

Rules For Branch Openings

All branch piping sizes and loads should be in accordance with [Chart 2](#). Branch piping should have a minimum of 1/8" per foot pitch.

The ProVent Base Fitting has a pressure relief vent opening that extends up then returns down 180 degrees using pipe and fittings that connect to the horizontal building drain at a point no less than 10 pipe diameters downstream from the center line of the vertical stack to the centerline of the branch wye. The pressure relief vent line may run parallel to the horizontal drain and must connect above the centerline of the drain. Branch soil or wastes are allowed when they are connected above the horizontal drain line. They cannot connect in-between any short pipe areas where there is a change in direction from the Base Fitting downstream to the building drain.

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Branches that change directions three (3) times by 90 degrees should increase one pipe size at the offset nearest the stack. This increase does not apply if one (1) of the changes can be made with two (2) forty five degree fittings or a short sweep 90 degree fitting.

If two (2) 3.5 gpf public water closets are connected to the same branch, the first connection can be 3" then increased to 4" at the second connection. This increase is not required for the 1.6 gpf flush water closets. Check manufacturers installation instructions for pressure assisted type water closets that may require special fittings for back to back installations.

4" Size branches shall not exceed a developed length of 27 feet. 3" Size branches shall not exceed a developed length of 15 feet. 2" Size branches shall not exceed a developed length of 15 feet. 2" branches for washing machines should not exceed 5 feet. These lengths include any horizontal pipe offsets but the length of the vertical drop arms is not included. Horizontal to horizontal branch connections should be made with wye combinations or heel outlet fittings.

Vertical branches should not exceed 40". A 45 degree offset can extend the drop pipe to 40" from the top 45 degree fitting to the fixture outlet. When a vertical drop into a horizontal waste exceeds 10 feet both must increase one (1) pipe size.

1-1/4" size fixture traps can be connected back to back into one 2" vertical drop. 1-1/2" size fixture traps require separate 2" drops. 1-1/2" and larger traps can use a single vertical drop by increasing the drop one (1) pipe size. Note: Horizontal waste branches without vertical drops are sized per chart 2.

An alternate to increase developed lengths can be done by using a revent line or by telescoping smaller to larger pipe sizes or by using an Air Admittance Valve where applicable and permitted. The revent line shall be routed vertically and horizontally and tie in above the flood rim level using a wye branch looking up.

Maximum Loading by Branch

Chart 2: Maximum Loading by Branch		
Fixture Units		
Drain Size	Slope: 2% (1/4 per foot)	Slope: 1% (1/8 per foot)
2"	6	5
3"	16	13
4"	90	72

Maximum Loading by Stack

Chart 3: Maximum Loading by Stack	
Stack Size	Fixture Units
3"	64
3" (over 7 stories)	102
4"	504
5"	1010
6"	2200

Maximum Loading by Building Drain

Chart 4: Maximum Loading by Building Drain		
Drain Size	Fixture Units	
	Slope: 2% (1/4 per foot)	Slope 1% (1/8 per foot)
3"	42	36
4"	216	180
5"	350	280
6"	850	680
8"	2700	2160
10"	3900	3120
12"	5800	4640