

# COEUR D'ALENE WINDOW CO TEST REPORT

**SCOPE OF WORK**

AAMA/WDMA/CSA 101/I.S.2/A440 TESTING ON  
6800 SERIES SLIDING DOOR - 240" X 120"

**REPORT NUMBER**

L3361.02-901-44

**TEST DATE(S)**

12/02/20 - 12/17/20

**ISSUE DATE**

03/12/21

**RECORD RETENTION END DATE**

12/17/30

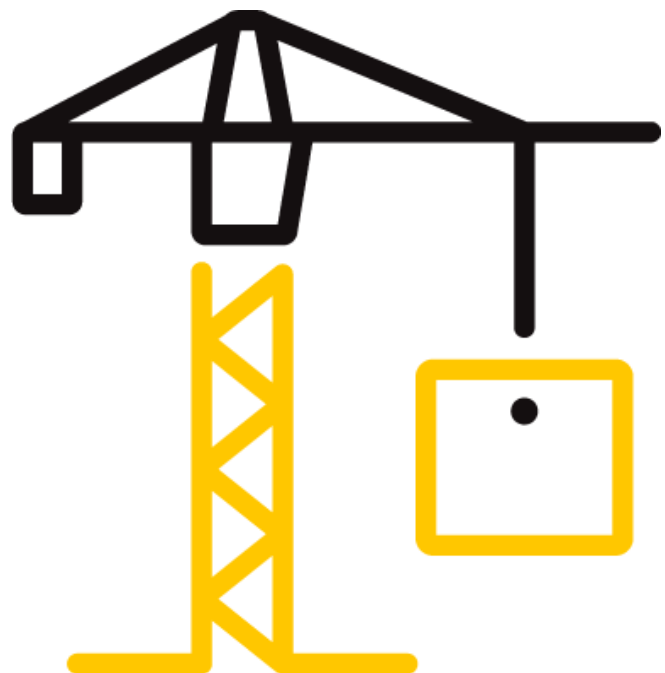
**PAGES**

23

**DOCUMENT CONTROL NUMBER**

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

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## TEST REPORT FOR COEUR D'ALENE WINDOW CO

Report No.: L3361.02-901-44

### REPORT ISSUED TO

#### COEUR D'ALENE WINDOW CO

115 N. Sycamore  
Spokane, WA 99202

### SECTION 1

#### SCOPE

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by ENERGI Fenestration Solutions Ltd to perform testing in accordance with AAMA/WDMA/CSA 101/I.S.2/A440 on their Multi-slide 425 Energi 4-Track XXXO / 2498 Sash - Sliding door - 240" x 120". Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at the Intertek B&C test facility in Kent, WA. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

Unless differently required, Intertek reports apply the "Simple Acceptance" rule also called "Shared Risk approach," of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity.

This product was originally tested as the ENERGI Fenestration Solutions Ltd. Series/Model Multi-slide 425 Energi 4-Track XXXO / 2498 Sash - Sliding door - 240" x 120" and is a reissue of the original Report No. L3361.01-901-44. This report is reissued in the name of Coeur D'Alene Window Co through written authorization by ENERGI Fenestration Solutions Ltd.

### SECTION 2

#### SUMMARY OF TEST RESULTS

TITLE	RESULTS
AAMA/WDMA/CSA 101/I.S.2/A440-17	Class R PG20 Size Tested 6096 x 3048mm (240" x 120") – Type SD
Design Pressure	±960 Pa (±20.05 psf)
Air Infiltration	0.76 L/s/m <sup>2</sup> (0.15 cfm/ft <sup>2</sup> )
Air Exfiltration	0.41 L/s/m <sup>2</sup> (0.08 cfm/ft <sup>2</sup> )
Canadian Air Infiltration/Exfiltration Level	A2
Cyclic Water Penetration Resistance Test Pressure	150 Pa (3.13 psf)

Reference must be made to Intertek B&C Report No. L3361.02-901-44, dated 03/12/21 for complete test specimen description and detailed test results

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**TEST REPORT FOR COEUR D'ALENE WINDOW CO**

Report No.: L3361.02-901-44

For INTERTEK B&C:

<b>COMPLETED BY:</b>	Arbind Raj	<b>REVIEWED BY:</b>	Brian L. Rasmussen
<b>TITLE:</b>	Lab Supervisor	<b>TITLE:</b>	Lab Manager
<b>SIGNATURE:</b>		<b>SIGNATURE:</b>	
<b>DATE:</b>	03/12/21	<b>DATE:</b>	03/12/21

AR/CR/BLR:pac

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## TEST REPORT FOR COEUR D'ALENE WINDOW CO

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### SECTION 3

#### TEST SPECIFICATION(S)/METHOD(S)

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:

**ASTM E2068-00(2016)**, *Standard Test Method for Determination of Operating Force of Sliding Windows and Doors*

**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 F842-17**, *Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact*

**ASTM E 987 - 17**, *Standard Test Methods for Deglazing Force of Fenestration Products*

### SECTION 4

#### MATERIAL SOURCE/INSTALLATION

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

The specimen was installed into a Douglas-Fir wood buck. The rough opening allowed for a 1/4" shim space and the exterior perimeter of the specimen was sealed to the test buck.

LOCATION	ANCHOR DESCRIPTION	ANCHOR SPACING
Head track	#8 x 2-1/2" Pan head screws	One screw approximately located at each interlock rail
Jambs	#8 x 2-1/2" Pan head screws	10" from corners and 24" apart through jamb installation
Head, jambs and sill	#8 x 1" Pan head screws	3" from corners and every 8" to 10" apart through nail fin

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### SECTION 5

#### LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Arbind Raj	Intertek B&C
Bob Gillespie	Energi Fenestration Solutions Ltd.

### SECTION 6

#### TEST SPECIMEN DESCRIPTION

**Product Type:** Multi-slide

**Series/Model:** 425 Energi 4-Track XXXO / 2498 sash - Sliding door

#### Product Sizes:

OVERALL AREA:	WIDTH		HEIGHT	
	millimeters	inches	millimeters	inches
18.58 m <sup>2</sup> (200 ft <sup>2</sup> )				
Overall size	6096	240	3048	120
Panel (x4)	1575	62	2985	117-1/2

#### Frame Construction:

MEMBER	MATERIAL	DESCRIPTION
Head, sill, jambs,	PVC	Extruded
	JOINERY TYPE	DETAIL
Frame corners	Coped / Butt	Sealed secured with four #10 x 2" screws at corners
Sill	Polyurethane	Fully imbedded in sealant adhering to sill plate

#### Panel Construction:

MEMBER	MATERIAL	DESCRIPTION
Rails and Stiles	PVC	Extrusion
	JOINERY TYPE	DETAIL
Fixed panel	Mitered	Thermally welded; set on setting block and secured to frame with #8 x 1" screws approximately 24" apart
All corners	Mitered	Thermally welded

#### Reinforcement:

DRAWING NUMBER	LOCATION	MATERIALS
425-S2498	Stiles	Steel
425-A17	Sill track	Aluminum

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### Weather-stripping:

DESCRIPTION	QUANTITY	LOCATION
3/16" Pile weather strip with centre fin	8 rows	Jamb, head and sill - frame tracks
3/16" Pile weather strip with centre fin	1 row	Interior of interlocks per panel

**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
3/4" IG	Stainless steel	5 mm (3/16") annealed	5 mm (3/16") annealed	Glazing set on setting block; adhered to glazing tape and secured with glazing bead from the exterior; sealant applied in the corners

LOCATION	QUANTITY	DAYLIGHT OPENING		GLASS BITE
		millimeters	inches	
Panel	4	1397 x 2807	55 x 110-1/2	1/2"

### Drainage:

METHOD	SIZE	QUANTITY	LOCATION
Weep hole	1.5" x 0.15625"	5	Sill face; 12" from corners and at centre of each interlock - slotted punched through inner tracks
Weep holes	0.75" x 0.25"	8 per track	Sill track, located 4 per each side 1" from jamb
Weep hole	0.3125" dia	2 per panel	Panel, bottom rail glazing pocket, 2" from corners, drains through roller pockets

### Hardware:

DESCRIPTION	QUANTITY	LOCATION
Lock	1	78-3/4" from top rail
Keeper (strike)	1	Jamb aligned with lock
Rollers	2 per panel	Panel, bottom rail
Sill track	1	Sill -full length

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**SECTION 7**

**TEST RESULTS**

The temperature during testing was 25°C (77°F). The results are tabulated as follows:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
<b>Operating Force</b> As per ASTM E2068	Initiate motion: 53 N (12 lbf) Maintain motion: 75 N (17 lbf) Force to Latch: 8.9 N (2 lbf)	135 N (30.35 lbf) max. 110 N (24.73 lbf) max. 100 N (22.48 lbf) max.	
<b>Air Leakage,</b> Infiltration per ASTM E283 at 75 Pa (1.57 psf)	0.76 L/s/m <sup>2</sup> (0.15 cfm/ft <sup>2</sup> )	1.5 L/s/m <sup>2</sup> (0.3 cfm/ft <sup>2</sup> ) max.	1, 2
<b>Air Leakage,</b> Exfiltration per ASTM E283 at 75 Pa (1.57 psf)	0.41 L/s/m <sup>2</sup> (0.08 cfm/ft <sup>2</sup> )	1.5 L/s/m <sup>2</sup> (0.3 cfm/ft <sup>2</sup> ) max.	1, 2
<b>Canadian Air</b> <b>Infiltration/Exfiltration Level</b>	A2	1.5 L/s/m <sup>2</sup> (0.3 cfm/ft <sup>2</sup> ) max.	
<b>Water Penetration,</b> per ASTM E547 at 150 Pa (3.13 psf)	Pass	No leakage	3
<b>Forced Entry Resistance,</b> Per ASTM F842, Grade 10	Pass	No Entry or damage	
<b>Deglazing Test per ASTM E987</b> Operating direction - lock stile 320 N (72 lbf) Remaining direction - lock stile 320 N (72 lbf)	Pass Pass	Meets as stated Meets as stated	
<b>Thermoplastic Corner Weld Test</b>	Pass	Meets as stated	
<b>Uniform Load Deflection,</b> per ASTM E330 Deflections taken at 2 <sup>nd</sup> Interlock +960 Pa (+20.05 psf) -960 Pa (-20.05 psf)	21.0 mm (0.83") 39.1 mm (1.54")	Report only	4, 5, 6
<b>Uniform Load Deflection,</b> per ASTM E330 Deflections taken at 3 <sup>rd</sup> Interlock +960 Pa (+20.05 psf) -960 Pa (-20.05 psf)	38.6 mm (1.52") 37.8 mm (1.49")	Report only	4, 5, 6

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TITLE OF TEST	RESULTS	ALLOWED	NOTE
<b>Uniform Load Structural,</b> per ASTM E330 Permanent set taken at 2 <sup>nd</sup> Interlock +1440 Pa (+30.08 psf) -1440 Pa (-30.08 psf)	0.51 mm (0.02") 0.76 mm (0.03")	11.9 mm (0.47") max. 11.9 mm (0.47") max.	4, 5
<b>Uniform Load Structural,</b> per ASTM E330 Permanent set taken at 3 <sup>rd</sup> Interlock +1440 Pa (+30.08 psf) -1440 Pa (-30.08 psf)	0.51 mm (0.02") 0.51 mm (0.02")	11.9 mm (0.47") max. 11.9 mm (0.47") max.	4, 5

*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 12/02/20 / Time: 10:15 AM*

*Note 3: The client opted to start at a pressure higher than the minimum required.*

*Note 4: Loads were held for 10 seconds.*

*Note 5: 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.*

*Note 6: 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.*

**SECTION 8  
ALTERATIONS**

*Additional weep holes were drilled through inner tracks at each interlock to prevent water from overflowing sill tracks.*



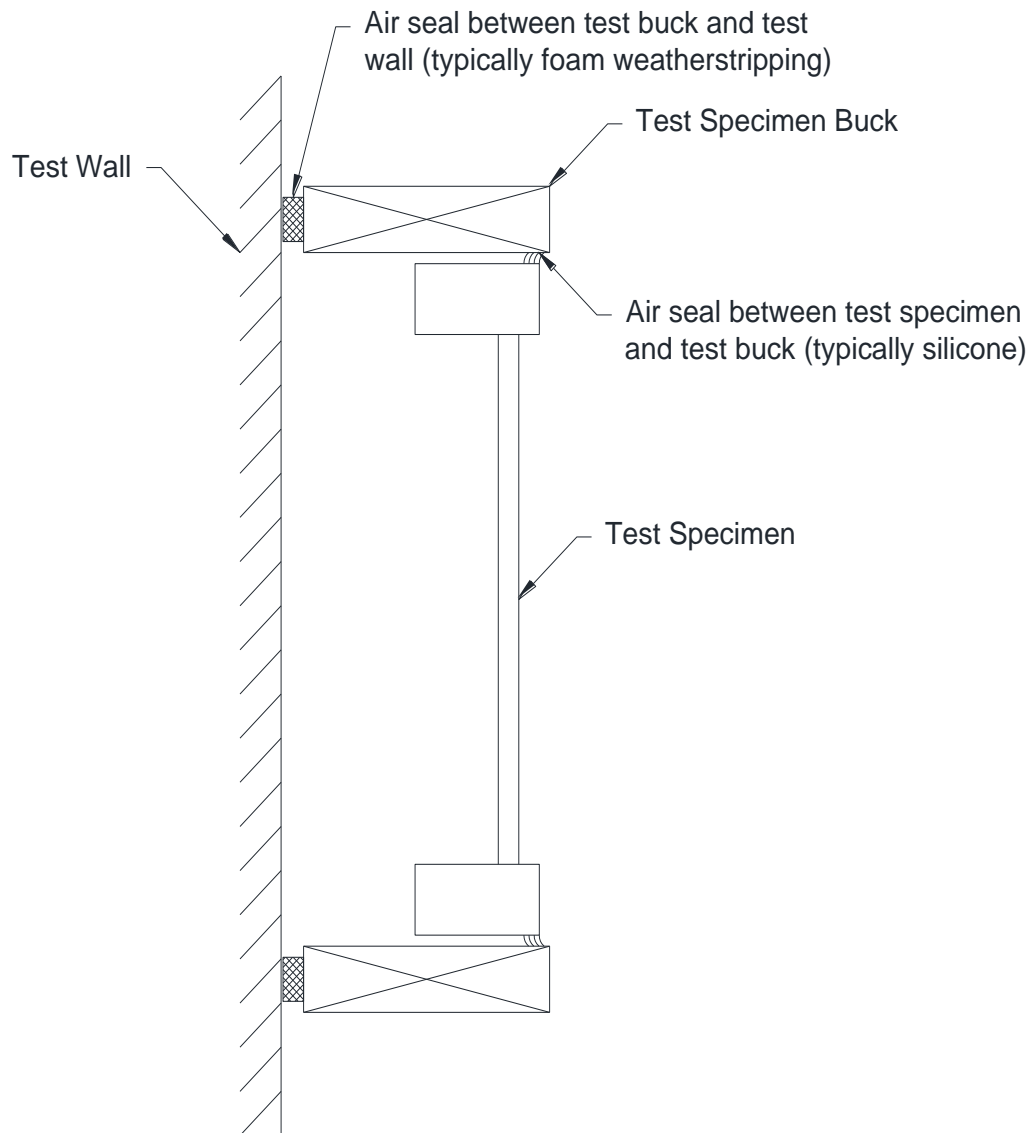
## TEST REPORT FOR COEUR D'ALENE WINDOW CO

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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 **Class R-PG20 Size Tested 6096 x 3048 mm (240" x 120") – Type SD** rating.

This report is reissued in the name of Coeur d'Alene Window Co through written authorization of ENERGI Fenestration Solutions Ltd., to whom the original report was rendered. The original ENERGI Fenestration Solutions Ltd. Report No. is L3361.01-901-44.

### 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.

Attachments (pages): Drawings (13)

### SECTION 12

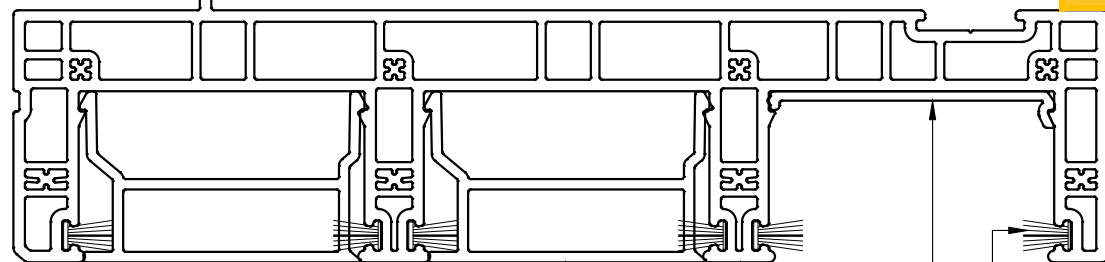
#### REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	03/12/21	N/A	Original Report Issue



Report #: L3361.01  
 Date: 01/14/2021  
 Verified by:

REV.	DESCRIPTION	Date	BY
A1	First Issue	2019-06-12	gmc
B1	Updated components & Notes	2019-08-20	gmc
B2	Corrected Roller Track Part Number	2019-10-30	gmc
B3	Added Custom Hardware Option	2019-12-11	gmc

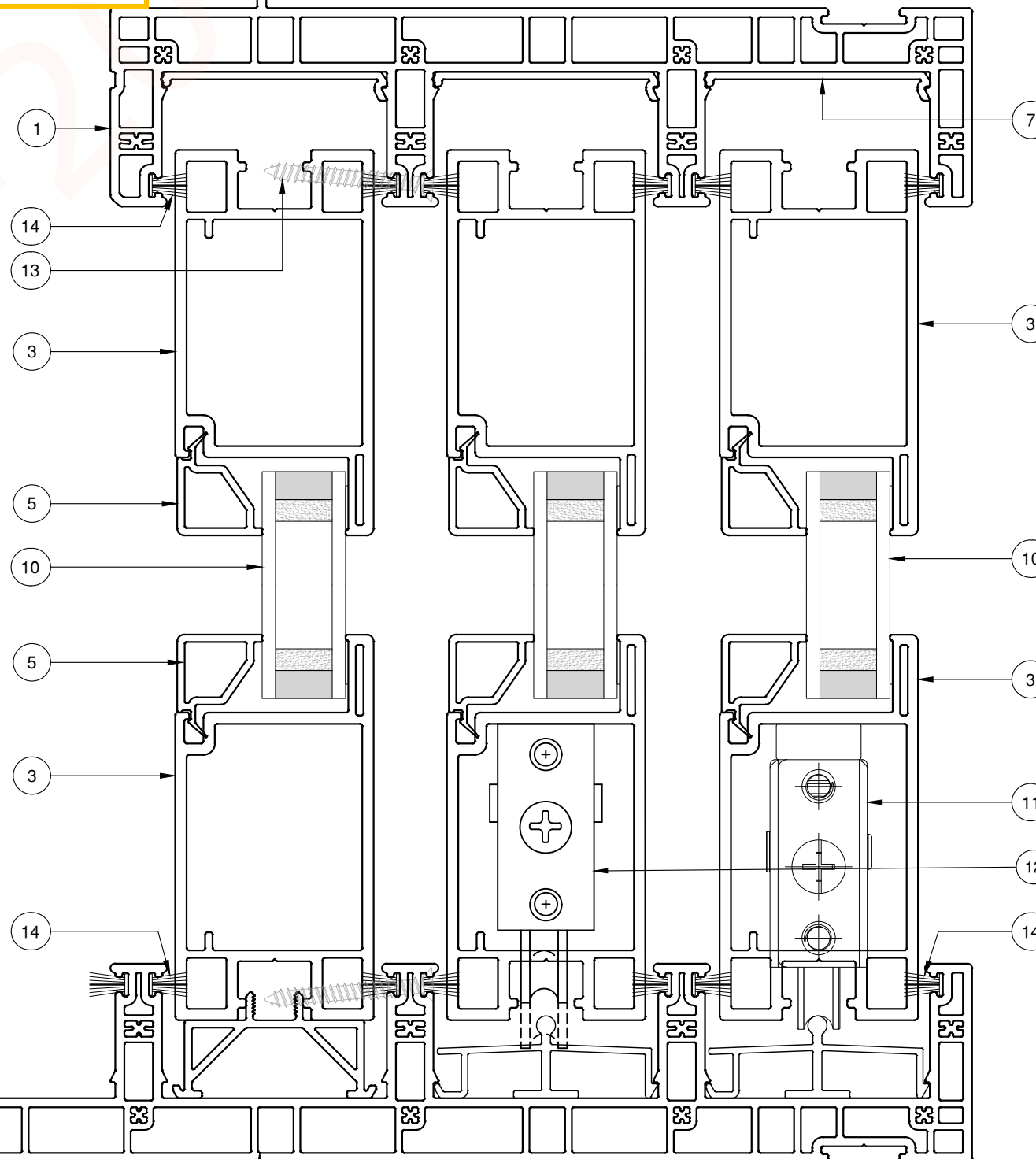
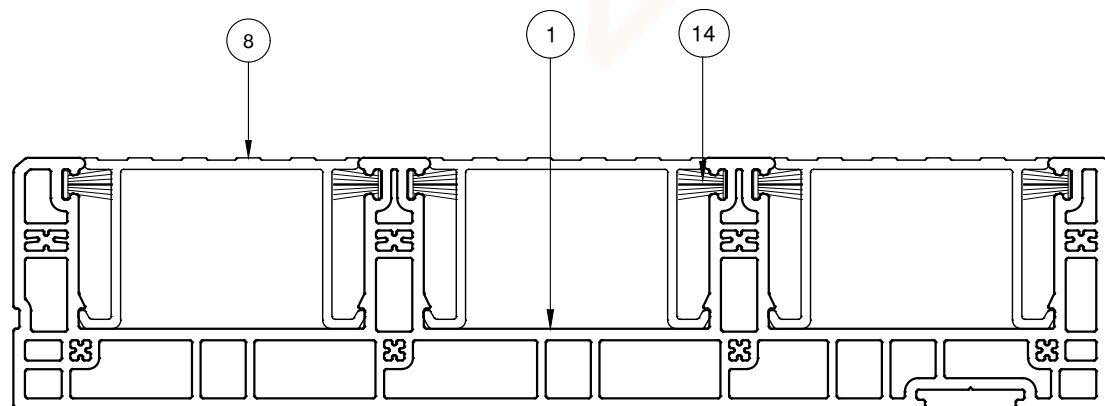


Pocket Covers To Go Between Closed Sash Stiles and Lock Jamb

ITEM	NAME	DESCRIPTION	MATERIAL	VENDOR
1	KE2720-425-D105	Main Frame - 3 Track	rPVC	EFS
2	KE2722-425-107	Main Frame - 4 Track	rPVC	EFS
3	KE2498-425-D50_cap	Sash	rPVC	EFS
4	R1837-425-D13	Outside Cover Receiver	rPVC	EFS
5	KE2744-425-D113	Glass Stop	rPVC	EFS
6	KE2717-425-D103	Inside Pocket Filler	rPVC	EFS
7	KE2747-425-D116	Inside Pocket Cover	rPVC	EFS
8	425-A12_rev	Sill Pocket Cover	Aluminum	TBD
9	425-A17	Roller Track	Auminum	TBD
10	IG_750_ss	IG 3/4" OA	Per Spec	TBD
11	SS4650DSPA	Roller - Anthony	Per Spec	Anthony
12	TA-39-PRSS-181-850	Roller - Custom	Per Spec	Custom
13	*U354	#8 x 1.5" FH Screw	SS	TBD
14	WS_188 x .340	Pile Weatherstrip	Per Spec	TBD

Aluminum Sill Pocket Covers To Go Between Closed Sash Stiles and Lock Jamb

KE2747 Required For Cap option Ony



Dual & Quad Rollers From Custom & Anthony Available

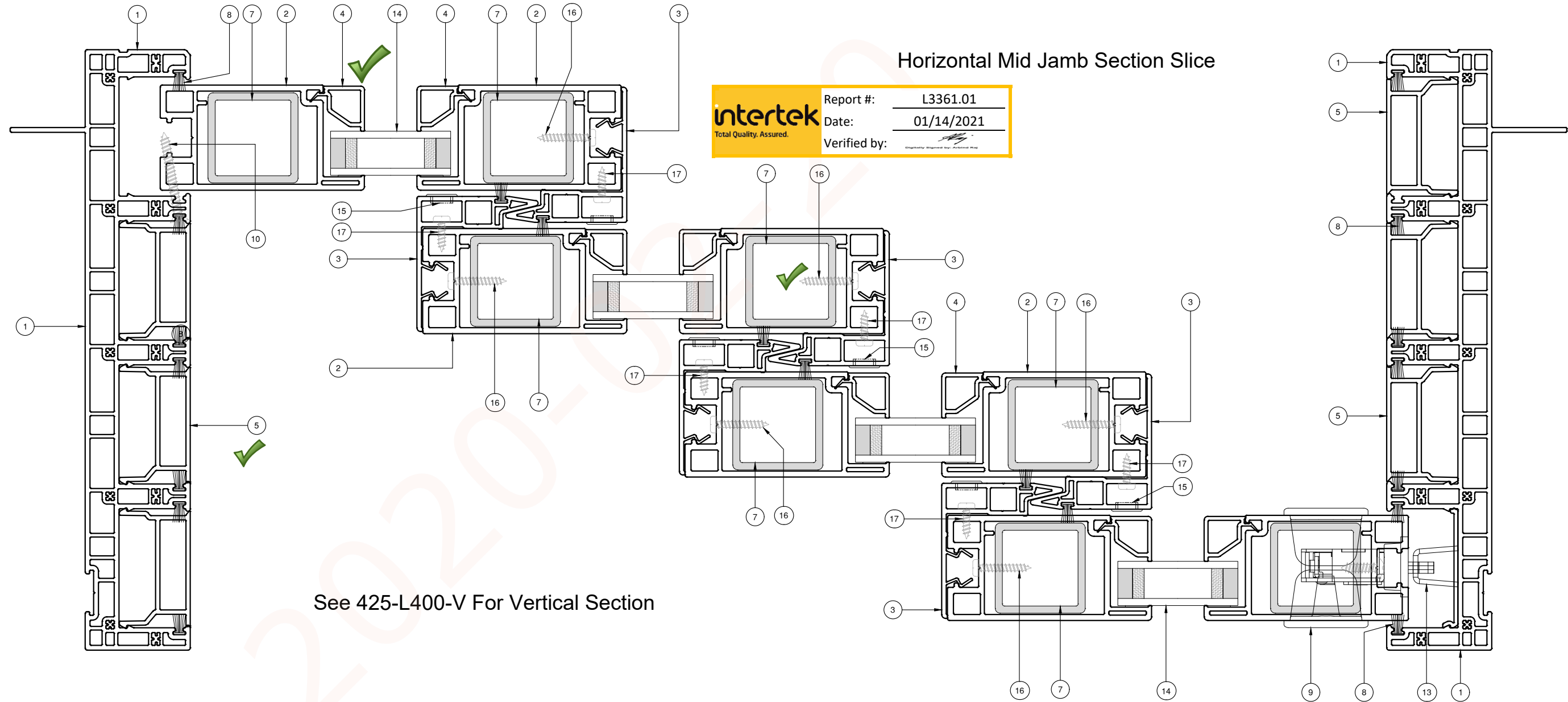
425-L400-V



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CUSTOMER: EFS		Project: 425 Catalog	DRAWN: gmc	Layout/Drawing Name: 425-L400-V	
TITLE: Medium Sash Vertical Section		CHECKED:		PART:	DIE NUMBER: ACAD:
SHEET: B	MATERIAL: As Noted	DATE: 2019-06-12	SCALE: 0.75:1	Series: 425	SHEET: /
425 Catalog.dwg					

REV.	DESCRIPTION	Date	BY
A1	First Issue	2019-06-12	gmc
B1	Updated components & Notes	2019-08-20	gmc



Horizontal Mid Jamb Section Slice

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Report #: L3361.01  
Date: 01/14/2021  
Verified by: [Signature]

See 425-L400-V For Vertical Section

Parts List									
ITEM	NAME	DESCRIPTION	MATERIAL	VENDOR	ITEM	NAME	DESCRIPTION	MATERIAL	VENDOR
1	KE2722-425-107	Main Frame - 4 Track	rPVC	EFS	10	*U354	#8 x 1.5" FH Screw	SS	TBD
2	KE2498-425-D50_cap	Sash	rPVC	EFS	11	#8 x .5 Flange Head	#8 x .5 Screw	SS	TBD
3	KE2545-425-D55	Sash Interlock	rPVC	EFS	12	Truth Lock 13326	Lock Body	Per Spec	Am Truth
4	KE2744-425-D113	Glass Stop	rPVC	EFS	13	Truth Keeper 33291	Keeper	Per Spec	Am Truth
5	KE2717-425-D103	Inside Pocket Filler	rPVC	EFS	14	IG_750_ss	IG 3/4" OA	Per Spec	TBD
6	KE2747-425-D116	Inside Pocket Cover	rPVC	EFS	15	Plug 375	3/8" Hole Plug	HDPE	TBD
7	425-S2498_x120	Steel Tube 1.5 X .120	Steel 50k	TBD	16	*U366	#6 x 7/8" PH ST SS	SS	TBD
8	WS_188 x .340	Pile Weatherstrip	Per Spec	TBD	17	*U1052	#6 x 1/2" PH Screw	SS	TBD
9	Truth Handle 40-.84xx.304	Flush Mount Pull	Per Spec	Am Truth					

KE2747 Required For Cap option Only

425-L410-H

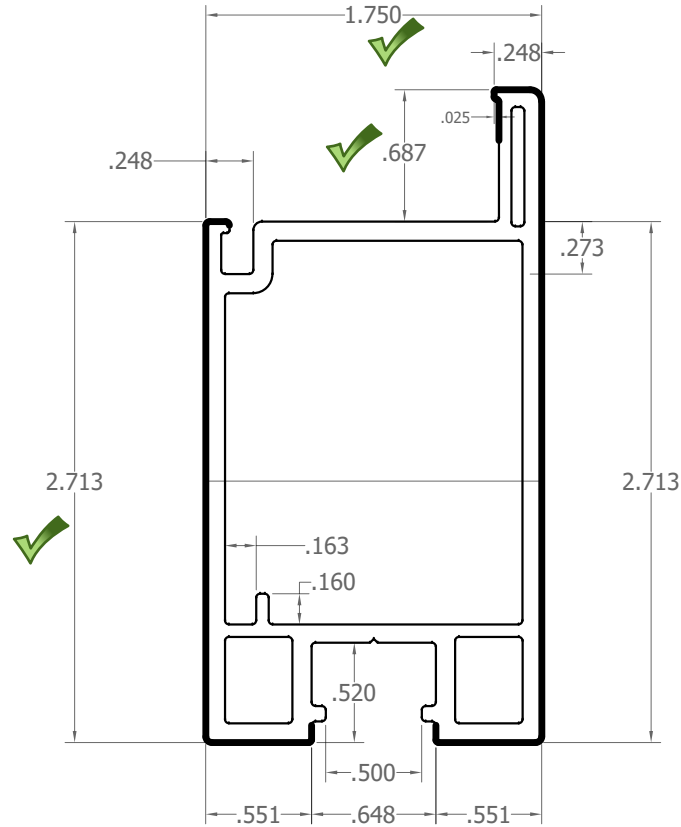


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CUSTOMER: EFS				Project: 425 Catalog	DRAWN: gmc	Layout/Drawing Name: 425-L410-H		
TITLE: Medium Sash 4 Panel Horizontal Section				CHECKED:		PART: DIE NUMBER: ACAD:		
SHEET: B	MATERIAL: As Noted	DATE: 2019-06-12	SCALE: 0.55:1	Series: 425	SHEET: /	425 Catalog.dwg		

# KE2498

REV.	DESCRIPTION	Date	BY
A1	First Issue	2019-06-11	gmc



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	Date:	01/14/2021
	Verified by:	

**Bold Lines = Optional Cap**

WALL THICKNESS:	
EXTERNAL	.100
INTERNAL	.065
■	.000



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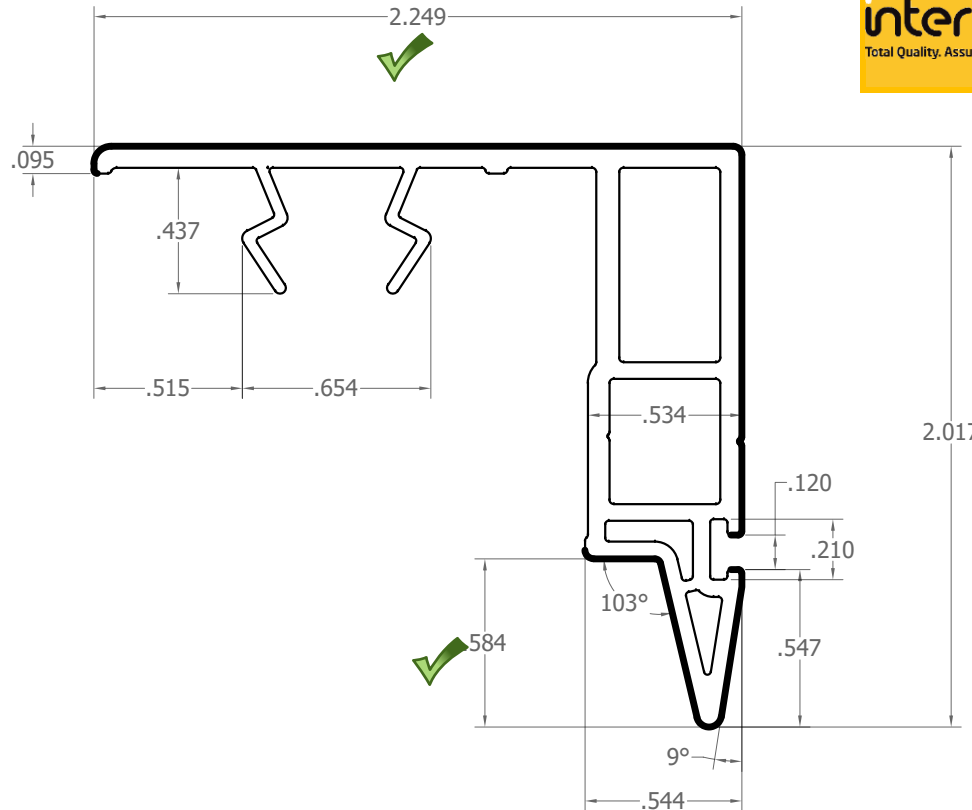
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# KE2585

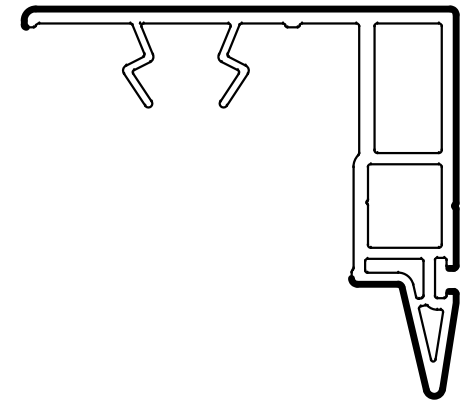
REV.	DESCRIPTION	Date	BY
A1	First Issue	2019-06-11	gmc

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Report #: L3361.01  
Date: 01/14/2021  
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Scale = 1:1



WALL THICKNESS:	
EXTERNAL	.100
INTERNAL	.058
■	.000



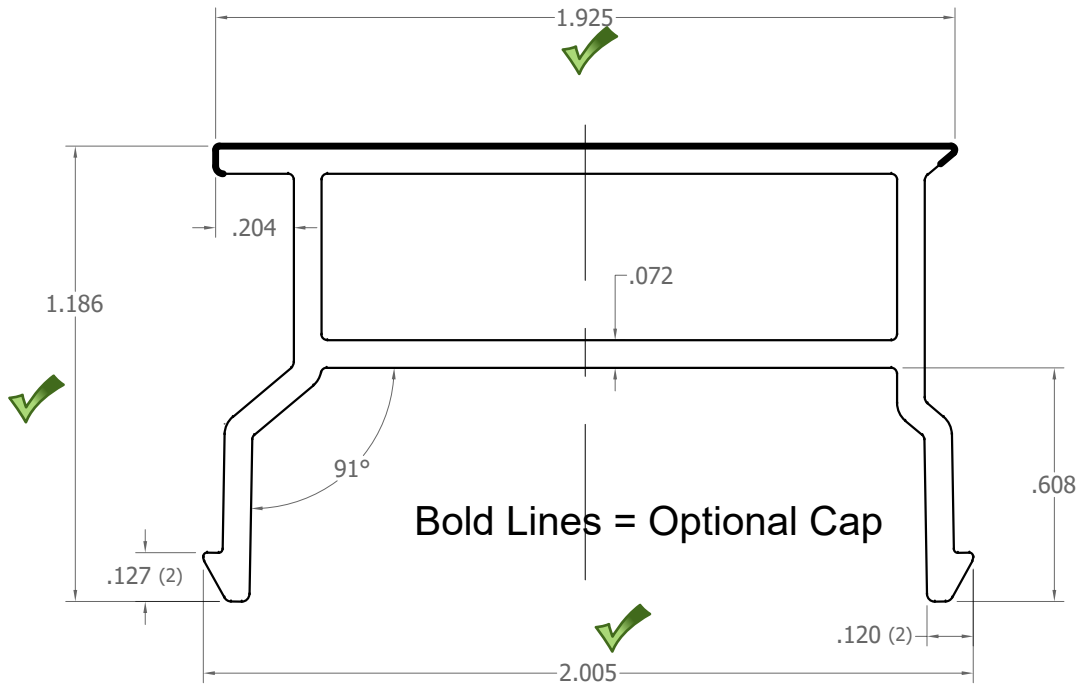
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CUSTOMER: <b>EFS</b>		Project: <b>425 Catalog</b>	DRAWN: <b>gmc</b>	Layout/Drawing Name: <b>KE2545-425-D55</b>		
TITLE: <b>Interlock For KE2498 Sash</b>				CHECKED:		
SHEET: <b>A</b>	MATERIAL: <b>rPVC</b>	DATE: <b>2019-06-11</b>	SCALE: <b>1.5:1</b>	Series: <b>425</b>	SHEET: <b>/</b>	PART: <b>D55</b>
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						ACAD: <b>425 Catalog - copy 09242020.dwg</b>

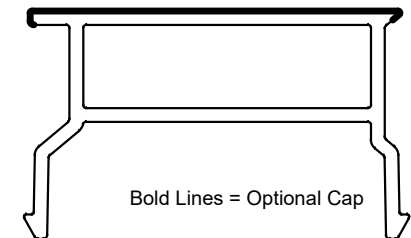
# KE2717

REV.	DESCRIPTION	Date	BY
A1	First Issue	2019-06-11	gmc

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	Date:	01/14/2021
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Scale = 1:1



Bold Lines = Optional Cap

Bold Lines = Optional Cap

Symmetrical About C/L

WALL THICKNESS:	
EXTERNAL	.072
INTERNAL	

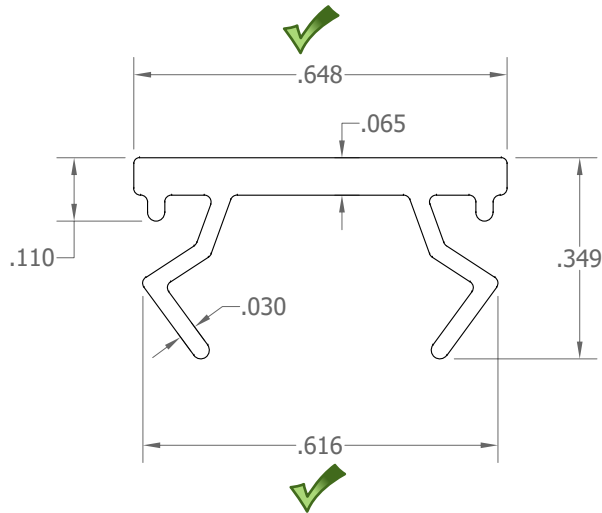


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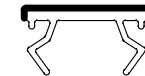
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TITLE:		Inside Pocket Filler				CHECKED:					
SHEET:	MATERIAL:	DATE:	SCALE:	Series	SHEET:	PART:	DIE NUMBER:	ACAD:			
A	rPVC	2019-06-11	2:1	425	/	D103	KE2717	425 Catalog - copy 09242020.dwg			

# KE2743

REV.	DESCRIPTION	Date	BY
A1	First Issue	2019-06-11	gmc



	Report #:	L3361.01
	Date:	01/14/2021
	Verified by:	



Scale = 1:1

WALL THICKNESS:	
EXTERNAL	.072
INTERNAL	



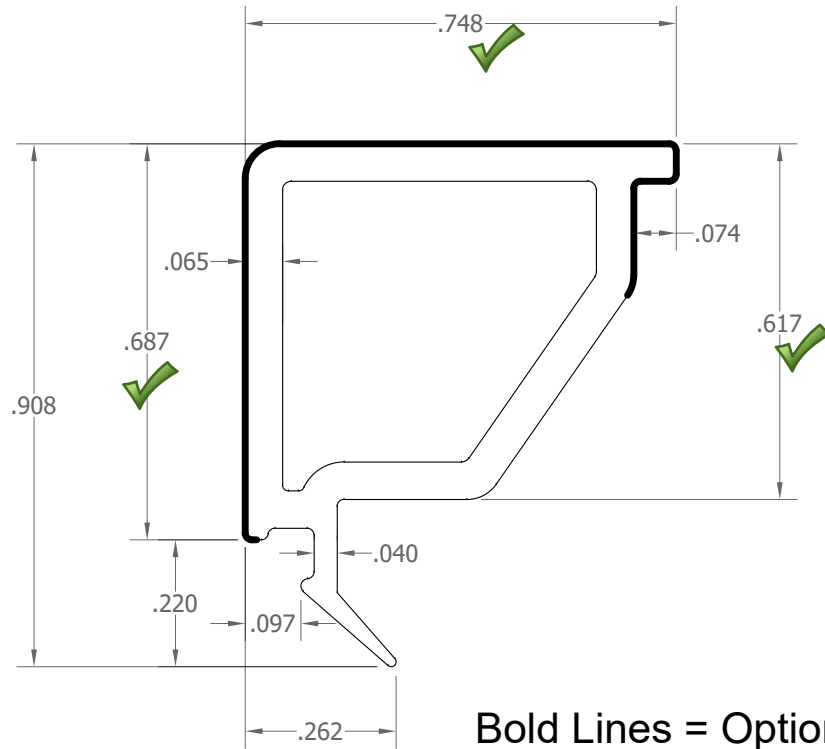
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CUSTOMER:		EFS		Project	425 Catalog	DRAWN:	gmc	Layout/Drawing Name		
TITLE:		Euro Groove Filler		CHECKED:		KE2743-425-D112				
SHEET:	MATERIAL:	DATE:	SCALE:	Series	SHEET:	PART:	DIE NUMBER:	ACAD:		
A	rPVC	2019-06-11	3:1	425	/	D112	KE2743	425 Catalog - copy 09242020.dwg		



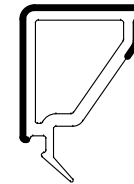
# KE2744

REV.	DESCRIPTION	Date	BY
A1	First Issue	2019-06-11	gmc



**intertek**  
Total Quality. Assured.

Report #: L3361.01  
Date: 01/14/2021  
Verified by:



**Bold Lines = Optional Cap**

**Bold Lines = Optional Cap**

**Scale = 1:1**

KE2498 -  $\frac{3}{4}$ " IG  
R1898-99 -  $\frac{5}{8}$ " IG

WALL THICKNESS:	
EXTERNAL	.072
INTERNAL	



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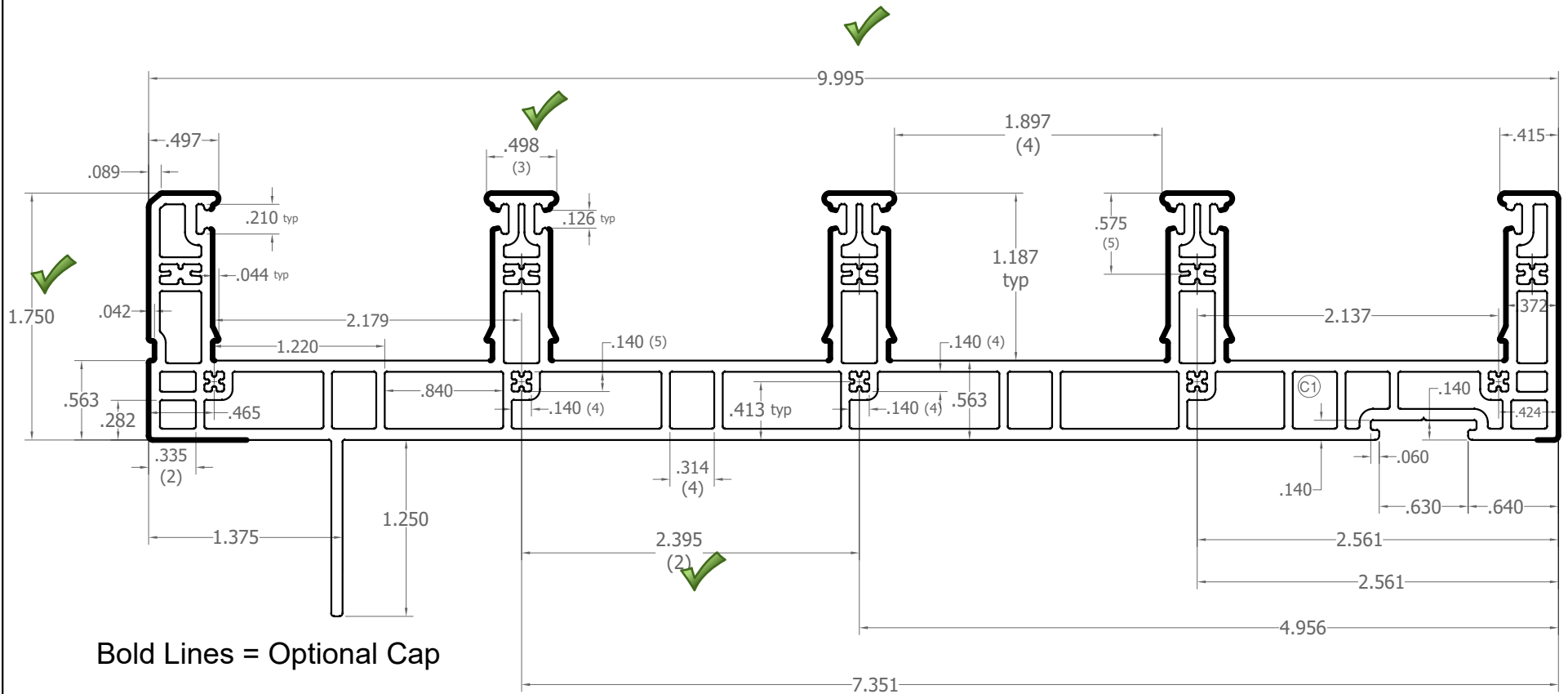
CUSTOMER: EFS		Project: 425 Catalog	DRAWN: gmc	Layout/Drawing Name: KE2744-425-D113		
TITLE: Glass Stop		CHECKED:		PART: D113	DIE NUMBER: KE2744	ACAD: 425 Catalog - copy 09242020.dwg
SHEET: A	MATERIAL: rPVC	DATE: 2019-06-11	SCALE: 3:1	Series: 425	SHEET: /	


# KE2722

REV.	DESCRIPTION	Date	BY
A1	First Issue	2018-09-28	gmc
B1	Flattened outside face of frame	2019-01-31	gmc
B2	Added tower bosses, moved lower	2019-04-26	gmc
C1	Added internal web	2019-05-08	gmc

**intertek**  
Total Quality. Assured.

Report #: L3361.01  
Date: 01/14/2021  
Verified by: 



WALL THICKNESS:	
EXTERNAL	.080
INTERNAL	.060
	.000

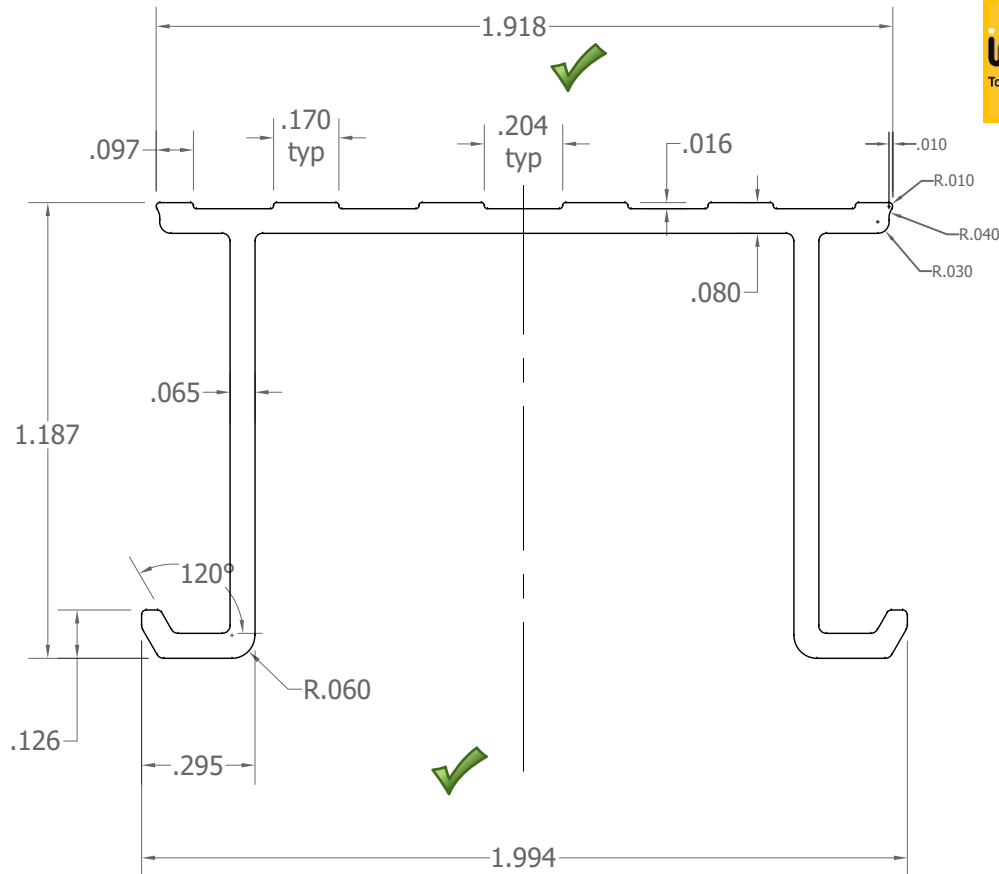


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CUSTOMER: <b>EF5</b>		Project: <b>425 Catalog</b>	DRAWN: <b>gmc</b>	Layout/Drawing Name: <b>KE2722-425-D107</b>	
TITLE: <b>4 Track Main Frame</b>			CHECKED:	PART: <b>D-107</b>	DIE NUMBER: <b>KE2722</b>
SHEET: <b>A</b>	MATERIAL: <b>rPVC</b>	DATE: <b>2018-09-28</b>	SCALE: <b>0.9:1</b>	Series: <b>425</b>	SHEET: <b>/</b>
ACAD: <b>425 Catalog - copy 09242020.dwg</b>					

# 425-A12

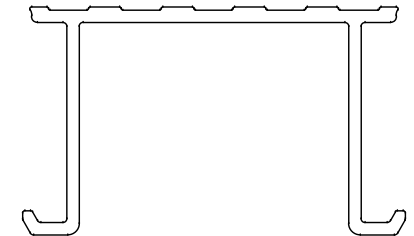
REV.	DESCRIPTION	Date	BY
A1	First Issue	2019-06-11	gmc
A1	Rev top mating geometry to frame	2019-07-29	gmc



**intertek**  
Total Quality. Assured.

Report #: L3361.01  
Date: 01/14/2021  
Verified by:

Scale = 1:1



Symmetrical About C/L  
6063 T5 Alloy or Equiv

WALL THICKNESS:	
EXTERNAL	.065
INTERNAL	

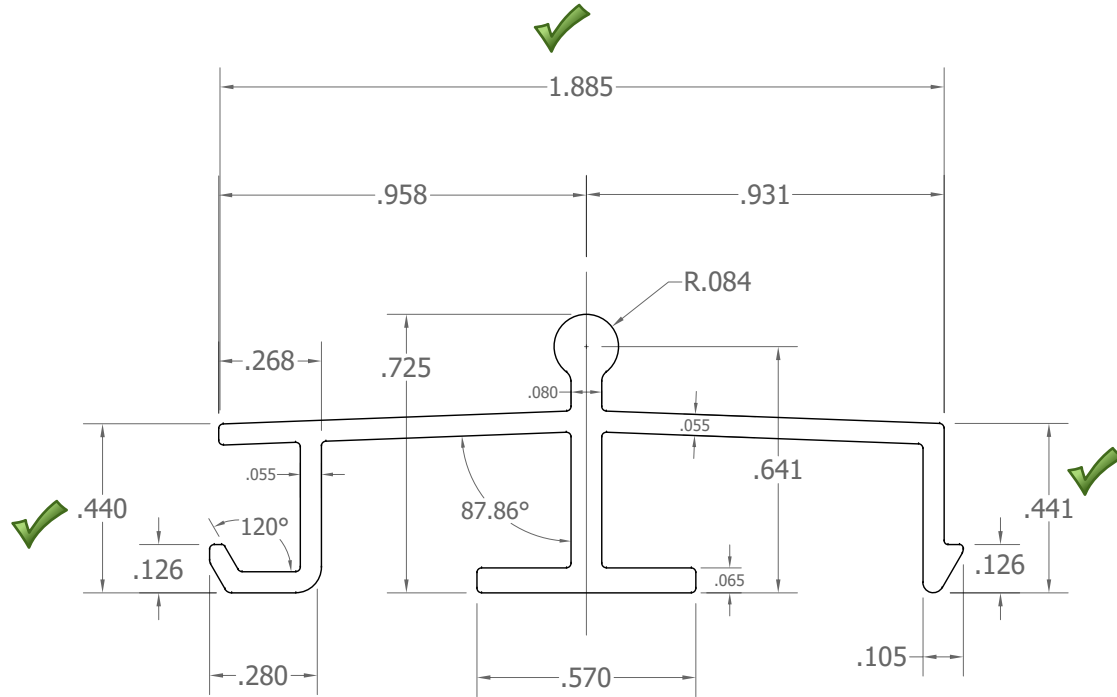


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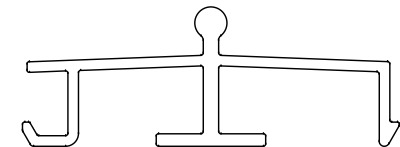
CUSTOMER: <b>EFS</b>		Project <b>425 Catalog</b>	DRAWN: <b>gmc</b>	Layout/Drawing Name <b>425-A12</b>		
TITLE: <b>Sill Track Cover</b>				CHECKED:		
SHEET: <b>A</b>	MATERIAL: <b>Aluminum</b>	DATE: <b>2019-06-11</b>	SCALE: <b>2:1</b>	Series <b>425</b>	SHEET: <b>/</b>	PART: <b>A12</b>
			DIE NUMBER:		ACAD: <b>425 Catalog - copy 09242020.dwg</b>	

# 425-A17

REV.	DESCRIPTION	Date	BY
A1	First Issue	2019-06-11	gmc
B1	Chg'd .044 walls to .055	2020-01-03	gmc



 Total Quality. Assured.	Report #:	L3361.01
	Date:	01/14/2021
	Verified by:	



Scale = 1:1

WALL THICKNESS:	
EXTERNAL	Noted
INTERNAL	

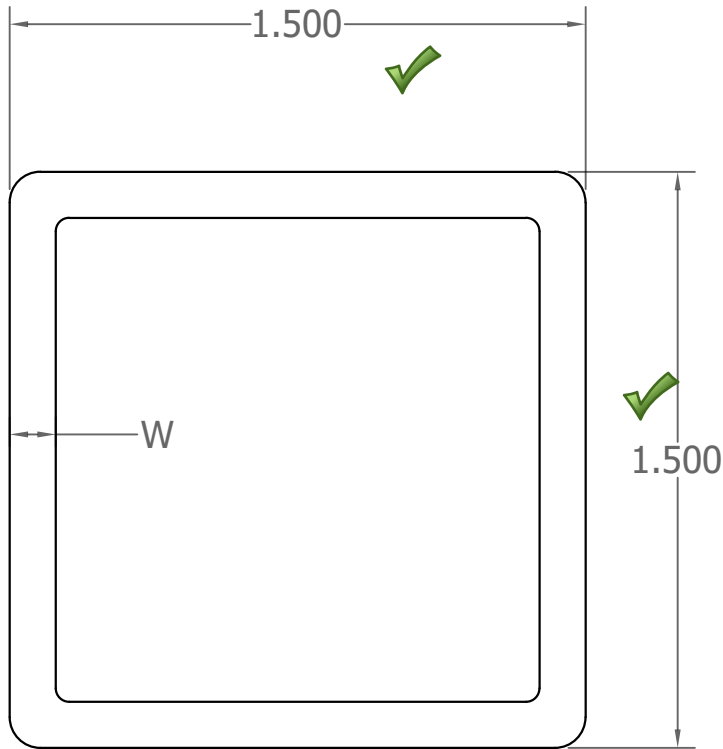


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CUSTOMER:		EFS		Project	425 Catalog		DRAWN:	gmc		Layout/Drawing Name		425-A17		
SHEET:		A		TITLE:				Roller Track		CHECKED:				
MATERIAL:	Aluminum	DATE:	2019-06-11	SCALE:	2:1	Series	425	SHEET:	/	PART:	A17	DIE NUMBER:	ACAD:	425 Catalog - copy 09242020.dwg

# 425-S2498

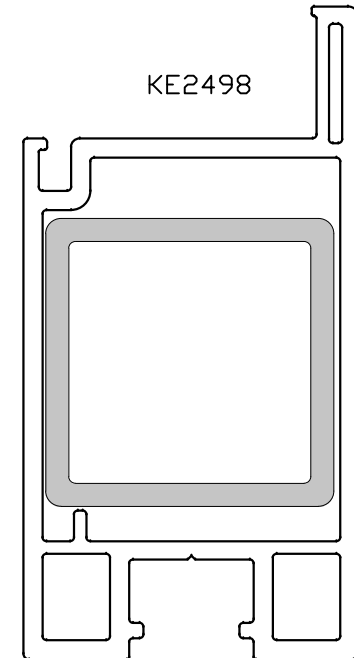
REV.	DESCRIPTION	Date	BY
A1	First Issue	2019-11-22	gmc



### 1 1/2" Square Steel Tube Wall Thickness Options

W"	Moment <sup>^4</sup>
0.065	0.125848
0.083	0.155483
✓ 0.120	0.209296
0.188	0.286242
0.250	0.335850

Scale = 1:1



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CUSTOMER: EFS		Project: 425 Catalog	DRAWN: gmc	Layout/Drawing Name: 425-S2498		
TITLE: Standard 1 1/2" Square Steel Tubing Specs						
SHEET: A	MATERIAL: Aluminum	DATE: 2019-11-22	SCALE: 2:1	Series: 425	SHEET: /	PART: S2498
				DIE NUMBER:	ACAD:	425 Catalog - copy 09242020.dwg

# KE2498 Refo Opts

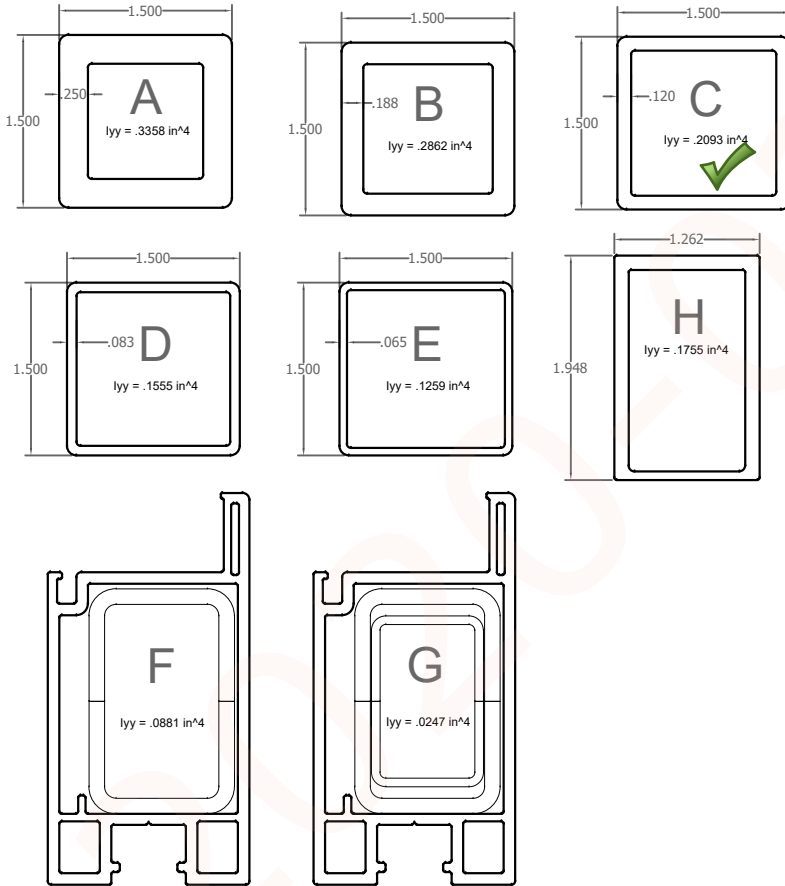
REV.	DESCRIPTION	Date	BY
A1	First Issue	209-11-22	gmc



Report #: L3361.01  
 Date: 01/14/2021  
 Verified by:

425 Door - Max Water = DP 35 (260 PA) at base of towers

425 Door - Max Water = DP 50 (400 PA) below sash pockets



Sash	Stiffener Config	Stiffener Material	Stiffener Description	Yield psi	Sash Size in.	Max PSF	COMMENTS
Medium	A	Steel	1.5" sq Tube x .250 wall	50k	60 x 120	45	50 psf possible with some permanent set
Medium	B	Steel	1.5" sq Tube x .188 wall	50k	60 x 120	35	40 psf possible with some permanent set
Medium	C	Steel	1.5" sq Tube x .120 wall	50k	60 x 120	25	30 psf possible with some permanent set
Medium	D	Steel	1.5" sq Tube x .083 wall	50k	60 x 120	20	
Medium	E	Steel	1.5" sq Tube x .065 wall	50k	60 x 120	15	
Medium	F	Steel	425 S11 U Channel	31k	60 x 120	FAIL	Below 15
Medium	G	Steel	425-S11 & 425-S12 Combo	31k	60 x 120	FAIL	Below 15
Medium	H	Aluminum	Rectangular Tube 425-AD50	21k	60 x 120	FAIL	Below 15

Medium	A	Steel	1.5" sq Tube x .250 wall	50k	60 x 108	50	55 psf possible with some permanent set
Medium	B	Steel	1.5" sq Tube x .188 wall	50k	60 x 108	40	45 psf possible with some permanent set
Medium	C	Steel	1.5" sq Tube x .120 wall	50k	60 x 108	30	35 psf possible with some permanent set
Medium	D	Steel	1.5" sq Tube x .083 wall	50k	60 x 108	25	30 psf possible with some permanent set
Medium	E	Steel	1.5" sq Tube x .065 wall	50k	60 x 108	20	25 psf possible with some permanent set
Medium	F	Steel	425 S11 U Channel	31k	60 x 108	FAIL	
Medium	G	Steel	425-S11 & 425-S12 Combo	31k	60 x 108	FAIL	15 remotely possible with lots of permanent set
Medium	H	Aluminum	Rectangular Tube 425-AD50	21k	60 x 108	FAIL	15 possible with 6061-T6 alloy

Medium	A	Steel	1.5" sq Tube x .250 wall	50k	60 x 96	75	
Medium	B	Steel	1.5" sq Tube x .188 wall	50k	60 x 96	65	
Medium	C	Steel	1.5" sq Tube x .120 wall	50k	60 x 96	45	50 psf possible with some permanent set
Medium	D	Steel	1.5" sq Tube x .083 wall	50k	60 x 96	35	40 psf possible with some permanent set
Medium	E	Steel	1.5" sq Tube x .065 wall	50k	60 x 96	30	
Medium	F	Steel	425 S11 U Channel	31k	60 x 96	FAIL	15 psf possible with lots of permanent set
Medium	G	Steel	425-S11 & 425-S12 Combo	31k	60 x 96	15	20 remotely possible with lots of permanent set
Medium	H	Aluminum	Rectangular Tube 425-AD50	21k	60 x 96	15	20 possible with perm set - 25 possible 6061-T6 alloy

Medium	A	Steel	1.5" sq Tube x .250 wall	50k	48 x 108	65	70 psf possible with some permanent set
Medium	B	Steel	1.5" sq Tube x .188 wall	50k	48 x 108	55	60 psf possible with some permanent set
Medium	C	Steel	1.5" sq Tube x .120 wall	50k	48 x 108	45	small permanent set possible
Medium	D	Steel	1.5" sq Tube x .083 wall	50k	48 x 108	30	
Medium	E	Steel	1.5" sq Tube x .065 wall	50k	48 x 108	25	
Medium	F	Steel	425 S11 U Channel	31k	48 x 108	FAIL	
Medium	G	Steel	425-S11 & 425-S12 Combo	31k	48 x 108	15	Barely
Medium	H	Aluminum	Rectangular Tube 425-AD50	21k	48 x 108	15	Barely

Medium	A	Steel	1.5" sq Tube x .250 wall	50k	48 x 96	90	
Medium	B	Steel	1.5" sq Tube x .188 wall	50k	48 x 96	75	80 psf possible with some permanent set
Medium	C	Steel	1.5" sq Tube x .120 wall	50k	48 x 96	55	60 psf possible with some permanent set
Medium	D	Steel	1.5" sq Tube x .083 wall	50k	48 x 96	40	45 psf possible with some permanent set
Medium	E	Steel	1.5" sq Tube x .065 wall	50k	48 x 96	35	small permanent set possible
Medium	F	Steel	425 S11 U Channel	31k	48 x 96	15	
Medium	G	Steel	425-S11 & 425-S12 Combo	31k	48 x 96	20	
Medium	H	Aluminum	Rectangular Tube 425-AD50	21k	48 x 96	20	25 possible with perm set - 30 possible 6061-T6 alloy

Medium	A	Steel	1.5" sq Tube x .250 wall	50k	48 x 82	100 +	Off the chart - major overkill
Medium	B	Steel	1.5" sq Tube x .188 wall	50k	48 x 82	100 +	
Medium	C	Steel	1.5" sq Tube x .120 wall	50k	48 x 82	80	
Medium	D	Steel	1.5" sq Tube x .083 wall	50k	48 x 82	60	65 psf possible with some permanent set
Medium	E	Steel	1.5" sq Tube x .065 wall	50k	48 x 82	50	
Medium	F	Steel	425 S11 U Channel	31k	48 x 82	20	25 possible with perm set
Medium	G	Steel	425-S11 & 425-S12 Combo	31k	48 x 82	25	30 psf possible with some permanent set
Medium	H	Aluminum	Rectangular Tube 425-AD50	21k	48 x 82	30	35 possible with perm set - 40 possible 6061-T6 alloy



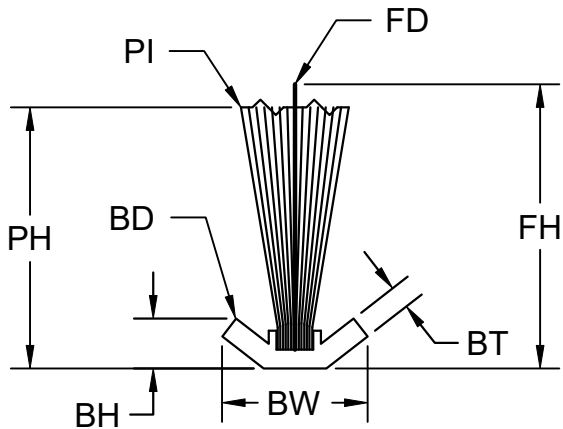
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CUSTOMER:	EFS		Project	425 Catalog		DRAWN:	gmc		Layout/Drawing Name		
TITLE:	KE2498 Reinforcement Options					CHECKED:	KE2498 Refo Opts				
SHEET:	MATERIAL:	DATE:	SCALE:	Series	SHEET:	PART:	DIE NUMBER:	ACAD:	425 Catalog - copy 09242020.dwg		
A	Aluminum	2019-11-22	0.6:1	425	/						

10-39-88

1/4/2021

CAB (Chris Bullock)



REVISIONS			
REV	DESCRIPTION	DATE	CRM NO
A	RELEASE FOR MANUFACTURE	01/04/2021	15763
PRODUCT DIMENSIONS / DESCRIPTION			
ITEM	DESCRIPTION	NOMINAL DIM	TOLERANCES
PI	PILE	LIGHT DENSITY / WHITE / PP	
PH	PILE HEIGHT	0.340	+0.015/-0.010
FD	FIN DESCRIPTION	CENTER / CLEAR / PP	
FH	FIN HEIGHT	PH + 0.030	±0.015
BW	BACKING WIDTH	0.187	±0.008
BT	BACKING THICKNESS	0.0295	±0.0015
BD	BACKING DESCRIPTION	NATURAL / PP	
BH	BACKING HEIGHT	0.065	+0.008 / -0.005

**intertek**  
Total Quality. Assured.

Report #: L3361.01  
Date: 01/14/2021  
Verified by: [Signature]  
Digitally Signed by: Arshad Riaz

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VERSION: 20.0	1050 HOOK ROAD FARMINGTON, NY 14425 www.ultrafab.com			
DRAWN: CAB 01/04/2021	<b>CUSTOMER DRAWING</b> .187" X .340", WHITE, Ultra Pro® W24341UW0000			
CHECKED: RWO 01/04/2021				
CUST. APPR.:	SIZE A	CAGE CODE N/A	DRAWING NUMBER 10-39-88	REV A
ISSUED: 01/04/2021	SCALE 4:1	DO NOT SCALE	SHEET 1 OF 2	

1) ALL DIMENSIONS ARE IN INCHES  
NOTES: