

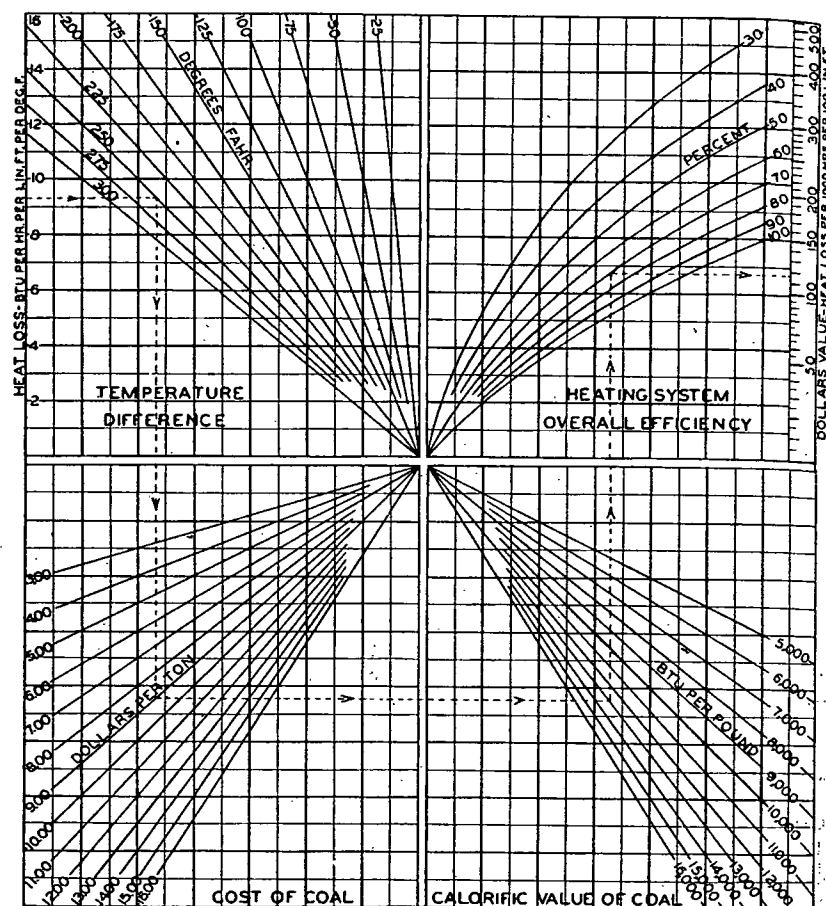


FIG. 1. CHART FOR ESTIMATING DOLLAR VALUE OF HEAT LOSS FROM BARE IRON PIPES. (SEE TABLE 1)^a

^aThis chart is based on 100 linear feet per 1000 hours. For fractions or multiples of these factors, multiply by proper percentage.

heat equivalent to more than a ton of coal per year shows the necessity for insulating such surfaces.

STEAM AND HOT WATER LINES

The conductivities of various materials used for insulating steam and hot water pipes are given in Table 5. In this table the conductivities are given as functions of the mean temperatures or the mean of the inner and

TABLE 1. HEAT LOSSES FROM HORIZONTAL BARE IRON PIPES

Expressed in Btu per linear foot per degree Fahrenheit difference in temperature between the pipe and surrounding still air at 70 F

NOMINAL PIPE SIZE (INCHES)	HOT WATER				STEAM		
	120 F	150 F	180 F	210 F	227.1 F (5 Lb)	297.7 F (50 Lb)	337.9 F (100 Lb)
	TEMPERATURE DIFFERENCE						
	50 F	80 F	110 F	140 F	157.1 F	227.7 F	267.9 F
1/2	0.543	0.573	0.605	0.638	0.656	0.742	0.796
3/4	0.660	0.690	0.729	0.762	0.781	0.886	0.955
1	0.791	0.829	0.878	0.920	0.953	1.084	1.166
1 1/4	0.979	1.02	1.087	1.15	1.184	1.345	1.450
1 1/2	1.09	1.15	1.220	1.29	1.335	1.520	1.640
2	1.34	1.40	1.491	1.58	1.637	1.866	2.015
2 1/2	1.58	1.67	1.778	1.87	1.937	2.215	2.388
3	1.88	1.99	2.100	2.22	2.301	2.641	2.853
3 1/2	2.13	2.24	2.380	2.51	2.585	2.972	3.215
4	2.36	2.50	2.650	2.78	2.873	3.312	3.582
4 1/2	2.60	2.75	2.920	3.08	3.170	3.655	3.956
5	2.87	3.02	3.200	3.38	3.493	4.030	4.368
6	3.39	3.56	3.775	4.01	4.115	4.755	5.153
8	4.32	4.55	5.050	5.14	5.270	6.120	6.635
10	5.32	5.61	5.925	6.34	6.551	7.592	8.245
12	6.25	6.62	6.995	7.46	7.670	8.900	9.670

TABLE 2. HEAT LOSSES FROM HORIZONTAL BARE COPPER PIPES

Expressed in Btu per linear foot per degree Fahrenheit difference in temperature between the pipe at 210 F and surrounding still air at 70 F

NOMINAL PIPE SIZE (INCHES)	OUTSIDE DIAMETER (INCHES)	TEMPERATURE DIFFERENCE 140 F	NOMINAL PIPE SIZE (INCHES)	OUTSIDE DIAMETER (INCHES)	TEMPERATURE DIFFERENCE 140 F
1/2	0.625	0.405	2 1/2	2.625	0.986
3/4	0.875	0.478	3	3.125	1.131
1	1.125	0.550	3 1/2	3.625	1.276
1 1/4	1.375	0.623	4	4.125	1.422
1 1/2	1.625	0.695	5	5.125	1.713
2	2.125	0.841	6	6.125	2.004

TABLE 3. RADIATING SURFACE PER LINEAR FOOT OF PIPE

NOMINAL PIPE SIZE (INCHES)	SURFACE AREA (Sq Ft)	NOMINAL PIPE SIZE (INCHES)	SURFACE AREA (Sq Ft)	NOMINAL PIPE SIZE (INCHES)	SURFACE AREA (Sq Ft)
1/2	0.22	2	0.622	5	1.456
3/4	0.275	2 1/2	0.753	6	1.734
1	0.344	3	0.917	8	2.257
1 1/4	0.435	3 1/2	1.047	10	2.817
1 1/2	0.498	4	1.178	12	3.338