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Product Approval
USER: Public User

[Product Approval Menu](#) > **Application Detail**

OFFICE OF THE
SECRETARY

FL #	FL7621-R6
Application Type	Revision
Code Version	2023
Application Status	Approved
Comments	
Archived	<input type="checkbox"/>
Product Manufacturer	Elite Aluminum Corporation
Address/Phone/Email	4650 Lyons Technology Parkway Coconut Creek, FL 33073 (954) 949-3200 bpeacock@elitealuminum.com
Authorized Signature	Frank Bennardo P.E. frank@engineeringexpress.com
Technical Representative	Bruce Peacock
Address/Phone/Email	4650 Lyons Technology Parkway Coconut Creek, FL 33073 (954) 949-3200 bpeacock@elitealuminum.com
Quality Assurance Representative	
Address/Phone/Email	
Category	Roofing
Subcategory	Products Introduced as a Result of New Technology
Compliance Method	Evaluation Report from a Florida Registered Architect Professional Engineer <input type="checkbox"/> Evaluation Report - Hardcopy Received
Florida Engineer or Architect Name who developed the Evaluation Report	Frank L. Bennardo, P.E.
Florida License	PE-0046549
Quality Assurance Entity	QAI Laboratories
Quality Assurance Contract Expiration Date	12/31/2025
Validated By	John Henry Kampmann Jr. <input checked="" type="checkbox"/> Validation Checklist - Hardcopy Received
Certificate of Independence	FL7621_R6_COI_INDEP.pdf
Referenced Standard and Year (of Standard)	

Equivalence of Product Standards
Certified By

Sections from the Code

104.11.2
1708.3

Product Approval Method

Method 2 Option B

Date Submitted

08/21/2023

Date Validated

08/21/2023

Date Pending FBC Approval

08/29/2023

Date Approved

10/17/2023

Summary of Products

FL #	Model, Number or Name	Description
7621.1	OSB / Aluminum Skin	EPS Foam Core Composite Roof Panels
Limits of Use Approved for use in HVHZ: No Approved for use outside HVHZ: Yes Impact Resistant: No Design Pressure: N/A Other: For outdoor patio construction only. For use outside the HVHZ only. See installation instructions for allowable span/load combinations.		Installation Instructions FL7621_R6_II_DOC.pdf Verified By: Frank L. Bennardo, P.E. PE Created by Independent Third Party: Y Evaluation Reports FL7621_R6_AE_4in_Test_Reports.pdf FL7621_R6_AE_6in_Test_Reports.pdf FL7621_R6_AE_EVAL.pdf Created by Independent Third Party: Y

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Contact Us :: 2601 Blair Stone Road, Tallahassee FL 32399 Phone: 850-487-1824

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Section 455.275(1), Florida Statutes, effective October 1, 2012, licensees licensed under Chapter 455, F.S. must provide their address if they have one. The emails provided may be used for official communication with the licensee. However email addresses not wish to supply a personal address, please provide the Department with an email address which can be made available to are a licensee under Chapter 455, F.S., please click [here](#).

Product Approval Accepts:





August 16, 2023

Product Approval Administrator
DBPR Codes and Standards
2601 Blair Stone Road
Tallahassee, FL 32399

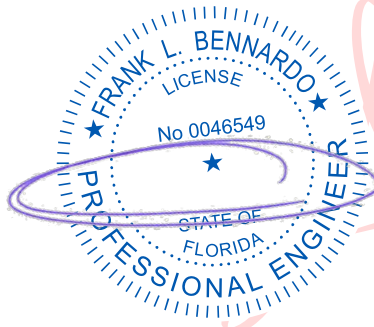
Regarding: Elite Aluminum Corporation
EPS Foam Core Composite Roof Panels – FL #7621.1 – EX # 23-59945

To Whom It May Concern:

Please be advised that the below-signed engineer does not have nor will acquire a financial interest in the company manufacturing or distributing the product(s) for which an evaluation report or validation certification has been prepared, as referenced above. This engineer is not owned, operated, nor controlled by the manufacturer or distributor noted above and does not have any financial interest in any other entity involved in the approval process of the above-noted product(s).

Note: "EX #" where used above is an abbreviation for "Engineering Express (EX) Project Number".

Respectfully,



Digitally signed
by Frank
Bennardo
Date: 2023.08.21
13:01:49 -04'00'

Frank Bennardo, P.E.
ENGINEERING EXPRESS®
#PE0046549 | Cert. Auth. 9885

FL





MAXIMUM ALLOWABLE CLEAR SPAN TABLES:

Total Load*	Deflection Limit (L/...)	4" Panels (Depth)		6" Panels (Depth)	
		OSB / 0.024"	OSB / 0.030"	OSB / 0.024"	OSB / 0.030"
		Alum Skin 1-LB EPS	Alum Skin 1-LB EPS	Alum Skin 1-LB EPS	Alum Skin 1-LB EPS
10 PSF	80	18'-0"	20'-0"	22'-0"	24'-0"
	120	17'-5"	18'-11"	22'-0"	24'-0"
	180	15'-3"	16'-6"	19'-9"	21'-3"
	240	13'-10"	15'-0"	17'-11"	19'-4"
15 PSF	80	17'-5"	18'-11"	22'-0"	24'-0"
	120	15'-3"	16'-6"	19'-9"	21'-3"
	180	13'-3"	14'-5"	17'-3"	18'-7"
	240	12'-1"	13'-1"	15'-8"	16'-10"
20 PSF	80	15'-10"	17'-2"	20'-6"	22'-1"
	120	13'-10"	15'-0"	17'-11"	19'-4"
	180	12'-1"	13'-1"	15'-8"	16'-10"
	240	10'-12"	11'-11"	14'-3"	15'-4"
25 PSF	80	14'-8"	15'-11"	19'-0"	20'-6"
	120	12'-10"	13'-11"	16'-7"	17'-11"
	180	11'-3"	12'-2"	14'-6"	15'-8"
	240	10'-2"	11'-1"	13'-2"	14'-3"
30 PSF	80	13'-10"	15'-0"	17'-11"	19'-4"
	120	12'-1"	13'-1"	15'-8"	16'-10"
	180	10'-7"	11'-5"	13'-8"	14'-9"
	240	9'-7"	10'-5"	12'-5"	13'-5"
35 PSF	80	13'-2"	14'-3"	17'-0"	18'-4"
	120	11'-6"	12'-5"	14'-10"	16'-0"
	180	10'-0"	10'-11"	12'-12"	13'-12"
	240	9'-1"	9'-11"	11'-10"	12'-9"
40 PSF	80	12'-7"	13'-8"	16'-3"	17'-6"
	120	10'-12"	11'-11"	14'-3"	15'-4"
	180	9'-7"	10'-5"	12'-5"	13'-5"
	240	8'-8"	9'-5"	11'-3"	12'-2"
45 PSF	80	12'-1"	13'-1"	15'-8"	16'-10"
	120	10'-7"	11'-5"	13'-8"	14'-9"
	180	9'-3"	10'-0"	11'-11"	12'-10"
	240	8'-4"	9'-1"	10'-10"	11'-8"

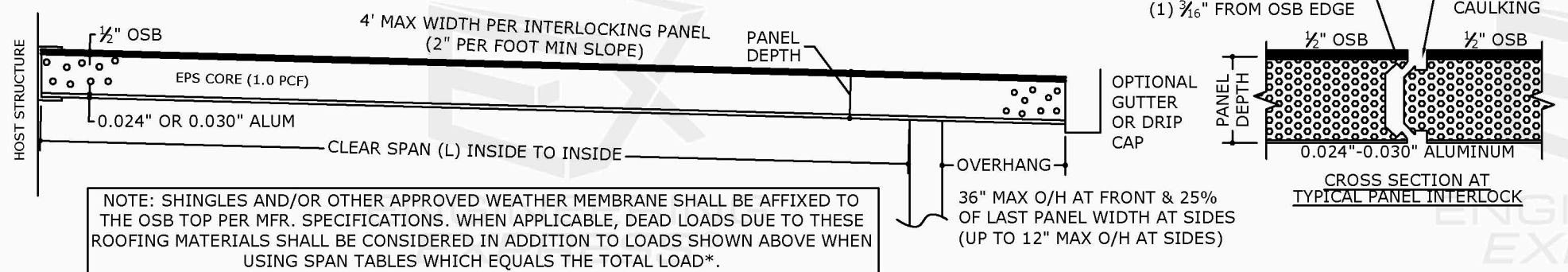
Total Load*	Deflection Limit (L/...)	4" Panels (Depth)		6" Panels (Depth)	
		OSB / 0.024" Alum Skin 1-LB EPS	OSB / 0.030" Alum Skin 1-LB EPS	OSB / 0.024" Alum Skin 1-LB EPS	OSB / 0.030" Alum Skin 1-LB EPS
50 PSF	80	11'-8"	12'-8"	15'-1"	16'-3"
	120	10'-2"	11'-1"	13'-2"	14'-3"
	180	8'-11"	9'-8"	11'-6"	12'-5"
	240	8'-1"	8'-9"	10'-6"	11'-3"
55 PSF	80	11'-4"	12'-3"	14'-8"	15'-9"
	120	9'-10"	10'-9"	12'-9"	13'-9"
	180	8'-7"	9'-4"	11'-2"	12'-0"
	240	7'-10"	8'-6"	10'-2"	10'-11"
60 PSF	80	10'-10"	11'-6"	14'-3"	15'-4"
	120	9'-7"	10'-5"	12'-5"	13'-5"
	180	8'-4"	9'-1"	10'-10"	11'-8"
	240	7'-7"	8'-3"	9'-10"	10'-7"
65 PSF	80	10'-0"	10'-7"	13'-10"	14'-11"
	120	9'-4"	10'-2"	12'-1"	13'-0"
	180	8'-2"	8'-10"	10'-7"	11'-5"
	240	7'-5"	8'-1"	9'-7"	10'-4"
70 PSF	80	9'-4"	9'-10"	13'-5"	14'-0"
	120	9'-1"	9'-10"	11'-10"	12'-9"
	180	7'-11"	8'-8"	10'-4"	11'-1"
	240	7'-3"	7'-10"	9'-4"	10'-1"
75 PSF	80	8'-8"	9'-2"	12'-11"	13'-1"
	120	8'-8"	9'-2"	11'-6"	12'-5"
	180	7'-9"	8'-5"	10'-1"	10'-10"
	240	7'-1"	7'-8"	9'-2"	9'-10"
80 PSF	80	8'-2"	8'-7"	12'-6"	12'-3"
	120	8'-2"	8'-7"	11'-3"	12'-2"
	180	7'-7"	8'-3"	9'-10"	10'-7"
	240	6'-11"	7'-6"	8'-11"	9'-8"

CLEAR SPAN TABLES DIRECTIVE:

1. FIND ALLOWABLE COMPOSITE PANEL CLEAR SPAN IN TABLE FOR APPROPRIATE PANEL DEPTH, FACING THICKNESS, AND EPS CORE DENSITY SELECTED.
2. ANCHOR COMPOSITE PANELS TO EXISTING HOST STRUCTURE AND EXISTING SUPPORTING MEMBERS PER SEPARATE CERTIFICATION.

*TOTAL LOAD = SUM OF ALL LOADS (WIND, LIVE, DEAD, ETC.) ACTING IN THE WORST CASE LOAD COMBINATION AS DETERMINED PER SEPARATE CERTIFICATION

EPS ROOF PANEL SPAN DETAIL:



FL 7621.1

EXENGINEERING
EXPRESS®

POSTAL ADDRESS:
401 W. ATLANTIC AVE R10 BOX 219
DELRAY BEACH, FL 33444
ENGINEERINGEXPRESS.COM

Elite Aluminum Corporation

4650 Lyons Technology Parkway
Coconut Creek, FL 33073

EPS Foam Core Composite Roof Panels
OSB / Aluminum Skin

REMARKS	DRWN CHKD DATE
PREV. SUBMITTAL (20-28649)	CGB RWN 09/16/23
2023 FBC UPDATE	MRT RWN 08/16/23
-	" " "
-	" " "
-	" " "
-	" " "
-	" " "

23-59945

SCALE: NTS UNLESS NOTED

2

HURRICANE ENGINEERING & TESTING, INC.

Computer Controlled Product Testing & Design,
.....Wind Load Analysis

ASTM E 72-05

Strength Test of Panels for Building Construction Transverse Load-Horizontal Specimen & Concentrated Load Test

December 15, 2005

REPORT NUMBER: **HETI-05-2035**

MANUFACTURER: Elite Aluminum Corporation.
4650 Lyons Technology Parkway, Coconut Creek, FL. 33073.

TEST LOCATION: Hurricane Engineering & Testing, Inc.
6120 NW 97th Avenue, Miami, Florida 33178

FBPE Certificate of Authorization Number: 6905

LAB. CERTIFICATION No.: 04-0816.01 (MIAMI-DADE COUNTY, FLORIDA)

FBC ORGANIZATION No: TST1691

PRODUCT: **4" Thick Sandwich Aluminum-Foam Panel**

PRODUCT SIZE: 48" wide x 80" long x 4" deep, and ½" OSB TOP and **0.024"** thick
Aluminum bottom skin.

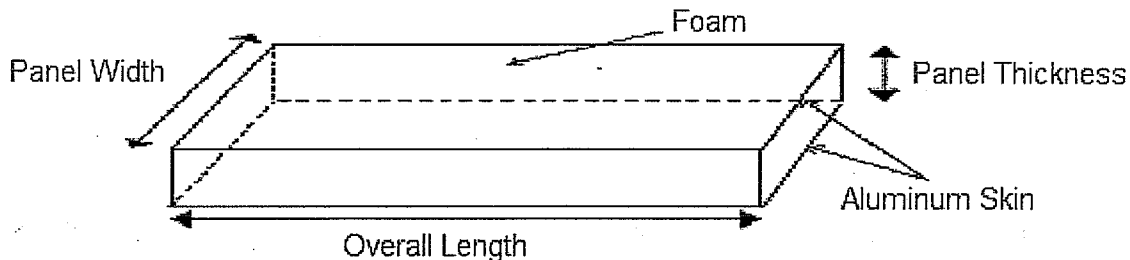
DRAWING TITLE: PT-OSB/FM-001 by Elite Aluminum Corporation , dated 1/17/06.

PRODUCT DESCRIPTION: Insulated Foam panel with **0.024"** aluminum skin on both sides
(Reference Material Tensile Test Report No. HETI-06-T502)

TEST WITNESSED BY: Syed Waqar Ali, Ph. D. (HETI)

Dr. Nasreen K. Ali, E.I. (HETI)

WITNESSING ENGINEER: Mrs. Ivonne Ghia, P.E. (HETI)

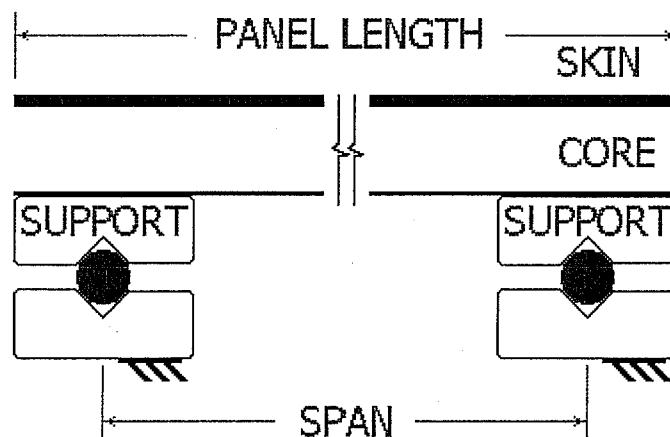


Product Description

- Each sample consisted of an upper layer of ½" **Oriented Strand Board (OSB)** and lower aluminum facing and a core. The aluminum weight was 0.3125 lbs per squared foot. The measurement was performed with a 0.0125 lbs accuracy scale on a 1 squared foot sheet paint was removed. The paint thickness was 0.75 MIL.
- Actual panel width: 48"
- Nominal panel width 48"
- Span: 76"
- Panel length 80"
- Panel depth 4"
- Top or Upper Facing: ½" ADVANTECH OSB by HUBER
- Bottom or Lower Facing: 0.024" nominal (0.0214" actual without paint and embossed) baked enamel finish 3105H154 Aluminum
- Core density: 0.91 lbs/ft³
- Core composition Expanded Polystyrene (EPS).
- Core thickness: 3.50" (prior to fabrication)
- Edge construction: roll formed
- Additional reinforcement: none.
- Adhesive ISOGRIP SP 2020 by Ashland Specialty

Test Procedure

- Symmetrical Assembly.
- Apparatus: Tested as per ASTM E 72 - 05 Section 11.3.1.1 Uniformly distributed loading by vacuum pump acting below the specimen, a 2 mil plastic sheathing above the specimen and an airtight chamber as per section 11.3.1.3 of ASTM E 72 - 05. The pressure was read with a water column manometer and a pressure transducer.
- Supports: The samples were supported by rollers as per diagram below:



Long side profile

- Deflection Gage: The deflection was measured using linear variable differential transformers (LVDT).

Test Results

Sample I

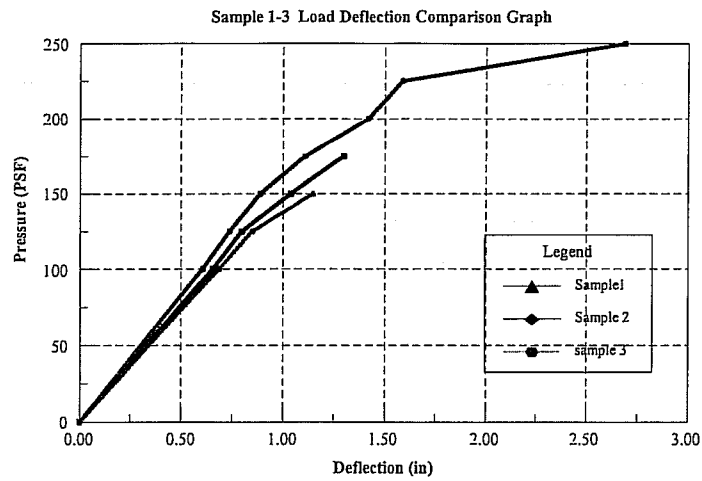
	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	100	0.61	0.000	100	300
Load	125	0.74	0.000	100	300
Load	150	0.89	0.012	99	300
Load	175	1.11	0.035	97	300
Load	200	1.42	0.139	90	300
Load	225	1.59	0.185	88	300
Load	250	2.69	0.659	76	300
Failure Load	Test stopped after recovery was less than 80%.				

Sample II

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	100	0.66	0.00	100	300
Load	125	0.80	0.00	100	300
Load	150	1.04	0.046	96	300
Load	175	1.30	0.081	94	300
Failure Load	Failed at 197 PSF, right end shear failure				

Sample III

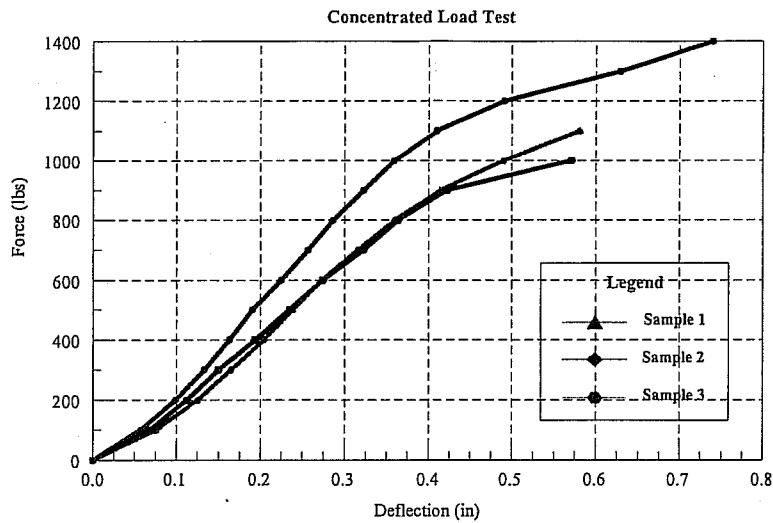
	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	100	0.69	0.000	100	300
Load	125	0.85	0.023	97	300
Load	150	1.15	0.092	92	300
Failure Load	Failed at 168 PSF, left end shear failure				



Concentrated Load Test

Force (lbs)	Sample 1 Deflection (in)	Sample 2 Deflection (in)	Sample 3 Deflection (in)	Duration (Sec)
0.0	0.000	0.0	0.0	0
100	0.057	0.067	0.076	60
200	0.099	0.112	0.125	60
300	0.133	0.150	0.165	60
400	0.163	0.194	0.204	60
500	0.191	0.235	0.239	60
600	0.225	0.274	0.273	60
700	0.257	0.323	0.316	60
800	0.287	0.364	0.360	60
900	0.323	0.422	0.415	60
1000	0.359	0.571	0.490	60
1100	0.410	-	0.581	60
1200	0.491	-	-	60
1300	0.629	-	-	60
1400	0.740	-	-	60
Failure Load	Failed at 1480	Failed at 1098	Failed at 1198	

Note: Failed status indicates that 1" diameter round bar used to apply concentrated load ruptured and penetrated the OSB board. Reference Group 05-2061.



Conclusion

The samples were tested as in accordance with ASTM E 72-05. The Comparison Graph reflects the last test run where failure occurred for each sample.

NOTE: The above results were obtained using the designated test methods, which indicates compliance with the performance requirements of the referenced specifications. This report does not constitute certification of the specimens tested.

STATEMENT OF INDEPENDENCE

The Hurricane Engineering & Testing, Inc., does not have, nor does it intend to acquire or will acquire, a financial interest in any company manufacturing or distributing products tested or labeled by the Hurricane Engineering & Testing, Inc. Hurricane Engineering & Testing, Inc., is not owned, operated or controlled by any company manufacturing or distributing products it tests or labels.

Dr. Nasreen K. Ali
Vice President

Ivonne Ghia, P.E.
Resident Engineer

01/23/06

HURRICANE ENGINEERING & TESTING, INC.

Computer Controlled Product Testing & Design,
.....Wind Load Analysis

ASTM E 72-05 Strength Test of Panels for Building Construction Transverse Load Test – Horizontal Specimen

December 15, 2005

REPORT NUMBER: **HETI-05-2028**

MANUFACTURER: Elite Aluminum Corporation.
4650 Lyons Technology Parkway, Coconut Creek, FL. 33073.

TEST LOCATION: Hurricane Engineering & Testing, Inc.
6120 NW 97th Avenue, Miami, Florida 33178

FBPE Certificate of Authorization Number: 6905

LAB. CERTIFICATION No.: 04-0816.01 (MIAMI-DADE COUNTY, FLORIDA)

FBC ORGANIZATION No: TST1691

PRODUCT: **4" Thick Sandwich Aluminum-Foam Panel**

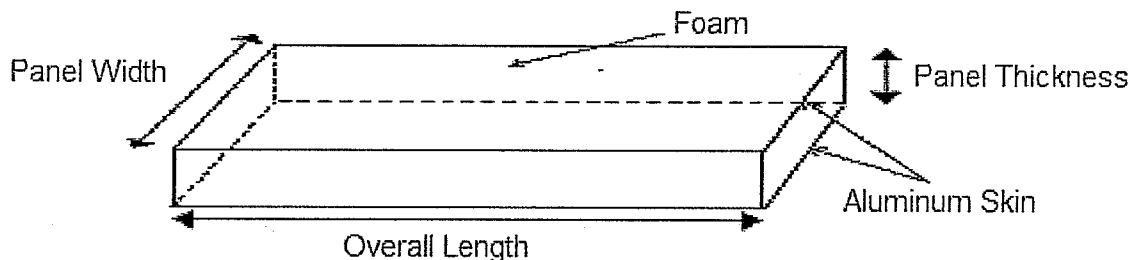
PRODUCT SIZE: 48" wide x 222" long x 4" deep, and ½" OSB TOP and **0.024"** thick Aluminum bottom skin.

DRAWING TITLE: PT-OSB/FM-002 by Elite Aluminum Corporation, dated 1/17/06.

PRODUCT DESCRIPTION: Insulated Foam panel with **0.024"** aluminum skin on both sides
(Reference Material Tensile Test Report No. HETI-06-T502)

TEST WITNESSED BY: Syed Waqar Ali, Ph. D. (HETI)
Dr. Nasreen K. Ali, E.I. (HETI)

WITNESSING ENGINEER: Mrs. Ivonne Ghia, P.E. (HETI)

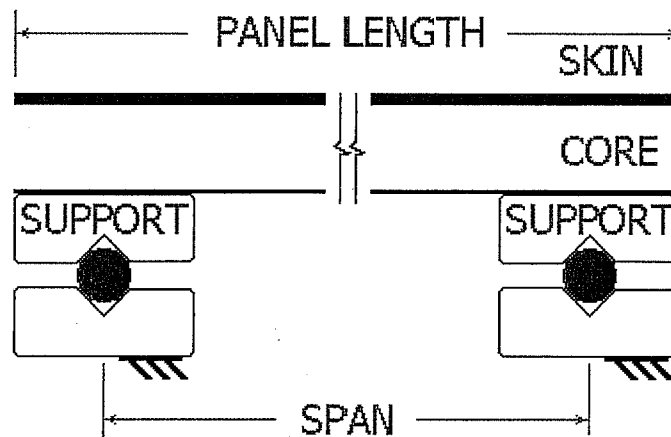


Product Description

- Each sample consisted of an upper layer of $\frac{1}{2}$ " **Oriented Strand Board (OSB)** and lower aluminum facing and a core. The aluminum weight was 0.3125 lbs per squared foot. The measurement was performed with a 0.0125 lbs accuracy scale on a 1 squared foot sheet paint was removed. The paint thickness was 0.75 MIL.
- Actual panel width: 48"
- Nominal panel width 48"
- Span: 218"
- Panel length 222"
- Panel depth 4"
- Top or Upper Facing: $\frac{1}{2}$ " ADVANTECH OSB by HUBER
- Bottom or Lower Facing: 0.024" nominal (0.0214" actual without paint and embossed) baked enamel finish 3105H154 Aluminum
- Core density: 0.91 lbs/ft³
- Core composition Expanded Polystyrene (EPS).
- Core thickness: 3.50" (prior to fabrication)
- Edge construction: roll formed
- Additional reinforcement: none.
- Adhesive ISOGrip SP 2020 by Ashland Specialty

Test Procedure

- Symmetrical Assembly.
- Apparatus: Tested as per ASTM E 72 - 05 Section 11.3.1.1 Uniformly distributed loading by vacuum pump acting below the specimen, a 2 mil plastic sheathing above the specimen and an airtight chamber as per section 11.3.1.3 of ASTM E 72 - 05. The pressure was read with a water column manometer and a pressure transducer.
- Supports: The samples were supported by rollers as per diagram below:



Long side profile

- Deflection Gage: The deflection was measured using linear variable differential transformers (LVDT).

Test Results

Sample I

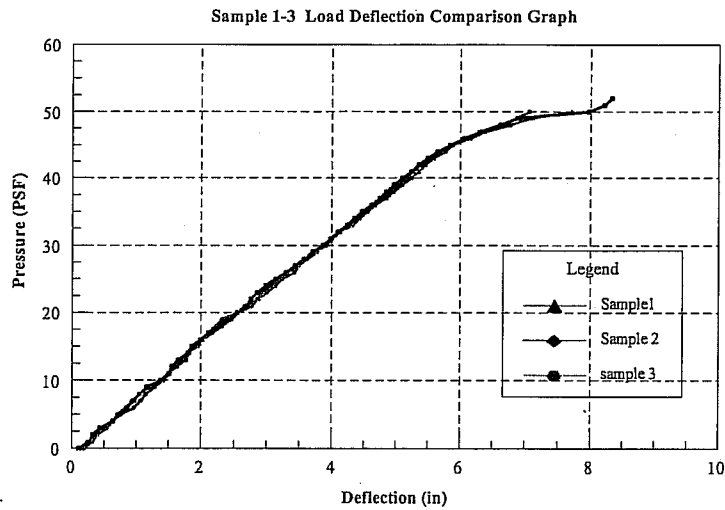
	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	10	1.16	0.000	100	300
Load	20	2.29	0.000	100	300
Load	30	3.83	0.092	98	300
Load	40	5.27	0.197	96	300
Failure Load	Failed at 50 PSF, left end shear failure				

Sample II

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	10	1.37	0.023	98	300
Load	20	2.37	0.035	99	300
Load	30	3.78	0.139	96	300
Load	40	5.73	0.601	90	300
Load	50	8.30	1.977	76	
Failure Load	Test stopped after recovery reached less than 80%.				

Sample III

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	10	1.31	0.023	98	300
Load	20	2.45	0.035	99	300
Load	30	3.74	0.116	97	300
Load	40	5.75	0.566	90	
Load	50	8.19	1.826	78	
Failure Load	Test stopped after recovery reached less than 80%.				



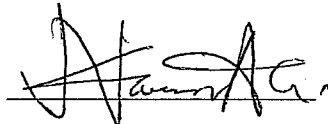
Conclusion

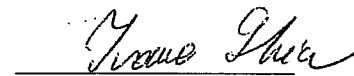
The samples were tested as in accordance with ASTM E 72-05. The Comparison Graph reflects the last test run where failure occurred for each sample.

NOTE: The above results were obtained using the designated test methods, which indicates compliance with the performance requirements of the referenced specifications. This report does not constitute certification of the specimens tested.

STATEMENT OF INDEPENDENCE

The Hurricane Engineering & Testing, Inc., does not have, nor does it intend to acquire or will acquire, a financial interest in any company manufacturing or distributing products tested or labeled by the Hurricane Engineering & Testing, Inc. Hurricane Engineering & Testing, Inc., is not owned, operated or controlled by any company manufacturing or distributing products it tests or labels.


Dr. Nasreen K. Ali
Vice President


Ivonne Ghia, P.E. 01/23/06
Resident Engineer

HURRICANE ENGINEERING & TESTING, INC.

Computer Controlled Product Testing & Design,
..... Wind Load Analysis

ASTM E 72-05

Strength Test of Panels for Building Construction Transverse Load-Horizontal Specimen & Concentrated Load Test

December 15, 2005

REPORT NUMBER: **HETI-05-2034**

MANUFACTURER: Elite Aluminum Corporation.
4650 Lyons Technology Parkway, Coconut Creek, FL. 33073.

TEST LOCATION: Hurricane Engineering & Testing, Inc.
6120 NW 97th Avenue, Miami, Florida 33178

FBPE Certificate of Authorization Number: 6905

LAB. CERTIFICATION No.: 04-0816.01 (MIAMI-DADE COUNTY, FLORIDA)

FBC ORGANIZATION No: TST1691

PRODUCT: **4" Thick Sandwich Aluminum-Foam Panel**

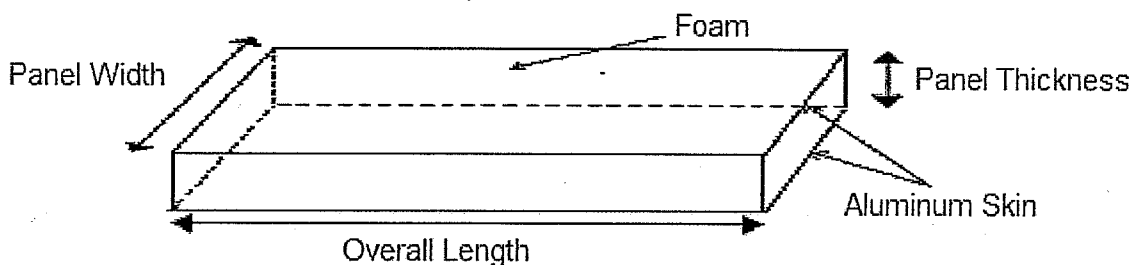
PRODUCT SIZE: 48" wide x 80" long x 4" deep, and ½" OSB TOP and **0.030"** thick
Aluminum bottom skin.

DRAWING TITLE: PT-OSB/FM-005 by Elite Aluminum Corporation , dated 1/17/06.

PRODUCT DESCRIPTION: Insulated Foam panel with **0.030"** aluminum skin on both sides
(Reference Material Tensile Test Report No. HETI-06-T516)

TEST WITNESSED BY: Syed Waqar Ali, Ph. D. (HETI)
Dr. Nasreen K. Ali, E.I. (HETI)

WITNESSING ENGINEER: Mrs. Ivonne Ghia, P.E. (HETI)

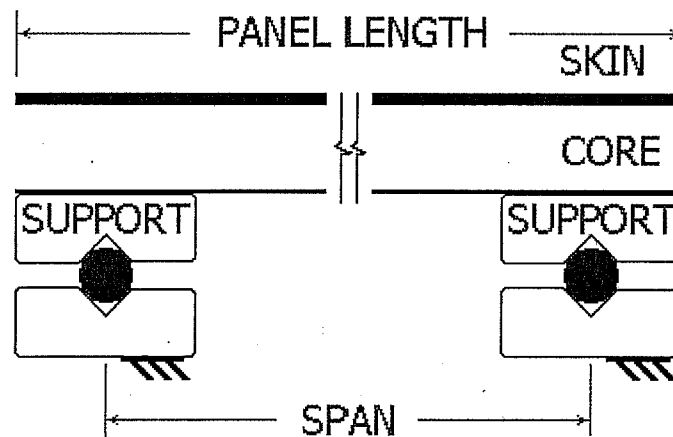


Product Description

- Each sample consisted of an upper layer of $\frac{1}{2}$ " **Oriented Strand Board (OSB)** and lower aluminum facing and a core. The aluminum weight was 0.408 lbs per squared foot. The measurement was performed with a 0.0125 lbs accuracy scale on a 1 squared foot sheet paint was removed. The paint thickness was 0.75 MIL.
- Actual panel width: 48"
- Nominal panel width 48"
- Span: 76"
- Panel length 80"
- Panel depth 4"
- Top or Upper Facing: $\frac{1}{2}$ " ADVANTECH OSB by HUBER
- Bottom or Lower Facing: 0.032" nominal (0.027" actual without paint and embossed) baked enamel finish 3105H154 Aluminum
- Core density: 0.91 lbs/ft³
- Core composition Expanded Polystyrene (EPS).
- Core thickness: 3.50" (prior to fabrication)
- Edge construction: roll formed
- Additional reinforcement: none.
- Adhesive ISOGRIP SP 2020 by Ashland Specialty

Test Procedure

- Symmetrical Assembly.
- Apparatus: Tested as per ASTM E 72 - 05 Section 11.3.1.1 Uniformly distributed loading by vacuum pump acting below the specimen, a 2 mil plastic sheathing above the specimen and an airtight chamber as per section 11.3.1.3 of ASTM E 72 - 05. The pressure was read with a water column manometer and a pressure transducer.
- Supports: The samples were supported by rollers as per diagram below:



Long side profile

- Deflection Gage: The deflection was measured using linear variable differential transformers (LVDT).

Test Results

Sample I

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	100	0.56	0.000	100	300
Load	125	0.62	0.000	100	300
Load	150	0.76	0.000	100	300
Load	175	0.97	0.035	96.4	300
Load	200	1.18	0.081	93.1	300
Failure Load	Failed at 224 PSF, Edge Shear failure.				

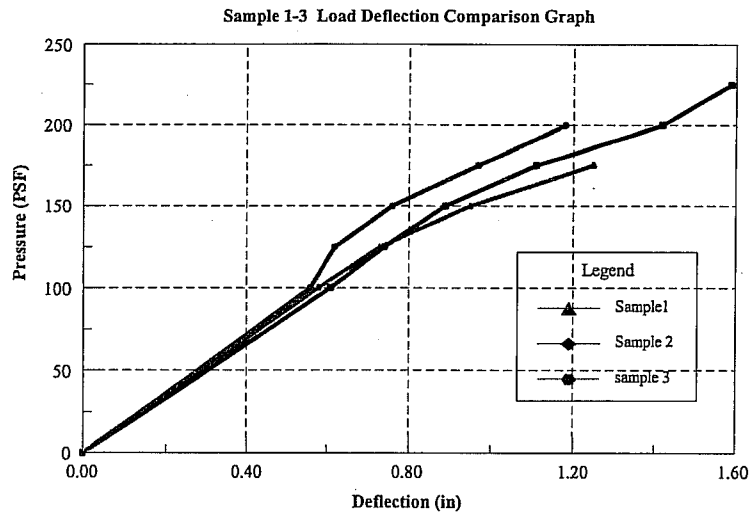
Sample II

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	100	0.61	0.000	100	300
Load	125	0.74	0.000	100	300
Load	150	0.89	0.000	100	300
Load	175	1.11	0.000	100	300
Load	200	1.42	0.000	100	300
Load	225	1.59	0.185	88.4	300
Failure Load	Test stopped after exceeding $1.5*(L/80)$ deflection criteria.				

Sample III

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	100	0.58	0.000	100	300
Load	125	0.73	0.000	100	300
Load	150	0.95	0.035	96.4	300
Load	175	1.25	0.116	90.8	300
Failure Load	Failed at 199 PSF, Edge Shear failure.				

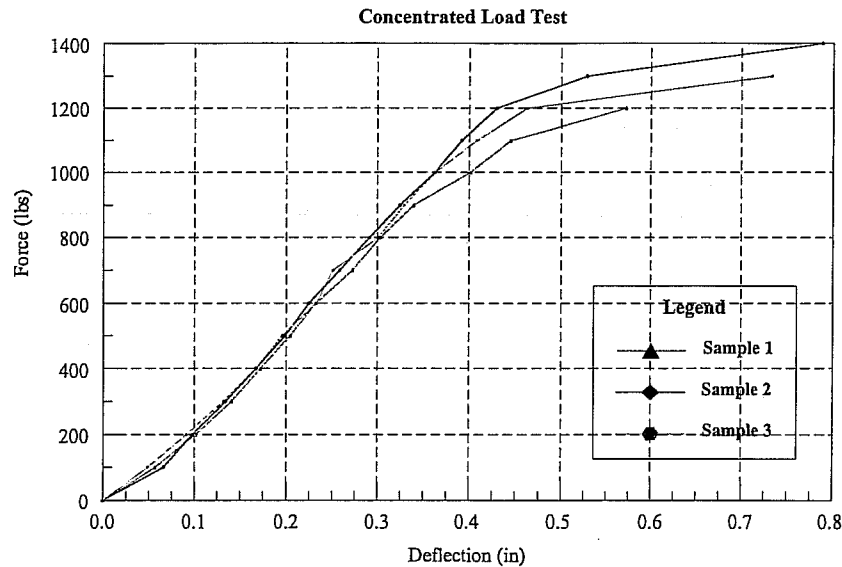
Sample
II B III



Concentrated Load Test

Force (lbs)	Sample 1 Deflection (in)	Sample 2 Deflection (in)	Sample 3 Deflection (in)	Duration (Sec)
0.0	0.000	0.0	0.0	0
100	0.057	0.067	0.049	60
200	0.101	0.098	0.092	60
300	0.140	0.135	0.132	60
400	0.172	0.168	0.168	60
500	0.205	0.200	0.196	60
600	0.232	0.225	0.233	60
700	0.272	0.259	0.252	60
800	0.303	0.292	0.301	60
900	0.339	0.325	0.330	60
1000	0.401	0.363	0.364	60
1100	0.444	0.392	0.408	60
1200	0.572	0.430	0.463	60
1300	-	0.529	0.734	60
1400	-	0.789	-	60
Failure Load	Failed at 1333	Failed at 1398	Failed at 1404	

Note: Failed status indicates that 1" diameter round bar used to apply concentrated load ruptured and penetrated the OSB board. Reference Group 05-2043.



Conclusion

The samples were tested as in accordance with ASTM E 72-05. The Comparison Graph reflects the last test run where failure occurred for each sample.

NOTE: The above results were obtained using the designated test methods, which indicates compliance with the performance requirements of the referenced specifications. This report does not constitute certification of the specimens tested.

STATEMENT OF INDEPENDENCE

The Hurricane Engineering & Testing, Inc., does not have, nor does it intend to acquire or will acquire, a financial interest in any company manufacturing or distributing products tested or labeled by the Hurricane Engineering & Testing, Inc. Hurricane Engineering & Testing, Inc., is not owned, operated or controlled by any company manufacturing or distributing products it tests or labels.

Dr. Nasreen K. Ali
Vice President

Ivonne Ghia, P.E.
Resident Engineer

01/23/06

HURRICANE ENGINEERING & TESTING, INC.

Computer Controlled Product Testing & Design,
.....Wind Load Analysis

ASTM E 72-05 Strength Test of Panels for Building Construction Transverse Load Test – Horizontal Specimen

December 15, 2005

REPORT NUMBER: **HETI-05-2027**

MANUFACTURER: Elite Aluminum Corporation.
4650 Lyons Technology Parkway, Coconut Creek, FL. 33073.

TEST LOCATION: Hurricane Engineering & Testing, Inc.
6120 NW 97th Avenue, Miami, Florida 33178

FBPE Certificate of Authorization Number: 6905

LAB. CERTIFICATION No.: 04-0816.01 (MIAMI-DADE COUNTY, FLORIDA)

FBC ORGANIZATION No: TST1691

PRODUCT: **4" Thick Sandwich Aluminum-Foam Panel**

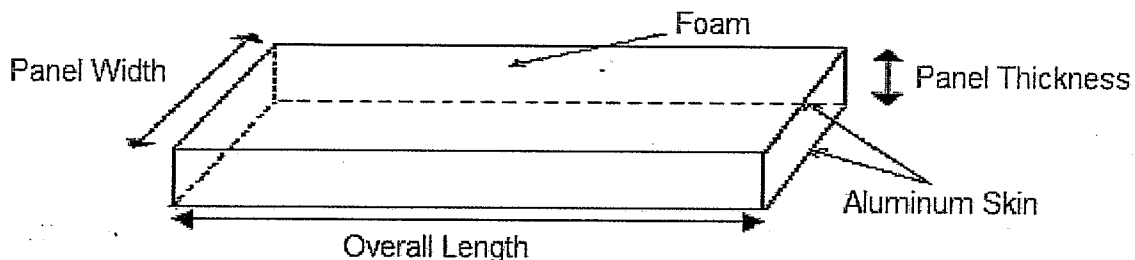
PRODUCT SIZE: 48" wide x 246" long x 4" deep, and ½" OSB TOP and **0.030"** thick Aluminum bottom skin.

DRAWING TITLE: PT-OSB/FM-006 by Elite Aluminum Corporation , dated 1/17/06.

PRODUCT DESCRIPTION: Insulated Foam panel with **0.030"** aluminum skin on both sides
(Reference Material Tensile Test Report No. HETI-06-T516)

TEST WITNESSED BY: Syed Waqar Ali, Ph. D. (HETI)
Dr. Nasreen K. Ali, E.I. (HETI)

WITNESSING ENGINEER: Mrs. Ivonne Ghia, P.E. (HETI)

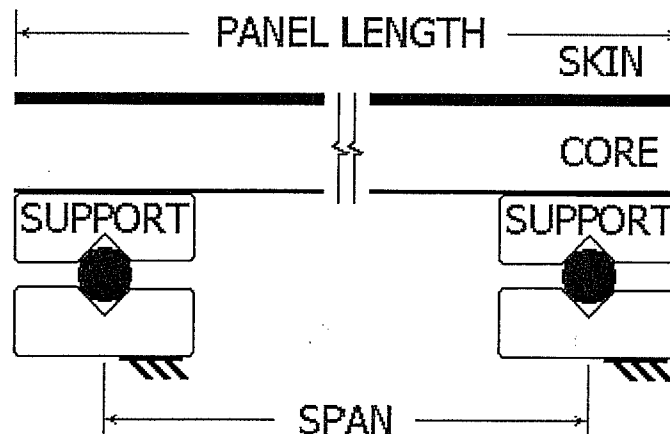


Product Description

- Each sample consisted of an upper layer of ½" **Oriented Strand Board (OSB)** and lower aluminum facing and a core. The aluminum weight was 0.408 lbs per squared foot. The measurement was performed with a 0.0125 lbs accuracy scale on a 1 squared foot sheet paint was removed. The paint thickness was 0.75 MIL.
- Actual panel width: 48"
- Nominal panel width 48"
- Span: 242"
- Panel length 246"
- Panel depth 4"
- Top or Upper Facing: ½" ADVANTECH OSB by HUBER
- Bottom or Lower Facing: 0.032" nominal (0.027" actual without paint and embossed) baked enamel finish 3105H154 Aluminum
- Core density: 0.091 lbs/ft³
- Core composition Expanded Polystyrene (EPS).
- Core thickness: 3.50" (prior to fabrication)
- Edge construction: roll formed
- Additional reinforcement: none.
- Adhesive ISOGRIP SP 2020 by Ashland Specialty

Test Procedure

- Symmetrical Assembly.
- Apparatus: Tested as per ASTM E 72 - 05 Section 11.3.1.1 Uniformly distributed loading by vacuum pump acting below the specimen, a 2 mil plastic sheathing above the specimen and an airtight chamber as per section 11.3.1.3 of ASTM E 72 - 05. The pressure was read with a water column manometer and a pressure transducer.
- Supports: The samples were supported by rollers as per diagram below:



Long side profile

- Deflection Gage: The deflection was measured using linear variable differential transformers (LVDT).

Test Results

Sample I

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	10	1.42	0.00	100	300
Load	20	3.03	0.023	99.2	300
Load	30	4.67	0.127	97.3	300
Load	40	6.25	0.312	95.0	300
Load	50	7.61	0.659	91.3	300
Failure Load	Test stopped after deflection exceeded $1.5*(L/80)$ deflection criteria				

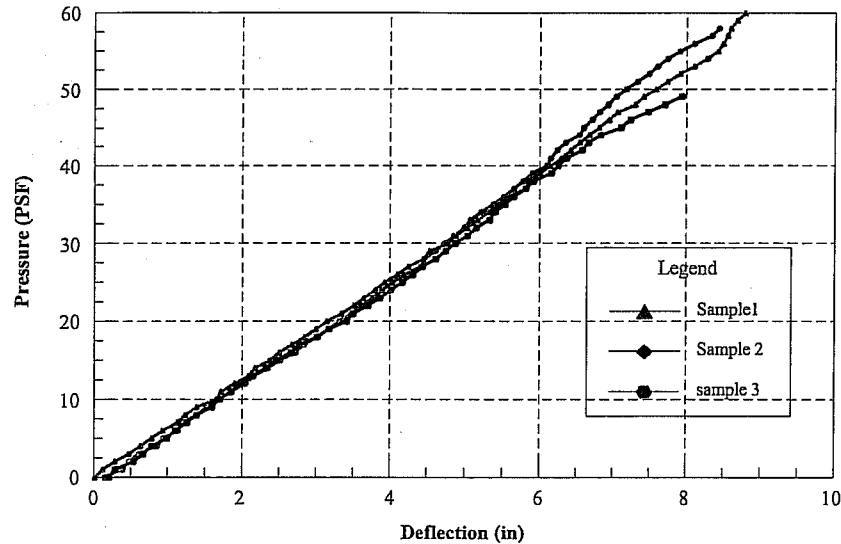
Sample II

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	10	1.41	0.000	100	300
Load	20	2.94	0.058	98.3	300
Load	30	4.67	0.069	98.5	300
Load	40	6.48	0.381	93.9	300
Load	50	7.48	0.289	96.1	300
Load	60	8.07	0.486	94.0	300
Failure Load	Test stopped after deflection exceeded $1.5*(L/80)$ deflection criteria				

Sample III

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	10	1.46	0.023	98.4	300
Load	20	3.23	0.069	97.9	300
Load	30	4.69	0.162	96.6	300
Load	40	6.37	0.381	94.0	300
Load	50	8.44	1.006	88.1	300
Load	60	9.06	1.029	88.6	300
Failure Load	Test stopped after deflection exceeded $1.5*(L/80)$ deflection criteria				

Sample 1-3 Load Deflection Comparison Graph



Conclusion

The samples were tested as in accordance with ASTM E 72-05. The Comparison Graph reflects the last test run where failure occurred for each sample.

NOTE: The above results were obtained using the designated test methods, which indicates compliance with the performance requirements of the referenced specifications. This report does not constitute certification of the specimens tested.

STATEMENT OF INDEPENDENCE

The Hurricane Engineering & Testing, Inc., does not have, nor does it intend to acquire or will acquire, a financial interest in any company manufacturing or distributing products tested or labeled by the Hurricane Engineering & Testing, Inc. Hurricane Engineering & Testing, Inc., is not owned, operated or controlled by any company manufacturing or distributing products it tests or labels.

Dr. Nasreen K. Ali
Vice President

Ivonne Ghia, P.E.
Resident Engineer

01/23/06

HURRICANE ENGINEERING & TESTING, INC.

Computer Controlled Product Testing & Design,
.....Wind Load Analysis

ASTM E 72-05 Strength Test of Panels for Building Construction Transverse Load Test – Horizontal Specimen

December 15, 2005

REPORT NUMBER: **HETI-05-2032**

MANUFACTURER: Elite Aluminum Corporation.
4650 Lyons Technology Parkway, Coconut Creek, FL. 33073.

TEST LOCATION: Hurricane Engineering & Testing, Inc.
6120 NW 97th Avenue, Miami, Florida 33178

FBPE Certificate of Authorization Number: 6905

LAB. CERTIFICATION No.: 04-0816.01 (MIAMI-DADE COUNTY, FLORIDA)

FBC ORGANIZATION No: TST1691

PRODUCT: **6" Thick Sandwich Aluminum-Foam Panel**

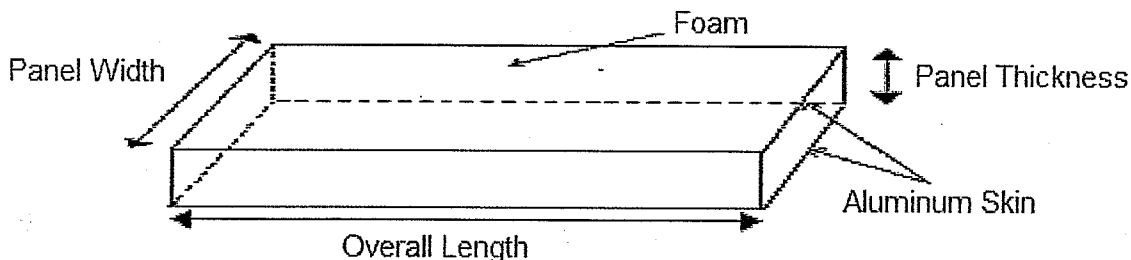
PRODUCT SIZE: 48" wide x 80" long x 6" deep, and ½" OSB TOP and 0.024" thick
Aluminum bottom skin.

DRAWING TITLE: PT-OSB/FM-003 by Elite Aluminum Corporation, dated 1/17/06.

PRODUCT DESCRIPTION: Insulated Foam panel with 0.024" aluminum skin on both sides
(Reference Material Tensile Test Report No. HETI-06-T502)

TEST WITNESSED BY: Syed Waqar Ali, Ph. D. (HETI)
Dr. Nasreen K. Ali, E.I. (HETI)

WITNESSING ENGINEER: Mrs. Ivonne Ghia, P.E. (HETI)

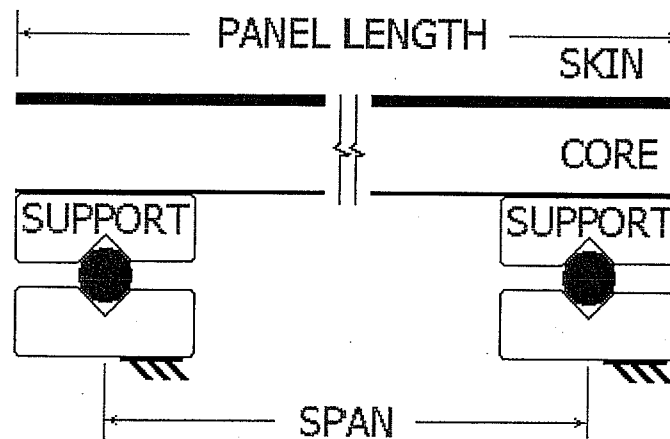


Product Description

- Each sample consisted of an upper layer of $\frac{1}{2}$ " **Oriented Strand Board (OSB)** and lower aluminum facing and a core. The aluminum weight was 0.3125 lbs per squared foot. The measurement was performed with a 0.0125 lbs accuracy scale on a 1 squared foot sheet paint was removed. The paint thickness was 0.75 MIL.
- Actual panel width: 48"
- Nominal panel width 48"
- Span: 76"
- Panel length 80"
- Panel depth 6"
- Top or Upper Facing: $\frac{1}{2}$ " ADVANTECH OSB by HUBER
- Bottom or Lower Facing: 0.024" nominal (0.0214" actual without paint and embossed) baked enamel finish 3105H154 Aluminum
- Core density: 0.91 lbs/ft³
- Core composition Expanded Polystyrene (EPS).
- Core thickness: 5.50" (prior to fabrication)
- Edge construction: roll formed
- Additional reinforcement: none.
- Adhesive ISOGRIP SP 2020 by Ashland Specialty

Test Procedure

- Symmetrical Assembly.
- Apparatus: Tested as per ASTM E 72 - 05 Section 11.3.1.1 Uniformly distributed loading by vacuum pump acting below the specimen, a 2 mil plastic sheathing above the specimen and an airtight chamber as per section 11.3.1.3 of ASTM E 72 - 05. The pressure was read with a water column manometer and a pressure transducer.
- Supports: The samples were supported by rollers as per diagram below:



Long side profile

- Deflection Gage: The deflection was measured using linear variable differential transformers (LVDT).

Test Results

Sample I

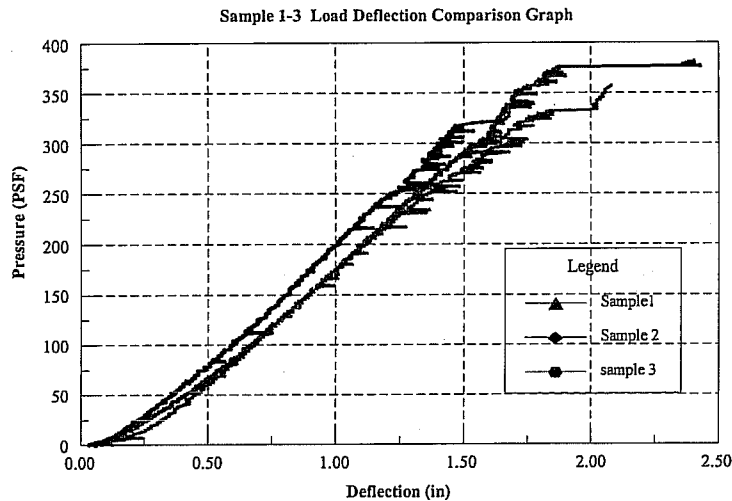
	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	100	0.45	0.00	100	300
Load	125	0.51	0.00	100	300
Load	150	0.58	0.00	100	300
Load	175	0.67	0.00	100	300
Load	200	0.80	0.046	94	300
Load	225	0.91	0.035	96	300
Load	250	1.05	0.069	93	300
Load	275	1.28	0.150	88	300
Load	300	1.54	0.281	85	300
Load	325	1.78	0.335	81	300
Load	350	2.08	0.428	79	300
Load	375	2.37	0.578	76	300
Failure Load	Test stopped after recovery reached less than 80%.				

Sample II

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	100	0.42	0.00	100	300
Load	125	0.49	0.00	100	300
Load	150	0.56	0.00	100	300
Load	175	0.64	0.00	100	300
Load	200	0.76	0.023	97	300
Load	225	0.90	0.058	94	300
Load	250	1.11	0.116	90	300
Load	275	1.36	0.185	86	300
Load	300	1.70	0.312	82	300
Load	325	1.95	0.416	79	300
Failure Load	Test stopped after recovery reached less than 80%.				

Sample III

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	100	0.42	0.000	100	300
Load	125	0.50	0.000	100	300
Load	150	0.60	0.000	100	300
Load	175	0.70	0.000	100	300
Load	200	0.81	0.035	96	300
Load	225	0.99	0.104	89	300
Load	250	1.18	0.150	87	300
Load	275	1.40	0.231	84	300
Load	300	1.66	0.301	82	300
Load	325	1.90	0.324	83	300
Load	350	2.52	0.798	68	300
Failure Load	Test stopped after recovery reached less than 80%.				



Conclusion

The samples were tested as in accordance with ASTM E 72-05. The Comparison Graph reflects the last test run where failure occurred for each sample.

NOTE: The above results were obtained using the designated test methods, which indicates compliance with the performance requirements of the referenced specifications. This report does not constitute certification of the specimens tested.

STATEMENT OF INDEPENDENCE

The Hurricane Engineering & Testing, Inc., does not have, nor does it intend to acquire or will acquire, a financial interest in any company manufacturing or distributing products tested or labeled by the Hurricane Engineering & Testing, Inc. Hurricane Engineering & Testing, Inc., is not owned, operated or controlled by any company manufacturing or distributing products it tests or labels.

Dr. Nasreen K. Ali
Vice President

Ivonne Ghia, P.E.
Resident Engineer

01/23/06

HURRICANE ENGINEERING & TESTING, INC.

Computer Controlled Product Testing & Design,
.....Wind Load Analysis

ASTM E 72-05 Strength Test of Panels for Building Construction Transverse Load-Horizontal Specimen & Concentrated Load Test

December 15, 2005

REPORT NUMBER: **HETI-05-2026**

MANUFACTURER: Elite Aluminum Corporation.
4650 Lyons Technology Parkway, Coconut Creek, FL. 33073.

TEST LOCATION: Hurricane Engineering & Testing, Inc.
6120 NW 97th Avenue, Miami, Florida 33178

FBPE Certificate of Authorization Number: 6905

LAB. CERTIFICATION No.: 04-0816.01 (MIAMI-DADE COUNTY, FLORIDA)

FBC ORGANIZATION No: TST1691

PRODUCT: **6" Thick Sandwich Aluminum-Foam Panel**

PRODUCT SIZE: 48" wide x 270" long x 6" deep, and ½" OSB TOP and **0.024"** thick
Aluminum bottom skin.

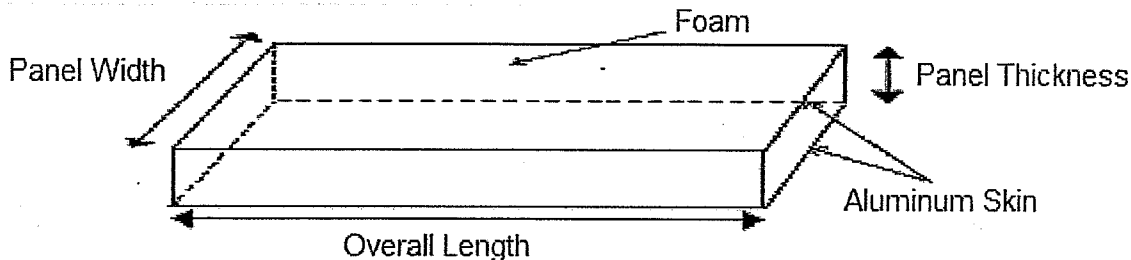
DRAWING TITLE: PT-OSB/FM-004 by Elite Aluminum Corporation , dated 1/17/06.

PRODUCT DESCRIPTION: Insulated Foam panel with **0.024"** aluminum skin on both sides
(Reference Material Tensile Test Report No. HETI-06-T502)

TEST WITNESSED BY: Syed Waqar Ali, Ph. D. (HETI)

Dr. Nasreen K. Ali, E.I. (HETI)

WITNESSING ENGINEER: Mrs. Ivonne Ghia, P.E. (HETI)

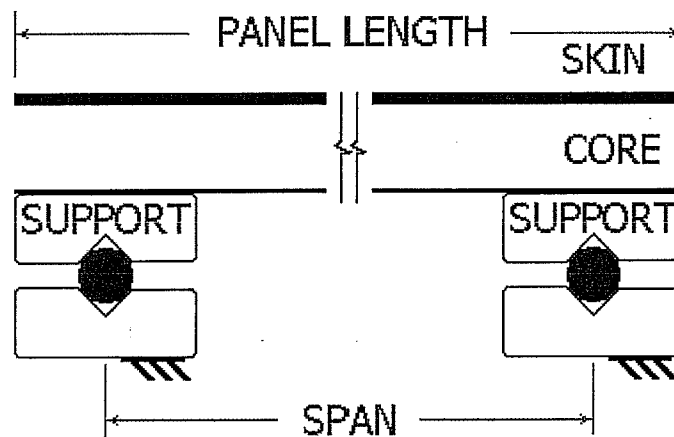


Product Description

- Each sample consisted of an upper layer of ½" **Oriented Strand Board (OSB)** and lower **aluminum facing** and a **core**. The aluminum weight was 0.3125 lbs per squared foot. The measurement was performed with a 0.0125 lbs accuracy scale on a 1 squared foot sheet paint was removed. The paint thickness was 0.75 MIL.
- Actual panel width: 48"
- Nominal panel width 48"
- Span: 266"
- Panel length 270"
- Panel depth 6"
- Top or Upper Facing: ½" ADVANTECH OSB by HUBER
- Bottom or Lower Facing: 0.024" nominal (0.0214" actual without paint and embossed) baked enamel finish 3105H154 Aluminum
- Core density: 0.91 lbs/ft³
- Core composition Expanded Polystyrene (EPS).
- Core thickness: 5.50" (prior to fabrication)
- Edge construction: roll formed
- Additional reinforcement: none.
- Adhesive ISOGRIP SP 2020 by Ashland Specialty

Test Procedure

- Symmetrical Assembly.
- Apparatus: Tested as per ASTM E 72 - 05 Section 11.3.1.1 Uniformly distributed loading by vacuum pump acting below the specimen, a 2 mil plastic sheathing above the specimen and an airtight chamber as per section 11.3.1.3 of ASTM E 72 - 05. The pressure was read with a water column manometer and a pressure transducer.
- Supports: The samples were supported by rollers as per diagram below:



Long side profile

- Deflection Gage: The deflection was measured using linear variable differential transformers (LVDT).

Test Results

Sample I

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	10	1.16	0.012	99	300
Load	20	2.34	0.035	99	300
Load	30	3.66	0.092	97	300
Load	40	5.19	0.405	92	300
Load	50	8.07	1.965	76	300
Failure Load	Test stopped after recovery was less than 80%.				

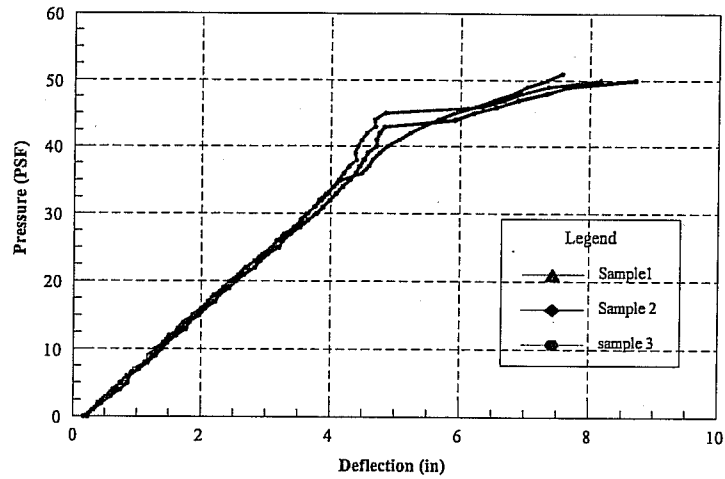
Sample II

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	10	1.07	0.00	100	300
Load	20	2.42	0.035	99	300
Load	30	3.68	0.116	97	300
Load	40	4.84	0.277	94	300
Load	50	8.91	2.543	71	300
Failure Load	Test stopped after recovery was less than 80%.				

Sample III

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	10	1.07	0.012	99	300
Load	20	2.09	0.012	99	300
Load	30	3.41	0.069	98	300
Load	40	4.59	0.231	95	300
Load	50	8.29	2.219	73	300
Failure Load	Test stopped after recovery was less than 80%.				

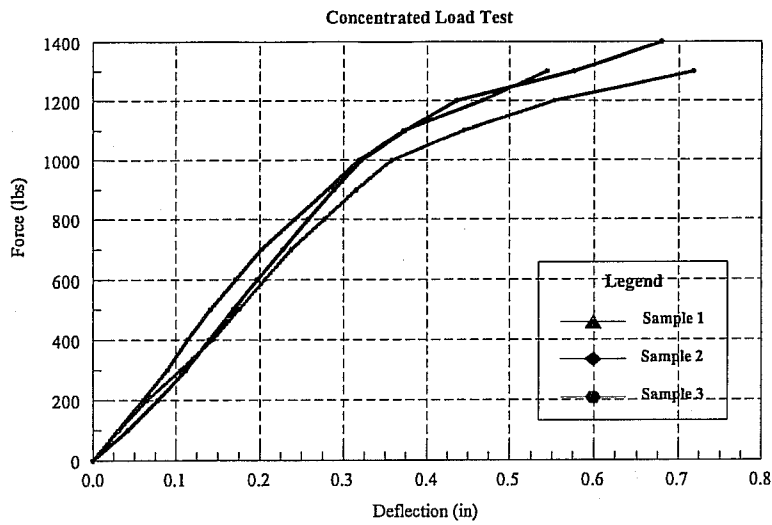
Sample 1-3 Load Deflection Comparison Graph



Concentrated Load Test

Force (lbs)	Sample 1 Deflection (in)	Sample 2 Deflection (in)	Sample 3 Deflection (in)	Duration (Sec)
0.0	0.000	0.0	0.0	0
100	0.030	0.042	0.031	60
200	0.060	0.078	0.065	60
300	0.089	0.112	0.106	60
400	0.114	0.140	0.144	60
500	0.141	0.169	0.175	60
600	0.171	0.197	0.206	60
700	0.202	0.228	0.238	60
800	0.242	0.258	0.277	60
900	0.281	0.289	0.316	60
1000	0.319	0.322	0.358	60
1100	0.372	0.374	0.445	60
1200	0.467	0.436	0.553	60
1300	0.544	0.576	0.718	60
1400	-	0.679	-	60
Failure Load	Failed at 1298	Failed at 1400	Failed at 1380	

Note: Failed status indicates that 1" diameter round bar used to apply concentrated load ruptured and penetrated the OSB board. Reference Group 05-2049.



Conclusion

The samples were tested as in accordance with ASTM E 72-05. The Comparison Graph reflects the last test run where failure occurred for each sample.

NOTE: The above results were obtained using the designated test methods, which indicates compliance with the performance requirements of the referenced specifications. This report does not constitute certification of the specimens tested.

STATEMENT OF INDEPENDENCE

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Dr. Nasreen K. Ali
Vice President

Ivonne Ghia, P.E.
Resident Engineer

01/23/06

HURRICANE ENGINEERING & TESTING, INC.

Computer Controlled Product Testing & Design,
.....Wind Load Analysis

ASTM E 72-05 Strength Test of Panels for Building Construction Transverse Load Test – Horizontal Specimen

December 15, 2005

REPORT NUMBER: **HETI-05-2033**

MANUFACTURER: Elite Aluminum Corporation.
4650 Lyons Technology Parkway, Coconut Creek, FL. 33073.

TEST LOCATION: Hurricane Engineering & Testing, Inc.
6120 NW 97th Avenue, Miami, Florida 33178

FBPE Certificate of Authorization Number: 6905

LAB. CERTIFICATION No.: 04-0816.01 (MIAMI-DADE COUNTY, FLORIDA)

FBC ORGANIZATION No: TST1691

PRODUCT: **6" Thick Sandwich Aluminum-Foam Panel**

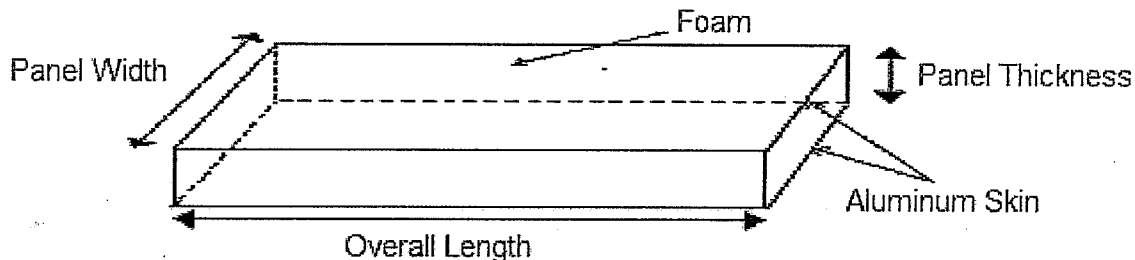
PRODUCT SIZE: 48" wide x 80" long x 6" deep, and ½" OSB TOP and **0.030"** thick Aluminum bottom skin.

DRAWING TITLE: PT-OSB/FM-007 by Elite Aluminum Corporation, dated 1/17/06.

PRODUCT DESCRIPTION: Insulated Foam panel with **0.030"** aluminum skin on both sides
(Reference Material Tensile Test Report No. HETI-06-T516)

TEST WITNESSED BY: Syed Waqar Ali, Ph. D. (HETI)
Dr. Nasreen K. Ali, E.I. (HETI)

WITNESSING ENGINEER: Mrs. Ivonne Ghia, P.E. (HETI)

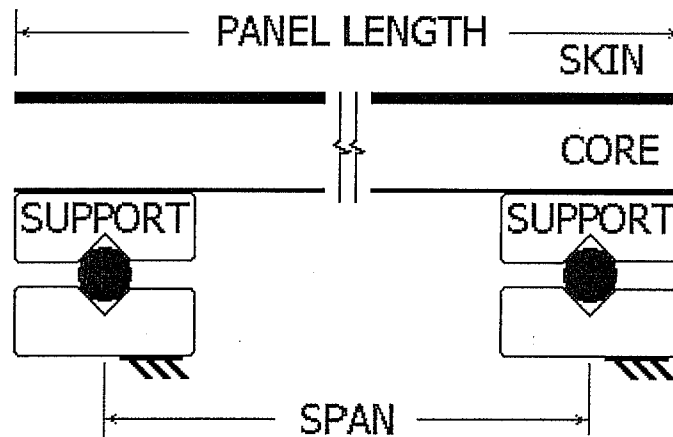


Product Description

- Each sample consisted of an upper layer of ½" **Oriented Strand Board (OSB)** and lower aluminum facing and a core. The aluminum weight was 0.408 lbs per squared foot. The measurement was performed with a 0.0125 lbs accuracy scale on a 1 squared foot sheet paint was removed. The paint thickness was 0.75 MIL.
- Actual panel width: 48"
- Nominal panel width 48"
- Span: 76"
- Panel length 80"
- Panel depth 6"
- Top or Upper Facing: ½" ADVANTECH OSB by HUBER
- Bottom or Lower Facing: 0.032" nominal (0.027" actual without paint and embossed) baked enamel finish 3105H154 Aluminum
- Core density: 0.91 lbs/ft³
- Core composition Expanded Polystyrene (EPS).
- Core thickness: 5.50" (prior to fabrication)
- Edge construction: roll formed.
- Additional reinforcement: none.
- Adhesive ISOGRIP SP 2020 by Ashland Specialty

Test Procedure

- Symmetrical Assembly.
- Apparatus: Tested as per ASTM E 72 - 05 Section 11.3.1.1 Uniformly distributed loading by vacuum pump acting below the specimen, a 2 mil plastic sheathing above the specimen and an airtight chamber as per section 11.3.1.3 of ASTM E 72 - 05. The pressure was read with a water column manometer and a pressure transducer.
- Supports: The samples were supported by rollers as per diagram below:



Long side profile

- Deflection Gage: The deflection was measured using linear variable differential transformers (LVDT).

Test Results

Sample I

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	100	0.43	0.000	100	300
Load	125	0.47	0.000	100	300
Load	150	0.57	0.012	98	300
Load	175	0.66	0.012	98	300
Load	200	0.87	0.104	88	300
Load	225	0.97	0.069	93	300
Load	250	1.21	0.185	85	300
Load	275	1.49	0.289	81	300
Load	300	1.78	0.381	79	300
Failure Load	Test stopped after recovery was less than 80%.				

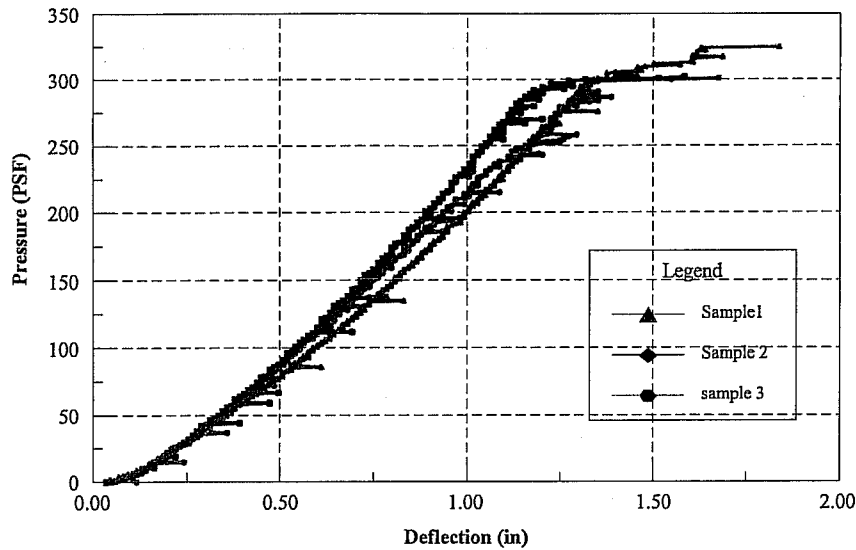
Sample II

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	100	0.43	0.000	100	300
Load	125	0.48	0.000	100	300
Load	150	0.56	0.000	100	300
Load	175	0.66	0.023	97	300
Load	200	0.81	0.058	93	300
Load	225	0.97	0.116	88	300
Load	250	1.13	0.127	89	300
Load	275	1.38	0.243	82	300
Load	300	1.64	0.370	77	300
Failure Load	Test stopped after recovery was less than 80%.				

Sample III

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	100	0.41	0.000	100	300
Load	125	0.45	0.000	100	300
Load	150	0.53	0.000	100	300
Load	175	0.64	0.023	96	300
Load	200	0.76	0.046	94	300
Load	225	0.92	0.092	90	300
Load	250	1.10	0.139	87	300
Load	275	1.39	0.243	82	300
Load	300	1.63	0.312	81	300
Load	325	1.92	0.486	75	300
Failure Load	Test stopped after recovery was less than 80%.				

Sample 1-3 Load Deflection Comparison Graph



Conclusion

The samples were tested as in accordance with ASTM E 72-05. The Comparison Graph reflects the last test run where failure occurred for each sample.

NOTE: The above results were obtained using the designated test methods, which indicates compliance with the performance requirements of the referenced specifications. This report does not constitute certification of the specimens tested.

STATEMENT OF INDEPENDENCE

The Hurricane Engineering & Testing, Inc., does not have, nor does it intend to acquire or will acquire, a financial interest in any company manufacturing or distributing products tested or labeled by the Hurricane Engineering & Testing, Inc. Hurricane Engineering & Testing, Inc., is not owned, operated or controlled by any company manufacturing or distributing products it tests or labels.

Dr. Nasreen K. Ali
Vice President

Ivonne Ghia, P.E.
Resident Engineer

01/23/06

HURRICANE ENGINEERING & TESTING, INC.

Computer Controlled Product Testing & Design,
.....Wind Load Analysis

ASTM E 72-05 Strength Test of Panels for Building Construction Transverse Load-Horizontal Specimen & Concentrated Load Test

December 15, 2005

REPORT NUMBER: **HETI-05-2025**

MANUFACTURER: Elite Aluminum Corporation.
4650 Lyons Technology Parkway, Coconut Creek, FL. 33073.

TEST LOCATION: Hurricane Engineering & Testing, Inc.
6120 NW 97th Avenue, Miami, Florida 33178

FBPE Certificate of Authorization Number: 6905

LAB. CERTIFICATION No.: 04-0816.01 (MIAMI-DADE COUNTY, FLORIDA)

FBC ORGANIZATION No: TST1691

PRODUCT: **6" Thick Sandwich Aluminum-Foam Panel**

PRODUCT SIZE: 48" wide x 288" long x 6" deep, and ½" OSB TOP and **0.030"** thick
Aluminum bottom skin.

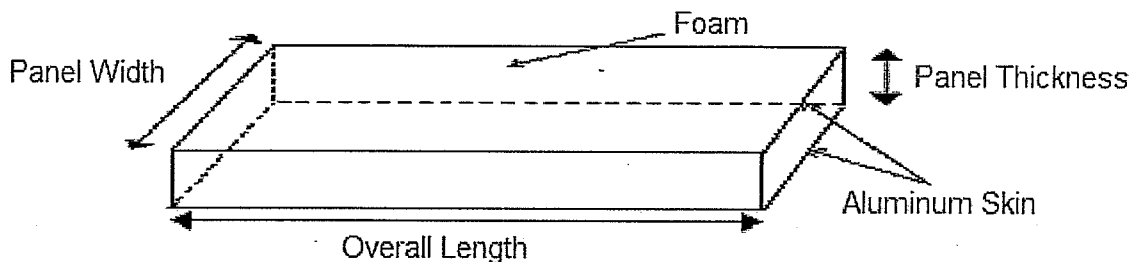
DRAWING TITLE: PT-OSB/FM-008 by Elite Aluminum Corporation , dated 1/17/06.

PRODUCT DESCRIPTION: Insulated Foam panel with **0.030"** aluminum skin on both sides
(Reference Material Tensile Test Report No. HETI-06-T516)

TEST WITNESSED BY: Syed Waqar Ali, Ph. D. (HETI)

Dr. Nasreen K. Ali, E.I. (HETI)

WITNESSING ENGINEER: Mrs. Ivonne Ghia, P.E. (HETI)

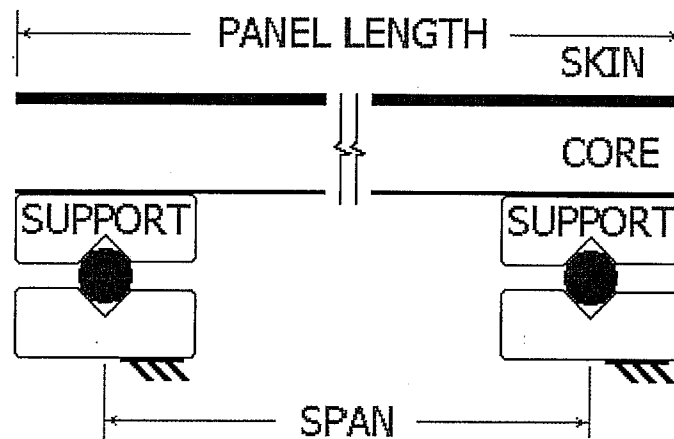


Product Description

- Each sample consisted of an upper layer of ½" **Oriented Strand Board (OSB)** and lower **aluminum facing** and a **core**. The aluminum weight was 0.408 lbs per squared foot. The measurement was performed with a 0.0125 lbs accuracy scale on a 1 squared foot sheet paint was removed. The paint thickness was 0.75 MIL.
- Actual panel width: 48"
- Nominal panel width 48"
- Span: 284"
- Panel length 288"
- Panel depth 6"
- Top or Upper Facing: ½" ADVANTECH OSB by HUBER
- Bottom or Lower Facing: 0.032" nominal (0.027" actual without paint and embossed) baked enamel finish 3105H154 Aluminum
- Core density: 0.91 lbs/ft³
- Core composition Expanded Polystyrene (EPS).
- Core thickness: 5.50" (prior to fabrication)
- Edge construction: roll formed
- Additional reinforcement: none.
- Adhesive ISOGRIP SP 2020 by Ashland Specialty

Test Procedure

- Symmetrical Assembly.
- Apparatus: Tested as per ASTM E 72 - 05 Section 11.3.1.1 Uniformly distributed loading by vacuum pump acting below the specimen, a 2 mil plastic sheathing above the specimen and an airtight chamber as per section 11.3.1.3 of ASTM E 72 - 05. The pressure was read with a water column manometer and a pressure transducer.
- Supports: The samples were supported by rollers as per diagram below:



Long side profile

- Deflection Gage: The deflection was measured using linear variable differential transformers (LVDT).

Test Results

Sample I

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	10	1.26	0.000	100	300
Load	20	2.36	0.032	99	300
Load	30	3.07	0.029	99	300
Load	40	3.55	0.035	99	300
Load	50	4.12	0.447	89	300
Failure Load	Failed at 50 psf, Left end shear failure				

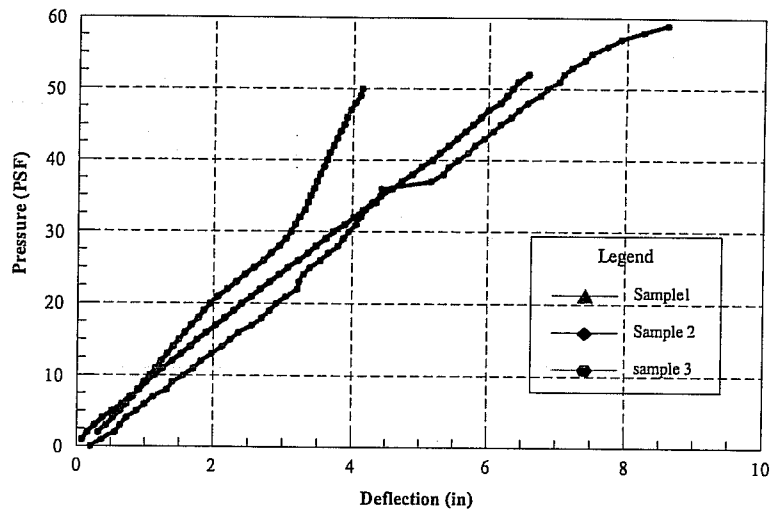
Sample II

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	10	1.22	0.026	98	300
Load	20	2.50	0.052	98	300
Load	30	3.88	0.101	97	300
Load	40	5.16	0.305	94	300
Load	50	6.32	0.61	90	300
Load	60	9.00	3.000	66	300
Failure Load	Test stopped after recovery was less than 80%.				

Sample III

	Pressure (psf)	AVG Center Deflection (inches)	Set (inches)	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.000	100	300
Load	10	1.28	0.023	98	300
Load	20	2.63	0.046	98	300
Load	30	4.01	0.069	98	300
Load	40	4.95	0.150	97	300
Load	50	7.62	0.950	87	300
Load	60	9.02	1.410	84	300
Failure Load	Test stopped after exceeding 1.5* (L/80) Deflection Criteria				

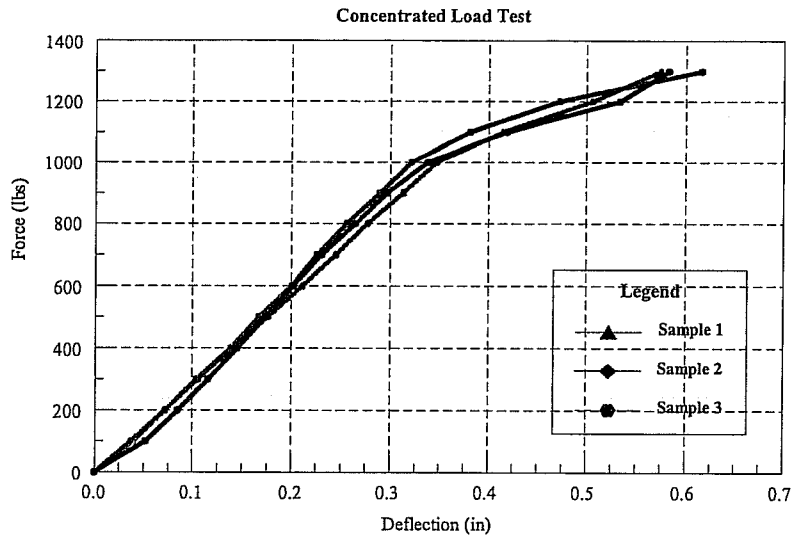
Sample 1-3 Load Deflection Comparison Graph



Concentrated Load Test

Force (lbs)	Sample 1 Deflection (in)	Sample 2 Deflection (in)	Sample 3 Deflection (in)	Duration (Sec)
0.0	0.000	0.000	0.000	0
100	0.039	0.052	0.037	60
200	0.072	0.085	0.072	60
300	0.104	0.116	0.106	60
400	0.139	0.146	0.140	60
500	0.167	0.174	0.177	60
600	0.200	0.202	0.211	60
700	0.226	0.231	0.245	60
800	0.256	0.265	0.277	60
900	0.289	0.297	0.313	60
1000	0.321	0.338	0.347	60
1100	0.381	0.419	0.415	60
1200	0.472	0.534	0.506	60
1300	0.616	0.583	0.575	60
Failure Load	Failed at 1298	Failed at 1290	Failed at 1300	

Note: Failed status indicates that 1" diameter round bar used to apply concentrated load ruptured and penetrated the OSB board. Reference Group 05-2050.



Conclusion

The samples were tested as in accordance with ASTM E 72-05. The Comparison Graph reflects the last test run where failure occurred for each sample.

NOTE: The above results were obtained using the designated test methods, which indicates compliance with the performance requirements of the referenced specifications. This report does not constitute certification of the specimens tested.

STATEMENT OF INDEPENDENCE

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Dr. Nasreen K. Ali
Vice President

Ivonne Ghia, P.E.
Resident Engineer

01/23/06

ENGINEERING EXPRESS® (EX) PRODUCT EVALUATION REPORT

August 16, 2023

Application Number: FL 7621.1
EX Project Number: 23-59945

Product Manufacturer: Elite Aluminum Corporation
Manufacturer Address: 4650 Lyons Technology Parkway
Coconut Creek, FL 33073

Product Name & Description: EPS Foam Core Composite Roof Panels
OBS / Aluminum Skin

Scope of Evaluation:

This Product Evaluation Report is being issued in accordance with the requirements of the Florida Department of Business and Professional Regulation (Florida Building Commission) Rule Chapter 61G20-3.005, F.A.C., for statewide acceptance per Method 2 (b). The product noted above has been tested and/or evaluated as summarized herein to show compliance with standard ASCE 7-22 (ASD) and the Florida Building Code Eighth Edition (2023) and is, for the purpose intended, at least equivalent to that required by the Standard and Code. Re-evaluation of this product shall be required following pertinent Florida Building Code or ASCE Standard modifications or revisions.

Substantiating Data:

- **PRODUCT EVALUATION DOCUMENTS**

EX Performance Evaluation document # 23-59945 titled "EPS Foam Core Composite Roof Panels", prepared by Engineering Express, Inc., signed & sealed by Frank Bennardo, P.E. is an integral part of this Evaluation Report, pages 1 through 2.

- **TEST REPORTS**

The product has been tested per the following:

Uniform static structural performance has been tested in accordance with the above-referenced Florida Building Code per test standard ASTM E72-05 as evidenced in test report(s) #HETI -05-2035, #HETI -05-2028, #HETI -05-2034, #HETI -05-2027, #HETI -05-2032, #HETI -05-2026, #HETI -05-2033, #HETI -05-2025 by Hurricane Engineering & Testing, Inc. (HETI) (signed by Ivonne Ghia, P.E.).

Metal tensile capacity has been determined in accordance with ASTM E8-01 test standard per test report(s) #HETI-05-T337 & #HETI-05-T338 by Hurricane Engineering & Testing, Inc. (HETI) (signed by Ivonne Ghia, P.E.).

Elite Aluminum Corporation – EPS Foam Core Composite Roof Panels

- **STRUCTURAL ENGINEERING CALCULATIONS**

Structural engineering calculations have been prepared which evaluate the product based on comparative and/or rational analysis to qualify the following design criteria:

1. Maximum Allowable Size/Pressure Combinations.

Impact Resistance:

Large & Small Missile Impact Resistance has NOT been demonstrated as evidenced in previously listed test reports, and is accounted for in the engineering design of this product.

Wind Load Resistance:

This product has been designed to resist wind loads as indicated on its respective Performance Evaluation document (i.e. engineering document).

Installation:

The product listed above shall be installed in strict compliance with the Performance Evaluation document (i.e. engineering document), along with all components noted therein.

The product components shall be of the material specified in the Performance Evaluation document (i.e. engineering document).

Limitations & Conditions of Use:

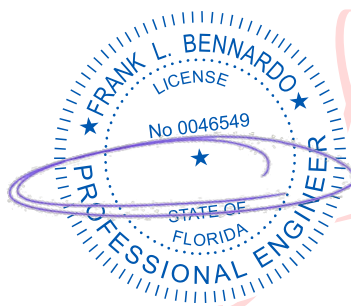
Use of each product shall be in strict accordance with its respective Performance Evaluation document (i.e. engineering document) as noted herein.

All supporting host structures shall be designed to resist all superimposed loads and shall be of a material listed in each product's respective anchor schedule. Host structure conditions which are not accounted for in each product's respective anchor schedule shall be designed for on a site-specific basis by a registered professional engineer.

All components which are permanently installed shall be protected against corrosion, contamination, and other such damage at all times. Any alteration to the respective Performance Evaluation document will invalidate it. This product has NOT been designed for use within the High Velocity Hurricane Zone (HVHZ), only outside the HVHZ.

Respectfully,

Frank Bennardo, P.E.
ENGINEERING EXPRESS®
#PE0046549 | Cert. Auth. 9885



Digitally signed
by Frank
Bennardo
Date: 2023.08.21
13:01:29 -04'00'