**Title: Fungal Resistance Results**

**Product: Poly Max**

Application: Wall or Ceiling

Testing Standard: ASTM C1338

Test Date: 4/21/2011

*Why this test:* This test evaluates resistance to the growth of mold on the product, placing product samples with mold spores applied in an environmental test chamber at about 30°C and 95% humidity for 28 days. Products are removed and examined under a microscope for any spore growth, which would result in a failure.

Test Result Summary: Pass (no fungal growth)

Test ID: R2011-87



123 Columbia Court North Suite 201 Chaska, MN 55318 | TOLL FREE 800.448.0121 | PHONE 952.448.5300 | FAX 952.448.2613 | WEB SITE www.acousticalsurfaces.com

130 Erick Street
Crystal Lake, IL 60014
(815) 526-0954

Final Report for:

ASI

123 Columbia Court N.
Chaska, MN

Test Method:

# ASTM C 1338 – 08 Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings

MSL #R2011-87-2, Amendment to R2011-87

Sample Received: 3/23/11

Testing Initiated: 3/24/11

Four Week Testing Completed: 4/21/11

Final Report Issued: 4/21/11

*Judy LaZonby*
President – The MicroStar Lab, Ltd





TESTING CERT #2832.01
ISO-R-118-02 DMK

## Objective:

To evaluate the fungal resistance properties of one insulation material sample as seen in the ASTM C 1338 - 08 fungal resistance test.

## Test Sample Description:

1. 1/2" Poly Max 9.4pcf (100% Polyester Acoustic Panel)

The sample was received as one larger piece from which 2 inch by 2 inch test pieces were cut. The sample was tested in triplicate for both sides of the sample.

## Customer Requested Modifications

None

## Procedure:

Inoculum was prepared using working fungal stock cultures that had been incubating for 5 days or longer on Potato Dextrose Agar. The test includes the following fungi:

1. *Aspergillus niger* ATCC # 9642
2. *Penicillium funiculosum* ATCC # 11797
3. *Aspergillus flavus* ATCC # 9643
4. *Aspergillus versicolor* ATCC # 11730
5. *Chaetomium globosum* ATCC # 6205

Each fungal culture was adjusted in concentration to $1.0 \times 10^6 \pm 200{,}000$ spore/mL. Equal volumes of each adjusted fungal suspension were blended for the final mixed spore suspension. Each test piece was placed into a separate sterile Petri dish. The test pieces were allowed to precondition in the test chamber at 30 ± 2°C and 95 ± 4% relative humidity for 4 hours prior to testing. After pre-conditioning, the test pieces were evenly inoculated with the mixed spore suspension using a sterile sprayer. Inoculated samples were then placed into the test chamber maintained at 30 ± 2°C and 95 ± 4% relative humidity for 28 days. At the end of the incubation period, samples were examined at 40X magnification for the presence of fungal growth. A comparative item was not submitted by the customer, therefore the test criteria is growth or no growth of fungus.

Individual viability plates of each test organism were prepared by placing approximately 0.2 mL of the prepared spore suspension onto Potato Dextrose Agar. Sterile filter paper was placed onto the surface of Potato Dextrose agar and inoculated with the mixed spore suspension as an inoculum viability control. A sterile tongue blade was also inoculated with the blended spore suspension as a viability control. See results below.

Relative humidity and temperature measurement equipment are validated using a Vaisala Thermohygrometer and Probe, MI70/ HMP75B that is externally calibrated to NIST traceable standards. Relative humidity is internally validated using NIST traceable $K_2SO_4$ saturated salts that are externally calibrated by an ISO/IEC 17025 FINAS accredited laboratory, Certificate # K008-U00038. Temperature is internally validated using a Cole Palmer Thermometer, Model 90250-31, Serial # 4463 that is externally calibrated by an ISO/IEC 17025 A2LA accredited laboratory, Calibration Certificate # 1681.02. An internally validated Veriteq data logger, Serial # 09102083, was also used to verify pre-condition parameters.

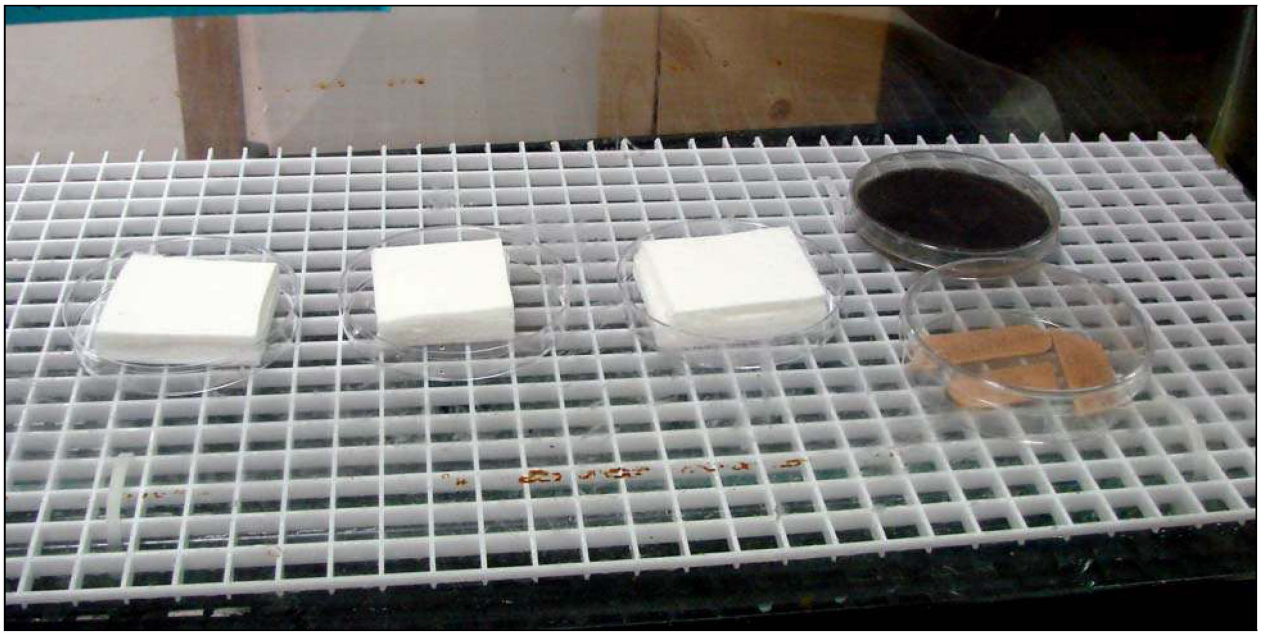
**Test Results:**

After 4 weeks of incubation in the C 1338 chamber, the results for the test pieces can be found in the data table below. The samples were rated according to the scales below. The test controls performed as expected, confirming the validity of the test. Individual test organism controls confirmed the viability of each test organism used. These results pertain only to the samples tested.

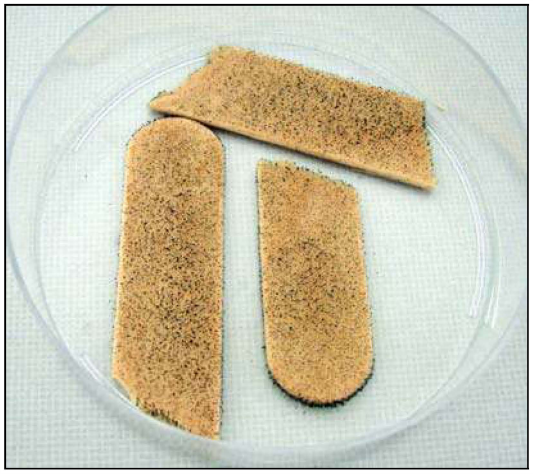
| **Interpretation of results according to C 1338 – 08 test method** |
|---|
| Growth greater than that on the comparative item shall be considered to have failed |
| Growth not greater than that on the comparative item shall be considered to have passed. |
| If no growth is the criterion, any growth shall be considered a failure |

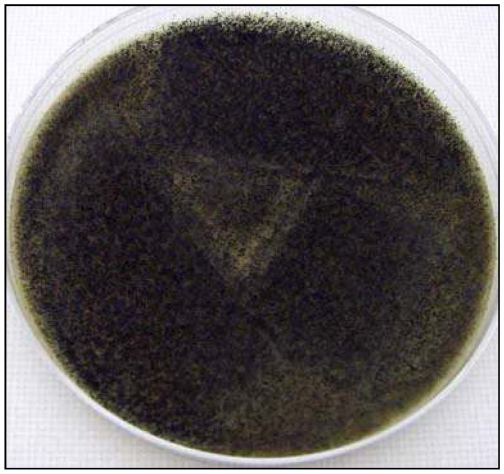
Since no comparative item was supplied by the customer, the criterion used to determine Pass/Fail for this test was "growth/no growth" criterion.

| Sample | Description of Growth | Pass/Fail |
|---|---|---|
| 1/2" Poly Max 9.4pcf (100% Polyester Acoustic Panel) | No fungal growth found on all three replicates at 40X magnification | PASS |



Pictured above are the three replicates tested of sample 1.2" Poly Max 9.4pcf (100% Polyester Acoustic Panel) and the test controls in the test chamber at Day 21.





The picture on the left is of the sterile tongue blade control at Day 28 which was inoculated with the test inoculum. The picture on the right is of the sterile paper strips at Day 28 that were placed on the agar surface and inoculated with the test inoculum. Both inoculum controls verify that the test inoculum was appropriate and viable.