PUBLIC AWARENESS:
Cross Connection Control

Educational Guide:

Do-it-yourself Homeowners Guide for Inspecting Bathrooms & Kitchens

WHAT IS CROSS CONNECTION

A cross connection is an actual or potential connection between our safe drinking water (potable) supply and a source of contamination or pollution. State plumbing codes require approved back-flow prevention devices, assemblies, or the methods to be installed at every point of potable water connection and use.

TO LEARN MORE, CHECK OUT THESE EASY-TO-UNDERSTAND VIDEOS:

OVERVIEW

DETAILED

HOW DOES CONTAMINATION OCCUR?

When you turn on a faucet, you expect the water to be safe. However, certain hydraulic conditions left unprotected within your plumbing system may allow hazardous substances to enter and contaminate your own drinking water or even the public water supply. Water normally flows in one direction to your faucet. However, under certain conditions, water can actually flow in reverse; this is known as Backflow. There are two situations that can cause Backflow: back siphonage and back pressure.

BACK SIPHONAGE

May occur due to a loss of pressure in the municipal water supply such as from a water main break.

BACK PRESSURE

May occur when a source (such as a boiler) creates a greater pressure than incoming water pressure.

HOW TO PREVENT BACKFLOW

- Installing proper air gaps in plumbing fixtures
  - It is a simple and effective method that utilizes physical air space between the potable and non-potable systems (ensuring that the contaminated water cannot flow back into the clean water supply).
    - Most common example of this would be a faucet and a sink.
- Installing an atmospheric vacuum breakers (AVB)
  - An AVB is a non-testable mechanical backflow preventer with a gravity air opening. This is designed to admit atmosphere into the downstream sides of the unit under a no flow condition to prevent back-siphonage.

EXAMPLES OF CROSS CONNECTION AND BACKFLOW SCENARIOS

- Soapy water or other cleaning compounds back-siphon into the water supply plumbing through a faucet or hose submerged in a bucket or laundry basin.
- Pool water back-siphons into the water supply plumbing through a hose submerged in a swimming pool.
- Fertilizers/pesticides back-siphon into the water supply plumbing through a garden hose attached to a fertilizer/pesticide sprayer.
- Chemicals/pesticides and animal feces drawn into the water supply plumbing from a lawn irrigation system with submerged nozzles.
- Bacteria/chemicals/additives in a boiler system back-siphon into the water supply plumbing.

SOME COMMON BACKFLOW HAZARDS

- Hose connections to chemical solutions to feed lawn and shrub herbicides, pesticides or fertilizers.
- Lawn irrigation systems.
- Chemically treated heating systems.
- Hose connections to a water outlet or laundry tub.
- Swimming pools, hot tubs, and spas.
- Private and/or non-portable water supplies located on the property.
- Water-operated sump drain devices.

City of River Falls
River Falls Municipal Utilities
222 Lewis Street
River Falls, WI 54022
715-425-0900
www.rfcity.org

DID YOU KNOW...

Your water can become contaminated if connections to your plumbing system are not connected properly?

The purpose of the local Cross Connection Program, as required by State Plumbing Code and DNR and EPA Regulations, is to ensure everyone in the community has safe, clean drinking water.

IT'S PUBLIC SAFETY...

To avoid contamination, backflow preventers are required by state plumbing codes wherever there is an actual or potential hazard for a cross connection.

The Wisconsin Department of Natural Resources requires all public water suppliers to maintain an on-going Cross Connection Control Program involving public education, onsite inspections, and possible corrective actions by building owners.

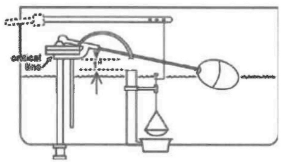
PROTECT THE PUBLIC WATER SYSTEM...

The public water suppliers must determine potential and actual hazards.

If a hazard exists at a customer's public water supply service connection, the customer will be required to install and maintain an appropriate backflow prevention device at the meter and/or at the source of the hazard.

IN THE BATHROOM - TOILET TANKS

- There are many unapproved toilet tank fill valve products sold at common retailers which do not meet the state plumbing code requirements for backflow prevention.
- Look for the ASSE #1002 number on the valve assembly.
- Replace any unapproved valve assemblies. Verify the new assembly is stamped with ASSE 1002 number.
- Verify overflow tube is 1" below the critical level (CL) marking on the valve assembly.
- Verify there is a 1" air gap between fill tube and overflow tube. Many fill tubes are mounted directly into the overflow tube. Clips can be purchased at local hardware stores that will raise the hose up to create the proper gap.



Toilet water tank

- ASSE #1002 Approved Ball Cock Assembly.

IN THE BATHROOM - BATHTUB AND SHOWER

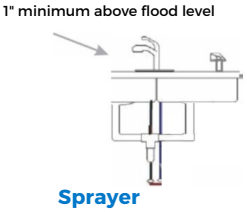
- Bathtub faucet outlet must be at least 1" above the top rim of the tub or sink.
- Handheld showerheads must have approved backflow prevention. ASSE 1014 or ASMI 112.18.1 will be stamped on the fixture.
- If the handheld shower fixture has no ASSE 1014 or ASME 112.18.1 stamp or cannot be proven compliant, it must be at least 1" above the tub when hanging freely. If it is too long it may be shortened if possible or must be replaced.
- When purchasing a new handheld shower be sure it is marked with the proper ASSE 1014 or ASME 112.18.1 number.

Tub

- Faucet outlet must be at least 1" above the top of the tub rim.

IN THE KITCHEN

- Kitchen sink faucet must be at least 1" above the top of the sink.
- If there is a hand sprayer it must have approved back flow prevention built into it. An ASSE #1025 or an ASMI 112.18.1 will be stamped on the back of the faucet. If there is no number or cannot be proven compliant, it must be replaced. When purchasing a new fixture, look for approved ASSE ASME numbers (not all fixtures being sold are compliant).



Sprayer

- Needs to be comply with ASSE 1025 or ASME 112.18.1

DO...

- Keep the ends of hoses clear of all possible contaminants.
- Verify a hose bib vacuum breaker is on all threaded faucets around your home.
- Make sure water treatment devices such as water softeners have the proper "air gap", which is a minimum of one inch above the drain.

DON'T...

- Submerge hoses in buckets, pools, tubs, sinks or ponds.
- Use spray attachments on garden hoses without a backflow prevention device on the hose.
- Connect waste pipes from water softeners or other treatment systems to the sewer or submerged (physical pipe connection) drainpipe.