

Island Vent

Similarly, a sink in casework that is not located near a wall requires an island sink vent. Unlike an individual vent that rises above the sink rim level before turning horizontal, an island vent turns horizontal just below the rim and drops below the floor. Depending on the code, it connects to a building drain that serves the sink. Other codes require a connection to the horizontal drain branch that serves the sink and to a vent stack in the nearest wall. Codes usually prescribe cleanouts and a pipe slope in the vent piping.

VENT SYSTEMS

The connection of a vent to a fixture drain should not be so close as to become clogged with debris washed through the trap, nor should it be so far away that it becomes blocked by water that will accumulate if downstream piping is obstructed. Figure 3-4 shows a vent blocked by backed-up water and a wye fitting. The vent is not blocked, for various connection orientations, if the location of the vent connection is less than the distances listed in Table 3-1.

From the vent connection, the vent pipe in a conventional system extends to the outdoors generally through a network of vent pipes. The open end of the pipe at the outdoor location, called a vent terminal, is generally above the roof, about 1 foot (300 millimeters) from its surface, and its diameter is of a generous size to prevent closure caused by frost buildup. A vent terminal location generally is restricted away from air intakes, doors, windows, and promenades. In addition, provision is made for expansion and contraction of the vent terminal relative to the roof membrane.

Where two vent pipes are connected, the horizontal pipes joining them are called vent headers or vent branches. The connection of two or more stack vents is called a vent header, while the connection of two or more fixture vents is called a branch vent.

Drainage basins that are pumped of their contents require a vent to replenish the lost volume with air that is at atmospheric pressure. This vent pipe allows the basin to be sealed from the building's air. Interceptors also may require an individual vent.

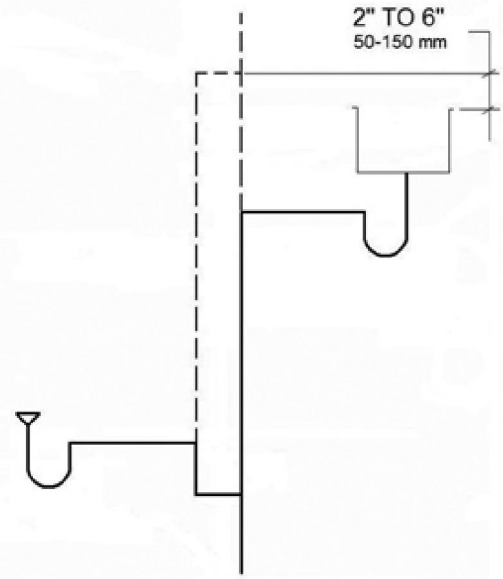


Figure 3-5 Two Vent Pipes Joined Above the Sink Rim

These vents may be combined to the other vents unless the interceptor requires isolation such as with chemical wastes.

All parts of a vent system, including the vent terminal, are independent of similar vent system types. That is, the sanitary vent system does not share its parts with the vent system of a chemical waste system, clear water system, graywater system, or steam vent system.

The piping material for vent systems can be identical to the drain system. The pressure test for the drain system often is applied to the vent system at the same time, with a few differences. Insulation that may be applied on drain piping that is prone to condensation is not applied to the vent piping, and the radii of elbows and tees are usually sharper than on drainage fittings.

For a fixture drain, the elevation of the horizontal portion of its vent is generally 2 to 6 inches (50.8 to 152 millimeters) above the rim of the fixture. Similarly, the elevation of a branch vent is 2 to 6 inches (50.8 to 152 millimeters) above the rim elevation of the highest connected fixture (see Figure 3-5). This elevation restriction prevents the fixture from functioning correctly when an obstruction occurs downstream of its vent connection. If the vent branch were at or below the fixture rim, drainage flow would divert to the vent of the lower fixture, and the obstruction would continue to be unnoticed.

Table 3-1 Maximum Distance of a Fixture Trap from a Vent Connection

| Fixture Drain Diameter, in. (mm) | Slope, inch per foot (%) | Distance with Sanitary Tee, ft (m) | Distance with Wye Fitting, ft (m) |
|----------------------------------|--------------------------|------------------------------------|-----------------------------------|
| 1.25 (32) | ¼ (2) | 3.5 (1.0) | 1.5 (0.4) |
| 1.5 (38) | ¼ (2) | 5 (1.5) | 4 (1.2) |
| 2 (51) | ¼ (2) | 6 (1.8) | 4.5 (1.4) |
| 3 (76) | ¼ (2) | 8 (2.4) | 6 (1.8) |
| 3 (76) | ⅛ (1) | 10 (3.0) | 8 (2.4) |
| 4 (102) | ¼ (2) | 10 (3.0) | 8 (2.4) |
| 4 (102) | ⅛ (1) | 12 (3.6) | 10 (3.0) |