

PIPE VELOCITY AND LINE SIZING CALCULATOR

Project: Cooling water return

Calc no: CALC PS 001

Rev: 0

Yellow cells: enter data. Grey cells: calculated automatically. Free template from instrumentationblog.in

Flow

Flow rate (m³/h)	60	Maximum velocity (m/s)	3
Service	Water, pump discharge	Minimum velocity (m/s)	0.5

Velocity in each line size (Schedule 40)

NPS	DN	Inside diameter (mm)	Area (m²)	Velocity (m/s)	Within limits
1/2"	15	15.80	0.000196	85.01	CHECK
3/4"	20	20.93	0.000344	48.44	CHECK
1"	25	26.64	0.000557	29.90	CHECK
1 1/2"	40	40.89	0.001313	12.69	CHECK
2"	50	52.50	0.002165	7.70	CHECK
3"	80	77.92	0.004769	3.50	CHECK
4"	100	102.26	0.008213	2.03	OK
6"	150	154.05	0.018639	0.89	OK
8"	200	202.72	0.032276	0.52	OK
10"	250	254.51	0.050874	0.33	CHECK
12"	300	303.23	0.072216	0.23	CHECK
Smallest size within the velocity limits					4"
Velocity in that size (m/s)					2.03

Typical velocities: water pump discharge 1.5 to 3 m/s, suction 0.6 to 1.5 m/s, saturated steam 20 to 35 m/s, compressed air 6 to 10 m/s. Magnetic flowmeters measure best at 1 to 3 m/s.

Prepared by	Checked by
Name:	Name:
Signature:	Signature:
Date:	Date: