

# ASTM D 3273 - 16

*Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*

*FINAL REPORT: R2022-116-2*

Prepared for:  
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## **Objective:**

To evaluate the mold resistance properties of four samples as demonstrated by the ASTM D3273 fungal resistance test.

## **Test Sample Identification:**

1. HardieFlex (Control)
2. HardieFlex Advanced 142037
3. HardieFlex Advanced 142037 painted
4. HardieFlex Advanced 142038

## **Test Procedure Summary:**

The ASTM D3273 test chamber contains soil that was seeded with fungal spores and allowed to grow. The test samples were hung in the D3273 chamber with three pieces of the positive growth control to confirm validity of the fungal inoculum coming from the soil. Samples were examined weekly for fungal growth and defacement and rated according to visual defacement of fungal growth.

### Test Variables

<b>Test Organisms:</b>	<i>Aspergillus niger</i>	ATCC 6275
	<i>Penicillium citrinum</i>	ATCC 9849
	<i>Aureobasidium pullulans</i>	ATCC 9348
<b>Sample Description:</b>	3" x 4" fiber board pieces	
<b>Sample Preparation:</b>	Test as received	
<b>Number of Replicates per Sample:</b>	Three	
<b>Positive Growth Control:</b>	Untreated wallboard	
<b>Environmental Conditions:</b>	32.5 ± 1°C; 95 ± 3% relative humidity	
<b>Incubation Duration:</b>	56 days (8 weeks)	
<b>Deviations from Standard Test Method:</b>	56-day incubation duration	



## Results:

After 56 days of incubation in the D3273 chamber, the results for the test pieces can be found in the data table below. These results pertain only to the samples tested.

Samples are rated according to degree of surface defacement. Visual defacement is determined with an unaided eye, using magnification only to confirm suspicious areas. The rating scale is as follows:

Rating	Definition
10	No Defacement
9	90% clear (1 - 10 % defaced)
8	80% clear (11 - 20% defaced)
7	70% clear (21 - 30% defaced)
6	60% clear (31 - 40% defaced)
5	50% clear (41 - 50% defaced)
4	40% clear (51 - 60% defaced)
3	30% clear (61 - 70% defaced)
2	20% clear (71 - 80% defaced)
1	10% clear (81 - 90% defaced)
0	0 % clear (91 - 100% defaced)

Sample Identification	Rep	ASTM D3273 Rating							
		Week 1 Front	Week 2 Front	Week 3 Front	Week 4 Front	Week 5 Front	Week 6 Front	Week 7 Front	Week 8 Front
HardieFlex (Control)	1	10	10	10	10	10	10	10	10
	2	10	10	10	10	10	10	10	10
	3	10	10	10	10	10	10	10	10
HardieFlex Advanced 142037	1	10	10	10	10	10	10	10	10
	2	10	10	10	10	10	10	10	10
	3	10	10	10	10	10	10	10	10
HardieFlex Advanced 142037 painted	1	10	10	10	10	10	10	10	10
	2	10	10	10	10	10	10	10	10
	3	10	10	10	10	10	10	10	10
HardieFlex Advanced 142038	1	10	10	10	10	10	10	10	10
	2	10	10	10	10	10	10	10	10
	3	10	10	10	10	10	10	10	10



### Controls and Conditions

New control pieces were added at week 4 to continuously monitor chamber viability over the 56-day incubation period. The control pieces added at Day 0 and Week 4 performed as expected, confirming the validity of the test.

### Results for: MSL Controls

	ASTM D3273 Rating (Front/Back)				
	MSL-1 ½" Untreated wallboard	MSL-2 ½" Untreated wallboard	MSL-3 ½" Untreated wallboard	Relative Humidity (95 ±3%)	Temperature °C (32.5 ± 1°C)
<b>Week 1</b>	9/9	9/9	9/9	32.5	96
<b>Week 2</b>	6/3	6/4	6/4	32.6	97
<b>Week 3</b>	3/2	4/2	3/2	32.4	96
<b>Week 4</b>	2/0	3/0	1/0	32.3	96
<b>Week 5*</b>	8/8	8/8	8/8	32.3	96
<b>Week 6*</b>	3/2	3/3	3/3	32.2	97
<b>Week 7*</b>	0/1	1/1	1/1	32.3	96
<b>Week 8*</b>	0/0	0/0	0/0	32.3	97

\*Results for control pieces added at Week 4