



Weatherstone Composite Technical Specifications

Fire Resistance Results

ABSTRACT

Test Specimen: Bear Board 5/4, 2x6, 1 formulation

Test Standard: ASTM E84-05

Test Date: September 1, 2006

Test Sponsor: Engineered Plastic Systems, LLC

Test Results:

FLAME SPREAD INDEX = 60

SMOKE DEVELOPED INDEX = 1100

= N/A ft Beyond Burners Centerline

ASTM TEST RESULTS

Compressive Strength (psi) @ 2.6% Strain - 1287

Compressive Modulus (psi) - 62600

Flexural Strength (psi) @ 3% Strain - 1200

Flexural Modulus (psi) - 61700

Specific Gravity - .694

Density (g/cm²) - .692

Density (lbs/ft²) - 43.3

Nail Withdrawal (lbf) - 184

Screw Withdrawal (lbf) - 360

Linear Thermal Expansion (in/in) F - 0000.44

Shear Strength (psi) - 1440

ICC Testing and Evaluation Results

The product test results, together with the applicable requirements of ICC-ES AC 174 are listed below in Table 1. A full set of data may be requested.

Property	Test Result				Requirement	Pass/Fail
Determination of Allowable Capacity (with adjustment and safety factor)						
	W/Max Load (psf)	W/Load @ L/180 (psf)	Span (inches)		Design Load	
1"x5 1/2"	388	106	16		100 psf	Pass
1.5"x 5 1/2"	300	100 (See *Note 2)	2 22		100 psf	Pass
1.5"x 5 1/2"	300	92	24		92 psf	Pass
Baseline Flexural Tests						
	MOR (psi)	MOE (psi)				
1"x5 1/2"	1825	88182			N/A	*Note 1
1.5"x 5 1/2"	1458	90799				
Mechanical Fasteners (safety factor of 3 used to determine allowable capacity)						
	Ult. Load	Allowable Capacity				
	(lbf)	(lbf)				
Withdrawal	477	159			*Note 1	N/A
Pull Through	1586	529				
Lateral Resistance	736	245				
Flame Spread						
1.5"x 5 1/2"	Flame Spread Index = 60				Flame Spread Index < 200	Pass
Duration of Load						
1"x5 1/2"	No failure of tertiary creep evident				Zero failure or evidence of tertiary creep	Pass
1.5"x 5 1/2"	No failure of tertiary creep evident					Pass
Temperature and Moisture Effects						
	MOR (psi)	Percent Change	MOE (psi)	Percent Change		
1"x5 1/2" Baseline	1825	N/A	88182	N/A	*Note 3	N/A
1"x5 1/2" Cold	3742	105%	228066	159%		
Temp Effect						
1"x5 1/2" Elev. Temp Effect	1215	-33%	56531	-36%		N/A
1"x5 1/2" Moisture Effect	1791	-2%	94868	8%		N/A
Ultraviolet (UV) Resistance						
	MOR (psi)	Percent Change	MOE (psi)	Percent Change		
1"x5 1/2" ripped to 1"x1"	1645	N/A	96851	N/A	*Note 3	N/A
1"x5 1/2" ripped to 1"x1"	1640	0%	93191	0%		
Freeze - Thaw Resistance						
	MOR (psi)	Percent Change	MOE (psi)	Percent Change		
1"x5 1/2" Baseine	1931	N/A	104286	N/A	*Note 3	N/A
1"x5 1/2" Freeze Thaw Effect	1596	-17%	82996	-20%		

Notes 1). No pass/fail requirement - results are reported 2). Load and span adjusted from actual calculated pad of 92 psi at 24" test span. The span was multiplied by the adjustment factor of 92/100 to assume that the reduction of span by that factor will sustain a load of 100psf. 3). Environmental effects are used to calculate adjustment factors for end use. There are no pass/fail requirements since the results are factored into the performance ratings of the product.