ASTM G21-09

Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

FINAL REPORT: R2016-223-1A

Prepared for:
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TESTING CERT: #2832.01

Testing Initiated: March 24, 2016
Testing Completed: April 21, 2016
Report Issued: December 19, 2017

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Objective:

To evaluate the mold resistance properties of one sample as seen in the ASTM G21 fungal resistance test.

Test Sample Identification:

1. 20oz. Printed and Embossed Type II Osnaburg Backed Commercial Vinyl Wallcovering (YM)

Test Procedure Summary:

Samples are placed onto the surface of ASTM G21 nutrient salts agar and sprayed with a mixed spore suspension of five fungal cultures. The nutrient salts agar provides all of the trace nutritional elements needed by fungi to support growth. However, to achieve a heavy growth, the fungi must use the test material as its primary carbon source. Inoculated samples are incubated and then examined for fungal growth.

Test Variables

Test Organisms:	*Aspergillus brasiliensis*[1]	ATCC 9642
	Penicillium funiculosum[2]	ATCC 11797
	Chaetomium globosum	ATCC 6205
	Trichoderma virens[3]	ATCC 9645
	Aureobasidium pullulans	ATCC 15233
Sample Description:	2” x 2” printed vinyl squares	
Number of Replicates per Sample:	Three	
Method of Sterilization /Pre-Cleaning:	UV Sterilized prior to testing	
Positive Growth Control:	Sterile Filter Paper	
Media Used:	Nutrient-Salts Agar prepared according to standard	
Environmental Conditions:	28 - 30°C; ≥85% relative humidity	
Incubation Duration:	28 days	
Deviations from Standard Test Method:	None, testing performed per ASTM G21 without deviation.	

[1] Historically known as *Aspergillus niger*
[2] Historically known as *Penicillium pinophilum*
[3] Historically known as *Gliocladium virens*

Results:

The results for the test pieces can be found in the data table below. The filter paper control pieces had copious fungal growth at Day 14. Temperature and relative humidity were maintained for the duration of the test. These results pertain only to the samples tested.

At week 4, samples rating a "0" or "1" were examined microscopically to confirm the ratings.

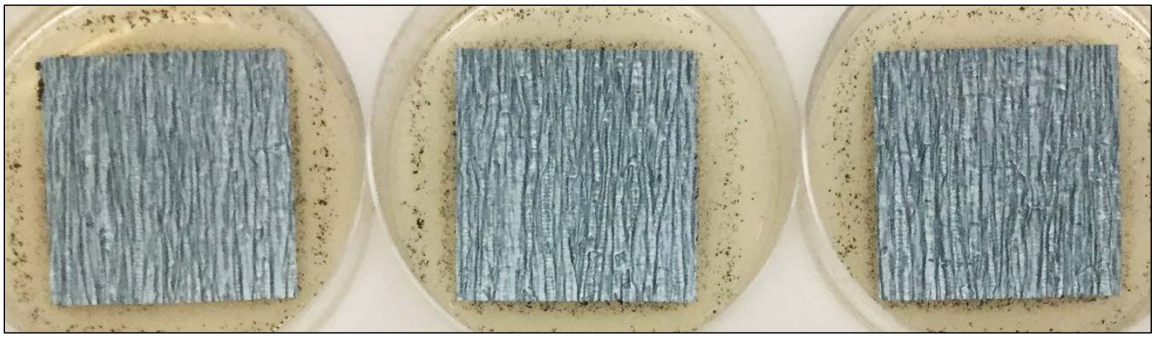
The rating scale for this test is as follows:

Rating	Observed Growth
0	No Growth
1	Trace of Growth (less than 10% coverage)
2	Light Growth (10-30% coverage)
3	Medium Growth (30-60% coverage)
4	Heavy Growth (60-100% coverage)

Sample Identification	Rep	Week 1	Week 2	Week 3	Week 4
20oz. Printed and Embossed Type II Osnaburg Backed Commercial Vinyl Wallcovering (YM)	1	0	0	0	1
	2	0	0	0	1
	3	0	0	0	1

Sample Photos with Fungal Growth:

Replicate 1 – Rated "1" Replicate 2 – Rated "1" Replicate 3 – Rated "1"



The trace growth on all replicates was only visible at 20X magnification.