



SAFE ENCASEMENT SYSTEMS-MIDWEST

SPECIFICATION NO. 00-1

JULY 2000

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USE OF SAFE ENCASEMENT SYSTEMS COATINGS INSIDE HVAC SYSTEMS AFTER MOLD/MILDEW DECONTAMINATION

COATING SYSTEM TEST DATA REQUIREMENTS:

After an HVAC system contaminated with mold, mildew, and other biological IAQ issues has been decontaminated, the affected surfaces frequently require the application of a coating, as it is impossible to fully and permanently decontaminate porous surfaces. The selection and application of the proper coating will seal in any remains of the biological bad actors, delay a repeat of this biological contamination, and offer a more cleanable surface should any dirt or biological recontamination build-up re-occur.

The coating system selected should be able to deal with a number of key issues for this application. Good adhesion to a variety of surfaces will be paramount. These surfaces will include metals, mineral-based insulators, some plastics, foil coverings on insulators, etc. The relevant ASTM's for this type of adhesion performance are D-3359, E-736, and E-1795. The system chosen must have passed the applicable test(s).

For going over the metal surfaces, the coating system should be able to exhibit some level of acceptable performance in salt spray cabinet based testing, and it is vital that the chosen system offer excellent performance in humidity cabinet tests. The system chosen must have passed the applicable ASTM tests, including B-117, D-4585, D-714, and D-1654.

HVAC systems present a variety of conditions relative to the presence of water vapor/humidity, and any coating system will need to be able to perform acceptably under these conditions. Look for data on ASTM D-1653, and ASTM E-96.

To best prevent the re-growth of biological contamination, coatings can be chosen that include a pesticide (mildewcide), essentially leaving the surface of the coating poisonous. This approach may not be advisable in HVAC systems, where any migration of the biocide from the coating to the air stream will be unacceptable as it can cause an allergic reaction among some of the facilities occupants. Look for a coating system that passes ASTM D-3273/74, for mildew resistance, and insure, as SES's label and product literature shows, that the coating does not include a pesticide. Refer also to Technical Bulletin No. 01-5 for additional information on mold and mildew remediation.

(OVER)

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SES APPLICATION SPECIFICATIONS:

All non-metal components to be coated should be inspected for the presence of surface dirt or other contamination. If significant levels exist (over 5-10% of any contiguous surface) that can be removed with minor finger pressure, this material must be removed.

All metal components to be coated should also be inspected for the presence of salt contamination. If there is any surface salt contamination (NaCl, NaSO₄, or any other salts of halogens such as F, Br, etc.) or any thought that these could be present, a power wash is needed, as explained below. Visual evidence of the presence of surface salt contamination will be the presence of surface corrosion, red rust for standard steel, and white rust for galvanized and some other alloys. The source of the salt can be the recently applied biocide for decontaminating the mold and mildew. For removal of surface salts before coating, a good power wash with SES's Chlor*Rid soluble salt remover at 2% will suffice. The source can even have resulted during construction, e.g. welding residue, or from an on-going application of a salt source over years of operation. If a power wash is not feasible, a scrub with water and 5% C*R can be substituted.

After this level of surface preparation is completed and the surfaces are reasonably dry, all surfaces should be primed with SE-110-MS Multi-Surface Penetrating Stabilizing (primer) at 10 wet mills thickness, or 160 square feet per gallon. The primer should be allowed to dry over night. It becomes clear and will remain "tacky" when dry.

After an appropriate drying time, the entire primed surface should be over coated with SE-120 flat-finish topcoat or SE-130 satin-finish topcoat at 10 wet mills, or 160 square feet per gallon. The estimated total material costs for this system is \$0.60/square foot. If costs are a major factor, and the customer is not looking for a system that will last 20+ years, the use of the primer on non-metal surfaces can be skipped, and the topcoat applied at a minimum of 10 wft, preferably more.

For drain pans, the surface preparation techniques mentioned for metal surfaces should be followed, and the primer application using SE-110-MS at 10 wet mills. The primer must be completely dry before it is over-coated. Since drain pans can stay submerged for periods of 3-4 months or more per year, standard overcoats may soften. We recommend the application of SES's submersible coating, which is designated SES-SUB. This should be applied at 10 wet mills, and allowed to dry for 1-2 days.