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OMNIMAX INTERNATIONAL TEST REPORT

SCOPE OF WORK
DYNAMIC WIND LOAD TESTING ON 6 FT WIDE BY 7 FT HIGH ALUMINUM PRIVACY FENCE SYSTEM WITH NO GAPS BETWEEN THE PANELS

REPORT NUMBER
I7672.01-119-19 R0

TEST DATE
10/04/18

ISSUE DATE
01/10/19

RECORD RETENTION END DATE
10/04/22

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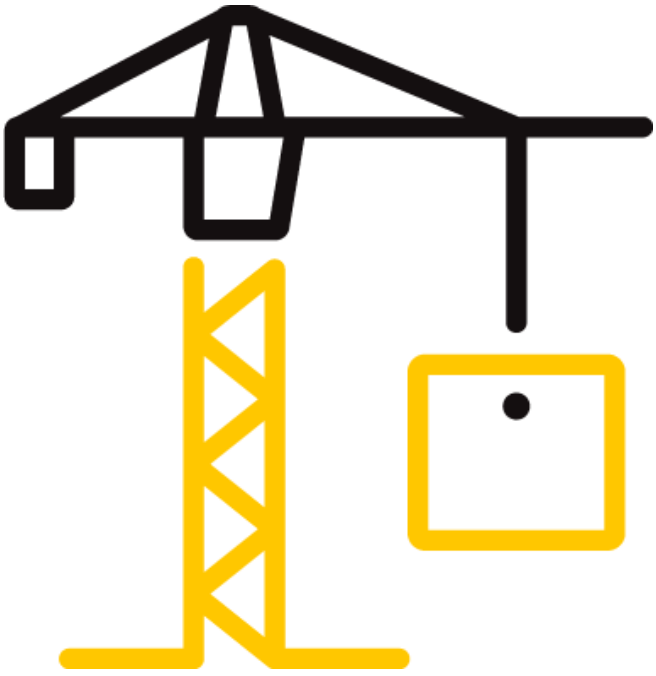

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TEST REPORT FOR OMNIMAX INTERNATIONAL
Report No.: I7672.01-119-19 R0
Date: 01/10/19

REPORT ISSUED TO
OMNIMAX INTERNATIONAL
450 Richardson Drive
Lancaster, Pennsylvania 17603-4036

SECTION 1
SCOPE

Intertek Building & Construction (B&C) was contracted by OmniMax International to perform dynamic wind load testing on their 6 ft wide by 7 ft high aluminum privacy fence system with no gaps between the panels. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at Intertek test facility in York, Pennsylvania.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

For INTERTEK B&C:

COMPLETED BY:	Adam J. Schrum	**REVIEWED BY:**	V. Thomas Mickley, Jr., P.E.
TITLE:	Lead Technician	**TITLE:**	Senior Staff Engineer
SIGNATURE:	Digitally Signed by: Adam J. Schrum	**SIGNATURE:**	Digitally Signed by: Virgal Thomas Mickley, Jr.
DATE:	01/10/19	**DATE:**	01/10/19

AJS:vtm/aas

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SECTION 2
MATERIAL SOURCE/INSTALLATION

Test samples were provided by the client. Test samples were inspected by a representative of Intertek B&C prior to testing. No compromising defects were observed. Representative samples of the test specimen(s) will be retained by Intertek B&C for a minimum of four years from the test completion date.

Test specimen was assembled by a representative from OmniMax International.

SECTION 3
EQUIPMENT

Two propeller fan wind generators were utilized for testing. The propeller of each fan was 84 in diameter and was comprised of four Kevlar composite airfoil units belt-driven by a high-output V8 engine. Wind speeds for the wind generators were calibrated according to AAMA 501.1-05. Deflections were measured with linear displacement transducers accurate to 0.01 inch.

SECTION 4
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Adam J. Schrum	Intertek B&C
Natalie Hall	OmniMax International
Daniel Good	OmniMax International

SECTION 5
TEST PROCEDURE

One specimen (consisting of a 2-panel/3-post fully assembled fence section) measuring approximately 12 ft wide by 7 ft high was tested.

A steel test fixture was designed and fabricated to simulate a rigid post embedment. The bottom of the bottom rail was fixed at two inches above the top of the test fixture. The wind generator outlet was located 4 ft from the face of the specimen. Linear transducers were fixed on the top, middle, and bottom of the infill areas for deflection measurements. See drawings in Section 10 for detailed descriptions of assembly and components and photographs in Section 9 for specimen orientation respective to wind direction.

Wind load testing began at 40 mph and increased until failure or a maximum wind speed of 130 mph. Wind loads were performed with a relaxation period following 50 mph and 80 mph to record permanent set measurements.

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SECTION 6
TEST CALCULATIONS

Wind Load Testing

The duration of the applied wind load at each wind speed was determined by using the following equation:

$$t = 3600 / Vfm \qquad \text{(Equation 1)}$$

where:

t = duration (s), required for a one mile long sample of air to pass
Vfm = "fastest mile" wind speed (mph)

Wind speeds used in testing correlate with "fastest mile" wind speeds (Vfm) for reference to codes and design standards. Maximum deflections were recorded at each load level.

SECTION 7
TEST SPECIMEN DESCRIPTIONS

DESCRIPTION	6 ft wide by 7 ft high aluminum privacy fence
PANELS	Fourteen, 5/8 in deep by 5-7/8 in high by 71-3/4 in long by 0.060 in thick 6060-T5 aluminum horizontal panels per section with no gaps between the panels.
POSTS	Three 2-9/16 in square by 111-1/4 in long by 0.080/0.190 in thick 6060-T5 aluminum posts with two 11/16 in wide by 1-3/16 high grooves for panel insertion
PANEL ATTACHMENT	Panels slid into the grooves in the post and were attached to the post with two, #8-18 by 1/2 in hex-head self-starting screws per end

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SECTION 8
TEST RESULTS

Test Date: 10/04/18

WIND SPEED	DURATION	MAXIMUM DEFLECTION (inches)					
		TOP		MID		BOTTOM	
		LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
40 mph	90 sec	0.65	0.64	0.36	0.44	0.07	0.09
50 mph	72 sec	1.00	0.86	0.58	0.47	0.13	0.13
0 mph	Permanent Set	0.01	0.00	0.02	0.00	0.01	0.00
60 mph	60 sec	1.47	1.40	0.86	0.72	0.18	0.16
70 mph	51 sec	1.82	1.70	1.04	0.86	0.21	0.19
75 mph	48 sec	2.06	1.87	1.14	0.96	0.23	0.21
80 mph	45 sec	2.29	2.10	1.26	1.05	0.25	0.22
0 mph	Permanent Set	0.14	0.09	0.06	0.05	0.00	0.01
90 mph	40 sec	3.15	2.91	1.73	1.47	0.35	0.28
100 mph	36 sec	3.54	3.36	1.94	1.67	0.39	0.32
110 mph	33 sec	3.97	3.53	2.28	1.91	0.46	0.37
115 mph	31 sec	4.54	4.38	2.48	2.04	0.49	0.42
130 mph	28 sec	6.81	6.34	3.65	3.62	0.77	0.62

Result: Specimen sustained maximum wind load of 130 mph

Maximum Sustained Wind, V_{fm} = 130 mph
Equivalent 3-second gust, V_{3s} = (1.05 x V_{fm}) + 10.5 = 147 mph

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SECTION 9
PHOTOGRAPHS

Photo No. 1
Test Specimen in Rigid Test Fixture with Transducers

Photo No. 2
Wind Generator Outlet Relative to Test Specimen

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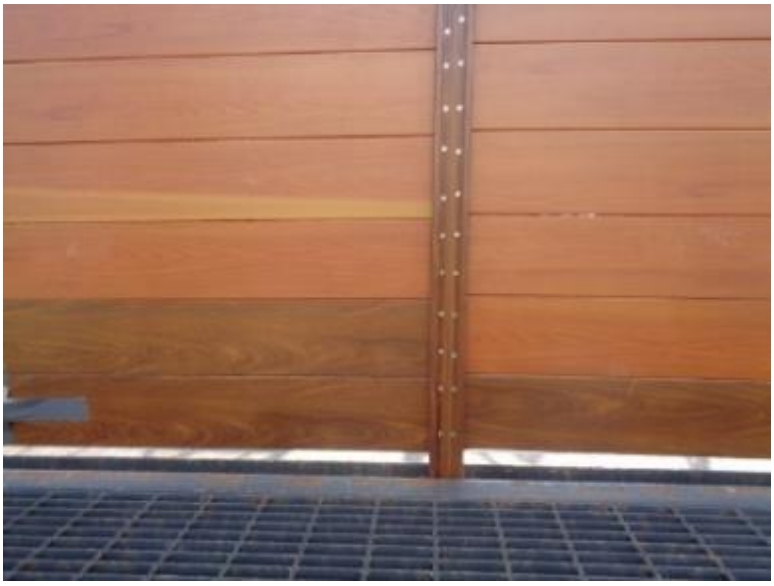

Photo No. 3
Panels Installed to Center Post

Photo No. 4
Panels Installed to End Post

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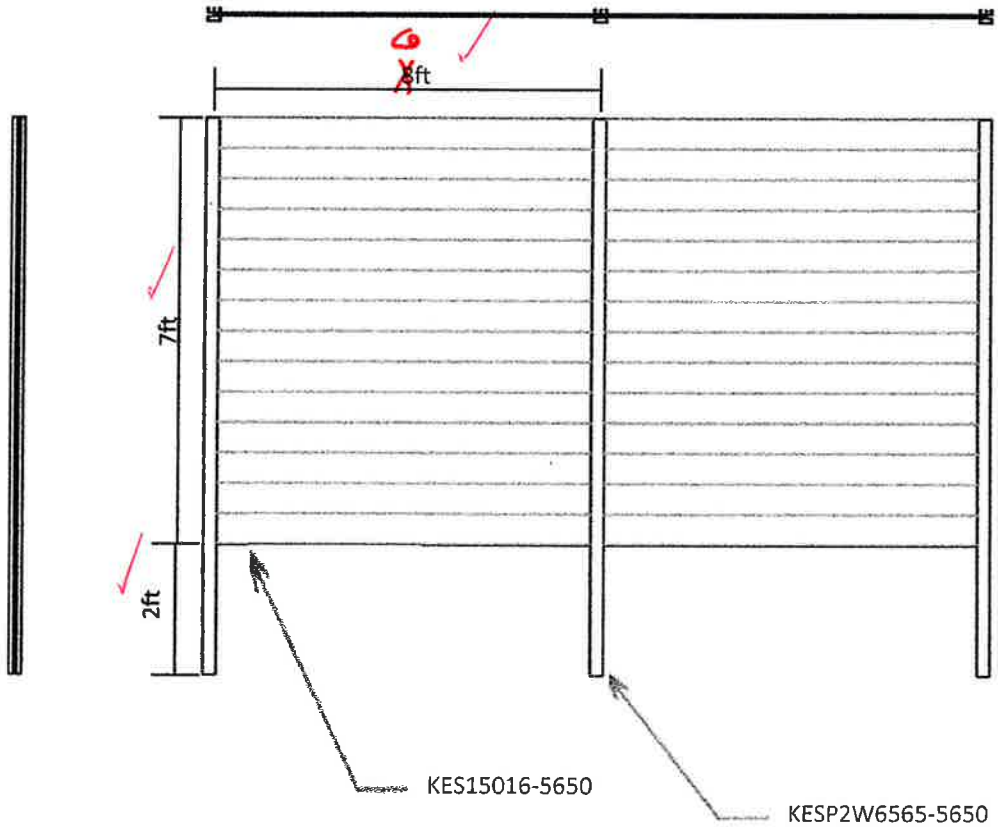
SECTION 10
DRAWINGS

The "As-Built" drawings for the 6 ft wide by 7 ft high aluminum privacy fence system, which follow, have been reviewed by Intertek B&C and are representative of the project reported herein. Project construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.



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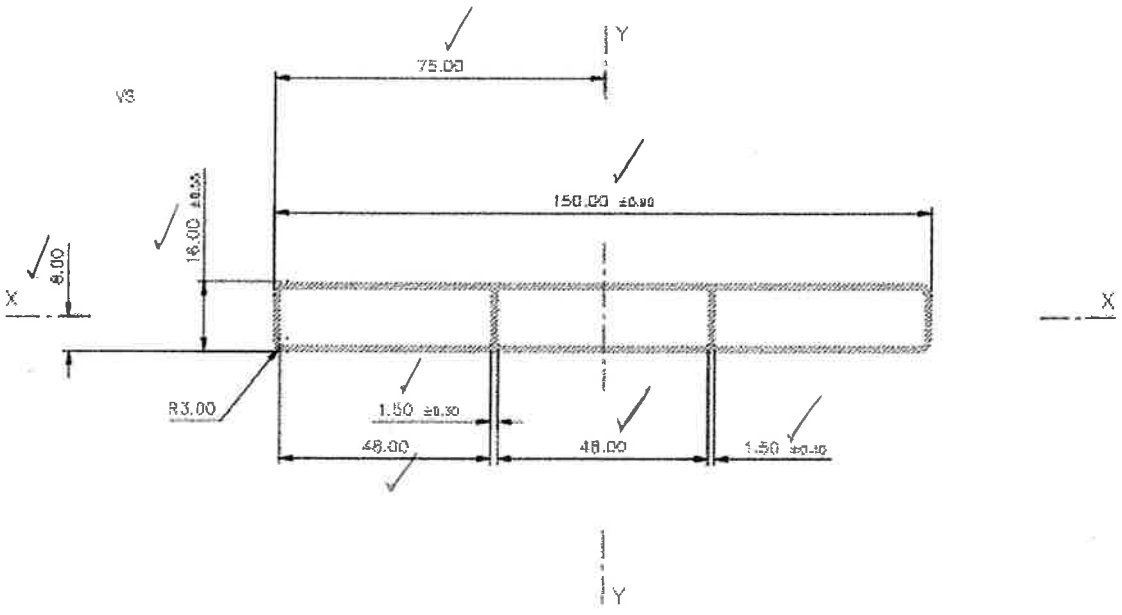
Test sample complies with these details.
Deviations are noted.

Report # I7672.01-119-19

Date 12/4/19 **Tech** AJS

FABRAL METAL WALL AND ROOF SYSTEMS Omnimax International Inc	FABRAL 3449 HEPMPLAND RD LANCASTER, PA 17601	KNOTWOOD Fence assembly	**KESP2W6565-5650** **KES15016-5650**



UNSPECIFIED WALL THICKNESS 1.50 ±0.25

CALCULATED ON NOMINAL WALL THICKNESS

Ixx =24.50 x 10E3 mmE4
Iyy =1050.40 x 10E3 mmE4

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Test sample complies with these details.
Deviations are noted.

Report # I7672.01-119-19

Date 12/4/18 **Tech** AJS

ALLOY	TEMPER	FINISH
6060	T5	ARCH

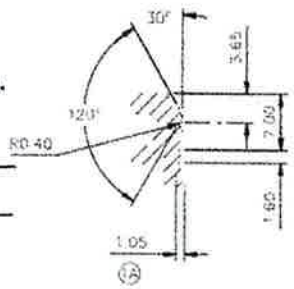
FABRAL METAL WALL AND ROOF SYSTEMS Omnimax International,Inc	FABRAL 3449 HEPMPLAND RD LANCASTER, PA 17601	KNOTWOOD 150MM (6") SLAT	KES15016-5650

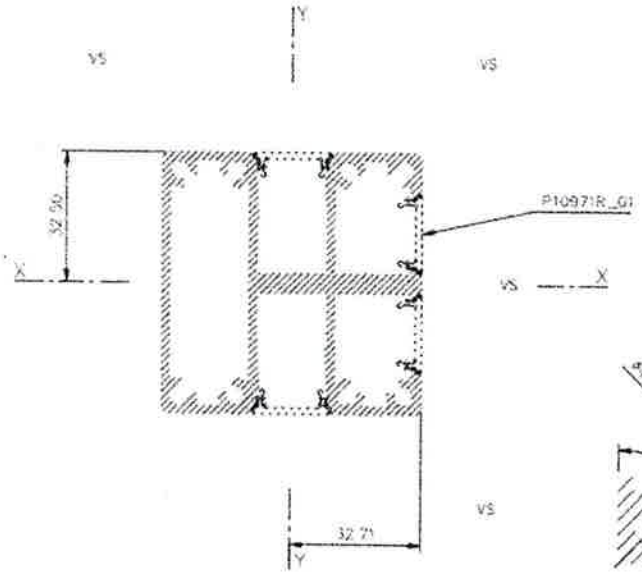
intertek

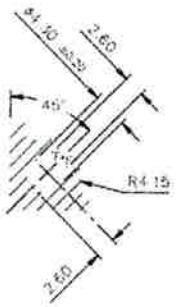
Test sample complies with these details.
Deviations are noted.

Report # I7672.01-119-19

Date 12/4/13 **Tech** AJS

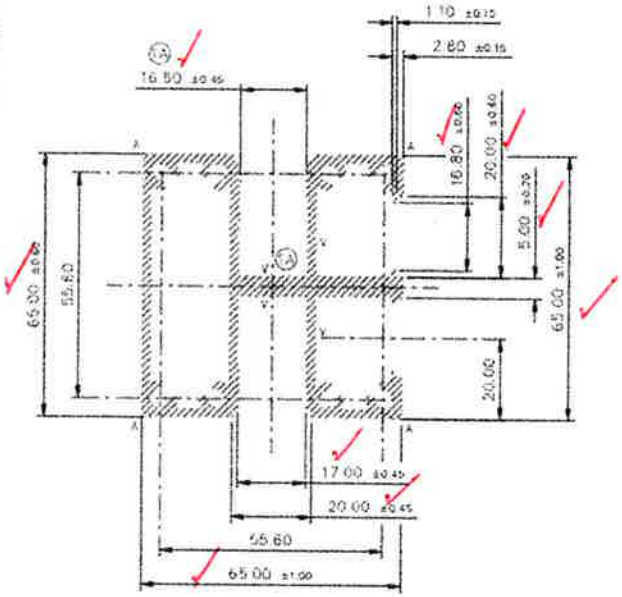






CALCULATED ON NOMINAL WALL THICKNESS

Ix =44102 x 10E3 mmE4
Iy =401.39 x 10E3 mmE4



A = 2.00 R
F = FULL R
V = STD VEE GROOVES

UNSPECIFIED WALL THICKNESS 2.00 ±0.15 THRU SOLID
2.00 ±0.25 THRU HOLLOW

ALLOY	TEMPER	FINISH
6063	T6	ARCH

KESP2W6565-5650

KNOTWOOD
TWO WAY POST

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3449 HEMPLAND RD
LANCASTER, PA 17601

FABRAL
METAL WALL AND ROOF SYSTEMS
Omnis International Inc

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SECTION 11
REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	01/10/19	N/A	Original Report Issue