



Enviroshield LLC
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Dear Bob,

This is a final report from MouldWorks on our latest evaluation of your protective coating. We evaluated the ability of this material to inhibit germination and/or growth of 5 different commonly occurring interior molds: *Cladosporium sphaerospermum*, *Penicillium aurantiogriseum*, *Chaetomium gloeosporium*, *Stachybotrys sp.* and *Aspergillus versicolor*.

Mold infestations in houses are established by spores which are deposited from the air, brought in by water intrusions, or disseminated by insects and mites. In virtually all cases infestations occur when spores germinate and grow within or on common construction materials such as OSB, dimensional lumber, drywall, or insulation. If spores cannot germinate and grow on protective coatings, then they cannot serve to initiate mold colonization within a building. The MouldWorks protocol for evaluating the resistance of coatings to molds involves an assessment of spore germination in 5 species of common household molds under laboratory conditions which simulate those that may occur in buildings prior to appearance of mold problems. These spores came from cultures of molds isolated by us from samples sent to MouldWorks for analysis – bulks, tapelifts, and viable spore plates. For the most part these cultures were isolated within the last 6 months. When cultures show signs of senescence and loss of vigor, we replace them with recent isolates.

Your product was applied to the surfaces of dry filter papers. When the coating had dried for 2-3 days, about 100 µl of spore suspension containing ca. 5 million spores/ml was placed on the surface of each coated paper and spread with a sterile cotton swab. The inoculated filter papers were then placed on the surfaces of water agar plates, and spore germination was monitored for 1 week. We did this by taking tapelifts from the surfaces of inoculated coatings and looking for signs of spore germination under the compound microscope. Control filter papers coated with black enamel spray paint and placed in water agar plates were inoculated with the same 5 mold species used for the test coatings. Spore suspensions were also plated out on plain water agar. These controls tested both for spore viability on non-coated agar and on a non-toxic coating. After one week spore germination was scored and tabulated. 100 spores of each species were counted and checked for germination. In the process several thousand spores were glanced at casually. The results from these tests are summed up in the following table:

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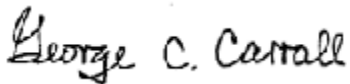
Species	Paint	Test Product	Water Agar
<i>Aspergillus versicolor</i>	growth	no growth*	growth
<i>Chaetomium globosum</i>	growth	no growth	growth
<i>Cladosporium sphaerospermum</i>	growth	no growth	growth
<i>Penicillium aurantiogriseum</i>	growth	no growth	growth
<i>Stachybotrys</i> sp.	growth	no growth	growth

* This species had a 52% germination rate, but no growth was observed

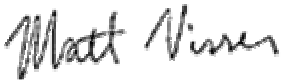
Only one of the molds showed any sign of germination or growth on the surfaces coated with your product. *Aspergillus versicolor* spores were able to germinate about half of the time, but the small germ tubes the spores were able generate promptly stopped growing and apparently died. These spores are then equivalent to nonviable spores. The germination of spores alone should not be seen as a shortcoming since this mold was unable to proceed to hyphal development and reproduction, ensuring an infestation could never occur

All of the surveyed species germinated and grew on both the agar and black enamel controls. We conclude that your product was highly effective in preventing fungal germination and growth under the conditions of this assay, which are certainly far more stringent that might occur under normal conditions leading to a mold infestation.

Sincerely yours,



George Carroll, Ph.D.
MouldWorks Mycologist



Matt Visser
Mycologist and Lab Manager