

Sandbag Disposal: Environmental and Practical Considerations After the Storm¹

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Introduction

Sandbags are an essential tool for flood prevention and control and are commonly used by homeowners and commercial owners. However, after a storm has passed and floodwaters have receded, sand from sandbags is often not properly discarded. The information contained in this article is intended for homeowners, commercial owners/operators, and municipal/government entities as it addresses the impacts of improper disposal of sand from sandbags and provides steps for proper disposal.

Environmental Concerns and Impacts

The primary issue surrounding the disposal of sand from used sandbags is environmental contamination. During flood events, sandbags may come into contact with hazardous substances such as oil, sewage, pathogens, pesticides, and various chemicals carried by floodwaters. These contaminants can compromise the quality of the sand, rendering it unsuitable for reuse in certain applications, especially in areas with strict disposal regulations aimed at protecting public health and the environment. To address these concerns, most governments and municipalities have established public disposal facilities designed to manage and contain the contaminants. Residents are

required to utilize those facilities to ensure proper handling and disposal of the hazardous materials associated with floodwaters.

Before disposing of or reusing sand from sandbags, it is crucial to assess whether the sand has been contaminated, as improper disposal of contaminated sand could lead to soil and water pollution, posing long-term risks to public health and ecosystems. Always handle the sandbags (and the sand within) with gloves. If the bags have come into contact with any type of floodwater, they should be considered contaminated and handled/disposed of as such. Keep in mind that some contaminants can be colorless and/or odorless, so err on the side of caution when making a determination about contamination. Bags that simply come into contact with falling rain and do not contact rising waters from surfaces and runoff can be considered uncontaminated unless they exhibit smells or color differences that would lead one to suspect contact with unknown sources. Separating the sand from the bags not only reduces waste but also contributes to environmental sustainability. Reusing sand responsibly reduces the need for additional raw materials and minimizes environmental degradation. Proper disposal of the bags helps prevent pollution or landfill overflow, promoting responsible waste management in the community. Furthermore, filled sandbags, whether

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compromised with contaminants or not, should not be included in waste management receptacles for curbside pickup or discarded in dumpsters. Sand poses a safety hazard because it is heavy, and it can damage equipment because it is abrasive. As with any potentially hazardous materials, during handling, always use protective gear such as goggles and non-slip gloves that can resist absorption of liquids.

Step-by-Step Guide for Safe Disposal

1. Assess the contamination risk.

The first step in responsible sandbag disposal is to evaluate the condition of the sand. After a flood, carefully inspect the sand for any signs of contamination. This may include foul odors, discoloration, or the presence of chemicals or debris. If there is any suspicion that the sand may be contaminated, it is essential to contact local environmental or waste management authorities to determine the appropriate disposal method. Contaminated sand should not be dumped in gardens, public areas, or waterways, as it may introduce harmful pollutants into the environment. Err on the side of caution and assume any sandbag that comes into contact with floodwaters is contaminated.

2. If the sandbags are free from contaminants...

a. Save the sandbags for future use.

After the sand is assessed for contamination, bags found to be intact and free from contaminants can be reused for future flood protection or repurposed for other uses, such as erosion control. If you determine the sand is contaminated, you will need to separate the sand from the bag prior to disposal, and you must dispose of the sand and the bags separately (See 3a, b, and c).

b. Separate the sand from the bags.

Once the sand has been separated, the condition of the bags should be evaluated. Sandbags are typically made from synthetic materials such as polypropylene or burlap, which can degrade over time, especially after prolonged exposure to water and sunlight. If the bags are intact and made of biodegradable or reusable materials, they may be repurposed for future storm preparedness or gardening projects, such as creating planters. However, if the bags are damaged, they should be properly disposed of, preferably at a local recycling facility if they are made of recyclable material, or in a landfill if not.

c. Reuse options for safe sand.

If the sand is clean and free from contaminants, there are numerous ways to reuse it. Clean sand from used sandbags can be repurposed for landscaping, construction, or agricultural applications. It can also be spread in low-lying areas to improve drainage or used in landscaping to enhance soil composition. Many communities encourage residents to donate clean sand to public works departments, which can then use it for road maintenance or other municipal needs. However, sand from sandbags should never be used in areas growing edible plants (i.e., gardens and edible landscaping). Using contaminated sand in areas where food is grown can expose those consuming the fruits or vegetables to harmful toxins or waste. It is best to take a cautious approach as one cannot typically be certain water impacting the bags was not contaminated. In the case of sandbags that never got wet (from rain, flooding, etc.), that sand can be utilized in the landscape in a variety of ways, provided its origin is deemed safe. However, sand provided for community use to fill sandbags comes from a variety of locations, and residents typically cannot verify its source. For this reason, it is best to avoid using sand from unknown sources where edible plants are grown.

3. If the sandbags are contaminated...

a. Dispose of contaminated sand safely.

If the sand has been contaminated by hazardous materials, it must be disposed of according to local regulations governing hazardous waste. In many cases, contaminated sand must be taken to a certified hazardous waste disposal facility. Municipalities often organize special waste collection events after floods or storms to help residents dispose of contaminated materials, including sandbags. It is essential to follow local guidelines carefully to avoid penalties and prevent further environmental harm.

b. Separate the sand from the bags.

Sand can be placed into trash bags for subsequent disposal. It is advisable that dust masks and eye protection be used when handling/separating the sand from the bags.

c. Dispose of the bags.

It is important to dispose of the bags themselves according to local waste management guidelines. Many municipalities provide specific disposal locations for sandbags, especially after major storm events. If your local municipality/government does not require disposal of contaminated sandbags

at a specific location, the bags can be taken to a solid waste disposal site or placed into trash cans for pickup by licensed trash haulers. Check with your local government or municipality for specific locations and trash hauler information.

Special Considerations for Contaminated Areas

In areas where floodwaters may carry significant amounts of pollutants, such as industrial regions, urban/suburban areas with sewage lines or septic systems, or areas with heavy agricultural runoff, the likelihood of sand contamination is higher. In these cases, local governments may provide specific instructions for residents and businesses regarding sandbag disposal. It is always advisable to contact local environmental agencies to ensure compliance with any special regulations that may be in place for contaminated materials. Always use personal protection equipment, such as gloves, eye protection, and masks, when handling potentially hazardous materials.

Alternatives to Traditional Sandbags

As an alternative to traditional sand-filled sandbags, some communities are turning to water-filled flood barriers, which are reusable and easier to store than sandbags. These barriers, once emptied, leave no waste to dispose of and are increasingly viewed as a more sustainable option for flood control. Other alternatives include biodegradable sandbags made from natural materials, which can reduce the environmental impact once they degrade.

The Importance of Public Awareness

Raising public awareness about the proper disposal of sandbags is crucial for minimizing environmental impact after a flood. Many people may not realize the potential hazards posed by contaminated sand or the opportunities for reusing clean sand. Public agencies should provide clear, accessible information on how to handle used sandbags, including locations for disposal, recycling, and reuse opportunities. Community education campaigns can also help residents understand the risks of improper disposal and encourage responsible practices.

Conclusion

By taking these steps, families can handle sandbag disposal in a way that safeguards health, reduces environmental impact, and promotes practical reuse of materials. The disposal of sand from used sandbags is a critical aspect of post-flood recovery that requires careful attention to environmental safety and sustainability. By following proper guidelines for assessing, separating, reusing, and disposing of sand and sandbags, individuals and communities can minimize their environmental footprint and ensure that sandbags continue to serve their purpose without causing unintended harm. With increased public awareness and adherence to best practices, the disposal of sandbags can be managed efficiently, protecting both the environment and public health.

References

- U.S. Centers for Disease Control and Prevention. (2024a). About Hurricanes and Other Tropical Storms. <https://www.cdc.gov/hurricanes/about/index.html>
- U.S. Centers for Disease Control and Prevention. (2024b). Safety Guidelines: Floodwater. <https://www.cdc.gov/floods/safety/floodwater-after-a-disaster-or-emergency-safety.html>
- U.S. Environmental Protection Agency. (2025). Flooded Homes Cleanup Guidance. <https://www.epa.gov/flooded-homes>
- Yeşiller, N., Hanson, J. L., Wartman, J., Turner, B., Gardiner, A., Manheim, D. C., & Choi, J. (2023). Disaster reconnaissance framework for sustainable post-disaster materials management. *Waste Management*, 169, 392–398. <https://doi.org/10.1016/j.wasman.2023.07.010>