ACCUGEN LABORATORIES,INC.

Accugen Laboratories, Inc., founded in 1997, is a FDA registered, independent contract microbiology laboratory. We offer full microbiological testing and analyze products from a wide variety of industries. Our microbiological testing laboratory is comprised of a highly experienced team of microbiologists who are experts in testing ASTM, AOAC, AATCC, FDA, EPA, USDA, USP, CTFA, JIS, ISO and other methods of analysis. Our competent professionals have decades of experience in routine microbiological analysis, special microbiology, research microbiology, and a variety of other microbiological testing. We are considered leading authorities in microbial testing.

Accugen Laboratories Inc.

FINAL REPORT

ASTM D3274-09
Standard Test Method for Evaluating Degree of Surface Disfigurement of Paint Films by Fungal or Algal Growth, or Soil and Dirt Accumulation

TEST AGENT
Arcoplast Engineered polymer 9.5 mm Lot No. Ref# 12262

TESTING LABORATORIES
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SAMPLE RECEIVED: 04-04-18

MOLD CULTURES INITIATED: 04-17-18

MOLD CULTURE IN CHAMBER INITIATED: 04-30-18

AFTER 2 WEEKS OF PREPARATION

TEST STARTED: 05-14-18

TEST COMPLETED: 06-11-18

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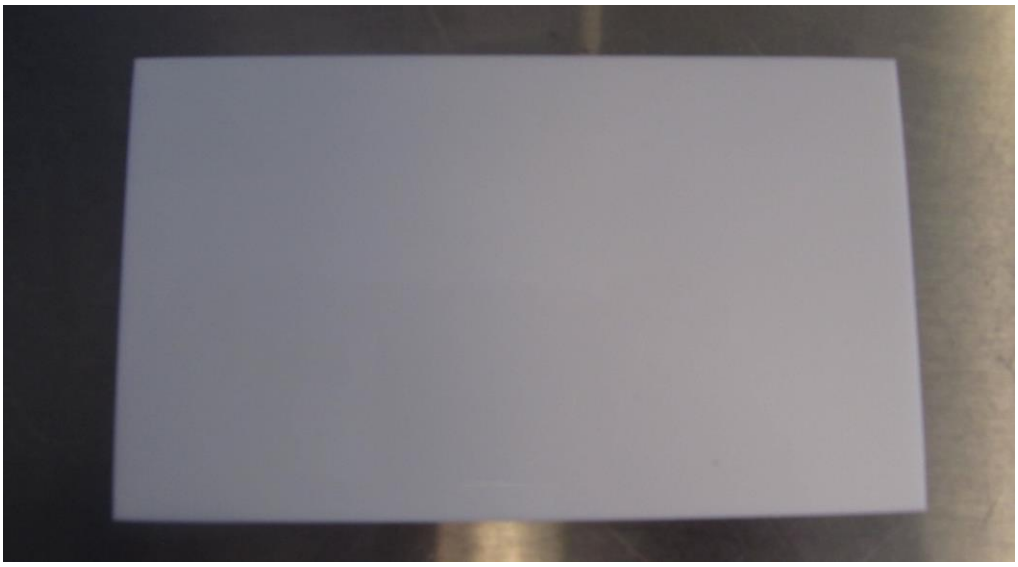
TEST SUMMARY

TITLE: Standard Test Method for Evaluating Degree of Surface Disfigurement of Paint Films by Fungal or Algal Growth, or Soil and Dirt Accumulation

OBJECTIVE: To test the resistance of test samples to mold growth.

TEST MATERIAL: Samples submitted and identified by sponsor of study as Arcoplast Engineered polymer 9.5 mm Lot No. Ref# 12262



TEST CONDITIONS:

Challenge Organisms:	Aureobasidium pullulans ATCC# 9348
	Aspergillus niger ATCC# 6275
	Penicillium Sp. ATCC# 9849
Sample size:	3 X 4 inches.
Soil Composition:	Greenhouse-grade potting soil with 25% peat moss.
Soil pH:	6
Growth Media:	Sabaroud dextrose agar
Environment Chamber:	Capable of maintaining a relative humidity of 95 to

	98% at a temperature of 32.5 ±10C providing continuous inoculation of the surface of exposed panels with mold spores.
References:	ASTM D3273 – 16 & ASTM D 3274-09 (2017)
Test Performed by:	Brijal Rana

STUDY DATES AND FACILITIES:

A study director was assigned before initiation of the test. The study was conducted at ACCUGEN LABS, INC., 2121 W Army trail Rd, Addison, IL 60101

RECORDS TO BE MAINTAINED:

All testing data, test material records, the final report, and correspondence will be stored in the archives.

PROCEDURE:

The test soil was spread across the bottom of the test chamber. The chamber was allowed to equilibrate for 24 hours before inoculating the soil with mold suspensions. The mixed fungal suspension (Aureobasidium pullulans ATCC# 9348, Aspergillus niger ATCC# 6275, and Penicillium Sp. ATCC# 9849) was evenly distributed by using a pipet over the soil tray in the chamber. Two weeks of continuous operation was carried out for the mold to sporulate and equilibrate with the environment before starting the test.

As Viability Control**,** a few open Sabaroud dextrose agar plates were placed face up in the chamber at several places on the sample support rods. The plates were covered after 1 hr and left in incubator at $32.5^0 \pm 1\ ^0$C for 3 days.

The test samples were suspended vertivally with the bottom of each sample approximately 3 inches above the surface of the inoculated soil and sufficient spacing between test units was created for free air movement.

The samples were incubated at $32.5^0 \pm 10$ C and 95% to 98% relative humidity for 4 weeks. Panels were observed each week and rated on resistance to mold from 0 (Heavy growth) to 10 (No growth).

RATING SCALE:

Rating	Coverage%	Description
10	0	No Fungal Growth
9	0.03	Trace
8	0.1	Slight
6	1	Moderate
4	10	Pronounced
2	33	Severe
0	50	Complete Coverage

TEST RESULTS: See Table and pictures

Table:
*: Average of three replicates.
Scoring: 0 means Complete Coverage, rating of 50%. 10 means No Fungal Growth, rating of 0%

Lab #	Sample ID	Results				Conclusion	Coverage%
		First Week	Second week	Third Week	Fourth Week		
unpainted control panels		0*	0	0	0	Heavy growth- Complete Coverage	50%
130822	Arcoplast Engineered polymer 9.5 mm Lot No. Ref# 12262	10*	10	10	10	Mold totally Absent- No Fungal Growth	0%

CONCLUSION:

Products tested showed 0% coverage of fungal growth. All samples had ASTM D3274 rating of 10.

Approved

4:39 pm CT, Jun 14, 2018

ACCUGEN LABORATORIES, INC ALI UNITED STATES OF AMERICA

Tehseen Naqvi, M.S. Microbiology, M (ASCP). Study direct

Figure 1. Treated Sample- Arcoplast Engineered polymer 9.5 mm Lot No. Ref# 12262

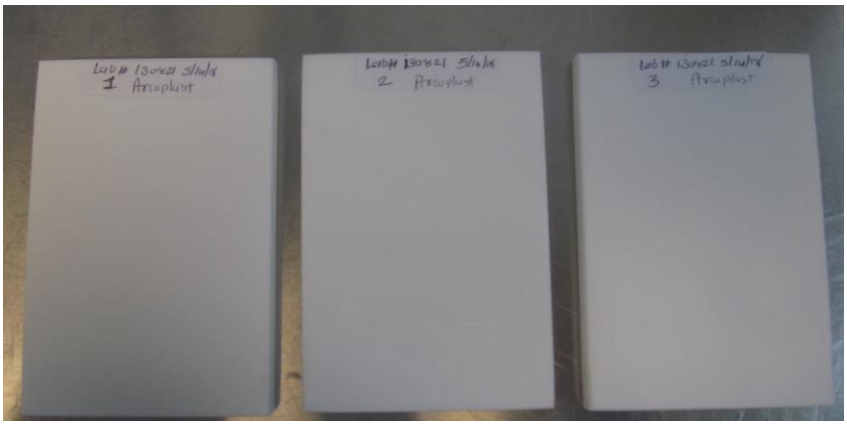


Figure 2: Untreated wood

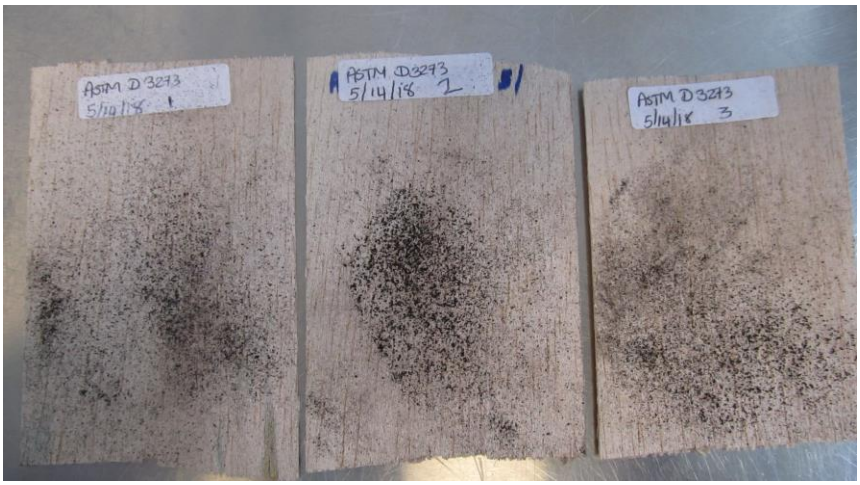


Figure 3:Viability control