

TEST REPORT

Report No.: C2375.01-301-44

Rendered to:

INTERNATIONAL WINDOW
Hayward, California

PRODUCT TYPE: Aluminum Hopper
SERIES/MODEL: 7222

SPECIFICATIONS: AAMA/WDMA/CSA 101/I.S.2/A440-05, *Standard/Specification for Windows, Doors, and Unit Skylights.*

CAWM 301-90, *Forced Entry Resistance Test for Windows.*

Title	Summary of Results
Primary Product Designator	AP-C30 1219 x 914 (48 x 36)
Design Pressure	±1440 Pa (±30.08 psf)
Air Infiltration	0.51 L/s/m ² (0.10 cfm/ft ²)
Water Penetration Resistance Test Pressure	220 Pa (4.59 psf)

Test Completion Date: 11/23/2012

Reference must be made to Report No. C2375.01-301-44 dated 12/12/12 for complete test specimen description and detailed test results.

1.0 Report Issued To: International Window
30526 San Antonia Street
Hayward, California 94544

2.0 Test Laboratory: Architectural Testing, Inc.
2524 East Jensen Avenue
Fresno, California 93706
(559) 233 - 8705

3.0 Project Summary:

3.1 Product Type: Aluminum Hopper

3.2 Series/Model: 7222

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test methods. The specimen tested successfully met the performance requirements for an **AP-C30 1219 x 914 (48 x 36)** rating.

3.4 Test Dates: 09/10/2012 - 11/23/2012

3.5 Test Record Retention End Date: All test records for this report will be retained until November 23, 2016.

3.6 Test Location: Architectural Testing, Inc. test facility in Fresno, California.

3.7 Test Sample 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 B. Any deviations are documented herein or on the drawings.

3.9 List of Official Observers:

<u>Name</u>	<u>Company</u>
David Douglass	Architectural Testing, Inc.
Jarod Hardman	Architectural Testing, Inc.
Jeffrey Osugi	Architectural Testing, Inc.

4.0 Test Specifications:

AAMA/WDMA/CSA 101/I.S.2/A440-05, *Standard/Specification for Windows, Doors, and Unit Skylights.*

CAWM 301-90, *Forced Entry Resistance Test for Windows.*

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 1.11 m ² (12.0 ft ²)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	1219	48	914	36
Vent	1185	46-5/8	879	34-5/8

5.2 Frame Construction:

Frame Member	Material	Description
Head, sill and jambs	Aluminum	Thermally broken poured and debridged 0.320".
Frame adapter	Aluminum	Snap fit to all members of frame.

	Joinery Type	Detail
All corners	Mitered	The corners were secured with two #8 x 1" Phillips pan head screws and sealed.

5.3 Vent Construction:

Vent Member	Material	Description
Top rail, bottom rail and each stile	Aluminum	Thermally broken poured and debridged 0.225".

	Joinery Type	Detail
All corners	Mitered	Secured with two corner keys and two #8 x 1" Phillips pan head screws and sealed.

5.0 Test Specimen Description: (Continued)

5.4 Weatherstripping:

Description	Quantity	Location
Wrapped foam gasket	1 Row	All members of vent. All members of frame adapter. The corners were sealed.
Hollow bulb gasket	1 Row	All members of frame adapter.
Dual leaf gasket	1 Row	Each glazing bead.

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	3/16" Annealed	3/16" Annealed	Interior glazed onto a bed of silicone glazing sealant and secured with an extruded aluminum snap in glazing bead.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Vent	1	1066 x 760	41-15/16 x 29-15/16	1/2"

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weephole	1-3/4" x 1/4" Oval (1-1/4" x 3/16" effective)	2	2-11/16" from each end through exterior sill face.
Weepnotch	1-3/4" wide	2	1-5/8" from each end through each leg of sill.
Weephole	7/8" x 5/16"	4	4-9/16" from each end through each hollow on bottom rail of vent.

5.0 Test Specimen Description: (Continued)

5.7 Hardware:

Description	Quantity	Location
Multi arm hinge	2	Bottom of each jamb secured to the frame with three and vent with five #8 x 1/2" Phillips pan head screws.
Lock	2	11-1/2" from each end on top rail of vent secured with two 10-24 x 5/8" Phillips flat head screws and sealed.
Keeper	2	Opposite each lock and secured with two #6 x 3/8" Phillips pan head screws.

5.8 Reinforcement: No reinforcement was utilized.

5.9 Screen Construction: No screen was utilized.

6.0 Installation:

The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 1/4" shim space. The exterior perimeter of the window was sealed with silicone.

Location	Anchor Description	Anchor Location
Head, sill and jambs	1-5/8" drywall screws	3-9" from each corner and 16" on center through the mounting fin.

7.0 Test Results: The temperature during testing was 21 - 26°C (70 - 79°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Operating Force, per ASTM E 2068	Initiate motion: 40 N (9.0 lbf) Maintain motion: 68 N (15.3 lbf) Locks: 44 N (10.0 lbf)	Report Only 135 N (30.3 lbf) max. 100 N (22.5 lbf) max.	
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	0.51 L/s/m ² (0.10 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Water Penetration, per ASTM E 547 at 220 Pa (4.59 psf)	Pass	No leakage	
Uniform Load Deflection, per ASTM E 330 taken at bottom rail of vent +1440 Pa (+30.08 psf) -1440 Pa (-30.08 psf)	0.8 mm (0.03") 1.0 mm (0.04")	Report Only	2, 3, 4
Uniform Load Structural, per ASTM E 330 taken at bottom rail of vent +2160 Pa (+45.11 psf) -2160 Pa (-45.11 psf)	0.0 mm (0.00") 0.0 mm (0.00")	3.4 mm (0.13") max.	3, 4
Forced Entry Resistance, per ASTM F 588, Type: B - Grade: 10	Pass	No entry	
Forced Entry Resistance, per CAWM 301, Type: II	Pass	No entry	
Awning, Hopper, Projected Hardware Load Test 140 N (31.5 lbf)	13.0 mm (0.51")	39.8 mm (1.57")	

Note 1: The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/IS.2/A440 for air leakage resistance.

Note 2: The deflections reported are not limited by AAMA/WDMA/CSA 101/IS.2/A440 for this product designation. The deflection data is recorded in this report for special code compliance and information only.

Note 3: Loads were held for 10 seconds.

Note 4: 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 that are retained 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.

David Douglass
Project Manager

Leaton Kirk
Director – Regional Operations

JO: ms

Attachments (pages): This report is complete only when all attachments listed are included.

Appendix-A: Alteration Addendum (1)

Appendix-B: Drawings (8) Complete drawings packet on file with Architectural Testing, Inc.

Appendix A

Alteration Addendum

- Alteration #1:** Date - 09/10/12
Cause for alteration - Failed air penetration test.
Remedial action taken - Unit replaced.
- Alteration #2:** Date - 11/15/12
Cause for alteration - Failed water penetration test.
Remedial action taken - Sealed corners of vent gasket.



Test Report No.: C2375.01-301-44
Report Date: 12/12/12
Record Retention End Date: 11/23/16

Appendix B

Drawings

***Note:** Complete drawings packet on file with Architectural Testing, Inc.*

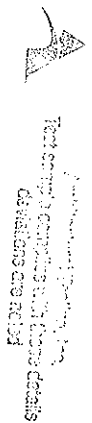
7223/7280 Hopper Single Panel

5/15/2007

"F"

Item #	Part Number	Description	Comments	Vendor	Vendor Part Number	Qty
F1	50697	Head, 1" offset	7223 ONLY	Intex	50697	1
	50697	Head, block	7280 ONLY	Intex	50697	
F2	50697	Sill, 1" offset	7223 ONLY	Intex	50697	1
	50697	Sill, block	7280 ONLY	Intex	50697	
	50697	Jamb, 1" offset	7223 ONLY	Intex	50697	
F3	50697	Jamb, block	7280 ONLY	Intex	50697	2
	50697	Jamb, 1" offset	7223 ONLY	Intex	50697	
F4	22444	Frame adaptor		Anaheim	22444	4
F5	50694	Top Rail		Intex	50433	1
S1	50694	Bottom Rail		Intex	50433	1
S2	50694	Vent Stile		Intex	50433	2
S3	22445	Vent Glazing bead		Anaheim	22445	4
S4						
SC1		Screen				1
SC2	SP2585	Wing Clips				4
Small Parts						
SP1	SP7210	Cam Handle	L&R - 2 req'd for 4' & over	Truth	25.31	1 or 2
SP2	SP711	Strike housing	2 req'd for 4' & over	Truth	20236	1 or 2
SP3	SP712	Strike housing insert	2 req'd for 4' & over	Truth	20233	1 or 2
SP4	SP5521	Weep Hole cover		Astro		2
SP5	SP7221-12	12" Awning friction hinge	Up to 2' high		34.25.208	2
	SP7221-18	18" Awning friction hinge	Up to 2-6' high		34.28.208	2
	SP7221-24	24" Awning friction hinge	Up to 3' high		34.31.208	2
	SP7221-28	28" Awning friction hinge	Up to 4' high		34.86.208	2
SP6		Snubber	2 req'd for over 3'			2
SP7						
SP8						
SP9						
SP10						
SP11	SP6218	Silicone	Joint sealant	Dow	995	AR
SP12	SP6219	Weld On PVC Glue	Bulb vinyl corners	IPS	4784PT	AR
SP13						

Item #	Part Number	Description	Comments	Vendor	Vendor Part Number	Qty
W1	FT8211	Foam Bulb vinyl		Amesbury	32001	A/R
W2						
W3						
W4						
Weatherstrip						
G1		3/4" Insulated Glass				1
G2	FT3320	1/16" x 1/2" Glazing Tape				A/R
G3	VY2316	Setting block/Edge Blocks 4"		Bandlock	BL4064	5
G4	SP2653	Sealant	Hold setting blocks in place, seal corners	Schnee- Morehead	5504	A/R
G6						
G7						
Glass						
FA1						
FA2	FA2440	#8 X 3/4" PH Flat HD SMS	Frame, Sash, Hinge, snubber			25
FA3	FA2289SS	#10-24 X 5/16" PH Flat hd MS SS	Handle & keeper			4
FA4	FA3477SS	#8 X 1/2" PH Pan HD SS	Hinge			6
FA5						
FA6						
Fasteners						
LB1	LAB6220C	AAMA Permanent Label				1
LB2	SP4001	NFRC Temporary Label				1
LB3	LAB219	Logo label with instructions				1
LB4						
Labels						

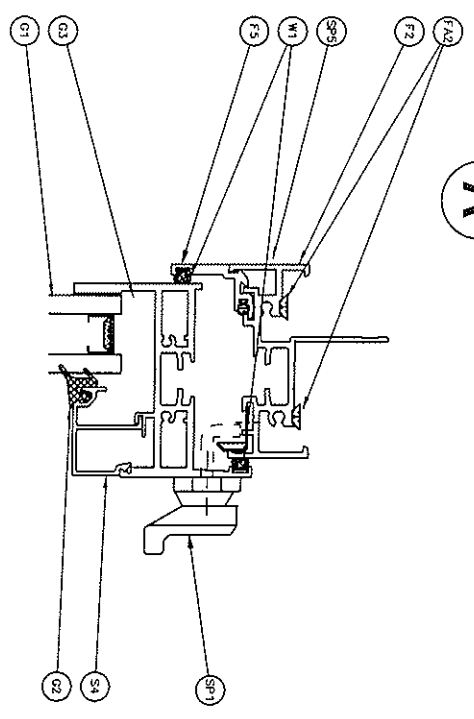


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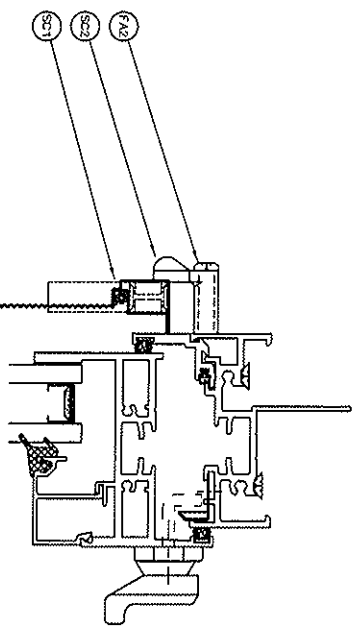
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A



A



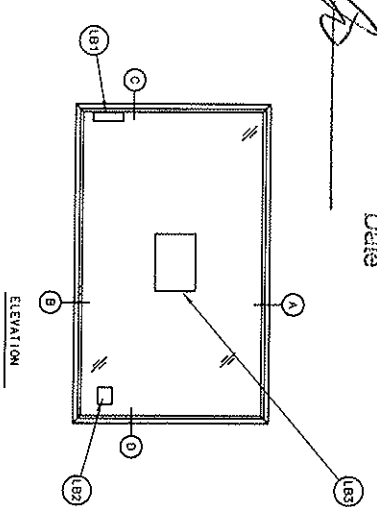
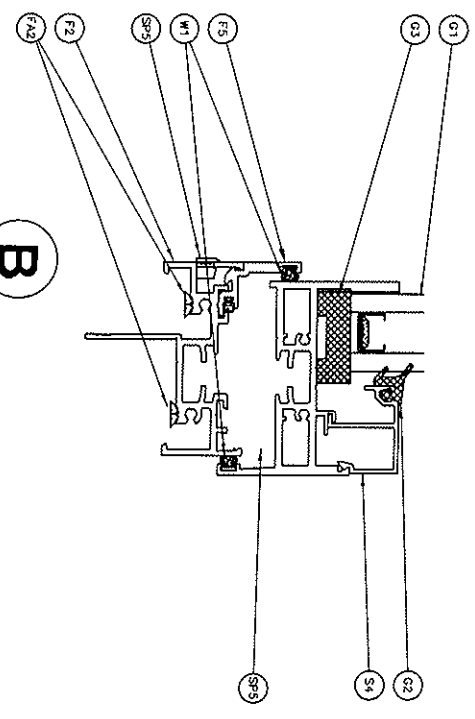
Technical drawing showing a cross-section of a window assembly. Callouts include: F2, S2, S3, and S5.

02375
020112012

Report #
Tech
Date

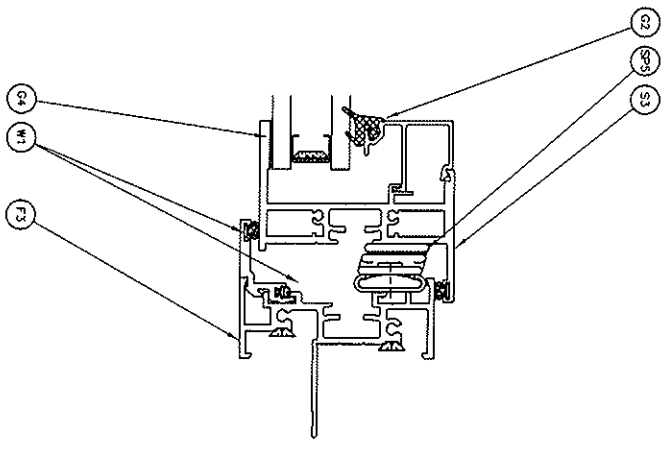
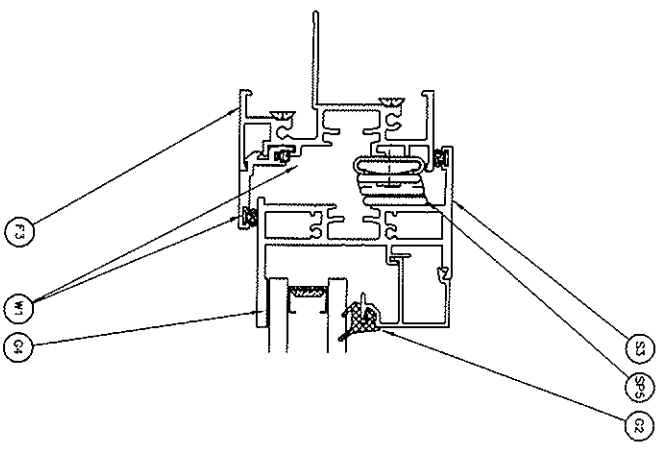
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B



ELEVATION

DATE	REV	BY	DATE	REV	BY	DATE	REV	BY
International Aluminum Corporation DIVISION INTERNATIONAL WINDOW CORPORATION			UAH 02/26/2010 2 X SIZE			DWG. NO. 7220-001 1 of 2		



C

D



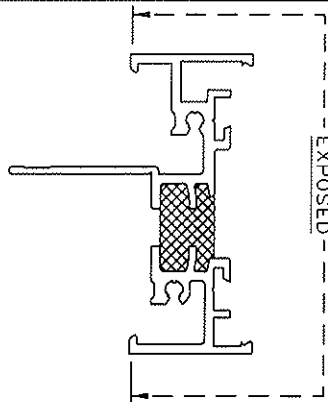
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SEP 11 2012

Report#
 Tech *[Signature]*
 Date

SM	REVISION	DATE	BY	DESCRIPTION	DWG. NO.
					7220A-001
					2 of 2

EXPOSED



ACTUAL SIZE WITH FILL AND DEBRIDGE



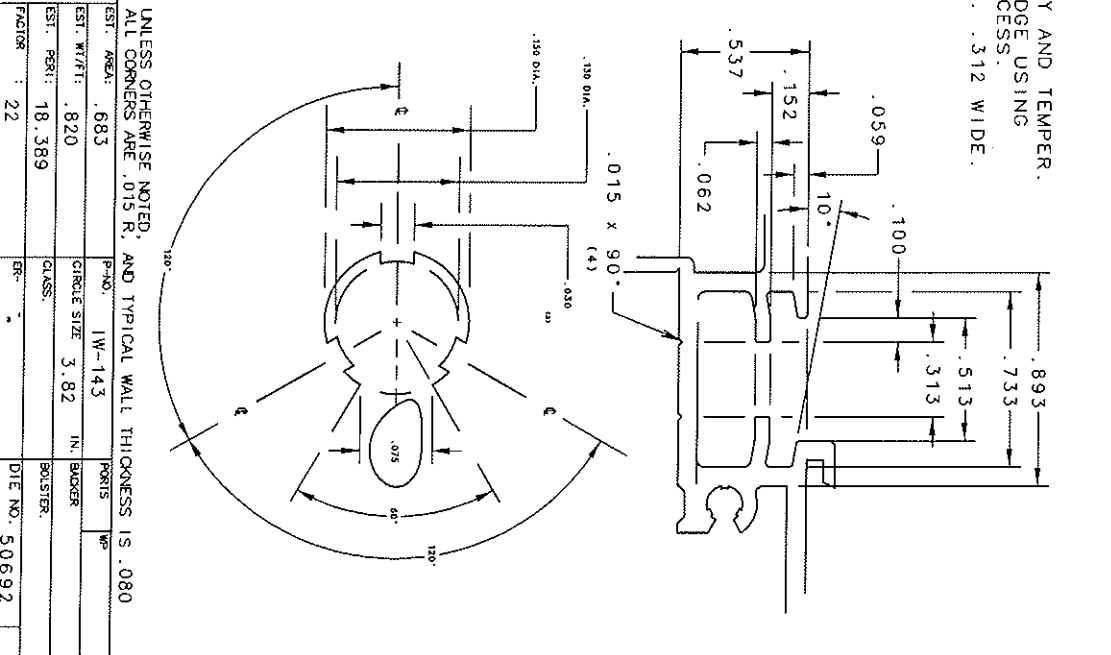
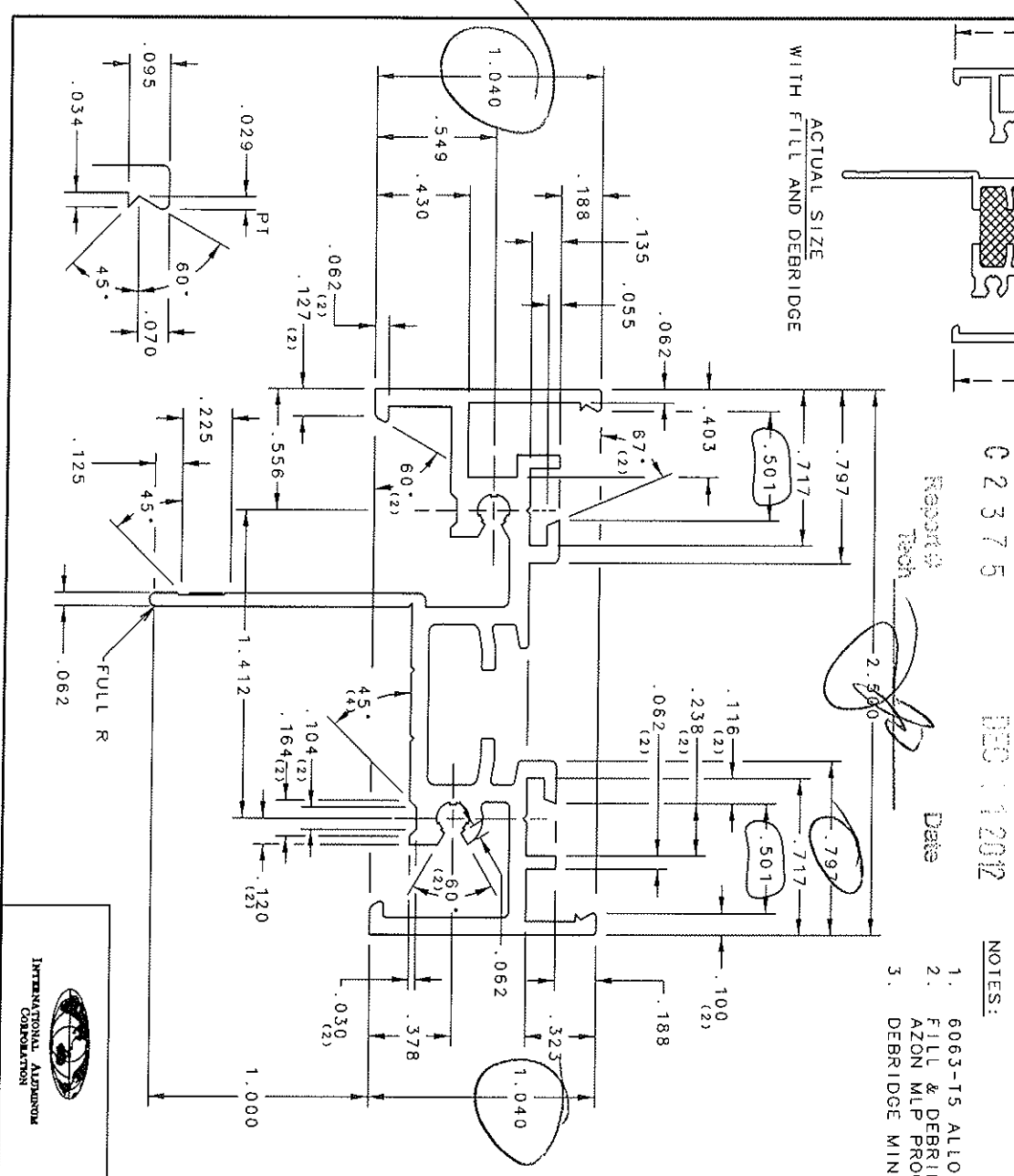
Approved by Larry Hammill at 9:29 am, Jan 23, 2012
Customer: AZON
Part Name: 72000 KELTIC UNIVERSAL FRAME
Part No.:
Scale: 2 X SIZE

0 2 3 7 5 DEC 14 2012

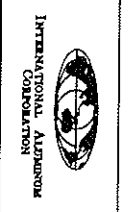
Revised
Tech

Date

- NOTES:
- 6063-T5 ALLOY AND TEMPER.
 - FILL & DEBRIDGE USING AZON MLP PROCESS.
 - DEBRIDGE MIN. .312 WIDE.



SM	REVISION	BY	DATE	CUSTOMER	DIE NO.
				INTERNATIONAL WINDOW	50692
				72000 KELTIC UNIVERSAL FRAME	1/20/2012
				SCALE: 2 X SIZE	
				STANDARD TOLERANCES FOR EXTRUDED SHAPES APPLY UNLESS SPECIFICALLY SHOWN OTHERWISE	

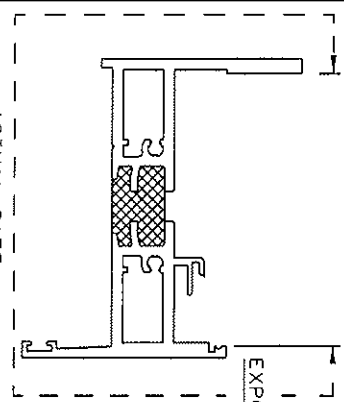


UNLESS OTHERWISE NOTED, ALL CORNERS ARE .015 R, AND TYPICAL WALL THICKNESS IS .080

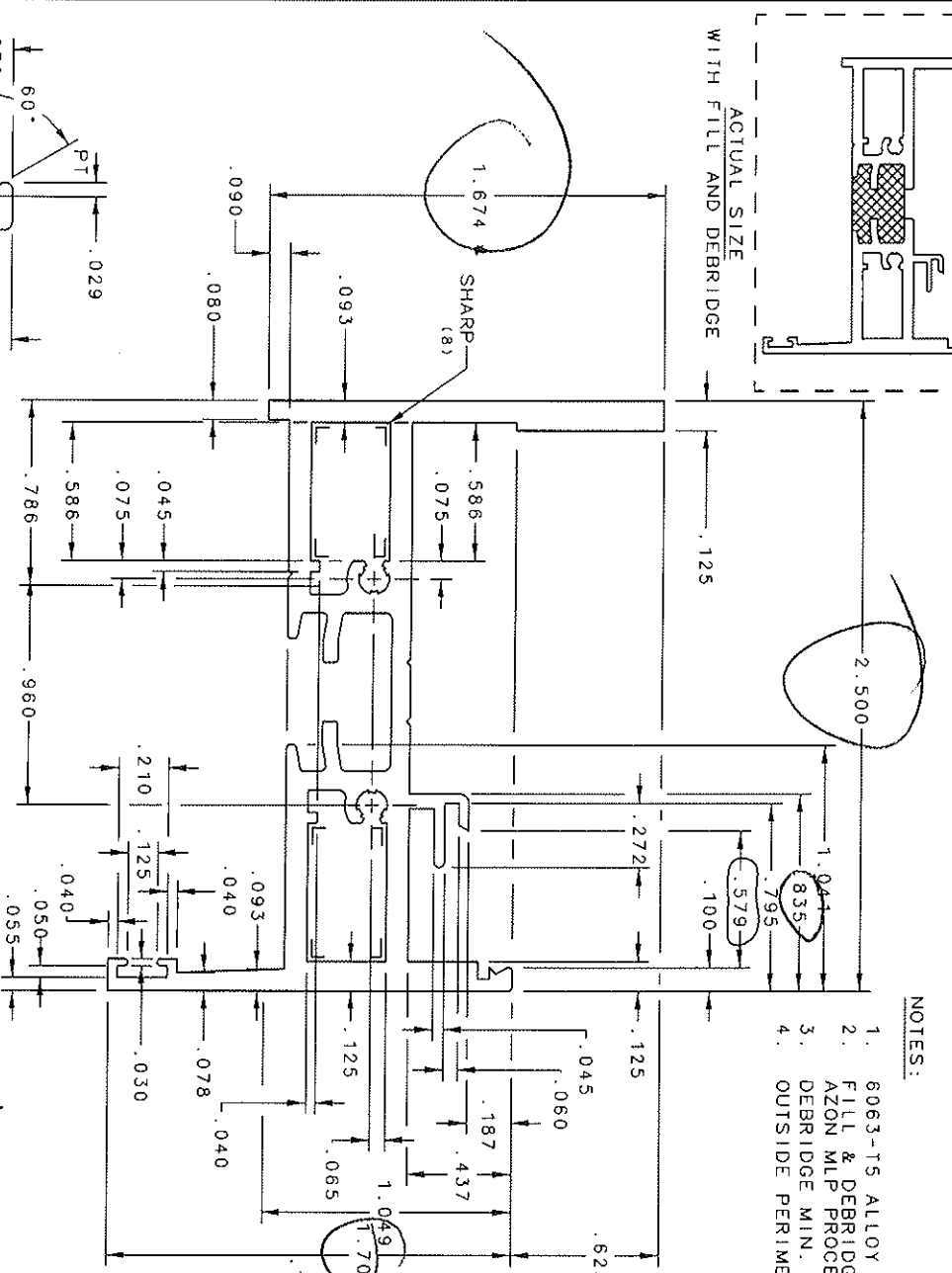
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EST. W/T/FI:	.820	CIRCLE SIZE	3.82	IN. BUCKER	
EST. PERI:	18.389	CLASS:		BOLSTER:	
FACTOR:	22	BR:		DIE NO.:	50692

C 2 3 7 5 DWG 112012

Reported To: *FD* Date: _____



ACTUAL SIZE
 WITH FILL AND DEBRIDGE



NOTES:

1. 6063-T5 ALLOY AND TEMPER.
2. FILL & DEBRIDGE USING AZON MLP PROCESS.
3. DEBRIDGE MIN. .250 WIDE.
4. OUTSIDE PERIMETER = 14.532.

REV	REVISION	BY	DATE	CUSTOMER	DIE NO.
				INTERNATIONAL WINDOW	H-50694
				7290 KELLIC HOOPER SASH	DATE: 1/20/2012
				SCALE: 2 X SIZE	
STANDARD TOLERANCES FOR EXTRUDED SWAGES APPLY UNLESS SPECIFICALLY SHOWN OTHERWISE.					

CA	TX	EST. AREA: .850	PERIOD: IW-145	PORTS	MP
		EST. W/T: 1.020	CIRCLE SIZE: 3.2	IN. BACKER	
		EST. PERI: 19.600	CLASS:	BOOSTER:	
		FACTOR: 19			DIE NO. H-50694

UNLESS OTHERWISE NOTED, ALL CORNERS ARE .015 R. AND TYPICAL WALL THICKNESS IS .080

International Extrusion Corporation
 1000 MERIDIAN AVENUE, ALHAMBRA, CALIF.
 TEL. 576-2424 AREA CODE 826

C 2 3 7 5

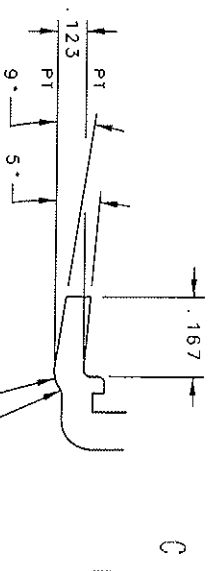
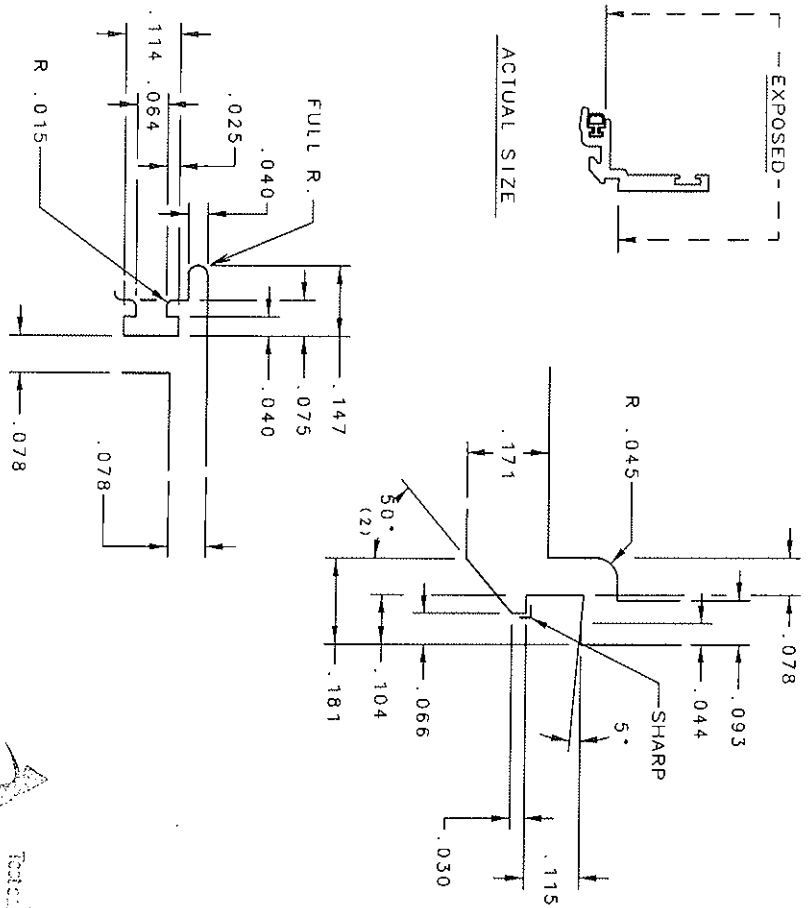
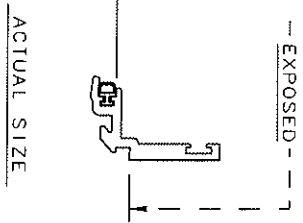
DATE

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REV	REVISION	BY	DATE	CUSTOMER	DIE NO.
				INTERNATIONAL WINDOW	22444
				7200C RELTIC FRAME ADAPTOR	DATE 1/20/2012
				2 X SIZE	DRW. 100%
STANDARD TOLERANCES FOR EXTRUDED SHAPES APPLY UNLESS SPECIFICALLY SHOWN OTHERWISE					

NOTES:

1. 6063-T5 ALLOY AND TEMPER.

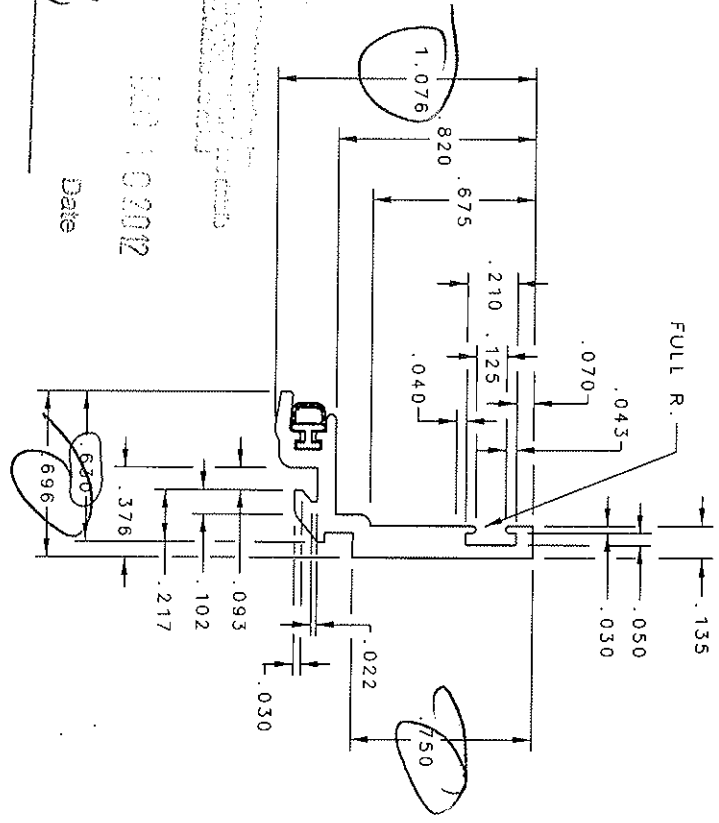


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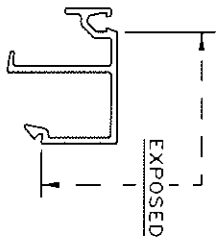
Report Tech

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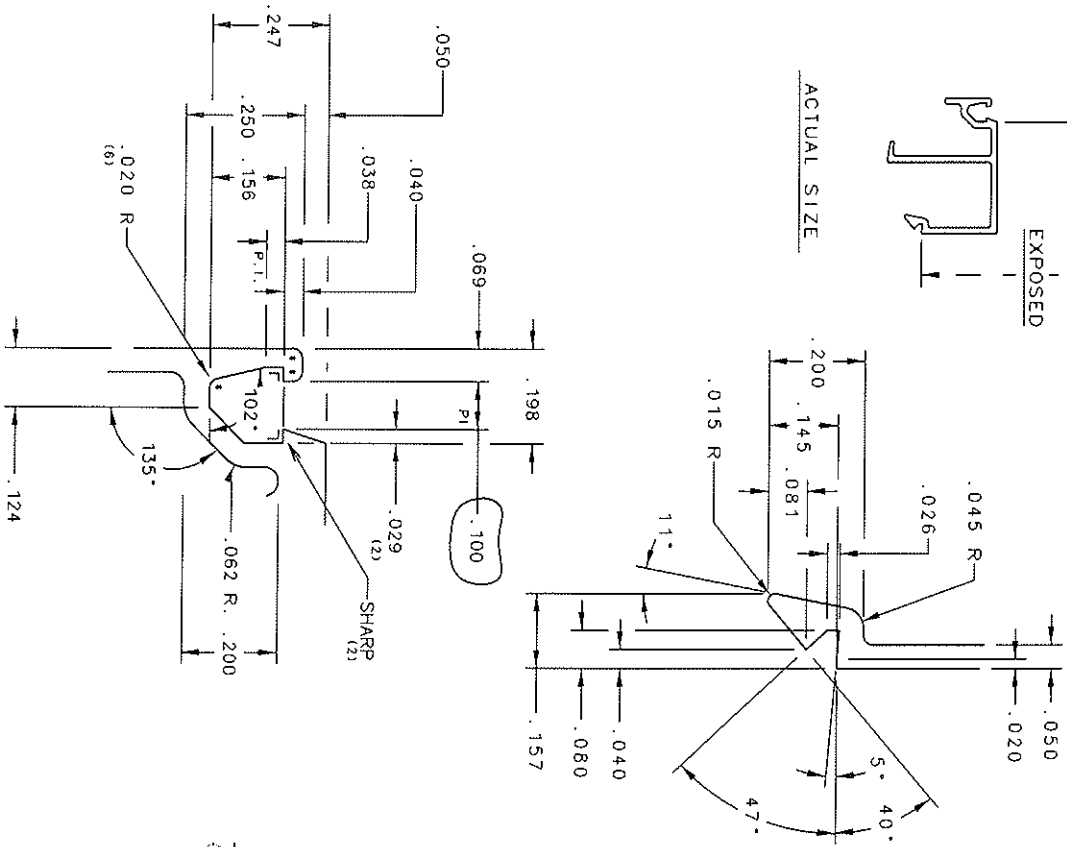
Date



<p>□ CA □ TX</p> <p>International Extrusion Corporation 1000 MERIDIAN ALHAMBRA, CALIF. TEL. 578-2424</p>	<p>UNLESS OTHERWISE NOTED, ALL CORNERS ARE .015 R. AND TYPICAL WALL THICKNESS IS .078</p>
<p>EST. AREA: .172</p> <p>EST. WGT: .206</p> <p>EST. PERI: 4.409</p> <p>Factor: 21</p>	<p>IP-NO: IW-147</p> <p>CIRCLE SIZE: 1.28</p> <p>CLASS: SOLID</p> <p>FR: 1</p>
<p>PORTS</p> <p>IN. BACKER</p> <p>BOASTER</p> <p>DIE NO. 22444</p>	



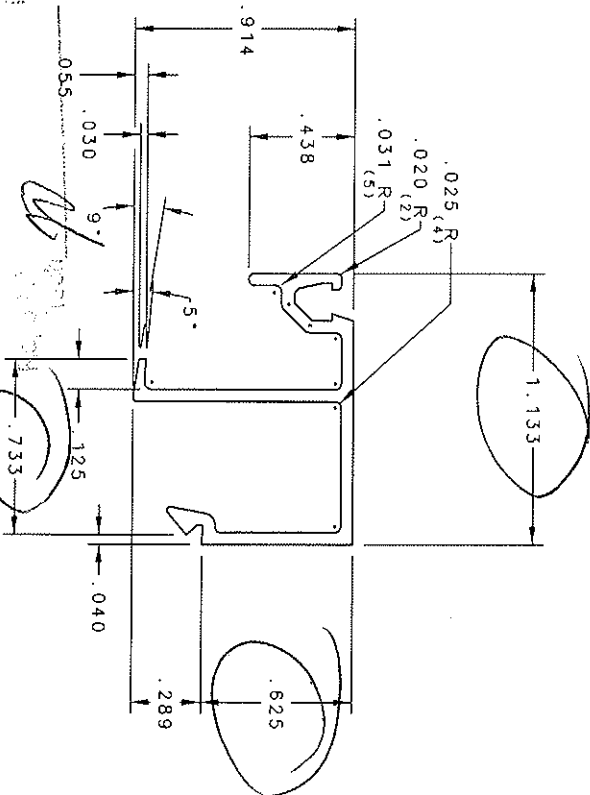
ACTUAL SIZE



SM	REVISION	BY	DATE	CUSTOMER	DIE NO.
				INTERNATIONAL WINDOW	22445
				PART NAME: 7200C KELLIC VENT GLZS BEAD	DATE: 1/20/2012
				PART NO.:	QTY: MP
				STANDARD TOLERANCES FOR EXTRUDED SWAPS APPLY UNLESS SPECIFICALLY SHOWN OTHERWISE	

NOTES:

1. 6063-T5 ALLOY AND TEMPER.



200701001 04220

□ CA	□ TX	EST. AREA: .176	P-NO: IW-148	PORTS	MP
		EST. W/FT: .211	CIRCLE SIZE: 1.3	IN. BACKER	
International Extrusion Corporation 1000 MERIDIAN ALHAMBRA, CALIF TEL. 578-2424 AREA CODE 928		EST. PERI: 6.935	CLASS: SOLID	BOULSTER:	
		FACTOR: 33			DIE NO. 22445

UNLESS OTHERWISE NOTED, ALL CORNERS ARE .015 R, AND TYPICAL WALL THICKNESS IS .050