



Custom Vinyl Products, LLC.
WINDOWS & DOORS

SUBMITTAL PACKAGE

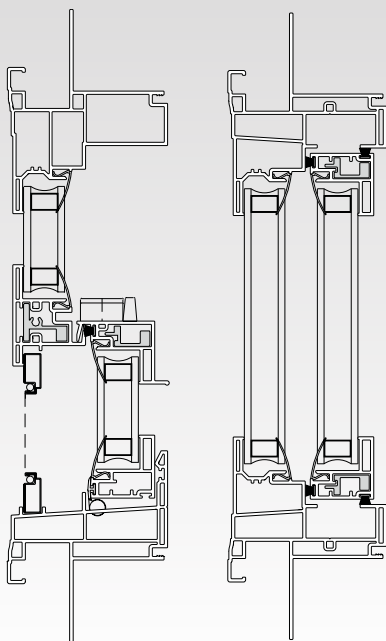
SH57 – Single-Hung Window

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CAD MODEL



ASSEMBLY DRAWING



**Custom Vinyl
 Products, LLC**
 Window & Door

www.customvinyl.net

Locally Owned & Operated

Products Certified 100% Lead Free



FEATURES and BENEFITS

- Impact rated grade 50 performance.
- Continuous head and sill with integral mullion.
- All Welded, Brickmold look, with J-Channel, sloped sill.
- Sweep lock no keeper needed. Passes forced entry.
- 3/4" glass capability or 5/8".
- Full 1-1/2" integral nail fin.
- Dual weatherstripping.
- Long reach interlock. No colliding or missing.
- Double wall frame for less roll.
- Universal pivot shoe pocket with Constant force balancesystem.
- Interior glazed fixed lite for easy drywall pass-throughcapability.
- Drywall pass through clip also used in integral mullion.
- Full family of Single Hung, Single Slider, and Picture Window.

MANUFACTURING LIMITATIONS

BASELINE PERFORMANCE

Thermal Insulation

GLASS	Uc Value	R Value	SHGC
LoE 270	0.30	3.33	.27
LoE 366	0.30	3.45	.20
LoE 366 w/i89	0.25	4.00	.20

Structural Performance

Air Infiltration @ 25 mph	0.15 cfm/ft ²
Water Penetration	7.50 psf
Uniform Loads	+/-75.00 psf

AAMA RATING: R-PG50-H



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

8428

Product Line Number

CST - K - 008

Revision Date

8/27/2015

The Following NFRC Product Line Has Been Authorized For Certification:

Model / Series: SH57 Single Hung
Operator Type: VSSH
Frame Type: VI
Sash Type: VI
Exp. Date: 5/3/2017

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:** SH57 Single Hung **Simulation Lab:** SATI **Initial Cert. Date:** 06/14/2012
Street: 260 Enterprise Drive **Product Type:** VSSH **Sim. Report #:** C6241.08-116-45 **Re-Certification Date:** 08/27/2015
City/State/Zip: Newport News, VA 23603 **Air Leakage:** ≤ 0.3 **Sim. Report Date:** 06/29/2015 **Revised Date:** 06/29/2015
Print Date: 08/27/2015 **Test Date:** 05/03/2013 **Expiration Date:** 05/03/2017

CPD Number: CST-K-8																IA: Keystone Certifications, Inc.									
Status	Product Num.	Manufacturer Code		Frame/ Sash	Glaz Lys	Low-E (Surface)	Gap Width(s)	Spacer	Gap Fill	Grids	Dividers	Tint	U-Factor	SHGC	VT	Cond. Res.									
	00019-00001	E270 / ARG90 / CLR (2MM/2MM) - 3/4" IG		VI/VI	2	0.037(2)	0.563	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.30	0.30	0.57	58									
	00019-00002	E270 / ARG90 / CLR (2MM/2MM) - 3/4" IG		VI/VI	2	0.037(2)	0.563	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.30	0.27	0.51	58									
	00019-00003	E270 / ARG90 / CLR (2MM/2MM) - 3/4" IG		VI/VI	2	0.037(2)	0.563	SS-D	Fill 1: ARG/AIR (90/10)	S	0.75	CL	0.30	0.27	0.51	58									
	00020-00001	E366 / ARG90 / CLR (2MM/2MM) - 3/4" IG		VI/VI	2	0.022(2)	0.563	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.30	0.22	0.52	59									
	00020-00002	E366 / ARG90 / CLR (2MM/2MM) - 3/4" IG		VI/VI	2	0.022(2)	0.563	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.30	0.20	0.47	59									
	00020-00003	E366 / ARG90 / CLR (2MM/2MM) - 3/4" IG		VI/VI	2	0.022(2)	0.563	SS-D	Fill 1: ARG/AIR (90/10)	S	0.75	CL	0.30	0.20	0.47	59									
	00021-00001	E270 / ARG90 / CLR (3MM/3MM) - 3/4" IG		VI/VI	2	0.037(2)	0.500	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.30	0.30	0.56	58									
	00021-00002	E270 / ARG90 / CLR (3MM/3MM) - 3/4" IG		VI/VI	2	0.037(2)	0.500	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.30	0.27	0.50	58									
	00021-00003	E270 / ARG90 / CLR (3MM/3MM) - 3/4" IG		VI/VI	2	0.037(2)	0.500	SS-D	Fill 1: ARG/AIR (90/10)	S	0.75	CL	0.30	0.27	0.50	58									
	00022-00001	E366 / ARG90 / CLR (3MM/3MM) - 3/4" IG		VI/VI	2	0.022(2)	0.500	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.29	0.22	0.52	59									
	00022-00002	E366 / ARG90 / CLR (3MM/3MM) - 3/4" IG		VI/VI	2	0.022(2)	0.500	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.29	0.20	0.46	59									
	00022-00003	E366 / ARG90 / CLR (3MM/3MM) - 3/4" IG		VI/VI	2	0.022(2)	0.500	SS-D	Fill 1: ARG/AIR (90/10)	S	0.75	CL	0.29	0.20	0.46	59									
	00023-00001	E366 / ARG90 / i89 (2MM/2MM) - 3/4" IG		VI/VI	2	0.022(2),0.149(4)	0.563	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.26	0.22	0.51	47									
	00023-00002	E366 / ARG90 / i89 (2MM/2MM) - 3/4" IG		VI/VI	2	0.022(2),0.149(4)	0.563	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.26	0.20	0.46	47									
	00023-00003	E366 / ARG90 / i89 (2MM/2MM) - 3/4" IG		VI/VI	2	0.022(2),0.149(4)	0.563	SS-D	Fill 1: ARG/AIR (90/10)	S	0.75	CL	0.26	0.20	0.46	47									
	00024-00001	E366 / ARG90 / i89 (3MM/3MM) - 3/4" IG		VI/VI	2	0.022(2),0.149(4)	0.500	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.25	0.22	0.51	47									
	00024-00002	E366 / ARG90 / i89 (3MM/3MM) - 3/4" IG		VI/VI	2	0.022(2),0.149(4)	0.500	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.25	0.20	0.45	47									



NFRC Product Certification Authorization Report

Manufacturer: Custom Vinyl Products, LLC		Product Series: SH57 Single Hung		Simulation Lab: SATI		Initial Cert. Date: 06/14/2012									
Street: 260 Enterprise Drive		Product Type: VSSH		Sim. Report #: C6241.08-116-45		Re-Certification Date: 08/27/2015									
City/State/Zip: Newport News, VA 23603		Air Leakage: ≤ 0.3		Sim. Report Date: 06/29/2015		Revised Date: 06/29/2015									
Print Date: 08/27/2015				Test Date: 05/03/2013		Expiration Date: 05/03/2017									
CPD Number: CST-K-8															
IA: Keystone Certifications, Inc.															
Status	Product Num.	Manufacturer Code	Frame/ Sash	Glaz Lys	Low-E (Surface)	Gap Width(s)	Spacer	Gap Fill	Grids	Dividers	Tint	U-Factor	SHGC	VT	Cond. Res.
00024-00003	E366 / ARG90 / i89 (3MM/3MM) - 3/4" IG		V1V1	2	0.022(2),0.149(4)	0.500	SS-D	Fill 1: ARG/AIR (90/10)	S	0.75	CL	0.25	0.20	0.45	47

Baseline Information

Test Lab	Test Date	Test Size	Tested U-Value	Standard U-Value	Test Report Number
TATI	05/03/2013	1200mm x 1499mm	0.273	0.266	C6242.08-116-46

Comments: 90% Argon, Single probe.

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: _____


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TEST REPORT

Report No.: D0769.01-501-47

Rendered to:

VEKA INC.
Fombell, Pennsylvania

PRODUCT TYPE: PVC Single Hung Window
SERIES/MODEL: SH57WW

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 1016 x 1600 (40 x 63) - H
Design Pressure	± 2400 Pa (± 50.13 psf)
Air Infiltration	0.8 L/s/m ² (0.15 cfm/ft ²)
Water Penetration Resistance Test Pressure	360 Pa (7.52 psf)

Test Completion Date: 08/14/2013

Reference must be made to Report No. D0769.01-501-47-r0, dated 10/10/13 for complete test specimen description and detailed test results.

1.0 Report Issued To: Veka Inc.
100 Veka Drive
Fombell, Pennsylvania 16123-0250

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 Single Hung Window

3.2 Series/Model: SH57WW

3.3 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 1016 x 1600 (40 x 63) - H rating.

3.4 Test Dates: 08/13/2013 - 08/14/2013

3.5 Test Record Retention End Date: All test records for this report will be retained until October 10, 2017.

3.6 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".

3.7 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.

3.8 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.

3.9 List of Official Observers:

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

4.0 Test Specification(s):

AAMA/WDMA/CSA 101/1.S.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: 1.6 m ² (17.5 ft ²)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	1016	40	1600	63
Sash size	962	37-7/8	775	30-1/2
Screen size	927	36-1/2	768	30-1/4

5.2 Frame Construction:

Frame Member	Material	Description
Head, sill, jambs, fixed meeting rail	PVC	Extruded

	Joinery Type	Detail
All corners	Mitered	Thermally Welded
Fixed rail	Coped butt type	The exterior meeting rail was fastened to the jambs using two metal clips, one at each end. Each clip was fastened to the fixed rail with two #8 x 1" long screws, and to the jamb with two #8 x 1" long screws. Each end of the fixed rail was sealed to the jamb with a silicone sealant.

5.3 Sash Construction:

Sash Member	Material	Description
All rails and stiles	PVC	Extruded

	Joinery Type	Detail
All corners	Mitered	Thermally welded

5.0 Test Specimen Description: (Continued)

5.4 Weatherstripping:

Description	Quantity	Location
0.187" x 0.270" center fin pile	1 Row	Sill, lock rail, bottom rail (interior)
0.187" x 0.270" center fin pile	2 Rows	Sash stiles
0.350" diameter foam-filled vinyl bulb with offset base	1 Row	Bottom rail (exterior)

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
3/4" IG	Rectangular shaped steel, single sealed	1/8" annealed	1/8" annealed	The sash was exterior glazed and the fixed lite was interior glazed. The glass was set against a silicone sealant and secured with rigid vinyl glazing beads.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Sash	1	902 x 718	35-1/2 x 28-1/4	1/2"
Frame	1	902 x 718	35-1/2 x 28-1/4	1/2"

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weepslot with flap	1" wide by 1/4" high	2	Exterior sill face, one 3-1/2" in from each end
Weepslot	1" wide by 3/16" high	2	Intermediate sill wall, one at each end.
Weephole	1-1/4" deep by 1/2" wide	2	Sill/jamb intersection, one at each end
Weephole	3/8" wide by 1/8" deep	2	Bottom rail, one at each end

5.0 Test Specimen Description: (Continued)

5.7 Hardware:

Description	Quantity	Location
Composite sweep lock	2	Lock rail, one 8" in from each end engaging an extruded slot in the fixed meeting rail
Recessed plastic tilt latch	2	Top corners of sash
Metal pivot bars	2	Bottom rail, one at each end
Constant force balance system with locking tilt shoes	2	One per jamb

5.8 Reinforcement:

Drawing Number	Location	Material
S-046	Fixed meeting rail	Extruded aluminum
S-047	Lock rail, stiles	Extruded aluminum

5.9 Screen Construction:

Frame Material	Corner Construction	Mesh Type	Mesh Attachment Method
Formed aluminum	Miter-cut and secured with snap-in plastic corner keys	Fiber	Flexible vinyl 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 window was sealed with a silicone sealant.

Location	Anchor Description	Anchor Location
Integral nail fin	#8 x 2" truss head screw	Spaced nominally 8" on center, and beginning at each corner

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

Test Specimen #1:

Title of Test	Results	Allowed	Note
Operating Force, per ASTM E 2068	Initiate motion: 36 N (8 lbf) Maintain motion: 36 N (8 lbf) Latches: 22 N (5 lbf) Locks: 36 N (8 lbf)	Report Only 155 N (35 lbf) max. 100 N (22.5 lbf) max. 100 N (22.5 lbf) max.	
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	0.8 L/s/m ² (0.15 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 588, 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 360 Pa (7.52 psf)	Pass	No leakage	2
Uniform Load Deflection, per ASTM E 330 taken at the exterior meeting rail +2400 Pa (+50.13 psf) -2400 Pa (-50.13 psf)	14.0 mm (0.55") 12.3 mm (0.48")	Report Only	4, 5, 6
Uniform Load Structural, per ASTM E 330 taken at the exterior meeting rail +3600 Pa (+75.19 psf) -3600 Pa (-75.19 psf)	0.5 mm (0.02") 0.5 mm (0.02")	3.6 mm (0.14") max. 3.6 mm (0.14") 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.

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.

Joseph E. Allison/sld

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

Joseph E. Allison
Senior Technician

Lynn George/sld

Digitally Signed for: Lynn George by Sandy L. DiCaro

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 (1) Complete drawings packet on file with Architectural Testing, Inc.

Appendix A

Alteration Addendum

Note: No alterations were required.

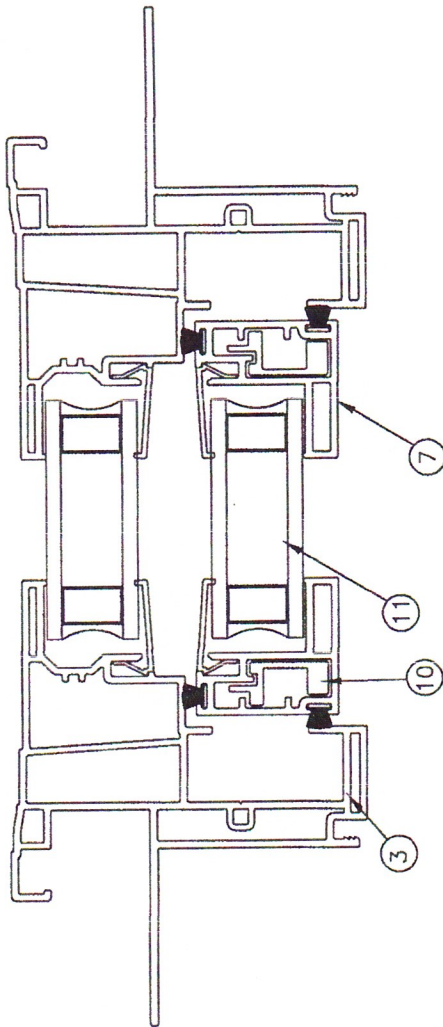
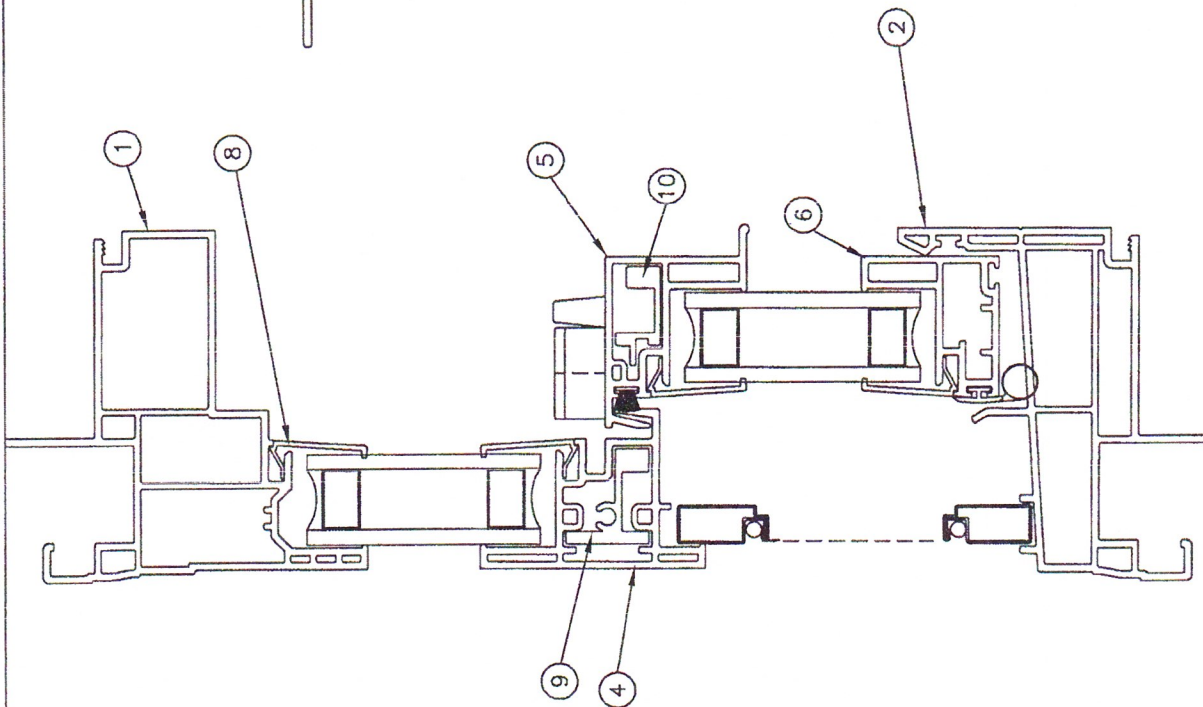
Appendix B

Drawings

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


Test sample complies with these details.
Deviations are noted.

Report# D0769 Tech. Gen
Date 10/31/13



VINYL & ALUMINUM EXTRUSIONS

① SH5702	FRAME HEAD	⑦ V-705	SASH STILE
② SH5703	FRAME SILL	⑧ BV162	GLAZING BEAD
③ SH5701	FRAME JAMB	⑨ A20114XX168.0000	M.R. REINFORCEMENT
④ V-706	MEETING RAIL	⑩ A20115XX168.0000	SASH REINFORCEMENT
⑤ V-704	SASH LOCK RAIL	⑪	3/4" I.G.
⑥ V-705	SASH BOTTOM RAIL		

 VEKA INC. 100 VEKA DRIVE FOMBEL, PA 16123		DESCRIPTION: SH57WW SINGLE HUNG SLOPED SILL EQUAL GLASS		
		B-SIZE	DATE	
REV	ECN	CHANGE	BY	DATE
THIS DOCUMENT CONTAINS CONFIDENTIAL AND PROPRIETARY INFORMATION DO NOT COPY OR DISCLOSE WITHOUT CONSENT OF VINTAGE INC.				
SCALE		DWG #		
FULL		SH57WW		

SH57WW



AAMA 506 TEST REPORT

Report No.: D4097.02-501-44

Rendered to:

VEKA INC
Fombell, Pennsylvania

PRODUCT TYPE: PVC Single Hung Window
SERIES/MODEL: SH57WW/AL-Insert

Test Dates 12/18/13

Report Date: 03/23/15

Test Record Retention End Date: 01/27/18

1.0 Report Issued To: Veka Inc.
100 Veka Drive
Fombell, Pennsylvania 16123

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

3.0 Project Summary:

3.1 Product Type: PVC Single Hung Window

3.2 Series/Model: SH57WW/AL-Insert

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test method(s). The samples tested met the performance requirements set forth in the referenced test procedures for a ± 2400 Pa (± 50.13 psf) Design Pressure with large missile impacts corresponding to Missile Level D and Wind Zone 3.

This product was originally tested as the MariTech Windows Series/Model 575, PVC Single Hung Window and is a reissue of the original Report No. D4097.01-501-44. This report is reissued in the name of Veka Inc. through written authorization by MariTech Windows.

3.4 Test Date: 12/18/2013

3.5 Test Location: Architectural Testing, Inc. test facility in Springdale, Pennsylvania.

3.6 Test Sample Source: The test specimens were 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>
Lynn George	Architectural Testing, Inc.
Joe Allison	Architectural Testing, Inc.

4.0 Test Specification(s):

AAMA 506-08, *Voluntary Specifications for Impact and Cycle Testing of Fenestration Products.*

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.*

ASTM E 1996-09, *Standard Specification for Performance of Exterior Windows, Glazed Curtain Walls, Doors and Storm Shutters Impacted by Wind Borne Debris in Hurricanes.*

5.0 Test Specimen Description:

5.1 Product Sizes:

Test Specimens #1 - #3:

Overall Area: 2.2 m ² (23.2 ft ²)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	1118	44	1930	76
Interior sash	1064	41-7/8	894	35-3/16

5.2 Frame Construction:

Frame Member	Material	Description
Head, sill, and jamb	Vinyl	Extruded
Sill dam (Dwg. No. D-200453)	Aluminum	Extruded

	Joinery Type	Detail
All corners	Mitered	Thermally welded
Sill dam	Straight cut and mechanically fastened	Secured through the sill into the wood buck with six #8 x 2" long pan head screws evenly spaced and beginning 3" in from each end. Sealed to the sill with a silicone silicone.

5.0 Test Specimen Description: (Continued)

5.3 Sash Construction:

Sash Member	Material	Description
Rails and stiles	Vinyl	Extruded
Fixed meeting rail	Vinyl	Extruded

	Joinery Type	Detail
All corners	Mitered	Thermally welded
Fixed meeting rail	Coped and butted	Secured through the jamb with two #8 x 3" long pan head screws at each end

5.4 Weatherstripping:

Description	Quantity	Location
0.187" backed by 0.320" thick polypile with center fin	1 Row	Fixed meeting rail and sill
0.187" backed by 0.320" thick polypile with center fin	2 Rows	All sash stiles
0.187" backed by 0.320" thick polypile with center fin	1 Row	All sash rails

5.5 Glazing:

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
3/4" IG	Butyl, single sealed	1/8" thick clear annealed 0.090" thick Solutia Saflex PVB 1/8" thick clear annealed	1/8" thick clear annealed	The fixed lite was interior glazed and the sash was exterior glazed. The glass was set against a bed of Sikaflex®-552 Sealant and secured with snap-on vinyl glazing beads.

5.0 Test Specimen Description: (Continued)

5.5 Glazing: (Continued)

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Fixed lite	1	1000 x 933	39-3/8 x 36-3/4	1/2"
Sash	1	972 x 797	38-1/4 x 31-3/8	1/2"

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weepslot with cover	1" wide by 1/4" high	3	Exterior sill face, one 4-1/2" from the corners and one midspan
Weephole	1/4" diameter	2	Sill, one 2" from each end, draining the screen track to the hollow below
Weep	1-1/4" wide by 1/4" high	2	Intermediate sill wall, one at each end draining the sill track to the lower hollow
Weepslot	3/8" wide by 5/32" high	2	Bottom rail, one 3" from each end

5.7 Hardware:

Description	Quantity	Location
Metal pivot bar	2	Bottom rail, one at each end
Metal cam lock with adjacent metal keeper	2	Lock rail, one 8-1/2" from each end
Metal surface mount tilt latches	2	Lock rail, one at each end
Metal tilt latch retainer clip	2	Jambs, at the sash tilt latch location
Block and tackle balance	2	One per jamb

5.0 Test Specimen Description: (Continued)

5.8 Reinforcement:

Drawing Number	Location	Material
D-201059	Fixed meeting rail	Aluminum
D-200475	Sash stiles and bottom rail	Aluminum
D-200474	Lock rail	Aluminum

6.0 Installation:

The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 3/16" shim space. The nail fin perimeter of the window was sealed with a silicone sealant.

Location	Anchor Description	Anchor Location
Integral nail fin	#8 x 2" long pan head screws	Nominally spaced at 6" on center, and beginning at each corner
Sill	#8 x 2" long pan head screws	Six screws evenly spaced starting 3" in from each end through the sill extension and into the wood buck.

7.0 Test Results: The results are tabulated as follows:

ASTM E 1886, Large Missile Impact

Conditioning Temperature: 21°C (70°F)
Missile Weight: 3969 g (8.75 lbs)
Missile Length: 2.4 m (7' 9-15/16")
Muzzle Distance from Test Specimen: 5.2 m (17' 0")

Test Unit #1: Orientation within $\pm 5^\circ$ of horizontal

Impact #1: Missile Velocity: 15.4 m/s (50.5 fps)	
Impact Area:	Exterior center of sash
Observations:	Missile hit target area, no penetrations
Results:	Pass

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

Test Unit #2: Orientation within $\pm 5^\circ$ of horizontal

Impact #1: Missile Velocity: 15.4 m/s (50.5 fps)	
Impact Area:	Exterior upper right corner of sash
Observations:	Missile hit target area, no penetrations
Results:	Pass

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

Test Unit #3: Orientation within $\pm 5^\circ$ of horizontal

Impact #1: Missile Velocity: 15.5 m/s (50.8 fps)	
Impact Area:	Exterior lower left corner of sash
Observations:	Missile hit target area, no penetrations
Results:	Pass

Note: See Architectural Testing Sketch #3 for impact locations.

7.0 Test Results: (Continued)
ASTM E 1886, Air Pressure Cycling

Test Unit #1

Design Pressure: ± 2400 Pa (± 50.13 psf)

POSITIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inches)		
			#1	#2	#3
480 to 1200 (10.0 to 25.1)	3500	1.34	3.5 (0.14)	9.3 (0.37)	3.5 (0.14)
0 to 1440 (0 to 30.1)	300	1.41	3.8 (0.15)	10.8 (0.42)	4.0 (0.16)
1200 to 1920 (25.1 to 40.1)	600	1.46	5.5 (0.22)	16.0 (0.63)	5.8 (0.23)
720 to 2400 (15.0 to 50.1)	100	2.03	6.8 (0.27)	18.8 (0.74)	7.0 (0.28)
			Permanent Set mm (inches)		
			0.3 (0.01)	1.8 (0.07)	0.5 (0.02)

NEGATIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inches)		
			#1	#2	#3
720 to 2400 (15.0 to 50.1)	50	2.02	8.0 (0.32)	18.0 (0.71)	1.3 (0.29)
1200 to 1920 (25.1 to 40.1)	1050	1.79	7.5 (0.30)	16.8 (0.66)	6.8 (0.27)
0 to 1440 (0 to 30.1)	50	2.34	5.8 (0.23)	12.3 (0.48)	5.0 (0.20)
480 to 1200 (10.0 to 25.1)	3350	2.02	5.5 (0.22)	11.5 (0.45)	5.0 (0.20)
			Permanent Set mm (inches)		
			1.5 (0.06)	1.8 (0.07)	1.0 (0.04)

Observations: No additional damage or deglazing was observed.

Result: Pass

Note: See Architectural Testing Sketch #4 for indicator locations. Test Specimens #1, #2 and #3 were cycled in a common chamber.

7.0 Test Results: (Continued)

ASTM E 1886, Air Pressure Cycling

Test Unit #2

Design Pressure: ± 2400 Pa (± 50.13 psf)

POSITIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inches)		
			#1	#2	#3
480 to 1200 (10.0 to 25.1)	3500	1.34	3.5 (0.14)	10.3 (0.40)	3.8 (0.15)
0 to 1440 (0 to 30.1)	300	1.41	3.5 (0.14)	11.3 (0.44)	4.3 (0.17)
1200 to 1920 (25.1 to 40.1)	600	1.46	5.0 (0.20)	16.5 (0.65)	6.8 (0.27)
720 to 2400 (15.0 to 50.1)	100	2.03	6.0 (0.24)	19.3 (0.76)	7.8 (0.31)
			Permanent Set mm (inches)		
			0.5 (0.02)	1.8 (0.07)	0.5 (0.02)

NEGATIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inches)		
			#1	#2	#3
720 to 2400 (15.0 to 50.1)	50	2.02	6.0 (0.24)	19.8 (0.78)	7.5 (0.30)
1200 to 1920 (25.1 to 40.1)	1050	1.79	5.5 (0.22)	18.0 (0.71)	6.8 (0.27)
0 to 1440 (0 to 30.1)	50	2.34	4.0 (0.16)	13.3 (0.52)	5.0 (0.20)
480 to 1200 (10.0 to 25.1)	3350	2.02	4.3 (0.17)	12.5 (0.49)	5.0 (0.20)
			Permanent Set mm (inches)		
			0.8 (0.03)	1.8 (0.07)	1.3 (0.05)

Observations: No additional damage or deglazing was observed.

Result: Pass

Note: See Architectural Testing Sketch #4 for indicator locations. Test Specimens #1, #2 and #3 were cycled in a common chamber.

7.0 Test Results: (Continued)

ASTM E 1886, Air Pressure Cycling

Test Unit #3

Design Pressure: ± 2400 Pa (± 50.13 psf)

POSITIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inches)		
			#1	#2	#3
480 to 1200 (10.0 to 25.1)	3500	1.34	3.0 (0.12)	10.3 (0.40)	3.8 (0.15)
0 to 1440 (0 to 30.1)	300	1.41	3.5 (0.14)	11.3 (0.44)	4.3 (0.17)
1200 to 1920 (25.1 to 40.1)	600	1.46	5.0 (0.20)	16.3 (0.64)	6.3 (0.25)
720 to 2400 (15.0 to 50.1)	100	2.03	5.8 (0.23)	19.0 (0.75)	7.3 (0.29)
			Permanent Set mm (inches)		
			0.3 (0.01)	1.3 (0.05)	0.3 (0.01)

NEGATIVE PRESSURE

Pressure Range Pa (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator mm (inches)		
			#1	#2	#3
720 to 2400 (15.0 to 50.1)	50	2.02	6.0 (0.24)	17.0 (0.67)	8.3 (0.33)
1200 to 1920 (25.1 to 40.1)	1050	1.79	5.5 (0.22)	15.8 (0.62)	7.8 (0.31)
0 to 1440 (0 to 30.1)	50	2.34	4.3 (0.17)	11.8 (0.46)	6.0 (0.24)
480 to 1200 (10.0 to 25.1)	3350	2.02	3.8 (0.15)	11.0 (0.43)	5.8 (0.23)
			Permanent Set mm (inches)		
			1.0 (0.04)	1.8 (0.07)	1.5 (0.06)

Observations: No additional damage or deglazing was observed.

Result: Pass

Note: See Architectural Testing Sketch #4 for indicator locations. Test Specimens #1 and #2 were cycled in a common chamber.

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

8.0 Test Equipment:

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.



This report is reissued in the name of Veka Inc. through written authorization of MariTech Windows to whom the original report was rendered. The original MariTech Windows Report No. is D4097.01-501-44.

The service life of this report will expire on the stated Test Record Retention End Date, at which time such materials as drawings, data sheets, samples of test specimens, copies of this report, and any other pertinent project documentation, shall be discarded without notice.

If test specimen contains glazing, no conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen(s) can be made. 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.

Joseph E. Allison/sld

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

Joseph E. Allison
Senior Technician

Lynn George

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: Sketches (4)

Appendix-B: Drawing(s) (1) Complete drawings packet on file with Intertek-ATI

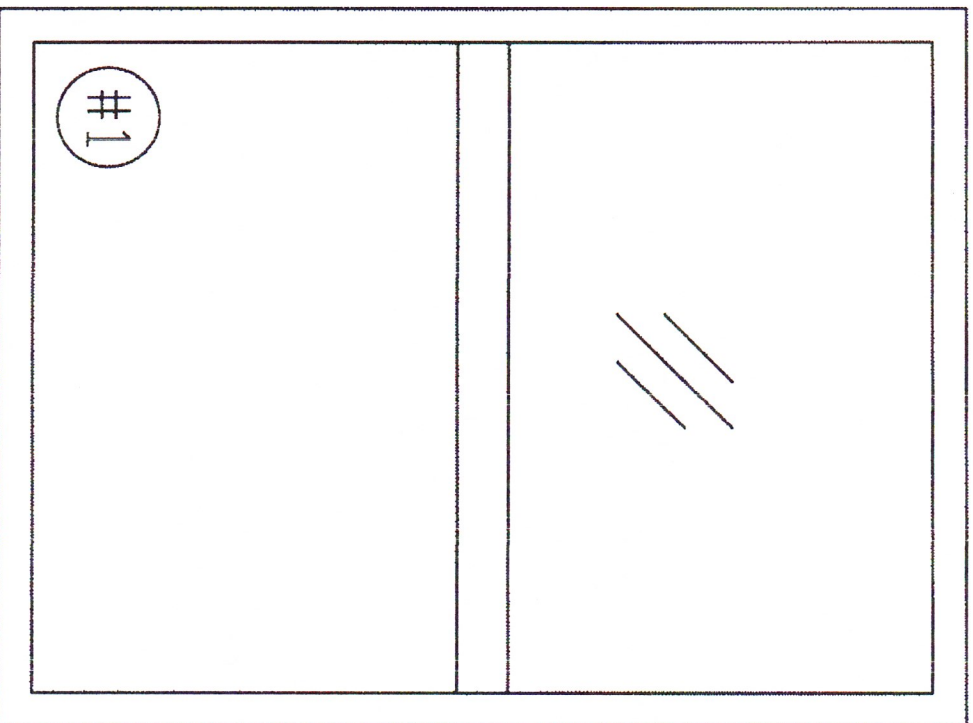


Test Report No.: D4097.02-501-44
Architectural Testing Report Date: 03/23/15
Test Record Retention End Date: 01/27/18

Appendix A

Sketches

REV	DATE	DESCRIPTION	BY
			LG



Impact Locations

PROJECT NO.
D409701
501-44

PROJECT NAME: 575
CLIENT: Maritech



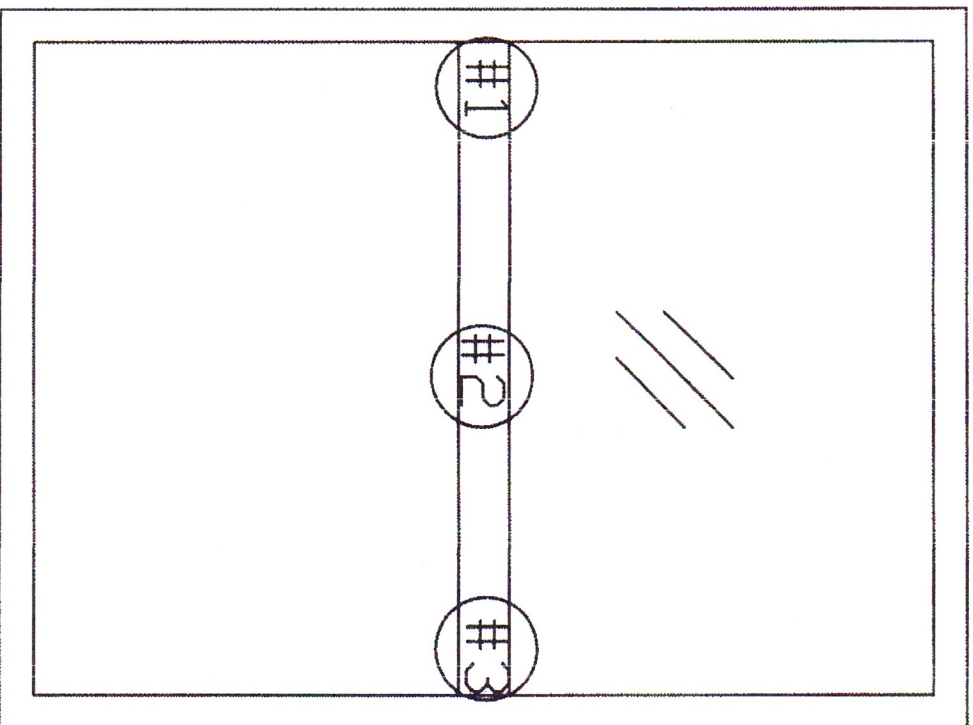
DRAWING

Sketch #3 (Impacts)

DWG. BY: LG
DATE: 01-20-14

SHEET 3 OF 4

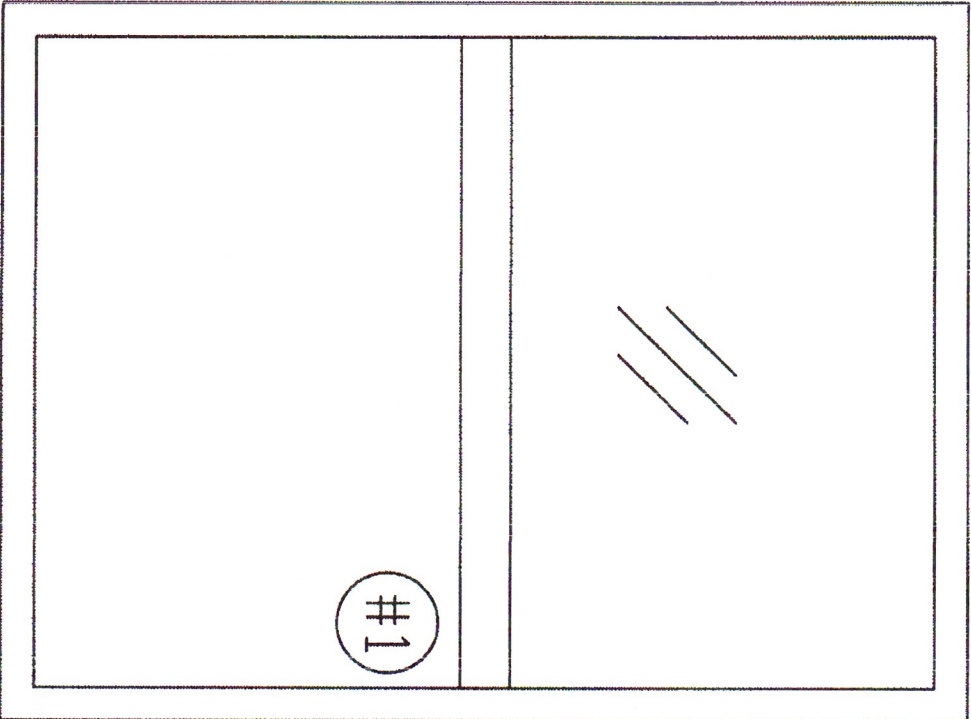
REV	DATE	DESCRIPTION	BY
			LG



INDICATOR LOCATIONS

PROJECT NO. D4097.01 501-44	PROJECT NAME 575 CLIENT: Maritech	 Architectural Tending	DRAWING Sketch 4 (Indicator locations)	DVG. BY: LG DATE: 01-20-14	SHEET 4 / 4
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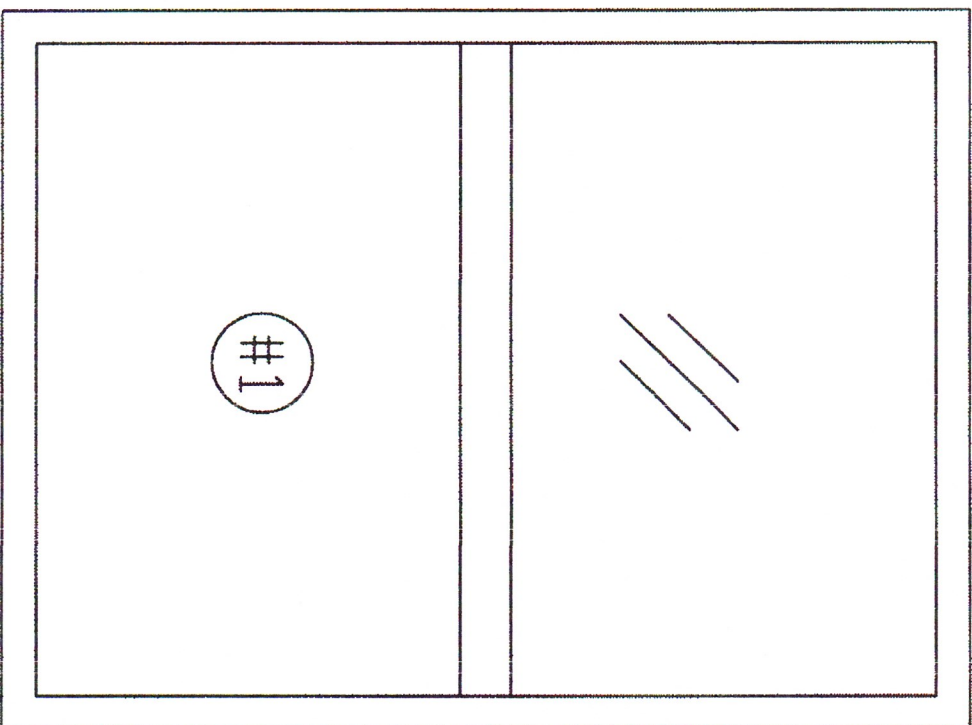
REV	DATE	DESCRIPTION	BY
			LG



Impact Locations

PROJECT NO. D4097.01 501-44		PROJECT NAME: 575 CLIENT: Maritech		 Architectural Teeding	DRAWING	Sketch 2 (Impact locations)	DWG. BY: LG	SHEET 2 OF 4
					DATE: 01-20-14			

REV	DATE	DESCRIPTION	BY
			LG



Impact Locations

PROJECT NO.
D4097.01.01
501-44

PROJECT NAME: 575
CLIENT: Maritech



Architectural Testing

DRAWING

Sketch #1 (Impacts)

DWG. BY: LG
DATE: 01-20-14

SHEET 1 OF 4



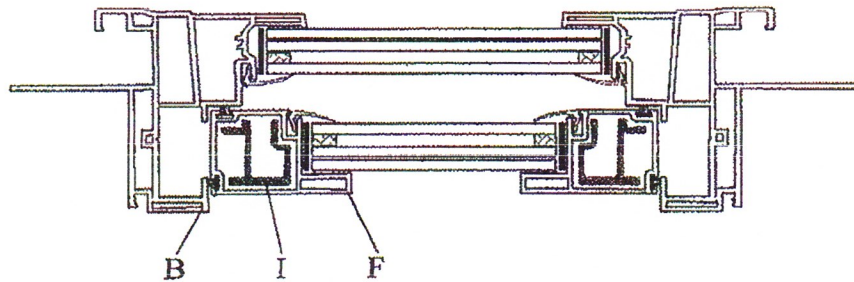
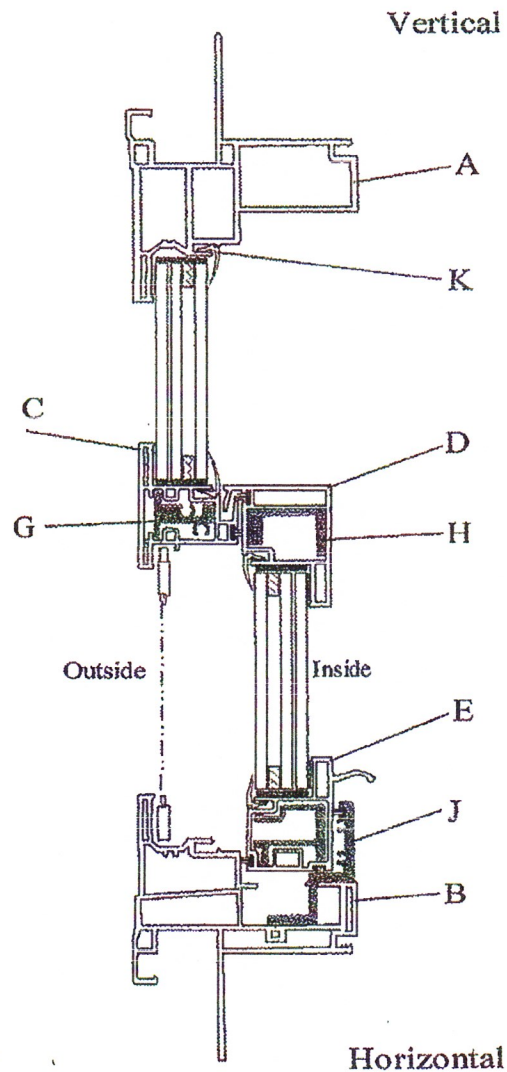
Appendix B

Drawings

Note: Complete drawings packet on file with Intertek-ATI

575 SH

- A. SH5702 - Head
- B. SH5701 - Sill, Jambs
- C. SH4604 - Meeting Rail
- D. SE4646 - Lock Rail
- E. SE4647 - Bottom Rail
- F. SE4645 - Stiles
- G. 1264 - Meeting Rail Rein.
- H. 1007 - Lock Rail Rein.
- I. 1008 - Bottom & Stile Rein.
- J. 1184 - Sill Dam Insert
- K. 1718R - Bead



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 14097
Date 1/9/14 Tech JMA

TEST REPORT

Report No.: F6528.01-501-47

Rendered to:

VEKA INC.
Fombell, Pennsylvania

PRODUCT TYPE: PVC Single Hung Window
SERIES/MODEL: SH57WW

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

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

Title	Summary of Results	
	Test Specimen #1	Test Specimen #2
AAMA/WDMA/CSA 101/IS.2/A440-08 and -11	Class LC-PG30 1118 x 1905 (44 x 75)-H	Class LC-PG50 914 x 1829* (36 x 72*)-H
Design Pressure	±1400 Pa (±30.08 psf)	±2400 Pa (±50.13 psf)
Air Infiltration	0.1 L/s/m ² (0.20 cfm/ft ²)	See specimen #1
Canadian Air Infiltration/Exfiltration Level	A2	See specimen #1
Water Penetration Resistance Test Pressure	260 Pa (5.43 psf)	360 Pa (7.52 psf)

Test Completion Date: 02/09/16

Reference must be made to Report No. F5628.01-501-47, dated 02/19/16 for complete test specimen description and detailed test results.



1.0 Report Issued To: Veka Inc.
100 Veka Drive
Fombell, Pennsylvania 16123-025

2.0 Test Laboratory: Architectural Testing, Inc.,
a subsidiary of Intertek (Intertek-ATI)
1140 Lincoln Avenue
Springdale, Pennsylvania 15144
724-275-7100

3.0 Project Summary:

3.1 Product Type: PVC Single Hung Window

3.2 Series/Model: SH57WW

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test method(s). The specimens tested successfully met the performance requirements for the following ratings:

Test Specimen(s)	Title	Summary of Results
1	101/I.S.2/A440-08 and -11	Class LC-PG30 1118 x 1905 (44 x 75)-H
2	101/I.S.2/A440-08 and -11	Class LC-PG50 914 x 1829* (36 x 72*)-H

***General Note:** An asterisk (*) next to the size designation indicates that the size tested for optional performance was smaller than the Gateway test size for the product type and class.*

3.4 Test Dates: 01/28/16 - 02/09/16

3.5 Test Record Retention End Date: All test records for this report will be retained until February 9, 2020.

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

3.7 Test Specimen Source: The test specimens were provided by the client. Representative samples of the test specimen(s) will be retained by Intertek-ATI for a minimum of four years from the test completion date.

3.8 Drawing Reference: The test specimen drawings have been reviewed by Intertek-ATI and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek-ATI per the drawings located in Appendix C. Any deviations are documented herein or on the drawings.

3.0 Project Summary: (Continued)

3.9 List of Official Observers:

<u>Name</u>	<u>Company</u>
Doug Merry	Veka Inc.
Cornell Charles	Veka Inc.
Joseph Allison	Intertek-ATI

4.0 Test Specification(s):

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

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:

Test Specimen #1:

Overall Area: 2.1 m ² (22.9 ft ²)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	1118	44	1905	75
Sash size	1060	41-3/4	933	36-3/8
Screen size	1038	40-7/8	918	36-1/8

Test Specimen #2:

Overall Area: 1.7 m ² (18.0 ft ²)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	914	36	1829	72
Sash size	857	33-3/4	886	34-7/8
Screen size	835	32-7/8	879	34-5/8

5.0 Test Specimen Description: (Continued)

The following descriptions apply to all specimens.

5.2 Frame Construction:

Frame Member	Material	Description
Head, sill, jambs, fixed meeting rail	PVC	Extruded

	Joinery Type	Detail
All corners	Mitered	Thermally Welded
Fixed rail	Coped butt type	The fixed meeting rail was fastened to the jambs using four #8 x 3" long pan head screws, two at each end. Each end of the fixed rail was sealed to the jamb with a silicone sealant.

5.3 Sash Construction:

Sash 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 x 0.270" high center fin pile	2 Rows	Sash stiles
0.187" backed x 0.270" high center fin pile	1 Row	Lock rail
0.187" backed x 0.300" high center fin pile	1 Row	Sill
0.450" diameter foam-filled vinyl bulb with offset base	1 Row	Bottom rail

5.0 Test Specimen Description: (Continued)

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
3/4" IG	Rectangular shaped steel, single sealed	1/8" annealed	1/8" annealed	The sash was exterior glazed and the fixed lite was interior glazed. The glass was set against a double-sided adhesive tape and secured with rigid vinyl glazing beads. A cap bead of silicone sealant was applied to the exterior of the fixed lite.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Specimen #1 sash	1	1003 x 867	39-1/2 x 34-1/8	1/2"
Specimen #1 frame	1	1003 x 867	39-1/2 x 34-1/8	1/2"
Specimen #2 sash	1	800 x 829	31-1/2 x 32-5/8	1/2"
Specimen #2 frame	1	800 x 829	31-1/2 x 32-5/8	1/2"

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weepslot	1" wide by 1/8" high	2	Exterior sill face, one 3-1/2" in from each end
Weepslot	1" wide by 3/16" high	2	Intermediate sill wall, one at each end.
Weephole	1-1/4" deep by 1/2" wide	2	Sill/jamb intersection, one at each end
Weephole	3/8" wide by 1/8" deep	2	Bottom rail, one at each end

5.0 Test Specimen Description: (Continued)

5.7 Hardware:

Description	Quantity	Location
Metal sweep lock	2	Lock rail, one 7" in from each end engaging an extruded slot in the fixed meeting rail
Recessed plastic tilt latch	2	Top corners of sash
Metal interlocking pivot bars	2	Bottom rail, one at each end
Constant force balance system with locking tilt shoes	2	One per jamb

5.8 Reinforcement:

Drawing Number	Location	Material
S-046	Fixed meeting rail	Extruded aluminum
S-047	Lock rail, stiles	Extruded aluminum

5.9 Screen Construction:

Frame Material	Corner Construction	Mesh Type	Mesh Attachment Method
Formed aluminum	Miter-cut and secured with snap-in plastic corner keys	Fiber	Flexible vinyl 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 window was sealed with a silicone sealant.

Location	Anchor Description	Anchor Location
Integral nail fin	#8 x 2" truss head screw	Nominally spaced at 10" on center, and beginning at each corner

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

Test Specimen #1:

Title of Test	Results	Allowed	Note
Operating Force, per ASTM E 2068	Initiate motion: 156 N (35 lbf) Maintain motion: 151 N (34 lbf) Latches: 31 N (7 lbf) Locks: 31 N (7 lbf)	Report Only 180 N (40 lbf) max. 100 N (22.5 lbf) max. 100 N (22.5 lbf) max.	
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	0.1 L/s/m ² (0.20 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Air Leakage, Exfiltration per ASTM E 283 at 75 Pa (1.57 psf)	0.8 L/s/m ² (0.15 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Canadian Air Infiltration/Exfiltration Level	A2	N/A	
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 588, 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 (5.43 psf)	Pass	No leakage	2
Uniform Load Deflection, per ASTM E 330 Deflections taken at the fixed meeting rail +1440 Pa (+30.08 psf) -1440 Pa (-30.08 psf)	16.0 mm (0.63") 15.3 mm (0.60")	Report Only	4, 5, 6
Uniform Load Structural, per ASTM E 330 Permanent sets taken at the fixed meeting rail +2160 Pa (+45.11 psf) -2160 Pa (-45.11 psf)	0.5 mm (0.02") 1.0 mm (0.04")	4.1 mm (0.16") max. 4.1 mm (0.16") max.	5, 6

Test Specimen #2:

Title of Test	Results	Allowed	Note
Optional Performance			
Water Penetration, per ASTM E 547 at 360 Pa (7.52 psf)	Pass	No leakage	2
Uniform Load Deflection, per ASTM E 330 Deflection taken at the fixed meeting rail +2400 Pa (+50.13 psf) -2400 Pa (-50.13 psf)	14.0 mm (0.55") 14.5 mm (0.57")	Report Only	4, 5, 6
Uniform Load Structural, per ASTM E 330 Permanent sets taken at the fixed meeting rail +3600 Pa (+75.19 psf) -3600 Pa (-75.19 psf)	2.0 mm (0.08") 1.0 mm (0.04")	3.3 mm (0.13") max. 3.3 mm (0.13") max.	5, 6

7.0 Test Results: (Continued)

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.

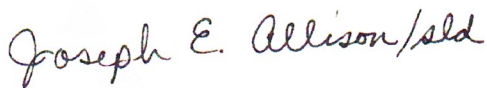
Note 5: Loads were held for 10 seconds.

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.

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

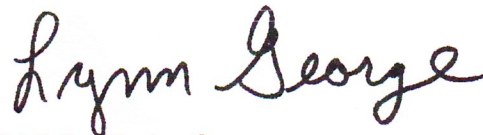
This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen(s) tested. This report may not be reproduced, except in full, without the written approval of Intertek-ATI.

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: Location of Air Seal (1)

Appendix- C: Drawing(s) (1) Complete drawings packet on file with Architectural Testing, Inc.



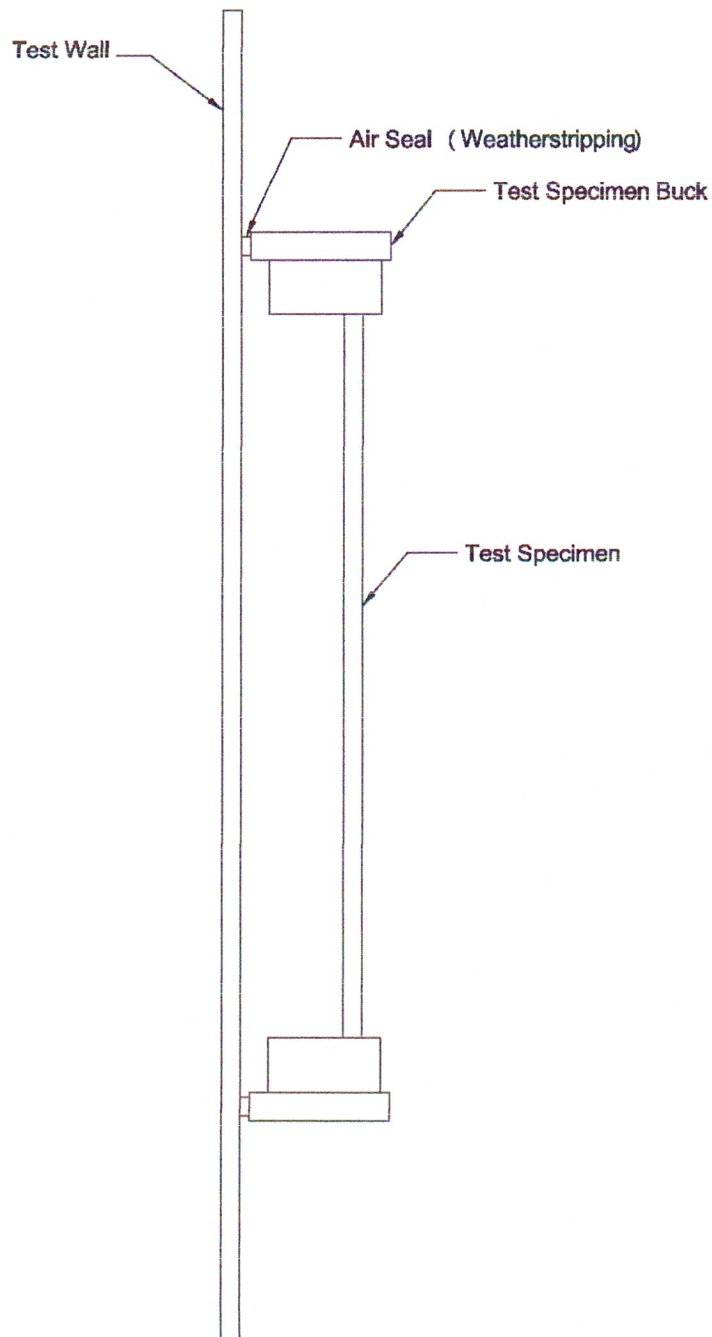
Appendix A

Alteration Addendum

Note: No alterations were required.

Appendix B

Location of Air Seal: The air seal between the test specimen and the test wall is detailed below. The seal is made of foam weatherstripping and is attached to the edge of the test specimen buck. The test specimen buck is placed against the test wall and clamped in place, compressing the weatherstripping and creating a seal.





Appendix C

Drawing(s)

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



Architectural Testing

Test sample complies with these details
Deviation is indicated

Report#

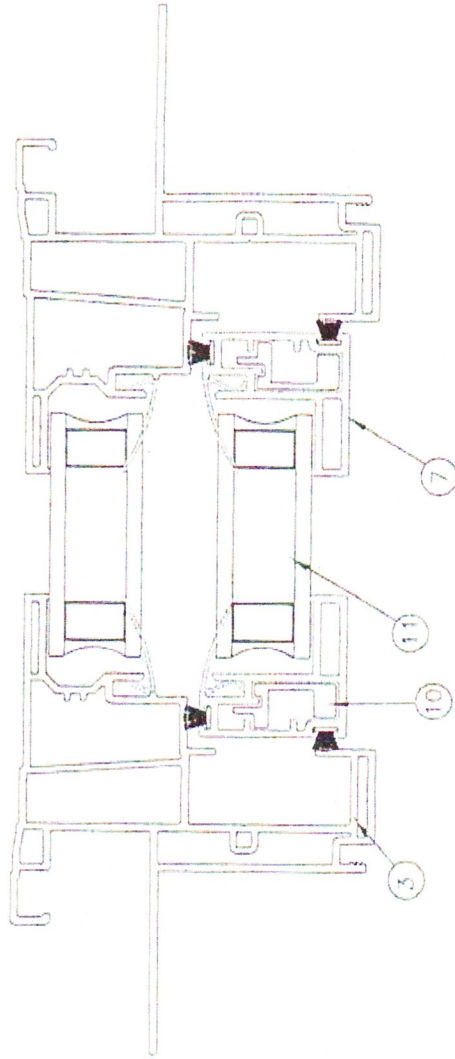
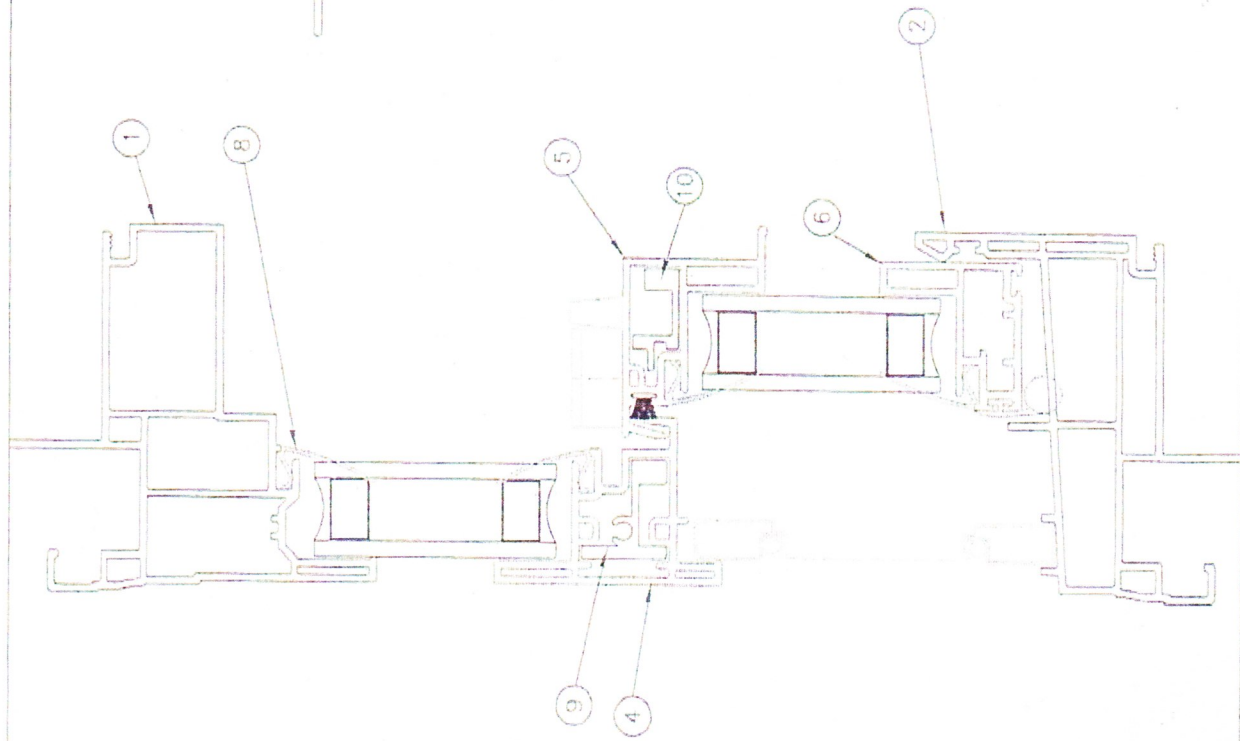
5368

Date

3/12/16

Tech

2/2/16



VINYL & ALUMINUM EXTRUSIONS

- | | | | | | |
|---|--------|------------------|----|-------|----------------------|
| 1 | SH5702 | FRAME HEAD | 7 | V-705 | SASH STILE |
| 2 | SH5703 | FRAME SILL | 8 | V-716 | GLAZING BEAD |
| 3 | SH5701 | FRAME JAMB | 9 | S-046 | M.L.R. REINFORCEMENT |
| 4 | V-706 | MEETING RAIL | 10 | S-047 | SASH REINFORCEMENT |
| 5 | V-704 | SASH LOCK RAIL | 11 | | 3/4" L.G. |
| 6 | V-705 | SASH BOTTOM RAIL | | | |

Vinyl Source

4371 TRACHER LANE
YOUNGSTOWN, OH 44515

DESCRIPTION: SH57WW SINGLE HUNG
SLOPED SILL - EQUAL GLASS

B-SIZE	BY	DATE
B-1	B-1	11/4/03
SCALE		
FULL		

REV	ECN	CHANGE	BY	DATE
B		UPDATED PROFILE SH5701/02/03	BJF	1/3/05
A	XXXX	UPDATED PROFILE SH5702 AND SH5703	BJF	11/10/04
THIS DOCUMENT CONTAINS CONFIDENTIAL AND PROPRIETARY INFORMATION DO NOT COPY OR DISCLOSE WITHOUT CONSENT OF VINYL-SOURCE INC.				

SH57WW



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.



CUSTOM VINYL PRODUCTS, LLC

WINDOW INSTALLATION INSTRUCTIONS

- 1) Check that rough opening is between $\frac{1}{2}$ " to $\frac{3}{4}$ " larger than the dimensions of the window, height and width.
- 2) Cut house wrap at 45 degree angle from top corners, about 6", and tack up out of the way.
- 3) Place wood shims in bottom right hand corner of the window opening.
- 4) Apply continuous $\frac{1}{4}$ " bead of silicone based caulk to the inside of the nailing flange on the sides and top only.
- 5) Place window unit in the opening. **Sash must be locked during installation.** Rest window against shims in the right hand corner.
- 6) Attach the window using 1 $\frac{1}{2}$ " galvanized roofing nails through upper right side of nail fin. **Use pre-punched nail slots. Never use automated nailing devices.**
- 7) Place 2 foot level against left side of jamb and lift left side of window into level position.
- 8) Fasten head jamb.
- 9) Shim left and right side of jambs as to maintain a $\frac{1}{16}$ " continuous margin between sash and frame.
- 10) Fasten left side of jamb.
- 11) Attach the remainder of the unit approximately every other nail slot.
- 12) Check sash for easy operation. Check margins between sash and frame along the sides as well as top and bottom.
- 13) Apply 4" window flashing tape around the perimeter of the window, sides first then top. **Do not tape the bottom of the window.**

****FOR FURTHER FLASHING INSTRUCTIONS GO TO CUSTOMVINYL.NET**

CAUTION: GENERAL CONTRACTORS

- Keep sill area free of all debris. Do not allow brick or mortar to touch edges of window frame. Allow $\frac{1}{8}$ " gap and seal with caulk.
- Never use expandable foam insulation between window and rough opening. Use bat insulation.
- Window sash must always be locked during installation.

OPERATING INSTRUCTIONS

- 1) ALWAYS raise the sash before attempting to tilt.
- 2) Sash removal: Raise sash, tilt 90 degrees, and lift at each corner.
- 3) If the sash will not move up or down, remove sash as instructed above and repeat the process.

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:

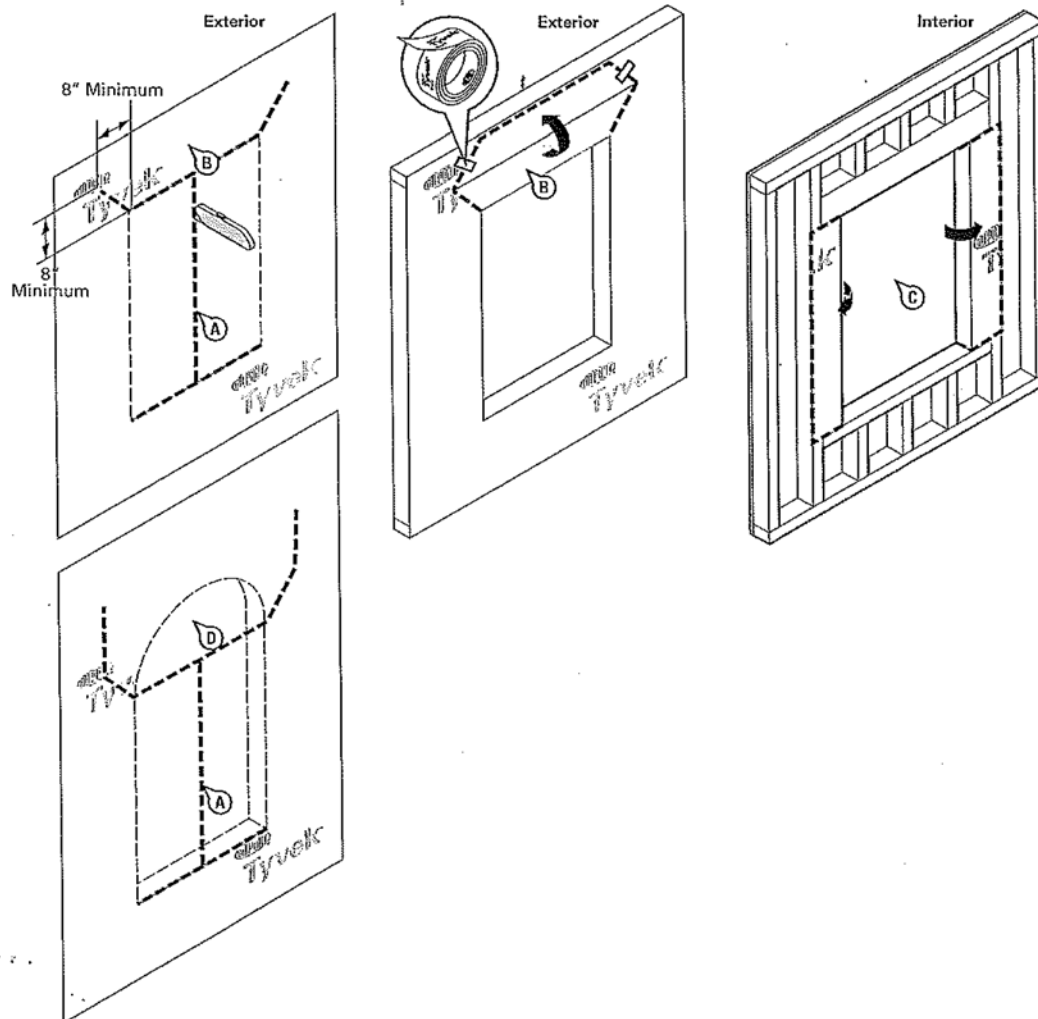
- DuPont™ StraightFlash™
- DuPont™ FlexWrap™

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.

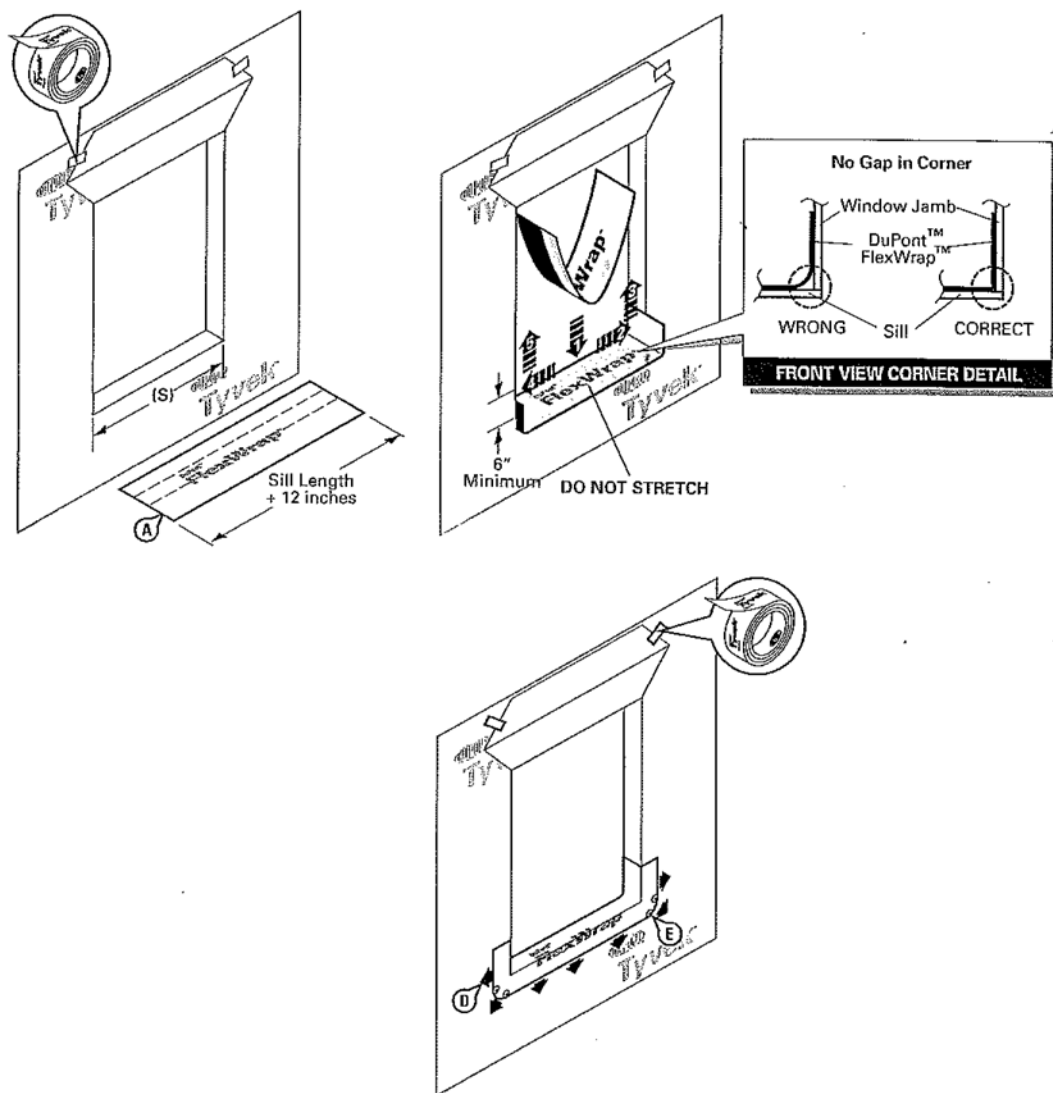
Note: Side flaps should cover interior facing framing stud.



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.

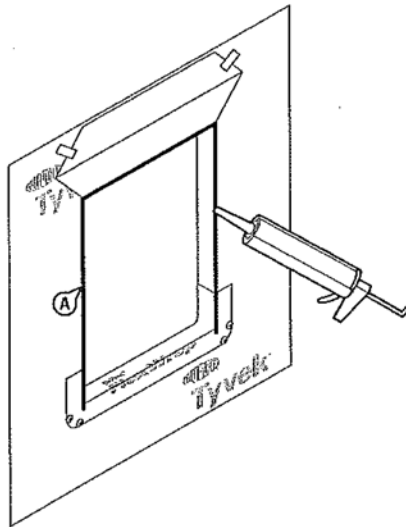


DuPont™ Flashing Systems Installation Guidelines

STEP 3

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

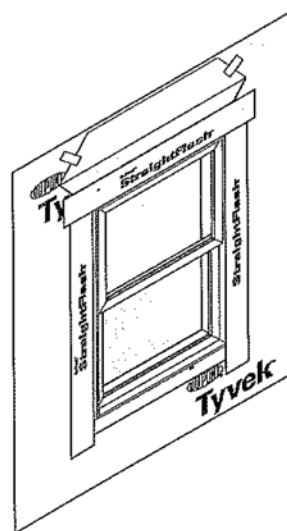
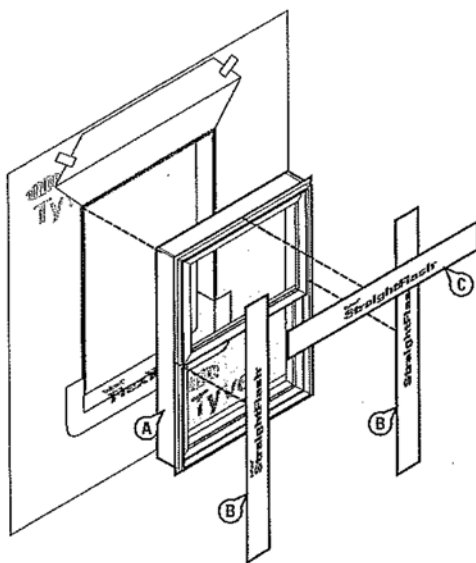
DO NOT APPLY CAULK ACROSS BOTTOM SILL FLANGE to allow for drainage.



FOR RECTANGULAR WINDOWS

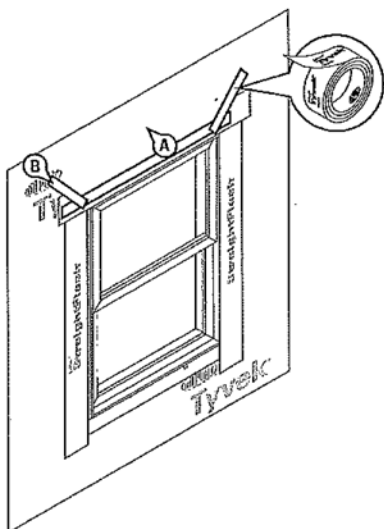
STEP 4

- 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

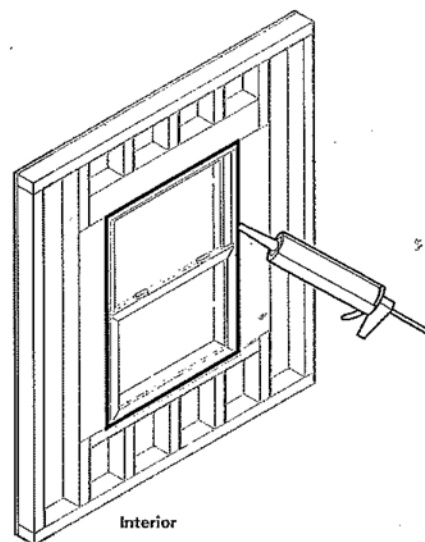
- A. Flip down upper flap of water-resistive barrier so it lays flat across head flashing.
- B. Tape along all cuts in water-resistive barrier and tape across head of the window with DuPont™ Tyvek® Tape.



STEP 6 (optional / not required)

Final Step

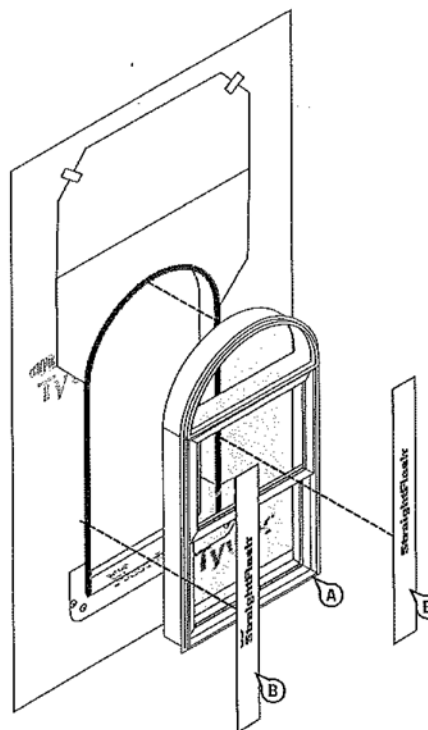
Seal around the window opening at the interior, using caulk (and backer rod as necessary). Caulk and backer rod will also serve as a back dam.



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.

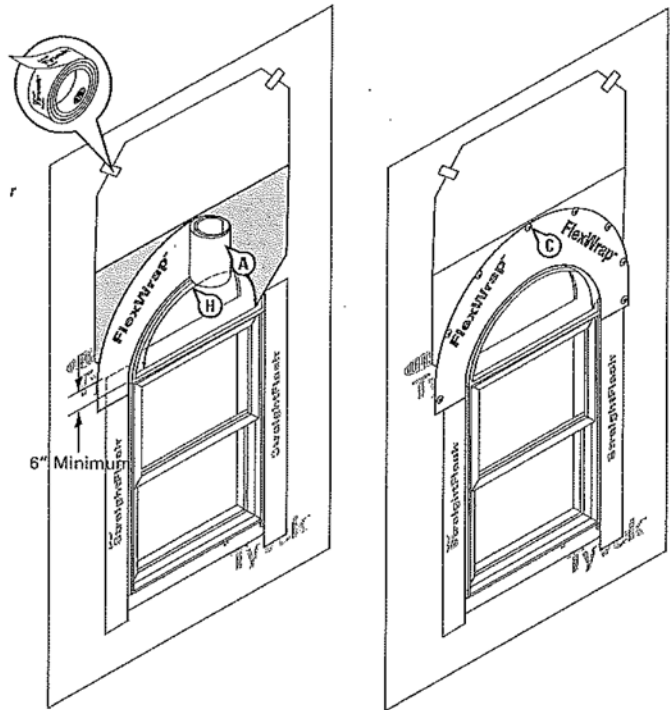


DuPont™ Flashing Systems Installation Guidelines

STEP 5

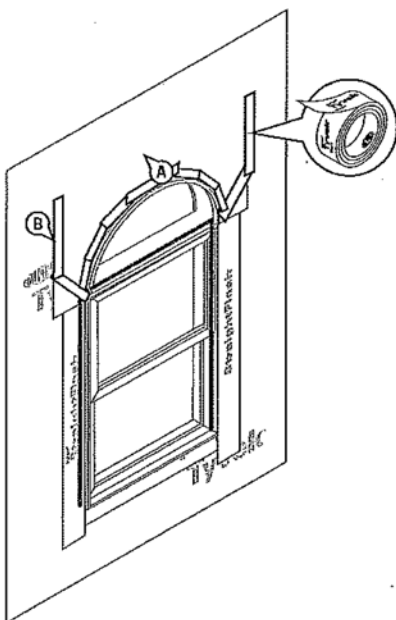
Install head flashing

- 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

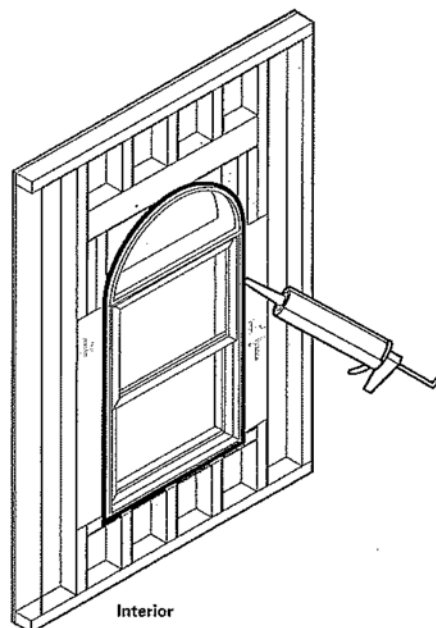
- Flip down upper flap of WRB so it lays flat across head flashing.
- Tape along all cuts in WRB and across head of the window with DuPont™ Tyvek® Tape.



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.





Custom Vinyl Products, LLC
260 Enterprise Drive
Newport News, VA 23603

Single Hung Operating Instructions

- 1) Make sure the sash is unlocked.
- 2) At this point, the bottom sash will be able to be raised freely.
- 3) To clean: (use a mild soap and water on frames and any standard glass cleaner on glass. DO NOT use any kind of harsh cleaner on the vinyl frames and sashes. Use of such products can cause damage to the vinyl and WILL void the warranty.)
 - a. Raise the bottom sash up at least 2" (failure to do so will result in a damaged window and such damage will not be covered under warranty)
 - b. At the top corners of the sash there are spring loaded tilt latches. Pull in, towards the center of the window, on the tilt latches, and hold them.
 - c. While holding the tilt latches in the unlocked position, gently pull the sash towards you for cleaning and release the tilt latches.
 - d. When finished cleaning, simply tilt the bottom sash back up into place and push to automatically engage the tilt latches, then lower the sash all the way back into place.
 - e. Make sure to reengage the sash locks for security.
- 4) If at any time the sash does not travel up and down freely, DO NOT force it. It should travel relatively easily. Occasionally during cleaning, the sash will become "locked out". Simply re-tilt the sash, down passed 90 degrees, then re-tilt it back up into position. The balance system on the window is self-correcting. IF this does not correct the issue, then call the main office at (757)887-3194 and ask to speak to our Service Manager for further assistance.