TEST REPORT

Report No.: F3585.01-109-44

Rendered to:

BRINC BUILDING PRODUCTS
New Bethlehem, Pennsylvania

PRODUCT TYPE: Coated Foam Curb System (Sealed)
SERIES/MODEL: ThermalBuck

Title	Summary of Results
Design Pressure	±9720 Pa (±203.01 psf)
Air Infiltration at 1.57 psf	<0.1 L/s/m^2 (<0.01 cfm/ft^2)
Air Infiltration at 6.24 psf	<0.1 L/s/m^2 (<0.01 cfm/ft^2)
Water Penetration Resistance Test Pressure	440 Pa (9.19 psf)
Uniform Load Structural Test Pressure	±14,400 Pa (±300.76 psf)

Reference must be made to Report No. F3585.01-109-44, dated 01/05/16 for complete test specimen description and detailed test results.

1.0 Report Issued To: Brinc Building Products
1270 Route 66
New Bethlehem, Pennsylvania 16242

2.0 Test Laboratory: Architectural Testing, Inc., an Intertek company ("Intertek-ATI")
130 Derry Court
York, Pennsylvania 17406-8405
717-764-7700

3.0 Project Summary:

3.1 Product Type: Coated Foam Curb System (Sealed)

3.2 Series/Model: ThermalBuck

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test method(s). Test specimen description and results are reported herein.

3.4 Test Date(s): 12/15/15 – 12/17/15

3.5 Test Record Retention End Date: All test records for this report will be retained until December 17, 2019.

3.6 Test Location: Intertek-ATI test facility in York, Pennsylvania.

3.7 Test Specimen Source: The test specimen(s) was provided by the client. Representative samples of the test specimen(s) will be retained by Intertek-ATI for a minimum of four years from the test completion date.

3.8 Drawing Reference: The test specimen drawings have been reviewed by Intertek-ATI and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek-ATI per the drawings located in Appendix D. Any deviations are documented herein or on the drawings.

3.9 List of Official Observers:

Name	Company
John Brooks	Brinc Building Products
Timothy J. McGill	Intertek-ATI
Ken R. Stough	Intertek-ATI

4.0 Test Method(s):

ASTM E283-04 (2012), *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, *Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference*

ASTM E547-00 (2009), *Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference*

AAMA 501.5-07, *Test Method for Thermal Cycling of Exterior Walls*

5.0 Test Specimen Description:

5.1 Product Sizes:

Crack Length: 4.2 m (13.7 ft)	**Width**		**Height**	
	millimeters	**inches**	**millimeters**	**inches**
Overall size	64	2-1/2	127	5

5.2 Curb Construction: The curb was constructed of high density foam with a spray coat of 25 mils or greater in thickness.

5.3 Aluminum Window Blank Construction: The aluminum window blank measured 1' 11-1/2" wide by 3' 11-1/4" high and was constructed 1/16" thick aluminum with fully welded corners and a 1-1/4" wide nail flange. Silicone was utilized on the backside of the window blank to seal the perimeter.

5.4 Test Buck Construction: The test buck measured 2' 9" wide by 4' 7" high and was constructed of #2 Spruce-Pine-Fir nominal 2x10 lumber. A rough opening, measuring 2' 0" wide by 3' 11-1/2" high, was centered in the buck and utilized single nominal 2x12 lumber framing around the rough opening. Silicone was utilized on the backside of the test panel to seal the perimeter.

5.0 Test Specimen Description: (Continued)

5.5 Test Specimen Assembly: The ThermalBuck system was installed into the wood test buck rough opening with mitered corners and was secured to the wood buck with 1/8" shank diameter, 7/16" head, 2" long roofing nails. The nails were located 2" from each corner and spaced 16" on center, through the curb, and into the studs. The aluminum window blank was then installed into the rough opening and secured to the curb system with #10 x 4-1/2" long wood screws, located 3" from each corner, and spaced 7" on center through the aluminum flange, through the curb system, and into the wood framing of the test buck. The rough opening allowed for a 1/8" shim space. The curb was sealed to the rough opening frame. The window blank aluminum flange was sealed between the flange and curb system with customer supplied sealant. No sealant was utilized under the aluminum flange at the sill of the curb system.

6.0 Test Results: The temperature during testing was 19°C (66°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Before Thermal Testing			
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	<0.1 L/s/m^2 (<0.01 cfm/ft^2)	Report only	
Air Leakage, Infiltration per ASTM E 283 at 300 Pa (6.24 psf)	<0.1 L/s/m^2 (<0.01 cfm/ft^2)	Report only	
Air Leakage, Exfiltration per ASTM E 283 at 75 Pa (1.57 psf)	<0.1 L/s/m^2 (<0.01 cfm/ft^2)	Report only	
Air Leakage, Exfiltration per ASTM E 283 at 300 Pa (6.24 psf)	<0.1 L/s/m^2 (<0.01 cfm/ft^2)	Report only	
Water Penetration, per ASTM E547 at 440 Pa (9.19 psf)	Pass	No leakage	
Uniform Load Deflection, per ASTM E330 Deflections taken at jamb +2880 Pa (+60.15 psf) -2880 Pa (-60.15 psf)	<0.3 mm (<0.01") <0.3 mm (<0.01")	Report only	1, 2
Uniform Load Structural, per ASTM E330 Permanent sets taken at jamb +4320 Pa (+90.23 psf) -4320 Pa (-90.23 psf)	<0.3 mm (<0.01") <0.3 mm (<0.01")	Report only	1, 2
Thermal Cycling, Six, eight-hour cycles	See Chart 1 in Appendix B for data		

6.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
After Thermal Testing			
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	<0.1 L/s/m^2 (<0.01 cfm/ft^2)	Report only	
Air Leakage, Infiltration per ASTM E 283 at 300 Pa (6.24 psf)	<0.1 L/s/m^2 (<0.01 cfm/ft^2)	Report only	
Air Leakage, Exfiltration per ASTM E 283 at 75 Pa (1.57 psf)	<0.1 L/s/m^2 (<0.01 cfm/ft^2)	Report only	
Air Leakage, Exfiltration per ASTM E 283 at 300 Pa (6.24 psf)	<0.1 L/s/m^2 (<0.01 cfm/ft^2)	Report only	
Water Penetration, per ASTM E547 at 440 Pa (9.19 psf)	Pass	No leakage	
Uniform Load Deflection, per ASTM E330 Deflections taken at jamb +2880 Pa (+60.15 psf) -2880 Pa (-60.15 psf)	<0.3 mm (<0.01") <0.3 mm (<0.01")	Report only	1, 2
Uniform Load Structural, per ASTM E330 Permanent sets taken at jamb +4320 Pa (+90.23 psf) -4320 Pa (-90.23 psf)	<0.3 mm (<0.01") <0.3 mm (<0.01")	Report only	1, 2

6.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
Optional Performance			
Uniform Load Deflection, per ASTM E330 Deflections taken at jamb			
+9720 Pa (+203.01 psf)	0.5 mm (0.02")		
-9720 Pa (-203.01 psf)	0.8 mm (0.03")	Report only	1, 2
Uniform Load Structural, per ASTM E330 Permanent sets taken at jamb			
+14,400 Pa (+300.76 psf)	<0.3 mm (<0.01")		
-14,400 Pa (-300.76 psf)	<0.3 mm (<0.01")	Report only	1, 2

***General Note**: All testing was performed in accordance with the referenced standard(s).*

Note 1: Loads were held for 10 seconds.

Note 2: 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.