

# "Mold Gets 10 Years to Life"

The following case study involves a prominent upper Midwest maximum security prison, which was built in 1982. The architect who designed the building won an award for innovative techniques in reducing energy consumption. In reducing energy consumption however, he ended up creating an environment conducive to mold growth on the interior surfaces of the duct work.

Complaints stemming from the building's air system resulted in the Warden hiring Paul Ellringer PE, CIH, to investigate and find a solution. Ellringer's investigation uncovered elevated mold spore counts in the work environment. Examination of the duct system confirmed that mold was growing on the fibrous glass duct liner found in the building's ventilation system.

## 10 YEARS LATER

The ductwork was subsequently inspected, and the coating surface tested for fungi at one, three, five and ten years after the initial coating application. At each inspection, testing and observations revealed continued significant fungal growth at locations where the coating was not applied. In areas where Foster 40-20 coating was applied, there was no visible mold on the coating surface, and surface wipe testing revealed no mold growth on the coating surface. Ten years later, the ductwork coated with Foster 40-20 coating looks as good visually as when it was originally applied. The Warden at the prison is extremely satisfied with the results of the Foster 40-20 coating solution.



Prior to application of Foster® 40-20™ coating, fungal wipe samples on the fibrous glass duct liner showed average fungal levels of 45,000 colony forming units per square centimeter (cfu/cm2).



After ten years the fungal wipe samples from the coating surface areas showed an average of 7 cfu/cm2 -meaning nominal growth!

## INITIAL TREATMENT FAILS

The duct system was cleaned of visible mold and fumigated with chlorine dioxide to sanitize the affected duct system. Less than one year later, additional inspection and testing of the ductwork revealed that the fungi was back, and had become as bad as before the initial treatment.

## FOSTER® 40-20™ COATING TO THE RESCUE

Around this time, Ellringer was introduced to Foster 40-20 Fungicidal Protective Coating. It is a water based acrylic coating formulated for long-term resistance to mold growth. Foster 40-20 coating could be applied directly to the fibrous glass duct liner surface providing a flexible, tough film that retards fiber release and erosion of the insulation.

After vacuuming the duct liner, Foster 40-20 coating was applied by airless sprayer in accordance with the manufacturer's specifications to designated areas, at the direction of Mr. Ellringer.

Paul Ellringer is a certified industrial hygienist and a registered Professional Engineer. Ellringer worked for the Minnesota Department of Health for 15 years before starting his own environmental company in 1994.

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