

## RAM INDUSTRIES TEST REPORT

#### **SCOPE OF WORK**

AAMA/WDMA/CSA 101/I.S.2/A440 TESTING ON SERIES S840 INTERIOR SILICONE GLAZED HEAVY PICTURE WINDOW

#### **REPORT NUMBER**

L3960.01-801-44-R0

#### TEST DATE(S)

09/21/20

#### **ISSUE DATE**

11/03/20

#### **RECORD RETENTION END DATE**

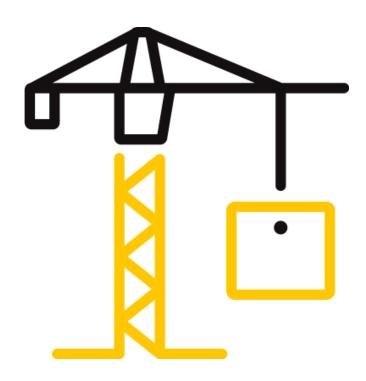
09/21/24

#### **PAGES**

13

#### **DOCUMENT CONTROL NUMBER**

RT-R-AMER-Test-2804 (04/17/18) © 2017 INTERTEK





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#### **TEST REPORT FOR RAM INDUSTRIES**

Report No.: L3960.01-801-44-r0

Date: 11/03/20

#### **REPORT ISSUED TO**

#### **RAM INDUSTIRES**

8600 Commerce Park Dr. Houston, TX 77036

#### **SECTION 1**

#### SCOPE

Intertek Building & Construction (B&C) was contracted by Ram Industries to perform testing in accordance with AAMA/WDMA/CSA 101/I.S.2/A440 on their Series S840 Interior Silicone Glazed Heavy Picture Window. Results obtained are tested values and were secured by using the designated test methods. Testing was conducted at the Intertek test facility in Plano, TX. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

#### **SECTION 2**

#### **SUMMARY OF TEST RESULTS**

TITLE	RESULTS
AAMA/WDMA/CSA 101/I.S.2/A440-17	CW-PG90-FW
Design Pressure	±4320 Pa (±90.23 psf)
Air Infiltration	<0.10 L/s/m <sup>2</sup> (<0.01 cfm/ft <sup>2</sup> )
Water Penetration Resistance Test Pressure	580 Pa (12.11 psf)

Reference must be made to Intertek B&C Report No. J6600.01-801-44, dated 02/13/20 for complete test specimen description and detailed test results.

#### For INTERTEK B&C:

COMPLETED BY:	Jeffrey Crump	REVIEWED BY:	Andy Cost
	Sr. Project Manager –		
TITLE:	AWS	TITLE:	Laboratory Manager
SIGNATURE:		SIGNATURE:	
DATE:	11/03/20	DATE:	11/03/20
IC·cm			

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#### **SECTION 3**

#### **TEST SPECIFICATION(S)/METHODS**

The specimens were evaluated in accordance with the following:

**AAMA/WDMA/CSA 101/I.S.2/A440-17**- North American Fenestration Standard/Specification for Windows, Doors, and Skylights

The following test methods were used during testing:

**AAMA 205-15**, In-Plant Testing Guidelines for Manufacturers and Independent Laboratories

**ASTM E283-04(2012)**, Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen

**ASTM E330/E330M-14**, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference

**ASTM E547-00(2016)**, Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference

**ASTM F588-17,** Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact

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#### **SECTION 4**

#### **MATERIAL SOURCE/INSTALLATION**

Test specimens were provided by the client. Representative samples of the test specimen(s) will be retained by Intertek B&C for a minimum of four years from the test completion date.

The specimen was installed into a SPF wood buck. The rough opening allowed for a 1/8" shim space and the exterior perimeter of the specimen was sealed to the test buck. Installation of the tested product was performed by the client.

LOCATION	ANCHOR DESCRIPTION	ANCHOR SPACING
Interior perimeter of frame nail fin	Snap in Nail fin frame is installed in a (2" x 6") test buck with #6 x 1-5/8" screws which is attached to outer (2" x 10") SPF wood wrap.	Screws attached 2" from each frame end and 12" on center at frame head, sill and jambs.

#### **SECTION 5**

#### **EQUIPMENT**

Calibration of test equipment was performed by Intertek B&C in accordance with AAMA 205-15.

#### **SECTION 6**

#### **LIST OF OFFICIAL OBSERVERS**

NAME	COMPANY
Jeffrey Crump	Intertek B&C
Jason Gossage	Intertek B&C

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#### **SECTION 7**

#### **TEST SPECIMEN DESCRIPTION**

**Product Type**: Fixed Window

Series/Model: S840 Interior Silicone Glazed Heavy Picture Window

#### **Product Size(s):**

OVERALL AREA:	WIDT	Н	HEIG	нт
1.95 m <sup>2</sup> (21 ft <sup>2</sup> )	millimeters	inches	millimeters	inches
Overall size	2134	84	914	36
Daylight Opening	2054	80-7/8	835	32-7/8

#### **Frame Construction:**

MEMBER	MATERIAL	DESCRIPTION
Head, sill, jambs, and snap in nail fin	Aluminum	Extruded aluminum thermally broken with polyurethane.
	JOINERY TYPE	DETAIL
All corners	Mechanical	Frame corners are attached with two (2) #8 x 1" HX WSHR Type A SMA, each. Aluminum frame corner bracket (2" x .062" thick) located at frame interior pocket. All corners sealed with silicone.

**Reinforcement:** No reinforcement was utilized.

Weatherstripping: No weatherstripping was utilized.

**Glazing:** No conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen(s) can be made.

<b>GLASS TYPE</b>	SPACER TYPE	INTERIOR LITE	<b>EXTERIOR LITE</b>	GLAZING METHOD
1" IG	Aluminum	3/16" annealed	3/16" annealed	Interior glazed with silicone at the exterior face of glass and aluminum glazing bead with rubber stop at the interior face of glass.

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LOCATION	QUANTITY	DAYLIGHT OPENING		GLASS BITE
		millimeters	inches	
Head sill and jambs	2	2054 x 835	80-7/8 x 32-7/8	9/16

**Drainage:** Weeps were not utilized

**Hardware:** No hardware was utilized.

### SECTION 8 TEST RESULTS

The temperature during testing was 23°C (73°F). The results are tabulated as follows:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Air Leakage,			
Infiltration per ASTM E283	<0.10 L/s/m <sup>2</sup>	1.5 L/s/m <sup>2</sup>	
at 300 Pa (6.24 psf)	(<0.01 cfm/ft <sup>2</sup> )	(0.3 cfm/ft <sup>2</sup> ) max.	1, 2
Air Leakage,			
Exfiltration per ASTM E283	<0.10 L/s/m <sup>2</sup>	1.5 L/s/m <sup>2</sup>	
at 300 Pa (6.24 psf)	(<0.01 cfm/ft <sup>2</sup> )	(0.3 cfm/ft <sup>2</sup> ) max.	1, 2
Water Penetration,			
per ASTM E547 at 580 Pa			
(12.11 psf)	Pass	No leakage	
Uniform Load Structural,			
per ASTM E330			
Deflections taken at Anchors			
+4320 Pa (+90.23 psf)	.51 mm (0.02")	1.8 mm (0.07") max.	
-4320 Pa (-90.23 psf)	1.02 mm (0.04")	1.8 mm (0.07") max.	

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Uniform Load Structural,			
per ASTM E330			
Permanent Set taken at Anchors			
+6480 Pa (+135.33 psf)	<.10 mm (<0.01")	1 mm (0.04") max.	
-6480 Pa (-135.33 psf)	<.10 mm (<0.01")	1 mm (0.04") max.	3
Forced Entry Resistance,			
per ASTM F588,			
Type: D - Grade: 10	Pass	No entry	

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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: Test Date 09/21/20 / Time: 10:00 AM(Air Note Only)

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 not used to seal against air leakage during structural testing. In our opinion, the tape and film did not influence the results of the test.

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#### **TEST REPORT FOR RAM INDUSTRIES**

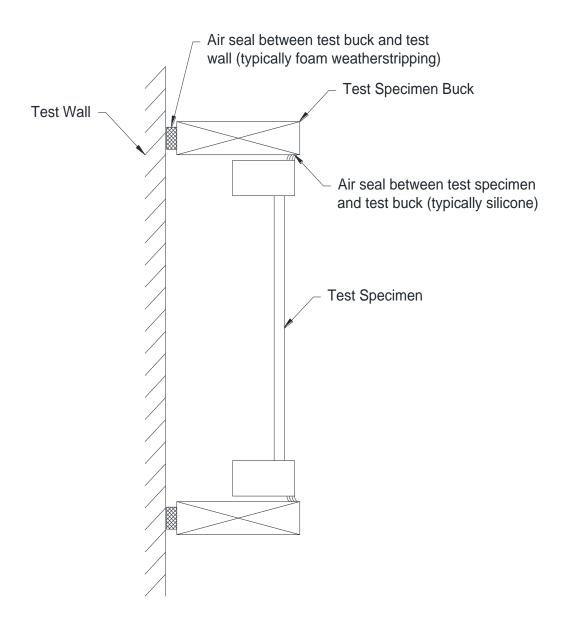
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#### **SECTION 9**

#### **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.



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#### **SECTION 10**

#### **CONCLUSION**

The specimen tested successfully met the performance requirements for a CW-PG90-FW rating.

Reference Intertek B&C Report No. J6600.010-801-44, dated 02/13/20 for complete *Gateway* test specimen description and test results.

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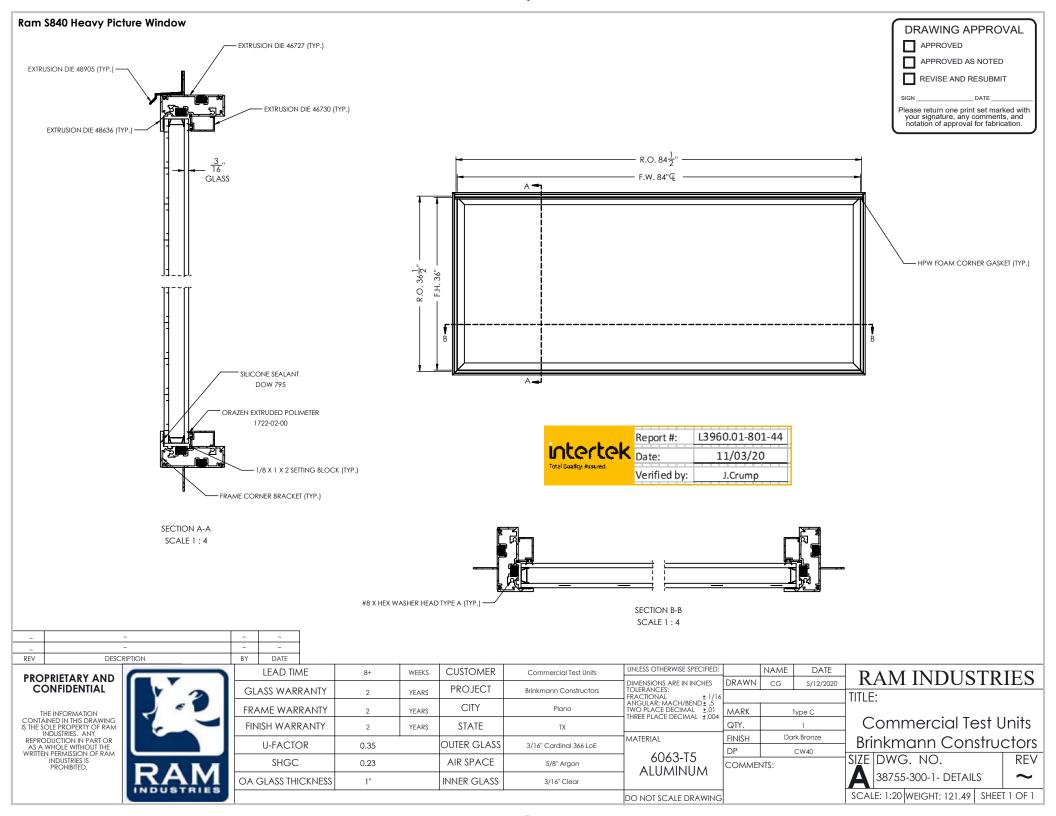
Date: 11/03/20

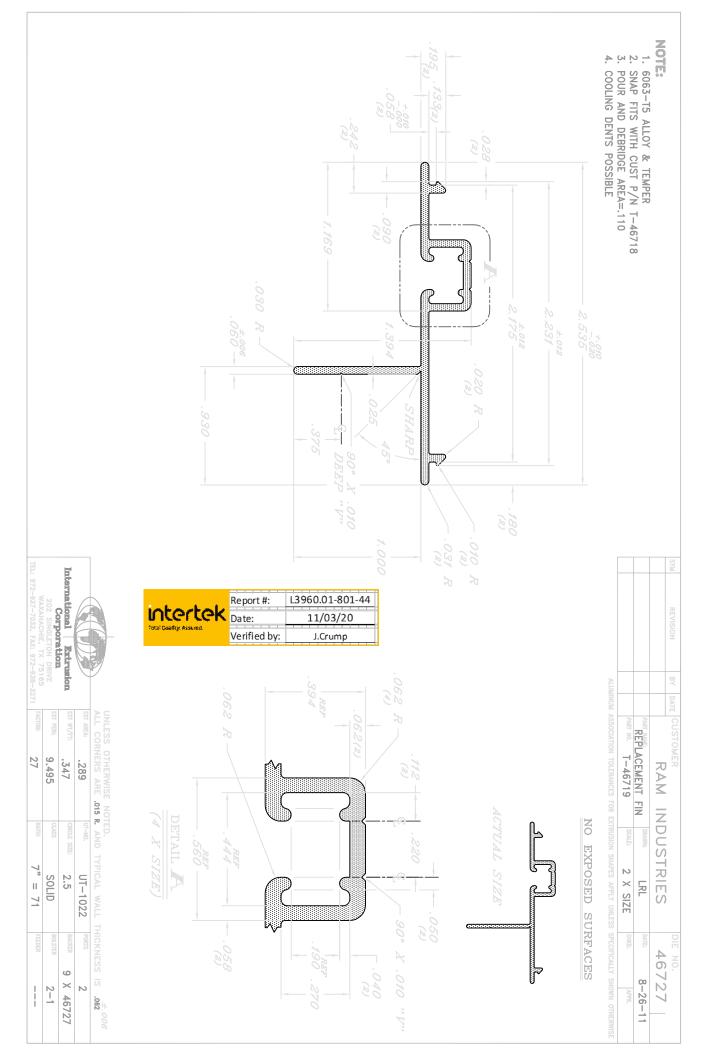
#### **SECTION 11**

#### **DRAWINGS**

The test specimen drawings have been reviewed by Intertek B&C and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.

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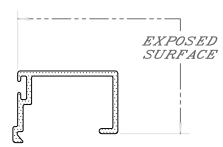


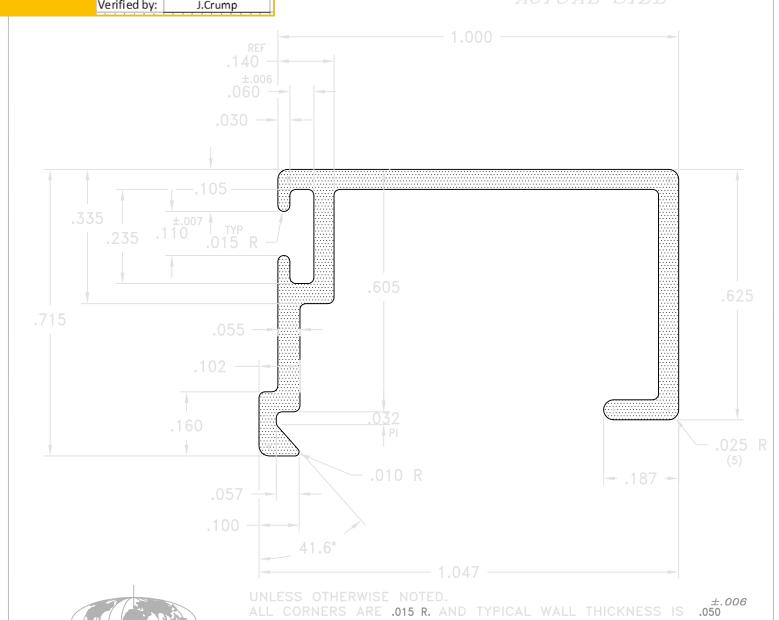


PART NAME: GLAZING STOP DRAWN: LRL PART NO. 44195 SCALE: 4 X SIZ  ALUMINUM ASSOCIATION TOLERANCES FOR EXTRUSION SHAPES APP  NOTE:	46730
ALUMINUM ASSOCIATION TOLERANCES FOR EXTRUSION SHAPES APP	DATE: 8-22-11
	CHKD. APPR.
1. 6063-T5 ALLOY & TEMPER 2. MATES WITH PART NO. 44192, 44193, 44194,	EXPOSED

intertek

Report #:	L3960.01-801-44
Date:	11/03/20
Verified by:	LCrumn





International Extrusion Corporation

202 SINGLETON DRIVE WAXAHACHIE, TX 75165 TEL: 972-937-7032, FAX: 972-938-3271

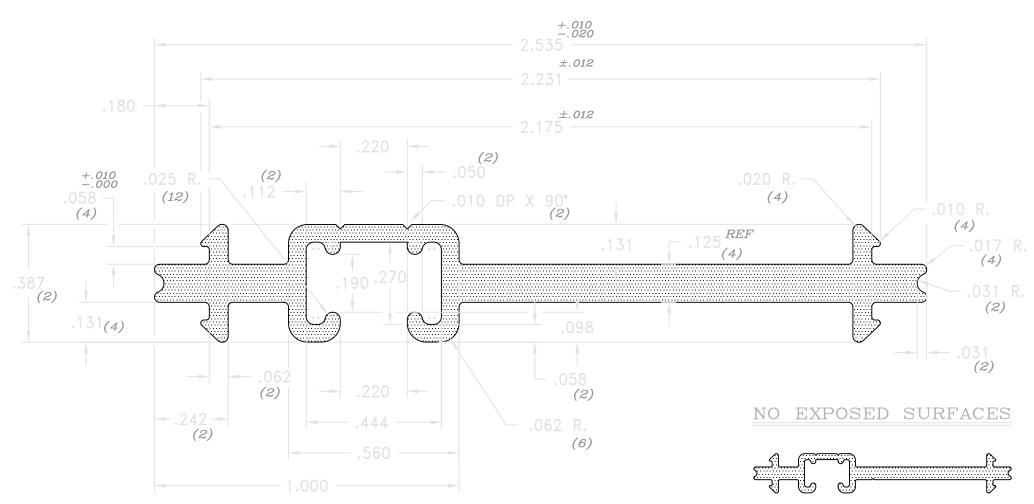
5 .132 1019 9 x 30897 .158 1.2 5.277 SOLID 5 - 77" = 62 33 46730

#### NOTE:

1. 6063-T5 ALLOY & TAMPER

SYM	REVISION	BY	DATE	CUSTOMER		DIE NO.	7
				RAM INDUS	TRIES, INC.	46/3	5
				PART NAME: MULL—THERMAL	DRAWN: JHN	DATE: 8/26,	/11
				PART NO. 40770	SCALE: 3X	CHKD.	APPR.

ALUMINUM ASSOCIATION TOLERANCES FOR EXTRUSION SHAPES APPLY UNLESS SPECIFICALLY SHOWN OTHERWISE



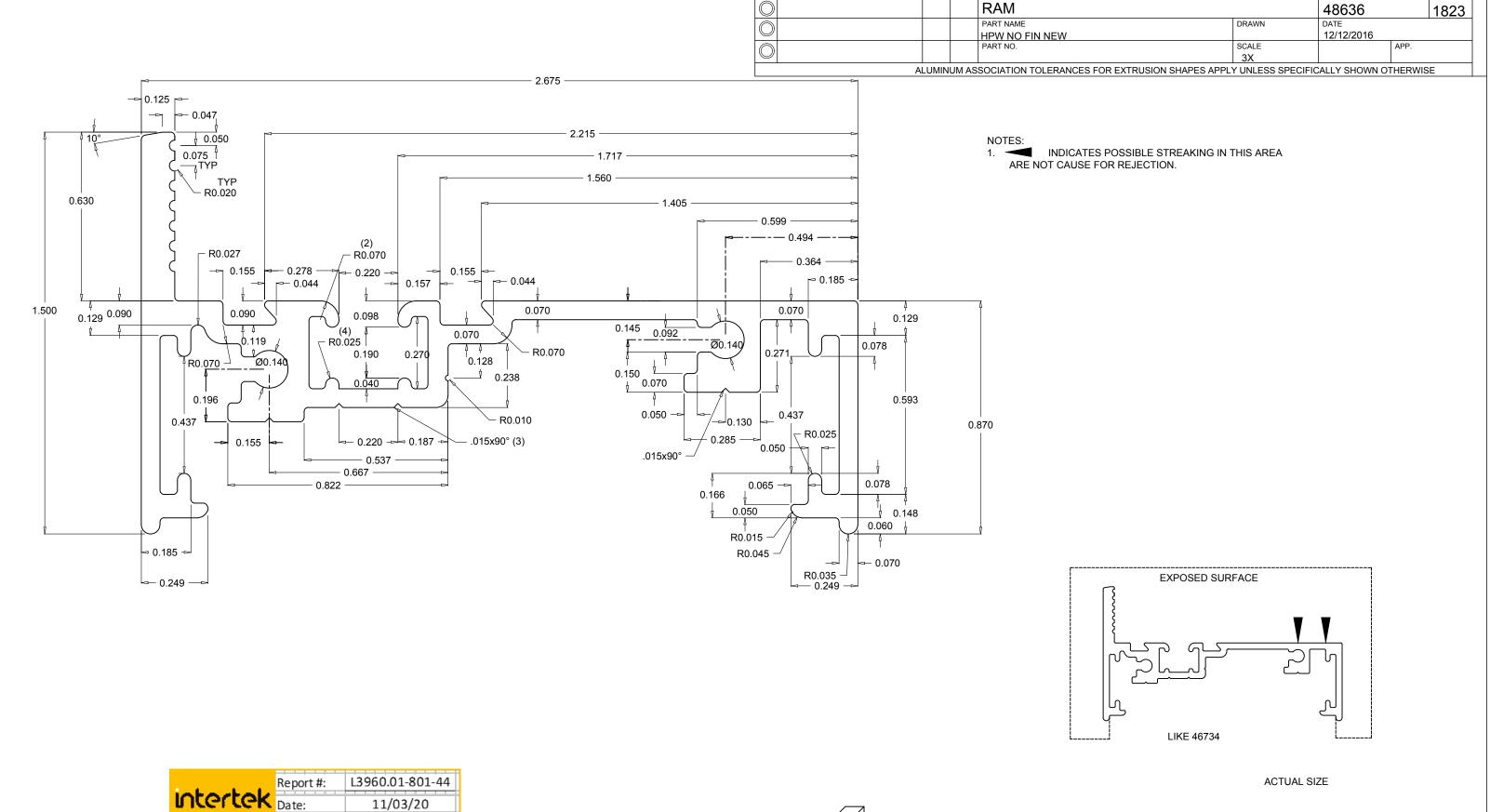
into delle	Report #:	L3960.01-801-44
<b>INCOLCOK</b>	Date:	11/03/20
Total Quality, Assured.	Verified by:	J.Crump

International Extrusion
Corporation

202 SINGLETON DRIVE WAXAHACHIE, TX 75165 TEL: 972-937-7032, FAX: 972-938-3271 UNIESS OTHERWISE NOTED.

ALL CORNERS ARE .015 R. AND TYPICAL WALL THICKNESS IS

EST AREA:	.363	UT-NO.	1023	PORTS	2	WP
EST WT/FT:	.436	CIRCLE SIZE:	2.5	BACKER	9	X 44061
EST PERI:	7.977	CLASS	SOLID	BOLSTER		3606
FACTOR:	18	ER -	7" = 56	DIE NO.		46733



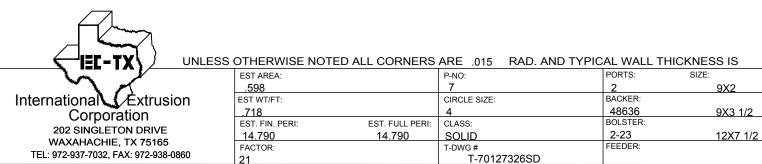
11/03/20

J.Crump

Verified by:

SYM

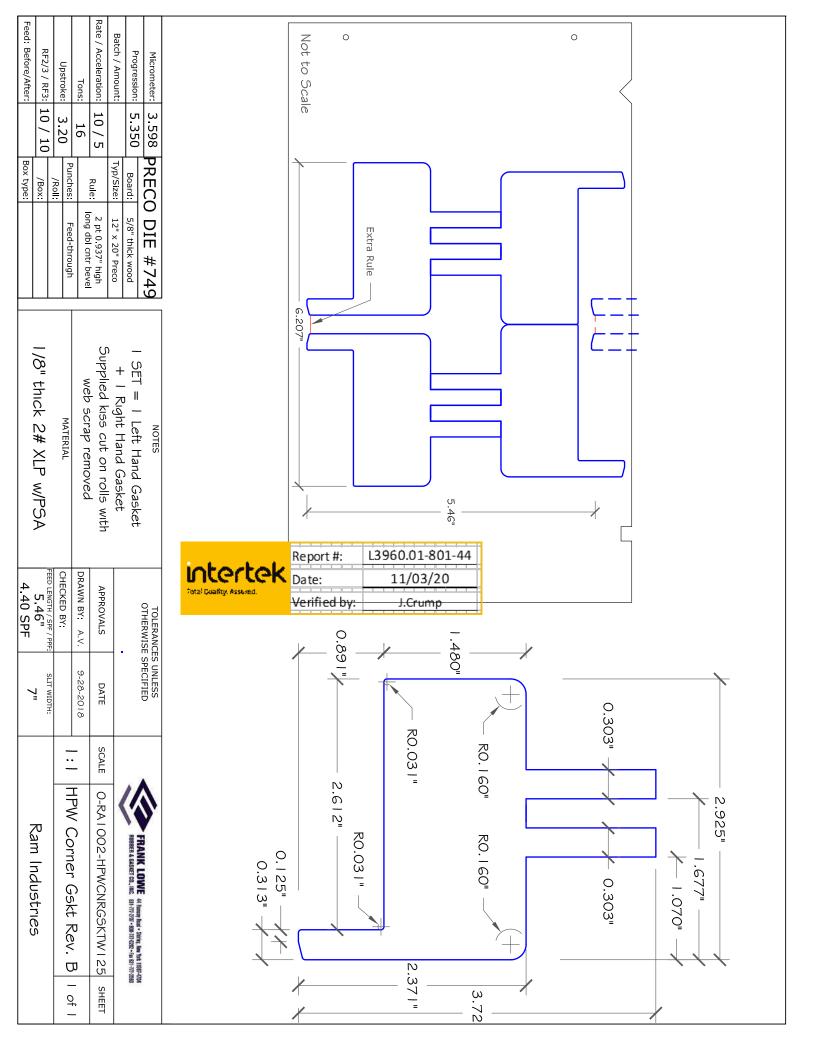
REVISION



BY DATE CUSTOMER

QUOTE NO.

DIE NO.



This Document is subject to ethyl aluminum group standard terms and conditions as Found on the aluminum group's purchase order acknowledgement which includes the following provision. 10: Buyer's Designs, Plans, Drawings, specifications, and requirements: on any material which is not included in seller's standard line offered to the trade generally in the usual course of seller's business. It is agreed that buyer has engaged seller to manufacture such material to buyer's specifications and requirements or for the design and prequirements or for the design and specifications and requirements or for the design and specifications and requirements or for the design and prequirements or for the design and prequirements or for the design and hat an advanced the summary of the summary of the summary of the summary or otherwise determining the sufficiency and applicability or fitned use and buyer is responsible for testing or otherwise determining the sufficiency and applicability or fitned use and buyer is responsible for testing or otherwise determining the sufficiency and applicability or fitned use and buyer is responsible for testing or otherwise determining the sufficiency and applicability or fitned use and buyer is responsible for testing or otherwise determining the sufficiency and applicability or fitned use and buyer is responsible for testing or otherwise determining the sufficiency and applicability or fitned use and buyer is responsible for testing or otherwise determining the sufficiency and applicability or fitned use and buyer is responsible for testing or otherwise determining the sufficiency and applicability or fitned use and buyer is responsible for testing or otherwise determining

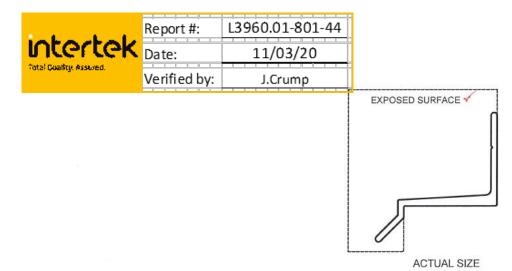
SYM	REVISION	BY	DATE	CUSTOMER		DIE NO.	QUOTE NO.	AM
0				STOCK				46:59
0				PART NAME RAM WINDOWS DRIP CAP	DRAWN SD	7/1/2019		19 11:
0				PART NO. RAM 1.0 DRIP CAP DIE	SCALE 3X		APP.	7/1/20
	Al	LUMIN	UM AS	SOCIATION TOLERANCES FOR EXTRUSION SHAPE	S APPLY UNLESS SPE	CIFICALLY SHOWN OT	HERWISE	



 INDICATES POSSIBLE STREAKING IN THIS AREA ARE NOT CAUSE FOR REJECTION.

# I, the undersigned hereby approve this print [\*] As Drawn [ ] As Marked This includes my approval of Tolerances & Dimensions as shown & I authorize the preparation of extrusion die & acknowledge that I will pay the cost of making this die and any cost to revise this die after the production of this die has started. SIGNATURE DATE 1-5-2019

PLEASE INDICATE EXPOSED SURFACE IF NOT INDICATED WILL PROCESS AS NO EXPOSED SURFACES



EE-TX UN

Corporation 202 SINGLETON DRIVE WAXAHACHIE, TX 75165 TEL: 972-937-7032, FAX: 972-938-0860

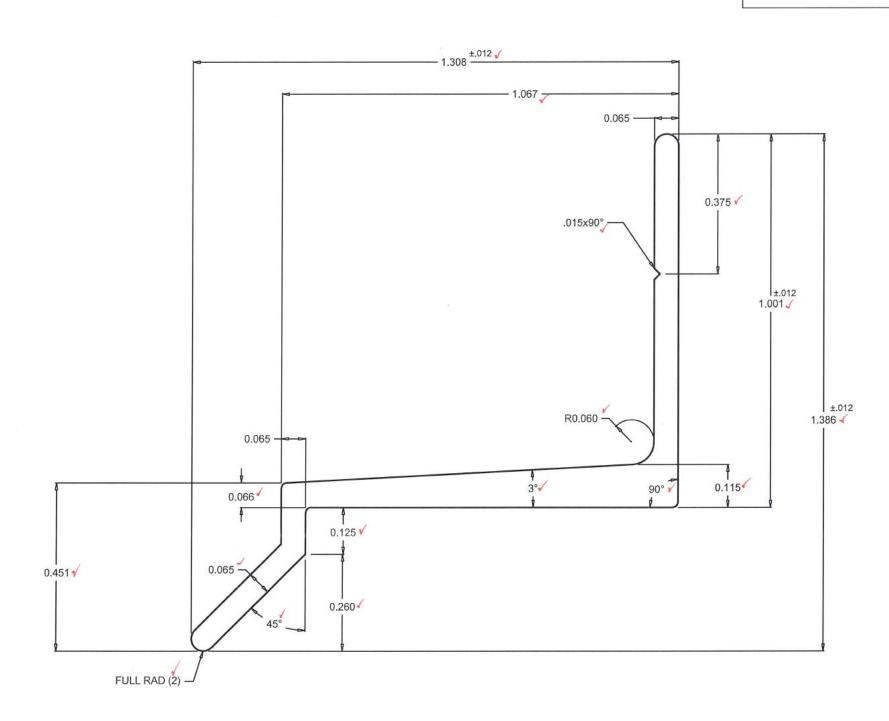
International<sup>3</sup>

Extrusion

#### FOR QUOTING ONLY

UNLESS OTHERWISE NOTED ALL CORNERS ARE .015 RAD. AND TYPICAL WALL THICKNESS IS .065

EST AREA: .188		P-NO:	PORTS: SIZE:
EST WT/FT: .226		CIRCLE SIZE:	BACKER:
EST. FIN. PERI: 4.969	EST. FULL PERI: 4.969	CLASS: SOLID	BOLSTER:
FACTOR:		T-DWG# T-00063	FEEDER:





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#### **SECTION 12**

#### **REVISION LOG**

REVISION #	DATE	PAGES	REVISION
0	11/03/20	N/A	Original Report Issue

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