

PLESIO, INC COMPUTER SIMULATION REPORT

SCOPE OF WORK

SELECT SERIES SMART SLIDE - NFRC 100/200/500

REPORT NUMBER

K6499.04-116-45 R0

TEST DATE

02/05/21

ISSUE DATE

11/08/22

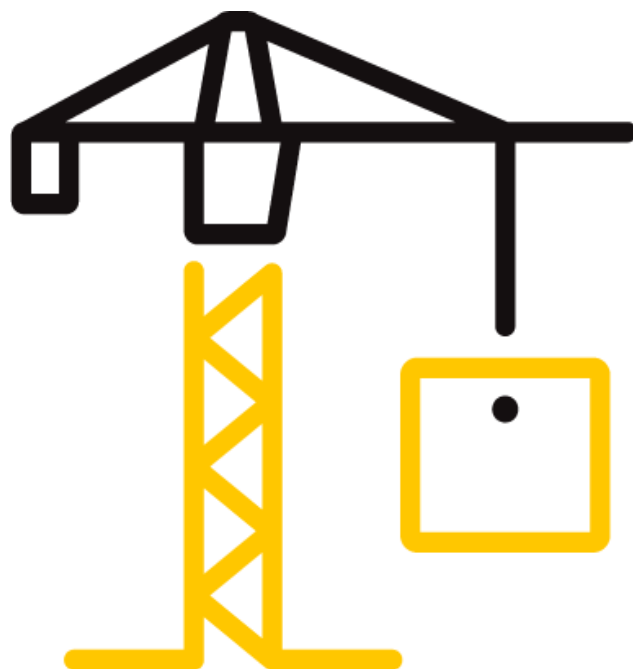
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TEST REPORT FOR PLESIO, INC

Report No: K6499.04-116-45 R0

Date: 11/08/22

REPORT ISSUED TO

PLESIO, INC

347 N. Woodmont Drive
Downington, Pennsylvania 19335

SECTION 1

SUMMARY

SERIES/MODEL: Select Series Smart Slide

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted to perform U-Factor, Solar Heat Gain Coefficient, Visible Transmittance and Condensation Resistance simulations in accordance with the National Fenestration Rating Council (NFRC). This report is reissued in the name of Plesio, Inc through written authorization of Chelsea Building Products to whom the original report was rendered. The original Chelsea Building Products report number is K6499.01-116-45.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. Intertek B&C will service this report for the entire test record retention period. The test record retention period ends five years after the test date. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained for the entire test record retention period.

FOR INTERTEK B&C:

COMPLETED BY:	Jonathan P. Spencer
	Project Engineer
TITLE:	NFRC Certified Simulator
SIGNATURE:	
DATE:	11/08/22

JPS:jps

REVIEWED BY:	Eric S. Leitner
	Manager - Simulations and Thermal Testing, SIRC
TITLE:	
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DATE:	11/08/22

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SECTION 2

TEST METHODS

The products were evaluated in accordance with the following:

ANSI/NFRC 100-2020, Procedure for Determining Fenestration Product U-Factors

ANSI/NFRC 200-2020, Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence

NFRC 500-2017, Procedure for Determining Fenestration Product Condensation Resistance Values

**Condensation Resistance results obtained from this procedure are for controlled laboratory conditions and do not include the effects of air movement through the specimen, solar radiation, and the thermal bridging that may occur due to the specific design and construction of the fenestration system opening.*

Ratings values included in this report are for submittals to an NFRC-licensed IA and are not meant to be used directly for labeling purposes. Only those values identified on a valid Certificate of Authorization (CA) by an NFRC accredited Inspection Agency (IA) are to be used for labeling purposes. The ratings values were rounded in accordance with NFRC 601, NFRC Unit and Measurement Policy.

Intertek B&C is an NFRC accredited simulation laboratory and all simulations were conducted in full compliance with NFRC approved procedures and specifications. The values included in this report are not considered in compliance with ANSI/NFRC 100, ANSI/NFRC 200, and/or NFRC 500 unless the associated validation test requirements have been satisfied, as applicable.

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SECTION 3

TEST PROCEDURE

The total product, including specific frame, spacer, and glass details, was modeled using NFRC approved software.

FRAME AND EDGE MODELING	THERM 7.4.4
CENTER-OF-GLASS MODELING	WINDOW 7.4.14
TOTAL PRODUCT CALCULATIONS	WINDOW 7.4.14
SPECTRAL DATA LIBRARY	IGDB 88.0

Modeling Assumptions / Technical Interpretations

Any modeling assumptions and technical interpretations required to model this product are listed below.

- 1) To prevent air infiltration, tape was applied to all interior sash crack locations.

SECTION 4

SIMULATION SPECIMEN DESCRIPTION

SERIES/MODEL	Select Series Smart Slide
PRODUCT TYPE	Sliding Glass Door
FRAME MATERIAL	VA - Vinyl w/ All Members Reinforced
SASH MATERIAL	VA - Vinyl w/ All Members Reinforced
STANDARD SIZE	2000mm x 2000mm

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SIMULATION SPECIMEN DESCRIPTION

SPACER OPTIONS			
TYPE	PRIMARY SEAL	SECONDARY SEAL	CODE
Cardinal Endur Spacer	Butyl Rubber	Silicone	SS-D
Quanex Super Spacer Premium S2	Butyl Rubber	-	ZF-S

GRID OPTIONS		
GRID SIZE	GRID TYPE	GRID PATTERN
0.188" x 0.625"	Aluminum Rectangular Grid (Painted)	NFRC Standard

REINFORCEMENT OPTIONS	
LOCATION	MATERIAL
Frame Perimeter	Steel
Lock & Keeper Rail	Steel

GAS FILLING TECHNIQUE	
FILL TYPE	METHOD
90% Argon	Single Probe

EDGE-OF-GLASS CONSTRUCTION	
INTERIOR CONDITION	Vinyl glazing bead with flexible gasket against glass
EXTERIOR CONDITION	Flexible gasket between frame and glass

WEATHERSTRIPPING		
TYPE	QUANTITY	LOCATION
EPDM Gasket	2 Rows	Sash Perimeter

FRAME/SASH MATERIALS FINISH	
INTERIOR	Vinyl
EXTERIOR	Vinyl

VALIDATION MATRIX*	
PRODUCT LINE	REPORT NUMBER
None	-

*These products are part of a validation matrix. Only one is required for validation testing.

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SECTION 5

SPECIALTY PRODUCTS TABLE

The specialty products method allows the manufacturer to determine the overall product SHGC and VT for any glazing option. The center of glass SHGC and/or VT must be determined using WINDOW 7.4.14. The method calculates overall product SHGC and VT indexed on center of glass properties. All values used in the calculations are truncated to six decimal place precision.

	No Dividers	Dividers < 1	Dividers > 1
SHGC0	0.003965	0.007121	0.010061
SHGC1	0.757025	0.664315	0.577922
VT0	0.000000	0.000000	0.000000
VT1	0.753060	0.657194	0.567861

$$SHGC = SHGC0 + SHGCc (SHGC1 - SHGC0)$$

$$VT = VT0 + VTc (VT1 - VT0)$$

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SECTION 6

SIMULATION RESULTS

TOTAL PRODUCT CALCULATIONS (Select Series Smart Slide)												
Option Number	Pane Thickness 1 (in)	Gap Width 1 (in)	Pane Thickness 2 (in)	Gap Width 2 (in)	Pane Thickness 3 (in)	Gap Width 3 (in)	Pane Thickness 4 (in)	Gap Fill	Low-e (Surface #)	Tint	Spacer	Grid Type
	U-Factor (Btu/Hr-Ft2-F)		Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)				Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance (CR)			
1	E180/ARG/CLR/ARG/E180 (DS/DS/DS) 1.5" IG											
	0.118	0.563	0.118	0.563	0.118			ARG90	0.068(#2) / 0.068(#5)	CL	SS-D	N,G
	U-Factor 0.18		SHGC(N/<1) 0.43 / 0.38				VT(N/<1) 0.53 / 0.46		CR 69			
2	E180/ARG/CLR/ARG/E180 (5M/5M/5M) 1.5" IG											
	0.187	0.469	0.185	0.469	0.187			ARG90	0.068(#2) / 0.068(#5)	CL	SS-D	N,G
	U-Factor 0.19		SHGC(N/<1) 0.40 / 0.36				VT(N/<1) 0.51 / 0.45		CR 68			
3	E180/ARG/CLR/ARG/E180 (6M/6M/6M) 1.5" IG											
	0.223	0.375	0.224	0.375	0.223			ARG90	0.068(#2) / 0.068(#5)	CL	SS-D	N
	U-Factor 0.20		SHGC(N) 0.39				VT(N) 0.50		CR 65			
4	E180/ARG/CLR/ARG/E180 (6M/6M/6M) 1.5" IG											
	0.223	0.375	0.224	0.375	0.223			ARG90	0.068(#2) / 0.068(#5)	CL	SS-D	G
	U-Factor 0.21		SHGC(<1) 0.34				VT(<1) 0.44		CR 65			
5	E272/ARG/CLR/ARG/E272 (DS/DS/DS) 1.5" IG											
	0.117	0.563	0.118	0.563	0.117			ARG90	0.042(#2) / 0.042(#5)	CL	SS-D	N,G
	U-Factor 0.18		SHGC(N/<1) 0.27 / 0.24				VT(N/<1) 0.43 / 0.38		CR 69			
6	E272/ARG/CLR/ARG/E272 (5M/5M/5M) 1.5" IG											
	0.187	0.469	0.185	0.469	0.187			ARG90	0.042(#2) / 0.042(#5)	CL	SS-D	N,G
	U-Factor 0.18		SHGC(N/<1) 0.26 / 0.23				VT(N/<1) 0.42 / 0.37		CR 68			
7	E272/ARG/CLR/ARG/E272 (6M/6M/6M) 1.5" IG											
	0.224	0.375	0.224	0.375	0.224			ARG90	0.042(#2) / 0.042(#5)	CL	SS-D	N
	U-Factor 0.20		SHGC(N) 0.26				VT(N) 0.41		CR 66			
8	E272/ARG/CLR/ARG/E272 (6M/6M/6M) 1.5" IG											
	0.224	0.375	0.224	0.375	0.224			ARG90	0.042(#2) / 0.042(#5)	CL	SS-D	G
	U-Factor 0.20		SHGC(<1) 0.23				VT(<1) 0.36		CR 66			
9	E366/ARG/CLR/ARG/E366 (DS/DS/DS) 1.5" IG											
	0.118	0.563	0.118	0.563	0.118			ARG90	0.020(#2) / 0.020(#5)	CL	SS-D	N,G
	U-Factor 0.17		SHGC(N/<1) 0.18 / 0.16				VT(N/<1) 0.35 / 0.31		CR 70			
10	E366/ARG/CLR/ARG/E366 (5M/5M/5M) 1.5" IG											
	0.185	0.469	0.185	0.469	0.185			ARG90	0.020(#2) / 0.020(#5)	CL	SS-D	N,G
	U-Factor 0.18		SHGC(N/<1) 0.18 / 0.16				VT(N/<1) 0.34 / 0.30		CR 69			

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SIMULATION RESULTS

TOTAL PRODUCT CALCULATIONS (Select Series Smart Slide)												
Option Number	Pane Thickness 1 (in)	Gap Width 1 (in)	Pane Thickness 2 (in)	Gap Width 2 (in)	Pane Thickness 3 (in)	Gap Width 3 (in)	Pane Thickness 4 (in)	Gap Fill	Low-e (Surface #)	Tint	Spacer	Grid Type
	U-Factor (Btu/Hr-Ft2-F)		Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)				Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance (CR)			
11	E366/ARG/CLR/ARG/E366 (6M/6M/6M) 1.5" IG											
	0.224	0.375	0.224	0.375	0.224			ARG90	0.020(#2) / 0.020(#5)	CL	SS-D	N
	U-Factor 0.19		SHGC(N) 0.18				VT(N) 0.34		CR 66			
12	E366/ARG/CLR/ARG/E366 (6M/6M/6M) 1.5" IG											
	0.224	0.375	0.224	0.375	0.224			ARG90	0.020(#2) / 0.020(#5)	CL	SS-D	G
	U-Factor 0.20		SHGC(<1) 0.16				VT(<1) 0.29		CR 66			
13	E272/ARG/CLR/ARG/E180 (DS/DS/DS) 1.5" IG											
	0.117	0.563	0.118	0.563	0.118			ARG90	0.042(#2) / 0.068(#5)	CL	SS-D	N,G
	U-Factor 0.18		SHGC(N/<1) 0.28 / 0.25				VT(N/<1) 0.48 / 0.42		CR 69			
14	E272/ARG/CLR/ARG/E180 (5M/5M/5M) 1.5" IG											
	0.187	0.469	0.185	0.469	0.187			ARG90	0.042(#2) / 0.068(#5)	CL	SS-D	N,G
	U-Factor 0.19		SHGC(N/<1) 0.28 / 0.24				VT(N/<1) 0.46 / 0.40		CR 68			
15	E272/ARG/CLR/ARG/E180 (6M/6M/6M) 1.5" IG											
	0.224	0.375	0.224	0.375	0.223			ARG90	0.042(#2) / 0.068(#5)	CL	SS-D	N
	U-Factor 0.20		SHGC(N) 0.27				VT(N) 0.45		CR 66			
16	E272/ARG/CLR/ARG/E180 (6M/6M/6M) 1.5" IG											
	0.224	0.375	0.224	0.375	0.223			ARG90	0.042(#2) / 0.068(#5)	CL	SS-D	G
	U-Factor 0.20		SHGC(<1) 0.24				VT(<1) 0.40		CR 66			
17	E180/ARG/CLR/ARG/E180 (5M/DS/6M) 1.5" IG											
	0.187	0.469	0.118	0.469	0.223			ARG90	0.068(#2) / 0.068(#5)	CL	SS-D	N,G
	U-Factor 0.19		SHGC(N/<1) 0.41 / 0.36				VT(N/<1) 0.51 / 0.45		CR 67			
18	E272/ARG/CLR/ARG/E180 (5M/DS/6M) 1.5" IG											
	0.187	0.469	0.118	0.469	0.223			ARG90	0.042(#2) / 0.068(#5)	CL	SS-D	N,G
	U-Factor 0.19		SHGC(N/<1) 0.28 / 0.25				VT(N/<1) 0.46 / 0.41		CR 68			
19	E272/ARG/CLR/ARG/E272 (5M/DS/6M) 1.5" IG											
	0.187	0.469	0.118	0.469	0.224			ARG90	0.042(#2) / 0.042(#5)	CL	SS-D	N,G
	U-Factor 0.18		SHGC(N/<1) 0.26 / 0.23				VT(N/<1) 0.42 / 0.37		CR 68			
20	E366/ARG/CLR/ARG/E366 (5M/DS/6M) 1.5" IG											
	0.185	0.469	0.118	0.469	0.224			ARG90	0.020(#2) / 0.020(#5)	CL	SS-D	N,G
	U-Factor 0.18		SHGC(N/<1) 0.18 / 0.16				VT(N/<1) 0.34 / 0.30		CR 68			

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SECTION 6 (Continued)

SIMULATION RESULTS

TOTAL PRODUCT CALCULATIONS (Select Series Smart Slide)												
Option Number	Pane Thickness 1 (in)	Gap Width 1 (in)	Pane Thickness 2 (in)	Gap Width 2 (in)	Pane Thickness 3 (in)	Gap Width 3 (in)	Pane Thickness 4 (in)	Gap Fill	Low-e (Surface #)	Tint	Spacer	Grid Type
	U-Factor (Btu/Hr-Ft2-F)		Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)				Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance (CR)			
21	E180/ARG/CLR/ARG/LAMI (2.7MM E180 030PVB 2.7MM CLR) (5M/DS/6M) 1.5" IG											
	0.187	0.469	0.118	0.469	0.250			ARG90	0.068(#2) / 0.068(#5)	CL	SS-D	N,G
	U-Factor 0.19		SHGC(N/<1) 0.41 / 0.36				VT(N/<1) 0.51 / 0.45		CR 68			
22	E272/ARG/CLR/ARG/LAMI (3MM E272 030PVB 3MM CLR) (6M/DS/6.8M) 1.5" IG											
	0.224	0.429	0.118	0.429	0.265			ARG90	0.042(#2) / 0.042(#5)	CL	SS-D	N,G
	U-Factor 0.19		SHGC(N/<1) 0.26 / 0.23				VT(N/<1) 0.42 / 0.36		CR 67			
23	E180/ARG/CLR/ARG/LAMI (3MM E180 030PVB 3MM CLR) (6M/DS/6.8M) 1.5" IG											
	0.223	0.429	0.118	0.429	0.266			ARG90	0.068(#2) / 0.068(#5)	CL	SS-D	N,G
	U-Factor 0.19		SHGC(N/<1) 0.40 / 0.35				VT(N/<1) 0.51 / 0.44		CR 67			
24	E272/ARG/CLR/ARG/LAMI (3MM E272 030PVB 3MM CLR) (6M/DS/6.8M) 1.5" IG											
	0.224	0.429	0.118	0.429	0.265			ARG90	0.042(#2) / 0.042(#5)	CL	SS-D	N,G
	U-Factor 0.19		SHGC(N/<1) 0.26 / 0.23				VT(N/<1) 0.42 / 0.36		CR 67			
25	E180/ARG/CLR/ARG/LAMI (3MM E180 030PVB 3MM CLR) (6M/DS/6.8M) 1.5" IG											
	0.223	0.429	0.118	0.429	0.266			ARG90	0.068(#2) / 0.068(#5)	CL	SS-D	N,G
	U-Factor 0.19		SHGC(N/<1) 0.40 / 0.35				VT(N/<1) 0.51 / 0.44		CR 67			
26	E272/ARG/LAMI (2.7CLR .030PVB 2.7 CLR) (5M/LAMI) 1" IG											
	0.187	0.570	0.243					ARG90	0.042(#2)	CL	SS-D	N,G
	U-Factor 0.28		SHGC(N/<1) 0.30 / 0.27				VT(N/<1) 0.53 / 0.46		CR 56			
27	E272/ARG/LAMI (2.7CLR .030PVB 2.7 CLR) (DS/LAMI) 1" IG											
	0.117	0.632	0.243					ARG90	0.042(#2)	CL	SS-D	N,G
	U-Factor 0.28		SHGC(N/<1) 0.31 / 0.27				VT(N/<1) 0.53 / 0.46		CR 57			
28	E180/ARG/LAMI (2.7CLR .030PVB 2.7 CLR) (5M/LAMI) 1" IG											
	0.187	0.570	0.243					ARG90	0.068(#2)	CL	SS-D	N,G
	U-Factor 0.28		SHGC(N/<1) 0.46 / 0.41				VT(N/<1) 0.58 / 0.51		CR 56			
29	E180/ARG/LAMI (2.7CLR .030PVB 2.7 CLR) (DS/LAMI) 1" IG											
	0.118	0.632	0.243					ARG90	0.068(#2)	CL	SS-D	N,G
	U-Factor 0.28		SHGC(N/<1) 0.48 / 0.42				VT(N/<1) 0.58 / 0.51		CR 56			
30	E366/ARG/LAMI (2.7CLR .030PVB 2.7 CLR) (5M/LAMI) 1" IG											
	0.185	0.570	0.243					ARG90	0.020(#2)	CL	SS-D	N,G
	U-Factor 0.27		SHGC(N/<1) 0.21 / 0.18				VT(N/<1) 0.47 / 0.41		CR 57			

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SIMULATION RESULTS

TOTAL PRODUCT CALCULATIONS (Select Series Smart Slide)												
Option Number	Pane Thickness 1 (in)	Gap Width 1 (in)	Pane Thickness 2 (in)	Gap Width 2 (in)	Pane Thickness 3 (in)	Gap Width 3 (in)	Pane Thickness 4 (in)	Gap Fill	Low-e (Surface #)	Tint	Spacer	Grid Type
	U-Factor (Btu/Hr-Ft2-F)			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)				Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance (CR)		
31	E366/ARG/LAMI (2.7CLR .030PVB 2.7 CLR) (DS/LAMI) 1" IG											
	0.118	0.632	0.243					ARG90	0.020(#2)	CL	SS-D	N,G
	U-Factor 0.27			SHGC(N/<1) 0.20 / 0.18				VT(N/<1) 0.48 / 0.42		CR 57		
32	E366/ARG/LAMI (3CLR .090PVB 3 CLR) (DS/LAMI) 1" IG											
	0.118	0.551	0.324					ARG90	0.020(#2)	CL	SS-D	N,G
	U-Factor 0.27			SHGC(N/<1) 0.21 / 0.18				VT(N/<1) 0.47 / 0.41		CR 57		
33	E272/ARG/LAMI (3CLR .090PVB 3 CLR) (DS/LAMI) 1" IG											
	0.117	0.551	0.324					ARG90	0.042(#2)	CL	SS-D	N,G
	U-Factor 0.27			SHGC(N/<1) 0.31 / 0.27				VT(N/<1) 0.53 / 0.46		CR 56		
34	E180/ARG/LAMI (3CLR .090PVB 3 CLR) (DS/LAMI) 1" IG											
	0.118	0.551	0.324					ARG90	0.068(#2)	CL	SS-D	N,G
	U-Factor 0.28			SHGC(N/<1) 0.48 / 0.42				VT(N/<1) 0.58 / 0.51		CR 56		
35	E366/ARG/LAMI (3CLR .090PVB 3 CLR) (5M/LAMI) 1" IG											
	0.185	0.488	0.324					ARG90	0.020(#2)	CL	SS-D	N,G
	U-Factor 0.26			SHGC(N/<1) 0.21 / 0.18				VT(N/<1) 0.47 / 0.41		CR 57		
36	E272/ARG/LAMI (3CLR .090PVB 3 CLR) (5M/LAMI) 1" IG											
	0.187	0.488	0.324					ARG90	0.042(#2)	CL	SS-D	N,G
	U-Factor 0.27			SHGC(N/<1) 0.30 / 0.27				VT(N/<1) 0.52 / 0.46		CR 56		
37	E180/ARG/LAMI (3CLR .090PVB 3 CLR) (5M/LAMI) 1" IG											
	0.187	0.488	0.324					ARG90	0.068(#2)	CL	SS-D	N,G
	U-Factor 0.28			SHGC(N/<1) 0.46 / 0.41				VT(N/<1) 0.57 / 0.50		CR 56		
38	E366/ARG/CLR (5M) 1" IG											
	0.185	0.625	0.185					ARG90	0.020(#2)	CL	SS-D	N,G
	U-Factor 0.27			SHGC(N/<1) 0.21 / 0.18				VT(N/<1) 0.48 / 0.42		CR 56		
	CLR/ARG/E366 (5M) 1" IG											
	0.185	0.625	0.185					ARG90	0.020(#3)	CL	SS-D	N,G
	U-Factor 0.27			SHGC(N/<1) 0.30 / 0.26				VT(N/<1) 0.48 / 0.42		CR 56		
39	E272/ARG/CLR (5M) 1" IG											
	0.187	0.625	0.185					ARG90	0.042(#2)	CL	SS-D	N,G
	U-Factor 0.28			SHGC(N/<1) 0.31 / 0.27				VT(N/<1) 0.53 / 0.46		CR 56		

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SIMULATION RESULTS

TOTAL PRODUCT CALCULATIONS (Select Series Smart Slide)												
Option Number	Pane Thickness 1 (in)	Gap Width 1 (in)	Pane Thickness 2 (in)	Gap Width 2 (in)	Pane Thickness 3 (in)	Gap Width 3 (in)	Pane Thickness 4 (in)	Gap Fill	Low-e (Surface #)	Tint	Spacer	Grid Type
	U-Factor (Btu/Hr-Ft2-F)			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)				Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance (CR)		
40	CLR/ARG/E272 (5M) 1" IG											
	0.185	0.625	0.187					ARG90	0.042(#3)	CL	SS-D	N,G
	U-Factor 0.28			SHGC(N/<1) 0.37 / 0.33				VT(N/<1) 0.53 / 0.46		CR 56		
40	E180/ARG/CLR (5M) 1" IG											
	0.187	0.625	0.185					ARG90	0.068(#2)	CL	SS-D	N,G
	U-Factor 0.29			SHGC(N/<1) 0.47 / 0.41				VT(N/<1) 0.59 / 0.51		CR 55		
41	CLR/ARG/E180 (5M) 1" IG											
	0.185	0.625	0.187					ARG90	0.068(#3)	CL	SS-D	N,G
	U-Factor 0.29			SHGC(N/<1) 0.50 / 0.44				VT(N/<1) 0.59 / 0.51		CR 55		
41	E366/ARG/CLR (DS) 1" IG											
	0.118	0.750	0.118					ARG90	0.020(#2)	CL	SS-D	N,G
	U-Factor 0.28			SHGC(N/<1) 0.21 / 0.19				VT(N/<1) 0.49 / 0.43		CR 57		
42	CLR/ARG/E366 (DS) 1" IG											
	0.118	0.750	0.118					ARG90	0.020(#3)	CL	SS-D	N,G
	U-Factor 0.28			SHGC(N/<1) 0.30 / 0.27				VT(N/<1) 0.49 / 0.43		CR 57		
42	E272/ARG/CLR (DS) 1" IG											
	0.117	0.750	0.118					ARG90	0.042(#2)	CL	SS-D	N,G
	U-Factor 0.28			SHGC(N/<1) 0.31 / 0.28				VT(N/<1) 0.54 / 0.47		CR 57		
43	CLR/ARG/E272 (DS) 1" IG											
	0.118	0.750	0.117					ARG90	0.042(#3)	CL	SS-D	N,G
	U-Factor 0.28			SHGC(N/<1) 0.38 / 0.34				VT(N/<1) 0.54 / 0.47		CR 57		
43	E180/ARG/CLR (DS) 1" IG											
	0.118	0.750	0.118					ARG90	0.068(#2)	CL	SS-D	N,G
	U-Factor 0.29			SHGC(N/<1) 0.49 / 0.43				VT(N/<1) 0.60 / 0.52		CR 56		
44	CLR/ARG/E180 (DS) 1" IG											
	0.118	0.750	0.118					ARG90	0.068(#3)	CL	SS-D	N,G
	U-Factor 0.29			SHGC(N/<1) 0.52 / 0.46				VT(N/<1) 0.60 / 0.52		CR 56		
44	E366/ARG/CLR (6M) 1" IG											
	0.224	0.500	0.224					ARG90	0.020(#2)	CL	SS-D	N,G
	U-Factor 0.27			SHGC(N/<1) 0.21 / 0.19				VT(N/<1) 0.47 / 0.41		CR 56		

TEST REPORT FOR PLESIO, INC

Report No: K6499.04-116-45 R0

Date: 11/08/22

SECTION 6 (Continued)

SIMULATION RESULTS

TOTAL PRODUCT CALCULATIONS (Select Series Smart Slide)												
Option Number	Pane Thickness 1 (in)	Gap Width 1 (in)	Pane Thickness 2 (in)	Gap Width 2 (in)	Pane Thickness 3 (in)	Gap Width 3 (in)	Pane Thickness 4 (in)	Gap Fill	Low-e (Surface #)	Tint	Spacer	Grid Type
	U-Factor (Btu/Hr-Ft2-F)			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)				Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance (CR)		
	CLR/ARG/E366 (6M) 1" IG											
	0.224	0.500	0.224					ARG90	0.020(#3)	CL	SS-D	N,G
	U-Factor 0.27			SHGC(N/<1) 0.29 / 0.26				VT(N/<1) 0.47 / 0.41		CR 56		
45	E272/ARG/CLR (6M) 1" IG											
	0.224	0.500	0.224					ARG90	0.042(#2)	CL	SS-D	N,G
	U-Factor 0.27			SHGC(N/<1) 0.30 / 0.27				VT(N/<1) 0.53 / 0.46		CR 55		
	CLR/ARG/E272 (6M) 1" IG											
	0.224	0.500	0.224					ARG90	0.042(#3)	CL	SS-D	N,G
	U-Factor 0.27			SHGC(N/<1) 0.37 / 0.32				VT(N/<1) 0.53 / 0.46		CR 55		
46	E180/ARG/CLR (6M) 1" IG											
	0.223	0.500	0.224					ARG90	0.068(#2)	CL	SS-D	N,G
	U-Factor 0.28			SHGC(N/<1) 0.46 / 0.40				VT(N/<1) 0.58 / 0.50		CR 55		
	CLR/ARG/E180 (6M) 1" IG											
	0.224	0.500	0.223					ARG90	0.068(#3)	CL	SS-D	N,G
	U-Factor 0.28			SHGC(N/<1) 0.49 / 0.43				VT(N/<1) 0.58 / 0.50		CR 55		
47	SB60/ARG/CLR/ARG/SB60 (DS/DS/DS) 1.5" IG											
	0.129	0.563	0.129	0.563	0.129			ARG90	0.035(#2) / 0.035(#5)	CL	ZF-S	N,G
	U-Factor 0.17			SHGC(N/<1) 0.26 / 0.23				VT(N/<1) 0.44 / 0.38		CR 71		
48	SB60/ARG/CLR/ARG/SB60 (5MM/5MM/5MM) 1.5" IG											
	0.184	0.469	0.184	0.469	0.184			ARG90	0.035(#2) / 0.035(#5)	CL	ZF-S	N,G
	U-Factor 0.18			SHGC(N/<1) 0.26 / 0.23				VT(N/<1) 0.43 / 0.38		CR 70		
49	SB60/ARG/CLR/ARG/SB60 (6MM/6MM/6MM) 1.5" IG											
	0.223	0.375	0.223	0.375	0.223			ARG90	0.035(#2) / 0.035(#5)	CL	ZF-S	N
	U-Factor 0.19			SHGC(N) 0.25				VT(N) 0.42		CR 67		
50	SB60/ARG/CLR/ARG/SB60 (6MM/6MM/6MM) 1.5" IG											
	0.223	0.375	0.223	0.375	0.223			ARG90	0.035(#2) / 0.035(#5)	CL	ZF-S	G
	U-Factor 0.20			SHGC(<1) 0.22				VT(<1) 0.37		CR 67		
51	SB70/ARG/CLR/ARG/SB60 (DS/DS/DS) 1.5" IG											
	0.129	0.563	0.129	0.563	0.129			ARG90	0.018(#2) / 0.035(#5)	CL	ZF-S	N,G
	U-Factor 0.17			SHGC(N/<1) 0.19 / 0.17				VT(N/<1) 0.39 / 0.34		CR 71		

TEST REPORT FOR PLESIO, INC

Report No: K6499.04-116-45 R0

Date: 11/08/22

SECTION 6 (Continued)

SIMULATION RESULTS

TOTAL PRODUCT CALCULATIONS (Select Series Smart Slide)												
Option Number	Pane Thickness 1 (in)	Gap Width 1 (in)	Pane Thickness 2 (in)	Gap Width 2 (in)	Pane Thickness 3 (in)	Gap Width 3 (in)	Pane Thickness 4 (in)	Gap Fill	Low-e (Surface #)	Tint	Spacer	Grid Type
	U-Factor (Btu/Hr-Ft ² -F)		Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)				Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance (CR)			
52	SB70/ARG/CLR/ARG/SB60 (5MM/5MM/5MM) 1.5" IG											
	0.184	0.469	0.184	0.469	0.184			ARG90	0.018(#2) / 0.035(#5)	CL	ZF-S	N,G
	U-Factor 0.18		SHGC(N<1) 0.19 / 0.17				VT(N<1) 0.38 / 0.33		CR 70			
53	SB70/ARG/CLR/ARG/SB60 (6MM/6MM/6MM) 1.5" IG											
	0.223	0.375	0.223	0.375	0.223			ARG90	0.018(#2) / 0.035(#5)	CL	ZF-S	N
	U-Factor 0.19		SHGC(N) 0.19				VT(N) 0.39		CR 67			
54	SB70/ARG/CLR/ARG/SB60 (6MM/6MM/6MM) 1.5" IG											
	0.223	0.375	0.223	0.375	0.223			ARG90	0.018(#2) / 0.035(#5)	CL	ZF-S	G
	U-Factor 0.20		SHGC(<1) 0.17				VT(<1) 0.34		CR 67			
55	SB60/ARG/CLR/ARG/SB70 (DS/DS/DS) 1.5" IG											
	0.129	0.563	0.129	0.563	0.129			ARG90	0.035(#2) / 0.018(#5)	CL	ZF-S	N,G
	U-Factor 0.17		SHGC(N<1) 0.23 / 0.21				VT(N<1) 0.39 / 0.34		CR 71			
56	SB60/ARG/CLR/ARG/SB70 (5MM/5MM/5MM) 1.5" IG											
	0.184	0.469	0.184	0.469	0.184			ARG90	0.035(#2) / 0.018(#5)	CL	ZF-S	N,G
	U-Factor 0.18		SHGC(N<1) 0.23 / 0.20				VT(N<1) 0.38 / 0.33		CR 70			
57	SB60/ARG/CLR/ARG/SB70 (6MM/6MM/6MM) 1.5" IG											
	0.223	0.375	0.223	0.375	0.223			ARG90	0.035(#2) / 0.018(#5)	CL	ZF-S	N
	U-Factor 0.19		SHGC(N) 0.22				VT(N) 0.39		CR 67			
58	SB60/ARG/CLR/ARG/SB70 (6MM/6MM/6MM) 1.5" IG											
	0.223	0.375	0.223	0.375	0.223			ARG90	0.035(#2) / 0.018(#5)	CL	ZF-S	G
	U-Factor 0.20		SHGC(<1) 0.20				VT(<1) 0.34		CR 67			



Total Quality. Assured.

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York, Pennsylvania 17406

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TEST REPORT FOR PLESIO, INC

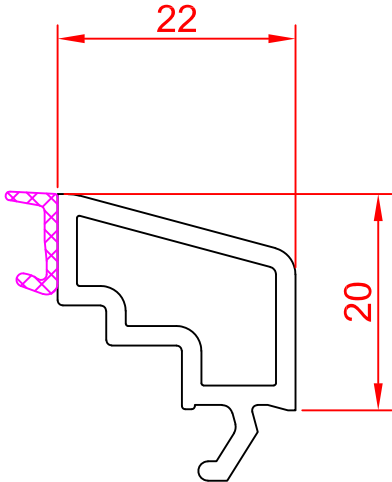
Report No: K6499.04-116-45 R0

Date: 11/08/22

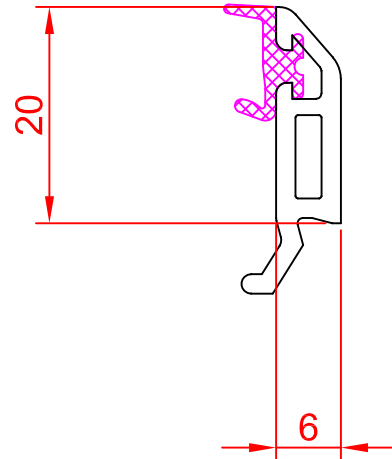
SECTION 7

DRAWINGS / BILL OF MATERIALS

The drawings which follow have been reviewed by Intertek B&C and are representative of the simulation results reported herein. Any deviations are documented herein or on the drawings.




120636
(1" IGU)

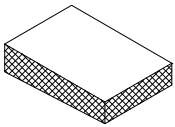
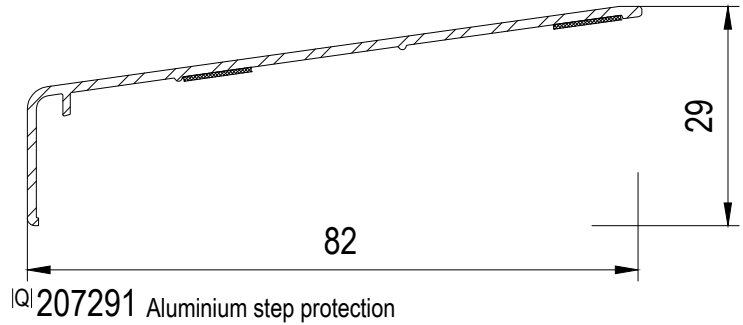


140631
(1 1/2" IGU)

PRELIMINARY PART #			
UNLESS OTHERWISE SPECIFIED			
MATERIAL	RIGID P.V.C.	EXT. WALLS	
EXTERIOR COATING		INT. WALLS	
FLEXIBLE P.V.C.		RADI	
TOTAL AREA	SQIN	ANGULARITY	
STANDARD WT/FT	LB		
GLAZING BEADS			
DRAWN BY:	DESIGNED BY:	DATE	SCALE
		02/25/20	NTS-1
CHECKED BY:	APPROVED BY:	DRAWING No.	
		Smartslide Glazing Beads	

No.	REVISION	BY	DATE


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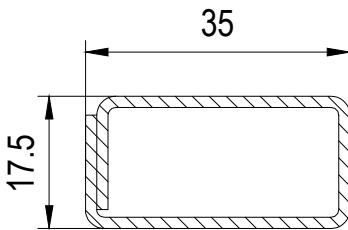


IYI 600291 Seal block

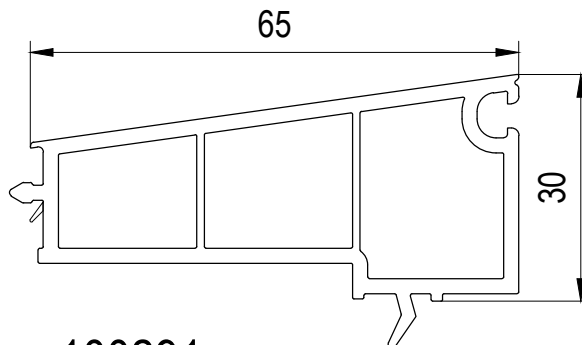


449980

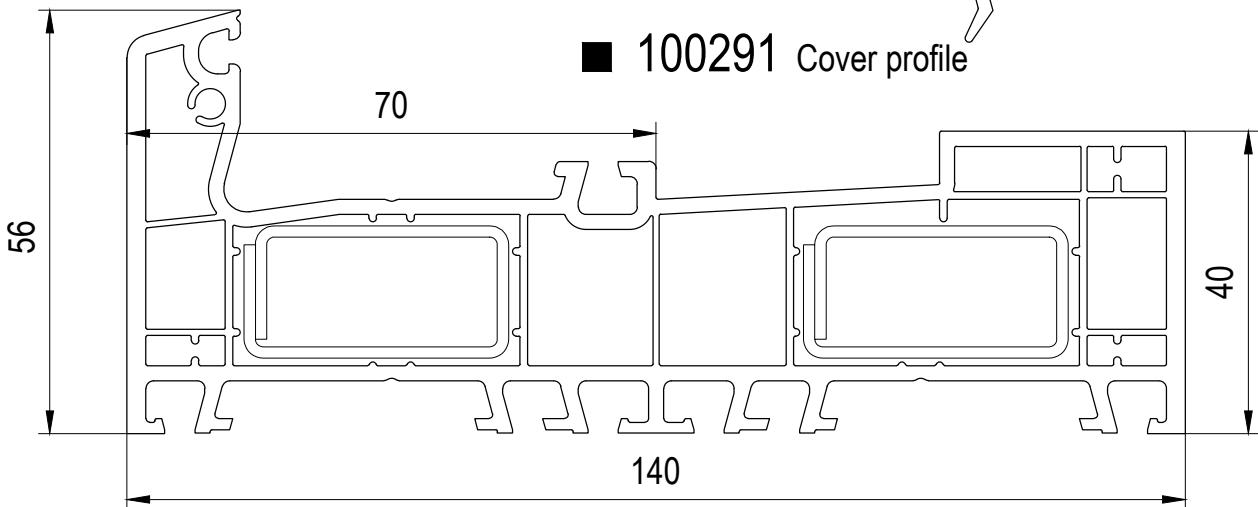
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	Date:	3/31/2020
	Verified by:	<i>Red A. [Signature]</i>



IFI 229037 s=1.5mm 2,5*
Reinforcements



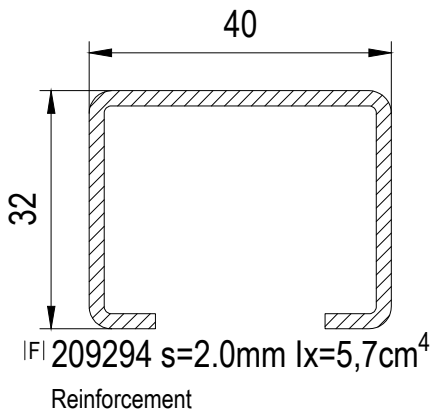
■ 100291 Cover profile



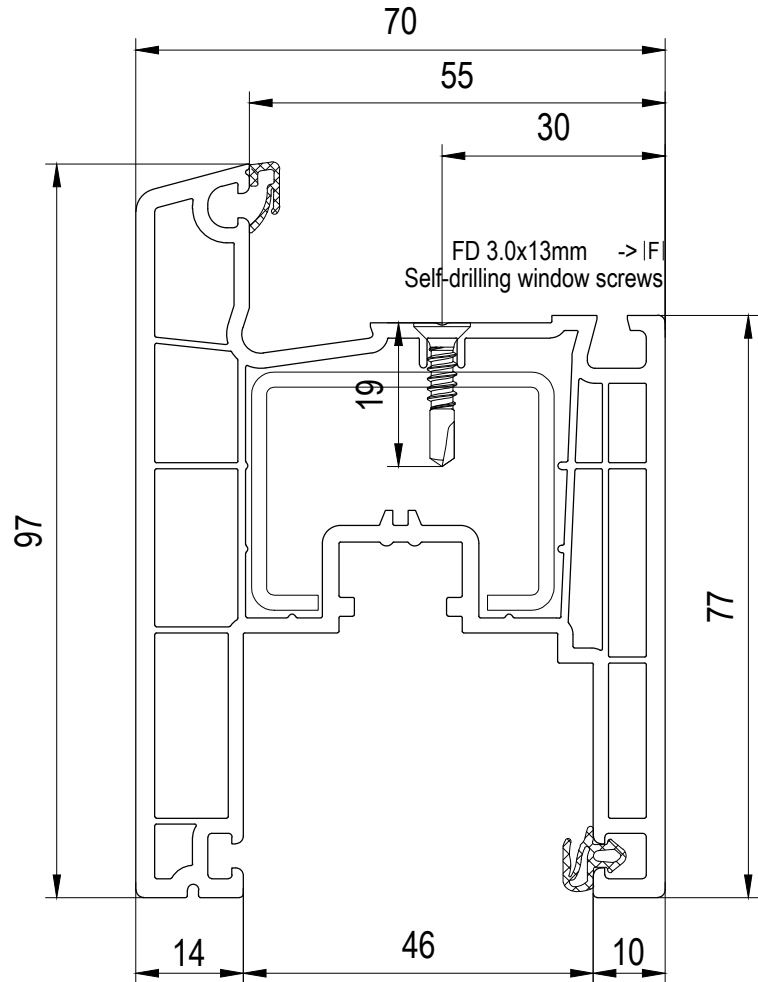
■ 100x91 Frame

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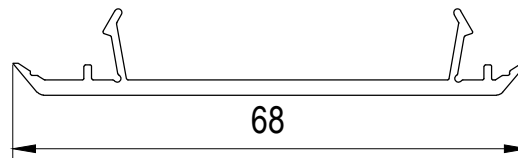
Report #: K6499-116-45
Date: 3/31/2020
Verified by: *R. Loh & M. W.*



449340



■ 100x94 Sash



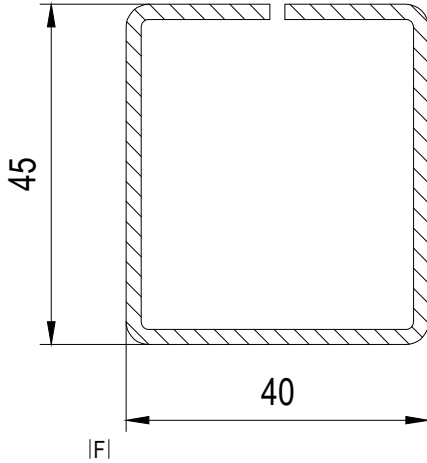
100294 Interlock and cover

intertek
Total Quality. Assured.

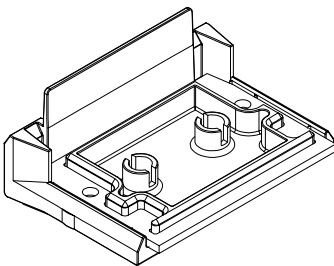
Report #: K6499-116-45

Date: 3/31/2020

Verified by: *Robert A. ...*

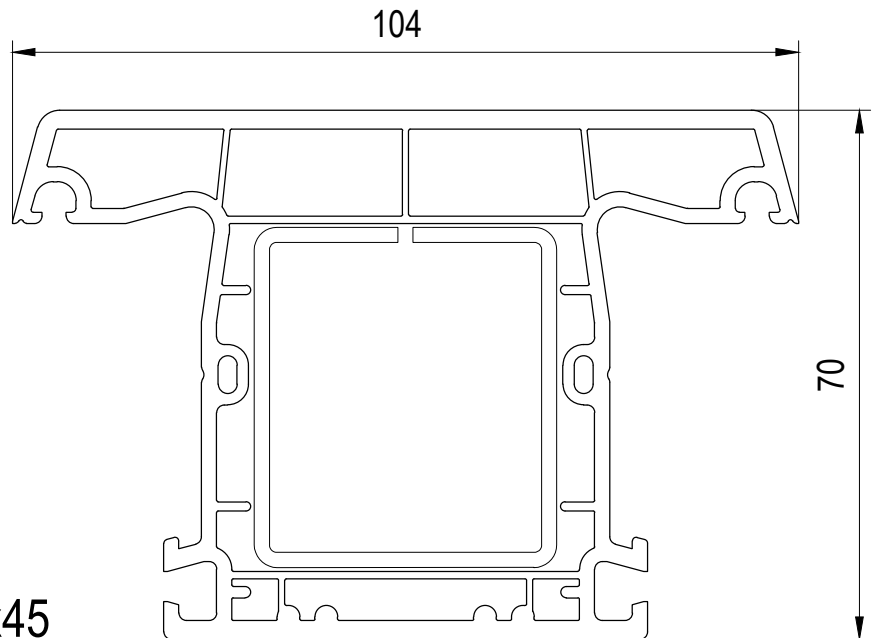


249035 s=2.0mm 9.2*
Reinforcements

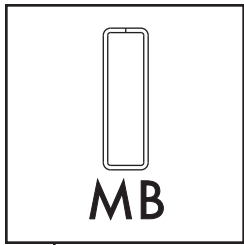


DI -
647136
Interconnects

■ 140x45
||



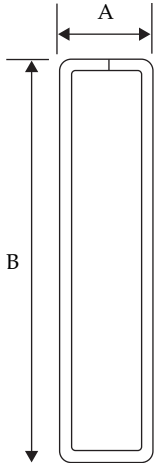
449980



ALLMETAL®

Muntin Bar

Aluminum: Painted, Mill Finish, Clear & Color In™ Anodized



TOLERANCE
A, ± .005 (.127mm)
B, ± .005 (.127mm)

SPECIAL NOTICE

Cleaning and Handling of Muntin Bar

We recommend muntin bar to be wiped clean before installation into an insulating glass unit. A household grade liquid cleaner may be used for this purpose.

To avoid breakdown of painted surfaces, do not use M.E.K., Triethane, Alcohol or like substances for the cleaning of painted muntin bar.

When machining and processing muntin bar in your plant, keep saw tables and work areas free of saw cut filings to avoid scratching the painted surfaces.

Packaging Information

Muntin Bar Size	Part #	Pieces Per Shipping Carton 12' 8" Lengths	Lineal Feet Per Shipping Carton 12' 8" Lengths
1/8 x .610	219697	200	2533
3/16 x 9/16 [†]	119320	150	1900
3/16 x .610 [†]	119705	125	1583
3/16 x 5/8 [†]	120874	125	1583
3/16 x 3/4	122909	110	1393
3/16 x 13/16	123618	110	1393
3/16 x 1	123823	85	1076
1/4 x 9/16	119427	135	1710
1/4 x 5/8 [†]	121410	120	1520
1/4 x 3/4	123063	95	1203
1/4 x 13/16	215017	95	1203
1/4 x 1	123836	70	887
1/4 x 1 1/4	123856	51	646
5/16 x 1	210318	60	684
3/8 x 5/8	121468	90	1140
3/8 x 3/4	123088	75	950
3/8 x 13/16	215016	70	887
3/8 x 7/8	123797	55	697
3/8 x 1	201968	55	696
3/8(.375) x 3/8	205591	140	1773
7/16 x 3/8	119016	115	1457
7/16 x 3/8	216500**	115	1457
7/16 x 1/2	213045	88	1115
7/16 x 5/8 ^Δ	214621	65	823
1/2 x 3/4 [*]	201043	50	633
1/2 x 1	203710	40	506

Specification In Inches

Muntin Bar Size	A	B
1/8 x .610	.125	.610
3/16 x 9/16 [†]	.187	.551
3/16 x .610 [†]	.187	.610
3/16 x 5/8 [†]	.187	.630
3/16 x 3/4 [†]	.187	.775
3/16 x 13/16 [†]	.187	.801
3/16 x 1	.187	1.000
1/4 x 9/16	.235	.562
1/4 x 5/8 [†]	.235	.625
1/4 x 3/4	.235	.765
1/4 x 13/16	.235	.801
1/4 x 1	.235	1.000
1/4 x 1 1/4	.235	1.250
5/16 x 1	.312	1.000
3/8 x 5/8 [†]	.325	.625
3/8 x 3/4	.325	.750
3/8 x 13/16	.325	.801
3/8 x 7/8	.325	.875
3/8 x 1	.325	1.000
3/8(.375) x 3/8	.375	.375
7/16 x 3/8	.438	.375
7/16 x 3/8	.438	.375
7/16 x 1/2	.438	.500
7/16 x 5/8 ^Δ	.438	.625
1/2 x 3/4 [*]	.500	.750
1/2 x 1	.500	1.000

Part numbers shown are standard white color.

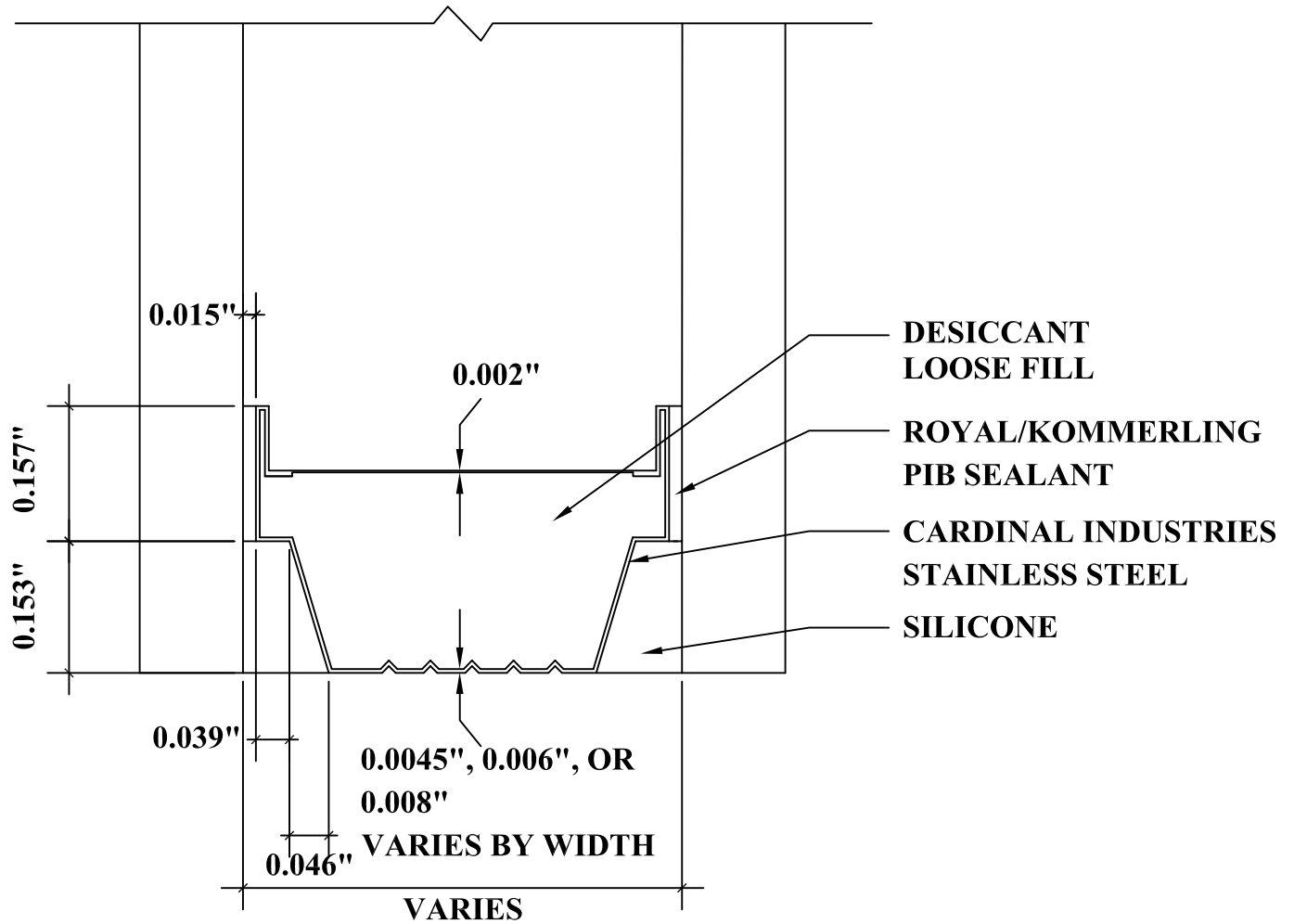
Material thickness: .0185

[†] Available in tutone. Please see Color Selection Chart located in front of catalog.

^Δ Part number shown is Dark Bronze Anodized Color.

* Part number shown is Clear Anodized. **Part number shown is white welded.

Note: Available in pre-cut lengths and pre-notched; tutone and post-painted. Custom colors also available.



DETAIL FOR THERMAL MODELING OF
CARDINAL ENDUR SPACER (SS-D)



Total Quality. Assured.

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York, Pennsylvania 17406

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TEST REPORT FOR PLESIO, INC

Report No: K6499.04-116-45 R0

Date: 11/08/22

SECTION 8

REVISION LOG

REVISION #	DATE	PAGES	REVISION
.04R0	11/08/22	All	Reissue to Plesio, Inc.
