

Maximum Flow Velocities in Water Systems

Water velocities in pipes and tubes should not exceed certain limits

The fluid flow velocities in water systems should not exceed certain limits to avoid noise and damaging wear and tear of pipes and fittings. The table below can be used as a guide to maximum velocities:

Application	Maximum Velocity	
	<i>(m/s)</i>	<i>(ft/s)</i>
Tap water (low noise)	0.5 - 0.7	1.6 - 2.3
Tap water	1.0 - 2.5	3.3 - 8.2
Cooling water	1.5 - 2.5	4.9 - 8.2
Suction boiler feed water	0.5 - 1.0	1.6 - 3.3
Discharge boiler feed water	1.5 - 2.5	4.9 - 8.2
Condensate	1.0 - 2.0	3.3 - 6.5
Heating circulation	1.0 - 3.0	3.3 - 9.8

Water Supply Pipe Lines - Sizing

Sizing of water supply pipe lines

A water supply pipe line should be sized according expected demand and not the total theoretical demand from all fixtures at the same time. Due to intermittent use of the fixtures it may be difficult to predict a realistic demand but the values below are relevant for water supply lines in applications like homes, offices, nursing homes etc.

Copper Pipe Size	Total Maximum Theoretical Demand Summarized	Maximum Expected Demand
DN (mm)	(liter/s)	(liter/s)
12	0.2	0.2
15	0.8	0.4
18	1.6	0.5
22	4.0	0.6
28	15	1.1
35	30	1.8
42	65	2.8
54	130	4.5

- 1 in = 25.4 mm