

CONSTRUCTION CONSULTING LABORATORY, *INTERNATIONAL*



TEST REPORT:

**AAMA/WDMA/CSA 101/I.S.2/A440-08
Series 430 Sliding Glass Door
Report #CCLI-12-118**

July 24, 2012

Prepared for:

MI WINDOWS AND DOORS, LLC.
1001 West Crosby Road
Carrollton, TX 75006



TABLE OF CONTENTS

- 1. PROJECT DATA.....1
- 2. SCOPE.....1
- 3. TEST SPECIMEN.....1
- 4. PERFORMANCE RESULTS.....3
- 5. CONCLUSION.....4

APPENDIXES

APPENDIX A: SERIES 430 SLIDING GLASS DOOR PRODUCT DRAWINGS.

Note: This product also labeled under name BB430/BB43P/BB440/BB44P

Refer to Mock-Up drawings in **Appendix A**, this report is not complete unless this drawing is stamped and initialed by **CCLI** as illustrated below.

Die	Detail	Date	Stamped as Illustrated	
	Bill of materials	8/15/08	CONSTRUCTION CONSULTING LABORATORY INTERNATIONAL 1601 Luna Road Carrollton, Texas 75006 Phone (972) 242-0556 Report# <u>12-118</u> , Date <u>7-24-12</u> Reviewed BY <u>GW</u>	
430Assy	Lay-out/Section	8/13/08		
4211	Frame Head	2/17/98		
4213	Frame Jamb	2/21/98		
4212	Frame Sill	2/17/98		
4202	Panel Top Rail	2/17/98		
4204	Panel Interlock Stile	2/17/98		
4206	Panel Lock Stile	2/18/98		
4200	Panel Bottom Rail	2/10/98		
4215	Screen Adaptor	3/9/98		
668	Internal Interlock Reinforcement	3/19/04		
4237	External Interlock Reinforcement	5/22/06		
4222	Panel Sill Retainer	3/17/98		
9917195	Panel Roller	4/15/98		
9915065	Panel Guide Lock Stile	5/15/98		
9915060	Panel Guide Interlock	5/15/98		
80024202	Glazing Gasket	4/6/98		
4224	Sill Extender	12/13/04		



1. PROJECT DATA

Project: AAMA/WDMA/CSA 101/I.S.2/A440-08
MI Windows and Doors, LLC.
Series 430/440 Sliding Glass Door

Date(s) of Testing: April 9, 2012

Tested For: MI Windows and Doors, LLC.

Witnessed By: (All or Partial Viewing)

Taylor Rix MI Windows and Doors, LLC.
Zack Cunningham Construction Consulting Laboratory, *International*

2. SCOPE

Construction Consulting Laboratory, *International* (CCLI) was requested to witness and report the testing results of MI Windows and Doors, LLC. Series 430 Sliding Glass Door. Tests were performed in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-08

3. TEST SPECIMEN

Product Type: Aluminum Sliding Glass Door, **Product Drawings, Appendix A**

Series Model: Series 430 Sliding Glass Door (SGD)

Specifications: AAMA/WDMA/CSA 101/I.S.2/A440-08

Specimen #1: **With Internal Reinforcement**
SGD-R35 3625.8mm x 2438.4mm (143 x 96)

Specimen #1a: **With Internal and External Reinforcement**
SGD-R40 3625.8mm x 2438.4mm (143 x 96)

Frame Size: 3625.8mm x 2438.4mm (11'-10³/₄" x 8'-0")

Panel Size: 1231.9mm x 2413mm (4'-¹/₂" x 7'-11")

Operable DLO: 1136.6mm x 2301.8mm (3'-8³/₄" x 7'-6⁵/₈")

Configuration: X.X.X

Specimen #2: **Without Reinforcements**
SGD-R40 3625.8mm x 2032mm (143 x 80)

Frame Size: 3625.8mm x 2032mm (11'-10³/₄" x 6'-8")

Panel Size: 1231.9mm x 2006.6mm (4'-¹/₂" x 6'-7")

Operable DLO: 1136.6mm x 1889.12mm (3'-8³/₄" x 6'-2³/₈")

Configuration: X.X.X



Weather Strip: Two (2) rows pile weather strip 6.35mm (.250" thick) with integral plastic fin at the interior and exterior face of panel top rail center pocket. Two (2) rows pile weather strip 10.9mm (.430" thick) with side plastic fin at the interior and exterior face of panel bottom rail center pocket. One (1) row pile weather strip 6.8mm (.270" thick) with integral felt fin located at interior and exterior face of panel jamb stiles. One (1) row pile weather strip 4.57mm (.180" thick) at the interior and exterior face of panel interlock stile. Pile pad located at underside of fixed interlock. Weather strip adhesive backed dust plug 25.4 x 12.7mm (1" x ½") at each end of panel interlock at frame head and sill.

Hardware: Flat mounted handle set part # 99-04-145 located 958.8mm (37¾") on center from panel bottom with keeper attached through frame jamb into test buck with two (2) to 8 x 50.8mm (2") wood screws. Metallic tandem rollers part # 99-17-195 at each end of panel bottom rails.

Glass: 4.76 mm (¾") tempered.

Glazing: Marine Glazed.

Weep Arrangement: Panel roller tracks notched 12.7mm (½") x leg height at each end. Screen roller track notched 22.8mm (.900") x 6.35mm (.25") at each end with 12.7mm (½") x leg height removed at each end creating a step effect.

Narrow Joint Sealant: Interior leg to frame jamb sealed. Exterior lateral face of frame jamb to frame sill.

Reinforcement: Specimen 1, R35 143" x 96" internal reinforcement. Specimen 1a, DP40 143" x 96" internal and external reinforcement. Specimen 2, DP40 143" x 80" no reinforcement. Part # 668 aluminum 6063-T6 square tube 3.04mm (.120") inserted into panel interlocks. Part # 4237 aluminum 6063 T5 interlock adaptor part at the interior face of operable panel interlock attached with eight (8), #8 x 12.7mm (½") screws evenly spaced.

Installation: Frame was attached to a #2, 50.8mm x 254mm (2" x 10") yellow pine test buck with silicone and #10 x 44.5mm (1¾") screws, two (2) rows spaced 139.7mm (5½") from each end and on approximate 432mm (17") centers at head and jambs. Sill was attached to test buck with #10 x 32mm (1¼") flat head screws spaced 140mm (5½") from each end and on 572mm (22½") centers and capped with silicone. The 2 x 10 test buck was installed within a nominal 2 x 12 test fixture for installation onto test wall.

Other Features: Frame members are attached by three (3) #8 x 15.8mm (5/8") screws per. Panel jamb stile-to-rail members are attached with two (2) #6 x 19.05mm (¾") square drive screws per connection. Panel interlocks attached to bottom rail with one (1) #6 x 19.05mm (¾") screws and one (1) ¼-20 x 19.05mm (¾") machine screw through interlock into roller housing.

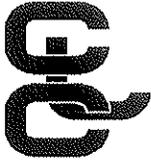


Roller housing also attached to panel bottom rail with one (1) # 10 x 12.7mm (½") screw through bottom rail glazing pocket. One (1) aluminum sill retainer clip per panel, part # 4222, located at fixed and moving panel bottom rail attached with (2) #6 x 9.5mm (3/8") screws. The sill utilized an aluminum sill extender, Die #4224, attached with continuous bead of caulk full length.

4. PERFORMANCE RESULTS

Note: Operating, Air infiltration, Water resistance, Deglazing, and Forced Entry Resistance was performed on an 8'0" door with No Reinforcements (Internal or External)

<u>Paragraph No.</u>	<u>Title of Test</u>	<u>Test Method</u>	<u>Measured</u>	<u>Allowed</u>
5.3.1.1.1	Operating Force Breakaway Operating		35.6N (8 lbs) 26.7N (6 lbs)	88.96N (30 lbs) 88.96N (20 lbs)
5.3.1.1.3	Latching Devices	A440-08	8.9N (2 lbs)	100N (22.5lbs)
5.3.2.1	Air Infiltration @ 75.17 Pa (1.57 psf)	ASTM E 283-04	.3 L/s•m ² (.06 cfm/sf)	1.5 L/s•m ² (0.30 cfm/sf)
Note: Air infiltration values meet the minimum requirements of the specification. Values were listed by request of the manufacturer.				
5.3.3.2	Water Resistance @288Pa (6.0 psf) with screen @288Pa (6.0 psf) w/out screen	ASTM E 547 & 331-02	No Leakage No Leakage	No Leakage No Leakage
5.3.4.2	Uniform Load Specimen 1 Deflection Interlock -1680Pa (35 psf) Positive -1680 Pa (35 psf) Negative	ASTM E 330-02		21.2mm (.835") Reported 66mm (2.6") Reported
5.3.4.3	Uniform Load Structural Specimen 1 -Positive @ 2520Pa (52.5 psf) -Negative @ 2520Pa (52.5 psf) -Permanent Set	ASTM E 330-02	No Damage No Damage 2.8mm (.11")	No Damage No Damage 9.6mm (0.384")
5.3.4.2	Uniform Load Specimen 1a Deflection -Positive @ 1920Pa (40.0 psf) -Negative @ 1920Pa (40.0 psf)	ASTM E 330-02		9.1mm (.36") Reported 19.8mm (.78") Reported



5.3.4.3	Uniform Load			
	Structural	ASTM E 330-02		
Specimen 1a	-Positive @ 2880Pa (60.0 psf)		No Damage	No Damage
	-Negative @ 2880Pa (60.0 psf)		No Damage	No Damage
	-Permanent Set		2.3mm (.09")	9.6mm (0.384")
5.3.5	Forced Entry			
	Resistance	ASTM F 842-04		
	Grade Type A Door		No Entry	No Entry
5.3.6.3	Deglazing Test	ASTM E 987		
	-Top Rail @ 230 N (50 lbs)		5%	90%
	-Bottom Rail @ 230 N (50 lbs)		4%	90%
	-Int. Lock Stile @ 320 N (70 lbs)		10%	90%
	-Meeting Rail @ 320 N (70 lbs)		6%	90%
	-Ext. Lock Stile @ 320 N (70 lbs)		12%	90%
5.3.4.2	Uniform Load			
Specimen 2	Deflection	ASTM E 330-02		
	Interlock			
	-1920Pa (40 psf) Positive		20mm (.79")	Reported
	-1920 Pa (40 psf) Negative		31.8mm (1.25")	Reported
5.3.4.3	Uniform Load			
Specimen 2	Structural	ASTM E 330-02		
	-Positive @ 2880Pa (60.0 psf)		No Damage	No Damage
	-Negative @ 2880Pa (60.0 psf)		No Damage	No Damage
	-Permanent Set		4.6mm (.18")	8.1mm (0.320")

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

5. CONCLUSION

The above results were achieved by using the designated test methods and indicate compliance with the above specification. This report does not constitute certification of this product.

Respectfully submitted,

CONSTRUCTION CONSULTING LABORATORY, INTERNATIONAL



 WESLEY WILSON
 LABORATORY MANAGER



 JEFFREY CRUMP
 TESTING MANAGER



APPENDIX A

PRODUCT DRAWINGS

Die	Detail	Date
430Assy	Bill of materials	8/15/08
4211	Lay-out/Section	8/13/08
4213	Frame Head	2/17/98
4212	Frame Jamb	2/21/98
4202	Frame Sill	2/17/98
4204	Panel Top Rail	2/17/98
4206	Panel Interlock Stile	2/17/98
4200	Panel Lock Stile	2/18/98
4215	Panel Bottom Rail	2/10/98
668	Screen Adaptor	3/9/98
4237	Internal Interlock Reinforcement	3/19/04
4222	External Interlock Reinforcement	5/22/06
9917195	Panel Sill Retainer	3/17/98
9915065	Panel Roller	4/15/98
9915060	Panel Guide Lock Stile	5/15/98
80024202	Panel Guide Interlock	5/15/98
4224	Glazing Gasket	4/6/98
	Sill Extender	12/13/04

- END OF REPORT -