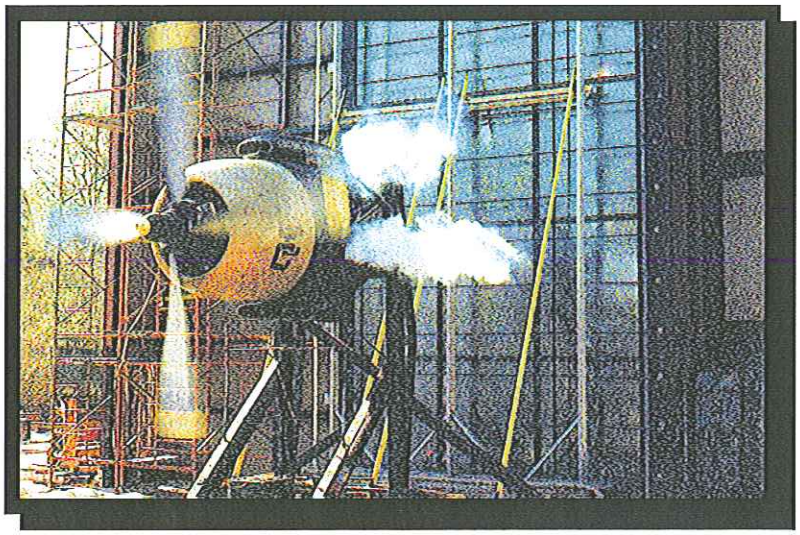
CONSTRUCTION CONSULTING LABORATORY, *INTERNATIONAL*



TEST REPORT:

AAMA/WDMA/CSA 101/I.S.2/A440-08
UNITED STATES ALUMINUM INC.,
DIVISION OF CR LAURENCE CO., INC.
SERIES 8200 ALUMINUM HORIZONTAL SLIDING WINDOW
REPORT CCLI #12-187

November 5, 2012

Prepared for:

United States Aluminum Inc.,
Division of CR Laurence Co., Inc.
200 Singleton Drive
Waxahachie, TX 75165

1601 Luna Road
Carrollton, Texas 75006

S-UNITED, INC.
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AAMA/WDMA/CSA 101/I.S.2/A440-08
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APPENDIX:

APPENDIX A: US ALUMINUM SERIES 8200 ALUMINUM HORIZONTAL SLIDING WINDOW DRAWINGS

Refer to drawings in **Appendix A**. This report is not complete unless these drawings are stamped and initialed by **CCLI** as illustrated below.

Drawing	Part #	Date	Stamped as Illustrated
SERIES 8200 ALUMINUM HORIZONTAL SLIDER		8/18/10	
HEAD	HS801	5/19/10	
SILL	HS803	5/26/10	
SILL INSERT	HS804	5/26/10	
JAMB	HS805	5/18/10	
SASH MEETING RAIL	HS854	7/22/10	
SASH TOP RAIL	HS811	4/18/10	
SASH BOTTOM RAIL	HS813	4/18/10	
SASH STILE	HS815	4/17/10	
FIXED MEETING RAIL	SH866	2/15/10	
GLAZING BEAD	SH865	2/12/10	

CONSTRUCTION CONSULTING LABORATORY, INTERNATIONAL
1601 Luna Road
Carrollton, Texas 75006
Phone (972) 242-8556
Report# 12-187, Date 11-6-12
Reviewed BY

AAMA/WDMA/CSA 101/I.S.2/A440-08
UNITED STATES ALUMINUM INC.,
DIVISION OF CR LAURENCE CO., INC.
SERIES 8200 HORIZONTAL SLIDING WINDOW
REPORT CCLI #12-187

1. PROJECT DATA

Project: Series 8200 Aluminum Horizontal Sliding Window

Date of Testing: October 24, 2012

Tested For: United States Aluminum Inc.,
Division of CR Laurence Co., Inc.
200 Singleton Drive
Waxahachie, TX 75165

Witnessed By: (All or Partial Viewing)

Terry Hopgood — United States Aluminum
Don Willard — United States Aluminum
Jeffrey Crump — Construction Consulting Laboratory, *International*

2. SUMMARY

Series	Product Type	Test Size	Positive DP	Negative DP
8200	Aluminum Horizontal Sliding Window	5'-11" x 5'-0"	4800 Pa (100 psf)	4800 Pa (100 psf)

3. TEST SPECIMEN

PRODUCT TYPE: Aluminum Horizontal Sliding Window, **Product Drawings, Appendix A**

SERIES/MODEL: Series 8220 Aluminum Horizontal Sliding Window

SPECIFICATION: AAMA/WDMA/CSA 101/I.S.2/A440-08
CW-PG100-HS 1194 x 2134 (71 x 60)

FRAME SIZE: 1803 x 1524 (5'-11"x 5'-0")

SASH SIZE: 922 x 1411 (3'-$^{5}/_{16}$" x 4'-$7^{9}/_{16}$")

SASH DAY LIGHT OPENING: 800 x 1283 (2'-$7^{1}/_{4}$" x 4'-$2^{1}/_{2}$")

FIXED DAY LIGHT OPENING: 784 x 1283 (2'-$6^{7}/_{8}$" x 4'-2½")

CONFIGURATION: X/O

WEATHER-STRIP: One row of pile weather-strip tri-fin, 6.86mm x 6.35 (0.270" x 0.250") thickness, located at the interior face of head, sill, and jamb PVC isolators. Tri-fin also located at the interior face of fixed interlock and the exterior face of sash interlock.

GLASS: Sealed insulating glass. 2 pcs. 6.35mm (¼") tempered glass, 12.7mm (½") air space with a 25.4mm (1") overall thickness. Air spacer consists of u-shaped steel.

GLAZING: Sash and fixed lites are exterior glazed with interior glazing gasket (part #NP881) and exterior glazing gasket (part #NP825) with glazing bead (part #SH865) located at the exterior face of glass. Interior glazing gaskets are sealed at each end. Glass sealed at interior glazing gaskets with 50.8mm x 50.8mm (2" x 2"), 9.525mm (3/8") thick line of silicone.

WEEPS: Four (4), 50.8mm x 9.525mm (2" x 3/8") weep slots located under sash steel track, two (2), 50.8mm x 6.35mm (2" x 1/4") weep slots located under sash at sill track, two (2), 8mm x 9.525mm (2" x 3/8") weep slots located under fixed lite sill insert and three (3), 44.45mm x 5.94mm (1 3/4" x .234") weep slots with baffles located at the exterior face of sill insert.

SEALANT: Sealant at all frame corners and vent corners. Attachment screws sealed. Each end of fixed interlock sealed to jambs. Horizontal interior glazing gaskets sealed 152.4mm (6") from each end.

HARDWARE: Lock assembly located at center of sash interlock, attached by three (3) #6 x 12.7mm (½") PH pan HD SMS screws with keeper located at center of fixed interlock, attached by two (2) #6 x 12.7mm (½") PH pan HD SMS screws. Sash release lever located at center of sash vent stile. Adjustable tandem roller assembly located at each end of sash bottom rail.

OTHER FEATURES: Frame members are thermally broken with polyurethane. PVC isolators located at frame head, sill, jamb, and sash bottom rail. Frame head is coped, butted and attached with two (2), #8 x 25.8mm (1") PH pan HD SMS type AB SS. Frame sill is coped, butted, and attached with three (3), #8 x 25.8mm (1") PH pan HD SMS type AB SS. Sill insert is snapped on to frame sill and attached at each end with, two (2), #8 x 25.8mm (1") PH hex washer HD SMS type AB SS. Sill insert attached to interior leg of frame sill with #6 x 12.7mm (½") PHIL flat HD SMS screws. Sash corners coped, butted, and attached with one (1), #8 x 25.8mm (1") PH pan HD SMS type AB SS per connection. Fixed interlock attached to frame horizontals with two (2) #8 x 25.8mm (1") PH pan HD SMS type AB SS per connection.

INSTALLATION FEATURES: Frame members were attached to SPF, nominal 50.8mm x 203.2mm (2" x 8") test buck with #8 x 50.8 (2") dry wall screws, 114mm (4½") from each end and 406mm (16") on center.

4. PERFORMANCE RESULTS

No.	Title of Test	Test Method	Measured	Allowed
5.3.1.1	Operating Force			
	Initiate		53.4N (12.0 lbs)	Report Only
	Maintain		35.5N (8.0 lbs)	111N (25 lbs)
5.3.1.1.3	Latching Devices		4.4N (1.0 lbs)	100N (22.5 lbs)
5.3.2	Air Infiltration	ASTM E 283-04		
	@ 75 Pa (1.60 psf)		1.335 L/s•m^2 (.267 cfm/ft^2)	1.5 L/s•m^2 (0.30 cfm/ft^2)
5.3.3	Water Resistance	ASTM E 547-00		
	@ 580 Pa (12 psf) with screen		No Leakage	No Leakage
	@ 580 Pa (12 psf) without screen		No Leakage	No Leakage
5.3.4.2	Deflections @ Interlock 4800 Pa (100.00 psf)			
	Positive		5.21mm (.205")	1.525mm (.305")
	Negative		5.21mm (.205")	1.525mm (.305")
5.3.4.3	Uniform Load Structural	ASTM E 330-02		
	@ 7200 Pa (150.00 psf) Positive		No Damage	No Damage
	@ 7200 Pa (150.00 psf) Negative		No Damage	No Damage
	-Permanent Set		1.52mm (.06")	4.06mm (0.160")
5.3.5	Forced Entry Resistance Grade 20	ASTM F 588-07	No Entry	No Entry
5.3.5	Forced Entry Resistance	CAWM-301-96	No Entry	No Entry

No.	Title of Test	Test Method	Measured	Allowed
5.3.6.3	Deglazing Test			
	Top Rail @ 311N (70 lbs)		1%	100%
	Bottom Rail @ 311N (70 lbs)		1%	100%
	Left Stile @ 222 N (50 lbs)		0%	100%
	Right Stile @ 222 N (50 lbs)		0%	100%

Detailed extrusion and assembly drawings indicating measured wall thickness and corner construction are on file and were compared to the test sample submitted. These records will be retained at **CCLI** for a period of four years.

5. DISCLAIMER

The above results were obtained by using the designated test methods indicating compliance with the above specification. This report does not constitute certification of this product, which may only be granted by the program administrator.

CONSTRUCTION CONSULTING LABORATORY, *INTERNATIONAL*

JEFFREY CRUMP
TESTING MANAGER

WESLEY WILSON
LABORATORY MANAGER