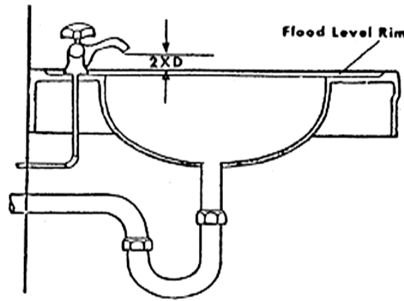
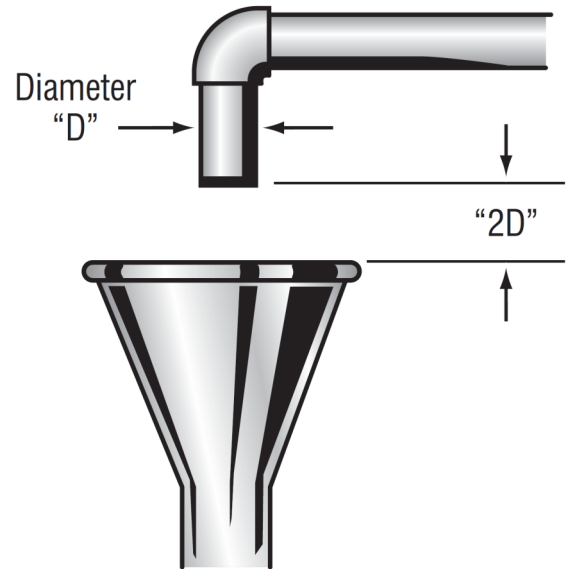


## Air Gap



*Examples for illustrative purposes only.  
Styles differ by model, manufacturer, and application.*

### Air gap.



### Mechanical Description:

A method of physical separation between the free-flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel. An "approved air gap" shall be at least twice the diameter of the supply pipe measured vertically above the overflow rim of the receiving vessel; in no case less than 1 inch (2.54 cm).

### Applications:

Sinks, toilets, tanks, pools, fire systems, industrial and agricultural systems, food industry, and bulk loading stations.

### Limitations:

In a continuous piping system, each air gap requires the added expense of reservoirs and secondary pumping systems. The air gap may be easily defeated in the event that the "2D" requirement was purposely or inadvertently compromised. Excessive splash may be encountered in the event that higher than anticipated pressures or flows occur.

### Installation Guidelines:

Must be at least twice the diameter of the supply pipe never less than one-inch the simple solution to reduce splashing being to reduce the "2D" dimension by thrusting the supply pipe into the receiving funnel is not accepted. By so doing, the air gap is defeated. Manufactured air gaps are normally accepted as meeting all requirements reviewed on a case by case basis.

### Protection:

Extremely effective backflow prevention method when used to prevent backsiphonage and backpressure conditions. Does protect against non-health hazards (i.e., pollutants) or health hazards (i.e., contaminants).

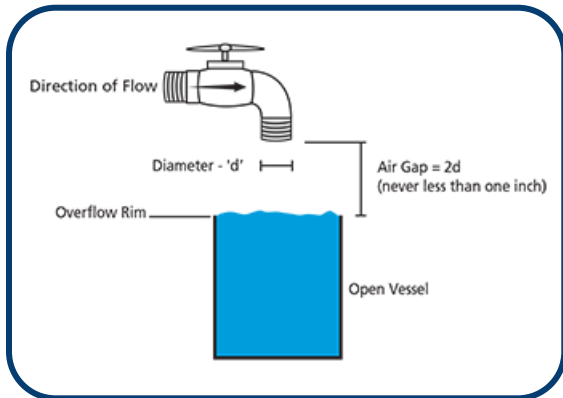
### Hazard Rating:

Health hazards and non-health hazards.

### Pressure Condition:

Flow of water is interrupted and loss of pressure occurs. Because of this, air gaps are used at the end of a pipe.

# Hydraulics, Orientation and Rule Requirements



## Requirements for Public Water Supplies:

As mandated by the federal Safe Drinking Water Act, water suppliers are responsible for ensuring that the water they supply meets federal primary drinking water regulations and is delivered to consumers without compromising water quality due to its distribution system. Water utilities may want to implement a cross connection program to stave off any problems that could occur.

Mechanical backflow preventers have internal seals, springs, and moving parts that are subject to fouling, wear, or fatigue. Also, mechanical backflow preventers and air gaps can be bypassed. Therefore, all backflow preventers have to be tested periodically to ensure that they are functioning properly. A visual check of air gaps is sufficient, but mechanical backflow preventers have to be tested with properly calibrated gauge equipment by a certified individual.

## Administrative Rules of Montana:

### 17.38.305 CROSS-CONNECTIONS: REGULATORY REQUIREMENTS

(1) A cross-connection on a public water supply system must be eliminated by the disconnection of the cross-connection whenever reasonably practicable. Whenever elimination of a cross-connection is not reasonably practicable and the cross-connection creates a health or non-health hazard, the hazard must be eliminated by the insertion into the piping of an approved backflow prevention assembly or device.

## Additional Resources:

Administrative Rules of Montana: Cross-Connections in Drinking Water 17.38.301—312 <http://www.mtrules.org>

American Backflow Prevention Association <https://abpa.site-ym.com/>

Environmental Protection Agency Cross Connection Control Manual (2003) <http://nepis.epa.gov>

Foundation for Cross-Connection Control and Hydraulic Research <https://fccchr.usc.edu/introduction.html>

## Montana Department of Environmental Quality

### Public Water Supply Bureau

Telephone: (406) 444-4400

Website: <http://deq.mt.gov/water/drinkingwater>

DEQ Contacts: <https://directory.mt.gov/govt/state-dir/agency/deq>