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## Thermal Resistance Test Report

Date of Test: March 29, 2006

Date of Manufacture: n/a

HFM File Number: 7522

Specimen Number: 1021060316-1B

Test Number: RD061903TR

Description of test specimen: Innovative Energy, Inc.; Product name is "Tuff Stuff". Double layer of polyethylene bubble-pack with aluminum foil on one face.

Test Method: ASTM C 518, "Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus."

Report prepared for: Innovative Energy, Inc. / Jim Kouns

The results in this report were obtained with a heat-flow meter built and operated in accordance with ASTM C 518.

Heat flow meter: _____	<u>12 by 12</u>	_____	inches x inches
Specimen thickness: _____	<u>0.313</u>	_____	inches
Specimen density: _____	<u>3.50</u>	_____	lb/ft <sup>3</sup>
Cold plate temperature: _____	<u>52.56</u>	_____	deg F
Hot plate temperature: _____	<u>97.56</u>	_____	deg F
Average specimen temperature: _____	<u>75.06</u>	_____	deg F
Apparent thermal conductivity: _____	<u>0.3127</u>	_____	Btu.in/ft <sup>2</sup> .hr.°F
Thermal resistivity ( R-per-inch): _____	<u>3.198</u>	_____	ft <sup>2</sup> .hr.°F/Btu.in
Thermal resistance of specimen: _____	<u>1.00</u>	_____	ft <sup>2</sup> .hr.°F/Btu

Notes: Calibration factor used for manual calculation? NA EMF NA

Edge guards or cabinet temperature satisfactory? Yes

Excessive moisture on cold plate? No

Length of time for test (hours)? 4.12

The precision of this test is estimated to be 2.5% (Section 10.3, ASTM C 518)

Ronald S. Swade  
 Reviewed By:

07-15-06  
 Date:

The results in this report apply only to the specimen tested. This test conforms to ASTM Test Method C 518 except for the report requirements. The report includes summary data but a full complement of data is available upon request.