Fenestration Testing Laboratory, Inc.

10235 8th Street • Rancho Cucamonga, CA 91730 • PH. (909) 477-4343 • FAX (909) 477-4348

TESTED FOR

Fleetwood Windows & Doors
1 Fleetwood Way
Corona, CA 92879

1.0 PURPOSE

The purpose of this report is to present the testing methods employed and the test results obtained during the performance testing of one (1) **Thermally Broken Aluminum Sliding Door** described in paragraph 4.0 of this report.

2.0 TEST REFERENCES

2.1 ASTM E 283 - Air Infiltration

2.2 ASTM E 331 - Water Penetration

2.3 ASTM E 330 - Uniform Load Structural

3.0 SUMMARY

The test results in paragraph 5.0 indicate that the test sample described in paragraph 4.0 of this report complied with the performance requirements of the above referenced specifications.

4.0 SAMPLE SUBMITTED

SERIES:	3070-T Multi-Slide Door
CONFIGURATION:	OXX
FRAME SIZE:	4010 mm x 2959 mm (157.88" x 116.50")
PANEL SIZES:	
FIXED (left):	1257 mm x 2915 mm (49.50" x 114.75")
CENTER ACTIVE:	1372 mm x 2915 mm (54.00" x 114.75") Locked to right panel
RIGHT ACTIVE:	1403 mm x 2915 mm (55.25" x 114.75") Primary panel (Locked to jamb)
GLASS:	Each panel contained a 1" overall wide insulated glass unit consisting of 1/4" tempered glass on both sides and a 0.5" spacer.
GLAZING:	Each panel was channel glazed.
WEEPAGE:	The sill containd a 1" x 3/16" weep 8" from each end. The weep cut across all the tracks.
WEATHERING:	Quiet finseal measuring 0.230" overall high was installed at the following locations:

WEATHERING:

- The sill (consisting of two extrusions joined together) contained four channels and each channel contained a strip of finseal facing in and a strip facing out.
- The center panel lock stile contained an extrusion to mate with the adjacent active panel and the extrusion contained a strip facing in and a strip facing out.
- The head (consisted of two extrusions joined together) contained two strips in the fixed channel and two strips in the active channel; one strip faced in and one strip faced out in each channel.

Quiet finseal measuring 0.290" overall high was installed at the following locations:

- The center panel interlock stile contained a strip facing out and the fixed interlock stile contained two strips facing in.

The following contained Q-lon U5212:

- The fixed jamb fixed channel contained one strip facing in and one strip facing out.
- The active jamb active channel contained one strip facing in and one strip facing out.

A brush air barrier was fastened at top and bottom of the sliding interlock.

A 6" piece of PVC extrusion which fit into the top of the fixed interlock contained a 6" strip of Q-lon facing in.

HARDWARE:

The primary active panel on the right side of the door contained an Archtype metal mortice lock 46.5" from the bottom of the door. When locked, the hook engaged a metal strike fastened to the jamb.
The center active panel contained an Archtype Narrow metal mortice lock 46.5" from the bottom that engaged the metal strike fastened to the primary active panel stile.

The two active panels each contained a tandem metal adjustable roller at each end of their respective bottom rails.

CONSTRUCTION:

The sill, jambs, and head all consisted of two extrusions joined by a plastic key. The jambs only were also fastened together from the back side with #6 x 3/8" PPH screws.

The frame was set into an aluminum pan.

The frame corners were mechanically joined with a pair of #10 x 2" screws through the jambs into the head and sill respectively.

The panel corners were mechanically joined with a #8 x 2.75" PPH screw and a #8 x 3.5" PFH screw per corner.

The fixed panel was retained in the frame by the head and sill fillers.

The frame sill contained sill fillers in the fixed channel, the fixed jamb contained an aluminum active channel filler and the active jamb contained an aluminum fixed channel filler. The head contained a fixed channel filler.

The center panel contained aluminum female yoke fastened to the stile with screws. This mated with the aluminum male yoke extrusion fastened to the primary active panel which was fastened to its stile with screws.

The primary and center active panel meeting stiles each contained a high performance "thermal adapter" extrusion that fit into the glazing pocket of each stile. The glass in turn fit into the "thermal adapter" glazing pocket.

CAULKING: The following were sealed:

- The frame corners were sealed full profile.
- The panel glazing corners were sealed on the outside only.
- The mail and female yoke were sealed to their respective meeting stiles.
- The sill was set in the pan in a bed of sealant except where the the weeps were located.

ANCHORING: The frame was fastened to the 2" x 10" rough opening with a pair of #10 x 2" PFH screws every 16" on center at the head and jambs. The sill was retained in a bed of sealant in the pan.

5.0 TEST PROCEDURES AND RESULTS

5.1 All testing procedures were performed in accordance with the performance requirements of the test specifications referenced in paragraph 2.0 of this report.

5.2 TEST RESULTS

TEST DESCRIPTION	MEASURED	ALLOWED
Operating Force (ASTM E 2068)		
Lead Panel only		
Breakaway Force	62.3 N (14.0 lbf)	135 N (30.35 lbf)
Operating Force	22.2 N (5.0 lbf)	90 N (20.23 lbf)
Two Panels		
Breakaway Force	80.1 N (18.0 lbf)	135 N (30.35 lbf)
Operating Force	48.9 N (11.0 lbf)	90 N (20.23 lbf)
Air Infiltration (ASTM E 283)(see note #1)		
300 Pa	1.5 L/s•m^2	1.5 L/s•m^2
(6.27 PSF)	0.3 CFM/Ft^2	0.3 CFM/Ft^2
Air Infiltration (ASTM E 283)(see note #1)		
75 Pa	0.5 L/s•m^2	1.5 L/s•m^2
(1.57 PSF)	0.1 CFM/Ft^2	0.3 CFM/Ft^2
Air Exfiltration (ASTM E 283)(see note #1)		
300 Pa	1.5 L/s•m^2	1.5 L/s•m^2
(6.27 PSF)	0.3 CFM/Ft^2	0.3 CFM/Ft^2
Air Exfiltration (ASTM E 283)(see note #1)		
75 Pa	0.5 L/s•m^2	1.5 L/s•m^2
(1.57 PSF)	0.1 CFM/Ft^2	0.3 CFM/Ft^2

Note #1 - The tested specimen meets or exceeds the performance levels specified in AAMA/WDMA/CSA 101/I.S.2-97/A440-08/(A440-S1-09) for air infiltration/exfiltration.

Water Penetration (ASTM E 331)

The height of the sill leg required for passing various differential pressures is indicated next to the differential pressure. Tests were conducted with no screen.

290 Pa (6.0 PSF) – Sill height 1.81"	No Leak	No Leak
360 Pa (7.5 PSF) - Sill height 2.13"	No Leak	No Leak
440 Pa (9.0 PSF) - Sill height 2.44"	No Leak	No Leak

5.2 **TEST RESULTS**

TEST DESCRIPTION	MEASURED	ALLOWED
Water Penetration (ASTM E 331) (Continued)		
510 Pa (10.5 PSF) – Sill height 2.75"	No Leak	No Leak
580 Pa (12.0 PSF) – Sill height 3.06"	No Leak	No Leak
Uniform Load Structural Deflection (ASTM E 330) (Measured at standard interlock)		
1200 Pa (25.0 PSF) POS	41.50 mm (1.63")	Report only
1200 Pa (25.0 PSF) NEG	41.50 mm (1.63")	Report only
1680 Pa (35.0 PSF) POS	56.75 mm (2.23")	Report only
1680 Pa (35.0 PSF) NEG	56.75 mm (2.23")	Report only
Uniform Load Structural Deflection (ASTM E 330) (Measured at heavy duty meeting stile)		
		L/175
1200 Pa (25.0 PSF) POS	9.75 mm (0.38")	16.50 mm (0.65")
1200 Pa (25.0 PSF) NEG	9.75 mm (0.38")	16.50 mm (0.65")
1680 Pa (35.0 PSF) POS	14.50 mm (0.57")	16.50 mm (0.65")
1680 Pa (35.0 PSF) NEG	14.50 mm (0.57")	16.50 mm (0.65")

For a complete description of the tested sample refer to the attached four (4) pages consisting of the elevation and cross section drawings and a parts page.

Cross section drawings are on file and have been compared to the sample submitted. Test sample sections, drawings and a copy of this report will be retained at the test laboratory for four years.

This test report may not be modified in any way without the written consent of Fenestration Testing Laboratory. The preceding test results relate only to the tested specimen and were obtained by using the applicable ASTM test methods.

Testing Completed: November 7, 2014
Report Completed: November 26, 2014

Pete Cruz
Test Engineer

Jim Cruz
Testing Manager

TABLE OF CONTENTS

TEST SPECIMEN

1. SERIES / MODEL: SERIES 3070–T
2. PRODUCT TYPE: MULTI–SLIDE DOOR

GENERAL NOTES

1. BUCKING OPENINGS & BUCKING FASTENERS MUST BE PROPERLY DESIGNED & INSTALLED TO TRANSFER LOADS TO THE STRUCTURE AND TO BE REVIEWED BY BUILDING OFFICIAL.

2. ALL HARDWARE & FASTENERS SHALL BE IN ACCORDANCE WITH THESE DRAWINGS & MAY NOT VARY UNLESS SPECIFICALLY MENTIONED ON THE DRAWINGS.

3. MATERIALS, INCLUDING BUT NOT LIMITED TO STEEL SCREWS, THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS OF AAMA AND BUILDING CODE.

SPECIFICATIONS

1. AAMA/WDMA/CSA 101/I.S.2/A440–08; A440 S1–09 (CANADIAN SUPPLEMENT)

CORNERS CONSTRUCTION

1. FRAME CORNER: THE HEAD AND SILLS ARE BUTTED TO THE JAMBS AND ATTACHED WITH SCREWS.
2. PANEL CORNER: THE TOP AND BOTTOM RAILS ARE BUTTED TO THE VERTICAL STILES AND ATTACHED WITH SCREWS.

GLAZING

1": CLEAR 6MM–T, 0.5 AIR, CLEAR 6MM–T

HARDWARE

1. LOCK JAMB: ARCHETYPE HARDWARE
2. MEETING STILES: ARCHETYPE NARROW HARDWARE

WEEP HOLES

1. TWO WEEP HOLES, 8" FROM BOTH ENDS.
2. WEEP HOLE SIZE: WIDTH = 1", HEIGHT = 3/16", CUT CROSS ALL TRACKS.

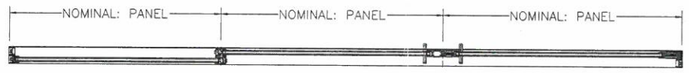
*FRAME ANCHOR REQUIREMENTS TABLE

OPENING TYPE (SUBSTRATE)	FRAME TO OPENING FASTENER TYPE	MINIMUM EMBEDMENT	MINIMUM EDGE DIST.
2X_ WOOD FRAME OR BUCK	(1)NO. 10 SMS SCREW	1 1/2"	3/4"
MIN. 18 GA. 33 KSI STEEL STUD	(1)NO. 10 SMS SCREW	FULL	3/8"
CMU/CONCRETE	(2)3/16" CONCRETE SCREWS	1 1/4"	2 5/8"

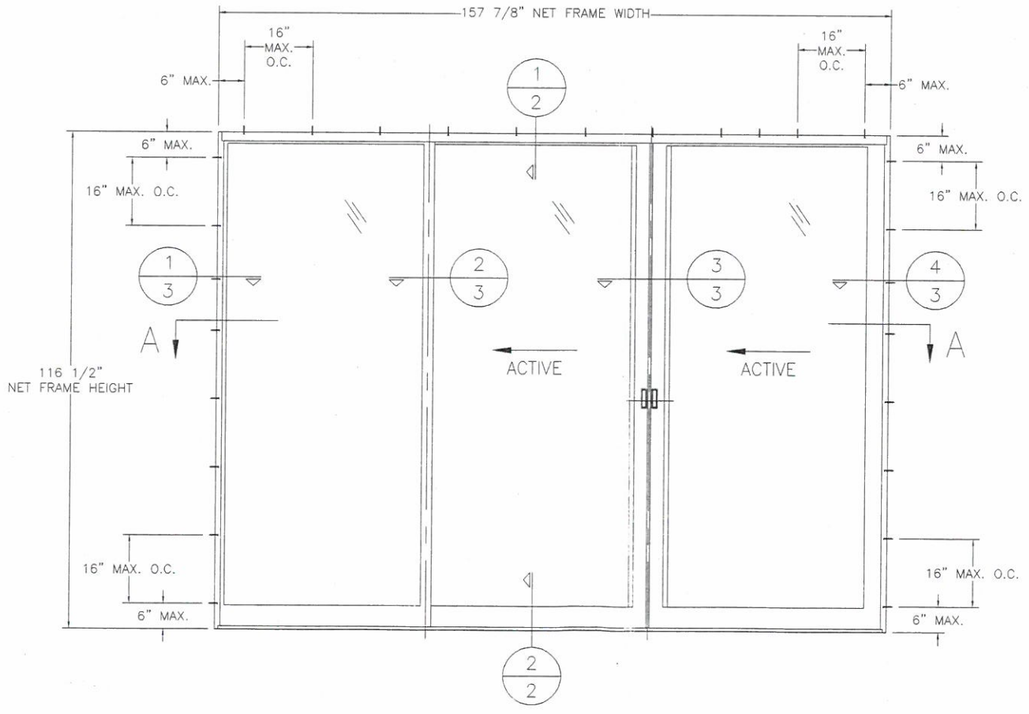
(1) SMS SCREWS
(2) CONCRETE SCREWS SHALL BE 3/16" ITW TAPCON

DESIGN PRESSURE TABLE

MAX DOOR HEIGHT	MAX PANEL DIMENSION	OVERALL D.L.O. DIMENSION	DESIGN PRESSURE (PSF)	
			POSITIVE	NEGATIVE
116.5"			+40.0	–40.0



"A–A"



FENESTRATION TESTING LAB
REPORT NO: T14-073
DATE: 11-26-14

REVISIONS	DATE	DRAWN BY	COMMENTS
-	-	-	-

DRAWN BY: BL
DATE: 11/05/14
JOB NUMBER: 358159

MATERIAL: SERIES 3070-T
CUSTOMER: FLEETWOOD WINDOWS AND DOORS
JOB NAME: FLEETWOOD IN HOUSE AAMA TEST

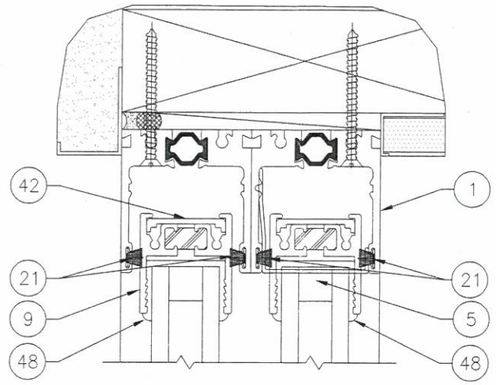
FLEETWOOD
WINDOWS AND DOORS
1 FLEETWOOD WAY CORONA, CALIFORNIA 92879 - www.fleetwoodusa.com

SCALE : DO NOT SCALE
DRAWING NO. : 1
SHEET : 1 OF 4

FENESTRATION TESTING LAB

REPORT NO: T14-073

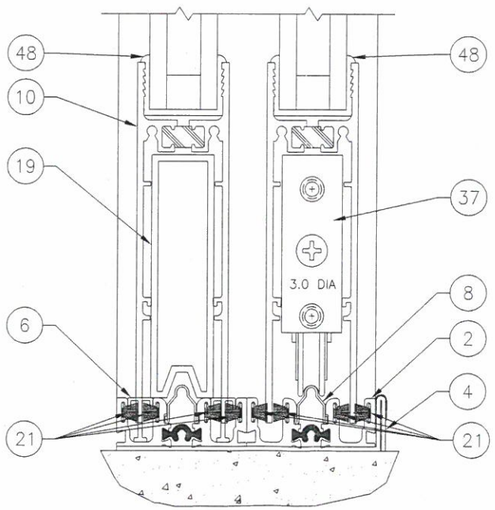
DATE: 11-26-14



EXTERIOR

1 SERIES 3070-T HEAD

Note: The tested sample Was installed in a 2"x12" Rough opening & set in a test chamber.



2 SERIES 3070-T SILL

REVISIONS	DATE	DRAWN BY	COMMENTS
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MATERIAL: SERIES 3070-T	CUSTOMER: FLEETWOOD WINDOWS AND DOORS	JOB NAME: FLEETWOOD IN HOUSE AAMA TEST	

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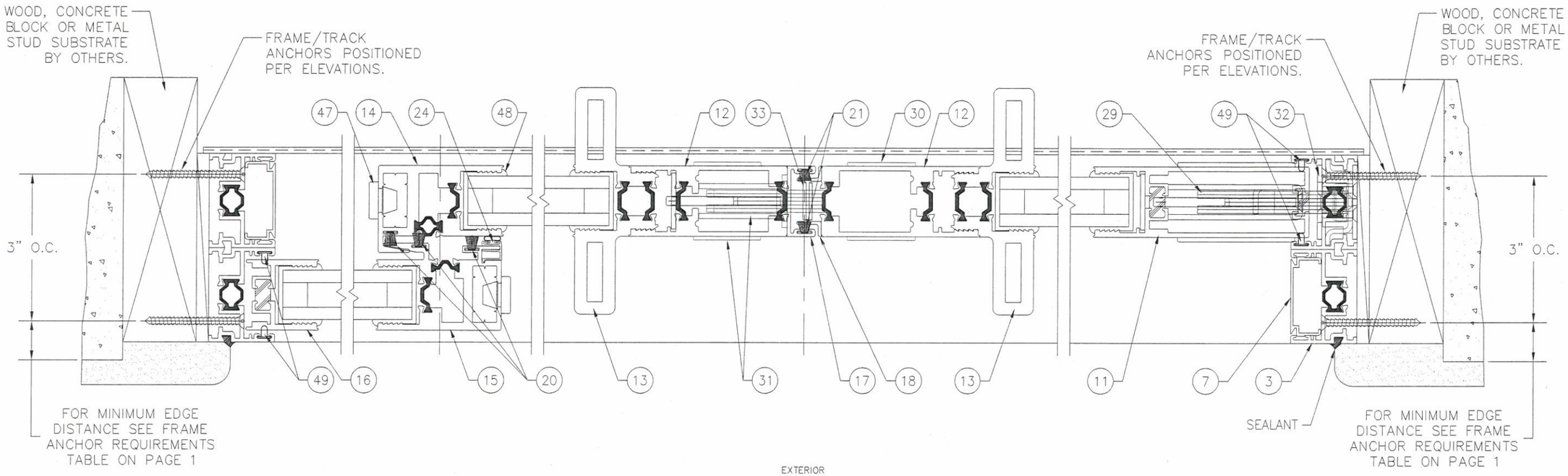
SCALE : DO NOT SCALE

DRAWING NO. : 2

SHEET : 2 OF 4

FENESTRATION TESTING LAB
REPORT NO: T14-073
DATE: 11-26-14



1 SERIES 3070-T FIXED JAMB

2 SERIES 3070-T INTERLOCKERS

3 SERIES 3070-T MEETING STILES

4 SERIES 3070-T LOCK JAMB

Note: The tested specimen was installed in a 2"x12" wooden rough opening & set in a test chamber

REVISIONS	DATE	DRAWN BY	COMMENTS
-	-	-	-

DRAWN BY: BL
DATE: 10/15/14
JOB NUMBER: 358159

MATERIAL: SERIES 3070-T
CUSTOMER: FLEETWOOD WINDOWS AND DOORS
JOB NAME: FLEETWOOD IN HOUSE AAMA TEST

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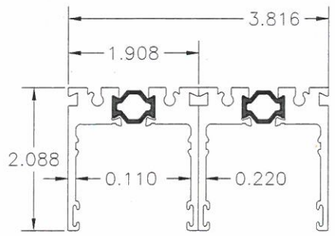
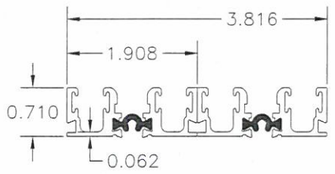
WINDOWS AND DOORS
1 FLEETWOOD WAY CORONA, CALIFORNIA 92879 - www.fleetwoodusa.com

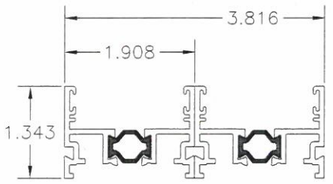
SCALE : DO NOT SCALE
DRAWING NO. : 3
SHEET : 3 OF 4



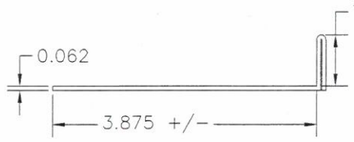
1 HEAD TRACK DOUBLE RUN



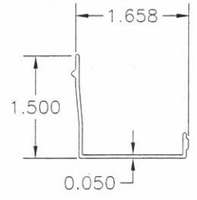
2 SILL TRACK DOUBLE RUN



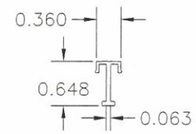
3 JAMB TRACK DOUBLE RUN



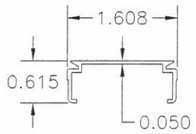
4 SILL PAN DOUBLE RUN



5 HEAD FILLER



6 SILL FILLER



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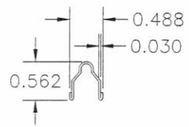
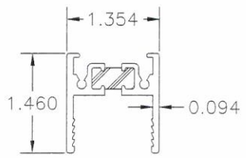
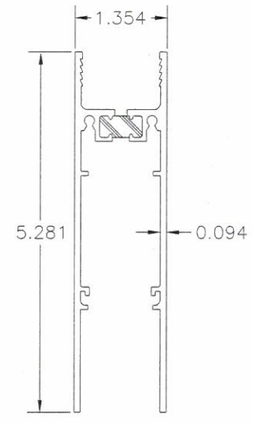


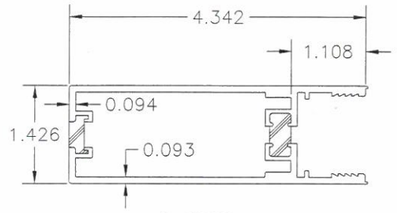
8 TRACK



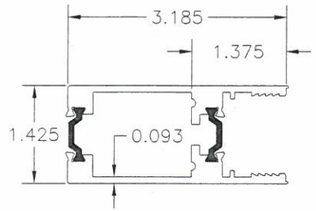
9 TOP RAIL



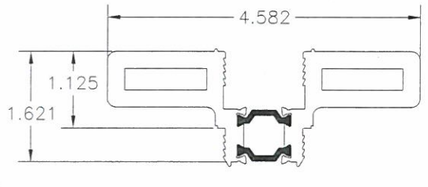
10 BOTTOM RAIL



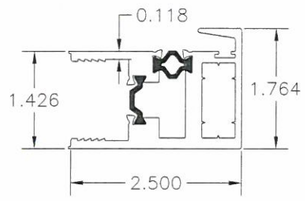
11 GLACIER LOCK STILE



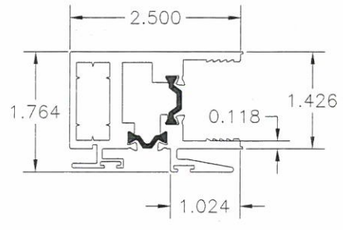
12 NARROW LOCK STILE



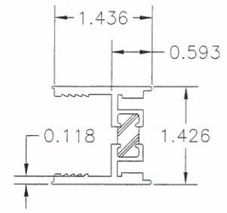
13 HIGH PERFORMANCE THERMAL ADAPTER



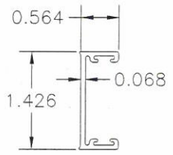
14 SLIDING INTERLOCKER



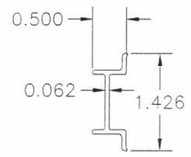
15 FIXED INTERLOCKER



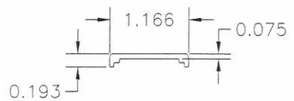
16 FIXED STILE



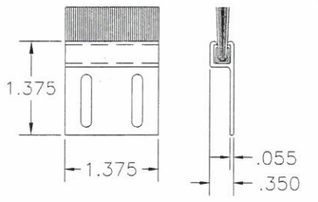
17 FEMALE YOKE



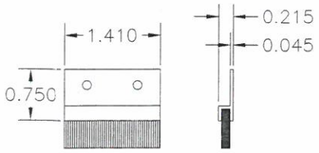
18 MALE YOKE



42 TOP RAIL SPREADER

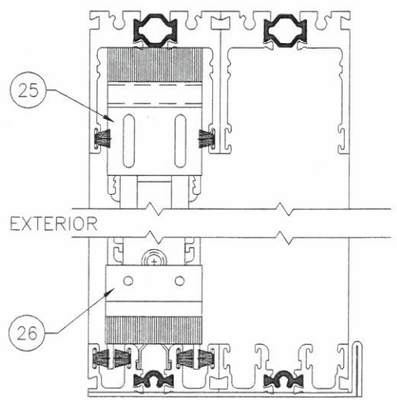


25 AIR BARRIER (HEAD)

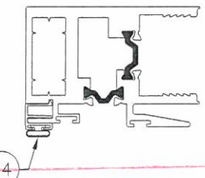


26 AIR BARRIER (SILL)

AIR BARRIER DETAIL (TYP.) ALL PANELS



6" AIR BARRIER TO BE MOUNTED AT THE TOP AND BOTTOM OF THE FIXED INTERLOCKER.



24

ITEM #	PART	ITEM DESCRIPTION	MANUFACTURER/NOTES
		PARTS	
1	3700	HEAD TRACK (2 RUNS)	6063-T6 ALUMINUM - EXTRUDED
2	3749	SILL TRACK (2 RUNS)	6063-T6 ALUMINUM - EXTRUDED
3	3711	JAMB TRACK (2 RUNS)	6063-T6 ALUMINUM - EXTRUDED
4		SILL PAN	5052 ALUMINUM
5	3011	HEAD FILLER	6063-T6 ALUMINUM - EXTRUDED
6	3747	SILL FILLER	6063-T6 ALUMINUM - EXTRUDED
7	3710	JAMB FILLER	6063-T6 ALUMINUM - EXTRUDED
8	FW-1020	TRACK	6063-T6 ALUMINUM - EXTRUDED
9	3075	TOP RAIL	6063-T6 ALUMINUM - EXTRUDED
10	3310	BOTTOM RAIL	302 STAINLESS STEEL
11	3770	GLACIER LOCK STILE	6063-T6 ALUMINUM - EXTRUDED
12	3773	NARROW LOCK STILE	6063-T6 ALUMINUM - EXTRUDED
13	3717	HIGH PERFORMANCE THERMAL ADAPTER	6063-T6 ALUMINUM - EXTRUDED
14	3727	SLIDING INTERLOCKER	6063-T6 ALUMINUM - EXTRUDED
15	3728	FIXED INTERLOCKER	6063-T6 ALUMINUM - EXTRUDED
16	3073	FIXED STILE	6063-T6 ALUMINUM - EXTRUDED
17	3040	FEMALE YOKE	6063-T6 ALUMINUM - EXTRUDED
18	3039	MALE YOKE	6063-T6 ALUMINUM - EXTRUDED
19	3762	MAMMOTH SETTING BLOCK	6063-T6 ALUMINUM - EXTRUDED
		SEALS & SEALANTS	
20	19117	LARGE FIN SEAL .290	AMESBURY (29027045bkqb)
21	19118	SMALL FIN SEAL .230	AMESBURY (23027045bkqb)
22	-	HEAVY DENSITY WEATHERSEAL .300 HIGH PILE	AMESBURY 413330-270
23	-	SILICON -DOW CORING 1199	DOW CORNING
24	24653	6" AIR BARRIER FOR STD INTERLOCKER	-
25	19104	AIR BARRIER HEAD	PEMKO
26	25383	AIR BARRIER SILL	PEMKO
27			
		HARDWARE	
29		ARCHETYPE (PRIMARY LATCH)	FLEETWOOD
30		ARCHETYPE NARROW DUMMY HANDLE	FLEETWOOD
31		ARCHETYPE NARROW LATCH	FLEETWOOD
32		STRIKE PLATE ASSY. (JAMB)	FLEETWOOD
33		STRIKE PLATE (MALE YOKE)	
34			
35			
36			FLEETWOOD
37	FW-1042	MAMMOTH ROLLER ASSEMBLY	FLEETWOOD
38			
		MISCELLANEOUS	
40	-	4" LONG SETTING BLOCK	AS REQ'D
41	R10882	PVC M/S TRACK CONNECTOR	RYKO
42	22938	RAIL SPREADER	BAND LOCK
43	-	NO.8 X 1/2" PNHD SMS 15" O.C.	STAINLESS STEEL
44	-	NO.8 X 3/4" SMS 15" O.C.	STAINLESS STEEL
45	-		
46	-	NO.8 X 3/4" PNHD SMS 35" O.C.	
47	-	PANEL BUMPER	FLEETWOOD
48	22909	1.0" GLAZING VINYL	BAND LOCK
	19120	Q-LON (U5212)	SCHLEGEL

FENESTRATION TESTING
REPORT NO: T14-073
DATE: 11-26-14

COMMENTS | DRAWN BY | DATE | REVISIONS
- | - | - | -

DRAWN BY: BL
DATE: 10/15/14
JOB NUMBER: 358159

MATERIAL: SERIES 3070-T
CUSTOMER: FLEETWOOD WINDOWS AND DOORS
JOB NAME: FLEETWOOD IN HOUSE AAMA TEST

FLEETWOOD
WINDOWS AND DOORS
1 FLEETWOOD WAY CORONA, CALIFORNIA 92879 - www.fleetwoodusa.com

SCALE : DO NOT SCALE
DRAWING NO. : 4
SHEET : 4 OF 4