

QUANEX BUILDING PRODUCTS TEST REPORT

SCOPE OF WORK

DUAL PANE INSULATING GLASS UNIT PERFORMANCE & GAS EVALUATION

REPORT NUMBER

H1690.01-119-28 R0

TEST DATE(S)

05/24/17 - 09/28/17

ISSUE DATE

10/18/17

RECORD RETENTION END DATE

09/28/21

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TEST REPORT FOR QUANEX BUILDING PRODUCTS

Report No.: H1690.01-119-28 R0

Date: 10/18/17

REPORT ISSUED TO

QUANEX BUILDING PRODUCTS

800 Cochran Avenue
Cambridge, OH 43725

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Quanex Building Products - 800 Cochran Avenue Cambridge, OH 43725 to evaluate the performance of insulating glass units. The product descriptions and test results are reported herein. 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 York, PA. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2

SUMMARY OF TEST RESULTS

	FROST POINT				VOLATILE FOG
	HIGH HUMIDITY	ACCELERATED WEATHERING	HIGH HUMIDITY	VISIBLE DEPOSITS	POST 7 DAY
REQUIREMENT	≤ -40	≤ -40	≤ -40	No Deposits	No Fog Observed
PASS/FAIL	Pass	Pass	Pass	Pass	Pass

ARGON GAS CONTENT	AVERAGE (%)	REQUIREMENT	PASS/FAIL
INITIAL	96	≥90% ¹	Pass
FINAL	95	≥80% ¹	Pass

¹ With no individual test specimen less than 50%

For INTERTEK B&C:

COMPLETED BY:	Jacob A. Weichert	REVIEWED BY:	Virgal T. Mickley, Jr., P.E.
TITLE:	Technician I	TITLE:	Senior Staff Engineer
SIGNATURE:		SIGNATURE:	
DATE:	10/18/17	DATE:	10/18/17

JAW:vtm/aaa

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TEST METHOD(S)

The specimens were evaluated in accordance with the following:

ASTM E546-14, *Standard Test Method for Frost/Dew Point of Sealed Insulating Glass Units*

ASTM E2188-10, *Standard Test Method for Insulating Glass Unit Performance*

ASTM E2189-10e1, *Standard Test Method for Testing Resistance to Fogging Insulating Glass Units*

ASTM E2190-10, *Standard Specification for Insulating Glass Unit Performance and Evaluation*

ASTM E2649-12, *Standard Test Method for Determining Argon Concentration in Sealed Insulating Glass Units Using Spark Emission Spectroscopy*

SECTION 4

MATERIAL SOURCE

Test samples were provided by Erdman Automation Corp. - Princeton, MN. The specimens were received on 05/17/17, in good condition and suitable for testing unless noted otherwise.

SECTION 5

SAMPLE RETENTION

Tested specimens will be retained for thirty (30) days from the report date. Specimens which do not comply with the referenced standards will be retained for ninety (90) days from the report date. All specimens will be automatically discarded after the specified retention period is exhausted.

SECTION 6

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Charles L. Kinney	Intertek B&C
Jacob A. Weichert	Intertek B&C
Cory E. Straub	Intertek B&C

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TEST SPECIMEN DESCRIPTION

Product / Reference No.: Duralite

Manufactured Date: 04/11/17

Overall Size: 355mm x 505mm ± 6 mm

Glass Thickness: 5mm (nominal)

Glass Type: Low-e coated - interior lite; clear - exterior lite

Overall Thickness: 16mm (nominal)

Air Space: 7mm (nominal)

Spacer: Duralite spacer system by Quanex

Corners: Three bent corners, fourth corner heated and spacer pressed for closure

Primary Sealant: Duralite spacer system butyl sealant by Quanex

Secondary Sealant: N/A

Desiccant: Duralite spacer system encapsulated desiccant by Quanex; four sides filled

Other Features: 272 low-E coating on surface #3 by Cardinal, edge deleted; units 11 and 12 contain muntins; gas filled

Gas Fill Method: Chamber

Information obtained from: Quanex

SECTION 8

TEST RESULTS

ASTM E2188-10 Seal Durability Results

UNIT	PRIMARY SEALANT WIDTH MIN.-MAX. (mm)	FROST POINT TEST RESULTS (°C) PER ASTM E546-14				
		INITIAL	HIGH HUMIDITY (14 DAYS)	ACCELERATED WEATHERING (252 CYCLES)	HIGH HUMIDITY (28 DAYS)	VISIBLE DEPOSITS (Y OR N)
1	0-7	<-65	<-62	<-62	<-62	N
2	0-7	<-65	<-62	<-62	<-62	N
3	0-6	<-65	<-62	<-62	<-62	N
4	0-7	<-65	<-62	<-62	<-62	N
5	0-7	<-65	<-62	<-62	<-62	N
6	0-7	<-65	<-62	<-62	<-62	N
REQUIREMENT	N/A	N/A	≤ -40	≤ -40	≤ -40	No Deposits
PASS/FAIL	N/A	N/A	Pass	Pass	Pass	Pass
DATE	05/23/17	05/24/17	06/12/17	08/28/17	09/28/17	09/28/17

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SECTION 8

TEST RESULTS (continued)

ASTM E2189-10e1 Volatile Fog Results

UNIT	PRIMARY SEALANT WIDTH MIN.-MAX. (mm)	MUNTINS	DURATION OF EXPOSURE (TOTAL)	OBSERVATION RESULTS		
				INITIAL	POST 24 HR.	POST 7 DAY
11	0-6	Yes	7 days	No Fog	N/A	N/A
12	0-7	Yes	7 days	No Fog	N/A	N/A
REQUIREMENT	Specimens shall not contain fog on the seventh observation day, from date of exposure completion				PASS/FAIL	Pass
					DATE	06/20/17

Average Fog Test Temperature: 50°C

Maximum Temperature: 51°C

Minimum Temperature: 49°C

ASTM E2649-12 Argon Gas Retention Results

UNIT	MUNTINS	ARGON GAS CONTENT (%)	
		INITIAL	FINAL
1	No	95	93
2	No	97	95
3	No	95	94
4	No	97	95
5	No	96	95
6	No	97	96
7	No	96	--
8	No	95	--
9	No	97	--
10	No	95	--
AVERAGE		96	95
REQUIREMENT		≥90% ¹	≥80% ¹
PASS/FAIL		Pass	Pass
DATE		05/24/17	09/28/17

¹ With no individual test specimen less than 50%



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SECTION 9

CONCLUSION

Meets the requirements of ASTM E2190-10 per E2188-10, E546-14, E2189-10e1, and E2649-12 test methods.

SECTION 10

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	10/18/17	N/A	Original Report Issue