

Guidance for Building Water System Flushing After Closures



During the COVID-19 Pandemic, some commercial or residential properties may have been left empty or were not at full occupancy for an extended period. As stay-at-home orders are lifted and plans are made to reoccupy these buildings, owners are encouraged to address the water quality of these locations proactively.

When homes and businesses are returned to service after an extended period of discontinued service (e.g., one week or more), a thorough flushing process is needed to clean out water that may have been sitting dormant in the building's plumbing. Stagnant water, for even as little as two days, can lead to low or undetectable levels of disinfectant, such as chlorine. Proper flushing can restore chlorine levels and ensure water quality for the premises.

Ensure that your water system is safe to use after a prolonged shutdown by conducting a flush of your commercial or residential property's internal plumbing. Flushing instructions vary depending on the size and complexity of the structure and its plumbing. In any case, we encourage owners of commercial and residential properties to follow the guidance below when reoccupying a building.

Property owners are responsible for maintaining the building's plumbing systems and internal water quality. Consult your plumber or building management team for assistance with carrying out these guidelines.

Visit the sites below to learn more about building water system flushing.

- [CDC Guidance for Building Water Systems](#)
- [Environmental Science, Policy and Research Institute Guidance](#)

Please note: Social distancing protocols will need to be considered when engaging residents or building occupants about premise plumbing flushing and during the flushing process.

Guidance for Commercial Property Owners

1. Follow or develop a comprehensive water management program for your water system and all devices that use water. Guidance to help with this process is available from [CDC](#) and others.
2. Ensure your water heater is maintained correctly and the temperature is set correctly.
3. Flush your water system. Flushing may need to occur in segments (e.g., floors, wings of the building, or individual rooms) due to facility size and water pressure. The purpose of building flushing is to replace all water inside building piping with fresh water.
 - a. Bypass devices such as point-of-entry treatment units prior to flushing. Follow manufacturer guidelines for flushing and maintaining these units.
 - b. Take steps to prevent backflow or the siphoning of contaminants into plumbing (e.g., close valves separating irrigation and other systems from plumbing, disconnect hoses attached to faucets, etc.). [Click here](#) to learn more about backflow prevention.

- c. Flush the cold-water lines first, and then the hot-water lines. The amount of time needed to flush the pipes completely will depend on the size and layout of the building.
 - i. For cold water taps, run enough water through all outlets (e.g., hose bibs, faucets, showerheads, toilets, etc.), removing aerators when possible. It is recommended that you check the chlorine levels of the water to determine if plumbing was flushed sufficiently. Chlorine levels should be detectable after flushing. Use chlorine test kits or test strips that are available at hardware or building supply stores.
 - ii. For hot water taps, flush until the hot water reaches its proper temperature setting.
 - d. Replace all point-of-use (POU) filtration units, including the filter in refrigerators. Residents should be reminded that if POU devices are installed (such as softeners or filters), these devices should be properly installed and adequately maintained.
4. Clean all decorative water features, such as fountains.
 5. Ensure hot tubs/spas are safe for use. Check for existing guidelines from your local or state regulatory agency before use.
 6. Ensure cooling towers are clean and well-maintained.
 7. Ensure safety equipment, including fire sprinkler systems, eyewash stations, and safety showers are clean and well-maintained.
 8. Maintain your water system after flushing is complete and the building is reoccupied. Follow your water management program, document activities, and promptly intervene when problems arise.

Guidance for Residential Property Owners

Please note: When conducting a flush of residential plumbing, an adult should be present in the home to ensure that leaks are minimized, piping is intact, and that the plumbing is flushed properly. Flushing instructions provided to occupants will vary depending on the structure.

1. Bypass devices such as point-of-entry treatment units prior to flushing. Follow manufacture guidelines for flushing and maintaining these units.
2. Take steps to prevent backflow or the siphoning of contaminants into plumbing (e.g., close valves separating irrigation systems from home plumbing, disconnect hoses attached to faucets, etc.). [Click here](#) to learn more about backflow prevention.
3. Organize flushing to maximize the flow of water (i.e. opening all taps simultaneously to flush the service line and then flushing outlets individually starting near where the water enters the structure).
4. Flush the cold-water lines first, and then the hot-water lines. Note: the hot water tank can be drained directly; it can require roughly 45 minutes to fully flush a typical 40-gallon hot water tank.
5. Run enough water through all outlets (e.g., hose bibs, faucets, showerheads, toilets, etc.), removing aerators when possible. Typical durations in existing protocols range from 10 to 30 minutes for each outlet (duration varies based on outlet velocity).
6. Replace all point-of-use (POU) filtration consumables, including the filter in refrigerators. Residents should be reminded that if POU devices are installed (such as softeners or filters), these devices should be properly installed and adequately maintained.
7. Once flushing is complete, dump the contents of your ice maker bin and allow it to refill before use.

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