Custom Vinyl Products, LLC.
WINDOWS & DOORS

SUBMITTAL PACKAGE

SH46 – Picture Window

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: 6/13/2012

Certification Number
8423
Product Line Number
CST - K - 003
Revision Date
8/27/2015

The Following NFRC Product Line Has Been Authorized For Certification:

Model / Series: SH46 Picture Window
Operator Type: FIXD
Frame Type: VY
Sash Type: NA
Exp. Date: 7/31/2018

Ratings Authorized For Certification:

Rating	Property	Authorized
NFRC 100	U-factor	☑
NFRC 200	Solar Heat Gain Coefficient	☑
NFRC 200	Visible Light	☑
NFRC 400	Air Leakage	☑
NFRC 500	Condensation Resistance	☑

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.

NFRC Product Certification Authorization Report

Manufacturer: Custom Vinyl Products, LLC
Street: 260 Enterprise Drive
City/State/Zip: Newport News, VA 23603
Print Date: 08/27/2015

Product Series: SH46 Picture Window
Product Type: FIXD
Air Leakage: ≤ 0.3

Simulation Lab: SATI
Sim. Report #: D9542.04-116-45
Sim. Report Date: 08/24/2015
Test Date: 07/31/2014

Initial Cert. Date: 06/13/2012
Re-Certification Date: 08/27/2015
Revised Date: 08/24/2015
Expiration Date: 07/31/2018

CPD Number: CST-K-3 **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.
	00019-00001	E270 / ARG90 / CLR (2MM/2MM) - 3/4" IG	VY/NA	2	0.037(2)	0.563	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.28	0.31	0.59	61
	00019-00002	E270 / ARG90 / CLR (2MM/2MM) - 3/4" IG	VY/NA	2	0.037(2)	0.563	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.28	0.28	0.53	61
	00019-00003	E270 / ARG90 / CLR (2MM/2MM) - 3/4" IG	VY/NA	2	0.037(2)	0.563	SS-D	Fill 1: ARG/AIR (90/10)	S	0.75	CL	0.28	0.28	0.53	61
	00020-00001	E366 / ARG90 / CLR (2MM/2MM) - 3/4" IG	VY/NA	2	0.022(2)	0.563	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.27	0.23	0.55	62
	00020-00002	E366 / ARG90 / CLR (2MM/2MM) - 3/4" IG	VY/NA	2	0.022(2)	0.563	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.27	0.21	0.49	62
	00020-00003	E366 / ARG90 / CLR (2MM/2MM) - 3/4" IG	VY/NA	2	0.022(2)	0.563	SS-D	Fill 1: ARG/AIR (90/10)	S	0.75	CL	0.27	0.21	0.49	62
	00021-00001	E270 / ARG90 / CLR (3MM/3MM) - 3/4" IG	VY/NA	2	0.037(2)	0.500	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.27	0.31	0.59	61
	00021-00002	E270 / ARG90 / CLR (3MM/3MM) - 3/4" IG	VY/NA	2	0.037(2)	0.500	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.27	0.28	0.53	61
	00021-00003	E270 / ARG90 / CLR (3MM/3MM) - 3/4" IG	VY/NA	2	0.037(2)	0.500	SS-D	Fill 1: ARG/AIR (90/10)	S	0.75	CL	0.27	0.28	0.53	61
	00022-00001	E366 / ARG90 / CLR (3MM/3MM) - 3/4" IG	VY/NA	2	0.022(2)	0.500	SS-D	Fill 1: ARG/AIR (90/10)	N		CL	0.27	0.23	0.54	61
	00022-00002	E366 / ARG90 / CLR (3MM/3MM) - 3/4" IG	VY/NA	2	0.022(2)	0.500	SS-D	Fill 1: ARG/AIR (90/10)	G	0.75	CL	0.27	0.21	0.48	61
	00022-00003	E366 / ARG90 / CLR (3MM/3MM) - 3/4" IG	VY/NA	2	0.022(2)	0.500	SS-D	Fill 1: ARG/AIR (90/10)	S	0.75	CL	0.27	0.21	0.48	61

Baseline Information

Test Lab	Test Date	Test Size	Tested U-Value	Standard U-Value	Test Report Number
TATI	**07/31/2014**	1200mm x 1499mm	0.351	0.344	D9543.04-116-46

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: _____ 2015.08.28 08:16:14 -04'00'

Architectural Testing

TEST REPORT

Report No.: D0768.01-501-47

Rendered to:

VEKA INC.
Fombell, Pennsylvania

PRODUCT TYPE: PVC Single Hung Window
SERIES/MODEL: SH46WW

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	0.7 L/s/m^2 (0.13 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. D0768.01-501-47-r0, dated 10/18/13 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: SH46WW

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 18, 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:

Name	Company
Doug Merry	Veka Inc.
Cornell Charles	Veka Inc.
Joe Allison	Architectural Testing, Inc.

4.0 Test Specification(s):

AAMA/WDMA/CSA 101/I.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	962	37-7/8	775	30-1/2
Screen	930	36-5/8	743	29-1/4

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 fixed 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 mating 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
0.300" 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	1-1/8" wide by 3/16" high	2	Exterior sill face accessory groove, 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 groove 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 22°C (72°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)	0.7 L/s/m^2 (0.13 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)	 15.0 mm (0.59") 13.5 mm (0.53")	 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)	 0.8 mm (0.03") 1.0 mm (0.04")	 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
Digitally Signed by: Joseph E. Allison

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: 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

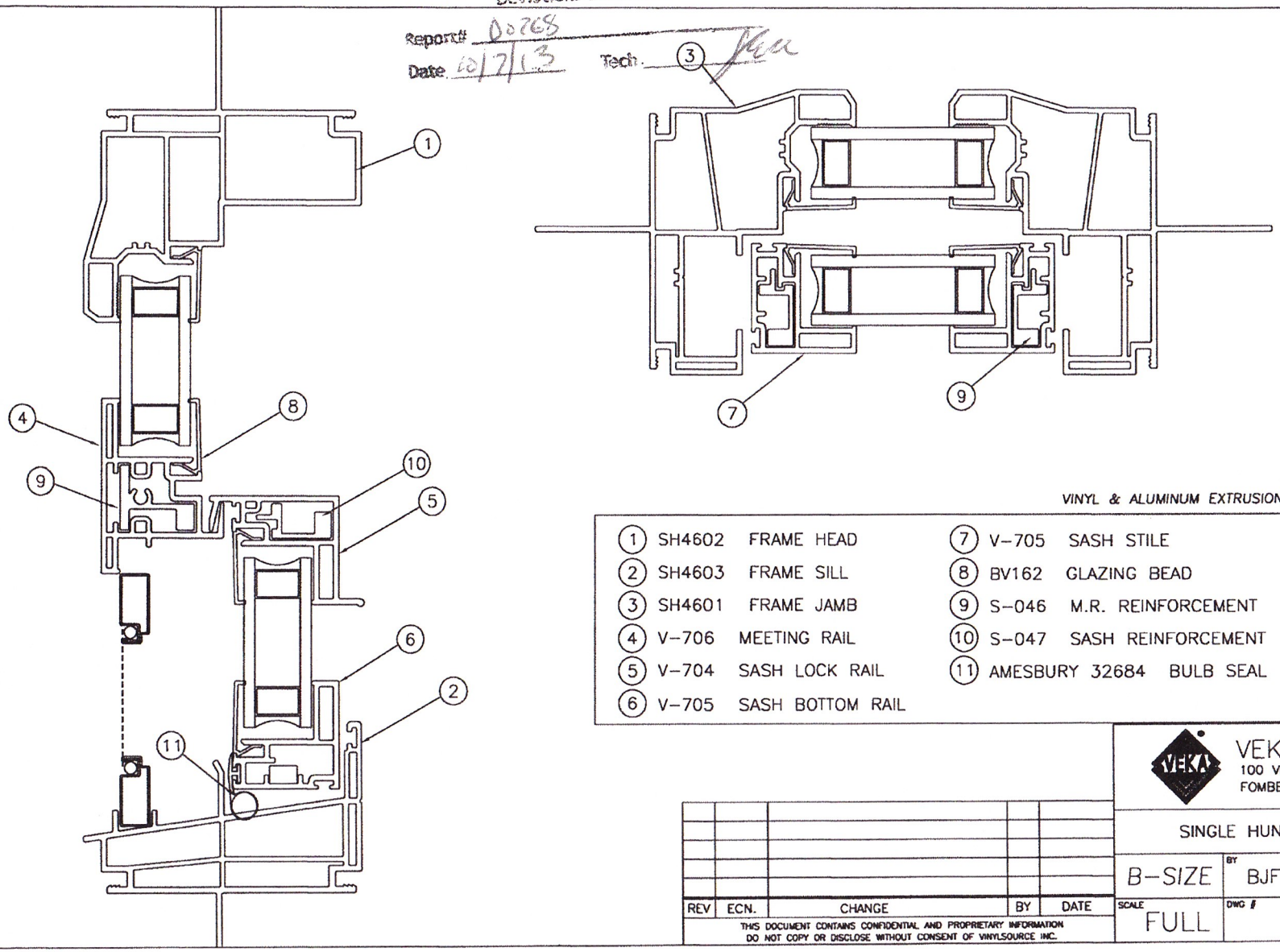
Drawings

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

Architectural Testing

Test sample complies with these details
Deviations are noted.

Report# D0268
Date 10/2/13 Tech. 3



VINYL & ALUMINUM EXTRUSIONS

1	SH4602	FRAME HEAD	7	V-705	SASH STILE
2	SH4603	FRAME SILL	8	BV162	GLAZING BEAD
3	SH4601	FRAME JAMB	9	S-046	M.R. REINFORCEMENT
4	V-706	MEETING RAIL	10	S-047	SASH REINFORCEMENT
5	V-704	SASH LOCK RAIL	11	AMESBURY 32684	BULB SEAL
6	V-705	SASH BOTTOM RAIL			

REV	ECN.	CHANGE	BY	DATE

VEKA INC.
100 VEKA DRIVE
FOMBELL, PA 16123

SINGLE HUNG SH46WW

B-SIZE	BY BJF	DATE 06/20/11
SCALE FULL	DWG # SH46WW	

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 ½" to ¾" 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 ¼" 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 ½" 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 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 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.

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

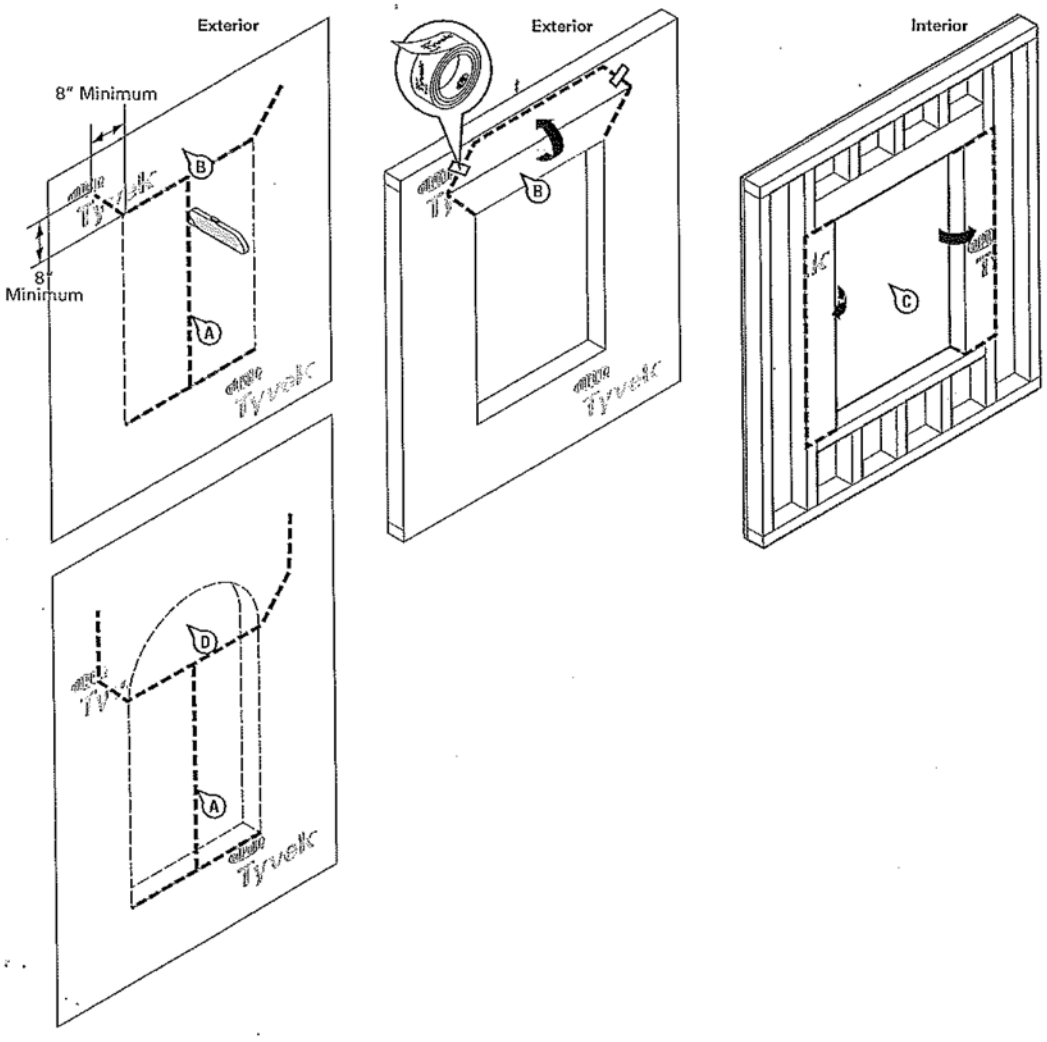
Prepare water-resistive barrier for window installation:

A. 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.

B. 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.

C. 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).

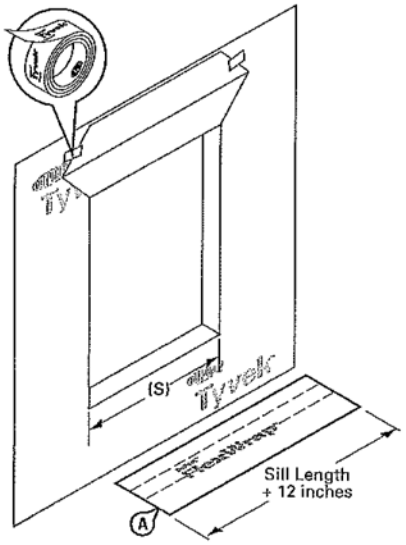
B. Remove first piece of release paper, cover horizontal sill by aligning inside edge of sill, and adhere into rough opening along sill and up jambs (min. 6" on each side).

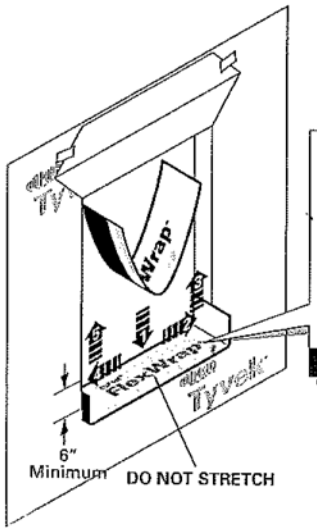
C. Remove second release paper.

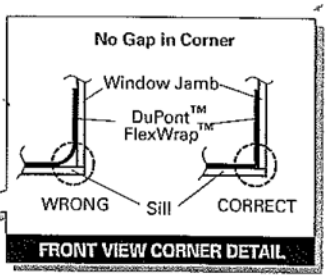
D. Flex DuPont™ FlexWrap™ at bottom corners onto face of wall.

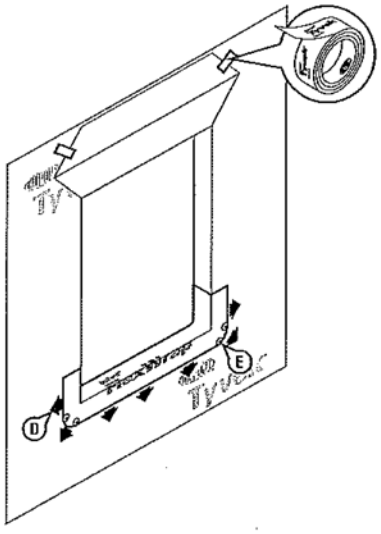
E. **SECURE EDGES OF DUPONT™ FLEXWRAP™ WITH MECHANICAL FASTENERS**. i.e., DuPont™ Tyvek® Wrap Caps (nails, screws, staples).

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



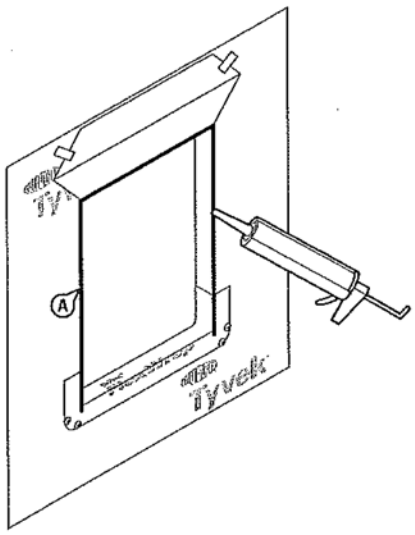






STEP 3

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.



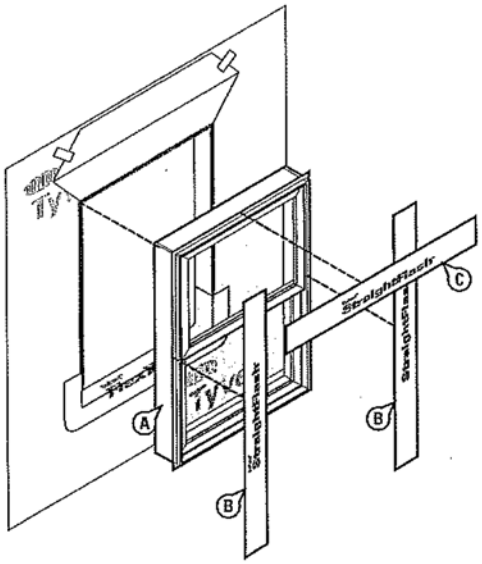
FOR RECTANGULAR WINDOWS

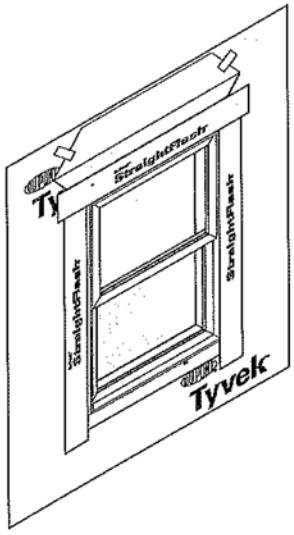
STEP 4

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)

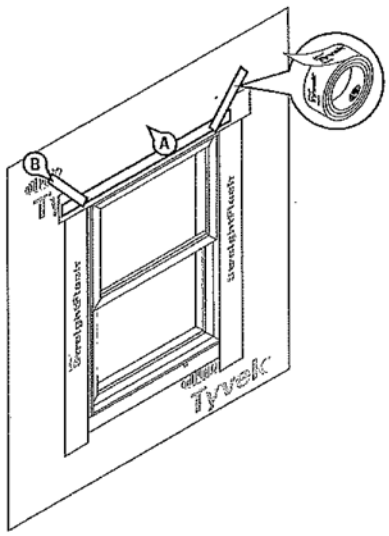




STEP 5

A. Flip down upper flap of water-resistive barrier so it lays flat across head flashing.

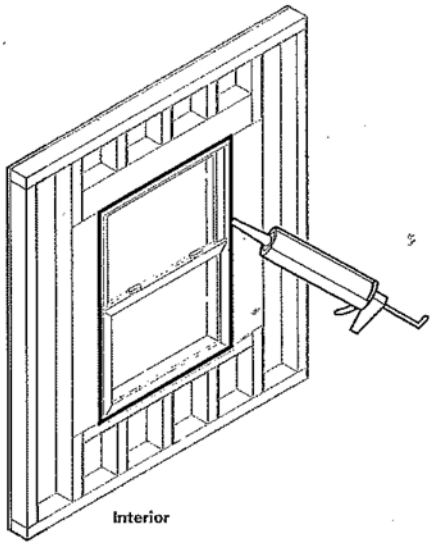
B. Tape along all cuts in water-resistive barrier and tape across head of the window with DuPont™ Tyvek® Tape.



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.

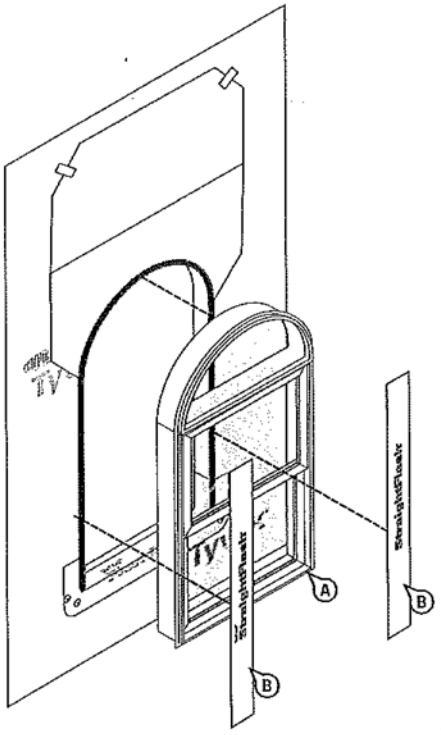


FOR ROUNDTOP WINDOWS

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.



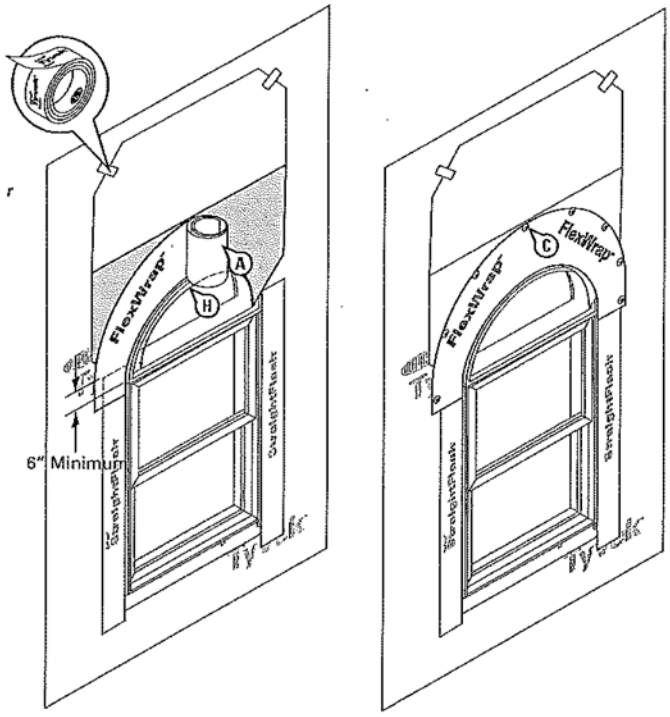
STEP 5

Install head flashing

A. Cut head flashing at least 12" longer than the arc length (H) of round-top window.

B. 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".

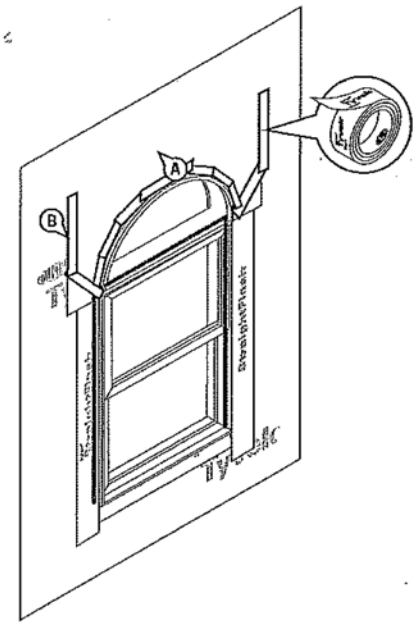
C. Secure outer edges of head flashing using mechanical fasteners. e.g. DuPont™ Tyvek® Wrap Caps (nails, screws, staples). SECURE every 6" to 12" along outer perimeter.



STEP 6

A. Flip down upper flap of WRB so it lays flat across head flashing.

B. 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.