Cleveland Water

Small Building Water System Flushing Instructions

WHEN TO FLUSH

Before employees return to work after the stay-at-home order is lifted, it is important to perform a full building flush of both the COLD water and then the HOT water plumbing before water in the building is used or consumed.

Building flushing should be done before a school, business, church, community center, hotel, dormitory, salon, barbershop, daycare, workout facility, dental office, etc. is re-opened. Flushing also applies to buildings that had limited water use during the time of social distancing. For flushing purposes, a small building is based on the size and complexity of the plumbing system. In general, smaller buildings might include a 1- or 2-story structure with relatively uncomplicated plumbing systems. A large warehouse with only one or two water outlets may also be considered a small building for the purposes of flushing.

WHY FLUSH

When a building's plumbing system is unused or is underused for an extended period of time, the water in the plumbing system may contain elevated levels of metals or chemicals from plastic plumbing components, and will no longer have chlorine residuals that keep the water safe from opportunistic premise plumbing pathogens. The goal of flushing is to ensure aged water is removed from the plumbing system and fresh water with proper chlorine residuals is reintroduced to the cold and hot water pipes.

HOW TO FLUSH

The guidance is a general outline on how to flush both cold and hot water plumbing in potable water systems in Cleveland Water's service area. Each building is different and will require different actions based on its plumbing systems and water use patterns. Building managers should develop a comprehensive water management program for facilities under their management.

1. Put on proper personal protective gear to prevent aerosolized water from entering your eyes, nose and mouth. This will include a safety mask and eye protection for every person assisting with the building flushing.

2. If possible, remove all aerator screens from every faucet and fixture in the building and leave each aerator screen in a container or bowl by the faucet from which it came.

- If the building includes a tub, shower or wash sink with an aerator sprayer, use the faucet and not the showerhead or sprayer, to flush the plumbing.

3. Determine the faucet that is closest to where the service line enters the building. If this is an outdoor spigot, turn the COLD WATER on first as high as it goes. Otherwise, start in the basement or lowest floor of the building. Turn the COLD WATER on as high as it goes.

4. Continue opening all COLD WATER faucets, including tubs, utility sinks, drinking fountains and outdoor spigots, until all COLD WATER faucets are open on all floors. Every COLD WATER faucet in the building should be turned on at the same time.

- Drinking fountains should not be flushed through a filtering device. If a drinking fountain can only be flushed through its filter, the filter should be changed after flushing is complete. Some drinking fountains can be kept in the on position by inserting a paperclip along the edge of the "on" button, or the button may be taped in the open position.
- For buildings with motion activated water faucets, consult the manufacturer's instructions on how to bypass the motion detection system.

5. After all faucets are open, let the COLD WATER run for at least 30 minutes. During this time, also flush each toilet in the building 2 or 3 times. Running the COLD WATER should remove any old (stagnant) water which may contain higher concentrations of metals, chemicals from plastic, or opportunistic premise plumbing pathogens. By removing the aerator screen, you also allow any particulate metals or plastics to escape and not become lodged on the screen.

- If the water pressure from the cold water plumbing is low or a trickle, the building may need to follow large building flushing instructions in which the building is flushed starting from the center, bottom floor and working outward and upward. For buildings that divide into separate wings, start at the center and flush outward one wing at a time. Each water outlet in the building should still be flushed for 30 minutes for cold water and another 15 minutes for hot water.

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Questions: Call the Cleveland Water Quality Line at 216-664-2639

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HOW TO FLUSH (CONTINUED)

6. After 30 minutes, turn off the first faucet that was opened. Then turn off all other faucets in the same order that they were turned on until all COLD WATER faucets are closed.

7. Now it is time to flush the HOT WATER plumbing. Starting at the faucet that is closest to the hot water heater and working outward, turn on the HOT WATER at each faucet, including tubs and showers, and let the HOT WATER run for at least 15 minutes. When only cold or lukewarm water is coming out of the hot water faucets, shut them all off.

8. If possible, test both the cold water and hot water for chlorine residuals. Cleveland Water is delivered to all customers with at least 0.2 parts per million (ppm) of chlorine residuals in the water. Typically residuals range from 0.2 ppm to 1.5 ppm with high residuals in water in buildings that are closer to one of our water treatment plants. In some cases, a person may be able to smell the chlorine residuals in the water.

9. Once the HOT WATER flushing is complete, go back to each faucet individually and turn the COLD WATER on as high as it goes for 1 minute. At this time, also flush the water from shower faucets where the tub faucet was used to flush, spray aerators, refrigerated water dispensers, ice makers, coffee pots, dishwashers, washing machines and other appliances. Appliances can be set to run a short cycle while empty. Dispose of any water that runs through coffee makers for at least two cycles, longer if the water is discolored. Ice cubes, for the first few cycles of new ice making, should not be used for consumption.

10. After both COLD WATER and HOT WATER flushing has been completed, clean and reattach aerators to each faucet. If an aerator cannot be cleaned, we recommend that you do not reattach it. Use the faucet without an aerator until a replacement can be bought at a hardware store or online.

11. Floor drains and other plumbing features may also need to be replenished with water so poisonous sewer gases do not migrate into the building's air. This may require pouring water into these drains to re-establish a water seal.

Additional building systems that use water should also be inspected, cleaned and disinfected following best practices and industry protocols. These features include decorative water features and fountains, hot tubs/spas, pools, eye wash stations, fire sprinkler systems, and cooling towers. Hot water heaters should also be properly maintained and the temperature set correctly (at least 120°F) to reduce the potential for Legionella bacteria growth. Higher temperatures can further reduce the risk of Legionella growth, but measures must be taken to prevent scalding which can occur if a water heater is set to a temperature greater than 130°F.

ONLINE RESOURCES

Centers for Disease Control – Guidance for Building Water Systems
cdc.gov/coronavirus/2019-ncov/php/building-water-system.html

NSF International
nsf.org/newsroom/in-the-time-of-covid-19-building-water-systems-with-low-demand-require-care

Ohio Environmental Protection Agency
epa.ohio.gov/Portals/28/documents/pws/guidance-for-premise-plumbing-water-service-restoration.pdf

Mechanical and Plumbing Industry Council of Cleveland (MAPIC)
mapic.org/members

Ohio Association of Plumbing Inspectors
oapi.org/web/contacts

Purdue University Center for Plumbing Safety
engineering.purdue.edu/PlumbingSafety/resources/flushing-plans

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