

Safety Masks

Your kit should include masks to prevent breathing unsafe particles. Basic “dust” or “nuisance” masks help when working with “poo bags” or in dusty conditions, such as tearing down walls or during high wind. Use masks rated as “N95” or “P100” (which means much smaller particles are blocked) in smoky air.



More elaborate “half masks” include filter elements that remove some toxic particles such as solvents, paint or other mists.

WARNING: Unlike the masks used by firefighters, none of these masks include air tanks that protect against poisonous gases, such as smoke, carbon monoxide or chlorine. They do not allow safe breathing inside a burning building or a confined space that may have toxic gas, such as a manhole.

Other Safety Clothing

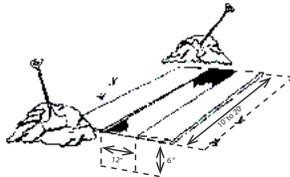
You should also have heavy-duty work gloves and sturdy shoes to protect when lifting, light rescue or construction activities. Shoes with steel toes provide extra protection from falling objects. Because disasters can take place during inclement weather, you should also have rain gear and warm clothing available.

Latrines

If buildings are unsafe to occupy and help has not arrived for several days, it may be necessary to build a latrine as a last resort. This will become a biohazard that must be removed by professionals after the event.

Here are guidelines for building a latrine:

1. Dig 2 trenches (one for men and one for women some distance apart) 6 inches deep, and 1 foot wide far enough from houses to provide privacy. The shallow depth allows topsoil enzymes to react with the waste.
2. Keep the removed dirt and a shovel near the trench to cover feces as the latrine is used.
3. If lime or peat moss (used for gardening) is available, add it to the dirt to reduce odor.
4. Improvise privacy barriers and provide toilet paper for comfort.



For details about preparing your home or business for disasters see:

[DisasterReadyDHSF.com](https://www.disasterreadydhsf.com)

Resilient Diamond Heights (RDH) is part of the San Francisco Neighborhood Empowerment Network (NEN) [empowersf.org](https://www.empowersf.org)

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Sanitation During Disasters



Your toilet may be rendered unusable by lack of running water when sheltering-in-place after a major disaster such as an earthquake, flood or regional fire. Preparation minimizes inconveniences and health hazards. Before getting into details, let's review two important concepts during sheltering: 1) Germ content of different biohazards and 2) How plumbing prevents sewer gas.

Infection Potential

Urine (pee) represents a relatively low risk, even though there may be an “ick” factor and some unpleasant odor if it accumulates over several days. Urine rarely contains live bacteria or virus as it consists mostly of water, salts, and artifacts of normal body functions.

Feces (poo) has much higher germ content and must be handled more cautiously. It also has more offensive odor, and must be moved out of the living area as appropriate. The old slogan related to saving water during a drought serves as a guide: “If it's yellow, let it mellow; if it's brown, flush it down.” Of course flushing may not be possible, so other plans are needed.

Vomit (throw up) has the highest potential of infection, as vomiting often occurs unexpectedly without any means of catching the material and tiny droplets might go airborne and collect on people or objects. Since whatever caused the vomiting might involve a virus (such as norovirus) or bacteria (such as food poisoning), all affected objects become infectious.

Here are guidelines for cleaning vomit:

1. Clean all contaminated surfaces. If you use an antibacterial cleaner, let it sit for at least 60 seconds before wiping. Bleach and water are more effective as many disinfectants won't kill viruses.
2. Separate contaminated laundry.
3. Wash your hands — then wash them again.

Use alcohol-based hand sanitizer if you don't have soap and water. Understand that alcohol may not kill all germs such as MRSA, salmonella, E. Coli, and norovirus, so use the sanitizer to wet your hands and then use a cloth or paper towel to remove it while still wet to shed more of the germs.



Plumbing 101

When you flush a toilet, it moves the waste away, but also leaves some water behind in the bowl to form a “trap” that prevents sewer gas from entering the living space. Sinks, bathtubs and showers also have traps which can be “sucked dry” in certain circumstances.



Sewer gas may be odorless or have an offensive odor, but doesn't carry germs. The main component is methane, which is the natural gas used for cooking. Methane is odorless (natural gas is “odorized” for safety) and colorless and is not detected by carbon monoxide or smoke detectors. If sufficient methane builds up, fire or explosion is possible. Sewer gas often contains ammonia and hydrogen sulfide, which produces the usual foul smell. Both gases are toxic, and at high concentrations can kill.

If you smell sewer gas, open windows to ventilate the space and pour water into “dry traps” that are allowing it to enter.

You get ONE Flush

Broken water mains or loss of power at pumping facilities can interrupt running water. The water stored in your toilet tank will provide only one flush before you need to find alternatives for sanitation. The recommended emergency water storage (one gallon per person per day) does NOT include water for refilling the toilet.

Adapting Your Toilet

Keep a supply of heavy-duty trash bags or camping toilet waste bags (see below) in your Shelter Kit. Place 2 bags (one inside the other) inside the toilet. After use, remove the inner bag, seal it and move it outside the home in a covered container that prevents animals from scattering the content. Keep the outer bag in the toilet bowl to keep the inner bag dry. Always leave enough water in the toilet to seal the trap.



If your home has 2 bathrooms, you can define one for pee and one for poo. The one for urine needs no special attention, as new urine will flow through the trap without flushing. If you have pine oil, pour enough into the toilet to cover the surface of the liquid to reduce odor. Because it is oil, it floats on the top of the liquid, and should not require repeated applications. If you have only one toilet, you can collect urine in a bucket or large cooking bowl and pour it down the bathroom sink or tub drain.

Camping Toilets

You can equip your Shelter Kit with an inexpensive toilet used by campers. An added benefit is that it can be used outside if your building is unsafe to

occupy. These devices use heavy-duty bags to capture the waste that include enzyme packs that reduce odor and bacteria. These special bags often include a second zipper bag to provide improved containment.

The least expensive camper toilet consists of a toilet seat that fits over a bucket that holds the bag. For a little more cost, you can get a folding seat with attachments to hold the bag. You can also purchase the bags and enzyme packs alone for use in the previous 2-bag home toilet process. Find these items at camping supply stores or online.



Other Biohazards

Also plan to store and dispose of pet waste or litter, diapers, medical waste, food waste, etc. Store in garbage bags. Use a marker to label the bags as biohazards and then placed them in containers outside the home with lids that prevent wind or animals from scattering the contents.

Safety Equipment

Your Shelter Kit should also include several items for personal protection, both from biohazards and from injuries while protecting life and property.

Barrier Gloves

First responders have a slogan: “If it's wet and not yours, don't touch it.” Disposable gloves form a barrier between germs and your hands to reduce your chance of illness. Wear gloves every time you might contact human waste, blood, bodily fluids, bodily tissues, mucous membranes, or broken skin. Do not wipe your face while wearing contaminated gloves.

Because some people are allergic to latex, purchase vinyl (clear) or nitrile (blue or purple) gloves for your Shelter Kit.

Use this procedure to avoid contact with contamination when de-gloving:

1. With one gloved hand, pinch the outside of the other glove about an inch from the edge inside the wrist.
2. Peel downwards, away from the wrist, turning the glove inside out as it is removed
3. While holding the inside-out glove with the gloved hand, slide the fingers of the gloveless hand under the second glove.
4. Peel downwards, away from the wrist, turning the glove inside out, covering the first glove.
5. Dispose the gloves in designated garbage bags.

