Port Charlotte High School Library - A Case Study

MOLD CONTAMINATED LIBRARY BOOKS SAVED FROM REPLACEMENT

Problem

Mold had infested approximately 10,000 library books at the Port Charlotte High School in Port Charlotte, Florida. On three occasions, the books had to be cleaned, wiped with dilute bleach solution, dried, and re-cataloged. Despite these efforts, mold and mildew always returned - sometimes in just a few weeks. The problem became so severe that students and library staff began to complain of respiratory illnesses and other symptoms typical of "Sick Building Syndrome." Replacement of the books seemed to be the only way to correct the problem.

Application Requirements

Determine whether or not it was possible to avoid costly replacement of the thousands of contaminated books in the Port Charlotte High School library, and secondly, to provide a lasting solution to the severe airborne microbial contamination problem in the library itself. Any procedure or treatment must be cost-effective and, because of the daily presence of students and staff in the library and the regular handling of the books, it must also be odorless and essentially non-toxic to humans.

Solution

The ÆGIS Microbe Shield™ Program.

Solutions Method and Results

Because of the results which had been achieved with mold and mildew contamination problems by other schools in Florida, in June, 1991 the school board turned to ÆGIS Environments to see if any solutions to the library problems existed.

ÆGIS researchers and field engineers worked closely with school officials to determine sources of contamination, methods of decontamination, and a strategy for prevention of future problems.

Carpeting in the library had become heavily contaminated with mold and was a primary suspect for the "Sick Building Syndrome"symptoms. This problem is fairly common and has been effectively controlled in numerous buildings by the ÆGIS Microbe Shield™ Program.

Controlling fungus on the books, however, would be more challenging. Although ÆGIS™Antimicrobial, the primary physical treatment utilized by ÆGIS, had been proven to prevent mold growth on books in the laboratory, it had never been used in the field.

ÆGIS designed and built a special apparatus for on-site treatment and drying. Proper dilution and application rates were determined, and in August treatment of the 10,000 books began.

The results have been even better than expected by the ÆGIS staff. Despite the fact that water is used as a solvent

for the antimicrobial material, none of the books were stained, warped, or otherwise adversely affected by the treatment. Long after the treatment, the books remained as clean and free of mold as when first treated.

Treatment of the carpeting and walls produced a 90.1% reduction of airborne fungal exposure levels in the library. Student and staff complaints about musty odors and respiratory illness have stopped.

ÆGIS ™ Antimicrobial is the keystone of the ÆGIS Microbe Shield™ Program. It is a durable, broad-spectrum antimicrobial, which is EPA approved for application to non-food contact interior surfaces. Unlike conventional antimicrobials or biocides, which are designed to volatilize and be absorbed by organisms, ÆGIS ™ Antimicrobial chemically bonds to, and literally becomes a part of, the application surface. It acts only when microorganisms come into direct contact with it.

Since the antimicrobial is not absorbed by organisms and remains a part of each application surface it, in effect, transforms conventional construction or decorating materials into active antimicrobial surfaces which will remain effective for extended periods. In most environments, the ÆGIS Microbe Shield™ Program effectively eliminates the microbial growth sources for a minimum of twelve months. The program typically results in an initial reduction of airborne microbial contaminants, which ranges from seventy-five to ninety-five percent of pretreatment levels. Periodic testing and retreatment can maintain the reduced contaminant levels indefinitely.

The work done by ÆGIS in the Port Charlotte High School Library was somewhat experimental in nature, but has proven to be extremely successful. The combination of the unique ÆGIS technology with ÆGIS' experience in treating microbial contamination problems appears to have successfully controlled what had been a severe, costly and long lasting problem for the library.

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