



TECHNICAL SERVICE REPORT

AC9919

Elite Crete Systems

Client:

Elite Crete Systems
1151 Transport Drive
Valparaiso, IN, 46383 US

Test Laboratory:

Thor Specialties, Inc.
50 Waterview Drive
Shelton, CT 06484 USA



OBJECTIVES:

To examine two Epoxy Resin samples for microbial contamination.

To determine the dry film fungal resistance of an Epoxy coating formulation, unpreserved as well as with 0.15%, 0.20%, 0.25% and 0.30% of ACTICIDE® 45.

CONCLUSIONS:

Microbiological screening revealed the Epoxy Resin Part A sample was free from contamination upon receipt. Due to the corrosive nature of sample two (Part B), it was not screened.

The two Epoxy Resin samples, Part A and Part B, were combined prior to conducting dry film testing (refer to sample preparation on page 3).

The dry film fungal resistance test results revealed susceptibility could not be established in the unpreserved Epoxy coating formulation under laboratory conditions, therefore the contribution of the biocide could not be determined.



SAMPLES: 2 Crystal Clear Epoxy samples

ADDITIONS: ACTICIDE® 45 at 0.10%, 0.15% and 0.20%

SAMPLE PREPARATION: Final coating formulation was prepared as follows:
 Mix ratio = 2 parts A resin to 1 part B hardener by volume
Biocide additions were made to the final coating formulation

EXAMINATIONS: Microbial Screening: A700
 pH and Redox measurements: A625, A626
 Dry Film Fungal Resistance Test, Vermiculite Bed A810

RESULTS: Microbial Screening

	Sample	Degree of Microbial growth on				pH value	Redox potential (mV)
		NA		PDA	SIM		
		30°C	37°C	25°C	30°C		
1	E100-PTI Part A Crystal Clear Epoxy	0	0	0	-		
2	E100-PTI Part B Crystal Clear Epoxy (Corrosive)	N/A	N/A	N/A	N/A		
1/2	Epoxy coating formulation					11.05	-54

Growth Key: N/A = not applicable

Bacteria/Yeast:

0 = no growth 1 = very scant 2 = scant 3 = light 4 = moderate 5 = heavy 6 = dense

Mold: 0 = None X= Slight XX = Moderate XXX = Heavy growth XXXX = Dense

Hydrogen Sulfide Producing Bacteria: - = Negative + = Positive ++ = Strong Positive () = Odor

Growth Media:

NA=Nutrient Agar-for the detection and growth of aerobic bacteria.

PDA=Potato Dextrose Agar-for the detection and growth of yeasts, molds and *Acetobacter type species*

SIM=Sulphide Indole Motility Agar-for the detection of hydrogen sulfide producing bacteria.



Dry Film Fungal Resistance Test, Vermiculite Bed A810:

Inoculum: Standard Dry Film Fungal Inoculum

6.6 x 10⁶ cfus/ml

Substrate: Concrete


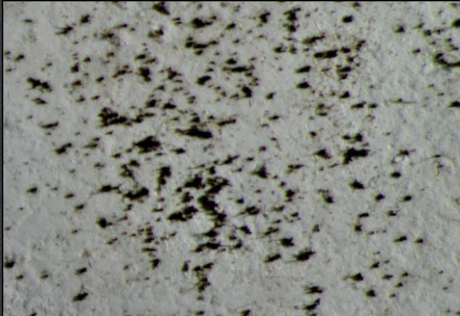

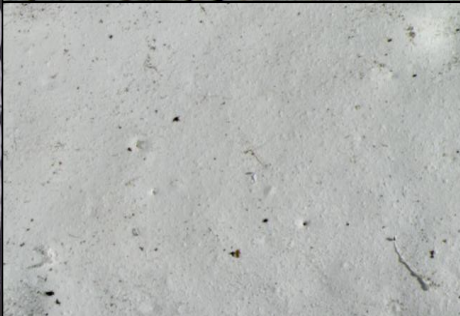
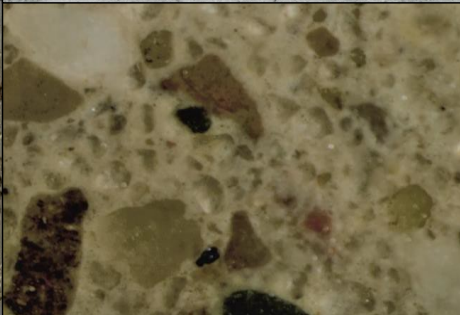
SAMPLE		Degree of Fungal Growth	
		I	II
positive control		3	3
negative control		0	0
1/2	Epoxy coating formulation		
	Unpreserved (Blank)	0	0
	0.15% ACTICIDE® 45	0	0
	0.20% ACTICIDE® 45	0	0
	0.25% ACTICIDE® 45	0	0
	0.30% ACTICIDE® 45	0	0

Film Fungal Growth Ratings Chart for Test Methods A810 & A800.1

<u>AREA</u>		<u>DENSITY</u>
0 = No growth	3 = 11 - 30% Coverage of growth	X = Light
1 = Trace growth	4 = 31 - 70% Coverage of growth	XX= Moderate
2 = 1 - 10% Coverage of growth	5 = 71 - 100% Coverage of growth	XXX= Dense

Dry Film Fungal Resistance Test, Vermiculite Bed A810 Pictures:

Substrate: Concrete

SAMPLE	Picture	
	Macroscopic	Microscopic 1X20
positive control		
negative control		
1/2	Representative of blank and all addition levels tested	



Dry Film Fungal Inocula

1.1 Methods 800.1 and 810 Vermiculite Bed Techniques

Mold Organisms	Culture Collection Reference
<i>Alternaria alternata</i>	ATCC 34509
<i>Aspergillus niger</i>	ATCC 10575
<i>Aspergillus oryzae</i>	ATCC 11488
<i>Aspergillus terreus</i>	IMI 113732
<i>Aureobasidium pullulans</i>	ATCC 9348
<i>Cladosporium cladosporioides</i>	ATCC 16022
<i>Myrothecium verrucaria</i>	IMI 140594
<i>Penicillium funiculosum</i>	ATCC 11797
<i>Penicillium ochrochloron</i>	IMI 061271
<i>Penicillium rubrum</i>	IMI 113729
<i>Phoma</i> species	ATCC 74077
<i>Stachybotrys chartarum</i>	ATCC 16026
<i>Ulocladium atrum</i>	ATCC 52425
<i>Trichoderma viride</i>	ATCC 24687



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