



RISK BULLETIN

Preventing Mold in Construction

Molds, a group of organisms known as fungi, have been on Earth for millions of years and pre-date human history. Recently, the media has done much to focus on the negative characteristics of mold. In contrast, little is said about the essential role of mold in our environment. Molds are essential for degrading organic-based materials such as dead animals, leaves and other dead or dying organic matter. While this characteristic is beneficial in the natural environment, it is also a source of concern to the construction industry.

Much of the construction material used to build residences and commercial buildings in the United States is composed of organic materials. Particleboard, studs, wallboard, and ceiling tiles are just a few examples of materials

with high organic material content. These materials, under the proper conditions, are readily available food sources for mold. Unfortunately, once mold growth is established on such materials, it is often difficult, if not impossible, to totally eliminate it.

CONDITIONS FAVORING MOLD GROWTH

- Organic food source
- Presence of water
- Relative humidity above 55%
- Temperature range 35 – 104° F

Why is mold a concern in construction? In addition to the structural damage that mold can do, elevated levels of mold reproductive structures (called spores) and mold metabolites (called mycotoxins) have been associated with causing a variety of adverse health effects in humans. These effects are particularly of concern for individuals with impaired immune systems such as the very young, the elderly and those individuals who are on immune-suppressing medications. If the health concerns aren't motivation enough to control mold growth, construction firms should be concerned with the recent increase in legal action against builders where claimants allege faulty designs or construction techniques have contributed to mold contamination. Jury awards have been significant in a number of cases.

As a result, construction firms need to be proactive in preventing mold growth. There are a number of common sense practices that can greatly reduce the risk of mold growth during construction. Some of the most important practices are discussed below.

MANAGEMENT COMMITMENT

Management must recognize that preventing mold growth in construction is vitally important. As such, resources must be allocated to accomplish this objective. Most progressive firms have developed a mold management policy or procedure, which outlines the firm's approach to preventing mold growth during the construction

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phase. All members of the construction team, including subcontractors, should be required to review and certify their compliance with the mold management plan. However, mold management requires more than just a written plan. Construction management must periodically monitor the project site to ensure the provisions of the mold management plan are enforced. Monitoring can best be accomplished during routine safety walkthroughs. Provisions from the mold management plan can also be added to site safety checklists already in use.

PROPER BUILDING DESIGN

Minimizing the risk of mold growth must occur during the building and landscaping design phase. Architects and other building design professionals must consider the exclusion of moisture when designing building envelopes and when specifying other design features. Correcting potential mold concerns at the design stage is easier and less costly than when a building is already constructed.

PROTECTING BUILDING MATERIALS FROM MOISTURE

The use of low-cost biodegradable building materials will continue to be the mainstay of US construction techniques. Construction materials should be inspected upon receipt and those exhibiting mold growth should be rejected. Once the materials are received, it is critically important to keep them as dry as possible. For large construction projects, temporary shelters are recommended to store moisture sensitive biodegradable construction materials. For smaller projects, such as during the construction of single family dwellings, materials should be elevated from the ground and covered with moisture-proof tarps or plastic sheeting. Care should be taken to ensure that these temporary staging

areas have proper drainage to minimize run-on during rain events. Exposing construction materials to the sun on clear days also allows the material to “dry-out” prior to use.

QUALITY IN CONSTRUCTION

Buildings must be constructed with quality in mind. Failure to follow manufacturer recommendations or shoddy workmanship can lead to leaking roofs, basements, walls and pipes. Poor grading during landscaping can contribute to excessive run-on during rain events and basement flooding. Poor housekeeping and worker sanitary practices can result in providing additional sources of moisture and food for mold growth. Construction firms must implement quality control/quality assurance processes to ensure that moisture limiting design features such as glazing systems and vapor barriers are properly installed and that construction practices do not contribute to mold growth. Frequent random checks must occur throughout the construction process. Such checks can take the form of periodic inspections and documentation by project management personnel or designated quality assurance/quality control personnel.



OCCUPANT EDUCATION

Occupant education is an important final step. The building occupant/owner should be instructed through printed fact sheets, operations and maintenance manuals and/or direct discussion during the commissioning phase regarding their role in preventing mold growth. Occupants should be informed regarding the

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proper operation of heating, ventilation and air-condition (HVAC) systems and what to do in the event of leaks or other water intrusion events. Occupants must be convinced of the importance of maintaining internal conditions that do not favor mold growth. In addition, occupants must recognize the importance of a quick response to water intrusion events as mold growth can occur within 24-48 hours. Copies of the information and documentation that such information/training was provided should be maintained in the construction project file for use in defending against potential future litigation.

It's safe to say that mold will continue to be a concern in construction until biodegradable building materials are no longer used. Given this fact, there are a number of best practices a construction firm can implement to prevent mold from becoming a very expensive problem. For

additional information on how XL Environmental can assist with preventing mold growth during construction projects, please contact us at 800-327-1414 or visit our website at www.xlenvironmental.com.

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