



QickSert CR™ Water Delivery Analysis

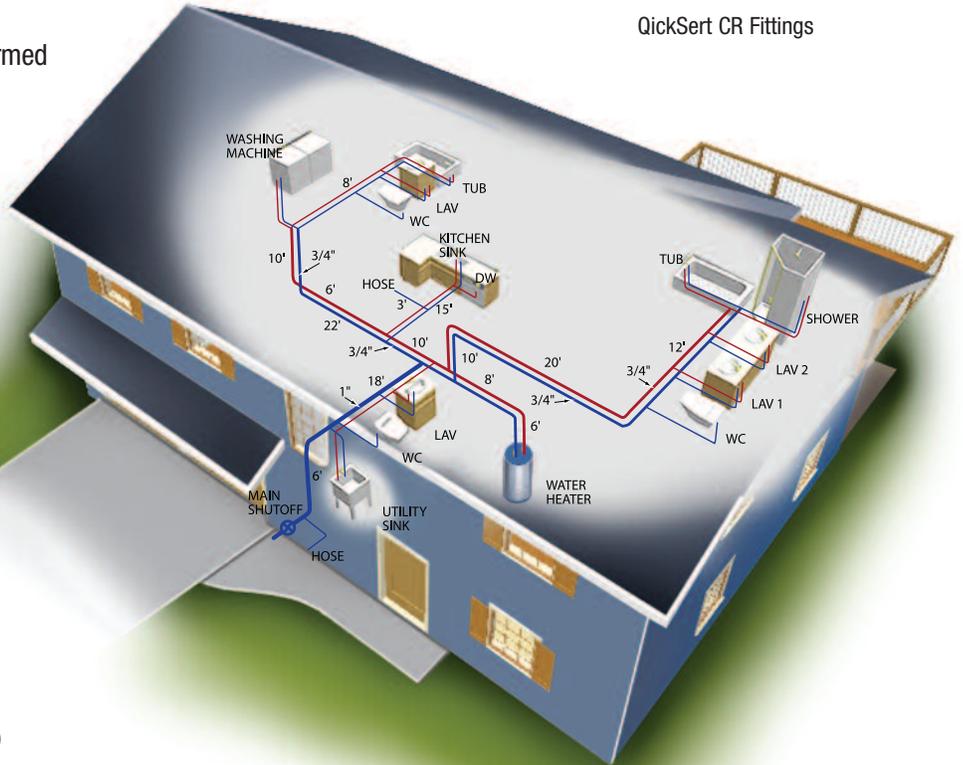
QickSert CR™ fittings are molded from a blend of highly engineered polymers which have been specifically chosen for their inherent ability to resist water-induced stress corrosion cracking. This makes QickSert CR fittings the preferred choice over metallic components for use in areas with localized aggressive water chemistry. Sometimes it is asked if it is necessary to upsize a system that is using QickSert CR fittings.

The pressure drop from the main to the furthest fixture in the system when using QickSert CR fittings is outlined in Table 1.



QickSert CR Fittings

To answer this question, we have performed a pressure loss analysis of a typical plumbing system with QickSert CR fittings. For this analysis we have assumed an unlikely situation in which 5 of the 16 fixtures are in operation simultaneously. This “worst case scenario” also assumes the maximum expected flow rates as they are listed by the Uniform Plumbing Code in Table A-2 of Appendix A.



Based on the trunk and branch design (see Figure 1), five fixtures were analyzed for pressure drop values in a worst case scenario. The worst case scenario analysis includes high flow fixtures and some standard fixtures. This analysis is for the cold water side of the system; however, it would apply for the hot water side as well since the piping arrangement is assumed to be similar.

Figure 1: Trunk and Branch Design

Table 1: Pressure Loss Analysis

Fixture	Fixture Demand (gpm)	Tube (feet)			No. of QickSert CR Fittings	Service Pressure (psi)	Total Pressure Loss (psi)	
		1"	3/4"	1/2"			Tubing and QickSert CR	QickSert CR
1 - Utility Sink	1.5	0	0	6	1	40	1.7	38.3
2 - Shower	2	48	48	6	9	40	5.6	34.4
3 - Kitchen Sink	1.5	22	22	21	6	40	10.1	29.9
4 - Washer	4	32	32	6	5	40	14.2	25.8
5 - Shower	2	32	32	14	6	40	12.2	27.8

Conclusion: In evaluating the results, it can be noted that even in a high demand scenario, such as this example, the pressure loss from the water main to the fixture would not be noticeable to the user in normal plumbing installations.

Note: Federal regulations mandate the following flow restrictions in a plumbing system:

- Shower Heads • 2.2 gpm max. at 60 psi
- Faucets* • 2.2 gpm max. at 60 psi
- 2.5 gpm max. at 80 psi
- 2.5 gpm max. at 80 psi

*Lavatory faucets are typically limited to flow rates between 0.5 and 1.5 gpm, depending on public or private usage.