

Carpet, Moisture and Mold Study

Objective: To study mold growth on building materials commonly found in schools at typical and elevated temperature humidity levels.

Team: Mike Berry, Carey Mitchell, Kurt Bolden, Cass Walton, Karin Foarde, Rachel Adams

Sponsor: CRI

Location: HydroLab - Noblesville, IN

Materials Tested: Carpet (soiled, clean), VCT, drywall, wood studs

Phase I: 60%, 80°F - no growth

Phase II: wet carpet with ½ liter of water; day 63

Conclusions:

- Mold was not found to grow at humidity levels of 65%
- Clean or new carpet does not support mold growth even at elevated humidity levels
- Mold appears not to grow on materials exposed at 80% RH until saturation occurs in dirt on materials
- The key to mold growth is dirt/nutrient and elevated water content of materials.
- Dirt in carpet absorbs moisture and mold grows only on the dirty portion of the carpet
- Conductivity moisture readings of 14% are associated with mold growth on carpet.

Strategy:

Clean and dry will not produce mold growth.

Carpet with light molding probably can be cleaned.

Phase III:

- Chambers reassembled
- Samples taken
- Elevated levels of aspergillus
- Reevaluated the laboratory to determine the source; most likely the wet wood.
- Disassembled lab.
- Recleaned the carpet.
- Bean field harvested; spores generated.
- Samples taken
- *Alternaria* found
- Carpet vacuumed
- Resample; no indication of mold growth.

Conclusions: Phase 3, 4

- Mold spores are ubiquitous and deposition on flooring is inevitable.
- Mold growth was not observed on clean surfaces even at elevated humidity levels for

extended periods.

- Mold spores can be effectively vacuumed from surfaces.
- Growing mold can be effectively removed from the surfaces of carpet
- Clean carpet, regardless of age, does not support mold growth and poses no risk to public health.