL INSULATION

GLASS	Uc Value	R Value	SHGC
Low-E 270	0.29	3.45	0.26
Low-E 366	0.28	3.57	0.20
Low-E 366 w/ i89	0.24	4.17	0.19

STRUCTURAL DATA

Air Infiltration @ 25mph	0.14 cfm/ft ²
Water Penetration	7.50 psf
Uniform Loads	+/- 75.00 psf

AAMA RATING: PG50-SGD





KEYSTONE CERTIFICATIONS, INC.
564 OLD YORK ROAD, SUITE 5
ETTERS, PA 17319 / PHONE 717-932-8500

Notice of Product Certification Authorization

National Fenestration Rating Council

Issued To:

Manufacturer: Custom Vinyl Products LLC
Address: 260 Enterprise Drive
New Port News VA 23603
Man'f Code CST
Cert Date: 6/14/2012

Certification Number

8430

Product Line Number

CST - K - 010

Revision Date

9/2/2015

The Following NFRC Product Line Has Been Authorized For Certification:

Model / Series: PD21 Patio Door
Operator Type: DDSG
Frame Type: VI
Sash Type: VV
Exp. Date: 9/11/2017

Ratings Authorized For Certification:

Rating	Property	Authorized
NFRC 100	U-factor	<input checked="" type="checkbox"/>
NFRC 200	Solar Heat Gain Coefficient	<input checked="" type="checkbox"/>
NFRC 200	Visible Light	<input checked="" type="checkbox"/>
NFRC 400	Air Leakage	<input checked="" type="checkbox"/>
NFRC 500	Condensation Resistance	<input checked="" type="checkbox"/>

Fenestration products are not NFRC Certified unless manufactured and labeled in accordance with the current version of NFRC-700, Product Certification Program requirements.

This is a cover sheet for an NFRC Certification Authorization Report (CAR)

the corresponding CAR may be downloaded for printing at www.nfrc.org.

The Manufacturer is authorized to label the options listed in the corresponding CAR

Please notify Keystone of any errors or omissions within 10 days of receipt.

Due diligence was used in authorizing these products for certification. By accepting this report the licensee agrees to hold harmless and indemnify Keystone Certifications, Inc. from all claims or liabilities which may arise based on this certification authorization. Certification authorization is based on NFRC program requirements and simulation and test reports from accredited laboratories.

NFRC Product Certification Authorization Report



Manufacturer: Custom Vinyl Products, LLC			Product Series: PD21 Patio Door			Simulation Lab: SATI			Initial Cert. Date: 06/14/2012						
Street: 260 Enterprise Drive			Product Type: DDSG			Sim. Report #: C8826.18-116-45			Re-Certification Date: 11/18/2013						
City/State/Zip: Newport News, VA 23603			Air Leakage: ≤0.3			Sim. Report Date: 09/13/2013			Revised Date: 08/27/2015						
Print Date: 09/02/2015						Test Date: 09/11/2013			Expiration Date: 09/11/2017						
CPD Number: CST-K-10															
IA: Keystone Certifications, Inc.															
Status	Product Num.	Manufacturer Code	Frame/Sash	Glaz Lyrs	Low-E (Surface)	Gap Width(s)	Spacer	Gap Fill	Grids	Dividers	Tint	U-Factor	SHGC	VT	Cond. Res.
	00013-00001	Equal: E270/90arg/clr - ds - 1"	VI/VV	2	0.037(2)	0.750	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.29	0.30	0.56	57
	00013-00002	Equal: E270/90arg/clr - ds - 1"	VI/VV	2	0.037(2)	0.750	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.29	0.26	0.49	57
	00014-00001	Equal: E366/90arg/clr - ds - 1"	VI/VV	2	0.022(2)	0.750	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.28	0.22	0.52	58
	00014-00002	Equal: E366/90arg/clr - ds - 1"	VI/VV	2	0.022(2)	0.750	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.28	0.20	0.46	58
	00015-00001	Equal: E270/90arg/090PVB - ds - 1"	VI/VV	2	0.037(2)	0.531	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.27	0.29	0.55	57
	00015-00002	Equal: E270/90arg/090PVB - ds - 1"	VI/VV	2	0.037(2)	0.531	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.27	0.26	0.48	57
	00016-00001	Equal: E366/90arg/090PVB - ds - 1"	VI/VV	2	0.022(2)	0.531	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.27	0.22	0.50	58
	00016-00002	Equal: E366/90arg/090PVB - ds - 1"	VI/VV	2	0.022(2)	0.531	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.27	0.20	0.44	58
	00017-00001	Unequal: E270/90arg/clr - ds - 1"	VI/VV	2	0.037(2)	0.750	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.29	0.31	0.58	57
	00017-00002	Unequal: E270/90arg/clr - ds - 1"	VI/VV	2	0.037(2)	0.750	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.29	0.27	0.51	57
	00018-00001	Unequal: E366/90arg/clr - ds - 1"	VI/VV	2	0.022(2)	0.750	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.28	0.23	0.54	57
	00018-00002	Unequal: E366/90arg/clr - ds - 1"	VI/VV	2	0.022(2)	0.750	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.28	0.20	0.47	57
	00019-00001	Unequal: E270/90arg/090PVB - ds - 1"	VI/VV	2	0.037(2)	0.531	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.27	0.30	0.56	57
	00019-00002	Unequal: E270/90arg/090PVB - ds - 1"	VI/VV	2	0.037(2)	0.531	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.27	0.27	0.49	57
	00020-00001	Unequal: E366/90arg/090PVB - ds - 1"	VI/VV	2	0.022(2)	0.531	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.27	0.22	0.52	57
	00020-00002	Unequal: E366/90arg/090PVB - ds - 1"	VI/VV	2	0.022(2)	0.531	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.27	0.20	0.46	57
	00021-00001	Equal: E366/90arg/89 - ds - 1"	VI/VV	2	0.022(2),0.149(4)	0.750	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.24	0.22	0.51	47
	00021-00002	Equal: E366/90arg/89 - ds - 1"	VI/VV	2	0.022(2),0.149(4)	0.750	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.24	0.19	0.45	47
	00021-00003	Equal: E366/90arg/89 - ds - 1"	VI/VV	2	0.022(2),0.149(4)	0.750	SS-D	Fill 1: ARG/AIR (90/10)	S	0.75	CL	0.24	0.19	0.45	47
	00022-00001	Unequal: E366/90arg/89 - ds - 1"	VI/VV	2	0.022(2),0.149(4)	0.750	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.24	0.22	0.52	47
	00022-00002	Unequal: E366/90arg/89 - ds - 1"	VI/VV	2	0.022(2),0.149(4)	0.750	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.24	0.20	0.46	47
	00022-00003	Unequal: E366/90arg/89 - ds - 1"	VI/VV	2	0.022(2),0.149(4)	0.750	SS-D	Fill 1: ARG/AIR (90/10)	S	0.75	CL	0.24	0.20	0.46	47

Baseline Information

Test Lab	Test Date	Test Size	Tested U-Value	Standard U-Value	Test Report Number
TATI	09/11/2013	2000mm x 2000mm	0.278	0.271	C8827.04-116-46

Comments: 90% Argon evacuation chamber. All Options have galvanized steel reinforcement in the fixed meeting stile and both active stiles. 11/26/14: Added Air Leakage Rating with AWS Test Report B7721.06-501-47. 9/2/15 revised options 13-20 to add SDLs, added options 21 and 22.

I hereby certify that all requirements for NFRC Certification Authorization have been met and that the above information is true and correct, to the best of my knowledge.

Authorized IA
Signature:



2015.09.02 16:00:10
-04'00'



TEST REPORT

Report No.: B7721.06-501-47

Rendered to:

CUSTOM VINYL PRODUCTS
Newport News, Virginia

PRODUCT TYPE: PVC Sliding Glass Door, Type XO
SERIES/MODEL: PD21 PATIO DOOR

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

Title	Summary of Results
Primary Product Designator	Class R-PG50 1816 x 2010 (72 x 80) - SGD
Design Pressure	± 2400 Pa (± 50.13 psf)
Air Infiltration	0.7 L/s/m ² (0.14 cfm/ft ²)
Water Penetration Resistance Test Pressure	360 Pa (7.52 psf)

Test Completion Date: 03/05/2012

Reference must be made to Report No. B7721.06-501, dated 10/31/14 for complete test specimen description and detailed test results.



1.0 Report Issued To: Custom Vinyl Products
260 Enterprise Drive
Newport News, Virginia 23603

2.0 Test Laboratory: Architectural Testing, Inc.
1140 Lincoln Avenue
Springdale, Pennsylvania 15144
724-275-7100

3.0 Project Summary:

3.1 Product Type: PVC Sliding Glass Door, Type XO

3.2 Series/Model: PD21 PATIO DOOR

Compliance Statement: Results obtained are tested values and were secured by using the designated test method(s). The specimen tested successfully met the performance requirements for a Class R-PG50 1816 x 2010 (72 x 80) - SGD rating.

This product was originally tested as the Veka Inc. Series/Model PD17WW, PVC Sliding Glass Door, Type XO and is a reissue of the original Report No. B7721.06-501-47. This report is reissued in the name of Custom Vinyl Products through written authorization by Veka Inc.

3.3 Test Dates: 02/14/2012 - 03/5/2012

3.4 Test Record Retention End Date: All test records for this report will be retained until March 15, 2016.

3.5 Test Location: Veka Inc. test facility in Fombell, Pennsylvania. Calibration of test equipment was performed by Architectural Testing in accordance with AAMA 205-01 "In-Plant Testing Guidelines for Manufacturers and Independent Laboratories".

3.6 Test Sample Source: The test specimen was provided by the client. Representative samples of the test specimen(s) will be retained by Architectural Testing for a minimum of four years from the test completion date.

3.7 Drawing Reference: The test specimen drawings have been reviewed by Architectural Testing and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Architectural Testing per the drawings located in Appendix B. Any deviations are documented herein or on the drawings.

3.8 List of Official Observers:

<u>Name</u>	<u>Company</u>
Doug Merry	Veka Inc.
Cornell Charles	Veka Inc.
Joseph Allison	Architectural Testing, Inc

4.0 Test Specification(s):

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

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 3.7 m ² (39.5 ft ²)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	1816	71-1/2	2010	79-1/2
Panel size	924	36-3/8	1943	76-1/2
Screen size	927	36-1/2	1969	77-1/2

5.2 Frame Construction:

Frame Member	Material	Description
Head, sill, jambs, and fixed meeting stile	PVC	Extruded
Equal glass adaptors, and thresh hold	PVC	Extruded
Roller track	Aluminum	Extruded

	Joinery Type	Detail
All corners	Mitered	Thermally welded
Fixed meeting stile	Coped and butted	Secured at the head and sill with four #8 x 3" long truss head fasteners, two at each end and sealed with a silicone sealant
Equal glass adaptors, and thresh hold	Straight-cut	Snap-in and sealed with a silicone sealant at each end

5.0 Test Specimen Description: (Continued)

5.3 Panel Construction:

Panel Member	Material	Description
All rails and stiles	PVC	Extruded

	Joinery Type	Detail
All corners	Mitered	Thermally welded

5.4 Weatherstripping:

Description	Quantity	Location
0.187" backed by 0.270" high center fin pile	2 Rows	Bottom rail, top rail, and lock stile
0.187" backed by 0.300" high center fin pile	1 Row	Meeting stiles

5.5 Glazing: *No conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen(s) can be made.*

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
1" IG	Butyl with corrugated substrate	1/8" tempered	1/8" tempered	Set from the exterior against a silicone sealant and secured with rigid vinyl glazing beads

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Panel	1	803 x 1822	31-5/8 x 71-3/4	5/8
Frame	1	810 x 1816	31-7/8 x 71-1/2	5/8

5.0 Test Specimen Description: (Continued)

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weepslot	1-1/4" wide by 5/16" high	2	Exterior sill face, one 3" from each end
Weepslot	1-1/4" wide by 5/16" high	4	Intermediate sill walls (below screen track), one 3" from each end
Weepslot	1" wide by 3/16" high	4	Intermediate sill walls (below screen track), one at each end
Weepslot	1-1/2" wide by 1/4" high	2	Intermediate sill walls (center most), one at each end
Weephole	1" wide by 3/16" deep	2	Interior sill track, one 3-1/2" from each end
Weep notch	1-1/2" wide by 1/4 deep	2	Aluminum roller track, one 2-1/2" from each end.

5.7 Hardware:

Description	Quantity	Location
Handle/lock assembly with double mortise lock	1	Lock stile with keeper on the mating jamb
Dual steel roller assembly	2	Bottom rail, one at each end

5.8 Reinforcement:

Drawing Number	Location	Material
3RFPD34SOM	Fixed meeting stile	Formed steel
3RFPD24SOM	Interlock stile	Formed steel
3RFPD03SOM	Lock stile	Formed steel

5.9 Screen Construction:

Frame Material	Corner Construction	Mesh Type	Mesh Attachment Method
Extruded aluminum	Mitered with metal corner keys	Fiberglass	Flexible spline

6.0 Installation:

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

Location	Anchor Description	Anchor Location
Integral nail fin	#8 x 2" long truss head fastener	Spaced approximately 10" on center, and starting in each corner
Jamb	#8 x 3" long fastener	Two through the keeper at the jamb

7.0 Test Results: The temperature during testing was 20°C (68°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Operating Force, per ASTM E 2068	Initiate motion: 76 N (17 lbf) Maintain motion: 67 N (15 lbf) Locks: 22 N (5 lbf)	135 N (30 lbf) max. 90N (20 lbf) max. 100 N (22.5 lbf) max.	
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	0.7 L/s/m ² (0.14 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Water Penetration, per ASTM E 547	N/A	N/A	3
Uniform Load Deflection, per ASTM E 330	N/A	N/A	3
Uniform Load Structural, per ASTM E 330	N/A	N/A	3
Forced Entry Resistance, per ASTM F 842, Type: A - Grade: 10	Pass	No entry	
Thermoplastic Corner Weld	Pass	Meets as stated	
Deglazing, per ASTM E 987 Operating direction, 320 N (72 lbf) Remaining direction, 230 N (52 lbf)	Pass Pass	Meets as stated Meets as stated	

7.0 Test Results: (Continued)

Test Specimen #1: (Continued)

Title of Test	Results	Allowed	Note
Optional Performance			
Water Penetration, per ASTM E 547 at 260 Pa (7.52 psf)	Pass	No leakage	2
Uniform Load Deflection, per ASTM E 330 taken at the exterior meeting stile +2400 Pa (+50.13 psf) -2400 Pa (-50.13 psf)	24.5 mm (0.97") 19.3 mm (0.76")	Report Only	4, 5, 6
Uniform Load Structural, per ASTM E 330 taken at the exterior meeting stile +3600 Pa (+75.19 psf) -3600 Pa (-75.19 psf)	2.5 mm (0.10") 1.0 mm (0.04")	7.9 mm (0.31") max. 7.9 mm (0.31") max.	5, 6

Note 1: The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440 for air leakage resistance.

Note 2: With and without insect screen.

Note 3: The client opted to start at a pressure higher than the minimum required. Test results are reported under Optional Performance.

Note 4: The deflections reported are not limited by AAMA/WDMA/CSA 101/I.S.2/A440 for this product designation. The deflection data is recorded in this report for special code compliance and information only.

Note 5: Loads were held for 10 seconds.

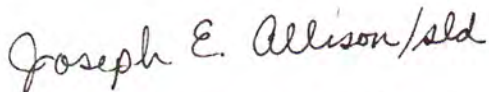
Note 6: Tape and film were used to seal against air leakage during structural testing. In our opinion, the tape and film did not influence the results of the test.

This report is reissued in the name of Custom Vinyl Products through written authorization of Veka Inc. to whom the original report was rendered. The original Veka Inc. Report No. is B7721.01-501-47.

Architectural Testing will service this report for the entire test record retention period. Test records that are retained such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation will be retained by Architectural Testing, Inc. for the entire test record retention period.

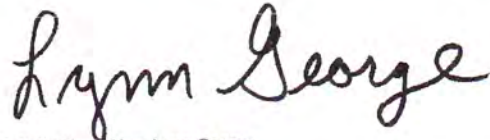
This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen(s) tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, Inc.



Digitally Signed for: Joseph E. Allison by Sandy L. DiCaro

Joseph E. Allison
Senior Technician



Digitally Signed by: Lynn George

Lynn George
Director – Regional Operations

JEA:sld

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

Appendix-A: Alteration Addendum (1)

Appendix-B: Drawings (2) Complete drawings packet on file with Architectural Testing, Inc.



Test Report No.: B7721.06-501-47
Architectural Testing Report Date: 10/31/14

Appendix A

Alteration Addendum

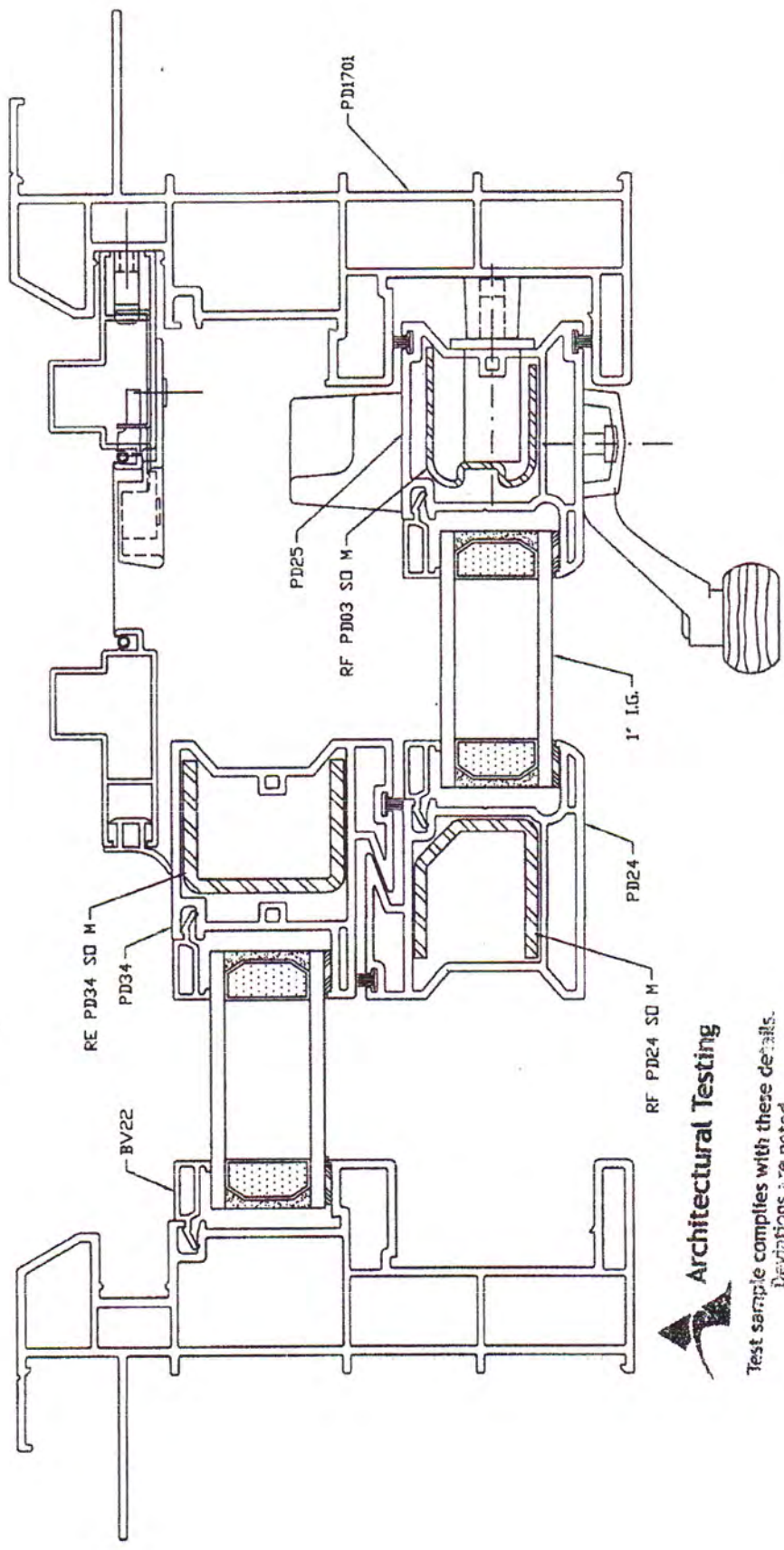
Note: No alterations were required.



Appendix B

Drawings

***Note:** Complete drawings packet on file with Architectural Testing, Inc.*



Test sample complies with these details.
Deviations are noted.

Report: 15721

Date: 3/7/12 Tech: JGA

NOTE: FOR OTHER PROFILE, GLAZING, BEAD, & GLASS OPTIONS, PLEASE SEE THE LINEAL PROFILE CHARTS FOR THIS SYSTEM.

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VEKA INC.
100 VEKA DRIVE
FOMBELL, PA 16123

DRAWN: BJF	DATE: 6 APR 06	SCALE: FULL
CHK'D:	DATE:	APPVD:
TITLE: PATIO DOOR PD17WW		DWG. # PD17W
HORIZONTAL ASSEMBLY - DP50		

REVISED	DATE
1	4/21/08 BJF

UPDATED PD 24 PROFILE

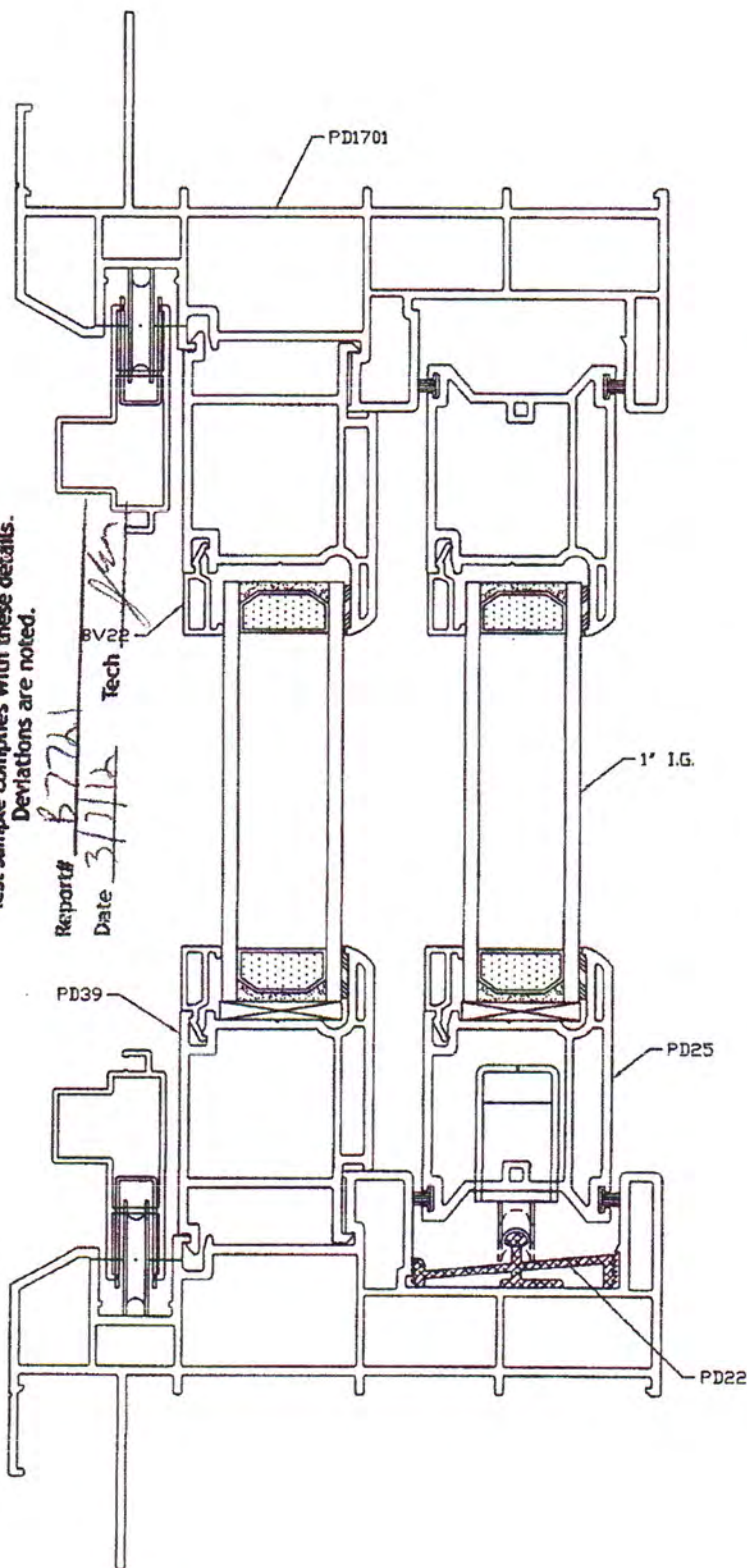


**Test sample complies with these details.
Deviations are noted.**

Report# 67761

Date 3/7/12

Tech



NOTE:
FOR OTHER PROFILE, GLAZING BEAD,
& GLASS OPTIONS, PLEASE SEE THE
LINEAL PROFILE CHARTS FOR THIS
SYSTEM.

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VEKA INC.
100 VEKA DRIVE
FOMBELL, PA 16123

DRAWN: B.J.F

DATE: 5 APR 06

SCALE: FULL

CHK'D:

DATE:

APPV'D:

DWG. # PD17WW

TITLE PATIO DOOR PD17WW
VERTICAL ASSEMBLY, EQUAL GLASS

DATE _____

REVISIONS



**ASTM E 1886 and ASTM E 1996
TEST REPORT**

Rendered to:

VEKA, INC.

**SERIES/MODEL: PD12/17/21WW
PRODUCT TYPE: PVC Sliding Door, Type XO**

**Report No.: 98930.01-501-44
Test Dates: 03/03/10
Through: 04/12/10
Report Date: 04/23/10
Expiration Date: 04/12/14**



ASTM E 1886 and ASTM E 1996 TEST REPORT

Rendered to:

VEKA, INC.
100 Veka Drive
Fombell, Pennsylvania 16123-0250

Report No.: 98930.01-501-44
Test Dates: 03/03/10
Through: 04/12/10
Report Date: 04/23/10
Expiration Date: 04/12/14

Project Summary: Architectural Testing, Inc. was contracted by Veka Inc. to perform testing on five Series/Model PD12/17/21WW, PVC sliding doors. The samples tested met the performance requirements set forth in the referenced test procedures for a ± 2400 Pa (± 50.16 psf) Design Pressure with missile impacts corresponding to Missile Level D and Wind Zone 3. Test specimen description and results are reported herein. The samples were provided by the client.

Test Procedures: The test specimens were evaluated in accordance with the following:

ASTM E 1886-05, *Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors and Storm Shutters Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.*

ASTM E 1996-05, *Standard Specification for Performance of Exterior Windows, Glazed Curtain Walls, Doors and Storm Shutters Impacted by Wind Borne Debris in Hurricanes.*

Test Specimen Description:

Series/Model: PD12/17/21WW

Product Type: PVC Sliding Door, Type XO

Overall Size: 2426 mm (95-1/2") wide by 2070 mm (81-1/2") high

Operable Panel Size: 1232 mm (48-1/2") wide by 2016 mm (78-3/8") high

Fixed Daylight Opening Size: 1111 mm (43-3/4") wide by 1873 mm (73-3/4") high

Test Specimen Description: (Continued)

Finish: All PVC was white.

Glazing Details (Test Specimen # 1 through #4): Each unit was exterior glazed with nominal 1" thick sealed insulating glass fabricated from one sheet of 1/8" thick clear tempered glass (exterior), and one sheet of 11/32" thick laminated glass (interior), separated by a rectangular shaped steel spacer system. The laminated glass was fabricated from two pieces of 1/8" thick clear annealed glass and a 0.090" thick Solutia Saflex® PVB interlayer. The glass was set against a TruSeal Purfect Glaze™ sealant.

Glazing Details (Test Specimen # 5): Each unit was exterior glazed with nominal 1" thick sealed insulating glass fabricated from one sheet of 1/8" thick clear tempered glass (exterior), and one sheet of 11/32" thick laminated glass (interior), separated by a rectangular shaped steel spacer system. The laminated glass was fabricated from two pieces of 1/8" thick clear annealed glass and a 0.090" thick Solutia Saflex® PVB interlayer. The glass was set against a Novaflex® M400 sealant.

Weatherstripping:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
0.187" backed by 0.270" high center fin pile	1 Row	Fixed meeting stile, operable meeting stile
0.187" backed by 0.270" high center fin pile	2 Rows	Top rail, bottom rail, and operable jamb/lock stile

Frame Construction: The extruded PVC frame was of mitered and welded corner construction. The fixed meeting stile was fastened to the frame with four #8 x 2" long truss head screws, two at each end. Snap-in rigid PVC equal glass adapters were located at the head and sill of the fixed lite. A drop-in extruded aluminum roller track was located at the interior sill track. A snap-in rigid PVC threshold was located at the exterior sill track at the operable panel.

Operable Panel Construction: The extruded PVC panel was of mitered and welded corner construction.

Test Specimen Description: (Continued)

Hardware:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Dual adjustable steel roller	2	Active panel bottom rail, one at each end
Lock and handle set with dual adjustable latch	1	Lock stile, approximately 40" up from the bottom
Metal keeper	1	Jamb, approximately 40" up from the bottom

Drainage:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
1" wide by 1/8" high weepslot	2	Exterior sill face, one 3" in from each end
1" wide by 3/16" high weepslot	4	Intermediate sill walls, two at each end
1" wide by 1/4" high weephole	2	Interior sill track, one 3" from each end
1-1/2" wide by 1/4" deep notch	2	Sill roller track, one at each end
1/2" wide by 1/8" high weepslot	2	Sill screen track, one at each end

Reinforcement: The fixed meeting stile contained a "U" shaped formed steel reinforcement, reference Drawing No. 3RFPD34SOM. The operable panel interlock stile contained a "U" shaped formed steel reinforcement, reference Drawing No. 3RFPD24SOM. The operable panel lock stile contained a "U" shaped formed steel reinforcement, reference Drawing No. 3RFPD03SOM.

Test Specimen Description: (Continued)

Installation (Test Specimens # 1, #2, #3 and #5): The unit was installed in a wood test buck constructed of Spruce-Pine-Fir construction lumber and secured through the nail fin with #8 x 2" long screws spaced approximately 9" on center, and beginning approximately 4" in from each corner. The unit was also secured through the frame with eighteen #8 x 2" long screws; four at each jamb evenly spaced and beginning 6" in from each end; and five each in the head and sill, one 6" in from each end, one at mid-span, and one 6" each side of midspan. The nail fin perimeter was sealed with a silicone sealant. A nominal 1/8" gap was maintained at the perimeter between the buck and door frame.

Installation (Test Specimens #4): The unit was installed in a wood test buck constructed of Spruce-Pine-Fir construction lumber and secured through the frame with eighteen #8 x 2" long screws; four at each jamb evenly spaced and beginning 6" in from each end; and five each in the head and sill, one 6" in from each end, one at mid-span, and one 6" each side of midspan. . The exterior perimeter was sealed with a silicone sealant. A nominal 1/8" gap was maintained at the perimeter between the buck and door frame.

Test Results: The following results have been recorded:

ASTM E 1886, *Large Missile Impact*

Conditioning Temperature: 26°C (78°F)

Missile Weight: 4037 g (8.90 lbs)

Missile Length: 2.39 m (7' 9-15/16")

Muzzle Distance from Test Specimen: 5.18 m (17.0 ft.)

Test Unit #1

Impact #1: Missile Velocity: 15.2 m/s (50.6 fps); orientation within $\pm 5^\circ$ of horizontal

Impact Area: Center of operable panel

Observations: Missile hit target area, broke outer annealed lite and fractured inner laminated lite, no penetration

Results: Pass

Note: See Architectural Testing Sketch #1 for impact locations.

Test Unit #2

Impact #1: Missile Velocity: 15.0 m/s (49.1 fps); orientation within $\pm 5^\circ$ of horizontal

Impact Area: Lower left corner of operable panel

Observations: Missile hit target area, broke outer annealed lite and fractured inner laminated lite, no penetration

Results: Pass

Note: See Architectural Testing Sketch #2 for impact locations.

Test Results: (Continued):

ASTM E 1886, Large Missile Impact

Conditioning Temperature: 26°C (78°F)
Missile Weight: 4037 g (8.90 lbs)
Missile Length: 2.39 m (7' 9-15/16")
Muzzle Distance from Test Specimen: 5.18 m (17 ft.)

Test Unit #3

Impact #1: Missile Velocity: 15.5 m/s (50.9 fps); orientation within $\pm 5^\circ$ of horizontal

Impact Area: Upper right corner of operable panel

Observations: Missile hit target area, broke outer annealed lite and fractured inner laminated lite, no penetration

Results: Pass

Note: See Architectural Testing Sketch #3 for impact locations

Test Unit #4 (Substitution with replacement type frame)

Impact #1: Missile Velocity: 15.2 m/s (49.8 fps); orientation within $\pm 5^\circ$ of horizontal

Impact Area: Center of operable panel

Observations: Missile hit target area, broke outer annealed lite and fractured inner laminated lite, no penetration

Results: Pass

Note: See Architectural Testing Sketch #1 for impact locations.

Test Unit #5 (Substitution with Novaflex® M400 glazing sealant)

Impact #1: Missile Velocity: 15.1 m/s (49.6 fps); orientation within $\pm 5^\circ$ of horizontal

Impact Area: Center of operable panel

Observations: Missile hit target area, broke outer annealed lite and fractured inner laminated lite, no penetration

Results: Pass

Note: See Architectural Testing Sketch #1 for impact locations.

Test Results: (Continued)

ASTM E 1886, Air Pressure Cycling

Test Unit #1

Design Pressure: ± 2400 Pa (± 50.16 psf)

POSITIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inch)		
			#1	#2	#3
480 to 1201 (10.03 to 25.08)	3500	1.34	6.3 (0.25)	20.3 (0.80)	5.8 (0.23)
0 to 1441 (0.00 to 30.10)	300	2.21	6.5 (0.26)	23.3 (0.92)	6.5 (0.26)
1201 to 1921 (25.08 to 40.13)	600	1.93	8.5 (0.34)	32.3 (1.27)	8.5 (0.34)
721 to 2400 (15.05 to 50.16)	100	1.89	10.0 (0.39)	39.5 (1.56)	10.5 (0.41)
			Permanent Set		
			4.5 (0.18)	7.5 (0.30)	3.0 (0.12)

NEGATIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inch)		
			#1	#2	#3
721 to 2400 (15.05 to 50.16)	50	2.23	6.8 (0.27)	35.5 (1.40)	9.0 (0.36)
1201 to 1921 (25.08 to 40.13)	1050	1.90	5.0 (0.20)	28.8 (1.13)	7.3 (0.29)
0 to 1441 (0.00 to 30.10)	50	2.56	3.0 (0.12)	20.8 (0.82)	5.0 (0.20)
480 to 1201 (10.03 to 25.08)	3350	1.82	2.3 (0.09)	17.5 (0.69)	3.8 (0.15)
			Permanent Set		
			+1.3 (+0.05)	0.3 (-0.01)	+1.5 (+0.06)

Observations: No additional damage or deglazing was observed.

Result: Pass

Note: See Architectural Testing Sketch #4 for indicator locations.

Test Results: (Continued)

ASTM E 1886, Air Pressure Cycling

Test Unit #2

Design Pressure: ± 2400 Pa (± 50.16 psf)

POSITIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inch)		
			#1	#2	#3
480 to 1201 (10.03 to 25.08)	3500	2.14	6.0 (0.24)	19.3 (0.76)	5.8 (0.23)
0 to 1441 (0.00 to 30.10)	300	2.40	6.5 (0.26)	21.5 (0.85)	6.5 (0.26)
1201 to 1921 (25.08 to 40.13)	600	1.63	7.5 (0.30)	29.8 (1.17)	9.0 (0.36)
721 to 2400 (15.05 to 50.16)	100	2.97	9.3. (0.37)	36.3 (1.43)	11.5 (0.45)
			Permanent Set		
			1.5 (0.06)	4.5 (0.18)	1.8 (0.07)

NEGATIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inch)		
			#1	#2	#3
721 to 2400 (15.05 to 50.16)	50	4.36	13.8 (0.54)	39.3 (1.55)	16.0 (0.63)
1201 to 1921 (25.08 to 40.13)	1050	1.89	12.5 (0.49)	34.8 (1.37)	13.8 (0.54)
0 to 1441 (0.00 to 30.10)	50	4.15	10.0 (0.39)	27.3 (1.07)	10.8 (0.42)
480 to 1201 (10.03 to 25.08)	3350	2.58	8.5 (0.34)	23.3 (0.92)	9.0 (0.36)
			Permanent Set		
			0.5 (0.02)	3.0 (0.12)	1.0 (0.04)

Observations: No additional damage or deglazing was observed.

Result: Pass

Note: See Architectural Testing Sketch #4 for indicator locations.

Test Results: (Continued)

ASTM E 1886, Air Pressure Cycling

Test Unit #3

Design Pressure: ± 2400 Pa (± 50.16 psf)

POSITIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inch)		
			#1	#2	#3
480 to 1201 (10.03 to 25.08)	3500	1.70	4.0 (0.16)	19.5 (0.77)	4.8 (0.19)
0 to 1441 (0.00 to 30.10)	300	2.63	4.0 (0.16)	21.3 (0.84)	5.3 (0.21)
1201 to 1921 (25.08 to 40.13)	600	2.36	5.0 (0.20)	27.5 (1.08)	7.0 (0.28)
721 to 2400 (15.05 to 50.16)	100	2.94	6.0 (0.24)	35.5 (1.40)	9.0 (0.36)
			Permanent Set		
			0.8 (0.03)	2.3 (0.09)	0.8 (0.03)

NEGATIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inch)		
			#1	#2	#3
721 to 2400 (15.05 to 50.16)	50	2.98	12.0 (0.47)	42.0 (1.65)	14.8 (0.58)
1201 to 1921 (25.08 to 40.13)	1050	2.29	10.5 (0.41)	35.8 (1.41)	13.0 (0.51)
0 to 1441 (0.00 to 30.10)	50	3.00	9.3 (0.37)	30.5 (1.20)	11.3 (0.44)
480 to 1201 (10.03 to 25.08)	3350	2.21	8.0 (0.32)	26.0 (1.02)	9.8 (0.38)
			Permanent Set		
			2.8 (0.11)	5.0 (0.20)	2.5 (0.10)

Observations: No additional damage or deglazing was observed.

Result: Pass

Note: See Architectural Testing Sketch #4 for indicator locations.

Test Results: (Continued)

ASTM E 1886, Air Pressure Cycling

Test Unit #4 (Substitution with replacement type frame)

Design Pressure: ± 2400 Pa (± 50.16 psf)

POSITIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inch)		
			#1	#2	#3
480 to 1201 (10.03 to 25.08)	3500	1.47	5.8 (0.23)	21.3 (0.84)	5.3 (0.21)
0 to 1441 (0.00 to 30.10)	300	2.52	7.8 (0.31)	25.0 (0.99)	6.8 (0.27)
1201 to 1921 (25.08 to 40.13)	600	1.76	9.0 (0.36)	32.8 (1.29)	8.3 (0.33)
721 to 2400 (15.05 to 50.16)	100	1.94	10.0 (0.40)	37.3 (1.47)	9.0 (0.36)
			Permanent Set		
			4.3 (0.17)	7.0 (0.28)	4.5 (0.18)

NEGATIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inch)		
			#1	#2	#3
721 to 2400 (15.05 to 50.16)	50	2.11	7.6 (0.30)	33.5 (1.32)	9.0 (0.36)
1201 to 1921 (25.08 to 40.13)	1050	1.35	5.8 (0.23)	27.0 (1.06)	6.8 (0.27)
0 to 1441 (0.00 to 30.10)	50	2.60	4.5 (0.18)	23.0 (0.91)	5.5 (0.22)
480 to 1201 (10.03 to 25.08)	3350	1.64	3.8 (0.15)	20.0 (0.79)	4.3 (0.17)
			Permanent Set		
			1.8 (0.07)	0.3 (0.01)	0.5 (0.02)

Observations: No additional damage or deglazing was observed.

Result: Pass

Note: See Architectural Testing Sketch #4 for indicator locations

Test Results: (Continued)

ASTM E 1886, Air Pressure Cycling

Test Unit #5 (Substitution with Novaflex® M400 glazing sealant)

Design Pressure: ± 2400 Pa (± 50.16 psf)

POSITIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inch)		
			#1	#2	#3
480 to 1201 (10.03 to 25.08)	3500	1.47	6.3 (0.25)	19.8 (0.78)	7.8 (0.31)
0 to 1441 (0.00 to 30.10)	300	2.52	7.3 (0.29)	22.5 (0.89)	10.3 (0.40)
1201 to 1921 (25.08 to 40.13)	600	1.76	9.8 (0.38)	32.0 (1.26)	13.5 (0.53)
721 to 2400 (15.05 to 50.16)	100	1.93	11.8 (0.46)	41.0 (1.62)	16.0 (0.63)
			Permanent Set		
			4.8 (0.19)	9.3 (0.37)	7.3 (0.29)

NEGATIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inch)		
			#1	#2	#3
721 to 2400 (15.05 to 50.16)	50	2.42	12.3 (0.48)	36.8 (1.45)	12.3 (0.48)
1201 to 1921 (25.08 to 40.13)	1050	1.55	10.8 (0.42)	30.5 (1.20)	9.8 (0.38)
0 to 1441 (0.00 to 30.10)	50	2.60	6.0 (0.24)	16.8 (0.66)	4.0 (0.16)
480 to 1201 (10.03 to 25.08)	3350	1.64	5.8 (0.23)	15.8 (0.62)	4.0 (0.16)
			Permanent Set		
			-1.0 (-0.04)	+1.0 (+0.04)	+3.5 (+0.14)

Observations: No additional damage or deglazing was observed.

Result: Pass

Note: See Architectural Testing Sketch #4 for indicator locations.

General Note: Upon completion of testing, the specimens met the requirements of Section 7 of ASTM E 1996.

Test Equipment: (See Appendix A)

Cannon: Constructed from steel piping utilizing compressed air to propel the missile

Missile: 2x4 Southern Pine

Timing Device: Electronic Beam Type

Cycling Mechanism: Computer controlled centrifugal blower with electronic pressure measuring device

Deflection Measuring Device: Linear transducers

Tape and film were used to seal against air leakage during structural testing. In our opinion, the tape and film did not influence the results of the test.

Drawing Reference: The test specimen drawings have been reviewed by Architectural Testing and are representative of the test specimen reported herein.

List of Official Observers:

Name

Company

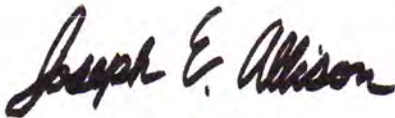
Joe Allison
James Grippo
Lynn George

Architectural Testing, Inc.
Architectural Testing, Inc.
Architectural Testing, Inc.

Detailed drawings, data sheets, representative samples of test specimens, a copy of this report, or other pertinent project documentation will be retained by Architectural Testing, Inc. for a period of four years from the original test date. At the end of this retention period, such materials shall be discarded without notice and the service life of this report will expire.

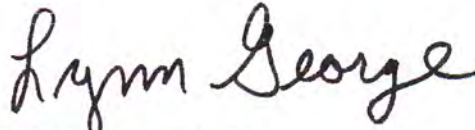
Results obtained are tested values and were secured by using the designated test methods. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen(s) tested.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

For ARCHITECTURAL TESTING, INC.



Digitally Signed by: Joseph E. Allison

Joseph E. Allison
Senior Technician



Digitally Signed by: Lynn George

Lynn George
Director – Regional Operations

JEA:sld

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

- Appendix-A: Test Equipment (1)
- Appendix-B: Sketches (4)
- Appendix-C: Drawings (15)

Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	04/23/10	N/A	Original report issue

Appendix A

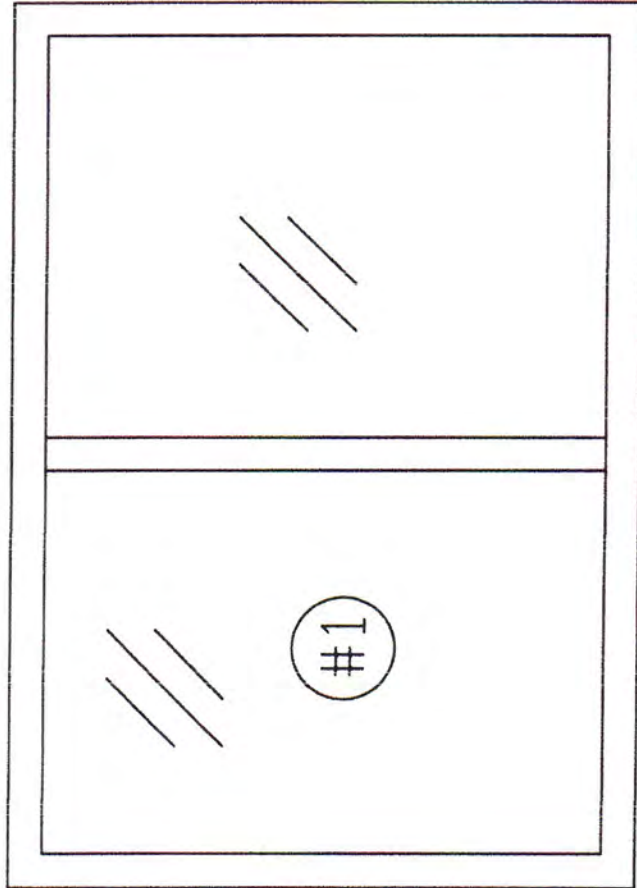
Test Equipment

Instrument	Manufacturer	Asset #
Air Cannon	Architectural Testing, Inc.	004992
Control Panel	Architectural Testing, Inc.	004968
Linear Transducer	Celesco	62162
Linear Transducer	Celesco	62163
Linear Transducer	Celesco	62164
Linear Transducer	Celesco	62165
Linear Transducer	Celesco	62166
Linear Transducer	Celesco	62167

Appendix B

Sketches

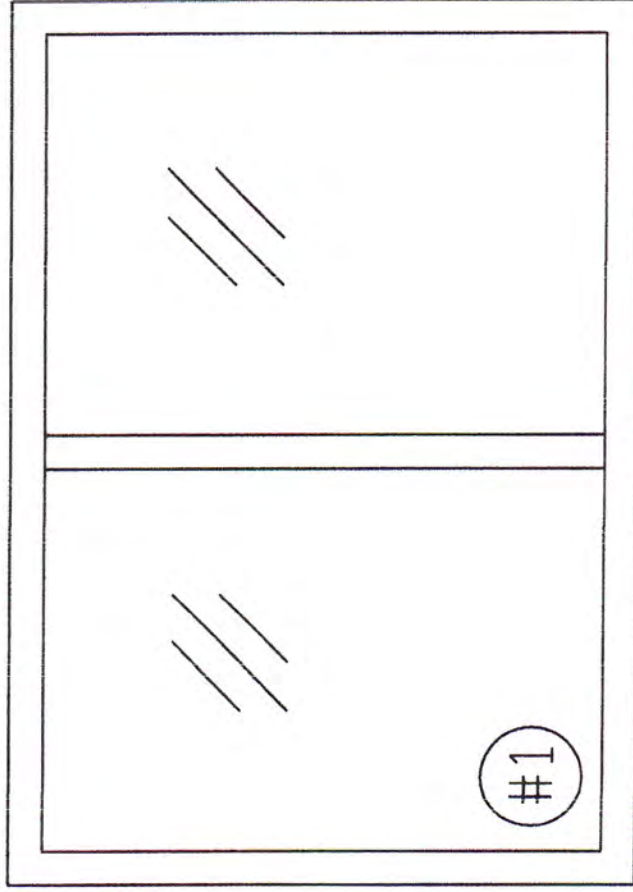
REV	DATE	DESCRIPTION	BY
			LG



IMPACT LOCATIONS

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				DATE: -20-2010		

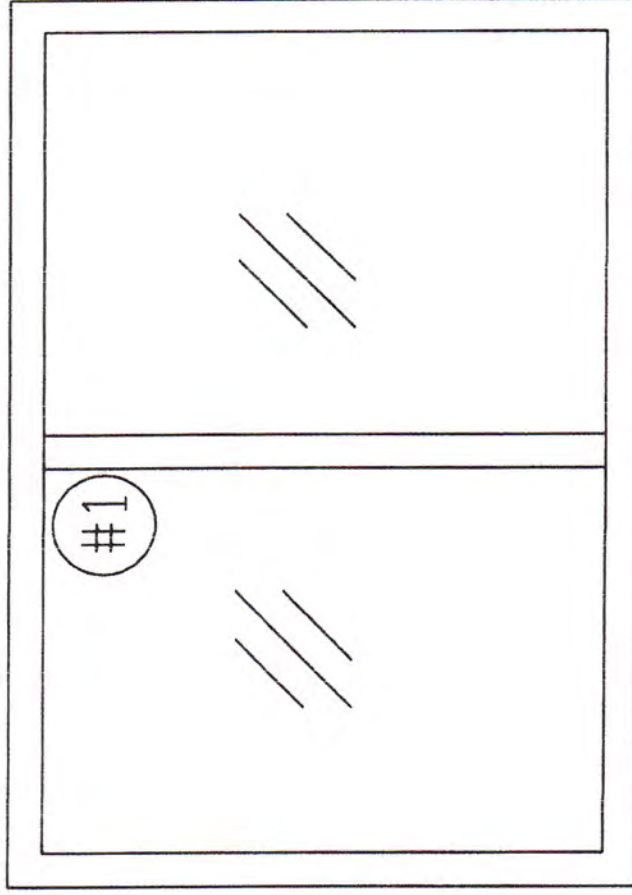
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			LG



IMPACT LOCATIONS

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					DATE: -20-2010	OF 4

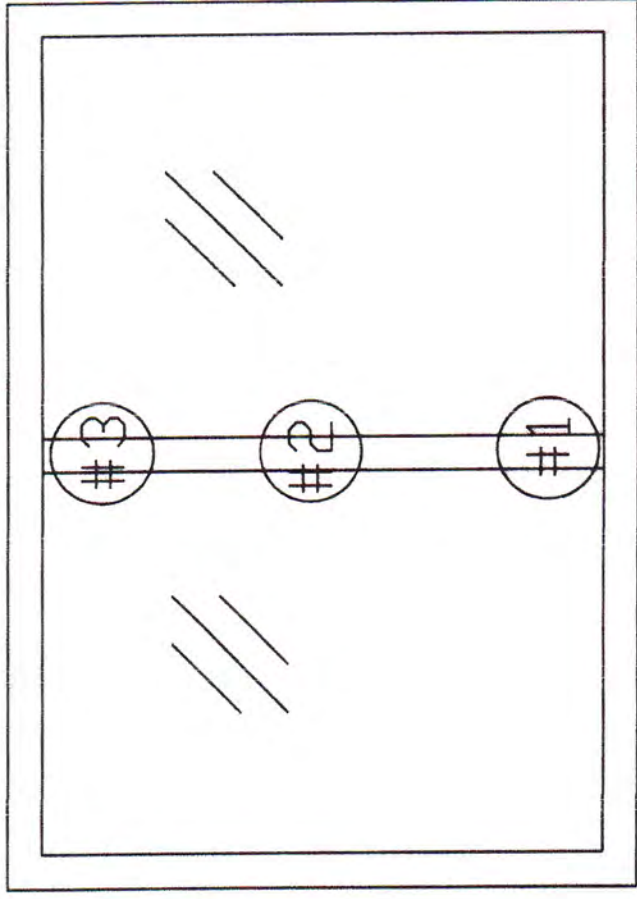
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			LG



IMPACT LOCATIONS

PROJECT NO. 98930.01 501-44	PROJECT NAME: PD12 CLIENT: Veka Inc.	DRAWING  Architectural Testing	Sketch #3 (Impact Locations)	DWG. BY: LG DATE: -20-2010	SHEET 3 OF 4
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REV	DATE	DESCRIPTION	BY
			LG



INDICATOR LOCATION

PROJECT NO. 98930.01 501-44	PROJECT NAME: PD12 CLIENT: Veka Inc.	DRAWING Sketch 4 (Indicator Locations)	DWG. BY: LG DATE: -20-2010	SHEET 4 OF 4
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Appendix C

Drawings



BILL OF MATERIALS

PATIO DOOR
(PD12WW IMPACT VERSION)

Page 1 of 2

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.

PVC PROFILES:

	<u>PART #</u>	<u># PER UNIT</u>	<u>SOURCE</u>
MASTER FRAME	PD1201	4	VEKA
STILE/RAIL	PD25	3	VEKA
SASH INTERLOCK	PD24	1	VEKA
FIXED INTERLOCK	PD34	1	VEKA
EQUAL GLASS ADAPTOR	PD39	2	VEKA
GLAZING BEAD 1" GLASS	BV22	8	VEKA
THRESHOLD	PD33	1	VEKA
SCREEN TRACK	PD58	1	VEKA

ALUMINUM PROFILES:

SILL TRACK	PD22	1	VEKA
ACTIVE SASH STOP	5207**	1	ATLANTIS PLASTICS

REINFORCING PROFILES:

JAMB STILE (PD25)	RF PD03 SO M	1	VEKA
SASH INTERLOCK (PD24)	RF PD24 SO M	1	VEKA
FIXED INTERLOCK (PD34)	RF PD34 SO M	1	VEKA
EQUAL GLASS ADAPTER (PD39) (8' DOORS)	RF PD03 SO M	A/R	VEKA

HARDWARE:

HANDLE SET	657**	1	BSI/Door Hardware
MULTI POINT LOCK (SS)	2468 SS	1	BSI/Door Hardware
MULTI POINT KEEPER (SS)	2447 SS	1	BSI/Door Hardware
TANDEM ROLLER (SS)	1978-4000 SS	2	TRUTH
	2688-1250	2	BSI/Door Hardware

GLAZING:

	<u>PART #</u>	<u># PER UNIT</u>	<u>SOURCE</u>
GLAZING SHIM	3/16" X 1" X 1" AWT**	A/R	TREMCO
HOT MELT LIQUID BACK BEDDING	PERFECT GLAZE	A/R	NAT. ADHESIVES
INSTALLATION SILICONE	896	A/R	PECORA
	5733	A/R	SCHNEE MOREHEAD
	899	A/R	DOW CORNING



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Port# 98930
Date 7/14/10 Tech [Signature]



BILL OF MATERIALS

PATIO DOOR
(PD12WW IMPACT VERSION)

Page 2 of 2

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.

WEATHERSTRIPPING:

ALL	.260-.187	FS7825-187 (WHITE)	A/R	SCHLEGEL
WEATHERPILE	.260-.187	3026W (WHITE)	A/R	ULTRAFAB
	.260-.187	47126-187 (GRAY)	A/R	AMESBURY

SCREWS:

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

ROLLER	#10 X 1/2" FHP (SS)	4	MERCHANTS
FIXED MEETING STILE	#8 X 2" THP	4	MERCHANTS
LOCK HANDLE*	#8-32X 1-7/8" PHP**	2	SASH CONTROLS
MORTISE LOCK	#10 X 1-1/4" FHP(SS)	2	MERCHANTS
KEEPER	#10 X 1-1/4" PHP (SS)	4	MERCHANTS
INSTALLATION SCREWS	#10 X 1-1/4" PHP (SS)	A/R	MERCHANTS

* = HARDWARE SET INCLUDES SCREWS

** = COLOR

A/R = AS REQUIRED

10/02/06



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 9893.0
Date 4/14/10 Tech [Signature]



37777

=CRITICAL DIMENSION


FILLETS:
✓ = SHARP
▲ = R0.25
■ = R0.75
○ = R1.0
◇ = R1.5

DIMENSIONS ARE IN MILLIMETERS.

NOTE: ALL DIMENSIONS
CAN BE ASSUMED AS
ORIGINATING FROM SHARP
CORNERS, UNLESS NOTED OTHERWISE.

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■ = FLATNESS & SQUARENESS CRITICAL



REVISIONS		DATE
EXTRUDER SIZE: CM-80		EXTRUDER SPEED: 2.0 m/min
WEIGHT: 1.067 lb/ft		AREA: 1090.84mm ²
UNSPECIFIED WALL THICKNESS	DUTY: 2mm	
UNSPECIFIED RADIUS	0.5mm	INNER: 1.5mm
UNSPECIFIED TOLERANCE		±0.0

REVISIONS

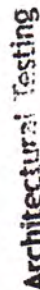
DATE _____



VEKA INC.
100 VEKA DRIVE
FOMBELL, PA 16123

DRAWN: JMN	DATE: 4 MAR 02	SCALE: AS NOTED
CHK'D:	DATE:	APPVD:
TITLE PATIO DOOR FRAME		DWG. # PD1201

MATERIAL: RIGID PVC



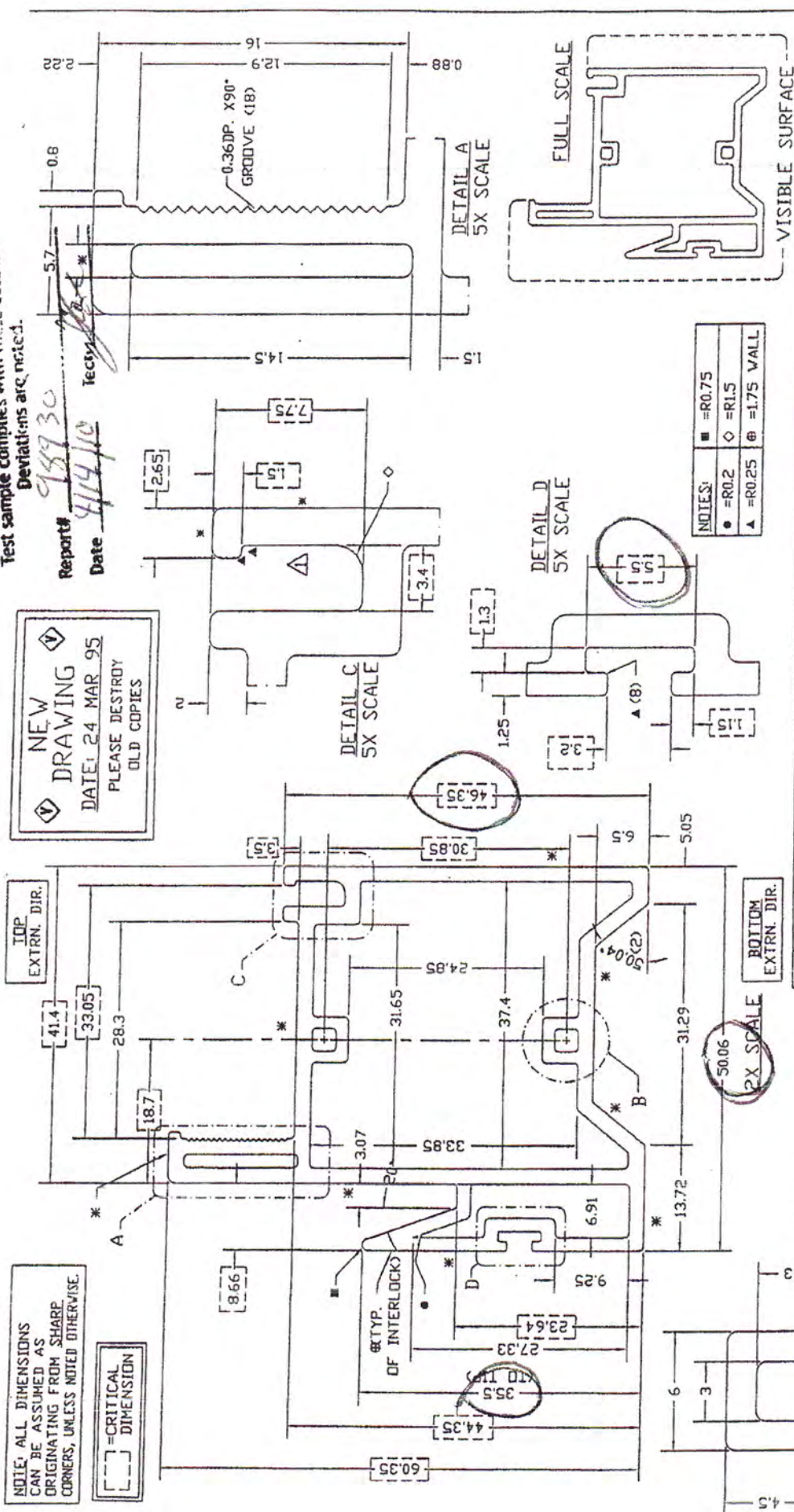
Test sample complies with these details.
 Deviations are noted.

Report# _____
Date _____

NEW
DRAWING
DATE: 24 MAR 95
PLEASE DESTROY
OLD COPIES

NOTE: ALL DIMENSIONS
CAN BE ASSUMED AS
ORIGINATING FROM SHARP
CORNERS, UNLESS NOTED OTHERWISE.

--] = CRITICAL DIMENSION



DETAIL B
(5X SCALE)
TYPICAL

MATERIAL: RIGID PVC

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■ ■ ■ FLATNESS & COLLAPSE CRITICAL

[illegible]

VEKA INC.
100 VEKA DRIVE
FOMBELL, PA 16123

DRAWN: JMN	DATE: 24 MAR 95	SCALE: AS NOTED
CHK'D:	DATE:	APP'V'D:
TITLE: OX PATIO DOOR MULLION (PD3 SERIES)		DWG. # PD34






EXTRUDER SIZE: CM80	EXTRUDER SPEED: 3.0 r/min
WEIGHT: 0.560 lb/ft	AREA: 572.8mm ² A
UNSPECIFIED WALL THICKNESS	OUTER 1.8mm INNER 1.5mm
UNSPECIFIED RADII 0.5mm	UNSPECIFIED TOLERANCE ±0.2mm

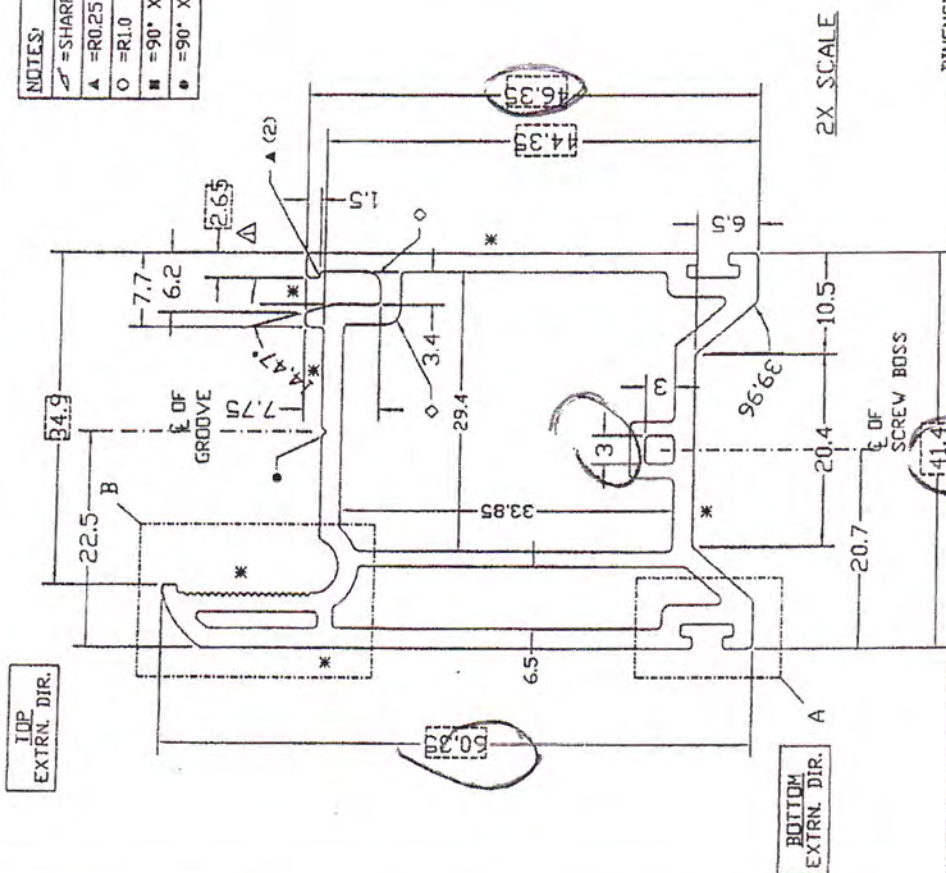


**Test sample complies with these details.
Deviations are noted.**

Report#

Date Y11.2.10 Tech MA

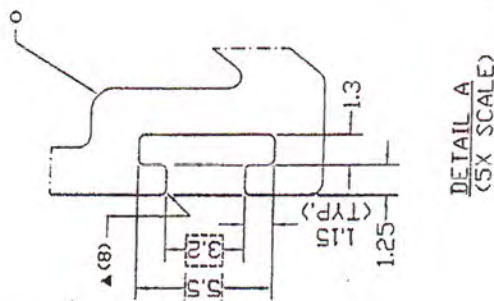
NOTES:	
	= SHARP ◇ = R1.5
	= R0.25 △ = R10.08
	= R1.0 □ = R2.86
	= 90° X 0.36 DP. NOTCH
	= 90° X 0.5 DP. NOTCH



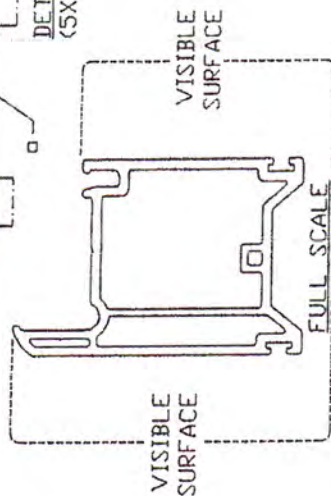
MATERIAL: RIGID PVC

NOTE: ALL DIMENSIONS CAN BE ASSUMED AS ORIGINATING FROM FILLETED CORNERS OF ZERO, UNLESS NOTED OTHERWISE.

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DETAIL A
(5X SCALE)



DETAIL B
(5X SCALE)

FULL SCALE

DIMENSIONS ARE IN MILLIMETERS.

2.	UPDATE DRAWING TO CURRENT FORMAT	11 AUG 00	JB
2.	OFFICIAL AREA & WEIGHT	22 DEC 94	
1.	DIMENSION ADDED	28 SEPT 94	
REVISIONS		DATE	
EXTRUDER SIZE: CN-80 EXTRUDER SPEED: 3.0 m/min			
WEIGHT: 0.494 lb/ft		AREA: 504.92 mm ²	
UNSPECIFIED WALL THICKNESS		OUTER 2.0mm INNER 1.5mm	
UNSPECIFIED RADII		0.5mm	UNSPECIFIED TOLERANCE ±0.2mm

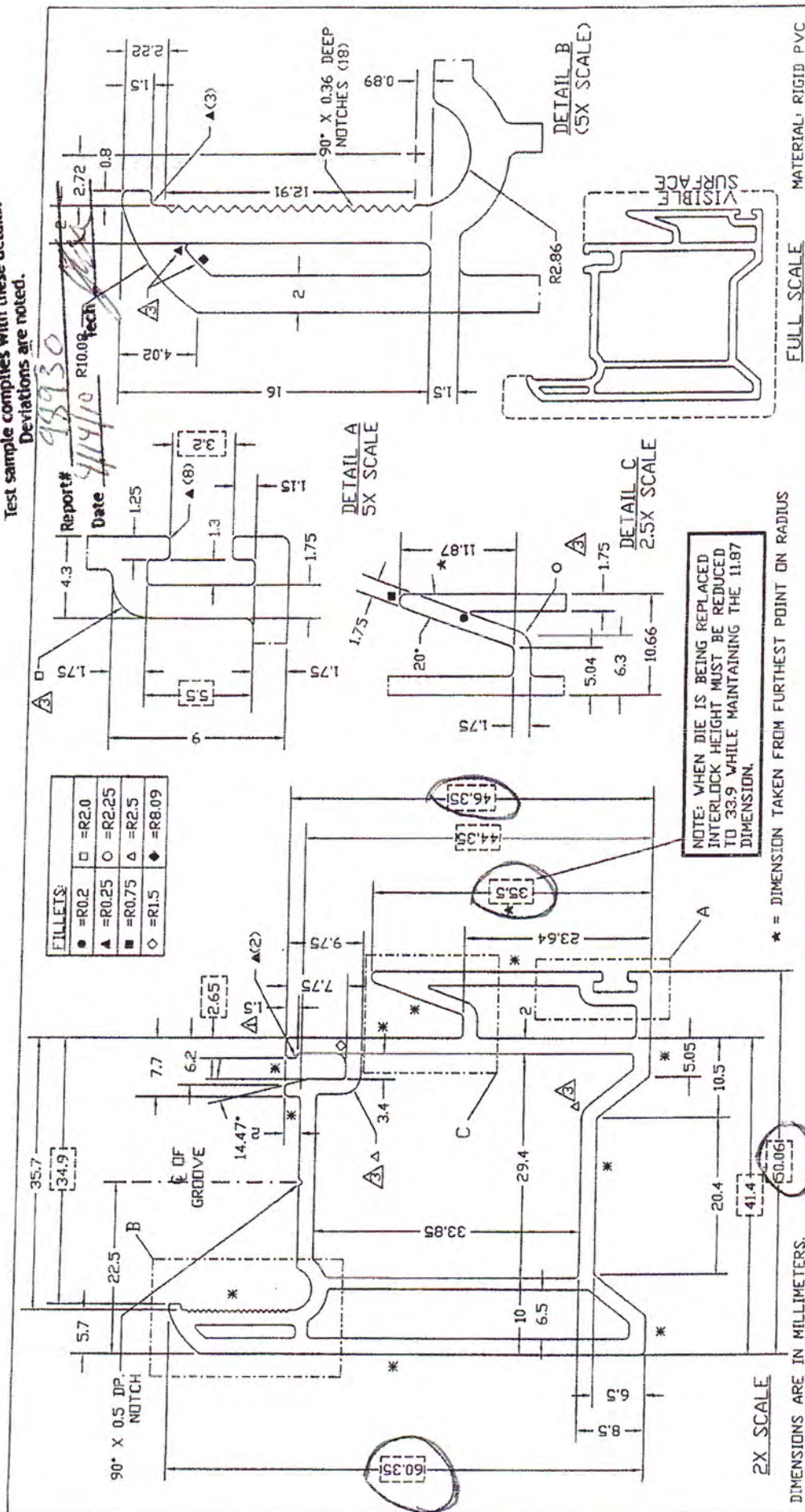


VEKA INC.
100 VEKA DRIVE
FOMBELL, PA 16123

DRAWN: JJS	DATE: 1 JULY 94	SCALE: AS NOTED
CHK'D:	DATE:	APPVD:
TITLE: COMMON SASH		DWG: # PD25



Test sample complies with these details.
Deviations are noted.



DIMENSIONS ARE IN MILLIMETERS.

NOTE: ALL DIMENSIONS
CAN BE ASSUMED AS
ORIGINATING FROM SHARP
CORNERS, UNLESS NOTED OTHERWISE.

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3.	REV. RADI R1 TO R2, R0.5 TO R2.5, R1.5 TO R2.5	1 DEC 99
2.	OFFICIAL WEIGHT & AREA	22 DEC 94
1.	DIMENSION ADDED	20 SEPT 94
REVISIONS		DATE
WEIGHT: 0.562 lb/ft		AREA: 57.44 sq in
UNSPECIFIED WALL THICKNESS		OUTER 2.0mm
UNSPECIFIED RADI		INNER 1.5mm
UNSPECIFIED TOLERANCE		±0.2mm

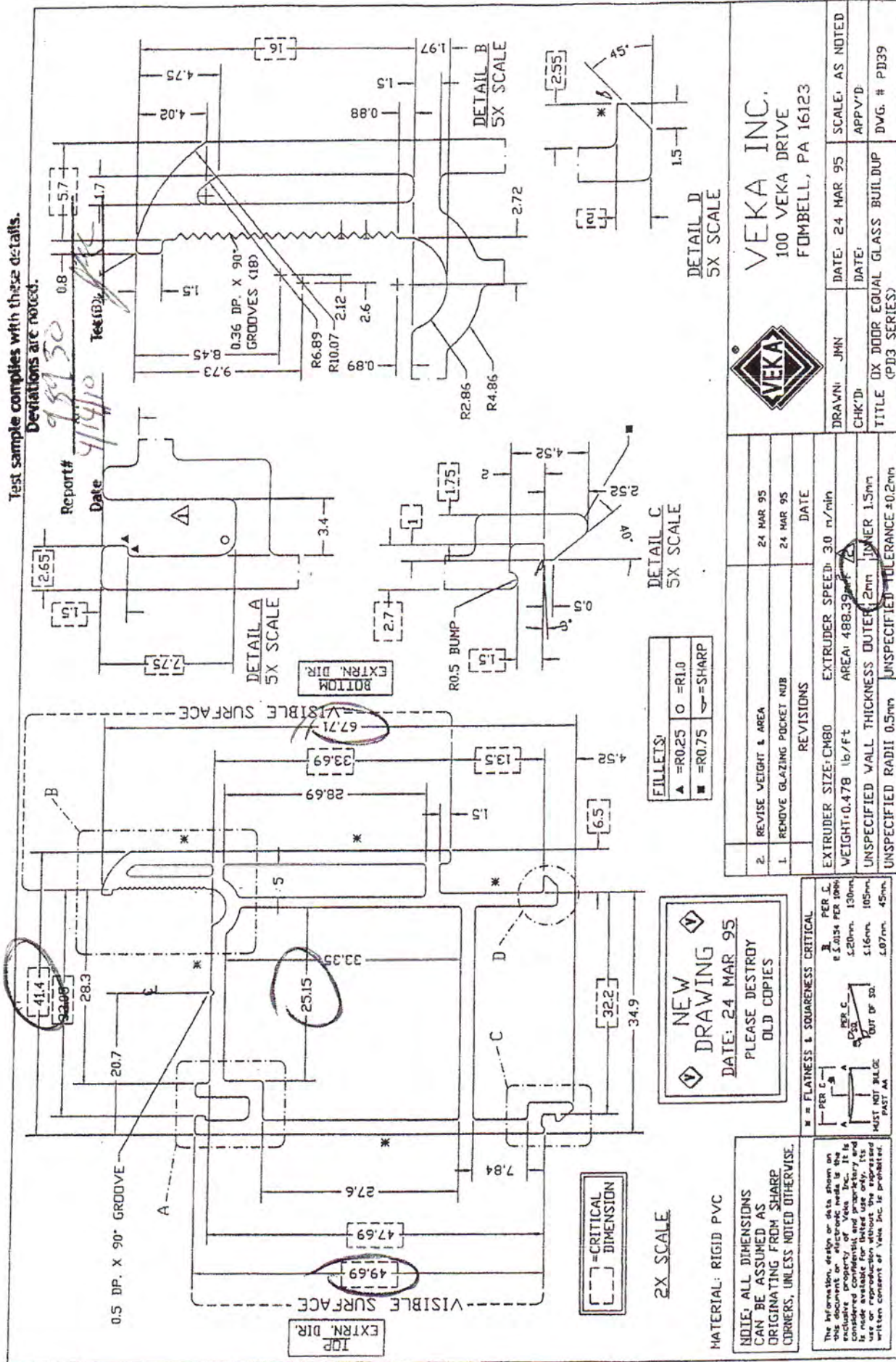
**[] = CRITICAL
DIMENSION**

VEKA INC.
100 VEKA DRIVE
FOMBELL, PA 16123

DRAWN: JJS	DATE: 1 JULY 94	SCALE: AS NOTED
CHK'D:	DATE:	APP'D:
TITLE: PATIO DOOR PD14V/MV INTERLOCK (EXTERIOR)		DWG. # PD24



Report# 98920
Date 4/14/10



MATERIAL: RIGID PVC

NOTE: ALL DIMENSIONS
CAN BE ASSUMED AS
ORIGINATING FROM SHAPE
CORNERS UNLESS NOTED OTHERWISE

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[illegible]

NEW
DRAWING
DATE: 24 MAR 95
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FILLETS:	
▲ = R0.25	○ = R1.0
■ = R0.75	◐ = SHARP

DETAIL C
5X SCALE

DETAIL D
5X SCALE



VEKA INC.
100 VEKA DRIVE
FOMBELL, PA 16123

DRAWN: JMN	DATE: 24 MAR 95	SCALE: AS NOTED
CHK'D:	DATE:	APPV'D
TITLE OX DOOR EQUAL GLASS BUILDUP (PD3 SERIES)		DWG. # PD39

	REVISE WEIGHT & AREA	24 MAR 95
	REMOVE GLAZING POCKET NUB	24 MAR 95
	REVISIONS	DATE
	EXTRUDER SIZE: CH80	EXTRUDER SPEED: 3.0 m/min
	WEIGHT: 0.478 lb/ft	AREA: 488.39 in ² /ft
	UNSPECIFIED WALL THICKNESS	OUTER: 2mm INNER: 1.5mm
	UNSPECIFIED RADII 0.5mm	UNSPECIFIED TOLERANCE ±0.2mm



Architectural Testing

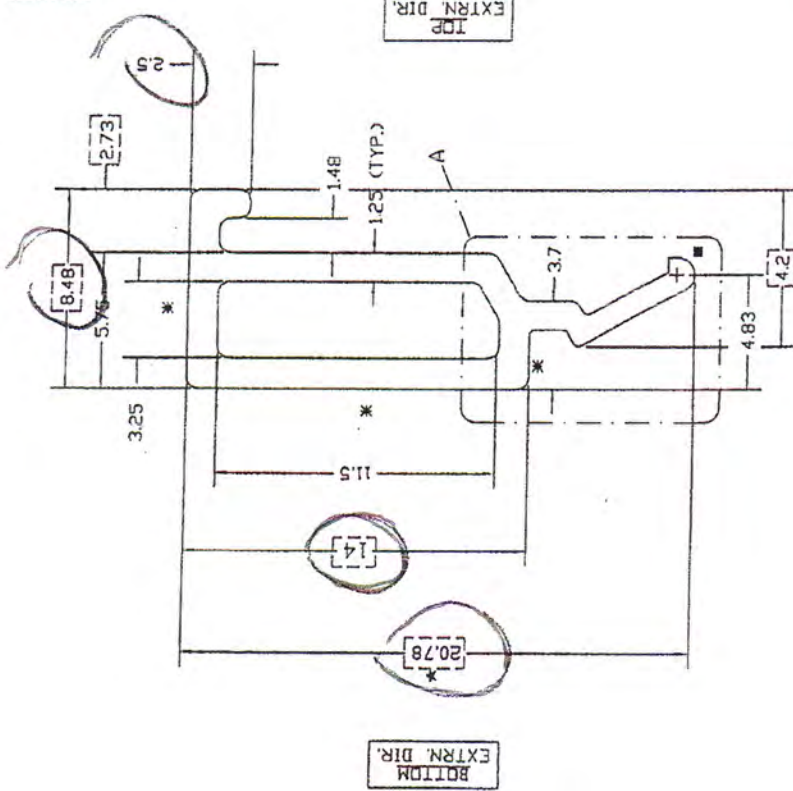
Test sample complies with these details.
Deviations are noted.

Report# 98930

Date 4/14/10

Tech [Signature]

FILLETS:	
■	= R0.75
▲	= R0.25



5X SCALE

DETAIL A
8X SCALE

FULL SCALE

★ = DIMENSION TAKEN FROM FURTHEST POINT ON RADIUS

MATERIAL: RIGID PVC

NOTE: ALL DIMENSIONS CAN BE ASSUMED AS ORIGINATING FROM FILLETED CORNERS OF ZERO, UNLESS NOTED OTHERWISE.

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[] = CRITICAL DIMENSION

■ = FLATNESS & SQUARENESS CRITICAL

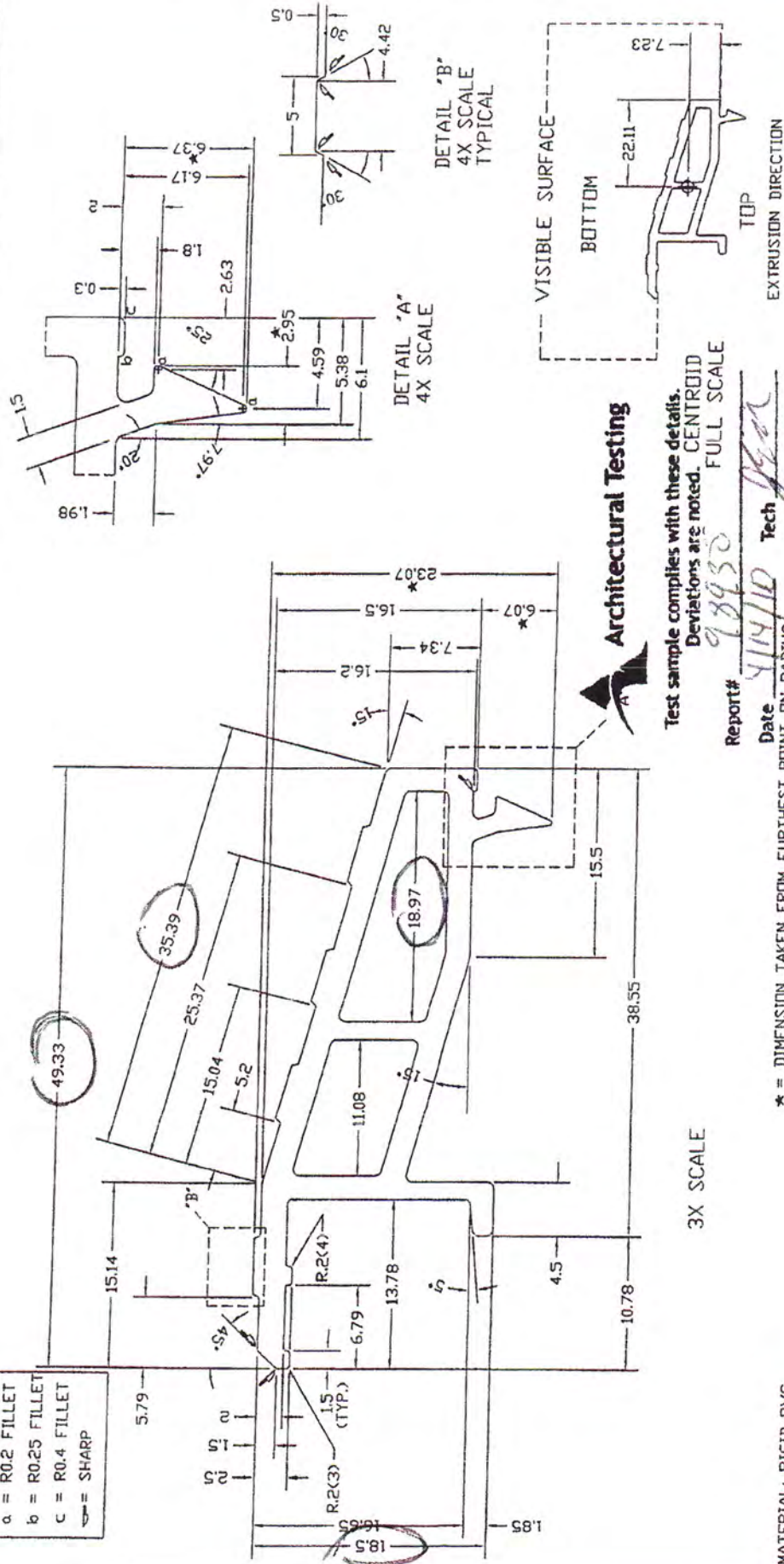
OFFICIAL AREA & WEIGHT		22 DEC 94	DATE
1	CHANGE SNAP LEG, REVERSE AREA/WEIGHT, CENTROID	12 JAN 94	JHN
EXTRUDER SIZE: CM35		EXTRUDER SPEED: 4.60 m/min	
WEIGHT: 0.054 lb/ft		AREA: 0.55 in ²	
UNSPECIFIED WALL THICKNESS: 1.25mm		UNSPECIFIED TOLERANCE: ±0.2mm	
UNSPECIFIED RADI: 0.5mm		UNSPECIFIED TOLERANCE: ±0.2mm	



VEKA INC.
100 VEKA DRIVE
FOMBELL, PA 16123

DRAWN: T JF	DATE: 29 MARCH 93	SCALE: AS NOTED
CHKD:	DATE:	APPVD:
TITLE: GLAZING BEAD 1' GLASS		DWG. # BV22

NOTE:
 a = R0.2 FILLET
 b = R0.25 FILLET
 c = R0.4 FILLET
 = SHARP



MATERIAL: RIGID PVC

NOTE: ALL DIMENSIONS CAN BE ASSUMED AS ORIGINATING FROM FILLETED CORNERS OF ZERO, UNLESS NOTED OTHERWISE.

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FLATNESS & SQUARENESS CRITICAL	
PER C.	PER C.
≤ .2 REGR.	≤ .3 ML 60 ML
≤ .2 REGR.	≤ .2 ML 40 ML
≤ .2 REGR.	≤ .1 ML 20 ML

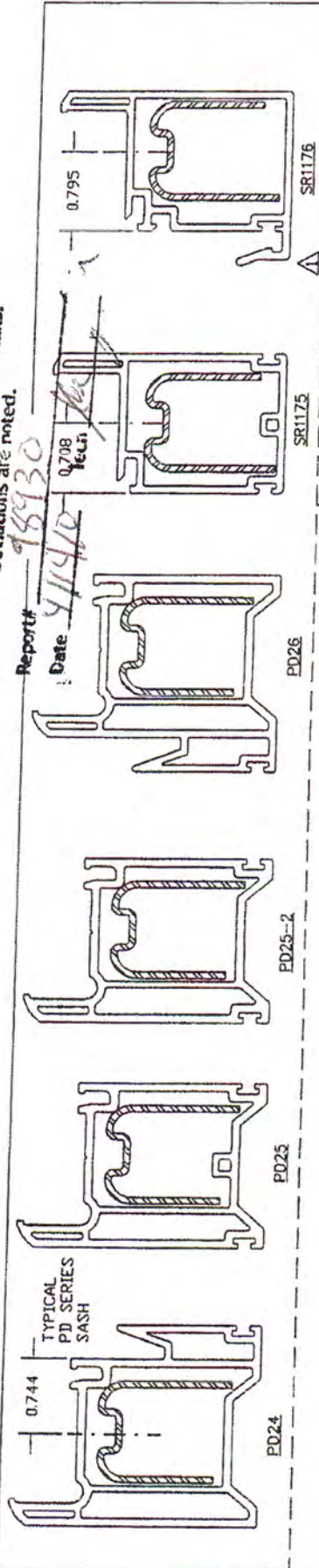
REVISIONS	
1	CORRECTED WEIGHT FROM 0.716 TO 0.237
DATE	21 JAN 94 JMN
EXTRUDER SIZE: CM55	EXTRUDER SPEED: 30 m/min
WEIGHT: 0.237 lb/ft	AREA: 242.47 mm ²
UNSPECIFIED WALL THICKNESS OUTER 2mm	INNER 1.5mm
UNSPECIFIED RADI	0.5mm
UNSPECIFIED TOLERANCE	±0.3mm

VEKA INC.	
100 VEKA DRIVE	
FOMBELL, PA 16123	
DRAWN: JMN	DATE: 3 DEC 93
CHK'D:	DATE:
TITLE THRESHOLD PD3	
DWG. # PD33	

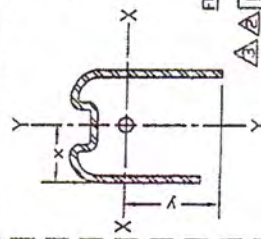




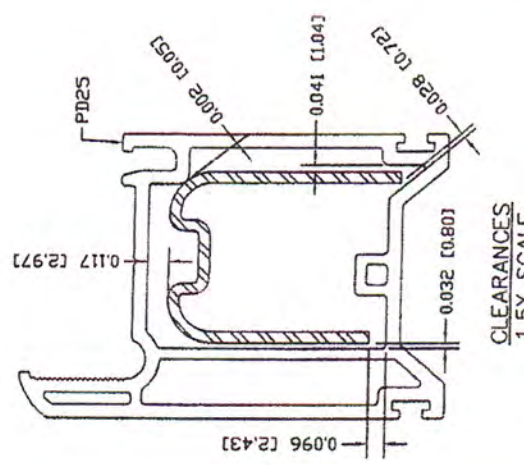
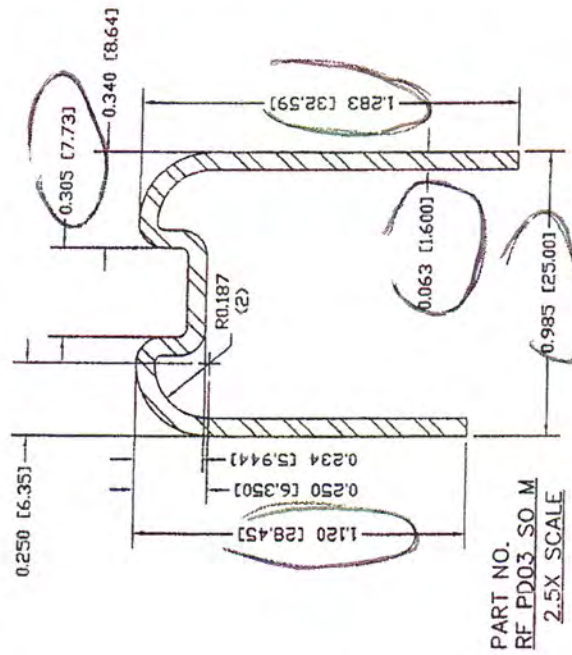
Test sample complies with these details.
Deviations are noted.



ATTACH REINFORCING 2" FROM EACH END THEN 12" O.C. USE #8 X 3/4" FHP SELF-TAPPING, PLATED OR SS SCREWS. QUANTITY AS REQUIRED



PROFILE PROPERTIES
MATERIAL: 0063 GALVANIZED ROLLED G90 STL., HOT DIPPED
AREA: 0.2089 IN² (1.348 CM²)
WEIGHT: 0.710 LB./FT.
MOMENTS OF INERTIA:
I_{xx}: 0.0282 IN⁴ (1.17 CM⁴)
I_{yy}: 0.0347 IN⁴ (1.44 CM⁴)
EXTREME FIBER DISTANCE:
x: 0.514 IN. (1.306 CM.)
y: 0.805 IN. (2.056 CM.)
SECTION MODULI:
S_{xx}: 0.0349 IN³ (0.571 CM³)
S_{yy}: 0.0674 IN³ (1.11 CM³)



NOTE: UNSPECIFIED INSIDE BENDS = R0.026

NOTE: DIMENSIONS ARE IN INCHES

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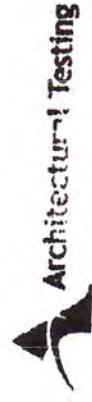
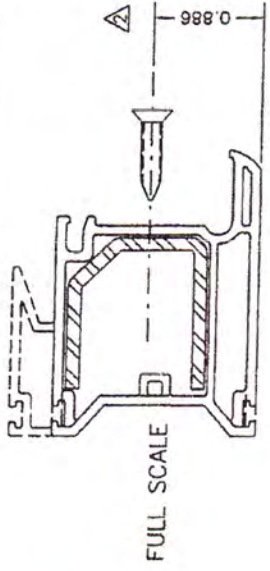
REVISIONS	DATE
3	UPDATE PROPERTIES AS PER RECALC 3/12/04
2	REVISE PROFILE PROPERTIES
1	ADDED SCREW SPECIFICATION AND NOTE



VEKA INC.
100 VEKA DRIVE
FOMBELL, PA 16123

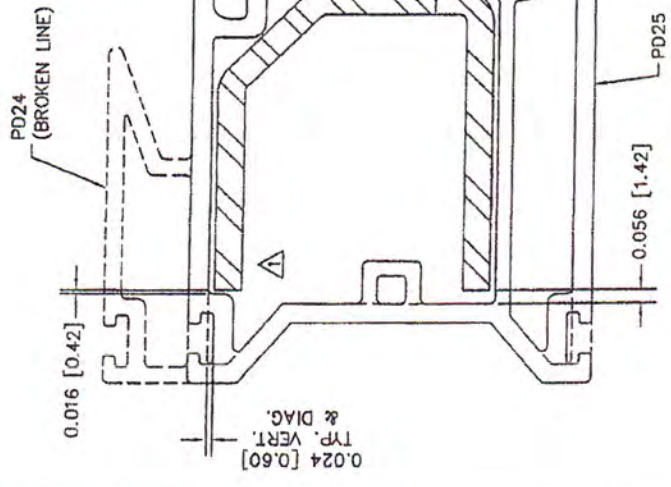
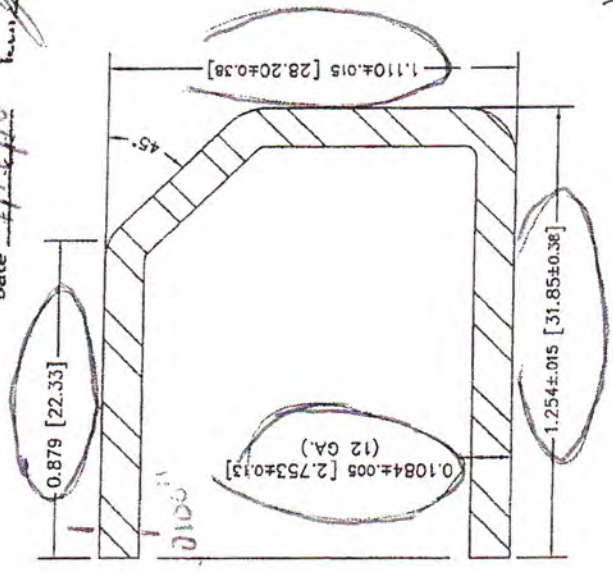
DRAWN: JLB	DATE: 4 FEB 02	SCALE: AS NOTED
CHK'D:	DATE:	APP'VD:
TITLE	STEEL REINFORCING RF PD03 SO M	DWG. # RFPD03SOM

ATTACH REINFORCING 2" FROM EACH END THEN 12" O.C. USE #8 X 3/4" FHP SELF-TAPPING, PLATED OR SS SCREWS. QUANTITY AS REQUIRED



Test sample complies with these details. Deviations are noted.

Report # 98930
Date 4/14/10



PROFILE PROPERTIES

IN ENGLISH [SI] UNITS

MATERIAL: 12 GA. GALVANIZED ROLLED C90 STL., HOT-DIPPED

AREA: 0.3421 IN² [2.207 CM²]

WEIGHT: 1.162 LB/FT. [1732 G/M]

MOMENTS OF INERTIA:

I_{xx}: 0.0657 IN.⁴ [2.73 CM.⁴]

I_{yy}: 0.0521 IN.⁴ [2.17 CM.⁴]

EXTREME FIBER DISTANCE:

x: 0.737 IN. [1.87 CM.]

y: 0.590 IN. [1.50 CM.]

SECTION MODULI:

S_{xx}: 0.111 IN.³ [1.83 CM.³]

S_{yy}: 0.0707 IN.³ [1.16 CM.³]

VEKA PART # RF PD24 SO M

NOTE: DIMENSIONS ARE IN INCHES [MM.]



VEKA INC.
100 VEKA DRIVE
FOMBELL, PA 16123

DRAWN: JLB	DATE: 14 MAR 02	SCALE: AS NOTED
CHK'D:	DATE:	APPVD:
TITLE: REINFORCING FOR PD24 & PD25		DWG. # RFPD24SOM

REVISIONS	DATE
2. ADDED SCREW SPECIFICATION AND NOTE	7 AUGUST 03 (TUF)
1. REVISE PROFILE SHAPE & PROPERTIES	19 MAR 02

CLEARANCES
2X SCALE

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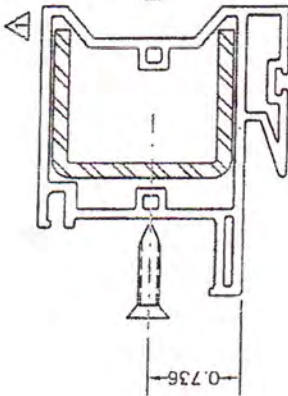
Test sample complies with these details.
Deviations are noted.

Report # 98930

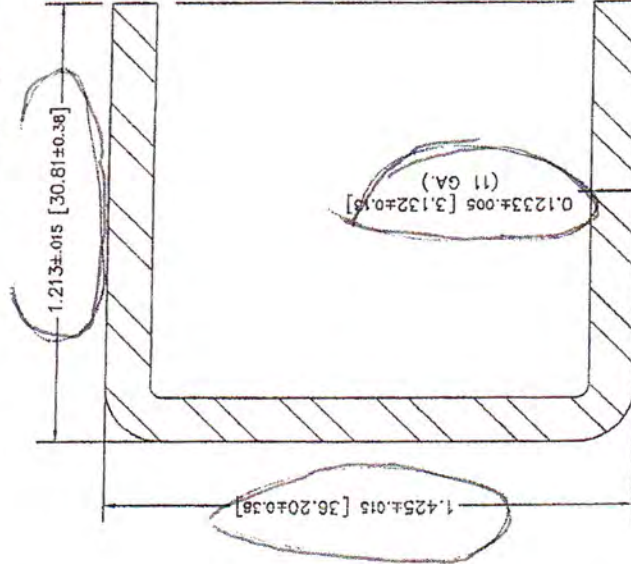
Date 4/14/10

Tech JLB

ATTACH REINFORCING 2" FROM
EACH END THEN 12" O.C.
USE #8 X 3/4" FHP SELF-
TAPPING, PLATED OR SS SCREWS.
QUANTITY AS REQUIRED

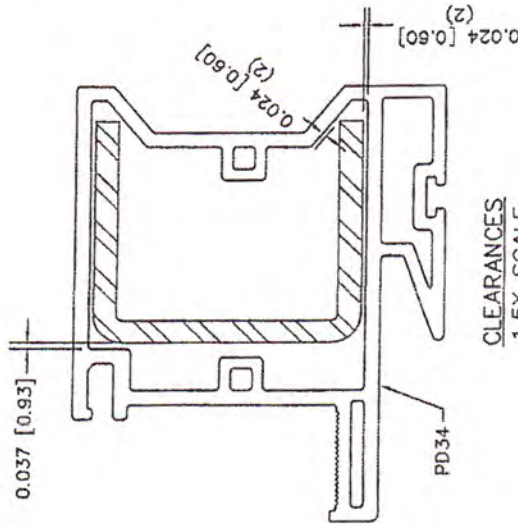


FULL SCALE



FULL SCALE

PROFILE PROPERTIES
IN ENGLISH [SI] UNITS
MATERIAL: 11 GA. GALVANIZED
ROLLED 690 STL., HOT-DIPPED
AREA: 0.4346 IN.² [2.804 CM.²]
WEIGHT: 1.477 LB/FT. [2199 G/M]
MOMENTS OF INERTIA:
I_{xx}: 0.139 IN.⁴ [5.80 CM.⁴]
I_{yy}: 0.0643 IN.⁴ [2.68 CM.⁴]
EXTREME FIBER DISTANCE:
x: 0.776 IN. [1.97 CM.]
y: 0.7125 IN. [1.81 CM.]
SECTION MODULI:
S_{xx}: 0.196 IN.³ [3.20 CM.³]
S_{yy}: 0.0829 IN.³ [1.36 CM.³]



CLEARANCES
1.5X SCALE

3X SCALE

NOTE: INSIDE RADII = 0.031 [0.79]

VEKA PART # RF PD34 SO M

NOTE: DIMENSIONS ARE IN INCHES [MM.]



VEKA INC.
100 VEKA DRIVE
FOMBELL, PA 16123

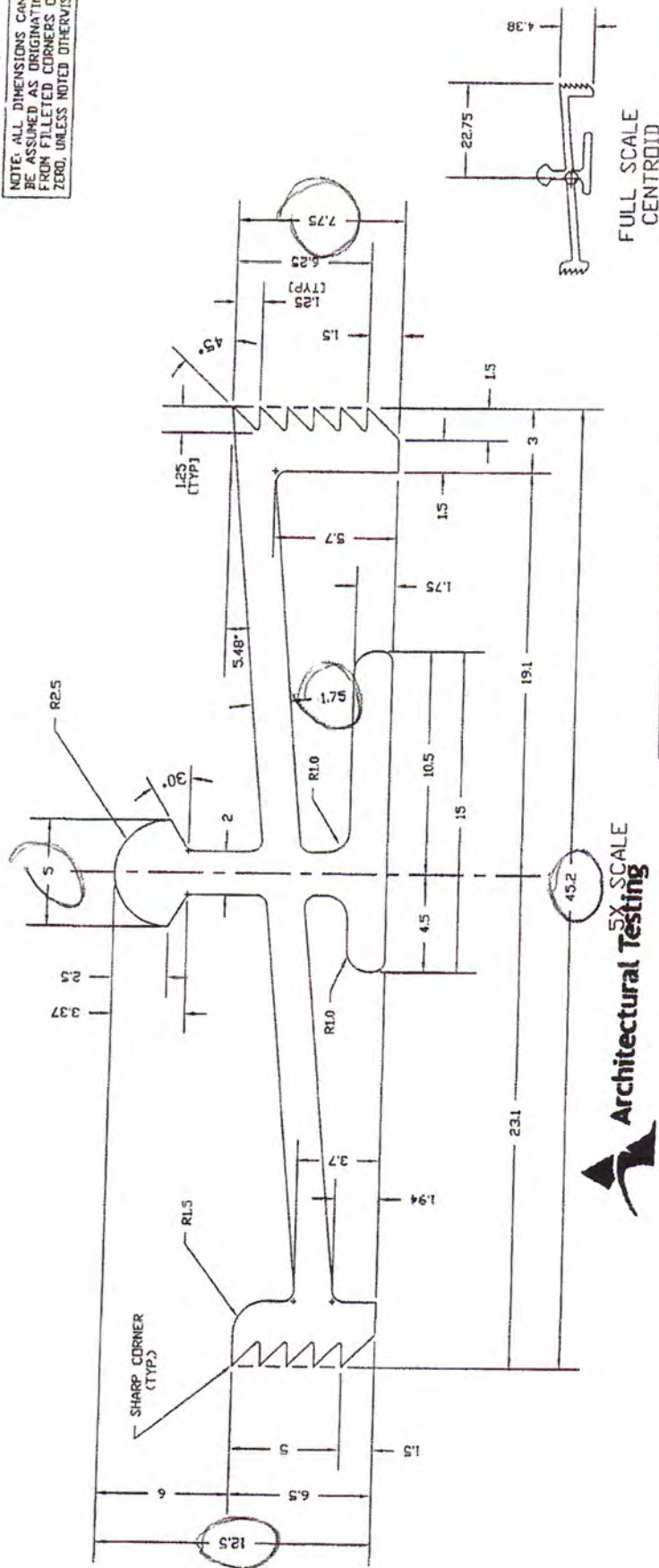
DRAWN: JLB	DATE: 14 MAR 02	SCALE: AS NOTED
CHK'D:	DATE:	APPVD:
TITLE REINFORCING FOR PD34		DWG. # RFPD34SOM

REVISIONS		DATE
1	ADDED SCREW SPECIFICATION AND NOTE	7 AUGUST 03 (JLF)

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STANDARD COMMERCIAL TOLERANCES FOR EXTRUDED BAR & SHAPES APPLY UNLESS SPECIFICALLY SHOWN OTHERWISE

NOTE: ALL DIMENSIONS CAN BE ASSUMED AS ORIGINATING FROM FILLETED CORNERS OF ZERO, UNLESS NOTED OTHERWISE.



**Test sample complies with these details.
Deviations are noted.**

Report# 98930 Tech Jard
Date 4/14/12

MATERIAL: ALUMINUM
ALLOY & TEMPER: 6005-T5 or 6105-T5
FINISH: MILL

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NOTE: DIMENSIONS & WEIGHTS
ARE METRIC [STANDARD]

VEKA PART # PD22	
WEIGHT: 411 g/m	AREA: 152.25 mm ²
UNSPECIFIED WALL THICKNESS	
UNSPECIFIED RADII 0.5 mm	
UNSPECIFIED TOLERANCE	

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VEKA INC.
100 VEKA DRIVE
P.O. BOX 250
FOMBELL, PA 16123

DRAWN: VGR/TJF	DATE: 8 JAN 92	SCALE: AS NOTED
CHK'D:	DATE:	APPVD:
TITLE PATIO DOOR (PD2VV) SILL TRACK		
DWG. # PD22		

[illegible]

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Architectural Testing


Test sample complies with these details.
Deviations are noted.

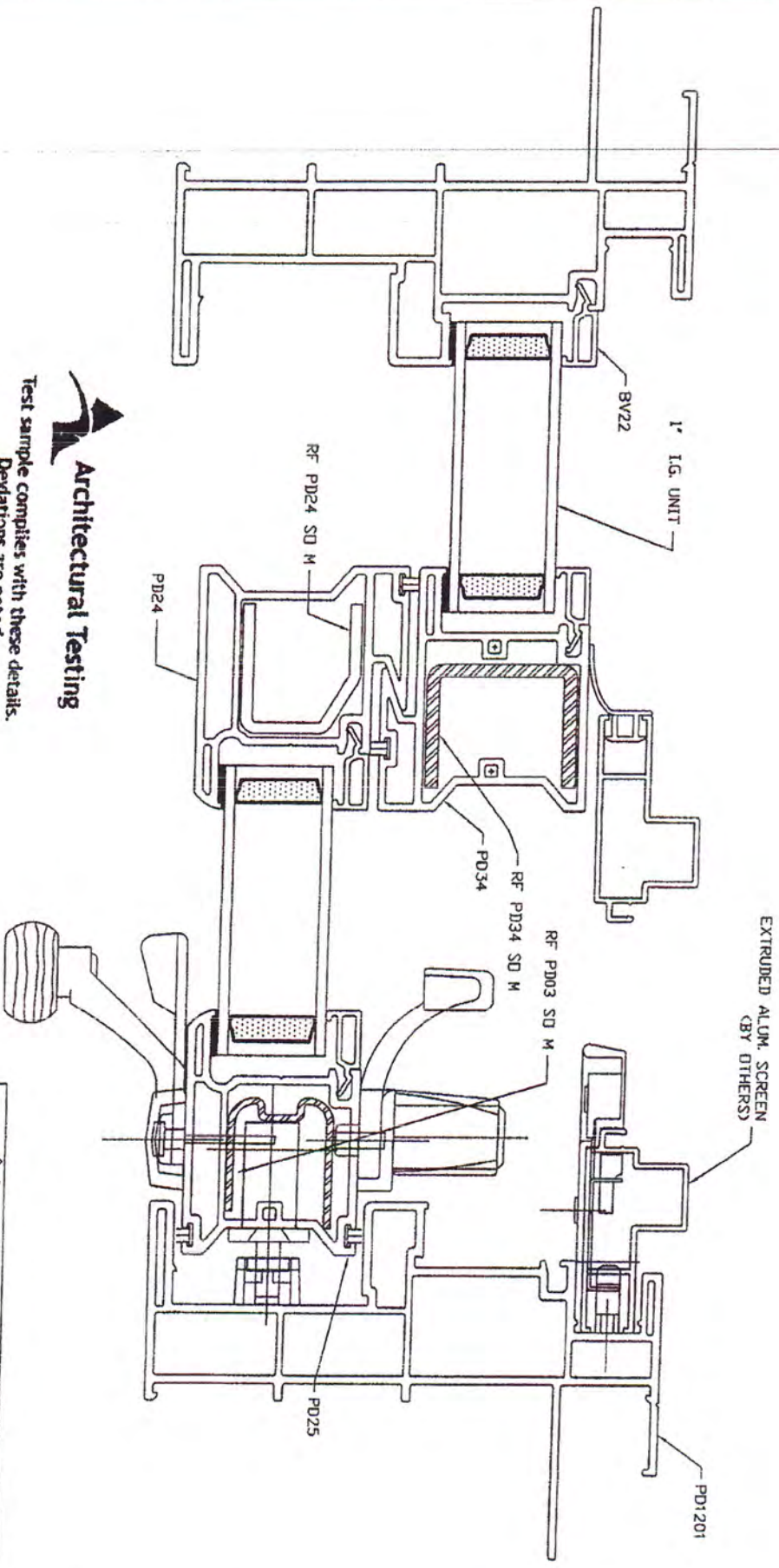
Report# 98930

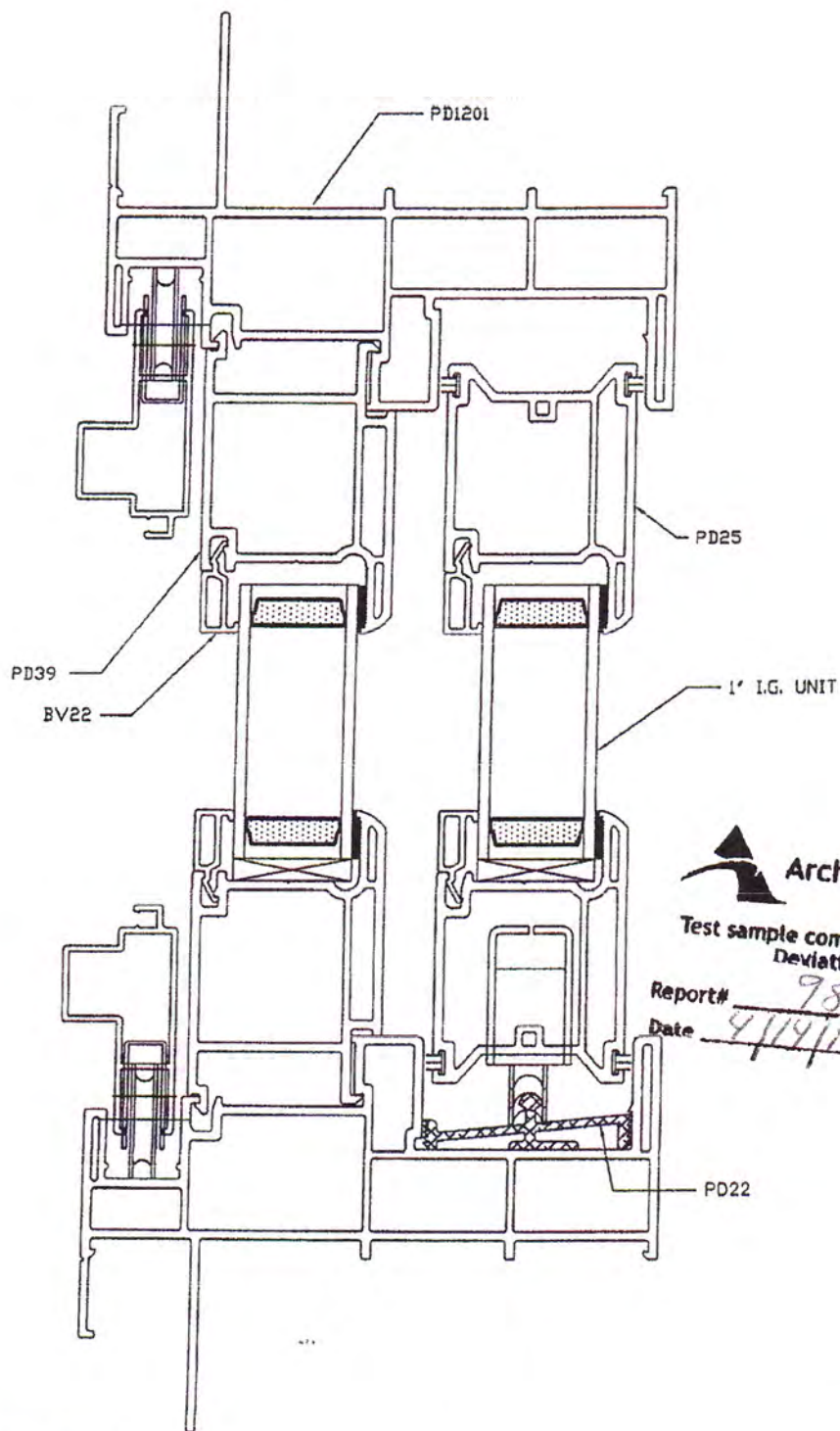
Date 7/19/10

Tech PCA

REVISIONS	DATE

 <p>VEKA INC. 100 VEKA DRIVE FOMBEL, PA 16123</p>		DRAWN: JLB	DATE: 30 JULY 02	SCALE: FULL
		CHK'D:	DATE:	APPV'D:
TITLE: PATIO DOOR PD12WW HORIZONTAL LAYOUT, OX DOOR		DWG. #PD12WW		





Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 98930
Date 4/19/10 Tech

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VEKA INC.
100 VEKA DRIVE
FOMBELL, PA 16123

REVISIONS		DATE			
			DRAWN: JLB	DATE: 30 JULY 02	SCALE: FULL
			CHK'D:	DATE:	APPV'D:
			TITLE		DWG. #
			PATIO DOOR PD12WW		PD12WW
			VERTICAL LAYOUT, EQUAL GLASS		



Limited Lifetime Warranty

Windows and sliding patio doors manufactured by **Custom Vinyl Products, LLC Windows and Doors** are guaranteed to be free of defects in material and workmanship under normal use and conditions. This Limited Warranty extends from the first date of purchase to the original owner and is subject to the terms and conditions stated herein:

- ❖ Vinyl components will be free from blistering, peeling, flaking, rotting, yellowing, or corrosion for the life of the product with the following exception:
 - Painted vinyl finishes – 10 years
 - Euroview vinyl products – 25 years
- ❖ There will be no material obstruction of vision on the internal surfaces of the insulated glass unit caused by seal failure for a period of 25 years with the following exceptions:
 - Laminated glass – 5 years
 - Architectural shaped glass – 10 years
 - Euroview product glass – 10 years
- ❖ Component parts will be covered for a period of 2 years with the following exceptions:
 - Motorized awning operators – 1 year
 - Screens – 90 days

The terms of this Limited Warranty exclude failures which are a result of or involve:

- ❖ Improper installation
- ❖ Accident, negligence, abuse, alteration, or improper use
- ❖ Excessive exposure to heat and cold outside of normal conditions
- ❖ Exposure to caustic agents
- ❖ Torn or damaged screens
- ❖ Glass breakage for any reason
- ❖ Corrosion of non-vinyl components in coastal areas, unless product is assembled with appropriate stainless steel hardware
- ❖ Condensation on external surfaces
- ❖ Failures caused by movement, expansion, or contraction of building or building components

This Limited Warranty covers materials only, and Custom Vinyl Products, LLC does not assume any expense or responsibility involved with the removal or reinstallation of replacement parts or any indirect, consequential, or incidental damage.

Installing a new Construction Patio Door

1. PREPARING THE ROUGH OPENING:

Check the opening for being level, plumb and square. The sill and surround should be clear of any debris or construction dust that may interfere with sealing material adhesion. Remove any fasteners that may be projecting into the installation opening. Measure the opening in the width and height for proper sizing to the door being installed.

2. DOOR HANDING:

Make sure the door is handed properly (left to right, right to left operating panel movement) for the opening it's being installed in. If the door has been fabricated for reversibility this has to be performed before the door is installed. Follow the reversing procedure provided.

3. INSTALLATION OF THE DOOR:

- You may want to dry fit the door before applying any sealant. Once you have determined that the door is properly sized and handed the door can be installed.
 - Apply a 3/8" bead of sealant to the back side of the nail fin along the sill, up the jambs and across the head. (Note: The bead of sealant should be placed as close to the nail fin holes as possible). An additional bead of sealant should be placed about 1" back from the leading edge of the sill of the rough opening.
 - Place the sill of the door into the rough opening and tilt the frame to vertical.
 - Shim the jambs about 6"-8" down from the head and secure each jamb through the nail fin slot at that point.
 - Plumb each jamb and shim about 6-8" up from the sill and secure through the nail fin at that point.
 - Level the head, shim where needed and secure at each end and at midpoint.
 - Level the sill, shim where needed and secure at each end and at midpoint.
- Note: No fasteners should be used through the frame sill of the door.**
- Install fasteners through each available nail fin slot along the door perimeter.

4. FLASHING THE DOOR:

- Cut and apply the self-adhesive flashing 14" wider than the width of the sill and center on door frame.
- Cut jamb pieces so that they extend 5" beyond the head and sill and adhere.
- Cut and apply the head flashing 14" wider than the width of the door and center on frame and adhere. The head flashing should overlap the jamb flashing.
- In all cases the flashing should be butted to the door framing as close as possible.
- Do not allow bubbles or gaps beneath the self adhesive flashing.

5. FINISHING THE INSTALLATION:

- Install the panel and handle.
- Adjust the door panel for smooth operation.
- Slide the panel over to the locking jamb and stop just before entering the jamb pocket. Visually inspect the gap between the leading edge of the panel and the frame pocket. This gap should be consistent the entire span. Adjust the panel rollers until this achieved.
- Close and lock the panel. You may have to adjust the striker to achieve satisfactory results.
- Remove one of the screws holding the keeper and replace with a screw of sufficient length to bite into the rough opening. Be sure to shim behind door jamb prior to fastening the longer screw.
- Install and adjust screen.

DuPont™ Flashing Systems Installation Guidelines

Installation Methods for DuPont™ Flashing System AFTER Water-Resistive Barrier (WRB) is Installed

Integral Flanged Window AFTER Water-Resistive Barrier (WRB)

Method applies to following product:

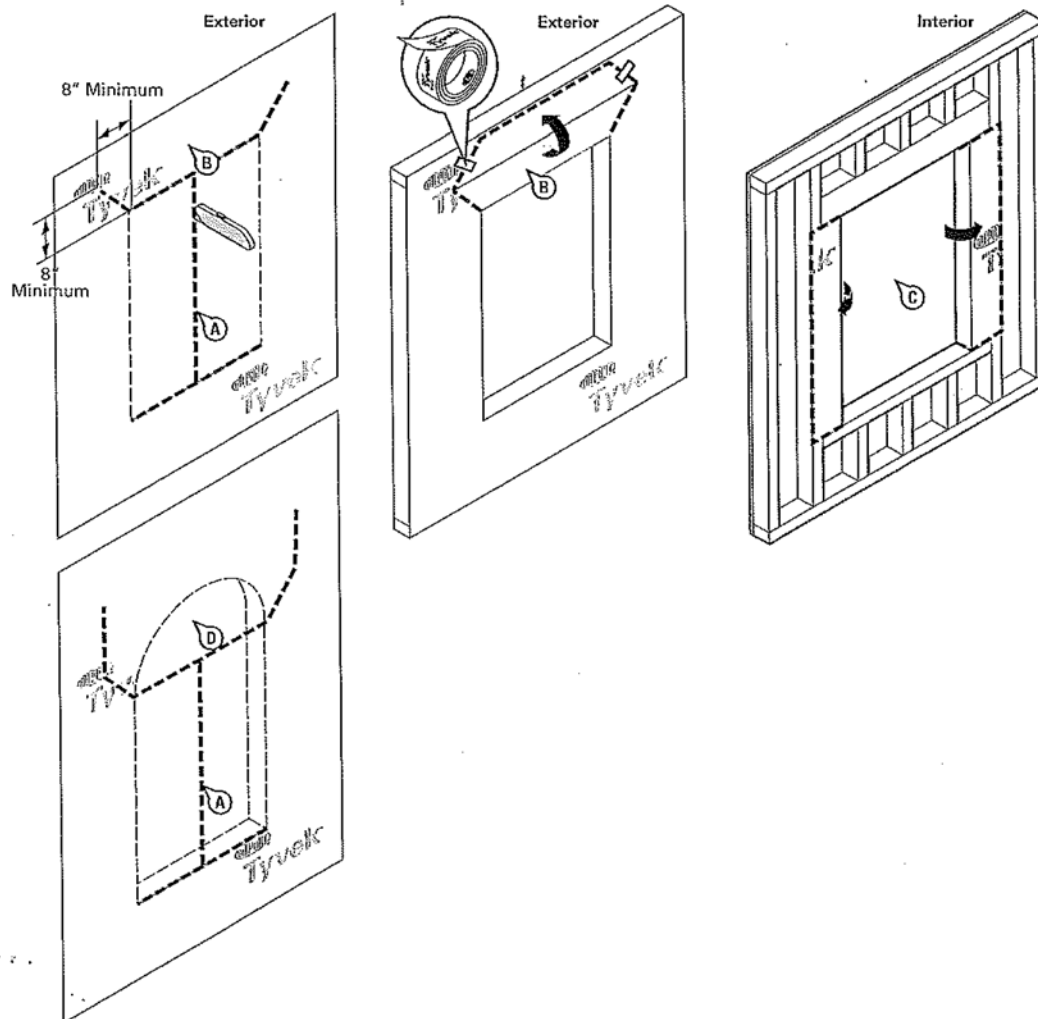
- DuPont™ StraightFlash™
- DuPont™ FlexWrap™

STEP 1

Prepare water-resistive barrier for window installation:

- Make an "I-Cut" (Standard I-Cut) in the WRB (modified I-Cut is also accepted). For an "I-Cut" begin with a horizontal cut across the bottom and the top of the window frame (for round top windows, the cut should begin 2" above the mull joint [see D]). From the center cut straight down to the sill.
- Cut two 45 degree slits a minimum of 8" from the corner of the header to create a flap above the rough opening to expose sheathing or framing members to allow head flashing installation (see step 5). Flip head flap up and temporarily secure with DuPont™ Tyvek® Tape. Some windows and flashing widths may require longer slits.
- Fold side flaps into rough opening, cut excess flaps, and secure.

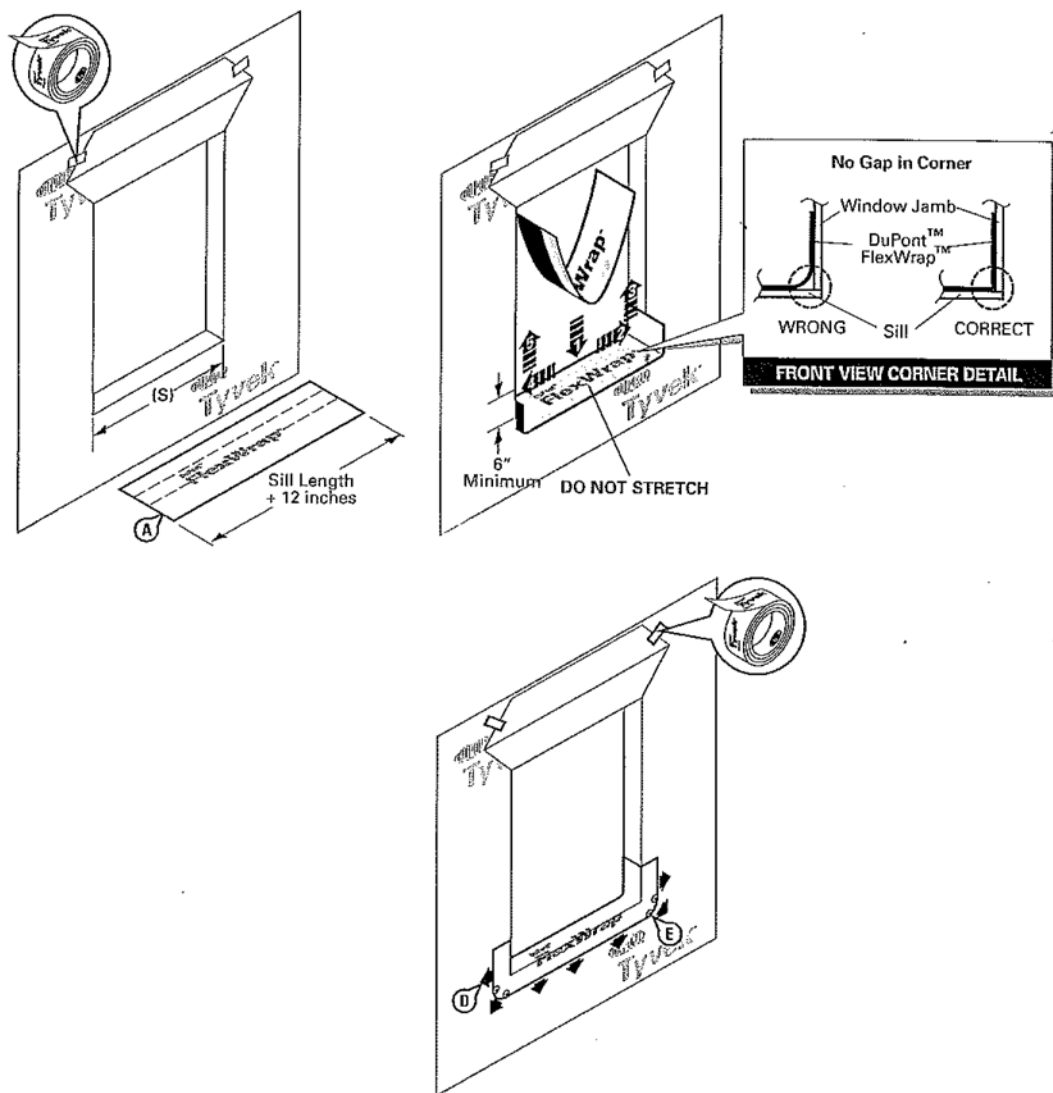
Note: Side flaps should cover interior facing framing stud.



STEP 2 (optional / not required)

- A. Cut DuPont™ FlexWrap™ at least 12" longer than width of rough opening sill (S).
- B. Remove first piece of release paper, cover horizontal sill by aligning inside edge of sill, and adhere into rough opening along sill and up jambs (min. 6" on each side).
- C. Remove second release paper.
- D. Flex DuPont™ FlexWrap™ at bottom corners onto face of wall.
- E. **SECURE EDGES OF DUPONT™ FLEXWRAP™ WITH MECHANICAL FASTENERS.** i.e., DuPont™ Tyvek® Wrap Caps (nails, screws, staples).

Note: Secure fastener along the bottom outer edge of the DuPont™ FlexWrap™ at flexed corners.

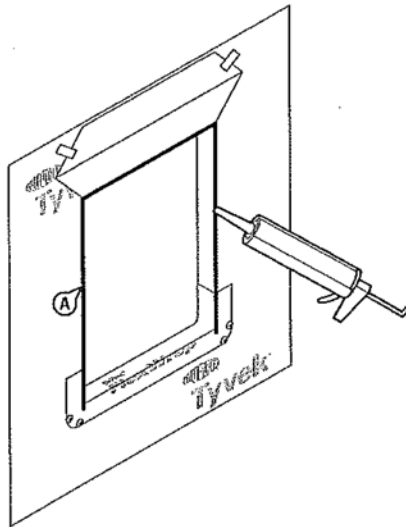


DuPont™ Flashing Systems Installation Guidelines

STEP 3

- A. Apply continuous bead of caulk at the window head and jambs to wall or back side of window mounting flange.

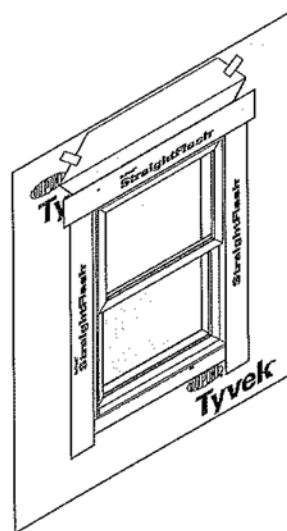
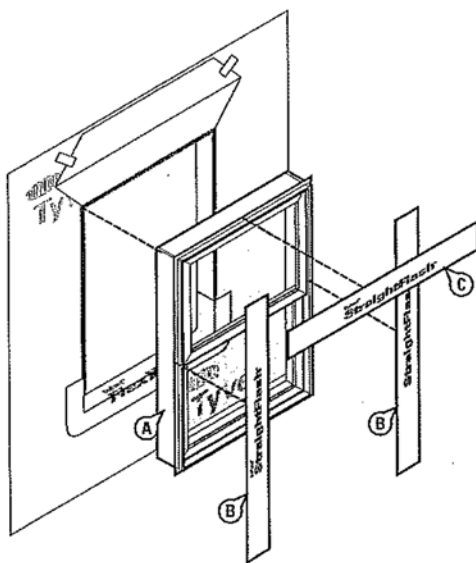
DO NOT APPLY CAULK ACROSS BOTTOM SILL FLANGE to allow for drainage.



FOR RECTANGULAR WINDOWS

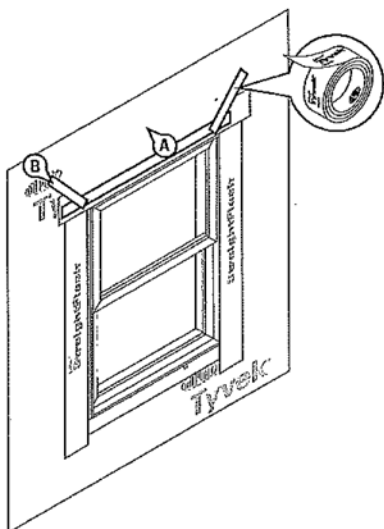
STEP 4

- A. Install window according to manufacturer's instructions.
- B. Cut two pieces of DuPont™ StraightFlash™ or DuPont™ FlexWrap™ for jamb flashing extending 1" above window head flange and below bottom edge of sill flashing. Remove release paper and press tightly along sides of window frame.
- C. Cut a piece of DuPont™ StraightFlash™ or DuPont™ FlexWrap™ for head flashing, which extends beyond outer edges of jamb flashings. Remove release paper and install completely covering mounting flange and adhering to exposed sheathing or framing members. (see C)



STEP 5

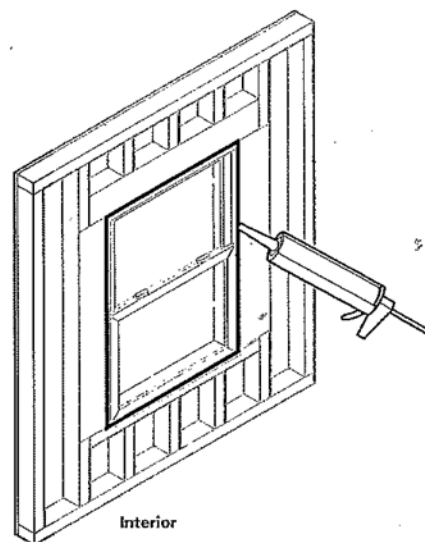
- A. Flip down upper flap of water-resistive barrier so it lays flat across head flashing.
- B. Tape along all cuts in water-resistive barrier and tape across head of the window with DuPont™ Tyvek® Tape.



STEP 6 (optional / not required)

Final Step

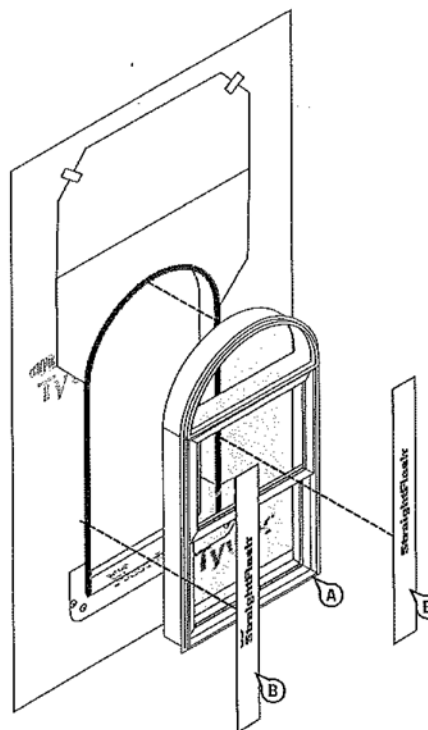
Seal around the window opening at the interior, using caulk (and backer rod as necessary). Caulk and backer rod will also serve as a back dam.



FOR ROUNDTOP WINDOWS

STEP 4

- A. Install window according to manufacturer's instructions.
- B. Cut two pieces of DuPont™ StraightFlash™ or DuPont™ FlexWrap™ for jamb flashing extending 1" above window head flange and below bottom edge of sill flashing. Remove release paper and press tightly along sides of window frame.

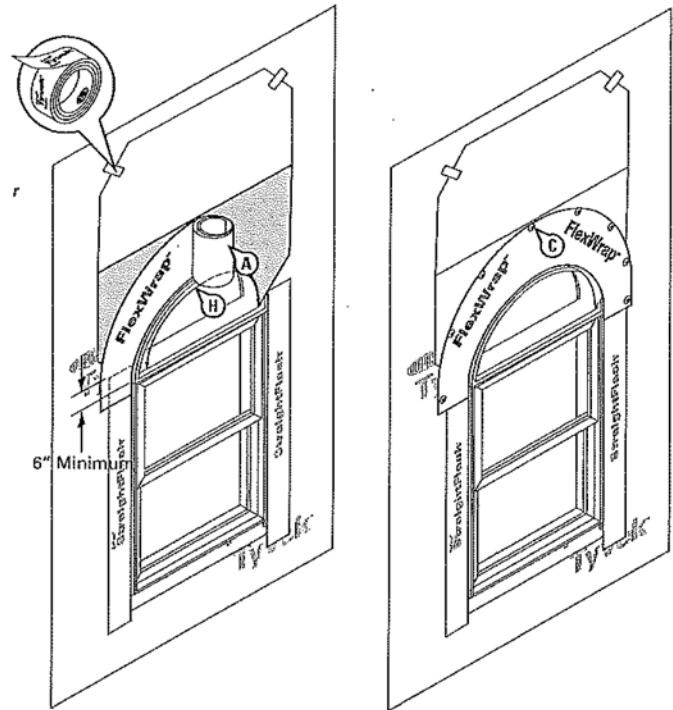


DuPont™ Flashing Systems Installation Guidelines

STEP 5

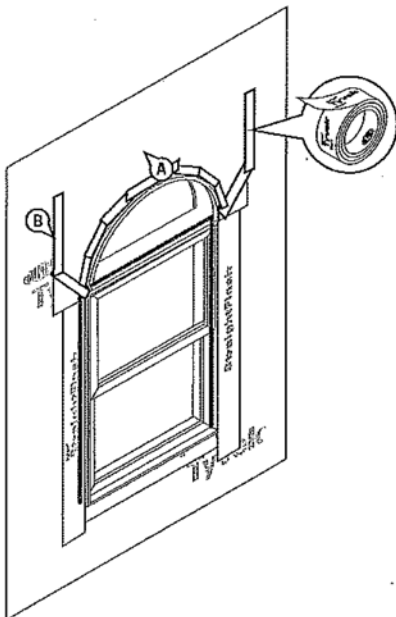
Install head flashing

- Cut head flashing at least 12" longer than the arc length (H) of round-top window.
- Remove both release papers and install to conform around top of window, covering entire mounting flange and adhering to exposed sheathing or framing members. Head flashing should overlap jamb flashings at least 6".
- Secure outer edges of head flashing using mechanical fasteners. e.g. DuPont™ Tyvek® Wrap Caps (nails, screws, staples). SECURE every 6" to 12" along outer perimeter.



STEP 6

- Flip down upper flap of WRB so it lays flat across head flashing.
- Tape along all cuts in WRB and across head of the window with DuPont™ Tyvek® Tape.



STEP 7

Final Step

Seal around the window opening at the interior, using caulk (and backer rod as necessary). Caulk and backer rod will also serve as a back dam.

