

# Standard Pipe Dimensions Rigid PVC Plastic Pipe

All Dimensions in Inches

Nominal Pipe Size Inches	Outside Diameter	CI 100 SDR 41		CI 125 SDR 32.5		CI 160 SDR 26		CL 200 SDR 21		CL 315 SDR 13.5		SCH 40 Plastic		SCH 80 Plastic	
		ID	WALL	ID	WALL	ID	WALL	ID	WALL	ID	WALL	ID	WALL	ID	WALL
½	.840									.716	.062	.622	.109	.546	.147
¾	1.050							.930	.060	.894	.078	.824	.113	.742	.154
1	1.315					1.195	.060	1.189	.063	1.121	.097	1.049	.133	.957	.179
1¼	1.660					1.532	.064	1.502	.079	1.414	.123	1.380	.140	1.278	.191
1½	1.900					1.754	.073	1.720	.090	1.618	.141	1.610	.145	1.500	.200
2	2.375					2.193	.091	2.149	.113	2.023	.176	2.067	.154	1.939	.218
2½	2.875					2.665	.110	2.601	.137	2.449	.213	2.469	.203	2.323	.276
3	3.500			3.284	.108	3.230	.135	3.166	.167	2.982	.259	3.068	.216	2.900	.300
4	4.500	4.280	.110	4.224	.138	4.154	.173	4.072	.214	3.834	.333	4.026	.237	3.826	.337
6	6.625	6.301	.162	6.217	.204	6.115	.255	5.993	.316	5.643	.491	6.065	.280	5.761	.432
8	8.625	8.205	.210	8.095	.265	7.961	.332	7.805	.410						
10	10.750	10.226	.262	10.088	.331	9.924	.413	9.728	.511						
12	12.750	12.128	.311	11.966	.392	11.770	.490	11.538	.606						

Pressure surges may damage the mainline piping and should be considered when designing a sprinkler system.

Surges occur when the flow of water in that section of pipe is stopped suddenly. How great the surge or *water hammer* depends upon several factors:

1. The initial velocity of flow in feet per second, and/or the quantity of water flowing through the pipe.
2. The length of time it took to stop the flow of water in the pipe.
3. The mainline length between the point where the flow first stopped and the first entrance connection into the source of water.

### Pressure Surge Formula

V = Velocity in feet per second

L = Length in feet

t = closing time of valve in seconds

$$P_s = \frac{V \times L \times .07}{t}$$

Total surge = Operating Pressure + Surge Pressure

### Velocity Formula

gpm = amount of water flowing

d<sub>i</sub> = inside diameter of pipe in inches

V = velocity in feet per second (fps)

2.45 = constant

$$V = \frac{gpm}{2.45 \times d_i^2}$$



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