Intertek | Architectural Testing

TEST REPORT

Report No.: F5292.01-501-47

Rendered to:

VEKA INC.
Fombell, Pennsylvania

PRODUCT TYPE: PVC Horizontal Sliding Window, Type XX
SERIES/MODEL: DS93WW

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

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

Title	Summary of Results
AAMA/WDMA/CSA 101/I.S.2/A440-08 and -11	Class LC-PG65 1854 x 1575 (73 x 62) - HS
Design Pressure	±3120 Pa (±65.16 psf)
Air Infiltration	0.8 L/s/m^2 (0.16 cfm/ft^2)
Canadian Air Infiltration/Exfiltration Level	A2
Water Penetration Resistance Test Pressure	580 Pa (12.12 psf)

Test Completion Date: 02/09/16

Reference must be made to Report No. F5292.01-501-47, 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 Horizontal Sliding Window, Type XX

3.2 Series/Model: DS93WW

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 LC-PG65 1854 x 1575 (73 x 62) - HS rating.

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 specimen was 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.

3.9 List of Official Observers:

Name	Company
Doug Merry	Veka Inc.
Cornell Charles	Veka Inc.
Joseph Allison	Intertek-ATI

4.0 Test Specification(s):

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

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

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 2.9 m^2 (31.4 ft^2)	**Width**		**Height**	
	millimeters	**inches**	**millimeters**	**inches**
Overall size	1854	73	1575	62
Exterior sash size	905	35-5/8	1451	57-1/8
Interior sash size	905	35-5/8	1451	57-1/8
Screen size	892	35-1/8	1454	57-1/4

5.2 Frame Construction:

Frame Member	**Material**	**Description**
Head, sill, jambs, roller tracks	PVC	Extruded

	Joinery Type	**Detail**
All corners	Mitered	Thermally welded
Roller tracks	Square-cut	Snap-fit

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" wide by 0.270" high center fin pile	3 Rows	Bottom rails, jamb stiles
0.187" wide by 0.350" high center fin pile	2 Rows	Exterior meeting stile (interior)
0.187" wide by 0.270" high center fin pile	1 Row	Lock stile, top rails, exterior meeting stile (exterior)
0.187" wide by 0.270" high center fin pile	2 Rows	Frame perimeter
3/4" by 1-1/4" by 0.350" high adhesive-backed pile pad	2	Top and bottom of lock stile at the interlock notch
3/4" by 5/8" by 0.350" high adhesive-backed pile pad	2	Top and bottom of the exterior meeting stile.

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

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
1" IG	Rectangular shaped steel, single sealed	1/8" annealed	1/8" annealed	The glass was set from the exterior against a silicone sealant and secured with rigid vinyl glazing beads.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Interior and exterior sash	2	806 x 1353	31-3/4 x 53-1/4	5/8"

5.0 Test Specimen Description: (Continued)

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weepslot with cover	1-1/4" wide by 5/16" high	2	Exterior sill face, one 3-1/2" in from each end.
Weepslot with open cell foam baffle	1" wide by 3/16" high	2	Interior sill track, one at each end.
Weephole	1/4" diameter	2	Exterior sill track, one at each end.
Weepslot	1" wide by 1/4" high	4	Through two intermediate sill walls, two at each end.
Weepslot	2-1/2" wide by 3/16" high	4	Sill roller track legs, one at each end.

5.7 Hardware:

Description	Quantity	Location
Metal cam lock and keeper	2	Lock stile, one 9-1/2" from each end with corresponding metal keeper on the exterior meeting stile.
Dual metal rollers with plastic housing	4	Bottom rails, one at each end.
6" long interlocking aluminum impact adaptors	2 Sets	Head/top rail of each sash located approximately 6" from each side of mid-span.

5.8 Reinforcement:

Drawing Number	Location	Material
RF SE9346b AOM	Lock stile	Extruded aluminum
RF SE9344 AOM	Exterior meeting stile	Extruded aluminum
RF SE9345 AOM	Jamb stiles	Extruded aluminum
RF SD01 AOM	Top rails	Extruded aluminum

5.0 Test Specimen Description: (Continued)

5.9 Screen Construction:

Frame Material	Corner Construction	Mesh Type	Mesh Attachment Method
Roll-formed aluminum	Square-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 exterior perimeter of the window was sealed with a sealant. The sill was set onto a silicone sealant.

Location	Anchor Description	Anchor Location
Head, sill	#10 x 3-1/2" flat head screws	Five at each member, 6" from each end, midspan and approximately 6" each side of midspan.
Jambs	#10 x 3-1/2" flat head screws	Four at each jamb, one 6" and 21" in from each end.

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

Title of Test	Results	Allowed	Note
Operating Force, per ASTM E 2068	Initiate motion: 133 N (30 lbf) Maintain motion: 89 N (20 lbf) Locks: 36 N (8 lbf)	Report Only 115 N (25 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/m² (0.16 cfm/ft²)	1.5 L/s/m² (0.3 cfm/ft²) max.	1
Air Leakage, Exfiltration per ASTM E 283 at 75 Pa (1.57 psf)	0.9 L/s/m² (0.17 cfm/ft²)	1.5 L/s/m² (0.3 cfm/ft²) max.	1
Canadian Air Infiltration/Exfiltration Level	A2	N/A	
Water Penetration, per ASTM E 547	N/A Pass	N/A No leakage	3 2
Uniform Load Deflection, per ASTM E 330	N/A 0.0 mm (0.00") 0.0 mm (0.00")	N/A Report Only OR 0.0 mm (0.00") max. 0.0 mm (0.00") max.	3 X, X, X
Uniform Load Structural, per ASTM E 330	N/A 0.0 mm (0.00") 0.0 mm (0.00")	N/A 0.0 mm (0.00") max. 0.0 mm (0.00") max.	3 X, X
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)	Pass	Meets as stated	
Remaining direction, 230 N (52 lbf)	Pass	Meets as stated	

7.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
Optional Performance			
Water Penetration, per ASTM E 547 at 580 Pa (12.12 psf)	Pass	No leakage	2
Uniform Load Deflection, per ASTM E 330 Deflections taken at the exterior meeting stile +3120 Pa (+65.16 psf) -3120 Pa (-65.16 psf)	 15.5 mm (0.61") 15.0 mm (0.59")	 Report Only	 4, 5, 6
Uniform Load Structural, per ASTM E 330 Permanent sets taken at the exterior meeting stile +4680 Pa (+97.74 psf) -4680 Pa (-97.74 psf)	 1.8 mm (0.07") 2.0 mm (0.08")	 5.8 mm (0.23") max. 5.8 mm (0.23") 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.

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.

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: Alteration Addendum (1)
Appendix-B: Location of Air Seal (1)
Appendix- C: Drawing(s) (2) Complete drawings packet on file with Intertek-ATI.

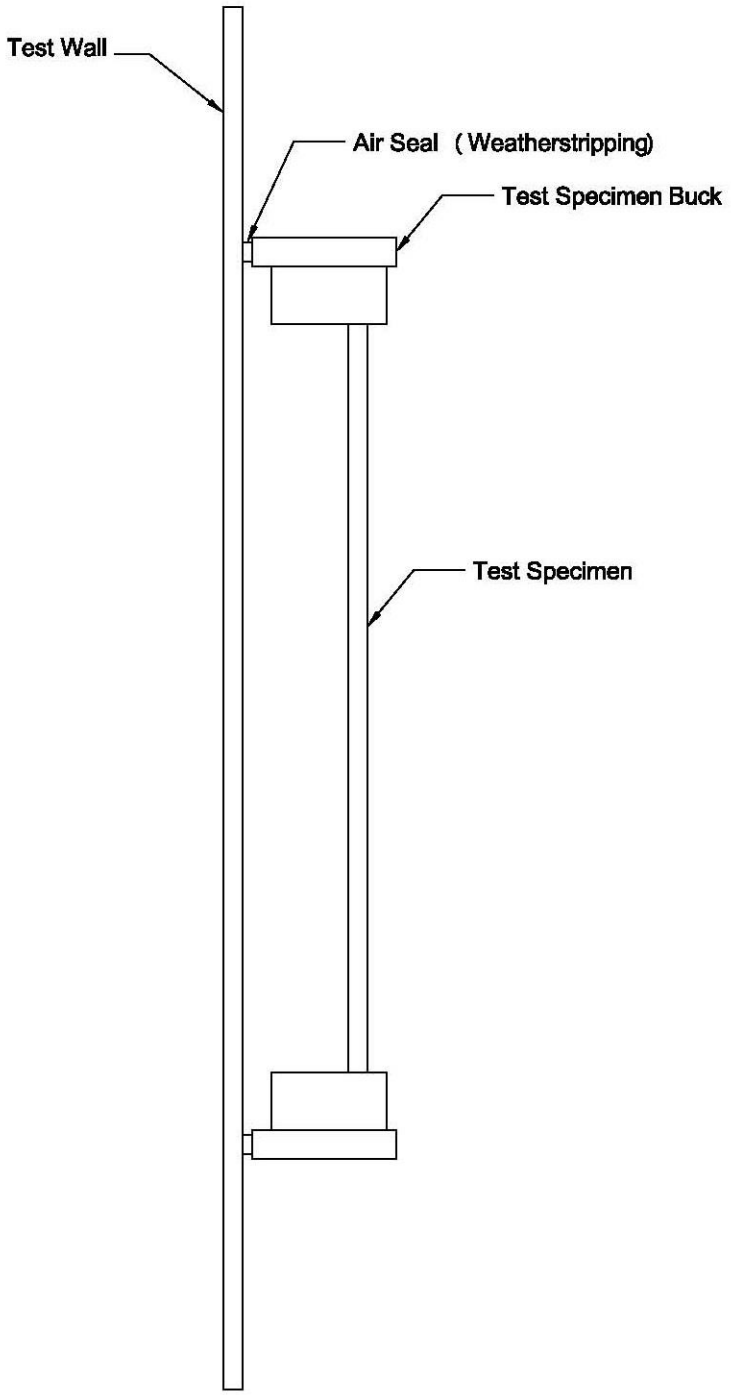
Appendix A

Alteration Addendum

***Note**: No alterations were required.*

Appendix B

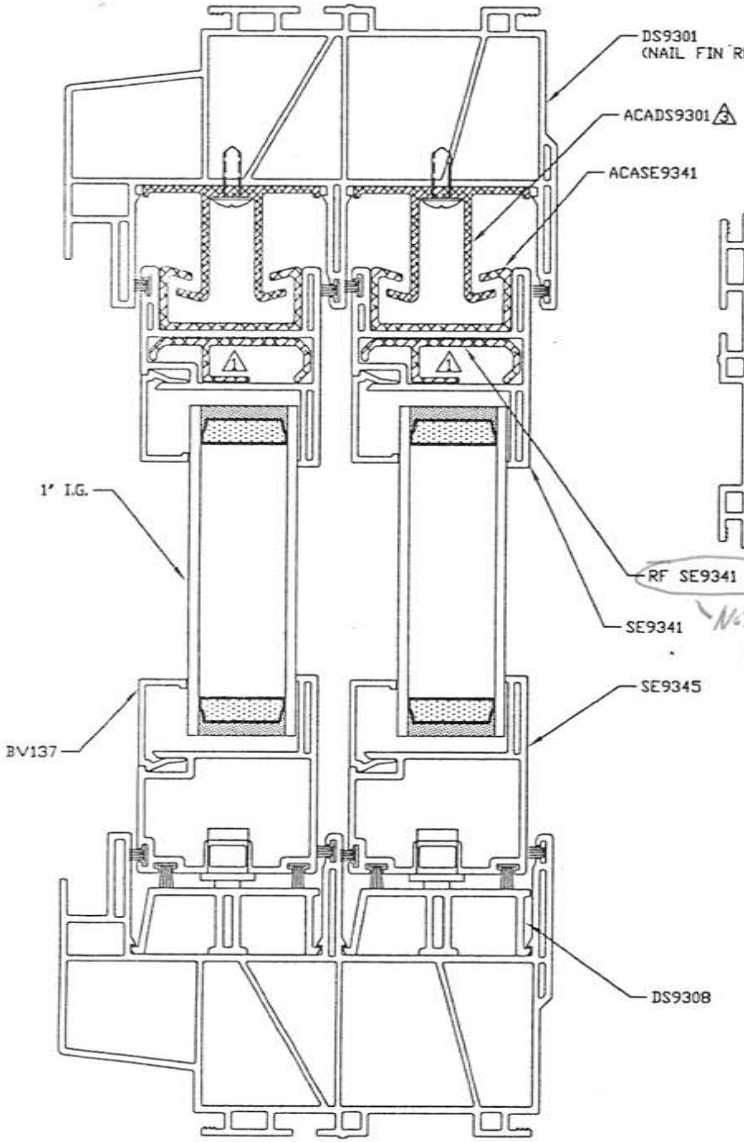
Location of Air Seal: The air seal between the test specimen and the test wall is detailed below. The seal is made of foam weatherstripping and is attached to the edge of the test specimen buck. The test specimen buck is placed against the test wall and clamped in place, compressing the weatherstripping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



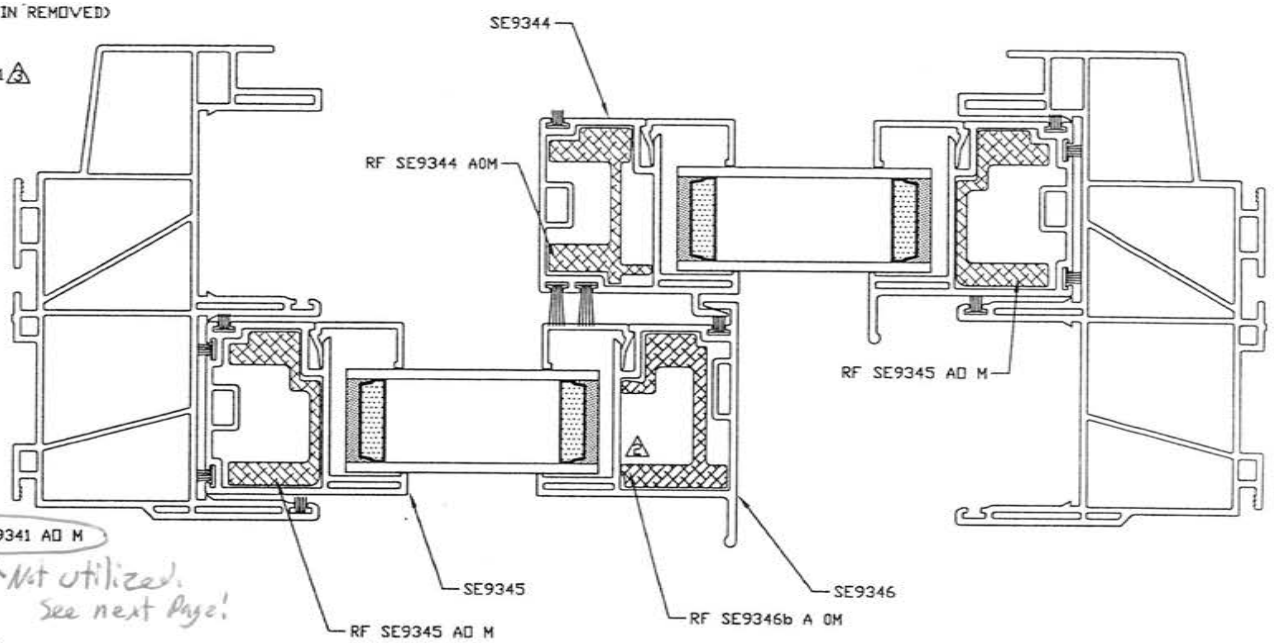
Appendix C

Drawing(s)

***Note**: Complete drawings packet on file with Intertek-ATI.*



VERTICAL ASSEMBLY



HORIZONTAL ASSEMBLY

Architectural Testing

Test sample complies with these details.
Deviations are noted.

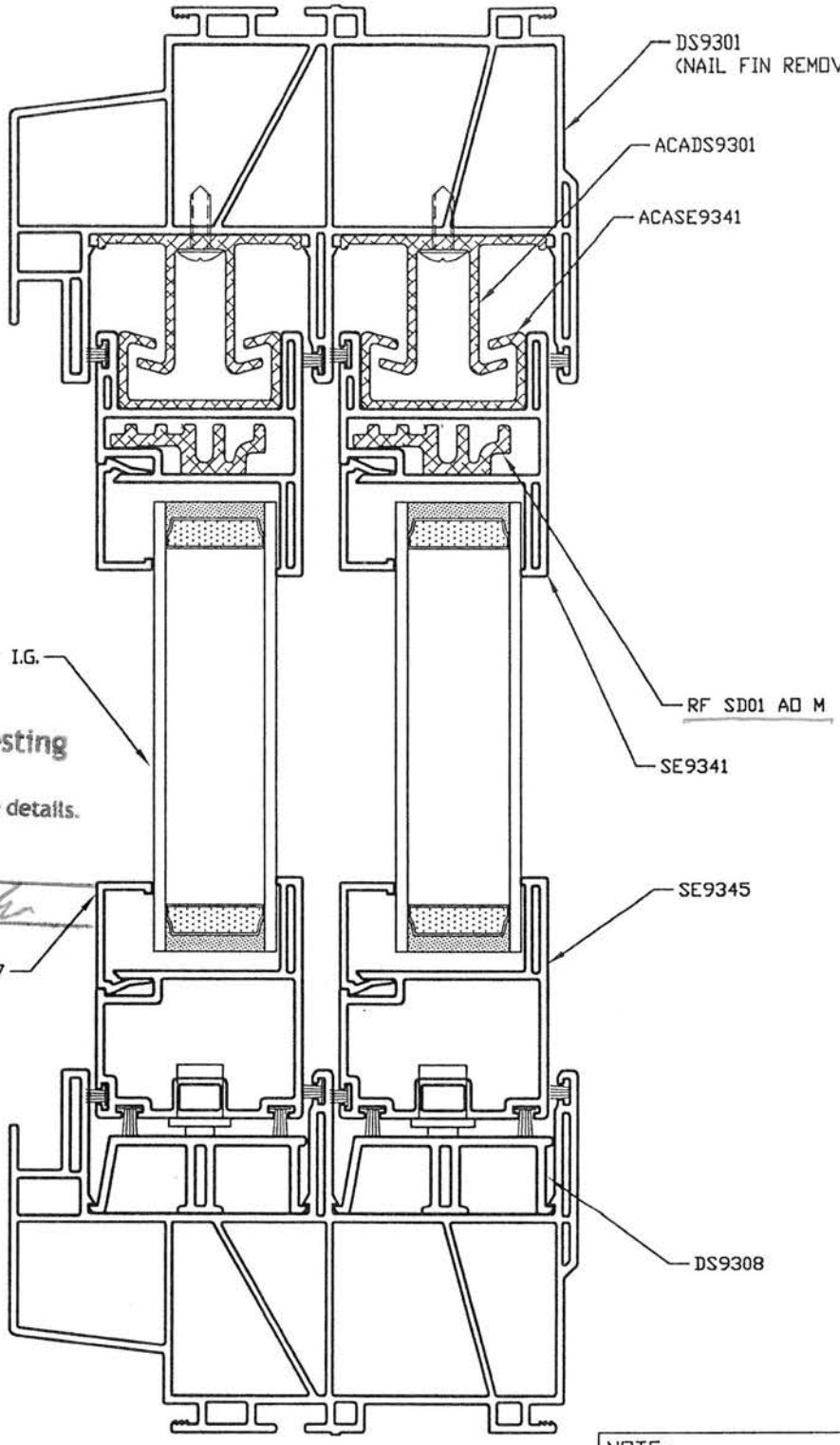
Report# FS292

Date 2/11/16 Tech

3	SHOWED REVISED ACADS9301	20 OCT 2011
2	RF SE9346b AO M REPLACES RF SE9346 AO M	19 OCT 2011
1	RF SE9341 AO M REPLACES RF SD01 AO M	19 OCT 2011
	REVISIONS	DATE

VEKA INC.
100 VEKA DRIVE
FOMBELL, PA 16123

DRAWN: TJF	DATE: 21 SEPT 2011	SCALE:
CHK'D:	DATE:	APPV'D:
TITLE: DOUBLE SLIDER DS93WW (IMPACT)		DWG. # DS93 SM-DP



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# F5293

Date 2/11/16 Tech

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

VEKA INC.
100 VEKA DRIVE
FOMBELL, PA 16123

DRAWN: TJF	DATE: 21 SEPT 2011	SCALE:
CHK'D:	DATE:	APPV'D:
TITLE DOUBLE SLIDER DS93WW VERTICAL ASSEMBLY (IMPACT)		DWG. DS93 SM-DP-a

	REVISIONS	DATE