



Farabaugh Engineering and Testing Inc.

Project No. T281-08

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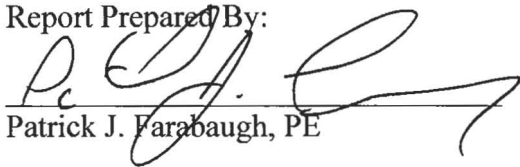
ASTM E 1592
STANDARD TEST METHOD FOR
STRUCTURAL PERFORMANCE OF SHEET METAL ROOF AND SIDING
SYSTEMS BY UNIFORM STATIC AIR PRESSURE DIFFERENCE

7.2 ROOF PANEL
36" WIDE X 0.032" ALUMINUM

FOR


PETERSEN ALUMINUM CORP.
1005 TONNE RD.
ELK GROVE VILLAGE, IL 60007

Report Prepared By:

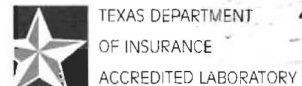

Patrick J. Farabaugh, PE

DANIEL G. FARABAUGH, P.E.
255 Saunders Station Rd.
Trafford, PA 15085
(412) 373-9238

Reviewed and Approved By:


Daniel G. Farabaugh, PE


10/31/08



Project No. T281-08

ASTM E1592-01
STANDARD TEST METHOD FOR
STRUCTURAL PERFORMANCE OF SHEET METAL ROOF AND SIDING
SYSTEMS BY UNIFORM STATIC AIR PRESSURE DIFFERENCE

Purpose

This test method covers the evaluation of the structural performance of Sheet Metal Panels and Anchor to Panel Attachments for roof or siding systems under uniform static air pressure difference.

Test Date

Test #1 (Specimen "A") – 10/23/08

Test #2 (Specimen "B") – 10/28/08

Test Specimen

Manufacturer: Petersen Aluminum Corp.
1005 Tonne Rd.
Elk Grove Village, IL 60007

Panel: 7.2 Roof Panel, 36" wide (coverage), 0.032" Aluminum

Panel Length: as shown

Testing Apparatus

Test Chamber: Vacuum Chamber Composed of Wood

Mounting Frame: Hat Shape Subgirts fastened to W6 X 15 Wide Flange Beams

Pressure Indicator: Digital Pressure Indicator from Micro-Pneumatic Logic, Inc.

Caliper: Mitutoyo Digital Caliper, Model No. CD-12" CP

Installation

- The panels were installed on to 16 ga supports using ¼"-14 X 1-1/4" long hex head self drill fasteners with 5/8" seal washer located at every low cell of the panel. The panel side-joints were overlapping using #12-14 X 1" long hex head self drill fasteners with 5/8" seal washer located at 18" o.c. .
- Plastic (4 mil thick) was employed loosely between the panels and subgirts and in the side joints to create a vacuum seal.

Procedure

- The specimen was checked for proper adjustment and all vents closed in the pressure measuring lines.
- The required deflection measuring apparatus' were installed at their specified locations.
- A nominal initial pressure was applied equal to at least four times but not more than ten times the dead weight of the specimen. This nominal pressure was used as the reference zero and initial deflection readings were recorded.
- At each load increment, pressure was maintained for a period of not less than 60 seconds and until the deflection gages indicated no further increase in deflections.
- Successive increments were achieved as above until failure or ultimate load was reached.

The test was conducted according to the procedure in ASTM E-1592-01 and as noted herein. In our opinion the tape and plastic had no influence on the results of the test.

TEST #1

NEGATIVE (UPLIFT) PRESSURE

PAC 7.2 RIB PANEL 36"W X 0.032" ALUMINUM (SPECIMEN A) 6 SPANS @2'-0" oc									
DEFLECTION DIAL READINGS (INCHES)									
LOAD (PSF)	D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	REMARKS
0.5	0	0	0	0	0	0	0	0	0 PANEL WT.
21.3	0.0405	0.064	0.0595	0.045	0.0375	0.0144	0.045	0.026	
0.5	0.008	0.028	0.0115	0.0055	0.021	0.0029	0.0225	0.0025	PANEL WT.
42.2	0.124	0.1185	0.1155	0.093	0.069	0.0389	0.071	0.044	
0.5	0.0185	0.0445	0.0185	0.0055	0.0375	0.0034	0.0225	0.0075	PANEL WT.
63.0	0.173	0.1655	0.175	0.134	0.095	0.0539	0.089	0.0615	
0.5	0.02	0.0455	0.0285	0.013	0.0377	0.0054	0.0235	0.0085	PANEL WT.
83.8	0.21	0.201	0.214	0.178	0.1065	0.0759	0.1225	0.0805	
0.5	0.0235	0.0585	0.0415	0.0205	0.038	0.0154	0.024	0.014	PANEL WT.
104.6	0.265	0.2605	0.2615	0.216	0.1495	0.0944	0.135	0.102	
0.5	0.0265	0.0586	0.0575	0.0325	0.0381	0.0209	0.029	0.0215	PANEL WT.
125.4	0.294	0.294	0.291	0.255	0.1595	0.1154	0.1555	0.122	
0.5	0.0305	0.06	0.0582	0.052	0.051	0.0419	0.037	0.025	PANEL WT.
146.2	0.3355	0.3335	0.3285	0.285	0.1835	0.1394	0.167	0.144	
0.5	0.0515	0.0755	0.07	0.058	0.0565	0.0494	0.046	0.036	PANEL WT.
167.1	0.3765	0.3855	0.3785	0.3245	0.203	0.1554	0.203	0.162	
0.5	0.056	0.089	0.085	0.094	0.0855	0.0709	0.053	0.0445	PANEL WT.
187.9	0.4095	0.4085	0.415	0.3615	0.2305	0.1879	0.219	0.1835	
0.5	0.0575	0.0955	0.1075	0.1185	0.087	0.0899	0.08	0.057	PANEL WT.

RESULTS:

ULTIMATE TEST LOAD = 208.1 PSF
 (PANEL FASTENERS PULLED OUT OF 16 GA SUPPORTS & PULL OVER)

TEST #2

NEGATIVE (UPLIFT) PRESSURE

PAC 7.2 RIB PANEL 36" W X 0.032 ALUMINUM (SPECIMEN B) 3 SPANS @ 5'-0" oc									
DEFLECTION DIAL READINGS (INCHES)									
LOAD (PSF)	D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	REMARKS
0.5	0	0	0	0	0	0	0	0	PANEL WT.
10.9	0.077	0.09	0.012	0.093	0.077	0.086	0.029	0.037	
0.5	0.001	0.001	0.003	0.001	0.007	0.006	-0.001	0.001	PANEL WT.
16.1	0.119	0.142	0.064	0.144	0.125	0.137	0.05	0.063	
0.5	0.006	0.005	0.015	0.007	0.021	0.017	0.002	0.004	PANEL WT.
21.3	0.16	0.187	0.171	0.193	0.175	0.194	0.076	0.09	
0.5	0.012	0.012	0.023	0.014	0.037	0.034	0.007	0.011	PANEL WT.
26.5	0.205	0.242	0.219	0.246	0.224	0.248	0.099	0.118	
0.5	0.02	0.018	0.031	0.023	0.058	0.054	0.013	0.017	PANEL WT.
31.8	0.247	0.288	0.259	0.293	0.267	0.296	0.121	0.142	
0.5	0.026	0.025	0.038	0.031	0.077	0.075	0.017	0.022	PANEL WT.
37.0	0.288	0.335	0.3	0.345	0.318	0.353	0.145	0.167	
0.5	0.034	0.034	0.047	0.041	0.098	0.098	0.022	0.027	PANEL WT.
47.4	0.365	0.43	0.39	0.448	0.405	0.449	0.186	0.215	
0.5	0.063	0.055	0.068	0.066	0.212	0.147	0.032	0.042	PANEL WT.
57.8	0.45	0.534	0.478	0.555	0.499	0.556	0.228	0.263	
0.5	0.075	0.084	0.097	0.1	0.196	0.209	0.045	0.054	PANEL WT.
68.2	0.538	0.634	0.576	0.663	0.586	0.648	0.262	0.306	
0.5	0.102	0.111	0.129	0.137	0.254	0.273	0.06	0.075	PANEL WT.
78.6	0.639	0.75	0.679	0.777	0.683	0.754	0.308	0.357	
0.5	0.136	0.151	0.169	0.179	0.318	0.343	0.075	0.092	PANEL WT.

RESULTS:

ULTIMATE TEST LOAD = 122.3 PSF (PANEL FASTENERS PULLED OUT OF 16 GA SUPPORTS & PULL OVER)