

ASTM TESTS

Each performed by VTEC Laboratories on SUPER THERM

(copies of complete tests available upon request)

- ASTM G53 (Visual Effects of UV Exposure): **RESULT: Little disclosure after exposure for 1,000 hours. No visual cracking, melting, spotting, etc.** --8/8/97
- ASTM D1653 (Water Vapor Permeability of Organic Coatings): Sample 1: 21,537.2 perm-mils; Sample 2: 16,615.12 perm-mils; Sample 3: 24,973.87 perm-mils. **RESULT: .03** --7/3/97
- ASTM D4060 (Abrasion Resistance of Organic Coatings by the Taber Abraser): Sample 1: 657 Wear Index; Sample 2: 568 Wear Index. **RESULT: 89 gram loss in 3000 cycles.** --7/21/97
- ASTM E96 (Water Vapor Transmission of Materials): Sample 1: 840.17 perm-mils; Sample 2: 1,422.91 perm-mils; Sample 3: 1,514.15 perm-mils. **RESULT: .06** --7/14/97
- ASTM D522 (Mandrel Bend Test of Attached Organic Coatings): Sample 1: 1/4"-1" no cracking; Sample 2: 1/4"-1" no cracking. --7/18/97
- ASTM D412 (Tensile Properties of Fiber-Resin Composites): **RESULTS--**

<u>Sample #</u>	<u>Width Inches</u>	<u>Thickness Inches</u>	<u>Length Inches</u>	<u>Area Inches</u>	<u>Force Pounds</u>	<u>Tensile Strength (PSI)</u>	<u>Deflection Inches</u>	<u>Percent Elongation</u>
1	0.243	0.042	4.5	0.010	4.5	441	0.1365	3.0
2	0.242	0.041	4.5	0.010	4.8	484	0.168	3.7
3	<u>0.241</u>	<u>0.047</u>	<u>4.5</u>	<u>0.011</u>	<u>4.6</u>	<u>406</u>	<u>0.1492</u>	<u>3.3</u>
AVERAGE	0.242	0.043	4.50	0.010	4.6	444	0.151	3.4

<u>Sample #</u>	<u>Width Inches</u>	<u>Thickness Inches</u>	<u>Length Inches</u>	<u>Area Inches</u>	<u>Modulus of Elasticity (PSI)</u>	<u>Strain at Failure</u>
1	0.243	0.042	4.5	0.010	14,536	0.030
2	0.242	0.041	4.5	0.010	12,958	0.037
3	<u>0.241</u>	<u>0.047</u>	<u>4.5</u>	<u>0.011</u>	<u>12,249</u>	<u>0.033</u>
AVERAGE	0.242	0.043	4.50	0.010	13,248	0.034

	<u>Tensile Strength (PSI)</u>	<u>Strain at Failure</u>	<u>Modulus of Elasticity (PSI)</u>	<u>Deflection Inches</u>	<u>Percent Elongation</u>
STANDARD DEVIATION:	38.9	0.004	1,170.7	0.016	0.352
COEFF. OF VARIATION:	8.770	10.479	8.837	10.479	10.479

I hereby verify that these results are true and accurate, and can verify by submission of original test results upon request.

J.F. Pritchett, President