



DUAL PANE INSULATING GLASS PERFORMANCE TEST REPORT ASTM E2190-10

Standard Specification for Insulating Glass Unit Performance and Evaluation

Rendered to: INTEGRATED AUTOMATION SYSTEMS Job #: E7540.01-106-28

7761 First Place Unit #3 **Date Received**: 04/28/15 Oakwood Village, OH 44146 **Authorization Date**: 04/21/15

Report Date: 10/07/15

Product / Reference No.: New closure Test 1

Manufactured Date: 04/14/15

Samples Obtained from Manufacturer: PPG Manufacturer Location: Carlisle, Pennsylvania

Overall Size: 355mm x 505mm

Glass Thickness: 4mm Glass Type: Annealed Overall Thickness: 21mm

Air Space: 13mm

Spacer: Intercept, tin plate spacer system by GED Integrated Solutions **Corners**: Three bent corners; fourth corner overlapped and butyl patched

Primary Sealant: Delchem 2000 reactive hot melt butyl

Secondary Sealant: N/A

Desiccant: Insul-dri WM-150 desiccated matrix by H.B. Fuller; four sides filled

Other Features: Low-E coating on Surface #2; edge deleted; argon filled; fourth corner has

oblong gas fill hole and IAS 4X12-TP proprietary plug closure

Gas Fill Method: Sensed

Information obtained from: Integrated Automation Systems PPG

ASTM E2188-10 Seal Durability Results

ASTIVIEZ 188-10 Seal Durability Results						
	Primary	FROST POINT TEST RESULTS (°C) per ASTM E546-08				
Unit	Sealant Width		High	Accelerated	High	Visible
	MinMax.	Initial	Humidity	Weathering	Humidity	Deposits
	(mm)		(14 days)	(252 cycles)	(28 days)	(Y or N)
1	7-9	<-65	<-65	<-70	<-60	N
2	7-9	<-65	<-65	<-70	<-60	N
3	7-9	<-65	<-60	<-70	<-65	N
4	7-9	<-65	<-65	<-70	<-65	N
5	7-9	<-65	<-65	<-70	<-60	N
6	7-9	<-65	<-60	<-70	<-65	N
Requirements	N/A	N/A	≤-40	≤-40	≤-40	No Deposits
Pass/Fail	N/A	N/A	Pass	Pass	Pass	Pass
Date	05/01/15	05/15/15	06/04/15	08/20/15	09/23/15	09/23/15





ASTM E2189-10 Volatile Fog Results

Unit	Primary Sealant Width MinMax. (mm)	Muntins	Duration of Testing	Results
7	7-9	No	7 days	No Fog
8	7-9	No	7 days	No Fog
Requirement	N/A		7 days	No Fog
Pass/Fail	N/A			Pass
Date	05/01/15			06/08/15

Average Fog Test Temperature: 50°C

Maximum Temperature: 51°C

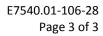
Minimum Temperature: 49°C

ASTM E2649-09 Argon Gas Retention Results

7.61.11.22.13.63.7.1.86.1		Initial Argon	Final Argon
Unit	Muntins	Gas Content	Gas Content
		%	%
1	No	97	95
2	No	97	96
3	No	96	95
4	No	99	97
5	No	99	96
6	No	98	90
7	No	97	
8	No	98	
9	No	96	
10	No	96	
Average	N/A	97	95
Requirement	N/A	≥90% ¹	≥80% 1
Pass/Fail	N/A	Pass	Pass
Date	N/A	05/14/15	09/23/15

¹ With no individual test specimen less than 50%

Remarks: Meets the requirements of ASTM E2190-10 per E2188-10, E546-08, E2189-10, and E2649-09 test methods.







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