

AES

ADVANCED ENGINEERING SERVICES

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AMENDMENT TO AES REPORT NO. PFF-1

Report No. PFF-1A

Prepared for

Precision Foam Fabricators, Inc.
754 East Hightower Trail
Social Circle, GA 30025

By

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AMENDMENT TO AES REPORT NO. PFF-1

1. INTRODUCTION

The load-span tables in AES Report No. PFF-1 dated July, 1997 were generated based on the following safety factors for wind load design.

Safety Factor on Bending Stress = 1.875

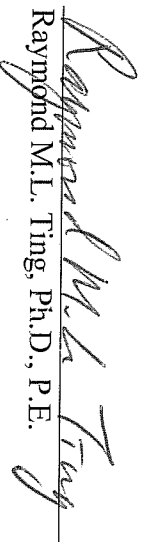
Safety Factor on Foam Core Shear = 3.0

The recent Building Codes revised the acceptable safety factor on bending stress to 2.5 with no change in the safety factor on foam core shear.

The purpose of this Report is to re-generate the load-span tables with the current acceptable safety factors for wind load design using the test data of Report PFF-1.

2. SCOPE

The load-span tables dated 6/12/06 for the 4" deep panel with 26/26 gauge combination designated as EPS4.0-26/26 are attached to this Report. The design governing parameters include bending stresses, core shear stress and panel deflection.

Reported by: 
Raymond M.L. Ting, Ph.D., P.E.

DATE : 6/12/06

DESIGN PARAMETERS FOR EPS04.0-26/26

WIND LOAD DESIGN

COMPOSITE I = 1.7180
COMPOSITE FACIA S = .8590
COMPOSITE LINER S = .8590
CORE AREA = 48.000
SHEAR MODULUS OF CORE = 280.100
NON-COMPOSITE I = .0000
NON-COMPOSITE FACIA S = .0000
MODULUS OF SKINS = 29000000.
ALLOWABLE FACIA STRESS = 6340.
ALLOWABLE LINER STRESS = 6340.
ALLOWABLE CORE SHEAR STRESS = 3.38
BENDING SAFETY FACTOR = 2.5000
SHEAR SAFETY FACTOR = 3.0000

DATE : 6/12/06

LOAD-SPAN TABLE OF EPPS04.0-26/26

WIND LOAD DESIGN

SIMPLE SPAN DESIGN

SPAN (FT)	ALLOWABLE LOAD IN POUNDS PER SQUARE FOOT				REACTION/U. LOAD		
	FACIA	LINER	SHEAR	L/120.	L/180.	L/240.	END INTERMED.
5.00	145.2	145.2	64.8	162.8	108.5	81.4	2.500 5.000
6.00	100.9	100.9	54.0	130.4	86.9	65.2	3.000 6.000
7.00	74.1	74.1	46.3	106.9	71.2	53.4	3.500 7.000
8.00	56.7	56.7	40.5	89.0	59.3	44.5	4.000 8.000
9.00	44.8	44.8	36.0	75.0	50.0	37.5	4.500 9.000
10.00	36.3	36.3	32.4	63.8	42.5	31.9	5.000 10.000
11.00	30.0	30.0	29.5	54.7	36.5	27.3	5.500 11.000
12.00	25.2	25.2	27.0	47.2	31.5	23.6	6.000 12.000
13.00	21.5	21.5	24.9	40.9	27.3	20.5	6.500 13.000
14.00	18.5	18.5	23.1	35.7	23.8	17.8	7.000 14.000
15.00	16.1	16.1	21.6	31.3	20.8	15.6	7.500 15.000
16.00	14.2	14.2	20.3	27.5	18.3	13.8	8.000 16.000
17.00	12.6	12.6	19.1	24.3	16.2	12.1	8.500 17.000
18.00	11.2	11.2	18.0	21.5	14.4	10.8	9.000 18.000
19.00	10.1	10.1	17.1	19.2	12.8	9.6	9.500 19.000
20.00	9.1	9.1	16.2	17.1	11.4	8.6	10.000 20.000
21.00	8.2	8.2	15.4	15.3	10.2	7.7	10.500 21.000
22.00	7.5	7.5	14.7	13.8	9.2	6.9	11.000 22.000
23.00	6.9	6.9	14.1	12.4	8.3	6.2	11.500 23.000
24.00	6.3	6.3	13.5	11.2	7.5	5.6	12.000 24.000

DATE : 6/12/06

LOAD-SPAN TABLE OF EPS04.0-26/26

WIND LOAD DESIGN

DOUBLE SPAN DESIGN

SPAN (FT)	ALLOWABLE LOAD IN POUNDS PER SQUARE FOOT				REACTION/1' LOAD			
	FACTA	LINER	SHEAR	I/120.	I/180.	I/240.	END	INTERMED.
5.00	165.5	165.5	61.1	165.0	110.0	82.5	2.347	5.306
6.00	119.9	119.9	50.0	133.6	89.1	66.8	2.761	6.477
7.00	91.9	91.9	42.2	111.1	74.1	55.6	3.160	7.679
8.00	73.4	73.4	36.4	94.3	62.8	47.1	3.547	8.907
9.00	60.2	60.2	31.9	81.2	54.1	40.6	3.924	10.152
10.00	50.6	50.6	28.4	70.7	47.1	35.4	4.295	11.411
11.00	43.2	43.2	25.6	62.2	41.5	31.1	4.661	12.679
12.00	37.4	37.4	23.2	55.1	36.7	27.6	5.024	13.953
13.00	31.3	31.3	21.3	49.2	32.8	24.6	5.385	15.231
14.00	25.8	25.8	19.6	44.1	29.4	22.0	5.745	16.511
15.00	21.7	21.7	18.2	39.7	26.5	19.9	6.104	17.792
16.00	18.5	18.5	17.0	35.9	24.0	18.0	6.463	19.073
17.00	15.9	15.9	15.9	32.6	21.8	16.3	6.823	20.354
18.00	13.9	13.9	15.0	29.7	19.8	14.9	7.183	21.634
19.00	12.2	12.2	14.1	27.1	18.1	13.6	7.543	22.913
20.00	10.8	10.8	13.4	24.8	16.6	12.4	7.904	24.191
21.00	9.7	9.7	12.7	22.8	15.2	11.4	8.266	25.468
22.00	8.7	8.7	12.1	20.9	14.0	10.5	8.628	26.743
23.00	7.9	7.9	11.6	19.3	12.9	9.6	8.991	28.018
24.00	7.1	7.1	11.1	17.8	11.9	8.9	9.355	29.291

DATE : 6/12/06

LOAD-SPAN TABLE OF EPPS04.0-26/26

WIND LOAD DESIGN

THREE SPAN DESIGN

SPAN (FT)	ALLOWABLE LOAD IN POUNDS PER SQUARE FOOT				REACTION/U. LOAD			
	FACIA	LINER	SHEAR	L/120.	L/180.	L/240.	END	INTERMED.
5.00	176.9	176.9	59.5	166.1	110.7	83.0	2.276	5.224
6.00	128.5	128.5	48.8	134.8	89.9	67.4	2.677	6.323
7.00	98.2	98.2	41.2	112.3	74.9	56.2	3.071	7.429
8.00	77.7	77.7	35.7	95.3	63.6	47.7	3.460	8.540
9.00	63.1	63.1	31.4	82.0	54.7	41.0	3.848	9.652
10.00	52.3	52.3	28.1	71.3	47.6	35.7	4.236	10.764
11.00	44.0	44.0	25.4	62.6	41.7	31.3	4.624	11.876
12.00	37.6	37.6	23.2	55.2	36.8	27.6	5.012	12.988
13.00	31.8	31.8	21.3	49.0	32.7	24.5	5.401	14.099
14.00	26.8	26.8	19.7	43.7	29.1	21.9	5.791	15.209
15.00	22.9	22.9	18.4	39.1	26.1	19.6	6.181	16.319
16.00	19.9	19.9	17.2	35.2	23.5	17.6	6.572	17.428
17.00	17.4	17.4	16.1	31.7	21.1	15.9	6.964	18.536
18.00	15.3	15.3	15.2	28.7	19.1	14.3	7.357	19.643
19.00	13.6	13.6	14.4	26.0	17.3	13.0	7.750	20.750
20.00	12.2	12.2	13.7	23.6	15.7	11.8	8.143	21.857
21.00	11.0	11.0	13.0	21.5	14.3	10.8	8.537	22.963
22.00	10.0	10.0	12.4	19.6	13.1	9.8	8.932	24.068
23.00	9.1	9.1	11.8	18.0	12.0	9.0	9.327	25.173
24.00	8.3	8.3	11.3	16.5	11.0	8.2	9.722	26.278

DATE : 6/12/06

ALLOWABLE SPAN TABLE OF EPS04.0-26/26
WIND LOAD DESIGN

W	15.	20.	25.	30.	35.	40.						
SPANS L/120. STR. L/120. STR. L/120. STR. L/120. STR. L/120. STR. L/120. STR.												
1	21.20	15.56	18.63	13.47	16.77	12.05	15.32	10.80	14.15	9.26	13.17	8.10
2	26.20	17.42	22.56	13.76	19.92	11.22	17.89	9.52	16.27	8.28	14.93	7.34
3	25.09	18.19	21.80	13.82	19.40	11.17	17.55	9.41	16.05	8.15	14.80	7.20
W	15.	20.	25.	30.	35.	40.						
SPANS L/180. STR. L/180. STR. L/180. STR. L/180. STR. L/180. STR. L/180. STR.												
1	17.64	15.56	15.32	13.47	13.64	12.05	12.33	10.80	11.27	9.26	10.39	8.10
2	21.15	17.42	17.89	13.76	15.57	11.22	13.81	9.52	12.42	8.28	11.29	7.34
3	20.52	18.19	17.55	13.82	15.40	11.17	13.74	9.41	12.42	8.15	11.33	7.20
W	15.	20.	25.	30.	35.	40.						
SPANS L/240. STR. L/240. STR. L/240. STR. L/240. STR. L/240. STR. L/240. STR.												
1	15.32	15.56	13.17	13.47	11.60	12.05	10.39	10.80	9.42	9.26	8.62	8.10
2	17.89	17.42	14.93	13.76	12.85	11.22	11.29	9.52	10.08	8.28	9.10	7.34
3	17.55	18.19	14.80	13.82	12.83	11.17	11.33	9.41	10.14	8.15	9.18	7.20

NOTES :

1. W = DESIGN LOAD IN PSF.
2. THE ALLOWABLE SPANS SHOWN IN THE ABOVE TABLE ARE IN FEET.
3. THE VALUE UNDER THE COLUMN HEAD OF STR. IS GOVERNED BY THE PANEL STRENGTH INCLUDING BENDING & SHEAR