

# Mould 101

Construction Solutions

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# Topics

1. The What and Why of Mould
2. The Mould Growth Cycle
3. Is Mould Toxic
4. Guidelines and Standards

# The What and Why of Mould?

- Part of fungi kingdom
- Needed to break down organic matter
- Ubiquitous indoors and outdoors
- Spread naturally through release of spores into the air
- Spores carried with air currents



# The What and Why of Mould?

- Require moisture and nutrient material
- If moisture source removed, mould enters dormant stage.
- Nutrient material include paper and wood products: drywall, wallboard, wallpaper, insulation, ceiling tiles, etc.

# Mold Growth Cycle

1

Moist food source

Spore lands on a moist surface

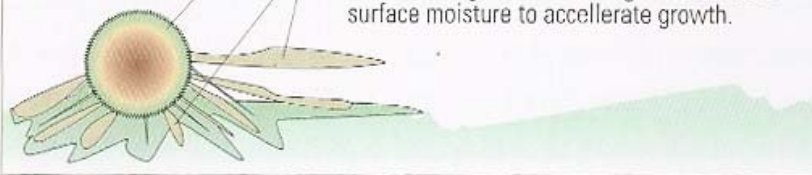
Enzymes use surface moisture to dissolve food



2

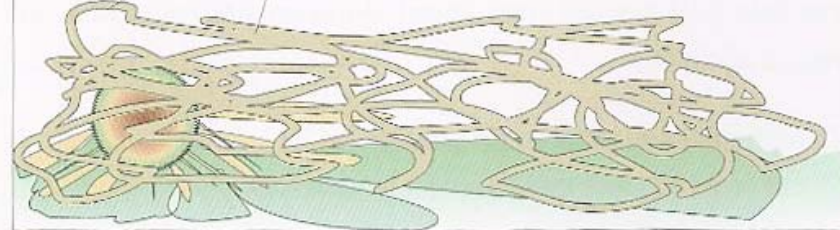
Spore germinates, producing filaments (hyphae)

Hyphae extend both reach and area of absorptive surface. Fungal metabolism generates more surface moisture to accelerate growth.



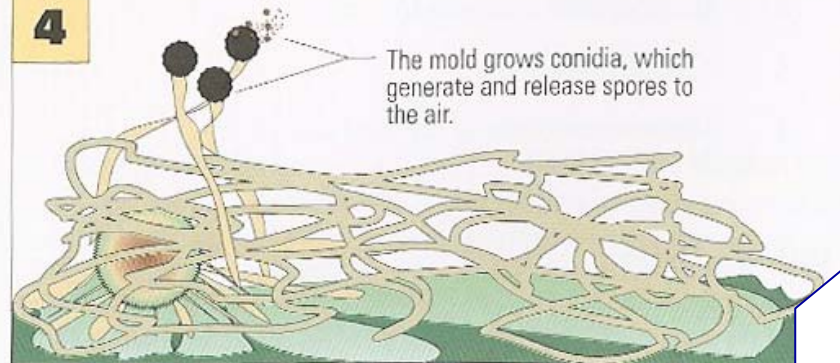
3

Hyphae grow thickly, digging into the surface and forming a protective mat (mycelium) that keeps the surface moist even if surrounding air is dry.



4

The mold grows conidia, which generate and release spores to the air.



Source: ASHRAE Humidity Control Design Guide

# IS MOULD TOXIC?

The Health Effects of Exposure to Moulds



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# Known Effects of Exposure to Moulds

1. Allergic reactions and other respiratory complaints.
  1. 40% of pop. is allergic
  2. 5% of pop. is allergic to moulds
2. Can trigger asthma episodes in people already having asthma (allergy)
3. Infections (immune suppressed)



# Toxic Effects of Exposure to Moulds in Buildings???

1. Pulmonary hemosiderosis = *Stachybotrys chartarum*? No longer linked.
2. Most moulds produce toxic metabolites called mycotoxins and these mycotoxins believed to be present in the spores and need not be viable.

However ....

“Current scientific evidence does not support the proposition that human health has been adversely affected by inhaled mycotoxins in the home, school or office environment.”

American College of Occupational and Environmental Medicine, Evidence-Based Statement (2002). Adverse Human Health Effects Associated with Molds in the Indoor Environment.

# GUIDELINES AND STANDARDS



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# Canadian Guidelines and Standards

- WCB Guideline 4.79
- Alberta Infrastructure – IAQ Guideline
- Alberta HR & Employment – Do I Have a Workplace Mould Problem?
- Manitoba – Guidelines for the Investigation, Assessment and Remediation of Mould in Workplaces
- Ontario MOL - Alert



# Canadian Guidelines and Standards

- Basically, these guidelines all suggest that mould be assessed visually.
- Visible mould growth should then be abated following specialized procedures after correcting moisture source.
- Bulk, air and surface sampling not usually necessary but tools that may be used.



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Thank you

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