You Should Know

Fixture fittings and faucets are required to conform to ASME A112.18.1/CSA B125.1, including faucets that have a spray attachment, such as a kitchen sink or a bath fill valve with a hand-held shower wand, which may have a diverter-type mechanism to prevent backflow of the sink or bathtub contents should the spray attachment be submerged below the flood level rim of the fixture. Since this backflow protection device will have been tested in order to comply with the product standard, no additional backflow protection is required. ●

BACKFLOW ASSEMBLIES, DEVICES AND METHODS

You Should Know

Definitions for consideration (see Glossary):

- Backsiphonage
- Backpressure, low head
- Air gap (water distribution system)
- Effective opening
- Backflow preventer ●

The ultimate protection against backflow is to not have a connection between the potable water system and any source of contamination, and the best method for accomplishing that is to provide an air gap, which is a vertical separation between the outlet discharge from the potable system to the flood level rim of a fixture, reservoir, tank, etc. (Figure 9-6) The physical air gap is basically two times the diameter of the effective opening, but in no case less than 1 inch (Table 9-1). Some fixtures, appliances and products may have the air gap built-in with an air gap complying with ASME A112.1.2 or an air gap fitting complying with ASME A112.1.3. Where the product is listed as complying with either of these standards, it is considered to be code compliant.

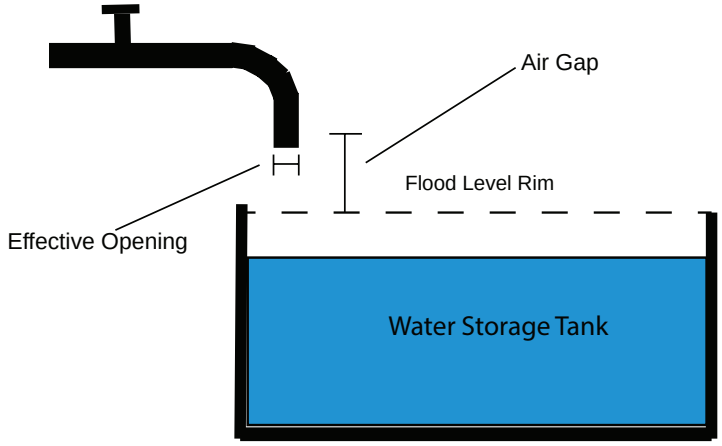

FIGURE 9-6 Air gap—water distribution

TABLE 9-1 Minimum required air gaps

FIXTURE	MINIMUM AIR GAP
Lavatories and other fixtures with effective openings not greater than ½ inch in diameter	1 inch
Sinks, laundry trays and other fixtures with effective openings not greater than ¾ inch in diameter	1½ inches
Over-rim bath fillers and other fixtures with effective openings not greater than 1 inch in diameter	2 inches
Effective openings greater than 1 inch	Two times the diameter of the effective opening

Note: The minimum required air gap is increased where the effective opening is adjacent to one or more walls as specified in IPC Table 608.16.1.

Where it is necessary to connect appliances, fixtures, appurtenances and other systems, backflow protection must be provided by means of appropriate backflow assemblies, devices or methods. The different types of backflow preventers are listed in IPC Table 608.1 along with the degree of hazard that they are equipped to handle. The applicable product standard for each is also identified in the table (Table 9-2). According to the table footnotes, connection to something that contains what would be defined as *contamination* is deemed a *high hazard*, whereas substances defined as *pollution* are deemed a *low hazard*. This leads you to the applicable backflow preventer required for the backflow protection. Additionally, the *application column* in the table identifies whether the backflow preventer can be used for protection from backpressure or backsiphonage.

Whatever backflow preventer is used, it is imperative that it be installed in accordance with the code and the manufacturer's installation instructions. **[Ref. IPC 608.1, 608.14.1, 608.16.1 and IRC P2902.1, P2902.3.1, P2902.4]**