



Product Data for Equipment Length Calculations

SB1 Flow/Pressure Loss Coefficient

Size		SB1 90° Elbow			SB1 45° Elbow			SB1 Reduce Elbow			SB1 Reduce Union			SB1 Socket			SB1 Union		
Inch	inside Dia (mm)	Cv	Flow Drop (kPa)	Equivalent Length (Ft)	Cv	Flow Drop (kPa)	Equivalent Length (Ft)	Cv	Flow Drop (kPa)	Equivalent Length (Ft)	Cv	Flow Drop (kPa)	Equivalent Length (Ft)	Cv	Flow Drop (kPa)	Equivalent Length (Ft)	Cv	Flow Drop (kPa)	Equivalent Length (Ft)
1/4"	8.00	0.94	0.76	0.39	0.96	0.50	0.26	0.89	1.39	0.71	0.98	0.25	0.13	0.99	0.13	0.06	0.99	0.13	0.06
3/8"	10.92		0.56	0.53		0.37	0.35		1.02	0.97		0.19	0.18		0.09	0.09			
1/2"	13.84		0.44	0.67		0.29	0.44		0.81	1.22		0.15	0.22		0.07	0.11			
5/8"	16.91		0.36	0.82		0.24	0.54		0.66	1.50		0.12	0.27		0.06	0.14			
3/4"	19.94		0.31	0.96		0.20	0.64		0.56	1.76		0.10	0.32		0.05	0.16			
7/8"	26.04		0.24	1.26		0.16	0.84		0.43	2.30		0.08	0.42		0.04	0.21			

Darcy Friction Factor	f	1 - Cv
Density (p)	p	1000
Flow Speed (m/s)	V	2
Pipe Length (m)	L	50

$$\Delta p = f \frac{L}{D} \frac{\rho V^2}{2}$$

Flow Coefficient	Hf	1 - Cv
tube Pre, Loss Coefficient	λ	0.02
Gravity acceleration (m/s²)	g	9.8

$$H_f = \lambda \cdot \frac{L}{D} \cdot \frac{v^2}{2g} [m]$$

Note.

- This calculation is made in consideration of the general situation.
 - It may vary depending on your environment and conditions.
 - The System Detail value for the formula is assumed
- General values are applied as physical values, and the formula includes tolerance values.
 - As mentioned on the Neutrium page, errors may occur due to definitions such as diameter, internal friction, and fluid viscosity.
- The calculation used two physical formulas.
 - Darcy-Weisbach equation
 - DEFINITION https://neutrium.net/fluid_flow/pressure-loss-in-pipe/

ESSENTECH Quality Assurance Team (2020/03/05)



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