

Pipe nominal bore N.B.	Pipe outside diameter O.D.	Insulation thickness											
		(mm)	20	25	37	40	50	65	75	80	100	125	150
mm	mm	(in.)	0.75	1	1.5	2	2.5	3	4	5	6		
12	21.35		5.95	5.16	4.13	4.13	3.58	3.21	3.02	2.94	2.69	2.47	2.32
20	26.70		6.86	5.89	4.65	4.54	4.00	3.55	3.30	3.23	2.94	2.69	2.51
25	33.40		7.98	6.91	5.36	5.14	4.56	3.96	3.71	3.60	3.23	2.94	2.73
32	42.20		9.42	8.04	6.20	5.91	5.17	4.47	4.14	4.01	3.60	3.25	3.00
40	48.30		10.41	8.74	6.63	6.43	5.54	4.81	4.41	4.30	3.84	3.45	3.18
50	60.35		12.36	10.28	7.69	7.44	6.36	5.47	4.98	4.85	4.26	3.84	3.52
65	73.05		14.39	11.89	8.79	8.50	7.21	6.15	5.57	5.42	4.72	4.23	3.85
80	88.90		16.91	13.90	10.15	9.79	8.24	6.97	6.29	6.10	5.28	4.70	4.26
100	114.30		20.94	17.32	12.30	11.84	9.88	8.27	7.42	7.18	6.15	5.42	4.88
125	141.30		25.21	20.74	14.92	14.01	11.74	9.63	8.68	8.30	7.12	6.17	5.52
150	168.30		29.47	23.82	16.82	16.16	13.30	10.98	9.74	9.40	7.93	6.83	6.14
200	219.10		37.47	30.13	21.04	20.19	16.50	13.49	11.89	11.46	9.57	8.16	7.20
250	273.05		45.96	36.82	25.53	24.45	19.86	16.14	14.17	13.62	11.29	9.55	8.38
300	323.50		53.95	43.12	29.73	28.46	23.03	18.62	16.29	15.65	12.90	10.85	9.47
350	355.60		58.94	47.05	32.36	30.96	25.00	20.17	17.60	16.91	13.90	11.66	10.15
400	406.40		66.93	53.35	36.56	34.97	28.16	22.64	19.73	18.93	15.50	12.90	11.20
450	457.20		74.91	59.64	40.76	38.97	31.31	25.11	21.84	20.94	17.08	14.22	12.30
500	508.00		82.90	65.92	44.96	42.96	34.46	27.58	23.95	22.95	18.67	15.49	13.37
600	609.60		98.86	78.50	53.35	50.95	40.76	32.50	28.16	26.96	21.84	18.04	15.50

Calculation of heat loss from Pipes for Temperature Maintenance Purposes

PIPE HEAT LOSS (W/m) = [N.F.] x [(dTemp.) deg.C] x [(k) W/m-deg.C] x [(dM) %]

Steps for calculation:

1. Select normalized Loss Factor (N.F.) from above Table, by Pipe Bore Vs. insulation Thickness
2. Multiply by Temperature difference [dTemp.] (Maintain temperature minus minimum ambient).
3. Multiply by the insulation thermal conductivity [k].
4. Multiply by the design margin [dM] of 10%., for Power Loading.

Calculation of heat loss from Tanks and Vessels for Temperature Maintenance Purposes

TANK HEAT LOSS (Kilowatt) = [(Area) sq.m] x [(dTemp.) deg.C] x [(k) W/m-deg.C] x [(dM) %] / [(t) mm]

Steps for calculation:

1. Determine [Area], of the insulated heat loss surface area.
2. Multiply by Temperature difference [dTemp.] (Maintain temperature minus minimum ambient).
3. Multiply by the insulation thermal conductivity [k].
4. Divide by the thermal insulation thickness [t].
5. Multiply by the design margin [dM] of 10%., for Power Loading.

Note: for vertical cylindrical Tanks with its bottom resting on sand bed foundation, calculate the heat loss of the tank bottom, separately, from that of the insulated surface area heat loss. Add the heat losses from insulated surface and the tank bottom to determine Total heat loss from Tank. In the above formula, consider sand bed thickness in place of thermal insulation thickness, and, likewise the 'k-value' of sand, generally at 0.3287 W/meter-deg.C.

THE ABOVE HEAT LOSS CALCULATION ARE APPLICABLE FOR SELF-REGULATING HEATERS.e.g Auto-Trace FOR HEAT LOSS COMPENSATION, CONSIDER HEATER OUTPUT AT OPERATING TEMPERATURE & VOLTAGE.