INDOOR AIR QUALITY - POST FLOOD

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What is “Indoor Air Quality”

- “The air quality within and around buildings and structures, especially as it relates to the health and comfort of building occupants.”
  - The building itself – construction and materials
  - The area around buildings – nature and neighbors
  - Building occupants – activities and product usage

IAQ After Flooding

- Hazardous substances that enter the building after a flood:
  - Fuel oils
  - Untreated sewage
  - Other
- Mold

What are Fungi?

- Molds, mushrooms, mildews, and yeasts are all classified as fungi.
- They grow best in warm, damp, and humid conditions, and reproduce and spread by making spores.
- There are thousands of species of fungi.

- Fewer than 500 fungal species have been described as human pathogens.
- Exposure to fungi can cause symptoms such as nasal stuffiness, eye irritation, wheezing, or skin irritation.

Difficulties

- Fungi are, at the same time, everywhere and nowhere.

- Fungi secrete enzymes that digest the material in which they are imbedded and absorb the released nutrients.

So the flood occurs…

- Building materials get wet.
- There is a window of opportunity to remove water and dry materials fungal growth.
- There may still be growth…

Dealing with Fungi

- Start the drying process, try to get the humidity in the home below 40%.
- Reduce the moisture in the air with dehumidifiers, fans and open windows or air conditioners, especially in hot weather. Do NOT use fans if fungal growth is present; a fan will spread the spores.

Remove Wet Materials

- DO NOT neglect other environmental issues:
  - Asbestos
  - Lead
- Protect workers
  - OSHA Safety Information Bulletin on Mold at https://www.osha.gov/dts/shib/shib101003.html
- Isolate the area
- Ventilate
- Reduce dust

Clean

- Hard surfaces can be cleaned with soapy water and a stiff brush.
- Cleaning vs. Disinfection
  - Bleach
  - Biocide
  - Ozone

- Consider having the air ducts cleaned if you suspect mold exists on the inside surfaces.
- Upgrade and change HVAC filters frequently.

When are you done?

- The area should be:
  - Clean and free of dust and debris
  - No visible mold
  - No “musty” smell
- There are no regulatory standards for airborne fungal spore counts.
- Materials must be dry.

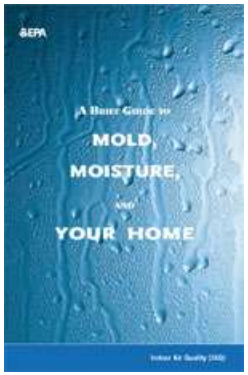
Dry, dry, dry….

- It may take weeks of active drying before you rebuild.
- Routinely check potential problem spots for moldy odors or signs of visible growth.
- Test for moisture not mold.

During Re-build

- Prevent seepage of water from outdoors into your house. Gutters needs to drain away from the house. Ground around the house needs to slope away to keep the basement and crawl space dry.
- In moisture-prone areas, choose non-organic materials with non-porous surfaces. Add ventilation if needed.
- Reduce potential for condensation on cold surfaces by insulating.

Resources



- http://www.epa.gov/mold/
- http://www.ct.gov/dph/lib/dph/environmental_health/eoha/pdf/fema_factsheet_cleaning_flooded_bldg.pdf
- http://www.ct.gov/dph/lib/dph/environmental_health/eoha/pdf/fema_initialrestorationfloodbldg.pdf
- http://www.mass.gov/eea/agencies/massdep/water/wastewater/flooding-and-sewage-back-ups-home-care-guide.html

Contact us

- CDPHE has regulations covering some of the activities you may do on a daily basis, such as disturbing materials that could contain lead-based paint or asbestos, but more importantly, information and guidance for someone who is performing activities that might impact both yourself and the indoor environment.
- 303-692-3100
- cdphe.iaq@state.co.us
- cdphe.asbestos@state.co.us
- cdphe.lead@state.co.us