

Tip: For gaseous flow problems, be absolutely sure that velocity is calculated using the pressure and temperature at flowing conditions. Reduce ambiguity by expressing the flow rate in mass, rather than volumetric, units. See [Table 1-1](#).

Table 1-1
Suggested starting point for pipe sizing using fluid velocity or pressure drop criteria

Service	Velocity, m/s or Other Criteria	Velocity, ft/s or Other Criteria
Air, compressed	20 to 30	65 to 100
Gas, dry	15 to 40	50 to 120
Gas, wet	10 to 18	30 to 60
Petrochemicals	1.5 to 4	5 to 12
Sodium hydroxide, 0–30%	1.8	6
Sodium hydroxide, 30–50%	1.5	5
Sodium hydroxide, 50–73%	1.2	4
Steam, dry, high pressure (> 2 bar, superheated)	50	150
Steam, saturated, low pressure (<= 2 bar)	30	100
Steam, small branch lines	15	50
Steam, wet	10 to 15	30 to 50
Vacuum, below 50 mm Hg absolute pressure	Max 5% pressure loss	
Vapor lines, general	Up to 0.3 Mach	
Water, average service	1.5 to 3	5 to 10
Water, boiler feed	1.5 to 4.6	5 to 15
Water, pump suction	0.3 to 1.5	1 to 5
Water, sea and brackish	1.5 to 4	5 to 12
Water, wastewater, pump suction	1 to 1.8	3 to 6
Water, wastewater, pump discharge	1 to 2.5	3 to 8
Water, wastewater, gravity	0.6 to 2.5	2 to 8