

Cleanup of Internal Areas

Once the flood waters have receded and the property can be accessed safely, cleanup operations should commence - **Remember to check with local emergency management officials before returning to a property affected by flooding!** The most important steps are to restore the environment to a dry state and salvage any valuable property. The longer that water/waste are allowed to remain in your home or on your property, the greater the potential for illness and irreparable damage to your home, its contents, and environs. *Where they may be operated safely, use of pumps and dehumidifiers will be helpful in restoring dry conditions.* In any flood cleanup project regardless of the source, **one should assume that pathogens are present and take appropriate precautions.**

The survival of pathogens depends on a number of factors: location (indoors vs. outdoors), season, type of surface contaminated, whether disinfectants are used, and also on environmental conditions such as humidity, temperature, and sunlight. Sunlight (UV radiation) reduces the survival rate of pathogens with numbers decreasing rapidly with increasing exposure to UV radiation. Mild temperatures and higher humidity in external situations result in longer survival times.

Prior to undertaking cleanup efforts, take proper precautions:

- Always wear protective gloves, eyewear, and boots. Rain gear is also advisable.
- Avoid direct contact with sewage material, and be particularly careful of your face and eyes. Goggles are recommended when using a hose and/or any chemicals.
- Protect all cuts and scrapes. Immediately wash and disinfect any wound that comes in contact with sewage.

The following steps should be taken to mitigate the microbial risk from a building contaminated with sewage:

? Any excess water should be removed from the property by pumps, wet vacs, or mopping. Dehumidifiers and active ventilation should also be used when available.

- All solid waste should be collected and disposed.
- All upholstered furniture and mattresses should be discarded, other contaminated furniture should be removed and cleaned or discarded.
- The affected areas should be washed with a detergent solution to remove sewage-related contamination, then disinfected and allowed to dry.

Sort damaged contents to be repaired or discarded. Use the following guide relative to discarding of household material and furnishings.

Usually Discard

Foam rubber
Large carpets
Books and paper products

Always Discard

Food
Cosmetics
Medicines and medical supplies
Stuffed animals
Toys
Mattresses and pillows
Upholstered couches and chairs
Carpet padding
Cardboard

BE CAREFUL

- Assume anything touched by sewage is contaminated.
- Clean and disinfect everything sewage has touched.
- Always wear protective rubber gloves, eyewear, and boots and be especially careful if you have cuts or open sores.
- Wash, disinfect, or discard any clothing and supplies immediately after use.

Disinfection

Disinfectants are typically chemical agents that reduce significant numbers of pathogens to levels below those expected to cause disease. Cleaning and disinfection are two different processes. Cleaning removes the dirt. The processes of disinfection and decontamination are important to ensure the elimination of pathogens and organisms that were contained in the sewage or that grew during the period of contamination. Even concrete can be colonized and broken down by microorganisms if it is allowed to remain wet and contaminated by organic matter. Many household products are capable of disinfecting surfaces and should be used in accordance with manufacturer's label directions. A household bleach solution is also an effective disinfection agent, and can be made by combining one quarter cup of household bleach to one gallon of water. Bleach should never be used directly without dilution since, in this concentrated form, the bleach can cause severe skin and respiratory hazards.

To prepare surfaces for disinfection, wash surfaces first with warm soapy water and rinse surface. Apply the disinfectant solution to all areas of the affected surface, and allow for sufficient contact and drying time.

When proceeding with cleanup operations, remember that those individuals whose immune systems are in some way compromised or who are otherwise susceptible due to age, medication, or underlying illness, are considered to be at greater risk of contracting infections than those individuals who are healthy.

If you decide you that you need professional help:

- Look under "Carpet Cleaning", "Fire Restoration", or "Mold Abatement" in the telephone book. If you hire cleanup or repair contractors, be sure they are qualified to perform the job. Always check references and ask whether they are insured. Certification for these companies is not currently required or available in Massachusetts.
- Contact your local emergency management officials, to determine if there are resources available for assistance, or to get referrals for qualified contractors.

More detailed information on cleaning up after a flood event can also be found on the [Red Cross](#) website.

Cleanup of External Areas

The majority of the microbial population from sewage flooding onto lawns, tarmac and paved areas will be inactivated within several days due to exposure to UV radiation from sunlight. A disinfectant can be used on tarmac and paved areas. Contamination on grass could be left to degrade naturally. Typically, bacterial numbers on turf are reduced to background levels expected in the environment within 13 days, but can extend to 20 days on soil and sand in the autumn and spring. Generally, the least absorbent or pervious surfaces absorb the least sewer and bacterial concentrations and return to background levels the quickest.

References/Other Sources of Information

Protecting Your Home from Flooding, FEMA, 1994
Repairing Your Flooded Home, FEMA-234, 1992

Flood Emergency and Residential Repair Handbook, FIA-13, 1986
Retrofitting Flood-Prone Residential Structures, FEMA-114, 1986
Protecting Building Utilities from Flood Damage, FEMA-348, 1999

To obtain copies of these and other FEMA documents, call FEMA Publications at 1-800-480-2520.
Information is also available on the World Wide Web: [Web site](#)

Other Internet Links

[Red Cross - Repairing Your Flooded Home](#)

[FEMA - Preparation & Prevention](#)

[FEMA - Floods](#)

[MEMA - What is a Flood?](#)

[MA Department of Public Health - Storm Fact Sheet](#)

Disclaimer:

The information provided is based on research and input from experienced professionals. The reader must assume responsibility for adapting this information to local conditions. This document should be used as a guide