



What are moulds?

Moulds (U.S. sp. molds) are forms of fungi, and are found throughout the world, both outdoors and indoors. At least 100,000 varieties are known to exist and of these at least 1,000 varieties occur in Canada and the U.S. Some of those most commonly found are species of *Aspergillus*, *Cladosporium*, *Penicillium* and *Stachybotrys*.

As building materials professionals why should we be concerned?

In terms of buildings, moulds are generally found only in structures, or portions thereof, in which problems related to excessive humidity, water leaks, condensation, water infiltration or flooding are present.

One of the worst moulds that we encounter in buildings, and the subject of this information sheet is *Stachybotrys Chartarum (Atra)*.

Stachybotrys Chartarum is normally a greenish black mould, typically wet and slimy to the touch, that is found throughout the world. However, it can look slimy, sooty or even like greyish white stranded material. Appearance may depend on the amount of moisture available and the length of time it has been growing. When the growth sporulates, the colony may be covered in what appears to be a powdery surface.

It is important to remember that, even to the expert eye, other common indoor moulds may look like *Stachybotrys*, so testing is required to conclusively establish its presence in a building.

Stachybotrys will only grow under the proper conditions. It requires moisture, a nutrient source, temperature and time. Standing water, or a relative humidity of 90% or higher is necessary for *Stachybotrys* spores to germinate and begin to grow. However, once growth has started, it can continue to grow and propagate even if the standing water source is eliminated and the relative humidity drops as low as 55%. *Stachybotrys* survives wide temperature variations, but does best in those considered by humans to be warm to moderately hot. This means that conditioned buildings kept at "comfortable" temperatures for humans and located in climates where warm, humid weather is a seasonal, if not constant, occurrence are most vulnerable to infestation

by *Stachybotrys*. Generally, if the correct temperatures and humidity are present, introduction of a water leak into the structure, even for short time, is likely to trigger the growth of *Stachybotrys*.

In buildings, *Stachybotrys* begins its growth and then thrives on chronically moist material with a high cellulose and low nitrogen content such as fibreboard, gypsum board (paper covering), dropped ceiling tiles, wood, paper, dust and lint. (see figures 1 & 2 below)

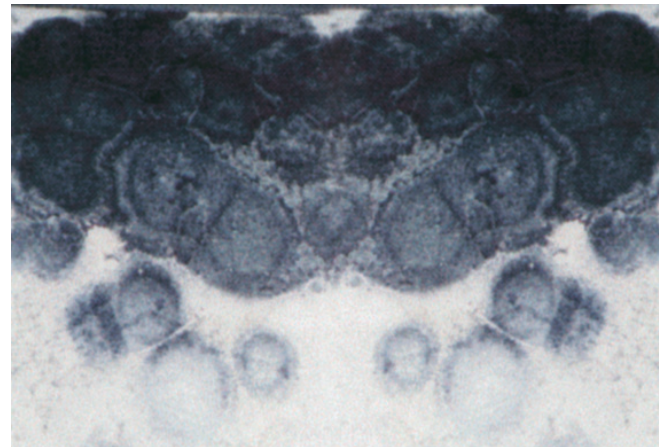


Figure 1
Stachybotrys Chartarum on paper (cellulose) surface of gypsum board.

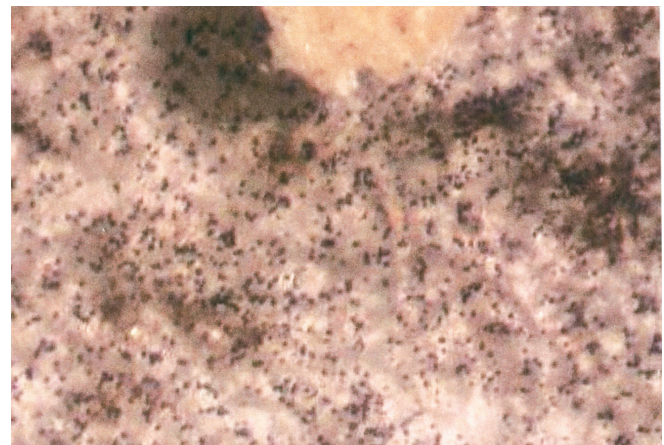


Figure 2
Heavy infestation of *Stachybotrys Chartarum* on cellulose-based material.

Why should we be particularly concerned about *Stachybotrys Chartarum (Atra)*?

Most types of moulds that are routinely encountered are not considered hazardous to healthy persons. However, this does not seem to be the case with ***Stachybotrys Chartarum***. It may, under specific environmental conditions, produce several toxic chemicals called mycotoxins. These chemicals are present on spores and microscopic fungus fragments released into the air and, consequently, are breathed in by those in the building.

There is a growing body of evidence, much of it anecdotal, that shows that people exposed to ***Stachybotrys*** in indoor environments suffer symptoms such as coughing, wheezing, irritated eyes or throat, nasal discharge, skin rash and diarrhoea. There is also a possible link between ***Stachybotrys*** and pulmonary haemorrhage (bleeding lungs) in infants, although the evidence is inconclusive.

Are regulatory bodies taking *Stachybotrys* seriously?

Certainly various authorities in Texas are. On June 8, 2000. The Dallas Morning News reported that the mould had been found across North Texas and had caused problems at the University of North Texas and Denton City Hall West and at three campuses in the Grapevine-Colleyville school district. Earlier the same newspaper reported that a fire station in Denton was evacuated when ***Stachybotrys*** was found in it. Obviously, there are serious health concerns when a fire station is closed.

In addition, many experts now say that once a building is contaminated with ***Stachybotrys*** there is no way to clean it up. Some of the experts claim that even a fire reaching a temperature of 260°C (500°F) is not hot enough to destroy this mould, but in fact may spread the spores, thus exacerbating the problem. There is also concern among some experts that the ground surrounding an infected building may also become infected and transmit the infection to any structure that may be subsequently built on the site.

Stachybotrys is by no means a concern in Texas alone. As noted earlier, it is present worldwide and has caused problems of which we are aware in many parts of Canada and the U. S.

Why is an insulation manufacturer interested in *Stachybotrys*?

We are interested because:

- a) We supply fibreglass-based products that contain absolutely no cellulose-based materials;
- b) Therefore our products will **never** support ***Stachybotrys***;
- c) Our major competition is cellulose (shredded paper) spray. It is manufactured and marketed by a number of companies, but all the products have one thing in common: **They constitute the very best medium for the growth of *Stachybotrys***;
- d) Granted, cellulose manufacturers put fungicides in their products, but if those fungicides are water-soluble (and some certainly are, because they also act as fire retardants) there is a real danger that they will leach out over time. In fact, at least one cellulose manufacturer recommends period re-spraying with fire retardant which is also known to be a fungicide.

Therefore, as a building professional please ask yourself the following question: **Do I really want to see one of the best mediums for support of the growth of *Stachybotrys Chartarum* installed, as an exposed product, in any building with which I am involved?**

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