

# Heat Loss for Pipeline

# Heat Loss Data

Unit : W / m

Insulation		PIPE DIAMETER (IPS) INCHES																	
(mm)	T (°C)	½	¾	1	1¼	1½	2	2½	3	4	6	8	10	12	14	16	18	20	24
10	20	6.7	7.7	9.1	11.2	12.3	15.1	17.9	21.5	26.7	38.3	49.3	61.2	72.1	78.8	89.4	99.9	111.9	133.7
	30	10.2	12	14.4	17.2	19.3	23.6	27.8	32.4	40.8	59.5	75.3	94.3	110.5	120.7	137.2	153.4	169.9	205.8
	40	13.7	16.5	19.3	23.2	26.4	31.7	36.9	44.7	55.9	79.5	102.7	127.4	149.5	163.2	185.4	210.4	232.9	277.6
20	20	4.2	4.9	6	7	7.7	9.1	10.6	12.7	15.5	21.8	27.8	34.1	39.8	43.3	49.6	55.6	61.2	72.8
	30	6.7	7.7	9.1	10.6	12	14.1	16.2	19	23.6	33.1	42.6	52.1	60.5	66.8	75.6	84.1	92.9	111.5
	40	9.1	10.6	12.3	14.4	16.2	19	22.2	26	32.4	45	57	70.4	82	90.1	102.7	114.3	126.3	149.5
60	14.4	16.2	19	22.2	25	29.2	34.5	39.8	49.6	69.3	89	107.7	127	138.3	158.3	176.6	194.5	234.3	
	20	3.9	4.2	5.3	6	6.7	7.7	9.1	10.6	13	17.9	22.9	29.1	33.1	36.2	40.8	45.4	50	59.8
	30	6	7	7.7	9.1	10.2	12	14.1	16.2	19.7	27.8	35.2	42.9	50.7	54.9	61.9	70	76.7	90.8
40	8.1	9.1	10.9	12.7	13.7	16.2	19	22.2	26.7	37.3	47.5	57.7	67.9	74.6	84.1	93.6	102.7	123.1	
	60	12.7	14.4	16.5	19	21.5	25.3	28.8	34.1	41.2	58.1	73.2	89.7	103.8	115	129.1	143.5	161.1	190.3
	80	17.2	19.3	22.5	26.4	29.2	34.1	39.4	46.1	56.3	79.9	99.9	122.1	143.2	155.5	177.7	197.4	217.1	260.3
100	22.2	25.3	28.8	34.1	37.6	44	50.7	59.5	73.2	102.7	129.8	155.8	184.7	200.5	225.5	253.6	282.5	333.9	
	20	3.5	3.9	4.6	5.3	6	7	7.7	9.1	11.3	15.5	19.7	23.9	27.8	30.6	34.5	38.7	42.6	51
	30	5.3	6	7	8.1	9.1	10.6	12	14.1	17.2	23.9	29.9	36.6	42.9	46.4	53.1	59.1	65.1	78.1
40	7.4	8.4	9.5	10.9	12.3	14.1	16.2	19	23.6	32.4	40.5	50	57.3	63.3	72.1	79.9	88	105.2	
	60	11.6	12.7	14.8	17.2	18.6	22.2	25.3	29.6	35.9	50	62.6	76.7	89.4	97.8	109.8	121.7	136.9	161.1
	80	15.5	17.9	20.4	23.6	26	30.3	34.8	40.5	49.3	68.2	86.5	105.2	121.4	133.7	149.9	169.2	185.8	222.7
100	20.4	22.9	26.4	30.6	33.4	38.7	45	52.1	63.7	87.2	110.1	133.3	158	171.3	192.1	216	240.6	283.6	
	120	24.6	28.1	32	37.3	40.8	48.2	54.5	63.7	77.7	107.3	136.1	164.6	194.2	210.4	238.9	268.1	294.5	346.9
	20	3.2	3.5	3.9	4.6	4.9	5.6	6.3	7.4	9.1	12.3	15.5	18.6	21.8	23.9	26.7	30.3	33.1	39.4
40	4.6	5.3	6	6.7	7.4	8.8	9.9	11.6	13.7	19	23.6	28.8	33.4	35.9	41.2	45.7	50	60.2	
	40	6.3	7	8.1	9.5	10.2	12	13.7	15.5	18.6	25.3	32	38.7	45	48.9	55.6	61.2	68.6	80.6
	60	9.9	10.9	12.7	14.4	15.8	18.3	21.1	23.9	28.8	39.4	49.3	59.8	69.3	76	84.8	95	105.5	123.5
80	13.7	15.5	17.2	20.1	21.5	25	28.5	32.7	39.8	54.5	67.2	81.3	95	103.8	117.1	129.5	144.6	169.6	
	100	17.6	19.3	22.2	25.3	27.8	32	36.6	42.2	50.7	69	86.2	105.5	121	133	150.9	166.8	182.6	218.1
	120	21.5	24.3	27.1	31.3	34.1	39.8	45	52.4	62.3	89.1	106.2	129.1	150.2	164.3	183.6	205.8	228.7	268.4
50	20	2.8	3.2	3.5	3.9	4.2	4.9	5.6	6.3	7.7	10.6	13	15.8	18.3	19.7	22.2	24.6	27.1	32
	30	4.2	4.6	5.3	6	6.7	7.7	8.4	9.9	11.6	15.8	19.7	23.6	27.8	29.9	33.8	37.6	41.2	48.9
	40	5.6	6.3	7.4	8.4	8.8	10.2	11.6	13.4	15.8	21.5	26.7	32.4	37.3	40.8	45.7	51	55.6	66.5
60	8.8	9.9	11.3	12.7	13.7	15.8	17.9	20.8	25	33.1	40.8	49.6	57.3	62.6	71.1	78.1	86.5	101.3	
	80	12.3	13.7	15.5	17.6	19	21.5	24.6	28.1	33.4	45.4	56.3	67.9	78.1	86.2	95.7	106.9	118.2	137.9
	100	15.8	17.6	19.7	22.5	24.3	27.8	31.7	36.2	43.3	58.1	71.8	88	101	109.8	123.1	137.2	149.5	178.4
120	19.3	21.5	24.3	27.4	30.3	34.1	38.7	44.3	53.8	71.4	88.7	107.7	124.5	134	151.6	169.9	185.4	220.6	
	20	2.1	2.5	2.8	3.2	3.2	3.5	4.2	4.6	5.6	7.4	8.8	10.6	12.3	13	14.8	16.5	17.9	21.1
	30	3.5	3.9	4.2	4.6	4.9	5.6	6.3	7.4	8.4	11.3	13.7	16.2	18.6	20.1	22.9	25	27.4	32.4
40	4.6	4.9	5.6	6.3	7	7.7	8.8	9.9	11.6	15.1	18.6	22.2	25.3	27.4	30.6	34.1	36.9	43.3	
	60	7.4	8.1	8.8	9.9	10.9	12	13.4	15.1	17.9	23.6	28.5	33.8	39	42.2	46.8	52.4	56.6	67.2
	80	9.9	10.9	12.3	13.7	14.8	16.5	18.3	20.8	24.3	32.4	39	46.4	53.1	57.7	64.7	72.1	77.7	91.5
100	13	14.1	15.5	17.6	18.6	21.1	23.9	26.7	31.3	41.2	50.3	59.5	67.9	73.5	82	91.1	99.9	117.1	
	120	15.8	17.2	19.3	21.5	23.2	26	29.2	33.1	38.3	50.7	61.2	73.2	84.4	91.1	101.7	112.2	123.1	145.6

Insulation Material-Glass Fiber (ASTM C547)

Pipe Installation Condition-Outside, Wind velocity 20 MPH(8.94 MPS)

Including 20% extra value

## Valve Heat Loss Factor

Valve	Heat Loss Factor
Gate	1.3
Butterfly	0.7
Ball	0.8
Globe	1.2