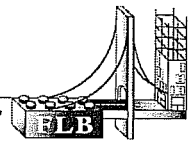


FRANK L. BENNARDO, P.E., INC.  
CONSULTING ENGINEERS

4441 NORTH DIXIE HIGHWAY  
BOCA RATON, FLORIDA 33431  
(561) 391-2888 FAX: (561) 391-2862



March 15, 2004

Sheets 1 - 3

Wayne-Dalton Corp  
3395 Addison Drive  
Pensacola, FL 32514

Calculations For:

FABRIC SHIELD™  
Storm Panel

MAR 23 2004

Frank L. Bennardo, P.E.  
#PE0046549

# WAYNE-DALTON CORP

## FLORIDA STATEWIDE APPROVAL SUBMITTAL

### FABRIC SHIELD™ 2-FOLD STORM PANEL

TEST REPORT Nos. 03-1873, 03-1875, 03-1885a, 03-1885b (HETI)  
 TEST DATE: 12/2/2003, 1/13/2004

3/23/04

F:\Project Data\Client Project Files\Wayne-Dalton (133)\04-133-001 Fabric Shield II Storm Panel - Statewide Approval\Calcs\04-133-001 Fabric Shield II Storm Panel - Sp

#### TEST SUMMARY

##### UNIFORM STATIC WINDLOAD TESTS (ASTM E330):

Specimen / Test Report Number	Span	Design Pressure	Max Defl. at Load	Maximum Perm Set	Recovery
(HETI-03-1873)	110.875"	+62 psf	11.19"	0	100%
	110.875	-66 psf	10.82"	0	100%
(HETI-03-1875)	111.875"	+62 psf	15.86"	0	100%
	111.875	-66 psf	17.07"	0	100%

##### IMPACT & CYCLIC LOADING TESTS (ASTM E1886, E1996):

Specimen / Test Report Number	Span	Design Pressure	Num of Impacts	Test Status
(HETI-03-1885a)				
Sample 1	110.875"	+62 / -66	2	Passed
Sample 2	110.875"	+62 / -66	2	Passed
Sample 3	110.875"	+62 / -66	2	Passed
Sample 4	110.875"	+62 / -66	2	Passed
(HETI-03-1885b)	111.875"	+62 / -66	2	Passed

##### Maximum Allowable

Span: 110.875" (9' - 2 7/8")

Max Allowable Pressures: +62 psf  
 -66 psf

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#### POROSITY CALCULATIONS

Min Porosity: 10% (Per ASTM E1886 & E1996)

Max Panel Offset: 0.40" at Sides  
 0.40" at Top or Bottom

Min Panel Width: 12"

$A_{GAP} = ("Sides") * L + ("Top / Bot")$  Area of gaps between panels & substrate/extrusions  
 $A_{COV} = L_{ALLOW} * ("Total Panel Cov")$  Total area of panels, projected horizontally

$Porosity = \alpha_{MAX} = (A_{GAP} + A_{PERF}) / A_{COV} \leq 10\%$   
 (For a non-porous impact protective system)

Min Panel Span: 12.0"

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## FLORIDA STATEWIDE APPROVAL SUBMITTAL

### FABRIC SHIELD™ 2-FOLD STORM PANEL

TEST REPORT Nos. 03-1873, 03-1875, 03-1885a, 03-1885b (HETI)  
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F:\Project Data\Client Project Files\Wayne-Dalton (133)\04-133-001 Fabric Shield II Storm Panel - Statewide Approval\Cals\04-133-001 Fabric Shield II Storm Panel - Spa

#### ANCHOR CALCULATIONS

##### ANCHOR CAPACITIES:

Anchor	2" E.D. 1.25" Embed to Hollow Block		2" E.D. 1.25" Embed to Wood	
	Ultimate	Allowable	Ultimate	Allowable
1/4" Elco PanelMate (Male)	1091	272.75	2632	658.00
1/4" Elco PanelMate (Female)	1060	265.00	2632	658.00
1/4" Elco PanelMate (Plus)	1060	265.00	2632	658.00
<b>Allowable Capacity for Group:</b>		<b>265.00</b>		<b>658.00</b>

NOTE: Values to Hollow Block qualify respective anchors to concrete at same capacity.

NOTE: All values are derived from published Elco Literature (see attached sheet)

##### ANCHOR SPACING:

Max Tested Panel Size:	110.875"
Max Allowable Pressure:	66.0 psf
Allowable Shear, per Testing:	304.9 lb/ft

##### To Conc/CBS:

Pressure (PSF)	To Conc/CBS:		
	4	8	9.2
	Spans to 4'-0"	Spans to 8' 0"	Spans to 9'-2"
35 psf	45.4"	22.7"	19.7"
40 psf	39.8"	19.9"	17.2"
45 psf	35.3"	17.7"	15.3"
50 psf	31.8"	15.9"	13.8"
57 psf	27.9"	13.9"	12.1"
66 psf	24.1"	12.0"	10.4"

##### To Wood:

Pressure (PSF)	To Wood:		
	4	8	9.2
	Spans to 4'-0"	Spans to 8'-0"	Spans to 9'-2"
35 psf	112.8"	56.4"	48.8"
40 psf	98.7"	49.4"	42.7"
45 psf	87.7"	43.9"	38.0"
50 psf	79.0"	39.5"	34.2"
57 psf	69.3"	34.6"	30.0"
66 psf	59.8"	29.9"	25.9"