

# QUANEX BUILDING PRODUCTS TEST REPORT

**SCOPE OF WORK**

DUAL PANE INSULATING GLASS UNIT PERFORMANCE & GAS EVALUATION

**REPORT NUMBER**

H1694.01-119-28

**TEST DATE(S)**

05/24/17 - 09/28/17

**ISSUE DATE**

10/18/17

**RECORD RETENTION END DATE**

09/28/21

**PAGES**

6

**DOCUMENT CONTROL NUMBER**

ATI 00545 (08/30/17)

RT-R-AMER-Test-2773

© 2017 INTERTEK



## TEST REPORT FOR QUANEX BUILDING PRODUCTS

Report No.: H1694.01-119-28

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
<b>REQUIREMENT</b>	≤ -40	≤ -40	≤ -40	No Deposits	No Fog Observed
<b>PASS/FAIL</b>	Pass	Pass	Pass	Pass	Pass

ARGON GAS CONTENT	AVERAGE (%)	REQUIREMENT	PASS/FAIL
INITIAL	95	≥90% <sup>1</sup>	Pass
FINAL	93	≥80% <sup>1</sup>	Pass

<sup>1</sup> With no individual test specimen less than 50%

For INTERTEK B&C:

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

JAW:vtm/aaa

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample(s) tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.



## TEST REPORT FOR QUANEX BUILDING PRODUCTS

Report No.: H1694.01-119-28

Date: 10/18/17

### SECTION 3

#### 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

## TEST REPORT FOR QUANEX BUILDING PRODUCTS

Report No.: H1694.01-119-28

Date: 10/18/17

### SECTION 7

#### TEST SPECIMEN DESCRIPTION

**Product / Reference No.:** Duraseal

**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:** Duraseal spacer system by Quanex

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

**Primary Sealant:** Duraseal spacer system butyl sealant by Quanex

**Secondary Sealant:** N/A

**Desiccant:** Duraseal 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	0-7	<-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
<b>REQUIREMENT</b>	N/A	N/A	≤ -40	≤ -40	≤ -40	No Deposits
<b>PASS/FAIL</b>	N/A	N/A	Pass	Pass	Pass	Pass
<b>DATE</b>	05/24/17	05/24/17	06/12/17	08/28/17	09/28/17	09/28/17

**TEST REPORT FOR QUANEX BUILDING PRODUCTS**

Report No.: H1694.01-119-28

Date: 10/18/17

**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	0-7	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: 48°C

**ASTM E2649-12 Argon Gas Retention Results**

UNIT	MUNTINS	ARGON GAS CONTENT (%)	
		INITIAL	FINAL
1	No	96	95
2	No	94	92
3	No	95	92
4	No	96	93
5	No	95	93
6	No	95	93
7	No	97	--
8	No	95	--
9	No	96	--
10	No	96	--
AVERAGE		95	93
REQUIREMENT		≥90% <sup>1</sup>	≥80% <sup>1</sup>
PASS/FAIL		Pass	Pass
DATE		05/24/17	09/28/17

<sup>1</sup> With no individual test specimen less than 50%



Total Quality. Assured.

130 Derry Court  
York, Pennsylvania 17406

Telephone: 717-764-7700  
Facsimile: 717-764-4129  
[www.intertek.com/building](http://www.intertek.com/building)

## TEST REPORT FOR QUANEX BUILDING PRODUCTS

Report No.: H1694.01-119-28

Date: 10/18/17

### 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