

TEST REPORT

Report No.: E2129.01-301-47

Rendered to:

CR LAURENCE CO., INC.
Los Angeles, California

PRODUCT TYPE: XO Aluminum Sliding Glass Door
SERIES/MODEL: 3000

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

Title	Summary of Results
AAMA/WDMA/CSA 101/IS.2/A440-08 and -11	Class LC – PG25: Size Tested 2438 x 2438 mm (96 x 96 in.) – Type SD
Design Pressure	±1200 Pa (±25.06 psf)
Air Infiltration	0.8 L/s/m ² (0.16 cfm/ft ²)
Water Penetration Resistance Test Pressure	180 Pa (3.76 psf)

Test Completion Date: 10/20/14

Reference must be made to Report No. E2129.01-301-47, dated 10/27/14 for complete test specimen description and detailed test results.

1.0 Report Issued To: CR Laurence Co., Inc.
2100 East 38th Street
Los Angeles, California 90058

2.0 Test Laboratory: Architectural Testing, Inc.
4 Rancho Circle
Lake Forest, California 92630
949-460-9600

3.0 Project Summary:

3.1 Product Type: XO Aluminum Sliding Glass Door

3.2 Series/Model: 3000

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test method. The specimen tested successfully met the performance requirements for a **Class LC – PG25: Size Tested 2438 x 2438 mm (96 x 96 in.) – Type SD** rating.

3.4 Test Dates: 10/17/14 - 10/20/14

3.5 Test Record Retention End Date: All test records for this report will be retained until October 20, 2018.

3.6 Test Location: CR Laurence Co., Inc. test facility in Los Angeles, California. 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 Specimen Source: The test specimen was provided by the client. Representative samples of the test specimen 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 reported herein. Test specimen construction was verified by Architectural Testing per the drawings located in Appendix C. Any deviations are documented herein or on the drawings.

3.9 List of Official Observers:

<u>Name</u>	<u>Company</u>
Marco Ramirez	CR Laurence Co., Inc.
Jarod S. Hardman	Architectural Testing, Inc.

4.0 Test Specification:

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

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 5.95 m ² (64.0 ft ²)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	2438	96	2438	96
Active panel	1252	49-5/16	2374	93-1/2
Screen	1280	50-3/8	2372	93-3/8

5.2 Frame Construction:

Frame Member	Material	Description
Head	Thermally broken aluminum	Union of Part # D1017 and Part #DE017 with thermal break of Drawing #3000-156 and Drawing #949200 (thermal breaks thermally welded to one another to form one piece).
Sill	Thermally broken aluminum	Union of Part # D1018 and Part #DE018 with thermal break of Drawing #3000-156 and Drawing #949200 (thermal breaks thermally welded to one another to form one piece).
Jambs	Thermally broken aluminum	Union of Part # D1016 and Part #DE016 with thermal break of Drawing #3000-156 and Drawing #949200 (thermal breaks thermally welded to one another to form one piece).
Sill	Aluminum	Threshold cap, Part #DU007, snap fit into exterior channel of sill beneath active panel.
Sill	Steel	Roller track, snap fit, full span, into sill Part #D1018.
Sill	PVC	Sill track riser, snap fit beneath fixed panel, Drawing #3000-154.

	Joinery Type	Detail
All corners	Coped	Secured through jamb into head and sill screw bosses with two #8 x 1" Phillips truss head screws at each corner.

5.0 Test Specimen Description: (Continued)

5.3 Panel Construction:

Panel Member	Material	Description
Top rail	Thermally broken aluminum	Part # DT002, union of Part # D1002 and Part #DE002 with two thermal breaks Drawing #279300.
Bottom rail	Thermally broken aluminum	Part # DT023, union of Part # D1023 and Part #DE023 with two thermal breaks Drawing #279300.
Fixed meeting rail	Thermally broken aluminum	Part # DT021, union of Part # D1021 and Part #DE021 with one thermal break Drawing #279300. Drawing #3000-159 snap fit into Part #DT021.
Fixed jamb stile	Thermally broken aluminum	Part # DT022, union of Part # D1022 and Part #DE022 with two thermal breaks Drawing #279300.
Active meeting rail	Thermally broken aluminum	Part # DT026, union of Part # D1026 and Part #DE026 with one thermal break Drawing #279300. Drawing #3000-160 snap fit into Part #DT026.
Active jamb stile	Thermally broken aluminum	Part # DT009, union of Part # D1009 and Part #DE009 with two thermal breaks Drawing #279300.

	Joinery Type	Detail
All corners	Butt	Secured through stiles into rail screw bosses with one #8 x 3" Phillips truss head screw at each corner.

5.0 Test Specimen Description: (Continued)

5.4 Weatherstripping:

Description	Quantity	Location
0.270 x 0.170 plain pile	2 rows	Inserted into Drawing #3000-160, entire length of active panel meeting rail.
0.270 x 0.250 tri-fin pile	1 row	Inserted into interior of thermal break, Drawing #3000-156, at head, sill, and jambs of frame.
0.270 x 0.250 tri-fin pile	1 row	Inserted into Drawing #3000-159, entire length of fixed panel meeting rail.
0.270 x 0.250	1 row	Inserted into interior leg of frame at fixed lite jamb, Drawing #D1016.
Super bug PVC	1 row	Drawing #3000-158, inserted into Drawing #3000-159, entire length of fixed panel meeting rail.
Super bug PVC	1 row	Drawing #3000-157, inserted into Drawing #SR301, entire length non-jamb stile.
Polypropylene guide	1 row	Drawing #USA-3180, inserted into interior leg of frame at head, sill, and active panel jamb, Drawing #D1016.
Two finger vinyl	1 row	Drawing #OP-SP-011, inserted into exterior of thermal break, Drawing #3000-156, at head, sill, and jambs of frame.
Rubber vent stop	1 each corner	Drawing #3000-152, inserted into meeting stiles to plug hardware access holes.

5.0 Test Specimen Description: (Continued)

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	Aluminum Spacer – Dual Seal (A1-D)	1/4" tempered	1/4" tempered	Channel glazed with 1" glazing gasket Drawing # 3000-162.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Active panel	1	1098 x 2235	43-1/4 x 88	5/8"
Fixed panel	1	1096 x 2236	43-3/16 x 88	5/8"

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weep hole	1-3/4" x 1/4"	8	Two located 1-1/2" and 3-1/4" from each corner and four located mid-span of sill 2" on center spacing from mid-point. Weep cover, Drawing #USA-2960, with flap, Drawing #USA-2961, inserted into each weep hole.

5.7 Hardware:

Description	Quantity	Location
Fixed panel clip	2	Inserted into top and bottom of fixed panel interlock stile and secured to head and sill with #12 x 3/4" Phillips hex head SMS.
Roller assembly	2	Drawing #1939-P795-SS, secured at ends of bottom rail of active panel through stiles with two #14 x 2" Phillips truss head screws.
Door stop	1	Drawing #DS160, secured at fixed jamb head through frame with two 12 x 2-1/2" Phillips flat head screws and capped with rubber stop, Drawing #3000-151, on inboard side.

5.0 Test Specimen Description: (Continued)

5.7 Hardware: (Continued)

Description	Quantity	Location
Handle hardware set	1	Part #BOH1011, centered 42" from sill and secured through lock stile with two #10-32 x 2.25" Phillips oval head screws.
Mortise lock	1	Part #BOH1016, centered 42" from sill and secured inside of jamb stile with two #10 x 1/2" Phillips flat head screws.
Deep backset strike	1	Drawing # 0132, secured to active panel jamb with four #12 x 4" Phillips flat head screws through predrilled holes, centered directly opposite lock hardware.

5.8 Reinforcement: No reinforcement was utilized.

5.9 Screen Construction:

Frame Material	Corner Construction	Mesh Type	Mesh Attachment Method
Aluminum	Mitered corner with corner key secured with four #6 x 9/16" Torx truss head screws, two per side	Heavy-Duty Fiberglass	3/16" solid foam spline

6.0 Installation:

The specimen was installed into a Pine wood buck. The rough opening allowed for a 1/4" shim space. The exterior and interior perimeters of the door were sealed with structural silicone sealant.

Location	Anchor Description	Anchor Location
Through frame full perimeter	#10 x 2" Phillips flat head screws	Two fasteners at each point, 3" from corners and 15" on center spacing.

7.0 Test Results: The temperature during testing was 26°C (78°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Operating Force, per ASTM E 2068	Initiate motion: 89 N (20.0 lbf) Maintain motion: 40 N (9.0 lbf) Locks: 22 N (5.0 lbf)	135N (30.4 lbf) max. 90 N (20.2 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/m ² (0.16 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Water Penetration, per ASTM E 547 at 140 Pa (2.92 psf)	N/A	N/A	3
Uniform Load Deflection, per ASTM E 330 Deflections taken at interlock +720 Pa (+15.04 psf) -720 Pa (-15.04 psf)	N/A	N/A	3
Uniform Load Structural, per ASTM E 330 Permanent sets taken at interlock +1080 Pa (+22.56 psf) -1080 Pa (-22.56 psf)	N/A	N/A	3
Forced Entry Resistance, per ASTM F 842, Type: A - Grade: 10	Pass	No entry	
Deglazing, per ASTM E 987 Operating direction, 320 N (70 lbf) Remaining direction, 230 N (50 lbf)	Pass Pass	Meets as stated Meets as stated	

7.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
Optional Performance			
Water Penetration, per ASTM E 547 at 180 Pa (3.76 psf)	Pass	No leakage	2
Uniform Load Deflection, per ASTM E 330 Deflections taken at interlock +1200 Pa (+25.06 psf) -1200 Pa (-25.06 psf)	15.0 mm (0.59") 15.5 mm (0.61")	Report Only	4,5,6
Uniform Load Structural, per ASTM E 330 Permanent sets taken at interlock +1800 Pa (+37.59 psf) -1800 Pa (-37.59 psf)	0.5 mm (0.02") 0.3 mm (0.01")	9.1 mm (0.36") max. 9.1 mm (0.36") 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.

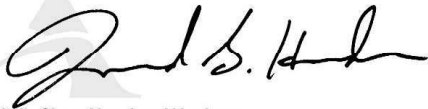
Note 5: Loads were held for 10 seconds.

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 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.



Digitally Signed by: Jarod Hardman

Jarod S. Hardman
Laboratory Manager



Digitally Signed by: Leaton Kirk

Leaton Kirk
Director – Regional Operations

JSH:ss

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)

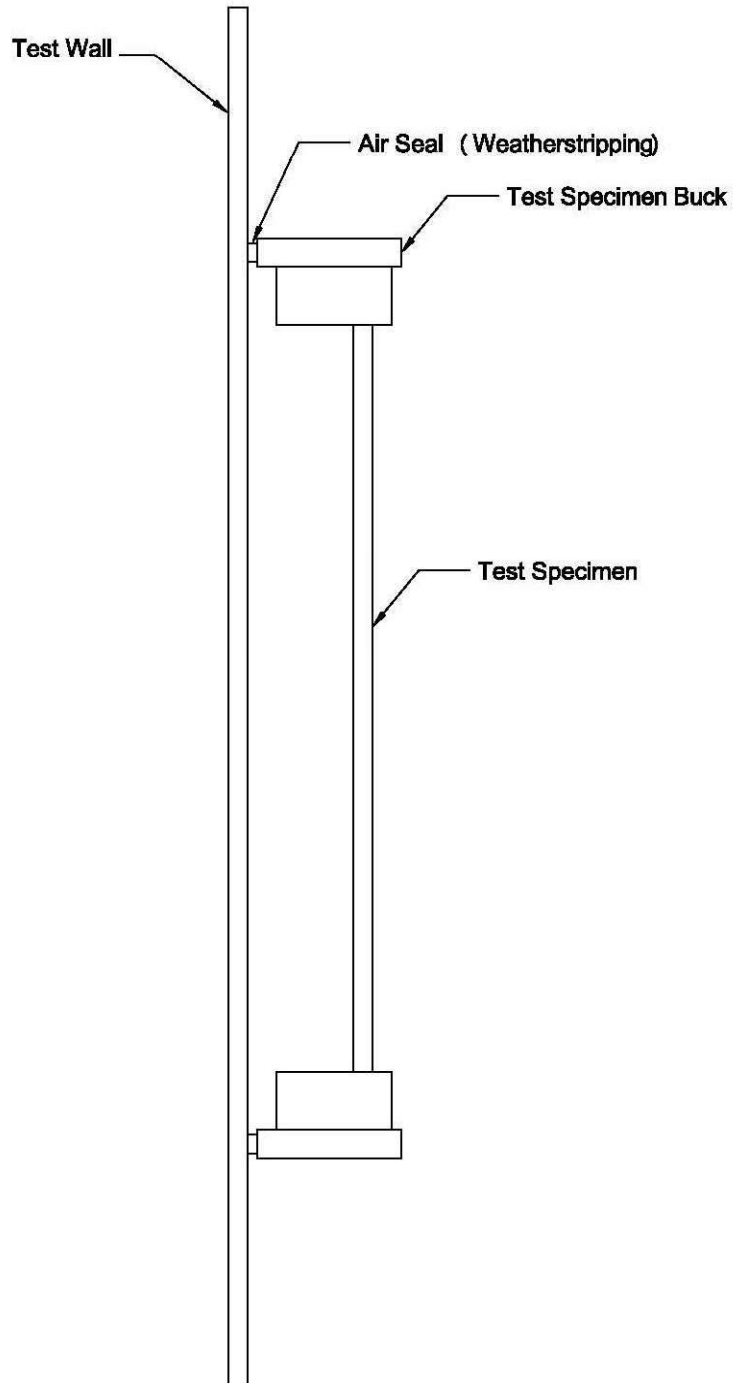
Appendix-C: Drawings (65)

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.

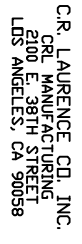


Appendix C

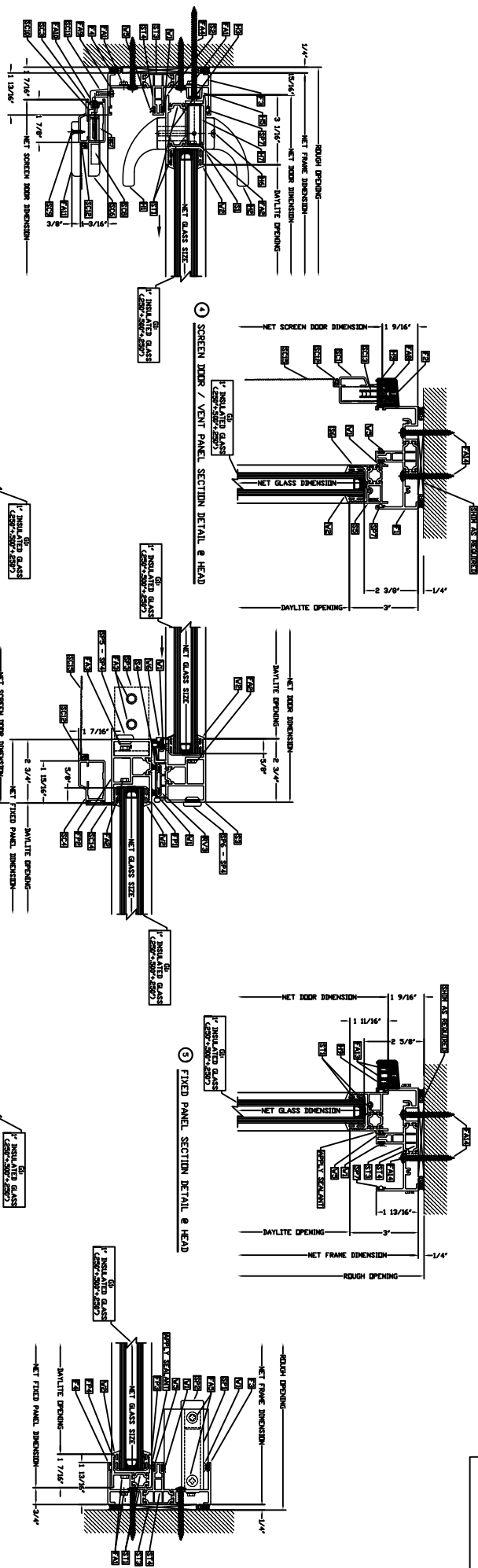
Drawings



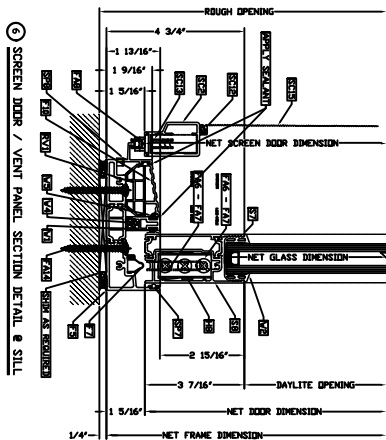
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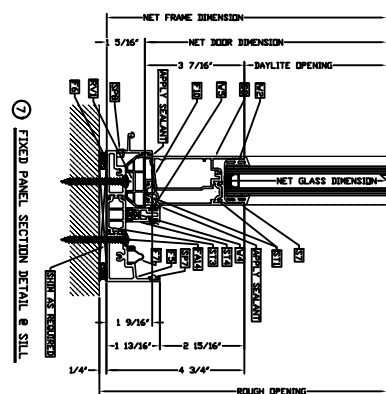
				<p style="text-align:center;">THIS DRAWING AND THE DESIGN SHOWN HEREIN IS THE PROPERTY OF C.R. LAURENCE CO., INC. AND USE OR COPIES THEREOF CANNOT BE MADE WITHOUT WRITTEN CONSENT,</p> <div style="float:right; width:80px;"><p>CRL C.R. LAURENCE CO., INC. CRJ MANUFACTURING 2100 E. 38TH STREET LOS ANGELES, CA 90058</p></div> <div style="clear:both;"></div>							
				DRAWN BY:	MR	TITLE: 3000 SERIES SLIDER DOOR CONFIG. XD -LCOS- MOCK-UP DRAWING					
				DATE:	05.06.14		DRAWING NO:	MIL2014SL3KLC25XD12601			
				SCALE:	$\frac{3}{4}''=1'-0''$		SHEET NO. 1 OF 5				
REV.	DESCRIPTION	DATE	BY								



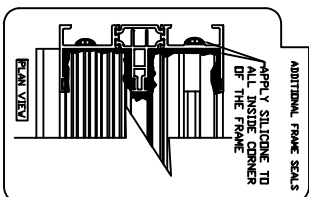
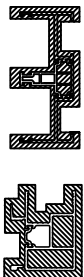
① **SCREEN DOOR / VENT PANEL DETAIL**
JAMB (XD SHOWN)



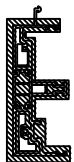
2 SCREEN IDDR / VENT PANEL / FIXED PANEL DETAIL 0
MEETING STILES (XD SHOWN)



③ VENT PANEL DETAIL @ JAMB (XD SHOWN)

SEAL END AT HORIZONTALS
(TDP)

SEAL END AT VERTICAL
(CENTER OF FRAME)



**SEAL END AT HORIZONTALS
(BOTTOM)**

NOTE:
1. PRODUCT TESTING & CERTIFICATION NUMBER PTC385672
(PRODUCT BEING TESTED: HS312BN1S)

[illegible]

BILL OF MATERIALS FOR 3025 SERIES SLIDING PATIO DOOR

[illegible]

「**ON**」

NOTE:
1. PRODUCT TESTING & CERTIFICATION NUMBER: PTC385672
(PRODUCT BEING TESTED: HS312BN11S)

Report #: E2129-301-47
Date: 10/27/2014
Verified by: *[Signature]*

[illegible]

C.R. LAURENCE CD, INC.
CRL MANUFACTURING
2100 E. 38TH STREET
LOS ANGELES, CA 90058

MU2014SL3KLC25XD12601

SHEET NO. 3 OF 5

NOTE:
1. PRODUCT TESTING & CERTIFICATION NUMBER: PTC385672
(PRODUCT BEING TESTED: HS312BN11S)

FOR


CRL
ALUMINUM

C.R. LAURENCE CO. INC.
CRL MANUFACTURING
2100 E. 38TH STREET
LOS ANGELES, CA 90058

FOR

CR
ALUMINUM

C.R. LAURENCE CO. INC.
CRL MANUFACTURING
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		DRAWN BY: MR.		TITLE:		DRAWING NO.	
		DATE: 03.04.17		3000 SERIES SLIDER DOOR		M202ASL3KLC230D12601	
REV.		DESCRIPTION		DATE BY		SHEET NO. 5 OF 5	
						BILL OF MATERIAL - C-460-	