



By Camille Atrache

Detecting and eliminating mould

Moulds are microorganisms that produce thousands of tiny particles called spores as part of their reproductive cycle. All mould contamination must be remediated.

Actively growing mould colonies are usually visible as colourful, woolly or slimy growths. They can be virtually any colour. When disturbed by air movement or contact, moulds release their spores into the air. Given the right environmental conditions, these spores can go on to form other mould colonies. Mould becomes inactive or dormant if moisture is not present. Inactive mould is often dry and powdery and, like actively growing mould, can be readily disturbed by air movement or contact, causing mould particles and spores to become airborne. Mould can remain inactive for many years but will grow once moisture returns.

Moulds thrive in dark, moist environments and can grow at room temperature on various materials, including plastic, metals, insulation, wallpaper, particleboard, ceiling tiles, drywall, plywood, carpets, underpadding and the interior surface of ventilation systems. This is not to say that moulds cannot grow in light, cool conditions; they can.

Workers can be potentially exposed to toxic spores when working on or in buildings with moisture problems. Moisture problems can be due to excessive humidity caused by lack of ventilation or by water damage from flooding, leaky plumbing or leaks in the structure itself from faulty roofs, windows or walls.

Numerous types of mould exist in buildings with water damage or ongoing moisture. Certain types of “water loving” moulds may reproduce to higher than normal levels and potentially cause adverse health effects. *Stachybotrys chartarum* (also known as *Stachybotrys atra*) is of particular concern because it can be found in large colonies and can cause adverse health effects.

In addition to *Stachybotrys*, personnel working in water damaged buildings may be exposed to other types of toxic moulds such as *Fusarium*, *Aspergillus*, and *Penicillium*.

Mould can produce toxic substances known as mycotoxins, some of which adhere to the mould spores while others can be found within the spore itself. Air movement and the handling of contaminated material can release spores



containing mycotoxins into the atmosphere. Exposure to toxic moulds may irritate skin, eyes, nose and throat, resulting in symptoms such as difficulty breathing, runny nose and watery eyes. Personnel who are allergic to moulds could experience asthmatic attacks upon exposure. Exposure to some types of *Stachybotrys* (black/greenish mould that grows on materials with high cellulose such as drywall, wood, paper, ceiling tiles) may cause burning in the nose, nosebleeds, severe coughing and impairment of the immune system.

Owners of buildings that may be mould contaminated should conduct an assessment to determine whether the building is indeed contaminated. Mould on visible surfaces may be the tip of the iceberg. Interviews with occupants and building maintenance staff are crucial to the overall assessment. Moulds thrive in dark, moist environments and may be hidden from view. The assessment must include a visual building inspection and may include taking and analyzing samples. It may also involve looking into cavities, behind drywall, under carpet and above ceilings. Based on presence of visible mould, evidence of water damage or symptoms that are consistent with allergic or toxic responses to mould, it may be justified to skip sampling and go straight to remediation.

All mould contamination must be remediated. The assessment (that should be

done prior to remediation) must answer the following questions: what is the extent of the contamination, what type of materials are affected and what is the source of the moisture? Once the assessment has been conducted, a plan of action must be developed. The plan should include: steps to correct the moisture problem, control measures to prevent worker exposure and relocate occupants without spreading the contamination into clean areas and what method of remediation is recommended (based on the mould guidelines for the Canadian construction industry).

Any plan to relocate workers should take into account the degree of contamination, the extent and types of health effects exhibited by workers, and the potential health risks associated with work activities during remediation.

The Canadian Construction Association has produced the Standard Construction Document CCA82-2004 “Mould Guidelines for the Canadian Construction Industry.” These guidelines provide useful information and step-by-step instructions on minimizing moisture intrusion, mould assessment and remediation protocols, and guidelines for selecting mould remediation contractors. **B**

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