

REPORT SUMMARY

REPORT SPECIFICATION

North American Fenestration Standard/specification for windows, doors, and skylights
AAMA/WDMA/CSA 101/I.S.2/A440-11 & Canadian Supplement A440S1-09

REPORT #

T15-084

TESTED FOR

Fleetwood Windows and Doors

1 Fleetwood Way
Corona, CA 92879

PRODUCT TYPE

Fixed Window (Aluminum Thermally Broken)

SERIES

250-T

CONFIGURATION

OO

PERFORMANCE GRADE

PG 40

PRIMARY DESIGNATOR

Class LC - PG40: Size tested 2743 mm x 1829 mm (~108 in. x 72 in.) - Type FW*
Reference should be made to specimen Report No. T15-085 for gateway size compliance.

Secondary Designator

Canadian Air Infiltration / Exfiltration = Fixed Level

TEST COMPLETION DATE

11/19/15

REPORT DATE

11/30/2015

Reference should be made to Report No. T15-084 for complete test specimen description and data.

Fenestration Testing Laboratory, Inc.

10235 8th. Street, Rancho Cucamonga, CA 91730

REPORT #T15-084

1.0 Tested For: Fleetwood Windows and Doors

1 Fleetwood Way
Corona, CA 92879

2.0 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) Aluminum fixed window described in paragraph 5.0 of this report.

3.0 Test References:

3.1 NAFS – North American Fenestration Standard/specification for windows, doors, and skylights AAMA/WDMA/CSA 101/I.S.2/A440-11

3.2 Canadian Supplement A440S1-09

4.0 Compliance Statement: The test results in paragraph 6.0 indicate that the test sample described in paragraph 5.0 of this report met the performance requirements of the above specifications for the performance grade shown in 4.1 below.

4.1 Primary Designator:

Class LC - PG40: Size tested 2743 mm x 1829 mm (~108 In. x 72 In.) - Type FW
Reference should be made to specimen Report No. T15-085 for gateway size compliance.

5.0 Sample Submitted

5.1 Product Type: Fixed Window (Aluminum Thermally Broken)

5.2 Series/Model: 250-T

5.3 Configuration OO

5.4 Test Sample Provider: Fleetwood Windows and Doors

5.5 Product Size:

	Millimeters	Inches
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	Millimeters	Inches
Frame:	2743 mm x 1829 mm	~108 In. x 72 In.
Lite DLO	1295.4 mm x 1730.5 mm	~51.00 In. x 68.13 In.

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5.0 Sample Submitted (Continued)

5.6 Glass and Glazing

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
1 In. Overall	0.5 In. wide metal Spacer	1/4 In. annealed	1/4 In. annealed	Both lites were outside glazed onto hollow bulb vinyl full perimeter and onto silicone 6 In. each way at the corners. Snap-in glazing stop was applied full perimeter on the exterior. The glass stop contained a strip of hollow bulb vinyl. Lites rested on (2) 3 In.x1 In.x1/4 In. rubber setting blocks, centered 3 In. in from each end.

5.7 Weepage

Draining Method	Size	Quantity	Location
Weep slot	1 In. x 0.18 In.	2	One at each end of each lite on the sill outside face. The glass stop was notched in line with each weep.

5.8 Weatherstripping

Type:	Quantity	Location
Hollow bulb vinyl	1 strip	On the glazing stops facing in
Hollow bulb vinyl	1 strip	On the frame inside leg full perimeter

5.9 Hardware

Type:	Quantity	Location
N/A	N/A	N/A

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5.0 Sample Submitted (Continued)

5.10 Construction

Location	Joinery Type	Number of Fasteners
All frame corners	Keyed, staked and welded	None
TDL - Integral Vertical Mullion	Welded to head and sill	None
The window was set in a sill pan with vertical 0.5 In. vertical leg on three sides. It was sealed to the window on the vertical leg.		
The frame and TDL integral mullion were thermally broken with a 1/4 In. de-bridged width.		

5.11 Reinforcement

Location	Material
N/A	N/A

5.12 Sealant

Location
All frame corners and TDL integral mullion butt joints full profile.
Full perimeter of the sill pan vertical leg to the frame.

5.13 Installation

The test specimen was installed into a 2 In. x 8 In. wooden rough opening.

Location on frame	Anchor type	Spacing
Head, jambs, and sill	#8 x 1.25 In. PFH screw applied through the nail-on fin.	6 In. from each corner and 12 In. on center in the field.

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6.0 Test Procedures and Results: All testing procedures were conducted in accordance with the performance requirements of the test specifications referenced in paragraph 3.0 of this report. (Laboratory conditions during test were 23.8 degrees Celsius (75 degrees Fahrenheit))

9.3.2 - Air Leakage (ASTM E 283-04)(2012) Infiltration

Test Pressure	Results	Allowed
75 Pa	0.00 L/s*sq.m	1.5 L/s*sq.m
1.57 psf	0.00 cfm/sq.ft.	0.30 cfm/sq.ft.

The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 1011.S.2/A440-11 and Canadian Supplement A440S1-09 for air leakage resistance.

Optional Performance Testing (Air)

Canadian (only) Air infiltration/exfiltration levels

9.3.2 - Air Leakage (ASTM E 283-04)(2012) Infiltration - Canada

75 Pa	0.00 L/s*sq.m	0.20 L/s*sq.m
1.57 psf	0.00 cfm/sq.ft.	0.04 cfm/sq.ft.

9.3.2 - Air Leakage (ASTM E 283-04)(2012) Exfiltration - Canada

75 Pa	0.00 L/s*sq.m	0.20 L/s*sq.m
1.57 psf	0.00 cfm/sq.ft.	0.04 cfm/sq.ft.

Note: Canadian air infiltration/exfiltration = Fixed Level

Additional air testing at 300 Pa (6.27 psf) {Canadian AW Class at Fixed level}

9.3.2 - Air Leakage (ASTM E 283-04)(2012) Infiltration

300 Pa	0.0 L/s*sq.m	0.20 L/s*sq.m
6.27 psf	0.0 cfm/sq.ft.	0.04 cfm/sq.ft.

9.3.2 - Air Leakage (ASTM E 283-04)(2012) ex-filtration

300 Pa	0.05 L/s*sq.m	0.20 L/s*sq.m
6.27 psf	0.01 cfm/sq.ft.	0.04 cfm/sq.ft.

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9.3.3 Water Penetration (ASTM E 547-00) (2009)

Test Pressure	Results	Allowed	Comments
580 Pa (12.11 psf)	Pass	No Leakage	

9.3.4.2 Uniform Load Deflection at Design Pressure (ASTM E 330-14)

Test Pressure & Direction	Results	Allowed	Comments
1920 Pa (40.1 psf) Pos	15.24mm (0.60In.)	As measured	
-1920 Pa (-40.1 psf) Neg	14.48mm (0.57In.)	As measured	

9.3.4.3 Uniform load Structural Performance (Overload/Proof Load) (ASTM E 330-14)

Test Pressure & Direction	Results	Allowed	Comments
2880 Pa (60.15 psf) Pos	0.76 mm (0.03 In.)	7.32 mm (0.288 In.)	0.4%
-2880 Pa (-60.15 psf) Neg	0.51 mm (0.02 In.)	7.32 mm (0.288 In.)	0.4%

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For a complete description of the tested sample refer to the attached 6 pages consisting of the bill of materials, cross section drawings, and individual die drawings. This report is complete only when all of the above referenced drawings and bill of materials are attached.

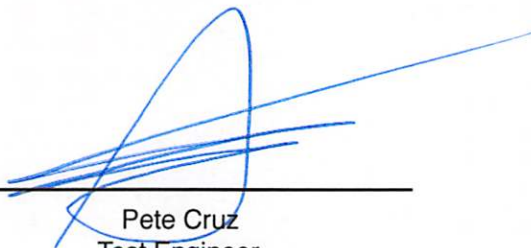
Cross section drawings and die drawings of frame members are on file and have been compared to the sample submitted. Test sample sections, drawings and a copy of this report will be retained at the test laboratory for four years.

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 test methods listed in sections 3.0 and 6.0 above. This report does not constitute certification of this product or an endorsement by this laboratory. It is the property of the client named in section 1.0 above. Certification can only be granted by an approved administrator and/or validator.

Date Testing Completed: November 18, 2015

Date Report Completed: November 30, 2015



Pete Cruz
Test Engineer



Sean Clevenger
Testing Manager

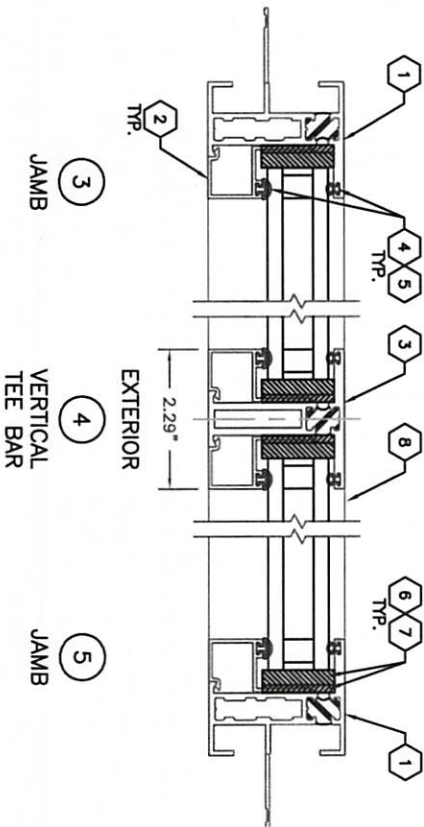
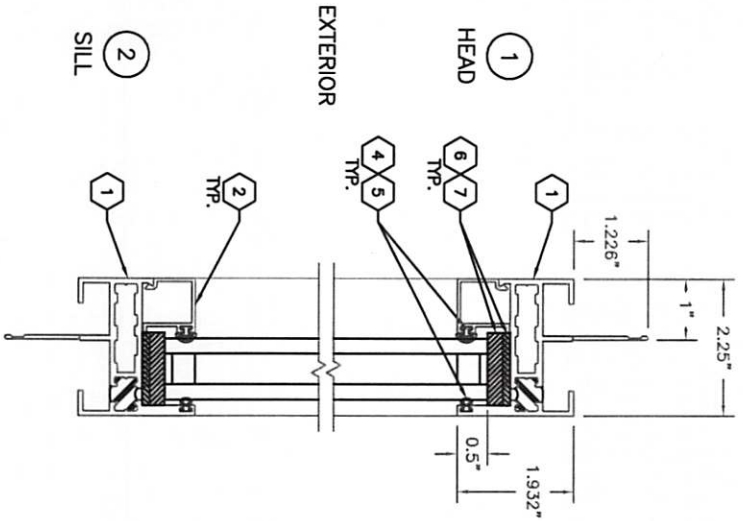
FENESTRATION TESTING LAB

REPORT NO:

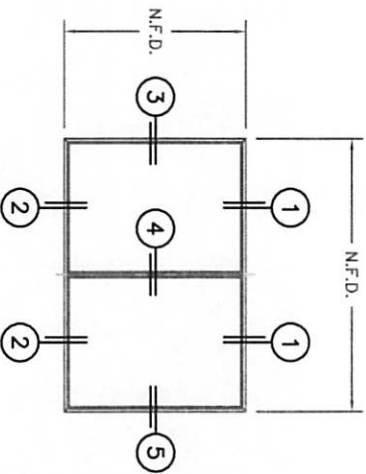
115-084

DATE:

11/30/15



ANCHOR SPACING:
 HEAD: 6" FROM ENDS; 12" O.C. MAX.;
 6" FROM TEE BAR CENTERLINE.
 JAMB: 6" FROM ENDS; 12" O.C. MAX.
 SILL: 6" FROM ENDS; 12" O.C. MAX.;
 6" FROM TEE BAR CENTERLINE.



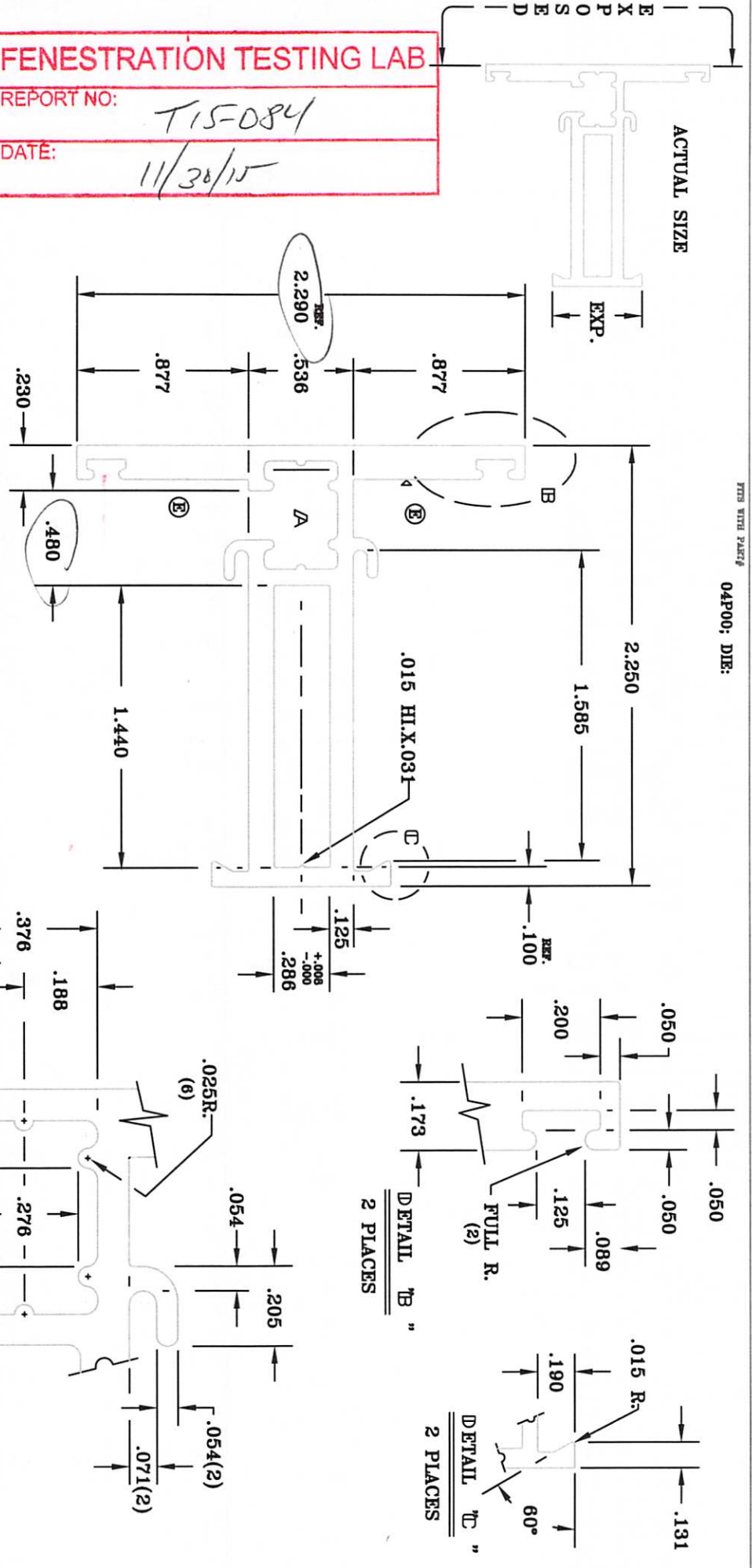
ITEM NO.	FLEETWOOD PART NO.	PART DESCRIPTION	VENDOR NAME	VENDOR PART NO.
1	05P88	ALUMINUM EXTRUSIONS	FRONTIER	52788
2	05P09	HEAD, SILL AND JAMB	SIERRA	6502
3	05P01	1" GLASS STOP	SIERRA	6658
4	25031	TEE BAR	SIERRA	6658
5	25199	MISCELLANEOUS	TREMCO	TX19639E
6	18620	BLUB VINYL - LARGE (EPDM 70 Duranella)	TREMCO	TX20801E
7	18621	BLUB VINYL - MINI (EPDM 70 Duranella)	SECON RUBBER	SR250-1000K4+Z
7	18621	4 x 1/8" x 1" SETTING BLOCK	SECON RUBBER	FLEETWOOD0052302

DESIGNED BY BRIAN L	DATE 12/2/15	TITLE SERIES 250-T
SCALE NOT TO SCALE	SIZE D	DESCRIPTION 00-GTF
PRODUCT NO. 5528		1" INSULATED GLAZING

FENESTRATION TESTING LAB
 REPORT NO: T15-084
 DATE: 11/30/15

CONTAINERS	7	DIE KING	5	SPACES KING	2	REMOVE UNDER CUTS W/PT. VAS .0605*18.047	ED	3/14/08
ALTA	.915	FOOTS	1	REER	—	REMOVED TOOLING DRD	TAS	8/16/08
W/PT	1.098	W/P	—	ROUFTER	2598	TOOLING CHANGE BOL.	ED	9/20/08
PERL	16.592	FLEE 6039	—	DIE SIZE	9X5	REMOVE 1/8" STEP (2) W/PT. VAS .0605*18.044	ED	7/19/08
DIR.	KEN	DATE	6/10/92	MAT'L	6063-T6	STANDARD TOLERANCES UNLESS OTHERWISE NOTED	BY	DATE
CHD.	DATE							
SIERRA ALUMINUM COMPANY 5245 Proctor Road Hayward, California 94506 (909)761-7900 FAX (909)761-7864				FLEETWOOD ALUM. PROD.		PART NO. 05P01		
PART NAME TREE BAR - VENT				SCALE 2:1		DIE NO. H-006658		

P.010 R. X .010DEP.I.D. MARK .080
 NOTE: TYP. WALL THICKNESS .010 R.
 UNFINISHED DIMENSIONS .010 R.



THIS WITH PART# 04P00; DIE:

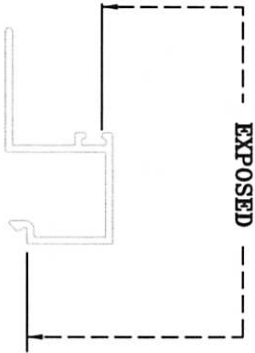
DETAIL "A"
 N.T.S.

DETAIL "B"
 2 PLACES

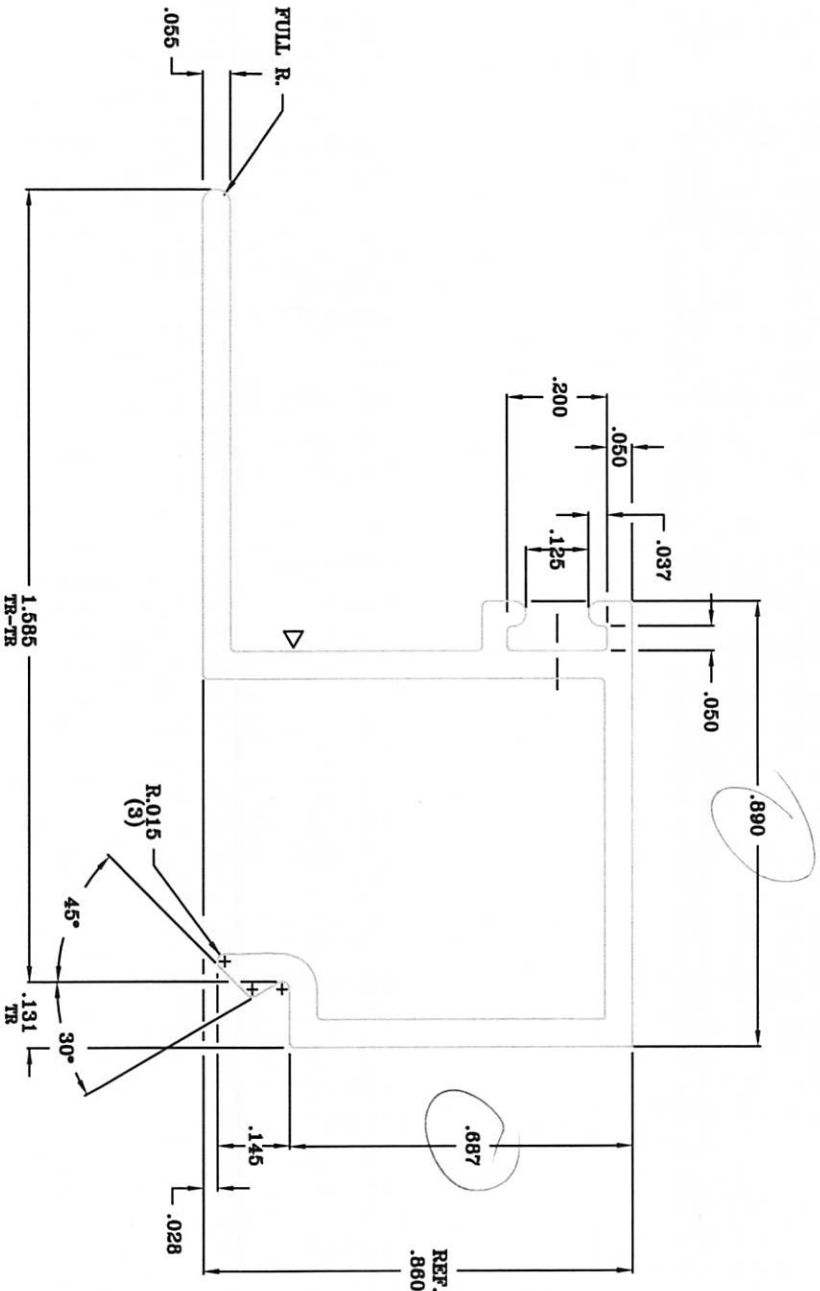
DETAIL "C"
 2 PLACES

THIS WITH PART #

05P01,05P11,05P71,05P81,05P70



ACTUAL SIZE



P.010 R. X .010 DEEP I.D. MARK .055 ^{TR. WALL EXCEPT AS NOTED}
 UNMARKED CORNERS .010 R.

CONTAINER	DIE KING	SPACES KING			
AREA	FOGOTS	DEE	6502		
WT/FT	W/P	ROUPTER	4-9		
PERL	7.337	FLIEE	6048		
DIN. BY	KEN	DIE SIZE	8X1		
DATE	10/15/99	MAT'L	6063-T6		
BY		MAT'L. VLS	6063-T6		
		STANDARD TOLERANCES UNLESS OTHERWISE NOTED			
		CUSTOMER	FLIETWOOD ALUMINUM PROD.		
		PART NAME	GLASS STOP 1"		
		SCALE	4:1		
		PART NO.	05P09		
		DIE NO.	006502		

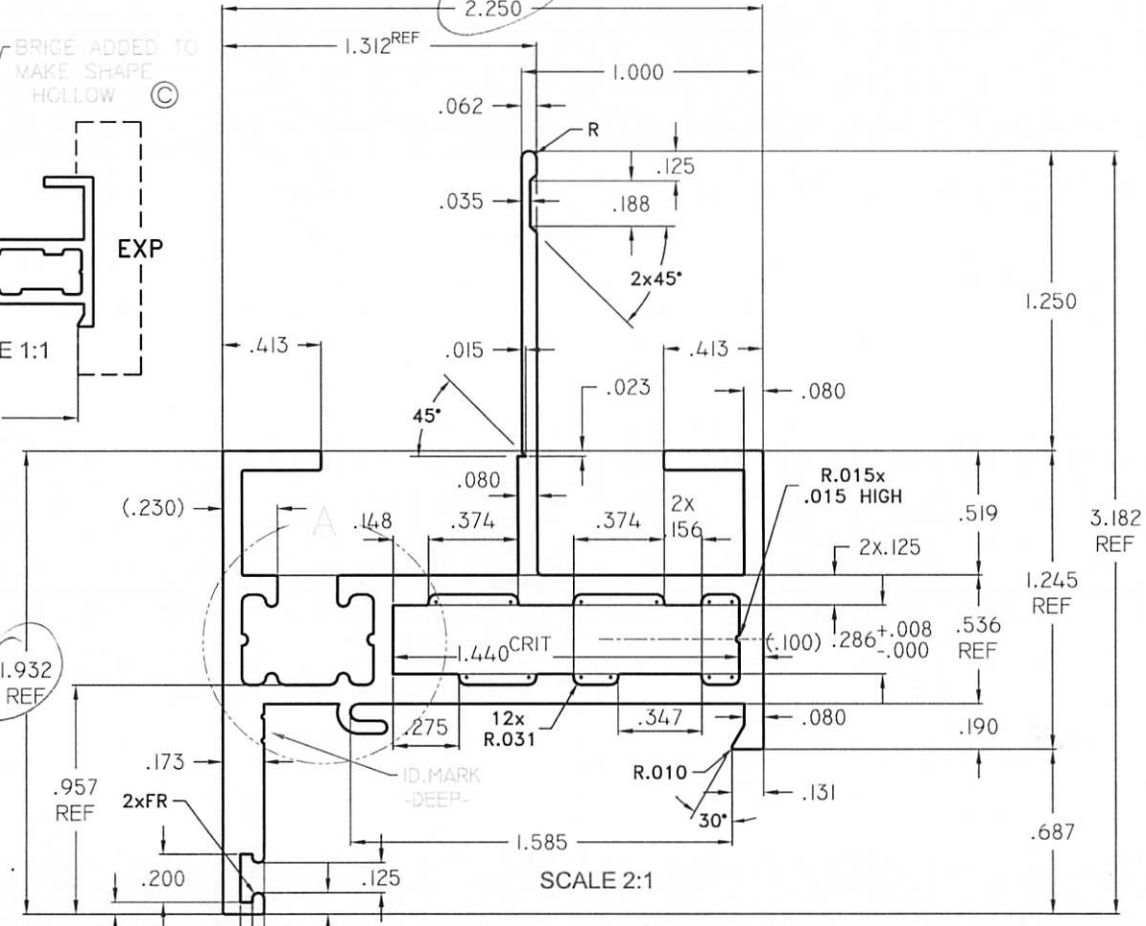
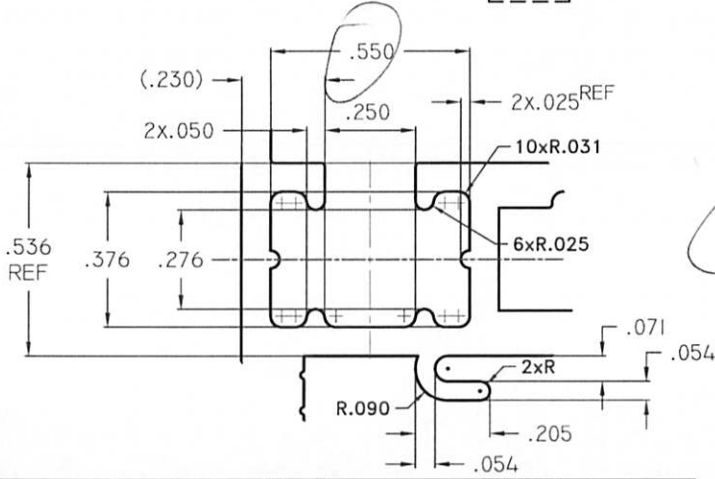
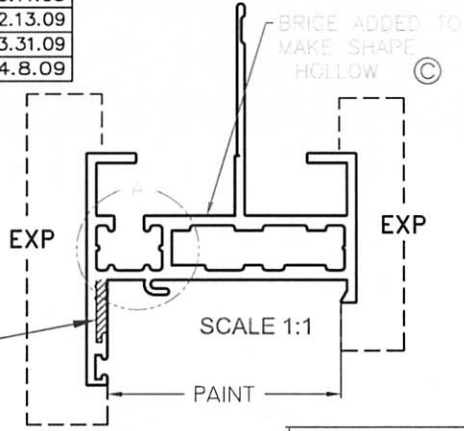
SIERRA ALUMINUM COMPANY
 8346 Firewood Drive
 Hayward, California 94509
 (909)781-7800 FAX (909)781-7864

FENESTRATION TESTING LAB
 REPORT NO: T15-084
 DATE: 11/30/15

CUSTOMER: **FLEETWOOD ALUMINUM** PART NAME: 5000 INSIDE GLAZE PERIM. (NAIL-ON)
 PART NUMBER: 05P88

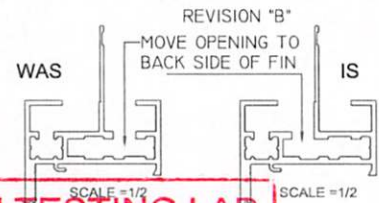
REV	REVISIONS	BY	DATE
A	MATERIAL ADDED-SEE ACTUAL SIZE	CD	3.11.03
B	SEE BELOW	CD	2.13.09
C	NOW A HOLLOW DIE/.413 WAS .625/R.031(12) WAS R.031(10)	CD	3.31.09
C1	REDRAWN	CD	4.8.09

TB CAVITY TYPE CC
 AREA SQ" .210
 VOLUME CUBIC"/FT. 2.520



UNMARKED WALLS: .080	UNMARKED CORNERS: R.010	UNMARKED FILLETS: R.010
UNLESS OTHERWISE SPECIFIED, STANDARD ALUMINUM ASSOCIATION TOLERANCES APPLY • FRONTIER ID. MARK: TWO .010 R x .100 APART		
AREA .927	PRESS 4	DWN CD
WT/FT 1.113	PORTS 11x7-2H	DATE 3.16.2015
PERI. 21.012	W/P HOLLOW	D 5278
FACTOR 19	BKR. HOLLOW	CLASS HOLLOW
c.c.d. 3.57	BOL. STD-2	17.205
AW:0201/92	RATIO: PRESS 1:	PRESS 2:
	PRESS 3:	
ALLOY & TEMPER 6063-T6	DIE NO. 5278	REV. C1

4/8/2009U:\Cadfiles_Admin\Products\250-T\Cert Dwg (np)\250-T Cert_2015\AAMA CERT DIE DRAWINGS\05P88 DATE: 12/2/2015 7:00 AM

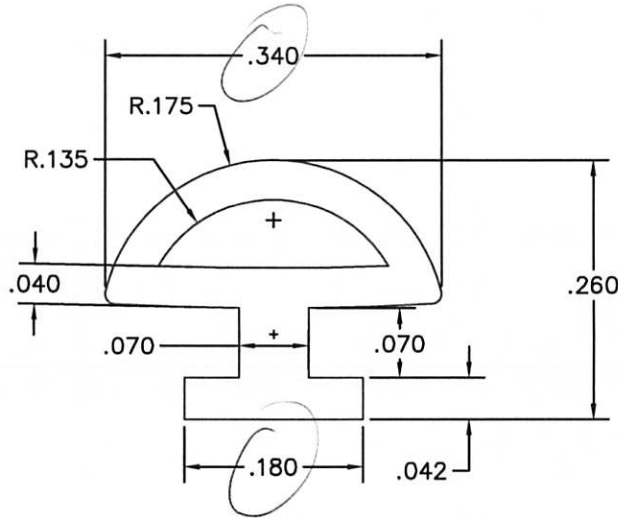


FENESTRATION TESTING LAB
 REPORT NO: T15-084
 DATE: 11/30/15

STANDARDS FOR CROSS SECTIONAL TOLERANCE (ASTM C864)

DIMENSION	TOLERANCE +/-
0 - 0.06	.010
0.06 - 0.10	0.014
0.10 - 0.16	0.016
0.16 - 0.25	0.020
0.25 - 0.39	0.027
0.39 - 0.63	0.031
0.63 - 0.98	0.039
0.98 - 1.57	0.051
1.57 - 2.48	0.063
2.48 - 3.94	0.079

DIMENSIONS MARKED "REF" ARE NOT SUBJECT TO INSPECTION DURING THE EXTRUSION PROCESS



FENESTRATION TESTING LAB
 REPORT NO: T15-084
 DATE: 11/30/15

- NOTES:
 1. MATERIAL:
 A. EPDM.
 B. MUST MEET ASTM C864
 2. COLOR: BLACK
 3. HARDNESS: 70 +/-5, SHORE A.

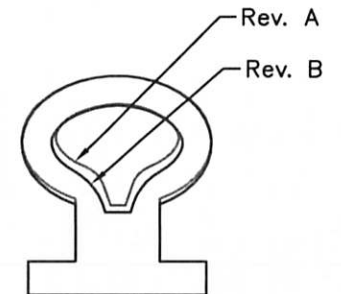
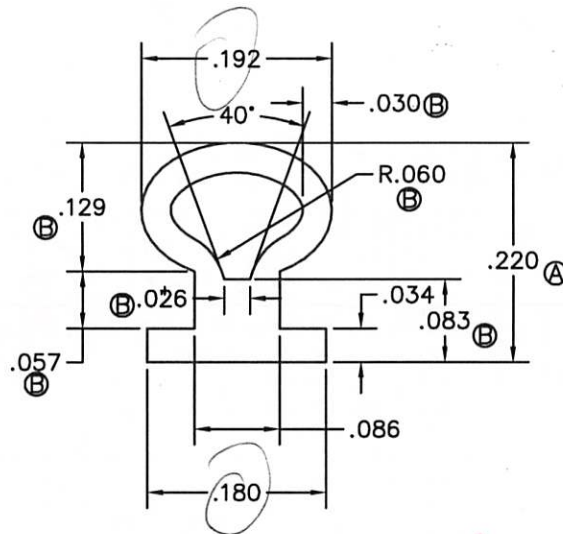
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

FLEETWOOD Windows & Doors		1 FLEETWOOD WAY Corona, CA 92679 (800) 736-7363 www.fleetwoodusa.com	
OBLONG BULB VINYL T-SLOT WEATHERSEAL			
SIZE B	DWG NO. 25031	REV -	
DRAWN BY BLP	DATE 1/30/12	SCALE 8X	SHEET 1 of 1

STANDARDS FOR CROSS SECTIONAL TOLERANCE (ASTM C864)

DIMENSION	TOLERANCE +/-
0 - 0.06	.010
0.06 - 0.10	0.014
0.10 - 0.016	0.016
0.16 - 0.25	0.020
0.25 - 0.39	0.027
0.39 - 0.63	0.031
0.63 - 0.98	0.039
0.98 - 1.57	0.051
1.57 - 2.48	0.063
2.48 - 3.94	0.079

DIMENSIONS MARKED "REF" ARE NOT SUBJECT TO INSPECTION DURING THE EXTRUSION PROCESS



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	.220 WAS .210, AS INDICATED	02/04/13	KN
B	AS INDICATED	02/22/13	KN

FENESTRATION TESTING LAB

REPORT NO:

T15-084

DATE:

11/30/15

NOTES:

1. MATERIAL:

A. EPDM.

B. MUST MEET ASTM C864

2. COLOR: BLACK

3. HARDNESS: 70 +/-5, SHORE A.

FLEETWOOD
Windows & Doors

1 FLEETWOOD WAY
Corona, CA 92579
(800) 736-7363
www.fleetwoodusa.com

MINI BULB VINYL,
T-SLOT WEATHERSEAL

SIZE B	DWG NO. 25199	REV B
DRAWN BY KEVIN	DATE 1/25/13	SCALE 8X
SHEET 1 of 1		

NAME
REF ID: M1
REGISTRATION TESTING LAB

REGISTRATION TESTING LAB