



## **Building Air Quality**

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### **Flood Cleanup - Avoiding IAQ Problems**

During a flood cleanup, the indoor air quality in your office may appear to be the least of your problems. However, failure to remove contaminated materials and to reduce moisture and humidity can present serious long-term health risks. Standing water and wet materials are a breeding ground for microorganisms, such as viruses, bacteria, and mold. They can cause disease, trigger allergic reactions, and continue to damage materials long after the flood.

### **Avoid Problems from Microbial Growth**

#### **Remove Standing Water**

Standing water is a breeding ground for microorganisms, which can become airborne and be inhaled. Where floodwater contains sewage or decaying animal carcasses, infectious disease is of concern. Even when flooding is due to rainwater, the growth of microorganisms can cause allergic reactions in sensitive individuals. For these health reasons, and to lessen structural damage, all standing water should be removed as quickly as possible.

#### **Dry Out All Wetted Spaces**

Excess moisture is an indoor air quality concern for three reasons:

- Microorganisms brought in during flooding may present a health hazard. These organisms can penetrate deep into soaked, porous materials and later be released into air or water. Coming in contact with air or water that contains these organisms can make you sick.
- High humidity and moist materials provide ideal environments for the excessive growth of microorganisms. This may result in additional health concerns such as allergic reactions.

Long term increases in humidity can also foster the growth of dust mites. Dust mites are a major cause of allergic reactions and asthma.

The process of completely drying out wetted spaces, fixtures, or furnishings, could take several weeks, and the growth of microorganisms can continue as long as humidity is high. If the building is not dried out properly, a musty odor, signifying growth of microorganisms, can remain long after the flood.

### **Remove Wet Materials**

Keeping certain items that were soaked by water may be unhealthy. Some materials tend to absorb and keep water more than others. As a general rule: Materials that are wet and cannot be thoroughly cleaned and dried should be discarded, as they can remain a source of microbial growth.

You may be able to dry out and save certain building materials (for example, wallboard, fiberglass insulation, and wall-to-wall carpeting that were soaked only with clean rain water; and plaster). You may, however, want to consider removing and replacing them to avoid indoor air quality problems. Because they take a long time to dry, they may be a source of microbial growth.

In addition, fiberboard, fibrous insulation, and disposable filters should be replaced, if they are present in your heating and air conditioning system and contacted water. (If a filter was designed to be cleaned with water and was in contact with clean rainwater only, ensure that it is thoroughly cleaned before reinstalling.)

### **Avoid Problems from Cleaners and Disinfectants**

The cleanup process involves thorough washing and disinfecting of the walls, floors, closets, shelves, and contents of the building. In most cases, common cleaning products and disinfectants are used for this task. The Federal Emergency Management Agency (FEMA) also suggests the use of disinfectants and sanitizers on the ductwork for the heating and air conditioning system, if it has been flooded. (See the section on Additional Information found at the end of this document.)

Cleaning products, disinfectants and sanitizers can contain toxic substances whose potential health effects vary greatly, from those with no known health effect to those that are highly toxic. Read and follow label instructions carefully, and provide increased quantities of outside air. If it is safe for you to use electricity, use fans both during and after the use of disinfecting, cleaning, and sanitizing products.

Be careful about mixing cleaners and disinfectants together. Check labels for cautions on this. Mixing certain types of products can produce toxic fumes and result in injury and even death.

### **Avoid Problems from Airborne Dust and Lead Dust**

Elevated concentrations of airborne asbestos can occur if asbestos-containing materials present in the building are disturbed. Airborne asbestos can cause lung cancer and mesothelioma, a cancer of the chest and abdominal linings.

Lead is a highly toxic metal, which produces a range of adverse health effects, particularly in young children. Disturbance or removal of materials containing lead-based paint may result in elevated concentration of lead dust in the air.