

# Backflow Prevention Devices, Assemblies, and Methods

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Backflow prevention devices, assemblies, and methods shall comply with Section 603.3.1 through Section 603.3.12.

## 603.3.1 Air Gap

The minimum air gap to afford backflow protection shall be in accordance with Table 603.3.1.

FIXTURES	WHERE NOT AFFECTED BY SIDEWALLS <sup>1</sup> (inches)	WHERE AFFECTED BY SIDEWALLS <sup>2</sup> (inches)
<u>Effective openings</u> <sup>3</sup> not greater than $\frac{1}{2}$ of an inch in <u>diameter</u>	1	$1\frac{1}{2}$
<u>Effective openings</u> <sup>3</sup> not greater than $\frac{3}{4}$ of an inch in <u>diameter</u>	$1\frac{1}{2}$	$2\frac{1}{4}$
<u>Effective openings</u> <sup>3</sup> not greater than 1 inch in <u>diameter</u>	2	3
<u>Effective openings</u> <sup>3</sup> greater than 1 inch in <u>diameter</u>	Two times the <u>diameter</u> of <u>effective opening</u>	Three times the <u>diameter</u> of <u>effective opening</u>

**TABLE 603.3.1**  
**MINIMUM AIR GAPS FOR WATER DISTRIBUTION<sup>4</sup>**

For SI units: 1 inch = 25.4 mm

### Notes:

<sup>1</sup> Sidewalls, ribs, or similar obstructions do not affect air gaps where spaced from the inside edge of the spout opening a distance exceeding three times the diameter of the effective opening for a single wall, or a distance exceeding four times the effective opening for two intersecting walls.

<sup>2</sup> Vertical walls, ribs, or similar obstructions extending from the water surface to or above the horizontal plane of the spout opening other than specified in Footnote 1 above. The effect of three or more such vertical walls or ribs has not been determined. In such cases, the air gap shall be measured from the top of the wall.

<sup>3</sup> The effective opening shall be the minimum cross-sectional area at the seat of the control valve or the supply pipe or tubing that feeds the device or outlet. Where two or more lines supply one outlet, the effective opening shall be the sum of the cross-sectional areas of the individual supply lines or the area of the single outlet, whichever is smaller.

<sup>4</sup> Air gaps less than 1 inch (25.4 mm) shall be approved as a permanent part of a listed assembly that has been tested under actual backflow conditions with vacuums of 0 to 25 inches of mercury (85 kPa).

#### 603.3.2 Atmospheric Vacuum Breaker (AVB)

An atmospheric vacuum breaker consists of a body, a checking member, and an atmospheric port.

#### 603.3.3 Hose Connection Backflow Preventer

A hose connection backflow preventer consists of two independent check valves with an independent atmospheric vent between and a means of field testing and draining.

#### 603.3.4 Double Check Valve Backflow Prevention Assembly (DC)

A double check valve backflow prevention assembly consists of two independently acting internally loaded check valves, four properly located test cocks, and two isolation valves.

#### 603.3.5 Pressure Vacuum Breaker Backflow Prevention Assembly (PVB)

A pressure vacuum breaker backflow prevention assembly consists of a loaded air inlet valve, an internally loaded check valve, two properly located test cocks, and two isolation valves. This device shall be permitted to be installed indoors where provisions for spillage are provided.

#### 603.3.6 Spill-Resistant Pressure Vacuum Breaker (SVB)

A pressure-type vacuum breaker backflow prevention assembly consists of one check valve force loaded closed and an air inlet vent valve force loaded open to atmosphere, positioned downstream of the check valve and located between and including two tightly closing shutoff valves and test cocks.

#### 603.3.7 Reduced-Pressure Principle Backflow Prevention Assembly (RP)

A reduced-pressure principle backflow prevention assembly consists of two independently acting internally loaded check valves, a differential pressure relief valve, four properly located test cocks, and two isolation valves.

#### 603.3.8 Double Check Detector Fire Protection Backflow Prevention Assembly

A double check valve backflow prevention assembly with a parallel detector assembly consisting of a water meter and a double check valve backflow prevention assembly (DC).

#### 603.3.9 Reduced Pressure Detector Fire Protection Backflow Prevention Assembly

A reduced-pressure principle backflow prevention assembly with a parallel detector assembly consisting of a water meter and a reduced-pressure principle backflow prevention assembly (RP).

#### 603.3.10 Dual Check Backflow Preventer

A dual check backflow preventer consists of two independently acting check valves, force loaded to a normally closed position.

#### 603.3.11 Laboratory Faucet Backflow Preventers

Laboratory faucet backflow preventers shall comply with ASSE 1035.

#### 603.3.12 Backflow Preventer With Intermediate Atmospheric Vent

A backflow preventer with intermediate atmospheric vent consists of two independently acting check valves, force loaded to a normally closed position, and an intermediate chamber with a means for automatically venting to atmosphere, force loaded to a normally open position.