

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_i = 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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