

	Document Title:	Doc No:	FRM B1-02	
	Structural Performance Certification Authorization Report	Rev No: 7	Page: 1	Of: 1
Required By: PRO B1-03				

CAR & Product ID Number: 757 - 109.0
 Issue Date: 7/25/2013
 Revision Date: 4/20/2017
 Expiration Date: 7/11/2020
 Company Code: 757

This Certification Authorization Report (CAR) is issued by Keystone Certifications, Inc. (KCI) after full validation review, and is based on a standardized evaluation of the product conducted by an independent accredited laboratory in accordance with the specified referenced standard. Actual fenestration product performance may vary based on many factors, including installation, condition of the wall/roof substrate and the age of the product and installation components.

This report indicates the product is eligible for the application of Keystone Certification Program certification labels. Licensee stipulates in affixing certification labels to products, that those products are representative of the specimen evaluated and documented for certification authorization. Only products bearing such a certification label shall be considered certified. The information in this report can be verified at www.keystonecerts.com.

Licensee Information:	Product Information:
Pocahontas Aluminum Company, Inc. 2001 Industrial Drive PO Box 756 Pocahontas AR 72455	Model: SH46 PVC Single Hung w/Metal Locks Operator Type: H Config: EM/IM Max Width: 40 Max Height: 63

Referenced Standard:	Product Rating:
AAMA/WDMA/CSA 101/I.S.2/A440-08	Class R-PG40 1016x1600 (40x63)-Type H

Qualifying Test Information:	
Test Report No:	ATI-C8551.02-501-47
Test Report Expiration:	7/11/2020

Authorized Signature:

Keystone Certifications, Inc.
 145 Limekiln Rd. Suite 100B
 New Cumberland, Pennsylvania 17070
 Phone: 717-932-8500
 Fax: 717-932-8501

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Licensee Information:	Product Information:
Pocahontas Aluminum Company, Inc. 2001 Industrial Drive PO Box 756 Pocahontas AR 72455	Model: SH46 PVC Single Hung w/Metal Locks Operator Type: H Config: EM/All Max Width: 40 Max Height: 63

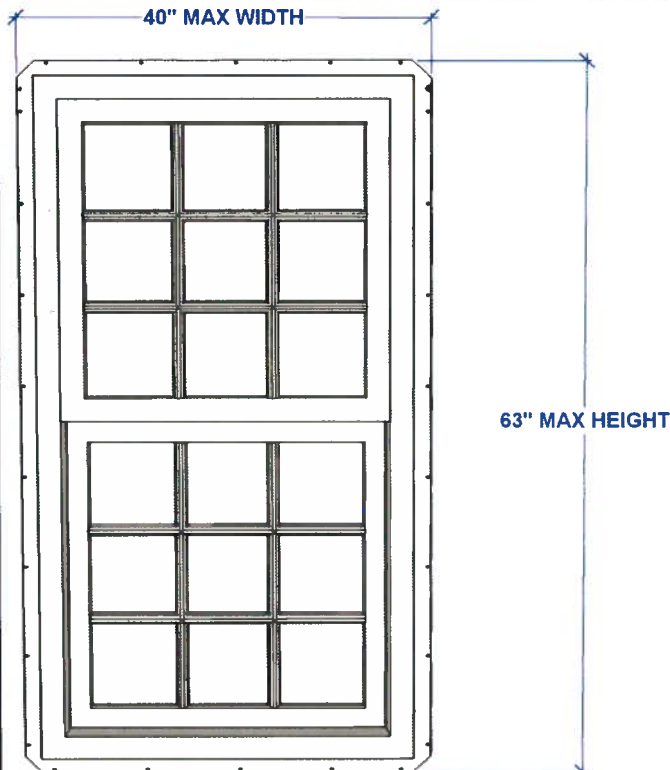
Referenced Standard:	Product Rating:
AAMA/WDMA/CSA 101/I.S.2/A440-08	Class R-PG45 1016x1600 (40x63)-Type H Neg DP=50

Qualifying Test Information:	
Test Report No:	ATI-C8551.02-501-47
Test Report Expiration:	7/11/2020

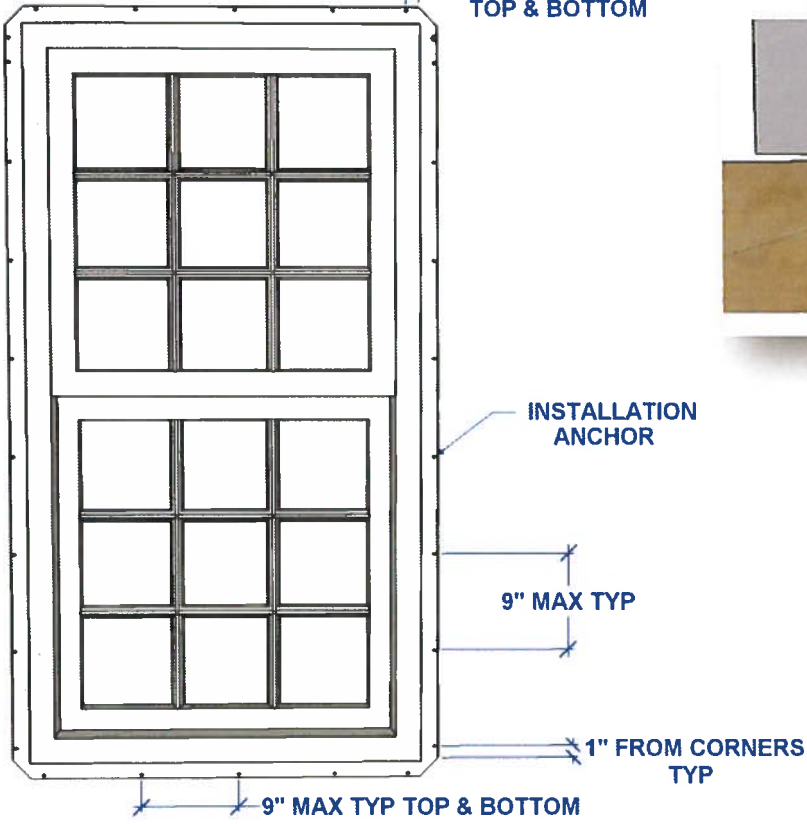
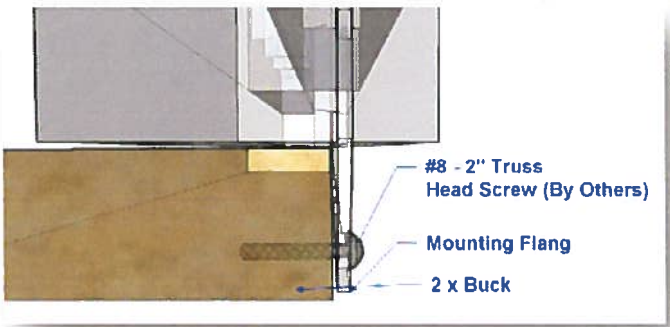
Authorized Signature:

Keystone Certifications, Inc.
 145 Limekiln Rd. Suite 100B
 New Cumberland, Pennsylvania 17070
 Phone: 717-932-8500
 Fax: 717-932-8501

**INSTALLATION METHOD
PVC (VINYL) SH46 SINGLE HUNG
ELEVATION & ANCHOR LAYOUT**



1" FROM CORNERS TYP
TOP & BOTTOM



INSTALLATION ANCHOR

9" MAX TYP

1" FROM CORNERS TYP

9" MAX TYP TOP & BOTTOM

SCALE: NTS
DWN BY: AMM
CHK BY: KEA
DATE: 9/27/13

TITLE:
INSTALLATION METHOD
PVC (VINYL) SH46 SINGLE HUNG
ELEVATION & ANCHOR LAYOUT

PREPARED BY:
POCAHONTAS ALUMINUM COMPANY, INC.
2001 INDUSTRIAL DRIVE
POCAHONTAS, AR 72455
PH: 870-892-3689 FAX: 870-892-9858

REVISIONS			
NO.	DESCRIPTION	BY	DATE

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FROM POCAHONTAS
ALUMINUM
COMPANY, INC.



TEST REPORT

Report No.: C8551.02-501-47

Rendered to:

POCAHONTAS ALUMINUM COMPANY, INC.
Pocahontas, Arizona

PRODUCT TYPE: PVC Single Hung Window
SERIES/MODEL: SH46 Single Hung

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

Test Dates: 05/19/13
Through: 06/27/13
Report Date: 07/12/13



SUMMARY OF RESULTS

Summary of Results		
Title	Test Specimen #1 <i>Lock rail and fixed meeting rail reinforced</i>	Test Specimen #2 <i>Lock rail, fixed meeting rail, and stiles reinforced</i>
Primary Product Designator	Class R-PG40 1016 x 1600 (40 x 63) - H	Class R-PG45 1016 x 1600 (40 x 63) - H
Design Pressure	±1920 Pa (±40.10 psf)	±2400 Pa (±50.13 psf)
Air Infiltration	1.3 L/s/m ² (0.25 cfm/ft ²)	N/A
Water Penetration Resistance Test Pressure	330 Pa (6.90 psf)	N/A

Summary of Results		
Title	Test Specimen #3 <i>Lock rail and fixed meeting rail reinforced</i>	Test Specimen #4 <i>Lock rail, fixed meeting rail, and stiles reinforced</i>
Primary Product Designator	Class R-PG45 762 x 1346* (30 x 53*) - H	Class R-PG50 762 x 1346* (30 x 53*) - H
Design Pressure	±2160 Pa (±45.11 psf)	±2400 Pa (±50.13 psf)
Air Infiltration	N/A	N/A
Water Penetration Resistance Test Pressure	360 Pa (7.52 psf)	N/A

Test Completion Date: 06/27/2013

Reference must be made to Report No. C8551.02-501-47, dated 07/12/13 for complete test specimen description and detailed test results.



1.0 Report Issued To: Pocahontas Aluminum Company, Inc.
2001 Industrial Drive, PO Box 756
Pocahontas, Arizona 72455-0756

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:

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 #1: **Class R-PG40 1016 x 1600 (40 x 63) - H**; Test Specimen #2: **Class R-PG45 1016 x 1600 (40 x 63) - H**; Test Specimen #3: **Class R-PG45 762 x 1346* (30 x 53*) - H**; Test Specimen #4: **Class R-PG50 762 x 1346* (30 x 53*) - H**.

This product was originally tested as the Veka Inc. Series/Model SH46WW, PVC Single Hung Window and is a reissue of the original Report No. C8551.01-501-47. This report is reissued in the name of Pocahontas Aluminum Company, Inc., through written authorization by Veka Inc.

***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: 05/09/2013 – 06/27/2013

3.5 Test Record Retention End Date: All test records for this report will be retained until July 11, 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 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.

3.8 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/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:****Test Specimen #1 and #2:**

Overall Area: 1.6 m ² (17.5 ft ²)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	1016	40	1600	63
Sash size	705	37-3/4	775	30-1/2
Screen size	930	36-5/8	743	29-1/4

Test Specimen #3 and #4:

Overall Area: 1.0 m ² (11.0 ft ²)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	762	30	1346	53
Sash size	705	27-3/4	648	25-1/2
Screen size	676	26-5/8	616	24-1/4

The following descriptions apply to all specimens.

5.2 Frame Construction:

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

	Joinery Type	Detail
All corners	Mitered	Thermally Welded
Fixed rail	Coped butt type	The fixed rail was fastened to the jambs with four #8 x 3" truss head screws, two at each end. Each end of the fixed rail was sealed to the jamb with a silicone sealant.
Sill adapter	Square cut and notched out for drainage	Snap fit, sealed along entire width and at each vertical leg with a silicone sealant



5.0 Test Specimen Description: (Continued)

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" 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
0.400" 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
5/8" IG	Rectangular shaped steel, single sealed	3/32" annealed	3/32" 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	
Specimen #1 and #2 sash	1	902 x 711	35-1/2 x 28	1/2"
Specimen #1 and #2 frame	1	899 x 718	35-3/8 x 28-1/4	1/2"
Specimen #3 and #4 sash	1	648 x 584	25-1/2 x 23	1/2"
Specimen #3 and #4 frame	1	645 x 591	25-3/8 x 23-1/4	1/2"

5.0 Test Specimen Description: (Continued)

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weepslot	1" wide by 0.140" high	2	Exterior sill face accessory groove, one 3-1/4" 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
Weep notch	0.800" deep by 1" wide	2	Sill adaptor, one at each end
Weephole	3/8" wide by 1/8" deep	2	Bottom rail, one at each end

5.7 Hardware:

Description	Quantity	Location
Metal sweep lock (specimens #1 and #2 only)	2	Lock rail, one 10" in from each end engaging an extruded groove in the fixed meeting rail
Composite sweep lock (specimens #3 and #4 only)	2	Lock rail, one 6" 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 (all units)	Extruded aluminum
S-047	Lock rail (all units)	Extruded aluminum
S-047	Stiles (specimens #2 and #4 only)	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 an 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 9" 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: 80 N (18 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)	1.3 L/s/m ² (0.25 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 330 Pa (6.90 psf)	Pass	No leakage	2
Uniform Load Deflection, per ASTM E 330 taken at the fixed meeting rail +1920 Pa (+40.10 psf) -1920 Pa (-40.10 psf)	14.8 mm (0.58") 11.5 mm (0.45")	Report Only	4, 5, 6
Uniform Load Structural, per ASTM E 330 taken at the fixed meeting rail +3240 Pa (+60.15 psf) -3240 Pa (-60.15 psf)	2.0 mm (0.08") 0.5 mm (0.02")	3.6 mm (0.14") max. 3.6 mm (0.14") max.	5, 6

Test Specimen #2:

Title of Test	Results	Allowed	Note
Optional Performance			
Uniform Load Deflection, per ASTM E 330 taken at the fixed meeting rail +2400 Pa (+50.13 psf) -2400 Pa (-50.13 psf)	20.5 mm (0.81") 15.5 mm (0.61")	Report Only	4, 5, 6
Uniform Load Structural, per ASTM E 330 taken at the fixed meeting rail +3600 Pa (+75.19 psf) -3600 Pa (-75.19 psf)	3.5 mm (0.14") 1.0 mm (0.04")	3.6 mm (0.14") max. 3.6 mm (0.14") max.	5, 6

**7.0 Test Results:** (Continued)**Test Specimen #3:**

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 fixed meeting rail +2160 Pa (+45.11 psf) -2160 Pa (-45.11 psf)	3.8 mm (0.15") 2.8 mm (0.11")	Report Only	4, 5, 6
Uniform Load Structural, per ASTM E 330 taken at the fixed meeting rail +3240 Pa (+67.67 psf) -3240 Pa (-67.67 psf)	0.5 mm (0.02") 0.3 mm (0.01")	2.5 mm (0.10") max. 2.5 mm (0.10") max.	5, 6

Test Specimen #4:

Title of Test	Results	Allowed	Note
Optional Performance			
Uniform Load Deflection, per ASTM E 330 taken at the fixed meeting rail +2400 Pa (+50.13 psf) -2400 Pa (-50.13 psf)	4.0 mm (0.16") 4.3 mm (0.17")	Report Only	4, 5, 6
Uniform Load Structural, per ASTM E 330 taken at the fixed meeting rail +3600 Pa (+75.19 psf) -3600 Pa (-75.19 psf)	0.8 mm (0.03") 0.5 mm (0.02")	2.5 mm (0.10") max. 2.5 mm (0.10") 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.



This report is reissued in the name of Pocahontas Aluminum Windows, Inc. through written authorization of Veka Inc. to whom the original report was rendered. The original Veka Inc. Report No. is C8551.01-501-47.

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.

Joseph E. Allison
Senior Technician

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.



Architectural Testing

Test Report No.: C8551.02-501-47
Report Date: 07/12/13

Appendix A

Alteration Addendum

Note: No alterations were required.



Architectural Testing

Test Report No.: C8551.02-501-47
Report Date: 07/12/13

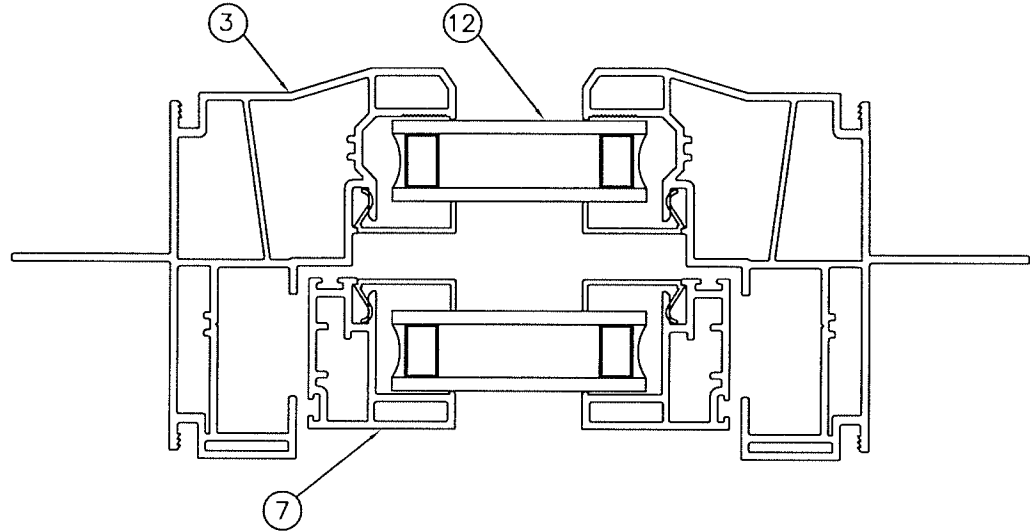
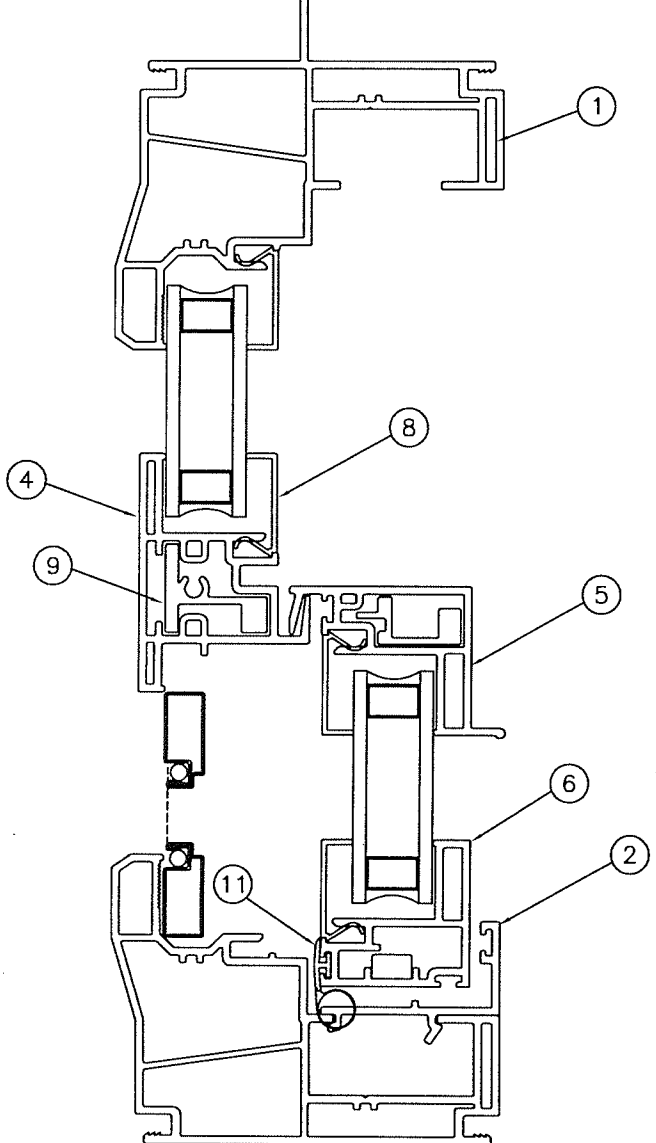
Appendix B

Drawings

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

Test sample complies with these data:
Deviations are noted.

Report# CRST-1
Date 7/1/13 Tech Jen



VINYL & ALUMINUM EXTRUSIONS

① SH4601	FRAME HEAD	⑦ V-705	SASH STILE
② V-818	SILL INSERT	⑧ V-722	GLAZING BEAD
③ SH4601	FRAME JAMB/SILL	⑨ S-046	M.R. REINFORCEMENT
④ V-706	MEETING RAIL		
⑤ V-704	SASH LOCK RAIL		
⑥ V-705	SASH BOTTOM RAIL		



VEKA INC.
100 VEKA DRIVE
FOMBELL, PA 16123

SINGLE HUNG SH46WW SILL INSERT

B-SIZE BY BJB DATE 11/24/08

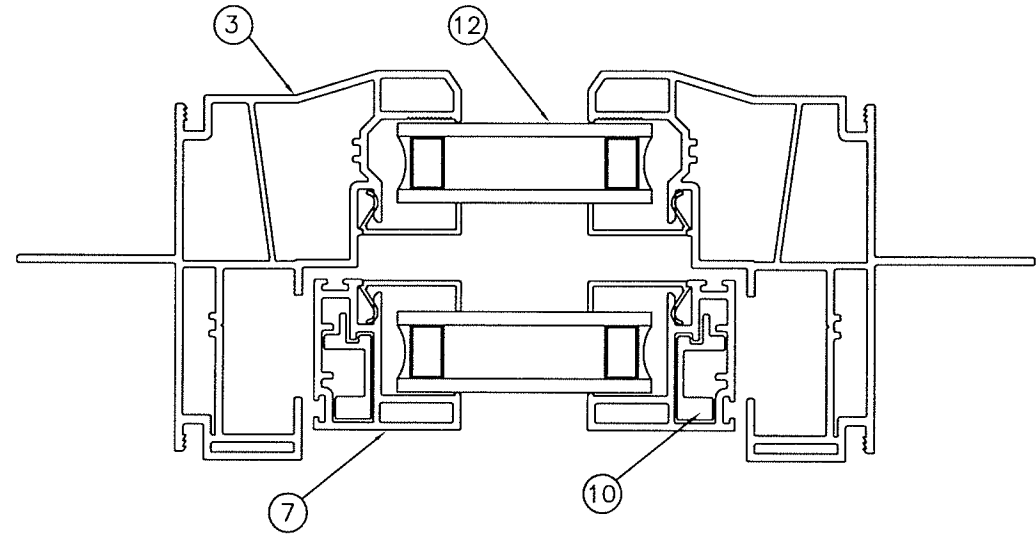
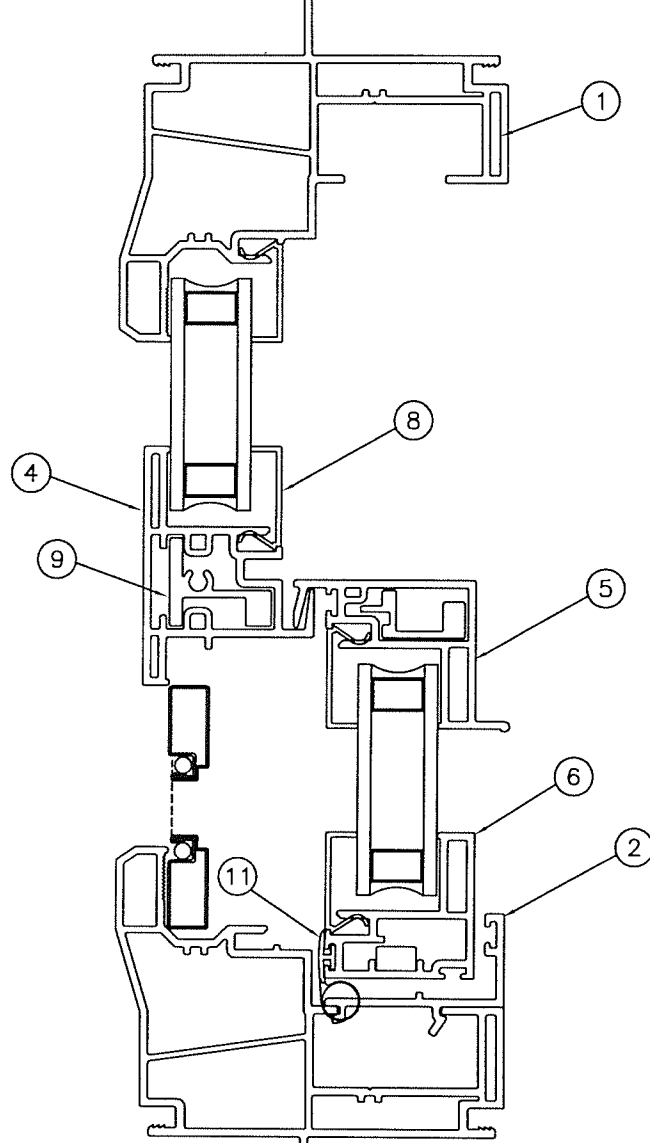
REV	ECN.	CHANGE	BY	DATE

SCALE FULL DWG # SH46WWSI



Test sample complies with these details.
Deviations are noted.

Project: C8551
Date: 7/1/13 Test: [Signature]



VINYL & ALUMINUM EXTRUSIONS

① SH4601	FRAME HEAD	⑦ V-705	SASH STILE
② V-818	SILL INSERT	⑧ V-722	GLAZING BEAD
③ SH4601	FRAME JAMB/SILL	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	⑫ 5/8" I.G. UNIT	



VEKA INC.
100 VEKA DRIVE
FOMBELL, PA 16123

SINGLE HUNG SH46WW SILL INSERT

B-SIZE

BY BJF

DATE 11/24/08

REV	ECN.	CHANGE	BY	DATE

SCALE

FULL

DWG #

SH46WWSI