

**UL 580  
TEST REPORT**

**Rendered to:**

**WOLFPAC TECHNOLOGIES, INC.**

**SERIES/MODEL: 6" Versatex Bead Board  
TYPE: Cellular PVC Soffit**

**Report No: 77307.01-109-44  
Test Dates: 10/31/07  
Through: 11/02/07  
Report Date: 11/05/07  
Expiration Date: 11/02/11**

## UL 580 TEST REPORT

Rendered to:

WOLFPAC TECHNOLOGIES, INC.  
111 Leetsdale Industrial Drive, Unit 101  
Leetsdale, Pennsylvania 15056

Report No: 77307.01-109-44  
Test Dates: 10/31/07  
Through: 11/02/07  
Report Date: 11/05/07  
Expiration Date: 11/02/11

**Project Summary:** Architectural Testing, Inc. was contracted by Wolfpac Technologies, Inc. to perform testing on a Series/Model 6" Versatex Bead Board, cellular PVC soffit. The test specimen area, measuring 10' square, was tested in accordance with UL 580, *Standard for Test for Uplift Resistance of Roof Assemblies*. The purpose of this test is to evaluate the comparative resistance of roof assemblies to positive and negative pressures. This test simulates the effects of wind gusts by use of oscillating exterior pressure and constant interior pressures. Reference Chart #1 for test duration times, positive and negative pressures, Photo No. 1 and No. 2 for test equipment, Photo No. 3 and No. 4 for installation, Photo No. 5 for deck failure, and Photo No. 6 for indicator locations.

### **Test Specimen Description:**

**Series/Model:** 6" Versatex Bead Board

**Board Description:** The tongue and groove boards were constructed of extruded cellular PVC that measured 1/2" thick, 5-1/2" wide, and 116-3/8" long. The boards were white with a smooth finish and utilized a bead at the center of the board.

**Installation:** The test specimen consisted of twenty two (22) boards that were perpendicular to the 18 gauge steel studs. The boards were secured to each other with tongue and groove and were secured to the steel studs with #6 x 1-1/4" long flathead self-tapping screws. The screws were located 1-1/2" from the edge of the board (Reference Photo No. 3) and 2-1/2" on center (Reference Photo No. 4), two screws per board, per stud.

**Test Specimen Description:** (Continued)

**Test Frame Construction:** The 10' 0" by 10' 0" test frame was constructed of Spruce-Pine-Fir, Grade 2, 2x10 timbers. The timbers were secured with four (4) #8 x 3" screws per corner. The test frame utilized ten (10) 18 gauge (0.045") steel studs, spaced 16" on center and secured at the ends to the 18 gauge (0.045") steel end cap with four (4) #8 x 1/2" long pan head self-tapping screws, two (2) at the top and two (2) at the bottom of the studs. The studs were reinforced with 2" wide by 2" high by 3/16" thick steel angle pieces that were welded to the bottom of the studs and ran from end to end. The steel end caps that were secured to the wood test frame with #12 x 1-1/2" pan head screws, staggered 10" on center.

**Peripheral Support:** The test apparatus frame was fabricated from C15 by 33.9 steel channels, 10' 0" wide by 10' 0" long by 1' 3" deep. Existing 5/8" diameter bolts evenly located on the four vertical interior sides of the test frame were employed to secure the perimeter of the test frame.

A loose fitting pleated 4-mil plastic film was utilized to assist in obtaining uniform pressure on the metal roof system.

*Note: One assembly was tested per UL 580. The following summarizes observations made during the test at each class rating. Deflection measurements are included within tables attached to this report. Reference Photo No. 6 for location of deflection measurement devices.*

**Test Results:** The results are tabulated as follows:

**Test Specimen #1:**

Class 30: Phases 1 - 5 PASSED

No visible damage to system. Reference Table #1 for deflection measurements.

Class 60: Phases 1 - 5 PASSED

No visible damage to system. Reference Table #2 for deflection measurements.

Class 90: Phases 1 - 5 PASSED

No visible damage to system. Reference Table #3 for deflection measurements.

Supplemental Loads: -120 psf STOPPED

The wood test frame broke and no deflection measurements could be taken. After the -120 psf supplemental test load was completed, no damage to the soffit was observed. Testing was stopped due to the failure of the test frame.

**General Test Note:** *Plastic film was used to assist in obtaining pressures. In our opinion, this did not influence test results.*

**Witnesses:** The following representatives witnessed all or part of the testing.

<u>Name</u>	<u>Company</u>
Perry Adams	Pier Solutions
Mike Nolte	Pier Solutions
Josh Pace	Wolfpac Technologies, Inc.
Michael D. Stremmel, P.E.	Architectural Testing, Inc.
Jeramie D. Grabosch	Architectural Testing, Inc.

Detailed drawings, data sheets, representative samples of test specimens, a copy of this report, or other pertinent project documentation will be retained by Architectural Testing, Inc. for a period of four years from the original test date. At the end of this retention period, such materials shall be discarded without notice and the service life of this report will expire.

Results obtained are tested values and were secured by using the designated test methods. No conclusions of any kind regarding the adequacy or inadequacy of the glass in the test specimen can be made. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen(s) tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.:

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Jeramie D. Grabosch  
Senior Technician

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Michael D. Stremmel, P.E.  
Senior Project Engineer

JDG;jdg/vlm

Attachments (pages):

- Appendix-A: Tables (2)
- Appendix-B: Charts (1)
- Appendix-C: Photographs (3)

### Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	11/05/07	N/A	Original report issue

Appendix A

**TEST SPECIMEN #1:**

<b>Table #1</b>			
<b>Class 30 Deflection Measurements</b>			
<b>Phase</b>	<b>#1</b>	<b>#2</b>	<b>#3</b>
Initial (0.0 psf)*	0.00"	0.00"	0.00"
1	0.25"	0.25"	0.25"
2	0.50"	0.53"	0.53"
3 Minimum	0.47"	0.53"	0.50"
3 Maximum	0.63"	0.69"	0.66"
4	0.38"	0.44"	0.38"
5	0.69"	0.75"	0.72"
Final (0.0 psf)**	0.03"	0.03"	0.00"

  

<b>Table #2</b>			
<b>Class 60 Deflection Measurements</b>			
<b>Phase</b>	<b>#1</b>	<b>#2</b>	<b>#3</b>
Initial (0.0 psf)*	0.00"	0.00"	0.00"
1	0.22"	0.22"	0.22"
2	0.47"	0.53"	0.50"
3 Minimum	0.56"	0.63"	0.56"
3 Maximum	0.72"	0.81"	0.75"
4	0.41"	0.47"	0.41"
5	0.69"	0.75"	0.69"
Final (0.0 psf)**	0.09"	0.16"	0.09"

  

<b>Table #3</b>			
<b>Class 90 Deflection Measurements</b>			
<b>Phase</b>	<b>#1</b>	<b>#2</b>	<b>#3</b>
Initial (0.0 psf)*	0.00"	0.00"	0.00"
1	0.34"	0.38"	0.38"
2	0.69"	0.72"	0.69"
3 Minimum	0.59"	0.63"	0.63"
3 Maximum	0.69"	0.75"	0.72"
4	0.41"	0.44"	0.44"
5	1.38"	1.50"	1.47"
Final (0.0 psf)**	0.31"	0.38"	0.38"

**TEST SPECIMEN #1:**  
(Continued)

<b>Table #4</b>					
<b>Supplemental Deflection Measurements</b>					
<b>Vacuum (psf)</b>	<b>Uplift (psf)</b>	<b>Load (psf)</b>	<b>Indicator</b>		
			<b>#1</b>	<b>#2</b>	<b>#3</b>
-56.5	-63.5	-120	N/A	N/A	N/A
-56.5	-78.5	-135	---	---	---

*\*The measurements are taken via a transit and steel scales mounted to the roof panels. The initial measurements are "zero" point, not actual deflection. Actual deflection is Phase 1, 2, 3 minimum, 3 maximum, 4 or 5 reading less the initial (0.0 psf) reading.*

*\*\*The final reading is taken after the completion of an entire class has been completed and becomes the initial reading for the following class test.*

**Appendix B**

**CHART #1**

**UL 580 Load Table Test Pressures**

Test Phase	Time Duration (minutes)	Negative Pressure		Positive Pressure	
		Pounds Per Square Foot psf (kPa)	Inches (mm) of Water	Pounds Per Square Foot psf (kPa)	Inches (mm) of Water
<b>Class 30</b>					
1	5	16.2 (0.79)	3.1 (79)	0.0 (0.00)	0.0 (0)
2	5	16.2 (0.79)	3.1 (79)	13.8 (0.66)	2.7 (69)
3	60	8.1 - 27.7 (0.39 - 1.33)	1.5 - 5.3 (38 - 135)	13.8 (0.66)	2.7 (69)
4	5	24.2 (1.16)	4.7 (119)	0.0 (0.00)	0.0 (0)
5	5	24.2 (1.16)	4.7 (119)	20.8 (1.00)	4.0 (102)
<b>Class 60</b>					
1	5	32.3 (1.55)	6.2 (157)	0.0 (0.00)	0.0 (0)
2	5	32.3 (1.55)	6.2 (157)	27.7 (1.33)	5.3 (135)
3	60	16.2 - 55.4 (0.79 - 2.66)	3.1 - 10.7 (79 - 272)	27.7 (1.33)	5.3 (135)
4	5	40.4 (1.94)	7.8 (198)	0.0 (0.00)	0.0 (0)
5	5	40.4 (1.94)	7.8 (198)	34.6 (1.66)	6.7 (170)
<b>Class 90 (maximum combined uplift pressure of 105 psf)</b>					
1	5	48.5 (2.33)	9.3 (236)	0.0 (0.00)	0.0 (0)
2	5	48.5 (2.33)	9.3 (236)	41.5 (1.99)	8.0 (203)
3	60	24.2 - 48.5 (1.16 - 2.33)	4.7 - 9.3 (119 - 236)	41.5 (1.99)	8.0 (203)
4	5	56.5 (2.71)	10.9 (277)	0.0 (0.00)	0.0 (0)
5	5	56.5 (2.71)	10.9 (277)	48.5 (2.33)	9.3 (236)

**Appendix C**  
**Photographs**



**Photo No. 1**  
**Test Equipment**



**Photo No. 2**  
**Test Equipment**



**Photo No. 3  
Installation**



**Photo No. 4  
Installation**



**Photo No. 5**  
**Test Frame Failure**



**Photo No. 6**  
**Indicator Locations**