



## Required Levels of Backflow Protection for Onsite Water Reuse Systems

Buildings containing onsite water reuse systems in the City and County of San Francisco must install the following backflow protection:

- **Rainwater Harvesting**
  - Containment reduced pressure principle backflow prevention assembly (RP) within 25 feet of the building's water meter, **and**
  - Isolation RP **or** isolation air gap at the point where potable make-up water connects to the auxiliary system.
- **All Other Auxiliary Water Systems (Graywater, Blackwater, Foundation Drainage, and Stormwater)**
  - Containment RP within 25 feet of the building's water meter, **and**
  - Isolation air gap at the point where potable make-up water connects to the auxiliary system.

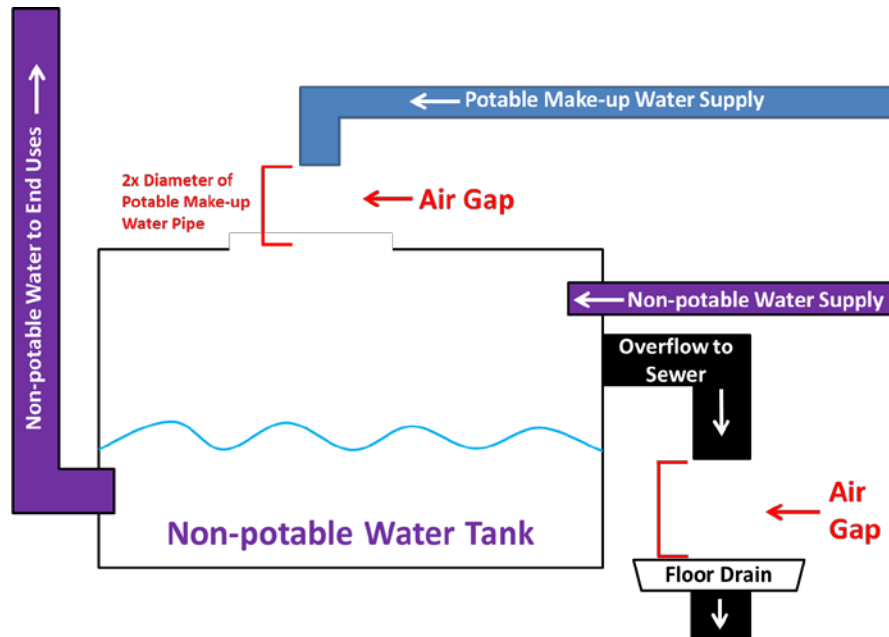
### What Is an Air Gap?

An air gap is a physical break between a supply pipe and a receiving vessel. Air gaps can be fabricated from commercially available plumbing components or purchased as separate units and integrated into plumbing and piping systems, but they must be able to be visually verified during inspection. Requirements for air gaps are set forth in the California Plumbing Code, Chapter 6, Section 603 and include the following:

- The outlet of a pipe and the top of the reservoir (overflow rim) or drain must have a vertical separation of at least twice the inner diameter (ID) of the pipe upstream of the air gap, or 1 inch, whichever is greater.
- If the air gap is near a wall, where "near" is defined as less than three times the ID of the pipe, the vertical separation must be at least three times the ID of the pipe, or 1½ inches, whichever is greater.
- If the air gap is near a corner, where "near" is defined as less than four times the ID of the pipe away from intersecting walls, the vertical separation must be at least four times the ID of the pipe, or 2 inches, whichever is greater.

Note: **An air gap may not be located inside of a receiving vessel.** It must be located outside of a tank and be visible for inspection.

### Air Gap Example Drawing:



### Additional Requirements

- Backflow prevention assemblies installed in San Francisco must be on the “Approved Backflow Prevention Assemblies” list developed by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.
- After initial testing, backflow prevention assemblies must be tested annually by an Authorized Backflow Prevention Assembly Tester. Air gaps must be inspected annually by an Authorized Cross-Connection Control Specialist.
- All projects installing non-potable water reuse systems that require dual plumbing must have a cross-connection test by the SFPUC, Water Quality Division, before being put into service. **To schedule a cross-connection test, please call (650) 652-3199. Please allow at least three weeks of lead time for a cross-connection test.**
- Dual-plumbed systems must be visually inspected annually and undergo a cross-connection test at least every four years.

### Additional Information

Additional information is available at [www.sfwater.org/backflow](http://www.sfwater.org/backflow), or you can call the Cross-Connection Control Program at (650) 652-3199 between 8 am and 5 pm.