

HEATING VENTILATING AIR CONDITIONING GUIDE 1938

TABLE 9. COEFFICIENTS OF TRANSMISSION (U) FOR PIPES INSULATED WITH 85 PER CENT MAGNESIA TYPE INSULATION

These coefficients are expressed in Btu per hour per square foot of pipe surface per degree Fahrenheit difference in temperature between pipe and surrounding still air at 70 F

THICKNESS OF INSULATION (INCHES)	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	1/2	0.744	0.754	0.764	0.774	0.779	0.802	0.814
	3/4	0.672	0.681	0.689	0.697	0.701	0.721	0.731
	1	0.613	0.621	0.629	0.637	0.641	0.659	0.670
	1 1/4	0.562	0.570	0.577	0.585	0.589	0.606	0.617
	1 1/2	0.532	0.539	0.546	0.553	0.557	0.573	0.582
	2	0.500	0.506	0.512	0.519	0.523	0.538	0.547
	2 1/2	0.475	0.481	0.487	0.493	0.497	0.512	0.520
	3	0.455	0.461	0.467	0.474	0.477	0.492	0.500
	3 1/2	0.441	0.447	0.452	0.458	0.462	0.475	0.483
	4	0.429	0.435	0.441	0.446	0.449	0.463	0.471
	4 1/2	0.420	0.425	0.431	0.437	0.440	0.453	0.460
	5	0.411	0.416	0.422	0.427	0.430	0.443	0.450
1 1/2	1/2	0.617	0.625	0.633	0.642	0.646	0.665	0.676
	3/4	0.550	0.558	0.566	0.573	0.577	0.596	0.606
	1	0.496	0.503	0.511	0.518	0.522	0.540	0.549
	1 1/4	0.453	0.459	0.465	0.472	0.475	0.490	0.498
	1 1/2	0.424	0.430	0.436	0.442	0.445	0.459	0.467
	2	0.394	0.400	0.405	0.410	0.413	0.427	0.434
	2 1/2	0.371	0.376	0.382	0.386	0.389	0.401	0.408
	3	0.352	0.357	0.362	0.367	0.370	0.380	0.387
	3 1/2	0.339	0.343	0.347	0.351	0.354	0.364	0.370
	4	0.328	0.333	0.337	0.341	0.343	0.353	0.359
	4 1/2	0.320	0.324	0.328	0.332	0.334	0.343	0.350
	5	0.312	0.316	0.320	0.324	0.326	0.336	0.342
2	1/2	0.543	0.551	0.558	0.565	0.569	0.587	0.597
	3/4	0.484	0.490	0.497	0.503	0.507	0.523	0.532
	1	0.433	0.439	0.445	0.451	0.454	0.467	0.476
	1 1/4	0.393	0.398	0.403	0.409	0.412	0.424	0.432
	1 1/2	0.365	0.370	0.376	0.381	0.384	0.397	0.402
	2	0.338	0.343	0.347	0.351	0.354	0.364	0.370
	2 1/2	0.316	0.320	0.324	0.328	0.331	0.341	0.347
	3	0.297	0.301	0.305	0.309	0.312	0.321	0.326
	3 1/2	0.284	0.288	0.292	0.295	0.297	0.306	0.311
	4	0.275	0.278	0.282	0.285	0.287	0.296	0.301
	4 1/2	0.266	0.270	0.273	0.276	0.278	0.286	0.290
	5	0.258	0.262	0.265	0.268	0.270	0.278	0.283
2 1/2	1/2	0.484	0.490	0.497	0.503	0.507	0.523	0.532
	3/4	0.433	0.439	0.445	0.451	0.454	0.467	0.476
	1	0.393	0.398	0.403	0.409	0.412	0.424	0.432
	1 1/4	0.365	0.370	0.376	0.381	0.384	0.397	0.402
	1 1/2	0.338	0.343	0.347	0.351	0.354	0.364	0.370
	2	0.316	0.320	0.324	0.328	0.331	0.341	0.347
	2 1/2	0.297	0.301	0.305	0.309	0.312	0.321	0.326
	3	0.284	0.288	0.292	0.295	0.297	0.306	0.311
	3 1/2	0.275	0.278	0.282	0.285	0.287	0.296	0.301
	4	0.266	0.270	0.273	0.276	0.278	0.286	0.290
	4 1/2	0.258	0.262	0.265	0.268	0.270	0.278	0.283
	5	0.250	0.254	0.257	0.260	0.262	0.270	0.274
3	1/2	0.433	0.439	0.445	0.451	0.454	0.467	0.476
	3/4	0.393	0.398	0.403	0.409	0.412	0.424	0.432
	1	0.365	0.370	0.376	0.381	0.384	0.397	0.402
	1 1/4	0.338	0.343	0.347	0.351	0.354	0.364	0.370
	1 1/2	0.316	0.320	0.324	0.328	0.331	0.341	0.347
	2	0.297	0.301	0.305	0.309	0.312	0.321	0.326
	2 1/2	0.284	0.288	0.292	0.295	0.297	0.306	0.311
	3	0.275	0.278	0.282	0.285	0.287	0.296	0.301
	3 1/2	0.266	0.270	0.273	0.276	0.278	0.286	0.290
	4	0.258	0.262	0.265	0.268	0.270	0.278	0.283
	4 1/2	0.250	0.254	0.257	0.260	0.262	0.270	0.274
	5	0.242	0.246	0.249	0.252	0.254	0.262	0.266

CHAPTER 39. PIPING AND DUCT INSULATION

TABLE 10. COEFFICIENTS OF TRANSMISSION (U) FOR PIPES INSULATED WITH CORRUGATED ASBESTOS TYPE INSULATION (4 PLIES PER INCH THICKNESS)

These coefficients are expressed in Btu per hour per square foot of pipe surface per degree Fahrenheit difference in temperature between pipe and surrounding still air at 70 F

THICKNESS OF INSULATION (INCHES)	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	1/2	0.890	0.919	0.949	0.978	0.995	1.065	1.106
	3/4	0.803	0.829	0.857	0.883	0.898	0.961	0.997
	1	0.731	0.756	0.780	0.804	0.818	0.876	0.909
	1 1/4	0.671	0.693	0.716	0.738	0.751	0.804	0.834
	1 1/2	0.635	0.656	0.677	0.698	0.710	0.760	0.788
	2	0.595	0.615	0.635	0.656	0.667	0.715	0.742
	2 1/2	0.567	0.586	0.605	0.624	0.635	0.680	0.705
	3	0.544	0.562	0.580	0.598	0.608	0.652	0.677
	3 1/2	0.527	0.544	0.561	0.578	0.588	0.631	0.654
	4	0.513	0.530	0.548	0.565	0.575	0.616	0.639
	4 1/2	0.502	0.518	0.535	0.551	0.561	0.601	0.624
	5	0.490	0.507	0.523	0.539	0.549	0.588	0.611
1 1/2	1/2	0.737	0.762	0.787	0.812	0.826	0.884	0.918
	3/4	0.657	0.679	0.702	0.725	0.737	0.790	0.820
	1	0.594	0.614	0.634	0.654	0.666	0.713	0.740
	1 1/4	0.542	0.559	0.577	0.596	0.606	0.649	0.673
	1 1/2	0.507	0.524	0.541	0.558	0.568	0.609	0.632
	2	0.471	0.487	0.503	0.519	0.528	0.565	0.587
	2 1/2	0.443	0.458	0.473	0.488	0.497	0.533	0.553
	3	0.421	0.435	0.449	0.463	0.472	0.506	0.525
	3 1/2	0.403	0.417	0.430	0.443	0.451	0.483	0.502
	4	0.393	0.405	0.418	0.432	0.439	0.471	0.489
	4 1/2	0.383	0.394	0.407	0.420	0.428	0.460	0.476
	5	0.372	0.384	0.397	0.409	0.417	0.447	0.463
2	1/2	0.648	0.670	0.692	0.713	0.726	0.779	0.810
	3/4	0.578	0.598	0.617	0.637	0.648	0.694	0.720
	1	0.518	0.535	0.552	0.570	0.580	0.622	0.645
	1 1/4	0.469	0.485	0.501	0.517	0.527	0.566	0.587
	1 1/2	0.438	0.452	0.467	0.481	0.490	0.526	0.545
	2	0.404	0.417	0.430	0.444	0.452	0.483	0.502
	2 1/2	0.379	0.391	0.403	0.415	0.422	0.451	0.466
	3	0.356	0.367	0.378	0.390	0.397	0.425	0.440
	3 1/2	0.339	0.350	0.361	0.373	0.380	0.406	0.421
	4	0.328	0.339	0.350	0.360	0.367	0.392	0.406
	4 1/2	0.318	0.328	0.339	0.350	0.357	0.381	0.395
	5	0.308	0.318	0.329	0.340	0.346	0.370	0.384
2 1/2	1/2	0.578	0.598	0.617	0.637	0.648	0.694	0.720
	3/4	0.518	0.535	0.552	0.570	0.580	0.622	0.645
	1	0.469	0.485	0.501	0.517	0.527	0.566	0.587
	1 1/4	0.438	0.452	0.467	0.481	0.490	0.526	0.545
	1 1/2	0.404	0.417	0.430	0.444	0.452	0.483	0.502
	2	0.379	0.391	0.403	0.415	0.422	0.451	0.466
	2 1/2	0.356	0.367	0.378	0.390	0.397	0.425	0.440
	3	0.339	0.350	0.361	0.373	0.380	0.406	0.421
	3 1/2	0.328	0.339	0.350	0.360	0.367	0.392	0.406
	4	0.318	0.328	0.339	0.350	0.357	0.381	0.395
	4 1/2	0.308	0.318	0.329	0.340	0.346	0.370	0.384
	5	0.299	0.309	0.319	0.329	0.335	0.358	0.371