



## Test Report for Resistance to the Growth of Fungi

### Report Summary

Manufacturer: Aeroflex USA, Inc.  
Material Description: Aerocel EPDM Sheet Insulation  
ASTM Test Method: C 1338-00  
Project Number: 1497  
Specimen Number: 1497080624-1  
Report Number: RD082271FR  
Date of Report: August 4, 2008  
Period of Test: June 30, 2008 – July 28, 2008  
Test Result: Pass  
Number of Specimens Observed: 3  
Comparative Material: Southern Yellow Pine  
Fungi Checked for Viability: Yes  
Regular or Extended Test: Regular

### Background

The ASTM Standard Specification for many thermal insulations requires a test for the resistance of the insulation to the growth of fungi. Section 10 of C 1497, ASTM C 1338-00, Section 6.6 of ASTM C 1149, or Section 11 of ASTM C 739-05b are commonly used in the case of building materials. Evaluations for fungi growth are based on visual examinations at 40X magnification. The examinations at 40X magnification compare fungal growth on the material being evaluated with the fungal growth on an untreated comparative material that is exposed to the same environment as the test specimens. Both the material being tested and the comparative material are inoculated with a mixed spore suspension containing five specific fungal species to start the test. Since most fungi thrive in a relatively narrow range of temperature and humidity, inoculated specimens and comparative materials are maintained within temperature and relative

humidity ranges specified in the test method for the 28-day growth period. The purpose of the test is to provide an evaluation of the potential for fungal growth present in the insulation material relative to common types of wood used in building construction. The fungal species used in the tests for thermal insulation are listed below.

<i>Aspergillus niger</i>	ATCC 9642
<i>Aspergillus flavus</i>	ATCC 9643
<i>Aspergillus versicolor</i>	ATCC 11730
<i>Penicillium funiculosum</i>	ATCC 11797
<i>Chaetomium globosum</i>	ATCC 6205

A mixed spore suspension is produced from the above five species in accordance with the test method being followed. The viability of each of the five species is verified with each test as required by the test method being used. The ASTM test methods for resistance to fungal growth require a 40X visual comparison of test material and comparative materials 28 days after inoculation. The criteria for a pass/fail result at the end of the 28-day test period depends on the test method being followed.

Test using ASTM C 1338-00

Each of the replicate test specimens shall be determined to have either no fungal growth, fungal growth no greater than the comparative material, or fungal growth greater than the comparative material.

<u>Results</u>	<u>Specimen</u>	<u>Fungal Growth Comparison</u>
	1	<u>No growth.</u>
	2	<u>No growth.</u>
	3	<u>No growth.</u>

The pass/fail result: Pass

Basis for the pass/fail result: Three of three specimens passed.

This R&D Services, Inc. test report and the evaluation contained in the report are limited to the material tested. The extent to which the material tested is representative of the product being manufactured is the sole responsibility of the manufacturer. The test results are not purported to predict the performance of the material in a building or installation.

*Karen McElroy*

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Evaluation:

08-04-08

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Date:

*Ronald S. Brewer*

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Review:

08-04-08

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Date:

References:

ASTM C 1338-00, "Standard test Method for Determining Fungi Resistance of Insulation Materials and Facings", 2002 Annual Book of ASTM Standards, Vol. 04.06, pp. 721-723.

ASTM C 1497, "Standard Specification for Cellulosic Fiber Stabilized Thermal Insulation", 2002 Annual Book of ASTM Standards, Vol. 04.06, pp. 849-852.

MIL-STD-810E, Method 508.4, "Fungus", 14 July 1989.