

1 Table of Contents

1	Table of Contents.....	1
2	Preface.....	2
3	Introduction	3
4	Materials and Methods.....	3
4.1.	Sample Selection	3
4.2.	Test Procedures.....	3
4.2.1.	Conditioning	3
4.2.2.	Axial Compressive Load.....	4
4.2.3.	Transverse Load	4
4.2.4.	Racking Load	5
5	Test Results	6
6	Conclusion	7
	Appendix A: Structural Test Data	21 pages
	Appendix B: Photographs	3 pages

2 Preface

All services undertaken are subject to the following general policy:

- 1) This report is for the exclusive use of Intertek Testing Services NA Ltd.'s (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.
- 2) Only the client is authorized to copy or distribute this report and then only in its entirety. Intertek must first approve any use of the Intertek's name or one of its marks for the sale or advertisement of the tested material, product or service in writing.
- 3) The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product or service is or has ever been under an Intertek certification program.

3 Introduction

Intertek Testing Services NA Ltd. (Intertek) personnel have conducted a testing evaluation for PFK Developments Inc. on a wall panel system. The evaluation was carried out in accordance with ASTM E72-02 "*Standard Test Methods of Conducting Strength Tests of Panels for Building Construction*". This evaluation was completed in the month of January 2006.

4 Materials and Methods

4.1. SAMPLE SELECTION

PFK Developments Inc. submitted four crates of Steel and Wood Framed MagBoard™ panels to our facility on November 8, 2005. The panels were identified as follows:

- A 4 ft by 8 ft frame made from 3-5/8 in. by 1-5/8 in. leg galvanized steel studs at 16 in. on centre. A top and bottom track of 3-5/8 in. x 2 in. leg 20 ga galvanized steel attaches to the studs by using one ½ in. wafer screw [gripper brand] on interior and one ½ in. wafer screw on exterior of each stud connection at top and bottom. Magboard (12 mm) is attached to the exterior using #8 1-1/4 in. Robertson galvanized screw on the field spacing every 8 in. and on the perimeter spacing every 6 in. Magboard (12 mm) is attached to the interior using #8 1-1/4 in. Robertson galvanized screw on the field spacing every 12 in. and on the perimeter spacing every 8 in.
- A 4 ft by 8 ft frame made from 2 in. by 6 in. spruce wood studs at 16 in. on centre. Top and bottom plates attaches at each stud connecting using three 4 in. ardox nails. A second top plate attaches at 16 in. centers using two 4 in. ardox nails. Magboard (12 mm) is attached to the exterior using #8 1-1/4 in. Robertson galvanized screw on the field spacing every 8 in. and on the perimeter spacing every 6 in. Magboard (12 mm) is attached to the interior using #8 1-1/4 in. Robertson galvanized screw on the field spacing every 12 in. and on the perimeter spacing every 8 in.

4.2. TEST PROCEDURES

4.2.1. Conditioning

Before testing, prepared specimens were held in standard laboratory conditions for at least 40 hours at a temperature of $23 \pm 2^{\circ}\text{C}$ and relative humidity of $50 \pm 5\%$.

4.2.2. Axial Compressive Load

Three walls of each configuration were loaded in increments to failure in accordance with ASTM E72-02, Section 9. An axial force was applied to the walls uniformly along a line parallel to the inside face, and one-third the thickness of the product from the inside face. The axial force was created using a hydraulic ram assembly, and measured using a pressure gauge calibrated to calculate load (lbs) exerted on the specimen. To measure compression, four brackets supporting four metal rods were attached to the sample near the upper end. Four corresponding brackets were also attached to the system near the lower end of the panels in the same orientation. A deflection gauge was then mounted on each of the lower brackets to monitor movement of the rod, and hence shortening of the specimen. To measure lateral movement, a fine wire was attached to a clamp near the upper end on each vertical edge of the specimen. The free ends were attached to stretched rubber bands connected to clamps near the lower end. A mirror and paper scale then monitored the movement of the specimen at midheight. The deflection readings were recorded for each test to establish deformation and set characteristics for compressive and lateral movement. The walls were loaded at a rate to achieve the incremental loads between 10 seconds and 5 minutes. The incremental test loads were held for five minutes before the load was released.

4.2.3. Transverse Load

A steel reaction frame capable of supporting two separate wall panels was used for testing. The inside length and width of the frame was slightly larger than the wall systems to allow for free downward movement during testing. Walls were erected vertically in the chamber and rested on a bottom roller to eliminate friction from the bottom edge. The walls were simply supported at each end on 5 in. diameter steel rollers. The walls were instrumented with deflection gauges to monitor deformation during loading. The deflection gauges were located at the centre of each inner stud, and one gauge at centre point on the panel. In addition, deflection gauges were positioned in the middle of the panel at the panel to roller contact point. All deflection measurements were made from a reference point independent of the test specimens.

The test specimens were loaded using the chamber method as specified in ASTM E72-02, Section 12.3.2. The chamber method was accomplished by sealing the outer side of the wall to the frame, and then reducing the air pressure behind the panels. The test setup and loading procedure for the panels are represented in Figure 1.

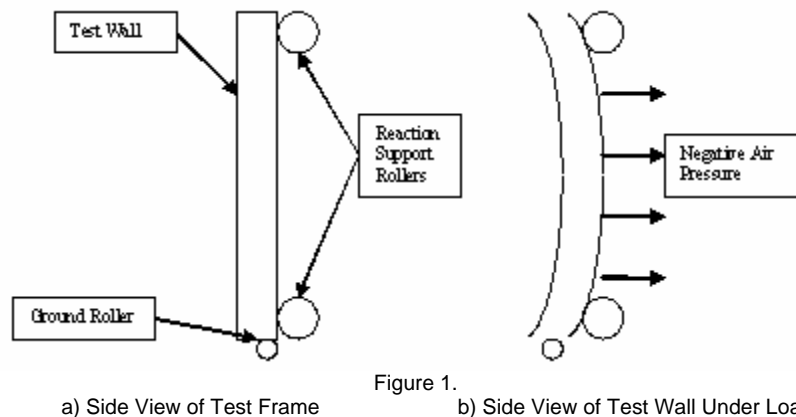


Figure 1.

A minimum of six deflection readings were recorded at predefined loads in order to establish deformation and set characteristics and a stiffness value (EI) for the walls. The predefined loads were achieved within a period of between 10 seconds and 5 minutes. The loads were held for five minutes or until equilibrium was reached. Equilibrium was defined as no deflection changes before the load was released.

For loading to ultimate capacity of the wall systems the incremental loads were applied at a rate between 10 seconds and 5 minutes. The incremental test loads were held for one minute. A visual examination of the samples was made after each test to determine the failure mode.

4.2.4. Racking Load

Three walls of each configuration were loaded in increments to failure as per ASTM E 72-02, Section 14. A minimum of six deflection readings were recorded at predefined loads in order to establish deformation and set characteristics for the walls. The predefined loads were achieved within a period of between 10 seconds and 5 minutes. The loads were held for five minutes or until equilibrium was reached. Equilibrium was defined as no deflection changes before the load was released.

Deflection gauges were located to monitor base slip, uplift, top plate horizontal displacement, and vertical displacement. Racking loads were applied parallel to and at the top centre of the panel. The racking loads were accomplished using a hydraulic ram assembly and monitored using a load cell. The loads were held for five minutes or until equilibrium was reached. Equilibrium was defined as no deflection changes before the load was released.

5 Test Results

The test results are summarized in Table 1 and 2 below in which no safety factors have been applied. A comprehensive set of test data is included in Appendix A.

Table 1. Steel Frame MagBoard™		
Property	Test Result	
	Mean	Coefficient of Variation %
Axial Compressive Load <ul style="list-style-type: none"> Ultimate Load, kN/m-width (lbf/ft-width) 	194.6 (13,330)	5.4
Transverse Load <ul style="list-style-type: none"> Stiffness, kN.m² (lb.ft²) Ultimate Load, kPa (psf) 	176.6 (427,250) 8.363 (175)	2.3 4.0
Racking Load <ul style="list-style-type: none"> Ultimate Load, kN/m-width (lbf/ft-width) 	11.55 (792)	7.9


Table 2. Wood Frame MagBoard™		
Property	Test Result	
	Mean	Coefficient of Variation %
Axial Compressive Load <ul style="list-style-type: none"> Ultimate Load, kN/m-width (lbf/ft-width) 	304.0 (20,830)	6.9
Transverse Load <ul style="list-style-type: none"> Stiffness, kN.m² (lb.ft²) Ultimate Load, kPa (psf) 	370.5 (896,620) 12.61 (263)	6.4 8.8
Racking Load <ul style="list-style-type: none"> Ultimate Load, kN/m-width (lbf/ft-width) 	14.47 (992)	12.4

6 Conclusion

The PFK Developments Inc. MagBoard™ wall systems identified and evaluated in this report have been tested in accordance with ASTM E72-02 "Standard Test Methods of Conducting Strength Tests of Panels for Building Construction". The product has shown structural properties as presented in Section 5 of this report. No safety factors have been applied to the data in this report.

INTERTEK TESTING SERVICES NA LTD.

Tested by: 
Kevin Penner
Technician, Construction Products

Reported by:  FOR
Craig Lawson, NZCE (Mech)
Manager, Construction Products

Reviewed by: 
Chris Bowness, P. Eng.
Manager, Engineering Services

cr1/ahvs

Appendix A: Structural Test Data (21 pages)

Test: **Axial, Transverse, and Racking Load**

Date: 31-Jan-06

Project: 3088432

Eng/Tech:

Kevin Penner

Client: PFK Developments Inc.

Product: Steel Frame MagBoard Panel

Method: ASTM E72-02 Conducting Strength Tests of Panels for Building Construction

Axial

Specimen	Ultimate Load (lbf/ft-width)	Ultimate Load (kN/m-width)	Lateral Stiffness (lbf/ft-width/ft)	Lateral Stiffness (kN/m-width/m)	Compressive Stiffness (lbf/ft-width/ft)	Compressive Stiffness (kN/m-width/m)	Failure Mode
1	13,750	200.7	1,069,213	51,194	1,800,158	86,192	Buckling of the panel
2	13,750	200.7	919,136	44,008	1,249,712	59,837	Buckling of the panel
3	12,500	182.4	980,283	46,936	1,650,092	79,007	Buckling of the panel
Mean:	13,333	194.6	989,544	47,380	1,566,654	75,012	4756.09638
COV %:	5.4	5.4	7.6	7.6	18.2	18.2	

Transverse

Specimen	Ultimate Load (psf)	Ultimate Load (kPa)	Stiffness (EI) (lbf.ft ²)	Stiffness (EI) (kN.m ²)	Failure Mode
1	177	8.475	423,079	174.8	Buckling of the panel at steel stud access ports
2	177	8.475	446,154	184.4	Buckling of the panel at steel stud access ports
3	170	8.140	412,511	170.5	Buckling of the panel at steel stud access ports
Mean:	175	8.363	427,248	176.6	
COV %:	2.3	2.3	4.0	4.0	

Racking

Specimen	Ultimate Load (lbf/ft-width)	Ultimate Load (kN/m-width)	Failure Mode
1	800	11.68	Stud collapsed at toe of panel
2	850	12.40	Stud collapsed at toe of panel
3	725	10.58	Stud collapsed at toe of panel
Mean:	792	11.55	
COV %:	7.9	7.9	

Test: Axial, Transverse, and Racking Load

Date: 31-Jan-06

Project: 3088432

Eng/Tech:

Kevin Penner

Client: PFK Developments Inc.

Product: Wood Frame MagBoard Panel

Method: ASTM E72-02 Conducting Strength Tests of Panels for Building Construction

Axial

Specimen	Ultimate Load (lbf/ft-width)	Ultimate Load (kN/m-width)	Lateral Stiffness (lbf/ft-width/ft)	Lateral Stiffness (kN/m-width/m)	Compressive Stiffness (lbf/ft-width/ft)	Compressive Stiffness (kN/m-width/m)	Failure Mode
1	20,000	291.9	940,365	45,025	1,501,973	71,915	Buckling of the sheathing
2	22,500	328.4	1,422,722	68,120	1,843,234	88,255	Buckling of the sheathing
3	20,000	291.9	1,637,213	78,390	1,802,589	86,308	Buckling of the sheathing
Mean:	20,833	304.0	1,333,4333	63,845	1,715,932	82,159	
COV %:	6.9	6.9	26.8	26.8	10.9	10.9	

Transverse

Specimen	Ultimate Load (psf)	Ultimate Load (kPa)	Stiffness (EI) (lbf.ft ²)	Stiffness (EI) (kN.m ²)	Failure Mode
1	250	11.97	865,720	357.8	Sheathing
2	250	11.97	962,789	397.9	Sheathing
3	290	13.89	861,335	355.9	Sheathing
Mean:	263	12.61	896,615	370.5	
COV %:	8.8	8.8	6.4	6.4	

Racking

Specimen	Ultimate Load (lbf/ft-width)	Ultimate Load (kN/m-width)	Failure Mode
1	1,050	15.32	Sheathing
2	1,075	15.69	Sheathing
3	850	12.40	Sheathing
Mean:	992	14.47	
COV %:	12.4	12.4	

Test: **Axial, Transverse, and Racking Load**

Date: 31-Jan-06

Project: 3088432

Eng/Tech: Kevin Penner

Client: PFK Developments Inc.

Method: ASTM E72-02 Conducting Strength Tests of
Panels for Building Construction

Equipment:

Asset No.	Item
D 2727	Mitutoyo dial gauge
D 2729	Mitutoyo dial gauge
D 2728	Mitutoyo dial gauge
D 2725	Mitutoyo dial gauge
GBC-0211271	50k Load Cell
P 52626	Mitutoyo caliper
D 2735	50k Load Cell
P 52728	500k Load Cell
P 51346	Pressure Gauge

Test: Axial Load - Test 1

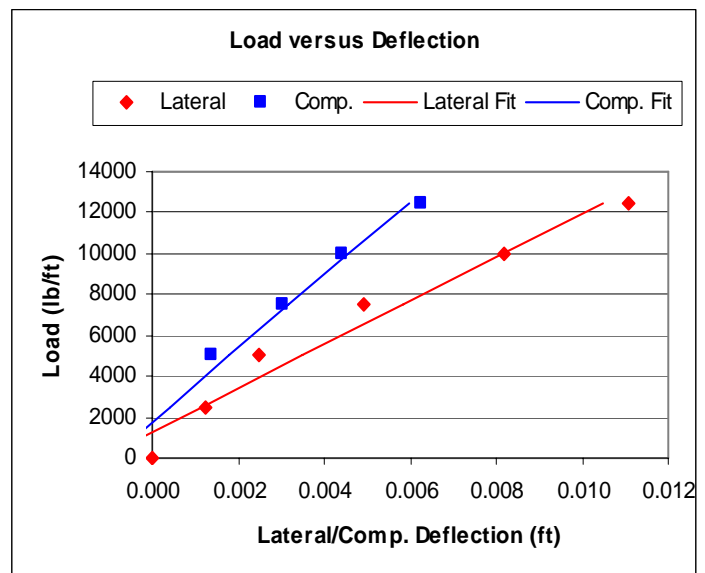
Date: 9-Jan-06 Project: 3088432 Eng/Tech: Kevin Penner
 Client: PFK Developments Inc. Adam Mantei
 Product: Steel Frame MagBoard Panel
 Height (ft): 8.00 Width (ft): 4.00 Depth (in): 4.6 Span (ft): 7.42
 Method: ASTM E72-02 Conducting Strength Tests of Panels for Building Construction

Load (lb)	Reading (min)	Lateral 1 (in.)	Lateral 2 (in.)	Comp. 3 (in.)	Comp. 4 (in.)	Comp. 5 (in.)	Comp. 6 (in.)	Lateral Net (in.)	Comp. Net (in.)
0	5 min	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10,000	initial	-0.010	0.039	0.073	-0.004	0.031	-0.105	0.015	-0.001
10,000	5 min	-0.010	0.039	0.074	-0.004	0.032	-0.104	0.015	-0.001
0	initial	0.020	-0.039	0.001	0.000	0.003	-0.091	-0.010	-0.024
0	5 min	0.020	-0.039	0.006	0.000	0.003	-0.091	-0.010	-0.022
20,000	initial	0.049	0.010	0.080	0.027	0.037	-0.085	0.030	0.016
20,000	5 min	0.049	0.010	0.080	0.029	0.037	-0.084	0.030	0.017
0	initial	0.049	-0.039	0.014	0.009	0.009	-0.093	0.005	-0.016
0	5 min	0.049	-0.039	0.013	0.009	0.008	-0.093	0.005	-0.017
30,000	initial	0.128	-0.010	0.088	0.007	0.029	-0.054	0.059	0.019
30,000	5 min	0.128	-0.010	0.088	0.072	0.029	-0.053	0.059	0.037
0	initial	0.069	-0.059	0.022	0.012	0.012	-0.094	0.005	-0.013
0	5 min	0.079	-0.020	0.021	0.011	0.012	-0.095	0.030	-0.014
40,000	initial	0.197	0.000	0.102	0.113	0.024	-0.048	0.098	0.052
40,000	5 min	0.197	0.000	0.102	0.118	0.025	-0.049	0.098	0.053
0	initial	0.079	-0.039	0.027	0.016	0.014	-0.096	0.020	-0.011
0	5 min	0.079	-0.039	0.028	0.014	0.014	-0.097	0.020	-0.011
50,000	initial	0.256	0.010	0.120	0.159	0.032	-0.042	0.133	0.073
50,000	5 min	0.256	0.010	0.122	0.163	0.033	-0.040	0.133	0.075
0	initial	0.098	0.000	0.036	0.024	0.015	-0.100	0.049	-0.007
0	5 min	0.098	0.010	0.033	0.021	0.014	-0.101	0.054	-0.009

55,000 ultimate bucking of the panel

Load (lb)	Load (lb/ft)	Lateral Net (ft)	Comp. Net (ft)
0	0	0.0000	-0.0001
10000	2500	0.0012	0.0000
20000	5000	0.0025	0.0014
30000	7500	0.0049	0.0031
40000	10000	0.0082	0.0044
50000	12500	0.0111	0.0062

Lateral Deflection Statistical Analysis		Comp. Deflection Statistical Analysis	
1069213.15	1280.4507	1800158	1766.46
106002.769	644.30921	176397.8	601.32
0.96217157	1017.0404	0.963012	1005.675
101.74057	4	104.1442	4
105237515	4137484.8	1.05E+08	4045526



Test: Axial Load - Test 2

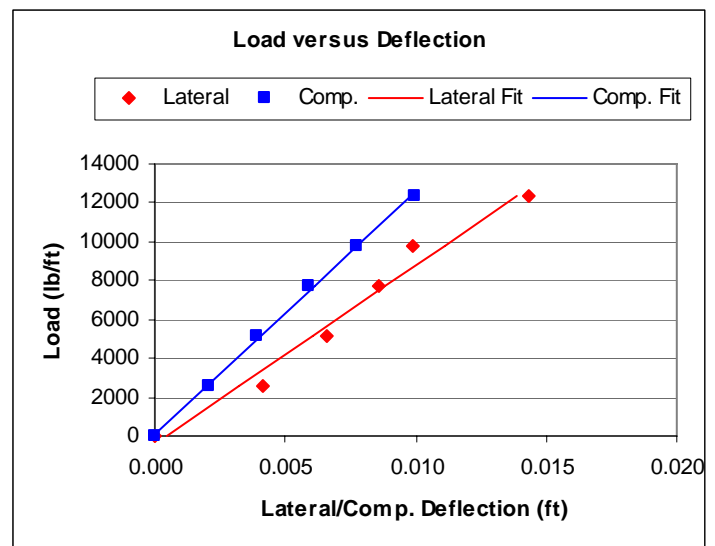
Date: 11-Jan-06 Project: 3088432 Eng/Tech: Kevin Penner
 Client: PFK Developments Inc. Adam Mantei
 Product: Steel Frame MagBoard Panel
 Height (ft): 8.00 Width (ft): 4.00 Depth (in): 4.6 Span (ft): 7.42
 Method: ASTM E72-02 Conducting Strength Tests of Panels for Building Construction

Load (lb)	Reading (min)	Lateral 1 (in.)	Lateral 2 (in.)	Comp. 3 (in.)	Comp. 4 (in.)	Comp. 5 (in.)	Comp. 6 (in.)	Lateral Net (in.)	Comp. Net (in.)
0	5 min	3.150	3.150	0.000	0.000	0.200	0.200	0.000	0.000
10,120	initial	3.219	3.179	0.029	0.038	0.204	0.218	0.049	0.024
10,120	5 min	3.219	3.179	0.031	0.038	0.204	0.219	0.049	0.025
0	initial	3.169	3.159	0.010	0.003	0.205	0.203	0.014	0.006
0	5 min	3.150	3.159	0.010	0.003	0.205	0.203	0.005	0.006
20,460	initial	3.238	3.219	0.062	0.061	0.223	0.222	0.079	0.045
20,460	5 min	3.238	3.219	0.065	0.063	0.224	0.222	0.079	0.047
0	initial	3.169	3.179	0.006	0.009	0.221	0.205	0.024	0.011
0	5 min	3.169	3.179	0.005	0.008	0.221	0.205	0.024	0.011
30,798	initial	3.268	3.238	0.095	0.095	0.243	0.227	0.103	0.070
30,798	5 min	3.268	3.238	0.096	0.096	0.244	0.227	0.103	0.071
0	initial	3.179	3.179	0.009	0.015	0.230	0.206	0.029	0.016
0	5 min	3.179	3.179	0.008	0.014	0.230	0.205	0.029	0.015
39,069	initial	3.268	3.268	0.120	0.126	0.256	0.234	0.118	0.091
39,069	5 min	3.268	3.268	0.123	0.129	0.256	0.237	0.118	0.093
0	initial	3.189	3.189	0.010	0.021	0.234	0.206	0.039	0.019
0	5 min	3.189	3.189	0.010	0.021	0.234	0.206	0.039	0.019
49,407	initial	3.297	3.317	0.063	0.068	0.262	0.241	0.157	0.063
49,407	5 min	3.307	3.337	0.168	0.171	0.262	0.242	0.172	0.119
0	initial	3.189	3.219	0.027	0.034	0.234	0.202	0.054	0.026
0	5 min	3.189	3.209	0.023	0.032	0.234	0.201	0.049	0.024

55,000 ultimate bucking of the panel

Load (lb)	Load (lb/ft)	Lateral Net (ft)	Comp. Net (ft)
0	0	0.0000	0.0000
10120	2530	0.0041	0.0021
20460	5115	0.0066	0.0039
30798	7700	0.0086	0.0059
39069	9767	0.0099	0.0078
49407	12352	0.0144	0.0100

Lateral Deflection Statistical Analysis		Comp. Deflection Statistical Analysis	
919136.095	-423.489	1249712	79.60925
72695.5947	621.1164	21864.84	130.4893
0.97558912	803.8852	0.998777	179.9298
159.861343	4	3266.832	4
103307428	2584926	1.06E+08	129499



Test: Axial Load - Test 3

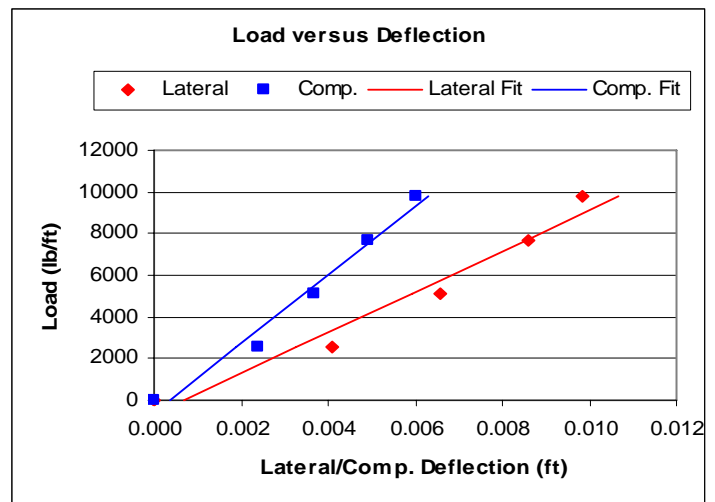
Date: 11-Jan-06 Project: 3088432 Eng/Tech: Kevin Penner
 Client: PFK Developments Inc. Adam Mantei
 Product: Steel Frame MagBoard Panel
 Height (ft): 8.00 Width (ft): 4.00 Depth (in): 4.6 Span (ft): 7.42
 Method: ASTM E72-02 Conducting Strength Tests of Panels for Building Construction

Load (lb)	Reading (min)	Lateral 1 (in.)	Lateral 2 (in.)	Comp. 3 (in.)	Comp. 4 (in.)	Comp. 5 (in.)	Comp. 6 (in.)	Lateral Net (in.)	Comp. Net (in.)
0	5 min	3.150	3.150	0.000	0.000	0.200	0.200	0.000	0.000
10,120	initial	3.219	3.179	0.045	0.052	0.199	0.211	0.049	0.029
10,120	5 min	3.219	3.179	0.045	0.052	0.199	0.211	0.049	0.029
0	initial	3.169	3.159	0.004	0.001	0.202	0.201	0.015	0.002
0	5 min	3.150	3.159	0.004	0.001	0.202	0.201	0.005	0.002
20,460	initial	3.238	3.219	0.068	0.089	0.195	0.210	0.079	0.044
20,460	5 min	3.238	3.219	0.069	0.090	0.195	0.210	0.079	0.044
0	initial	3.169	3.179	0.006	0.005	0.201	0.202	0.025	0.004
0	5 min	3.169	3.179	0.005	0.004	0.202	0.201	0.025	0.003
30,798	initial	3.268	3.238	0.097	0.122	0.196	0.204	0.103	0.059
30,798	5 min	3.268	3.238	0.097	0.123	0.195	0.204	0.103	0.059
0	initial	3.179	3.179	0.009	0.010	0.201	0.200	0.030	0.005
0	5 min	3.179	3.179	0.008	0.009	0.202	0.200	0.030	0.005
39,069	initial	3.268	3.268	0.121	0.148	0.201	0.193	0.118	0.071
39,069	5 min	3.268	3.268	0.124	0.151	0.202	0.192	0.118	0.073
0	initial	3.189	3.189	0.011	0.013	0.202	0.196	0.039	0.006
0	5 min	3.189	3.189	0.009	0.012	0.202	0.196	0.039	0.005

50,000 ultimate bucking of the panel

Load (lb)	Load (lb/ft)	Lateral Net (ft)	Comp. Net (ft)
0	0	0.0000	0.0000
10120	2530	0.0041	0.0024
20460	5115	0.0066	0.0037
30798	7700	0.0086	0.0049
39069	9767	0.0098	0.0060

Lateral Deflection Statistical Analysis		Comp. Deflection Statistical Analysis	
980283.924	-686.324	1650092	-606.504
108498.963	737.3453	144875.3	579.9527
0.9645518	849.8613	0.977397	678.6302
81.630525	3	129.7262	3
58958807.5	2166793	59743983	1381617



Test: Axial Load - Test 4

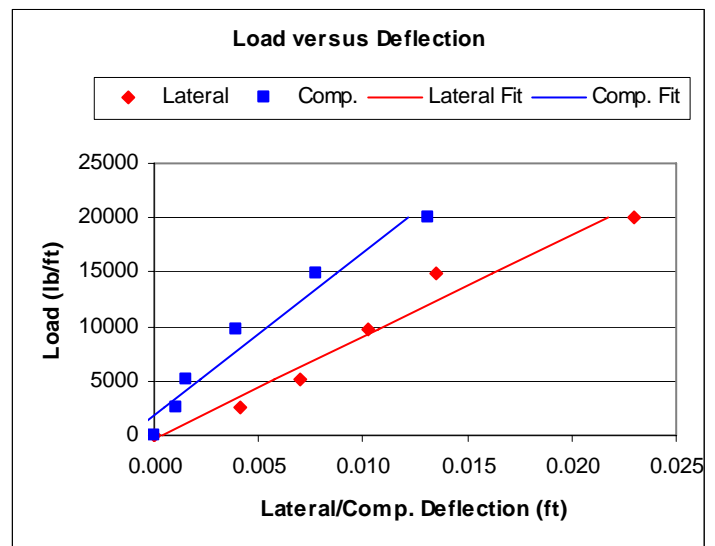
Date: 13-Jan-06 Project: 3088432 Eng/Tech: Kevin Penner
 Client: PFK Developments Inc. Adam Mantei
 Product: Wood Frame MagBoard Panel
 Height (ft): 8.00 Width (ft): 4.00 Depth (in): 6.5 Span (ft): 7.42
 Method: ASTM E72-02 Conducting Strength Tests of Panels for Building Construction

Load (lb)	Reading (min)	Lateral 1 (in.)	Lateral 2 (in.)	Comp. 3 (in.)	Comp. 4 (in.)	Comp. 5 (in.)	Comp. 6 (in.)	Lateral Net (in.)	Comp. Net (in.)
0	5 min	3.150	3.150	0.000	0.000	0.200	0.200	0.000	0.000
10,120	initial	3.199	3.199	0.025	0.037	0.186	0.196	0.049	0.012
10,120	5 min	3.199	3.199	0.024	0.038	0.187	0.197	0.049	0.012
0	initial	3.159	3.159	0.003	0.006	0.197	0.197	0.010	0.001
0	5 min	3.159	3.159	0.002	0.006	0.198	0.197	0.010	0.001
20,460	initial	3.238	3.228	0.038	0.059	0.180	0.193	0.084	0.019
20,460	5 min	3.238	3.228	0.038	0.060	0.180	0.192	0.084	0.019
0	initial	3.169	3.159	0.003	0.010	0.196	0.197	0.015	0.002
0	5 min	3.159	3.169	0.002	0.009	0.196	0.197	0.015	0.001
39,069	initial	3.287	3.248	0.081	0.123	0.173	0.195	0.118	0.046
39,069	5 min	3.297	3.248	0.082	0.125	0.173	0.196	0.123	0.047
0	initial	3.179	3.179	0.005	0.015	0.194	0.197	0.030	0.003
0	5 min	3.169	3.179	0.004	0.014	0.194	0.197	0.025	0.002
59,746	initial	3.346	3.278	0.160	0.202	0.173	0.197	0.162	0.090
59,746	5 min	3.346	3.278	0.168	0.206	0.174	0.198	0.162	0.093
0	initial	3.179	3.179	0.019	0.027	0.193	0.195	0.030	0.009
0	5 min	3.179	3.189	0.015	0.023	0.193	0.194	0.034	0.007
80,421	initial	3.435	3.376	0.270	0.308	0.169	0.189	0.256	0.145
80,421	5 min	3.455	3.396	0.298	0.327	0.171	0.187	0.276	0.157
0	initial	3.199	3.199	0.040	0.046	0.189	0.185	0.049	0.016
0	5 min	3.199	3.199	0.038	0.041	0.190	0.185	0.049	0.015

80,000 ultimate bucking of the sheathing

Load (lb)	Load (lb/ft)	Lateral Net (ft)	Comp. Net (ft)
0	0	0.0000	0.0000
10120	2530	0.0041	0.0010
20460	5115	0.0070	0.0016
39069	9767	0.0103	0.0040
59746	14937	0.0135	0.0078
80421	20105	0.0230	0.0131

Lateral Deflection Statistical Analysis		Comp. Deflection Statistical Analysis	
940364.749	-320.401	1501973	1873.76
89360.2582	1082.899	160164.2	1036.498
0.96513852	1608.093	0.956494	1796.44
110.73983	4	87.94144	4
286369199	10343856	2.84E+08	12908785



Test: Axial Load - Test 5

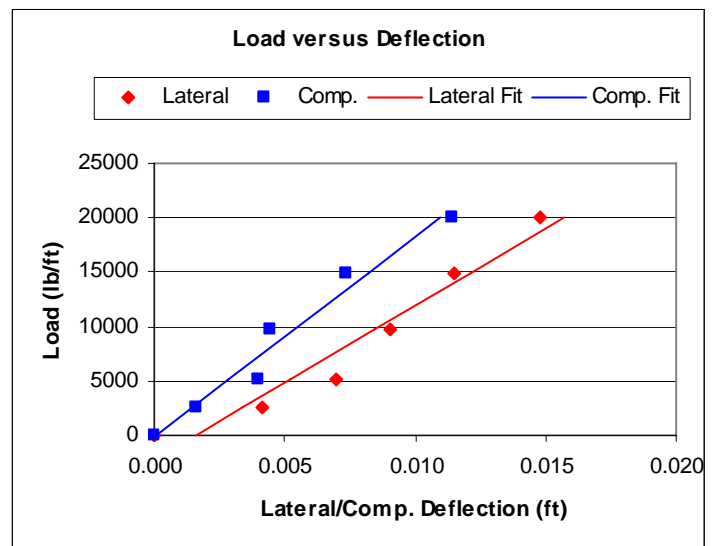
Date: 16-Jan-06 Project: 3088432 Eng/Tech: Kevin Penner
 Client: PFK Developments Inc. Adam Mantei
 Product: Wood Frame MagBoard Panel
 Height (ft): 8.00 Width (ft): 4.00 Depth (in): 6.5 Span (ft): 7.42
 Method: ASTM E72-02 Conducting Strength Tests of Panels for Building Construction

Load (lb)	Reading (min)	Lateral 1 (in.)	Lateral 2 (in.)	Comp. 3 (in.)	Comp. 4 (in.)	Comp. 5 (in.)	Comp. 6 (in.)	Lateral Net (in.)	Comp. Net (in.)
0	5 min	3.150	3.150	0.000	0.000	0.200	0.200	0.000	0.000
10,120	initial	3.228	3.159	-0.003	0.089	0.176	0.208	0.044	0.019
10,120	5 min	3.238	3.159	-0.003	0.092	0.176	0.208	0.049	0.020
0	initial	3.169	3.159	0.000	0.012	0.197	0.202	0.015	0.003
0	5 min	3.169	3.159	0.000	0.011	0.197	0.202	0.015	0.003
20,460	initial	3.278	3.189	0.009	0.015	0.176	0.203	0.084	0.001
20,460	5 min	3.278	3.189	0.011	0.185	0.177	0.203	0.084	0.047
0	initial	3.169	3.159	0.002	0.016	0.197	0.203	0.015	0.005
0	5 min	3.159	3.159	0.001	0.015	0.197	0.203	0.010	0.004
39,069	initial	3.307	3.209	0.039	0.167	0.182	0.202	0.108	0.051
39,069	5 min	3.307	3.209	0.041	0.171	0.183	0.202	0.108	0.053
0	initial	3.169	3.159	0.003	0.022	0.199	0.204	0.015	0.008
0	5 min	3.169	3.159	0.002	0.020	0.199	0.204	0.015	0.007
59,746	initial	3.337	3.238	0.080	0.224	0.197	0.205	0.138	0.083
59,746	5 min	3.337	3.238	0.087	0.235	0.201	0.206	0.138	0.089
0	initial	3.169	3.159	0.006	0.033	0.201	0.206	0.015	0.012
0	5 min	3.169	3.159	0.004	0.030	0.201	0.205	0.015	0.011
80,421	initial	3.396	3.268	0.141	0.302	0.211	0.212	0.182	0.126
80,421	5 min	3.396	3.258	0.156	0.320	0.218	0.214	0.177	0.137
0	initial	3.189	3.159	0.015	0.050	0.204	0.206	0.025	0.020
0	5 min	3.189	3.159	0.012	0.045	0.204	0.206	0.025	0.018

90,000 ultimate bucking of the sheathing

Load (lb)	Load (lb/ft)	Lateral Net (ft)	Comp. Net (ft)
0	0	0.0000	0.0000
10120	2530	0.0041	0.0016
20460	5115	0.0070	0.0040
39069	9767	0.0090	0.0044
59746	14937	0.0115	0.0074
80421	20105	0.0148	0.0114

Lateral Deflection Statistical Analysis		Comp. Deflection Statistical Analysis	
1422722.39	-2246.27	1843234	-114.856
169345.137	1540.721	172739.1	1052.884
0.94636786	1994.577	0.966062	1586.65
70.5821488	4	113.8622	4
280799700	15913355	2.87E+08	10069828



Test: Axial Load - Test 6

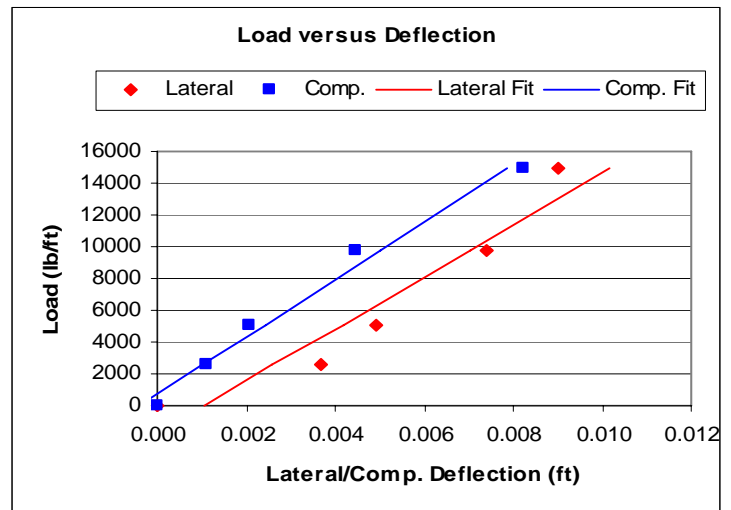
Date: 16-Jan-06 Project: 3088432 Eng/Tech: Kevin Penner
 Client: PFK Developments Inc. Adam Mantei
 Product: Wood Frame MagBoard Panel
 Height (ft): 8.00 Width (ft): 4.00 Depth (in): 4.6 Span (ft): 7.42
 Method: ASTM E72-02 Conducting Strength Tests of Panels for Building Construction

Load (lb)	Reading (min)	Lateral 1 (in.)	Lateral 2 (in.)	Comp. 3 (in.)	Comp. 4 (in.)	Comp. 5 (in.)	Comp. 6 (in.)	Lateral Net (in.)	Comp. Net (in.)
0	5 min	3.150	3.150	0.000	0.000	0.200	0.200	0.000	0.000
10,120	initial	3.219	3.169	-0.001	0.069	0.180	0.200	0.044	0.013
10,120	5 min	3.219	3.169	-0.001	0.071	0.180	0.200	0.044	0.013
0	initial	3.150	3.169	0.000	0.006	0.196	0.198	0.010	0.000
0	5 min	3.150	3.159	0.000	0.005	0.196	0.198	0.005	0.000
20,460	initial	3.228	3.189	0.006	0.103	0.189	0.191	0.059	0.024
20,460	5 min	3.228	3.189	0.007	0.107	0.188	0.190	0.059	0.025
0	initial	3.150	3.159	0.000	0.011	0.193	0.195	0.005	0.000
0	5 min	3.150	3.150	0.000	0.010	0.193	0.195	0.000	-0.001
39,069	initial	3.268	3.199	0.044	0.163	0.195	0.179	0.084	0.049
39,069	5 min	3.268	3.209	0.049	0.174	0.197	0.178	0.089	0.053
0	initial	3.150	3.150	0.003	0.019	0.197	0.191	0.000	0.003
0	5 min	3.150	3.150	0.002	0.016	0.193	0.191	0.000	0.001
59,746	initial	3.258	3.258	0.109	0.241	0.225	0.173	0.108	0.094
59,746	5 min	3.258	3.258	0.115	0.249	0.230	0.173	0.108	0.099
0	initial	3.150	3.150	0.011	0.038	0.193	0.186	0.000	0.008
0	5 min	3.159	3.159	0.009	0.029	0.192	0.187	0.010	0.005

80,000 ultimate bucking of the sheathing

Load (lb)	Load (lb/ft)	Lateral Net (ft)	Comp. Net (ft)
0	0	0.0000	0.0000
10120	2530	0.0037	0.0011
20460	5115	0.0049	0.0021
39069	9767	0.0074	0.0044
59746	14937	0.0090	0.0082

Lateral Deflection Statistical Analysis		Comp. Deflection Statistical Analysis	
1637212.94	-1721.69	1802589	741.9737
281878.973	1661.586	139020.6	600.6924
0.91833475	1964.519	0.982469	910.2072
33.7353309	3	168.126	3
130195995	11578010	1.39E+08	2485432



Test: **Transverse – Test 1**

Date: 27-Jan-06

Project: 3088432

Eng/Tech: Ivo Tanner

Client: PFK Developments Inc.

Adam Mantei

Product: Steel Frame MagBoard Panel

Height (ft): 8.00

Width (ft): 4.00

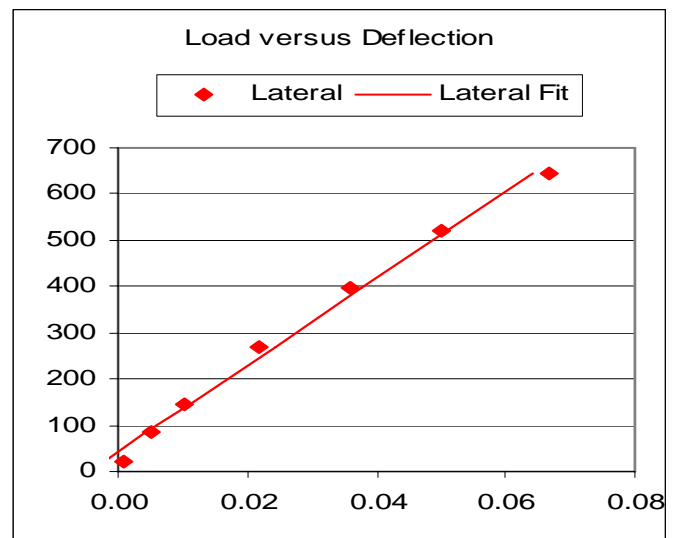
Depth (in): 64.6

Span (ft): 7.67

Method: ASTM E72-02 Conducting Strength Tests of Panels for Building Construction

Load (psf)	Load (in. WC)	Reading (min)	Mid-Span 1 (in.)	Mid-Span 2 (in.)	Mid-Span 3 (in.)	Reaction 4 (in.)	Reaction 5 (in.)	Deflection Net (in.)
5.2	1.0	5 min	0.015	0.015	0.014	0.005	0.002	0.011
20.8	4.0	initial	0.092	0.097	0.094	0.037	0.038	0.057
20.8	4.0	5 min	0.095	0.101	0.097	0.038	0.038	0.060
5.2	1.0	initial	0.018	0.018	0.017	0.006	0.004	0.013
5.2	1.0	5 min	0.016	0.016	0.015	0.005	0.003	0.012
36.4	7.0	initial	0.185	0.198	0.191	0.068	0.072	0.121
36.4	7.0	5 min	0.199	0.208	0.198	0.067	0.095	0.121
5.2	1.0	initial	0.038	0.036	0.032	0.007	0.015	0.024
5.2	1.0	5 min	0.036	0.034	0.031	0.007	0.014	0.023
67.6	13.0	initial	0.377	0.405	0.391	0.115	0.148	0.260
67.6	13.0	5 min	0.379	0.407	0.394	0.116	0.149	0.261
5.2	1.0	initial	0.075	0.073	0.068	0.012	0.036	0.048
5.2	1.0	5 min	0.072	0.071	0.066	0.010	0.035	0.047
98.8	19.0	initial	0.605	0.655	0.635	0.213	0.196	0.427
98.8	19.0	5 min	0.612	0.663	0.642	0.215	0.198	0.433
5.2	1.0	initial	0.131	0.126	0.120	0.046	0.051	0.077
5.2	1.0	5 min	0.130	0.125	0.119	0.045	0.050	0.077
130	25.0	initial	0.813	0.879	0.850	0.274	0.241	0.590
130	25.0	5 min	0.824	0.891	0.860	0.276	0.243	0.599
5.2	1.0	initial	0.179	0.175	0.165	0.060	0.069	0.109
5.2	1.0	5 min	0.170	0.165	0.156	0.056	0.065	0.103
161	31.0	initial	1.061	1.140	1.094	0.338	0.282	0.788
161	31.0	5 min	1.076	1.155	1.107	0.340	0.285	0.800
5.2	1.0	initial	0.237	0.235	0.219	0.070	0.083	0.154
5.2	1.0	5 min	0.221	0.218	0.204	0.064	0.075	0.145
177	34.0	ultimate	buckling of the panel at steel stud access ports					

Load (psf)	Load (lb/ft)	Deflection Net (ft)	Statistical Analysis	
5.2	20.8	0.0009	9404.958	41.55052
20.8	83.2	0.0050	366.1305	13.00721
20.8	83.2	0.0050	0.992479	22.15089
36.4	145.7	0.0101	659.8449	5
67.6	270.5	0.0217	323760.8	2453.31
98.8	395.4	0.0360		
130.1	520.2	0.0499	Stiffness (EI)	
161.3	645.0	0.0667	423079 lb-ft ²	
Deflection	Limiting height (ft)			
Limit (L/x)	5	7.5	10	15
L/120	23.83	20.82	18.92	16.53
L/180	20.82	18.19	16.53	14.44
L/240	18.92	16.53	15.01	13.12
L/360	16.53	14.44	13.12	11.46
Ultimate	37.23	30.40	26.33	21.50

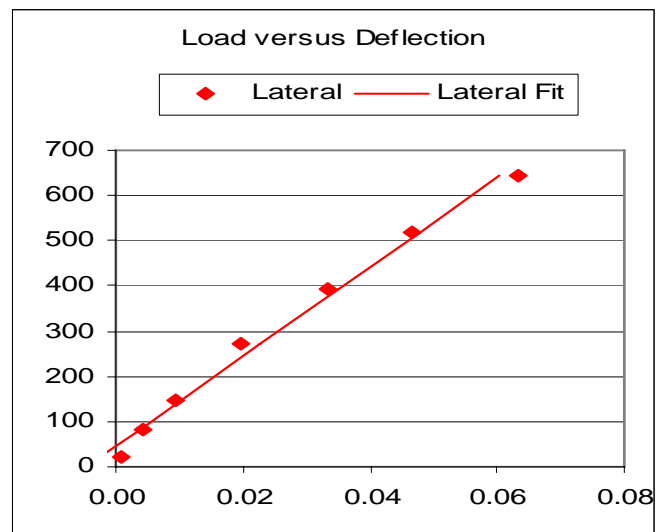


Test: Transverse – Test 2

Date: 27-Jan-06 Project: 3088432 Eng/Tech: Ivo Tanner
 Client: PFK Developments Inc. Adam Mantei
 Product: Steel Frame MagBoard Panel
 Height (ft): 8.00 Width (ft): 4.00 Depth (in): 4.6 Span (ft): 7.67
 Method: ASTM E72-02 Conducting Strength Tests of Panels for Building Construction

Load (psf)	Load (in. WC)	Reading (min)	Mid-Span 1 (in.)	Mid-Span 2 (in.)	Mid-Span 3 (in.)	Reaction 4 (in.)	Reaction 5 (in.)	Deflection Net (in.)
5.2	1.0	5 min	0.015	0.015	0.014	0.010	0.001	0.009
20.8	4.0	initial	0.094	0.097	0.090	0.052	0.031	0.052
20.8	4.0	5 min	0.097	0.100	0.092	0.054	0.032	0.053
5.2	1.0	initial	0.019	0.019	0.017	0.012	0.002	0.011
5.2	1.0	5 min	0.016	0.017	0.015	0.011	0.002	0.010
36.4	7.0	initial	0.178	0.182	0.165	0.084	0.048	0.109
36.4	7.0	5 min	0.180	0.184	0.167	0.084	0.049	0.111
5.2	1.0	initial	0.032	0.032	0.029	0.018	0.001	0.022
5.2	1.0	5 min	0.031	0.030	0.026	0.016	0.000	0.021
67.6	13.0	initial	0.351	0.359	0.326	0.138	0.079	0.237
67.6	13.0	5 min	0.352	0.361	0.328	0.138	0.079	0.239
5.2	1.0	initial	0.060	0.060	0.054	0.030	0.003	0.042
5.2	1.0	5 min	0.058	0.057	0.052	0.028	0.002	0.041
98.8	19.0	initial	0.570	0.594	0.554	0.199	0.153	0.397
98.8	19.0	5 min	0.578	0.601	0.561	0.203	0.155	0.401
5.2	1.0	initial	0.108	0.111	0.109	0.049	0.040	0.065
5.2	1.0	5 min	0.108	0.111	0.108	0.049	0.040	0.065
130	25.0	initial	0.775	0.813	0.768	0.262	0.206	0.551
130	25.0	5 min	0.785	0.825	0.780	0.264	0.209	0.560
5.2	1.0	initial	0.149	0.155	0.156	0.065	0.055	0.093
5.2	1.0	5 min	0.141	0.147	0.149	0.061	0.053	0.089
161	31.0	initial	1.015	1.072	1.018	0.321	0.257	0.746
161	31.0	5 min	1.029	1.088	1.034	0.324	0.260	0.758
5.2	1.0	initial	0.201	0.213	0.214	0.075	0.068	0.138
5.2	1.0	5 min	0.189	0.200	0.201	0.069	0.065	0.130
177	34.0	ultimate	buckling of the panel at steel stud access ports					

Load (psf)	Load (lb/ft)	Deflection Net (ft)	Statistical Analysis	
5.2	20.8	0.0008	9917.89	45.64972
20.8	83.2	0.0044	438.2766	14.62016
36.4	145.7	0.0092	0.99033	25.11716
67.6	270.5	0.0199	512.0849	5
98.8	395.4	0.0334	323059.8	3154.358
130.1	520.2	0.0467	Stiffness (EI)	
161.3	645.0	0.0632	446154 lb-ft ²	
Deflection	Limiting height (ft)			
Limit (L/x)	5	7.5	10	15
L/120	24.26	21.19	19.25	16.82
L/180	21.19	18.51	16.82	14.69
L/240	19.25	16.82	15.28	13.35
L/360	16.82	14.69	13.35	11.66
Ultimate	37.23	30.40	26.33	21.50

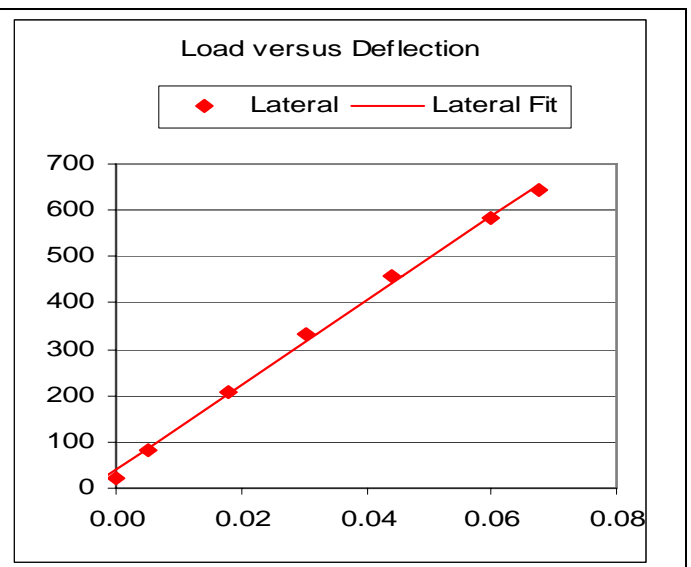


Test: Transverse – Test 3

Date: 30-Jan-06 Project: 3088432 Eng/Tech: Ivo Tanner
 Client: PFK Developments Inc. Adam Mantei
 Product: Steel Frame MagBoard Panel
 Height (ft): 8.00 Width (ft): 4.00 Depth (in): 6.5 Span (ft): 7.67
 Method: ASTM E72-02 Conducting Strength Tests of Panels for Building Construction

Load (psf)	Load (in. WC)	Reading (min)	Mid-Span 1 (in.)	Mid-Span 2 (in.)	Mid-Span 3 (in.)	Reaction 4 (in.)	Reaction 5 (in.)	Deflection Net (in.)	
5.2	1.0	5 min	0.000	0.000	-0.001	0.000	0.001	-0.001	
20.8	4.0	initial	0.094	0.101	0.094	0.031	0.043	0.059	
20.8	4.0	5 min	0.097	0.105	0.097	0.032	0.045	0.061	
5.2	1.0	initial	0.012	0.014	0.013	0.004	0.004	0.009	
5.2	1.0	5 min	0.010	0.012	0.011	0.004	0.004	0.007	
52.0	10.0	initial	0.297	0.317	0.292	0.073	0.108	0.212	
52.0	10.0	5 min	0.301	0.320	0.294	0.074	0.109	0.214	
5.2	1.0	initial	0.039	0.043	0.041	0.007	0.012	0.032	
5.2	1.0	5 min	0.035	0.039	0.037	0.007	0.010	0.029	
83.2	16.0	initial	0.490	0.518	0.479	0.109	0.160	0.361	
83.2	16.0	5 min	0.493	0.521	0.481	0.110	0.161	0.363	
5.2	1.0	initial	0.061	0.067	0.064	0.011	0.018	0.050	
5.2	1.0	5 min	0.056	0.060	0.058	0.009	0.016	0.046	
114.4	22.0	initial	0.687	0.724	0.671	0.150	0.210	0.514	
114.4	22.0	5 min	0.717	0.756	0.701	0.181	0.212	0.528	
5.2	1.0	initial	0.093	0.102	0.099	0.029	0.024	0.072	
5.2	1.0	5 min	0.087	0.095	0.093	0.027	0.023	0.067	
146	28.0	initial	0.952	1.008	0.942	0.245	0.262	0.714	
146	28.0	5 min	0.957	1.015	0.951	0.247	0.263	0.719	
5.2	1.0	initial	0.135	0.151	0.147	0.036	0.033	0.110	
5.2	1.0	5 min	0.127	0.142	0.139	0.034	0.031	0.104	
161	31.0	initial	1.056	1.122	1.056	0.269	0.281	0.803	
161	31.0	5 min	1.065	1.134	1.068	0.271	0.282	0.813	
5.2	1.0	initial	0.160	0.182	0.177	0.039	0.031	0.138	
5.2	1.0	5 min	0.156	0.178	0.174	0.038	0.030	0.135	
170	32.7	ultimate	buckling of the panel at steel stud access ports						

Load (psf)	Load (lb/ft)	Deflection Net (ft)	Statistical Analysis	
			9170.016	38.54139
5.2	20.8	-0.0001	231.3798	9.325875
20.8	83.2	0.0051	0.996827	14.91894
52.0	208.1	0.0178	1570.686	5
83.2	332.9	0.0302	349595.1	1112.874
114.4	457.8	0.0440		
145.7	582.6	0.0599	Stiffness (EI)	
161.3	645.0	0.0677	412511 lb-ft ²	
Deflection	Limiting height (ft)			
Limit (L/x)	5	7.5	10	15
L/120	23.63	20.65	18.76	16.39
L/180	20.65	18.04	16.39	14.31
L/240	18.76	16.39	14.89	13.01
L/360	16.39	14.31	13.01	11.36
Ultimate	36.50	29.80	25.81	21.07



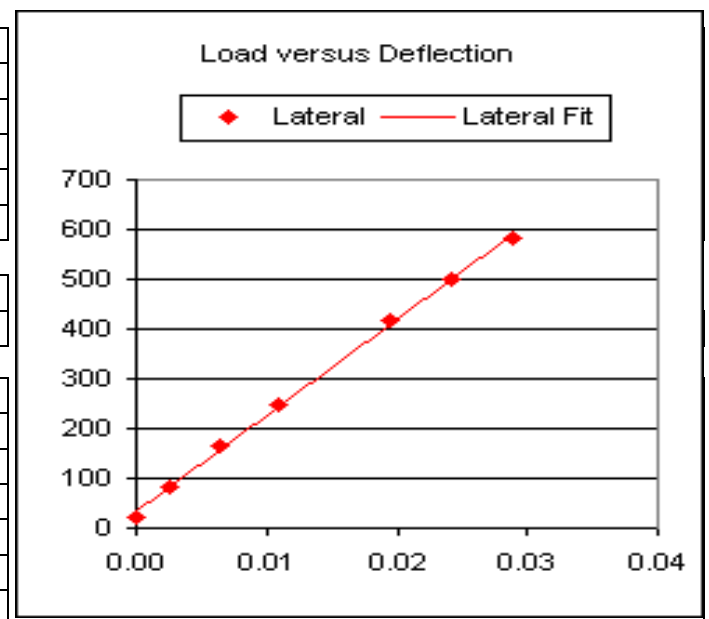
Test: **Transverse – Test 4**

Date: 26-Jan-06 Project: 3088432 Eng/Tech: Ivo Tanner
 Client: PFK Developments Inc. Adam Mantei
 Product: Wood Frame MagBoard Panel
 Height (ft): 8.00 Width (ft): 4.00 Depth (in): 6.5 Span (ft): 7.67
 Method: ASTM E72-02 Conducting Strength Tests of Panels for Building Construction

Load (psf)	Load (in. WC)	Reading (min)	Mid-Span 1 (in.)	Mid-Span 2 (in.)	Mid-Span 3 (in.)	Reaction 4 (in.)	Reaction 5 (in.)	Deflection Net (in.)		
5.2	1.0	5 min	-0.001	0.000	0.000	0.000	0.000	0.000		
20.8	4.0	initial	0.054	0.056	0.051	0.029	0.017	0.031		
20.8	4.0	5 min	0.056	0.058	0.052	0.030	0.018	0.031		
5.2	1.0	initial	0.012	0.010	0.007	0.007	0.001	0.006		
5.2	1.0	5 min	0.011	0.010	0.007	0.007	0.001	0.005		
41.6	8.0	initial	0.128	0.136	0.127	0.075	0.037	0.074		
41.6	8.0	5 min	0.132	0.140	0.130	0.077	0.037	0.077		
5.2	1.0	initial	0.031	0.027	0.023	0.026	0.000	0.014		
5.2	1.0	5 min	0.030	0.027	0.022	0.026	0.001	0.013		
62.4	12.0	initial	0.211	0.227	0.214	0.123	0.056	0.128		
62.4	12.0	5 min	0.221	0.236	0.223	0.135	0.058	0.130		
5.2	1.0	initial	0.059	0.056	0.050	0.058	0.002	0.025		
5.2	1.0	5 min	0.056	0.052	0.047	0.056	0.001	0.023		
104.0	20.0	initial	0.365	0.396	0.375	0.203	0.093	0.231		
104.0	20.0	5 min	0.371	0.403	0.380	0.204	0.096	0.235		
5.2	1.0	initial	0.091	0.090	0.083	0.077	0.015	0.042		
5.2	1.0	5 min	0.084	0.082	0.076	0.075	0.014	0.036		
125	24.0	initial	0.443	0.484	0.458	0.230	0.119	0.287		
125	24.0	5 min	0.447	0.489	0.462	0.231	0.119	0.291		
5.2	1.0	initial	0.104	0.104	0.097	0.080	0.025	0.049		
5.2	1.0	5 min	0.097	0.097	0.090	0.079	0.024	0.043		
146	28.0	initial	0.521	0.572	0.539	0.258	0.144	0.343		
146	28.0	5 min	0.526	0.577	0.544	0.259	0.145	0.347		
5.2	1.0	initial	0.116	0.116	0.107	0.084	0.040	0.051		
250	48.1	ultimate	sheathing failure							

Load (psf)	Load (lb/ft)	Deflection Net (ft)	Statistical Analysis	
5.2	20.8	0.0000	19244.76	33.8428
20.8	83.2	0.0026	321.7841	5.401361
41.6	166.5	0.0064	0.998604	8.801562
62.4	249.7	0.0108	3576.809	5
104.0	416.2	0.0196	277086.4	387.3375
124.8	499.4	0.0243	Stiffness (EI)	
145.7	582.6	0.0289	865720 lb-ft ²	

Deflection Limit (L/x)	Limiting height (ft)			
	5	7.5	10	15
L/120	30.26	26.43	24.02	20.98
L/180	26.43	23.09	20.98	18.33
L/240	24.02	20.98	19.06	16.65
L/360	20.98	18.33	16.65	14.55
Ultimate	44.26	36.14	31.30	25.56



Test: **Transverse – Test 5**

Date: 26-Jan-06

Project: 3088432

Eng/Tech: Ivo Tanner

Client: PFK Developments Inc.

Adam Mantei

Product: Wood Frame MagBoard Panel

Height (ft): 8.00

Width (ft): 4.00

Depth (in): 6.5

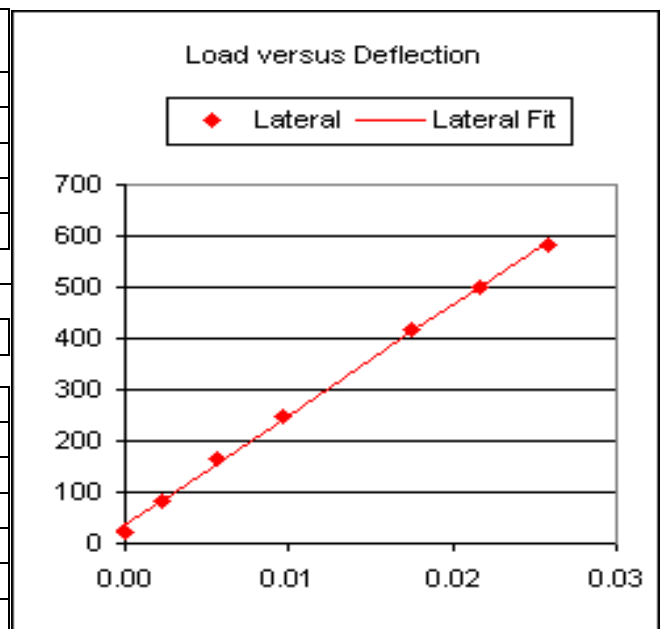
Span (ft): 7.67

Method: ASTM E72-02 Conducting Strength Tests of Panels for Building Construction

Load (psf)	Load (in. WC)	Reading (min)	Mid-Span 1 (in.)	Mid-Span 2 (in.)	Mid-Span 3 (in.)	Reaction 4 (in.)	Reaction 5 (in.)	Deflection Net (in.)
5.2	1.0	5 min	-0.001	0.000	0.000	0.001	0.000	-0.001
20.8	4.0	initial	0.051	0.051	0.043	0.024	0.022	0.025
20.8	4.0	5 min	0.052	0.053	0.045	0.025	0.023	0.026
5.2	1.0	initial	0.007	0.007	0.007	0.004	0.001	0.005
5.2	1.0	5 min	0.007	0.007	0.007	0.004	0.001	0.005
41.6	8.0	initial	0.125	0.126	0.106	0.056	0.050	0.066
41.6	8.0	5 min	0.128	0.128	0.108	0.058	0.051	0.067
5.2	1.0	initial	0.021	0.020	0.016	0.013	0.003	0.011
5.2	1.0	5 min	0.020	0.020	0.015	0.013	0.002	0.011
62.4	12.0	initial	0.206	0.206	0.172	0.086	0.079	0.112
62.4	12.0	5 min	0.212	0.211	0.176	0.090	0.080	0.115
5.2	1.0	initial	0.040	0.038	0.031	0.026	0.005	0.021
5.2	1.0	5 min	0.036	0.034	0.027	0.024	0.004	0.018
104.0	20.0	initial	0.363	0.363	0.303	0.139	0.133	0.207
104.0	20.0	5 min	0.370	0.370	0.308	0.140	0.138	0.210
5.2	1.0	initial	0.071	0.069	0.058	0.041	0.018	0.037
5.2	1.0	5 min	0.063	0.061	0.052	0.038	0.015	0.032
125	24.0	initial	0.447	0.448	0.375	0.160	0.175	0.256
125	24.0	5 min	0.452	0.453	0.380	0.161	0.176	0.260
5.2	1.0	initial	0.088	0.087	0.075	0.046	0.034	0.043
5.2	1.0	5 min	0.081	0.079	0.069	0.043	0.033	0.038
146	28.0	initial	0.530	0.530	0.445	0.183	0.207	0.307
146	28.0	5 min	0.535	0.536	0.449	0.184	0.209	0.310
5.2	1.0	initial	0.101	0.101	0.089	0.054	0.046	0.047
250	48.1	ultimate	sheathing failure					

Load (psf)	Load (lb/ft)	Deflection Net (ft)	Statistical Analysis	
5.2	20.8	-0.0001	21402.58	36.85908
20.8	83.2	0.0022	391.3189	5.862645
41.6	166.5	0.0056	0.998331	9.623054
62.4	249.7	0.0096	2991.374	5
104.0	416.2	0.0175	277010.7	463.0159
124.8	499.4	0.0217	Stiffness (EI)	
145.7	582.6	0.0258	962789 lb-ft ²	

Deflection Limit (L/x)	Limiting height (ft)			
	5	7.5	10	15
L/120	31.35	27.39	24.88	21.74
L/180	27.39	23.92	21.74	18.99
L/240	24.88	21.74	19.75	17.25
L/360	21.74	18.99	17.25	15.07
Ultimate	44.26	36.14	31.30	25.56



Test: **Transverse – Test 6**

Date: 30-Jan-06

Project: 3088432

Eng/Tech: Ivo Tanner

Client: PFK Developments Inc.

Adam Mantei

Product: Wood Frame MagBoard Panel

Height (ft): 8.00

Width (ft): 4.00

Depth (in): 6.5

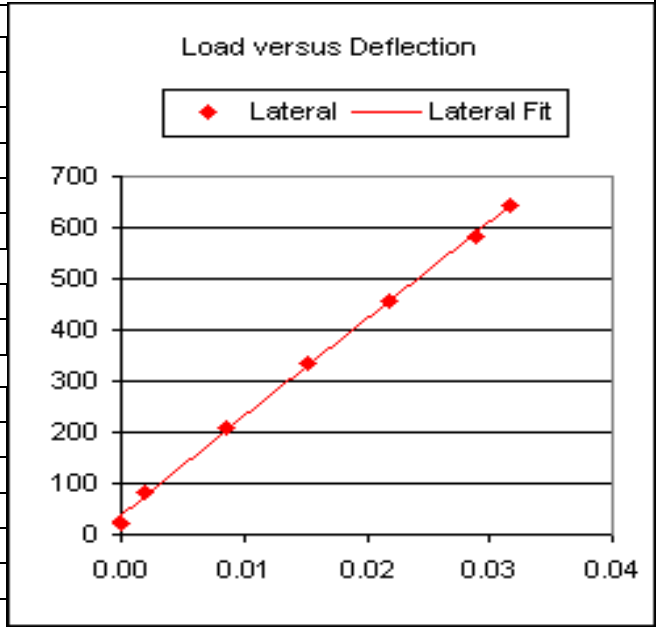
Span (ft): 7.67

Method: ASTM E72-02 Conducting Strength Tests of Panels for Building Construction

Load (psf)	Load (in. WC)	Reading (min)	Mid-Span 1 (in.)	Mid-Span 2 (in.)	Mid-Span 3 (in.)	Reaction 4 (in.)	Reaction 5 (in.)	Deflection Net (in.)
5.2	1.0	5 min	0.000	0.000	0.000	0.000	0.000	0.000
20.8	4.0	initial	0.050	0.056	0.054	0.037	0.027	0.021
20.8	4.0	5 min	0.052	0.058	0.055	0.038	0.028	0.022
5.2	1.0	initial	0.018	0.005	0.004	0.007	0.002	0.005
5.2	1.0	5 min	0.018	0.004	0.004	0.007	0.002	0.004
52.0	10.0	initial	0.178	0.178	0.170	0.085	0.068	0.099
52.0	10.0	5 min	0.184	0.181	0.172	0.086	0.068	0.102
5.2	1.0	initial	0.054	0.022	0.020	0.018	0.001	0.023
5.2	1.0	5 min	0.053	0.020	0.018	0.016	0.000	0.022
83.2	16.0	initial	0.294	0.303	0.288	0.123	0.106	0.181
83.2	16.0	5 min	0.297	0.305	0.289	0.124	0.106	0.182
5.2	1.0	initial	0.076	0.036	0.032	0.028	-0.002	0.035
5.2	1.0	5 min	0.073	0.032	0.029	0.026	-0.002	0.033
114.4	22.0	initial	0.401	0.424	0.403	0.160	0.147	0.256
114.4	22.0	5 min	0.407	0.431	0.408	0.162	0.147	0.261
5.2	1.0	initial	0.086	0.046	0.041	0.036	0.000	0.040
5.2	1.0	5 min	0.083	0.041	0.037	0.034	-0.001	0.037
146	28.0	initial	0.522	0.558	0.529	0.198	0.186	0.344
146	28.0	5 min	0.525	0.561	0.530	0.199	0.187	0.346
5.2	1.0	initial	0.097	0.054	0.047	0.043	0.007	0.041
5.2	1.0	5 min	0.093	0.048	0.043	0.041	0.004	0.039
161	31.0	initial	0.567	0.608	0.573	0.213	0.200	0.376
161	31.0	5 min	0.574	0.612	0.577	0.214	0.200	0.381
5.2	1.0	initial	0.105	0.057	0.050	0.045	0.002	0.047
5.2	1.0	5 min	0.101	0.054	0.047	0.045	0.002	0.044
290	55.7	ultimate	sheathing failure					

Load (psf)	Load (lb/ft)	Deflection Net (ft)	Statistical Analysis	
5.2	20.8	0.0000	19147.28	38.15874
20.8	83.2	0.0018	334.1116	6.456666
52.0	208.1	0.0085	0.99848	10.32588
83.2	332.9	0.0152	3284.21	5
114.4	457.8	0.0217	350174.9	533.1189
145.7	582.6	0.0288	Stiffness (EI)	
161.3	645.0	0.0317	861335 lb-ft ²	

Deflection Limit (L/x)	Limiting height (ft)			
	5	7.5	10	15
L/120	30.21	26.39	23.98	20.94
L/180	26.39	23.05	20.94	18.30
L/240	23.98	20.94	19.03	16.62
L/360	20.94	18.30	16.62	14.52
Ultimate	47.67	38.93	33.71	27.52



Test: **Rack Resistance – Test 1**

Date: 25-Jan-06

Project: 3088432

Eng/Tech: Kevin Penner

Client: PFK Developments Inc.

Baldeep Sandhu

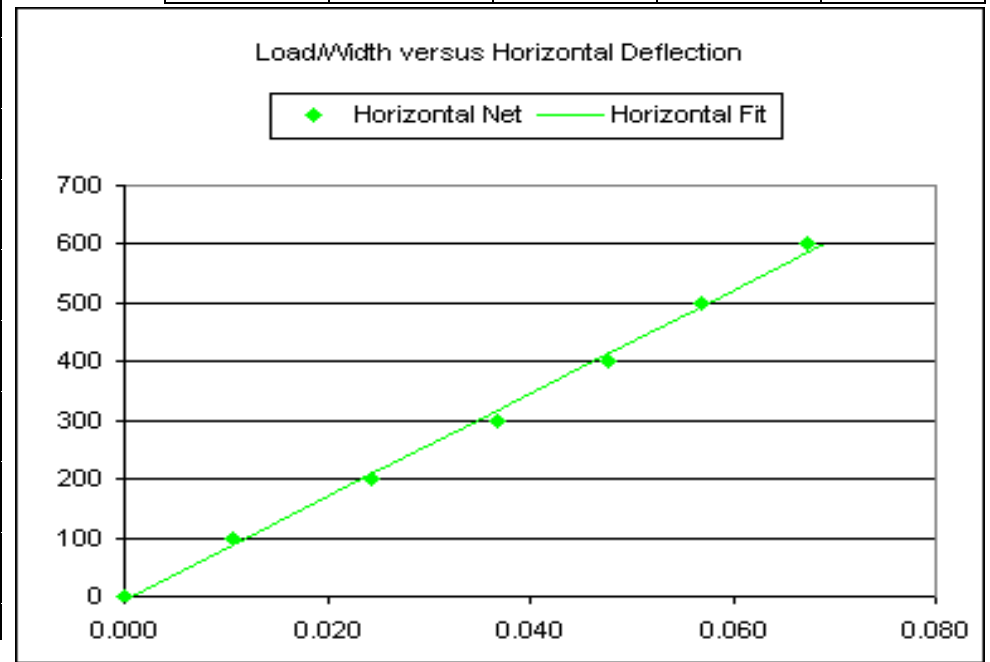
Product: Steel Frame MagBoard Panel

Height (ft): 8.00 Width (ft): 4.00 Depth (in): 4.6

Method: ASTM E72-02 Conducting Strength Tests of Panels for Building Construction

Load	Reading	Slip	Uplift	Horizontal	Vertical
(lb)	(min)	1 (in.)	2 (in.)	3 (in.)	4 (in.)
0	5 min	0.100	0.000	0.000	0.500
400	initial	0.104	0.036	0.123	0.480
400	5 min	0.104	0.036	0.129	0.479
0	initial	0.101	0.010	0.042	0.488
0	5 min	0.101	0.010	0.042	0.489
800	initial	0.108	0.087	0.280	0.464
800	5 min	0.108	0.091	0.292	0.463
0	initial	0.102	0.026	0.084	0.482
0	5 min	0.102	0.025	0.083	0.482
1,200	initial	0.112	0.139	0.424	0.453
1,200	5 min	0.113	0.140	0.440	0.452
0	initial	0.103	0.046	0.130	0.477
0	5 min	0.103	0.044	0.128	0.477
1,600	initial	0.119	0.180	0.563	0.442
1,600	5 min	0.119	0.183	0.572	0.441
0	initial	0.106	0.062	0.170	0.474
0	5 min	0.106	0.061	0.169	0.474
2,000	initial	0.126	0.211	0.673	0.431
2,000	5 min	0.127	0.213	0.683	0.429
0	initial	0.110	0.076	0.210	0.469
0	5 min	0.110	0.075	0.207	0.470
2,400	initial	0.136	0.240	0.786	0.419
2,400	5 min	0.138	0.246	0.809	0.416
0	initial	0.118	0.091	0.254	0.464
0	5 min	0.117	0.089	0.251	0.465
3,200	ultimate	Stud collapsed at toe of panel			

Load	Load	Horizontal Net	Internal Shear Disp.	Global Shear Stiffness
(lb)	(lb/ft)	(ft)	(in)	(lb/in)
0	0	0.0000		
400	100	0.0108	0.911	32000
800	200	0.0243	0.928	8696
1200	300	0.0367	0.951	7339
1600	400	0.0477	0.969	7064
2000	500	0.0569	0.988	7194
2400	600	0.0674	1.011	7154



Test: **Rack Resistance – Test 2**

Date: 26-Jan-06

Project: 3088432

Eng/Tech: Kevin Penner

Client: PFK Developments Inc.

Baldeep Sandhu

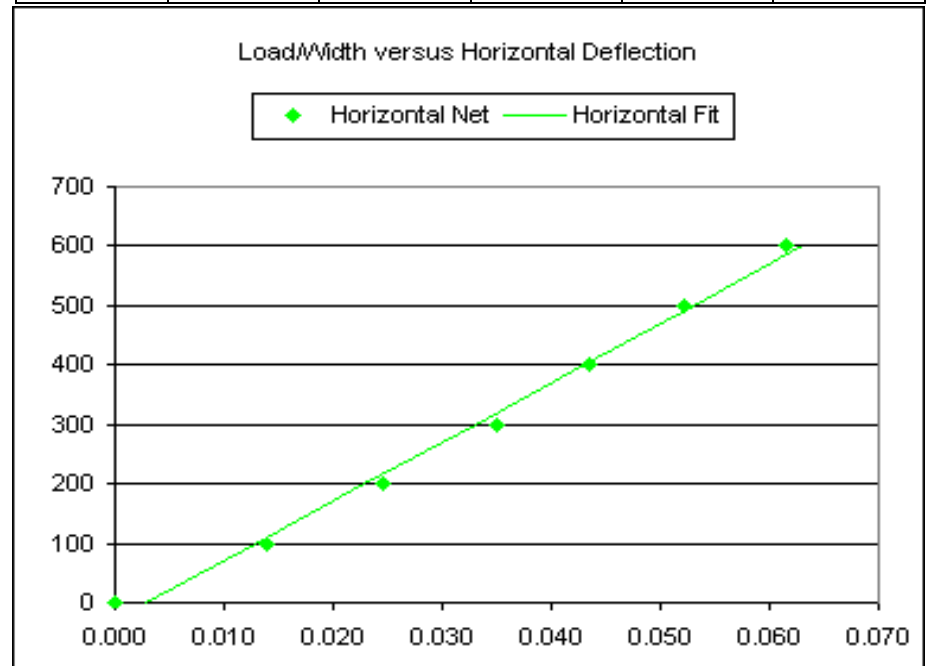
Product: Steel Frame MagBoard Panel

Height (ft): 8.00 Width (ft): 4.00 Depth (in): 4.6

Method: ASTM E72-02 Conducting Strength Tests of Panels for Building Construction

Load	Reading	Slip	Uplift	Horizontal	Vertical
(lb)	(min)	1 (in.)	2 (in.)	3 (in.)	4 (in.)
0	5 min	0.100	0.000	0.000	0.500
400	initial	0.104	0.046	0.162	0.475
400	5 min	0.104	0.047	0.166	0.474
0	initial	0.101	0.008	0.034	0.490
0	5 min	0.101	0.007	0.034	0.490
800	initial	0.108	0.088	0.293	0.463
800	5 min	0.108	0.089	0.296	0.463
0	initial	0.103	0.014	0.054	0.487
0	5 min	0.103	0.013	0.053	0.487
1,200	initial	0.114	0.127	0.411	0.456
1,200	5 min	0.114	0.128	0.421	0.455
0	initial	0.108	0.024	0.083	0.484
0	5 min	0.108	0.024	0.082	0.484
1,600	initial	0.121	0.156	0.521	0.450
1,600	5 min	0.121	0.158	0.522	0.450
0	initial	0.113	0.034	0.117	0.480
0	5 min	0.113	0.033	0.113	0.481
2,000	initial	0.126	0.182	0.617	0.446
2,000	5 min	0.127	0.186	0.626	0.445
0	initial	0.118	0.045	0.145	0.478
0	5 min	0.118	0.043	0.142	0.478
2,400	initial	0.131	0.213	0.727	0.439
2,400	5 min	0.132	0.216	0.737	0.438
0	initial	0.124	0.056	0.183	0.475
0	5 min	0.124	0.055	0.177	0.476
3,400	ultimate	Stud collapsed at toe of panel			

Load	Load	Horizontal Net	Internal Shear Disp.	Global Shear Stiffness	Internal Shear Stiffness
(lb)	(lb/ft)	(ft)	(in)	(lb/in)	(lb/in)
0	0	0.0000			
400	100	0.0138	0.916	12903	873
800	200	0.0247	0.936	8511	1709
1200	300	0.0351	0.961	7818	2497
1600	400	0.0435	0.985	7980	3249
2000	500	0.0522	1.017	8016	3933
2400	600	0.0614	1.049	7934	4576



Test: **Rack Resistance – Test 3**

Date: 27-Jan-06

Project: 3088432

Eng/Tech: Kevin Penner

Client: PFK Developments Inc.

Baldeep Sandhu

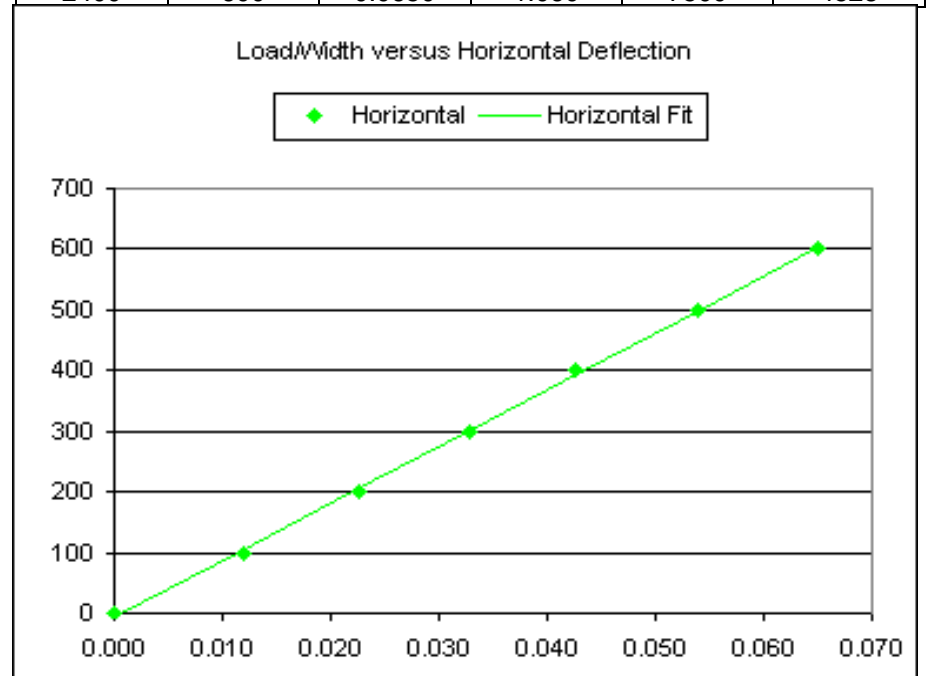
Product: Steel Frame MagBoard Panel

Height (ft): 8.00 Width (ft): 4.00 Depth (in): 4.6

Method: ASTM E72-02 Conducting Strength Tests of Panels for Building Construction

Load	Reading	Slip	Uplift	Horizontal	Vertical
(lb)	(min)	1 (in.)	2 (in.)	3 (in.)	4 (in.)
0	5 min	0.100	0.000	0.000	0.500
400	initial	0.103	0.034	0.138	0.476
400	5 min	0.103	0.035	0.144	0.476
0	initial	0.101	0.006	0.032	0.490
0	5 min	0.101	0.006	0.032	0.490
800	initial	0.106	0.072	0.268	0.464
800	5 min	0.106	0.074	0.271	0.464
0	initial	0.102	0.015	0.059	0.485
0	5 min	0.102	0.014	0.057	0.485
1,200	initial	0.111	0.110	0.391	0.453
1,200	5 min	0.111	0.111	0.395	0.452
0	initial	0.104	0.024	0.086	0.482
0	5 min	0.104	0.024	0.084	0.482
1,600	initial	0.120	0.138	0.502	0.443
1,600	5 min	0.121	0.141	0.510	0.442
0	initial	0.112	0.035	0.123	0.478
0	5 min	0.112	0.034	0.119	0.479
2,000	initial	0.119	0.169	0.635	0.424
2,000	5 min	0.119	0.173	0.647	0.421
0	initial	0.113	0.048	0.175	0.467
0	5 min	0.113	0.047	0.170	0.468
2,400	initial	0.136	0.202	0.770	0.415
2,400	5 min	0.140	0.205	0.780	0.415
0	initial	0.123	0.061	0.225	0.461
0	5 min	0.123	0.059	0.219	0.462
2,900	ultimate	Stud collapsed at toe of panel			

Load	Load	Horizontal	Internal Shear Disp.	Global Shear Stiffness	Internal Shear Stiffness
(lb)	(lb/ft)	(ft)	(in)	(lb/in)	(lb/in)
0	0	0.0000			
400	100	0.0120	0.923	19512	867
800	200	0.0226	0.945	9697	1693
1200	300	0.0329	0.966	8451	2484
1600	400	0.0425	0.991	8226	3229
2000	500	0.0539	1.024	7576	3906
2400	600	0.0650	1.060	7500	4528



Test: **Rack Resistance – Test 4**

Date: 30-Jan-06

Project: 3088432

Eng/Tech: Kevin Penner

Client: PFK Developments Inc.

Baldeep Sandhu

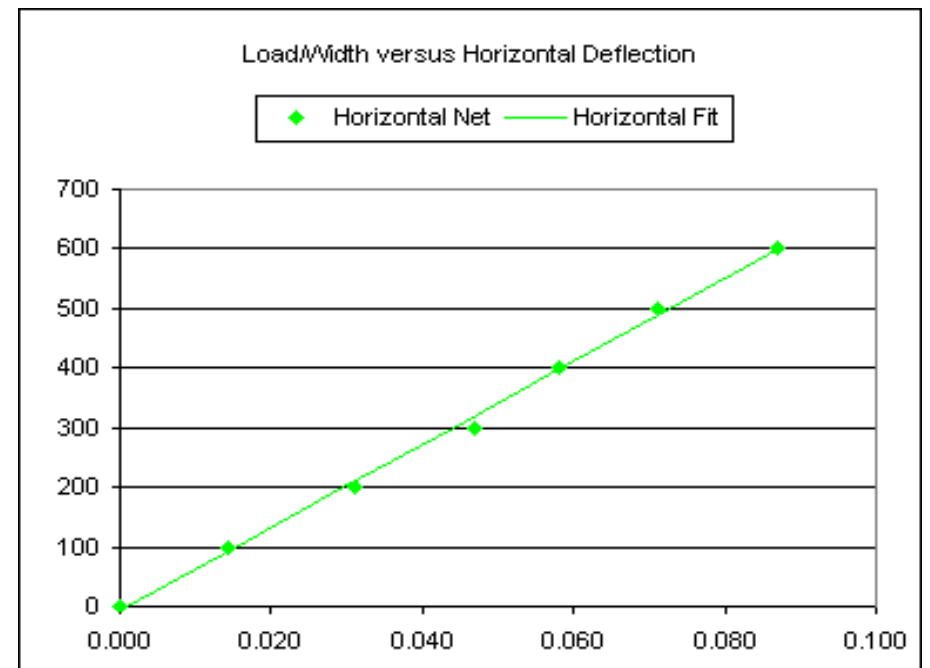
Product: Wood Frame MagBoard Panel

Height (ft): 8.00 Width (ft): 4.00 Depth (in): 6.5

Method: ASTM E72-02 Conducting Strength Tests of Panels for Building Construction

Load	Reading	Slip	Uplift	Horizontal	Vertical
(lb)	(min)	1 (in.)	2 (in.)	3 (in.)	4 (in.)
0	5 min	0.100	0.000	0.000	0.500
400	initial	0.104	0.038	0.166	0.465
400	5 min	0.104	0.040	0.170	0.464
0	initial	0.101	0.020	0.071	0.483
0	5 min	0.101	0.019	0.068	0.484
800	initial	0.109	0.084	0.350	0.430
800	5 min	0.110	0.091	0.371	0.425
0	initial	0.104	0.036	0.130	0.469
0	5 min	0.104	0.035	0.124	0.471
1,200	initial	0.116	0.138	0.547	0.396
1,200	5 min	0.116	0.143	0.562	0.393
0	initial	0.107	0.050	0.183	0.457
0	5 min	0.107	0.048	0.174	0.460
1,600	initial	0.121	0.171	0.681	0.380
1,600	5 min	0.121	0.178	0.698	0.377
0	initial	0.110	0.070	0.245	0.448
0	5 min	0.109	0.068	0.236	0.450
2,000	initial	0.125	0.209	0.833	0.365
2,000	5 min	0.126	0.219	0.855	0.361
0	initial	0.112	0.087	0.307	0.441
0	5 min	0.111	0.084	0.299	0.443
2,400	initial	0.130	0.252	1.004	0.350
2,400	5 min	0.130	0.267	1.042	0.344
0	initial	0.113	0.107	0.394	0.435
0	5 min	0.113	0.104	0.381	0.437
4,200	ultimate	Sheathing failure			

Load	Load	Horizontal Net	Internal Shear Disp.	Global Shear Stiffness	Internal Shear Stiffness
(lb)	(lb/ft)	(ft)	(in)	(lb/in)	(lb/in)
0	0	0.0000			
400	100	0.0142	0.914	12121	875
800	200	0.0309	0.929	6130	1722
1200	300	0.0468	0.946	5381	2537
1600	400	0.0582	0.975	5546	3282
2000	500	0.0713	1.013	5487	3949
2400	600	0.0868	1.066	5263	4503



Test: **Rack Resistance – Test 6**

Date: 31-Jan-06

Project: 3088432

Eng/Tech: Kevin Penner

Client: PFK Developments Inc.

Baldeep Sandhu

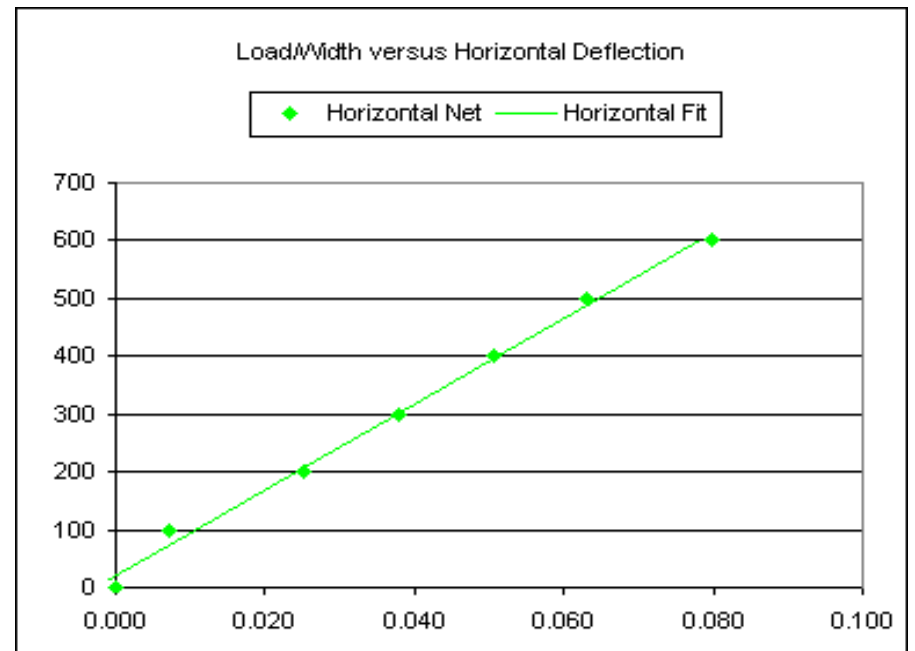
Product: Wood Frame MagBoard Panel

Height (ft): 8.00 Width (ft): 4.00 Depth (in): 6.5

Method: ASTM E72-02 Conducting Strength Tests of Panels for Building Construction

Load	Reading	Slip	Uplift	Horizontal	Vertical
(lb)	(min)	1 (in.)	2 (in.)	3 (in.)	4 (in.)
0	5 min	0.100	0.000	0.000	0.500
400	initial	0.101	0.014	0.085	0.485
400	5 min	0.101	0.017	0.086	0.484
0	initial	0.100	0.008	0.035	0.493
0	5 min	0.100	0.008	0.034	0.493
800	initial	0.104	0.071	0.286	0.448
800	5 min	0.104	0.076	0.300	0.445
0	initial	0.101	0.044	0.144	0.470
0	5 min	0.101	0.043	0.139	0.471
1,200	initial	0.107	0.119	0.446	0.430
1,200	5 min	0.107	0.126	0.454	0.428
0	initial	0.102	0.078	0.232	0.459
0	5 min	0.102	0.076	0.228	0.460
1,600	initial	0.109	0.163	0.597	0.418
1,600	5 min	0.110	0.170	0.609	0.415
0	initial	0.104	0.109	0.320	0.450
0	5 min	0.104	0.107	0.312	0.452
2,000	initial	0.112	0.202	0.747	0.406
2,000	5 min	0.112	0.209	0.758	0.403
0	initial	0.105	0.134	0.398	0.443
0	5 min	0.105	0.132	0.390	0.445
2,400	initial	0.115	0.247	0.925	0.391
2,400	5 min	0.115	0.257	0.956	0.389
0	initial	0.106	0.164	0.501	0.435
0	5 min	0.106	0.160	0.494	0.437
3,400	ultimate	Sheathing failure			

Load	Load	Horizontal Net	Internal Shear Disp.	Global Shear Stiffness	Internal Shear Stiffness
(lb)	(lb/ft)	(ft)	(in)	(lb/in)	(lb/in)
0	0	0.0000			
400	100	0.0072	0.919	-53333	871
800	200	0.0250	0.934	8163	1713
1200	300	0.0378	0.951	6916	2524
1600	400	0.0508	0.989	6413	3236
2000	500	0.0632	1.034	6192	3868
2400	600	0.0797	1.105	5707	4344



Appendix B Photographs (3 pages)



Axial load test setup showing position of compression measurement equipment



Metal panel specimen 1 for axial load, product failure due to buckling



Wood panel specimen 3 for axial load, product sheathing failure



Racking load test setup



Wood panel specimen 1 for racking load, product failure at location 2



Steel panel specimen 1 for racking load, product failure at location 2