

HEATING VENTILATING AIR CONDITIONING GUIDE 1939

TABLE 13. COEFFICIENTS OF TRANSMISSION (U) FOR PIPES INSULATED WITH LAMINATED ASBESTOS TYPE INSULATION (APPROXIMATELY 20 LAMINATIONS 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	0.910	0.925	0.940	0.956	0.964	1.001	1.022
	3/4	0.823	0.836	0.850	0.863	0.871	0.902	0.921
	1	0.748	0.760	0.773	0.785	0.792	0.823	0.840
	1 1/4	0.686	0.698	0.710	0.721	0.728	0.756	0.771
	1 1/2	0.649	0.659	0.671	0.682	0.688	0.716	0.731
	2	0.610	0.620	0.630	0.640	0.647	0.671	0.685
	2 1/2	0.581	0.590	0.600	0.609	0.615	0.638	0.651
	3	0.558	0.567	0.576	0.585	0.591	0.613	0.626
	3 1/2	0.539	0.548	0.557	0.566	0.571	0.592	0.604
	4	0.524	0.532	0.541	0.551	0.556	0.577	0.589
	4 1/2	0.514	0.522	0.530	0.539	0.544	0.564	0.575
	5	0.503	0.511	0.519	0.528	0.533	0.553	0.565
1 1/2	6	0.492	0.500	0.509	0.517	0.522	0.542	0.553
	8	0.473	0.480	0.488	0.497	0.502	0.521	0.532
	10	0.458	0.465	0.473	0.481	0.485	0.504	0.514
	12	0.452	0.459	0.467	0.475	0.478	0.497	0.507
	1/2	0.755	0.767	0.780	0.793	0.800	0.831	0.848
	3/4	0.674	0.685	0.697	0.708	0.715	0.743	0.759
	1	0.607	0.618	0.628	0.639	0.645	0.670	0.684
	1 1/4	0.553	0.562	0.572	0.581	0.587	0.610	0.622
	1 1/2	0.517	0.527	0.536	0.545	0.550	0.572	0.584
	2	0.481	0.490	0.499	0.508	0.513	0.535	0.547
	2 1/2	0.453	0.460	0.469	0.477	0.481	0.500	0.511
	3	0.429	0.436	0.444	0.452	0.456	0.475	0.485
	3 1/2	0.412	0.419	0.427	0.434	0.438	0.456	0.465
	4	0.400	0.407	0.415	0.422	0.426	0.443	0.453
	4 1/2	0.390	0.396	0.402	0.409	0.413	0.429	0.437
	5	0.380	0.386	0.393	0.400	0.403	0.418	0.427
	6	0.369	0.375	0.382	0.389	0.392	0.408	0.417
	8	0.351	0.358	0.364	0.370	0.374	0.388	0.397
	10	0.337	0.344	0.350	0.356	0.359	0.373	0.382
	12	0.332	0.338	0.344	0.350	0.353	0.367	0.375
2	1/2	0.664	0.675	0.687	0.698	0.704	0.732	0.747
	3/4	0.591	0.601	0.611	0.621	0.627	0.652	0.665
	1	0.529	0.538	0.547	0.557	0.562	0.584	0.597
	1 1/4	0.480	0.488	0.497	0.505	0.510	0.529	0.540
	1 1/2	0.445	0.453	0.462	0.470	0.475	0.494	0.504
	2	0.412	0.420	0.427	0.434	0.438	0.455	0.464
	2 1/2	0.385	0.392	0.398	0.405	0.409	0.425	0.434
	3	0.364	0.370	0.376	0.382	0.385	0.400	0.408
	3 1/2	0.346	0.352	0.358	0.365	0.368	0.382	0.390
	4	0.336	0.342	0.348	0.354	0.357	0.371	0.378
	4 1/2	0.325	0.332	0.338	0.343	0.346	0.360	0.367
	5	0.316	0.322	0.327	0.333	0.336	0.349	0.356
	6	0.306	0.312	0.317	0.323	0.326	0.338	0.345
	8	0.288	0.293	0.298	0.303	0.306	0.317	0.324
	10	0.275	0.279	0.284	0.289	0.292	0.302	0.308
	12	0.269	0.274	0.278	0.283	0.286	0.296	0.302

CHAPTER 39. PIPING AND DUCT INSULATION

TABLE 14. COEFFICIENTS OF TRANSMISSION (U) FOR PIPES INSULATED WITH ROCK WOOL 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	0.631	0.644	0.658	0.672	0.680	0.712	0.730
	3/4	0.569	0.581	0.593	0.606	0.613	0.642	0.659
	1	0.518	0.529	0.541	0.552	0.559	0.585	0.600
	1 1/4	0.476	0.486	0.497	0.507	0.513	0.537	0.551
	1 1/2	0.450	0.460	0.470	0.480	0.485	0.508	0.522
	2	0.422	0.431	0.441	0.450	0.456	0.478	0.490
	2 1/2	0.402	0.411	0.420	0.428	0.434	0.455	0.466
	3	0.385	0.394	0.402	0.411	0.415	0.435	0.446
	3 1/2	0.373	0.381	0.389	0.398	0.402	0.421	0.432
	4	0.363	0.371	0.379	0.387	0.392	0.411	0.422
	4 1/2	0.355	0.363	0.371	0.379	0.383	0.402	0.413
	5	0.348	0.356	0.364	0.371	0.376	0.394	0.404
1 1/2	6	0.341	0.348	0.356	0.363	0.368	0.386	0.396
	8	0.327	0.335	0.342	0.349	0.353	0.372	0.381
	10	0.317	0.324	0.331	0.338	0.343	0.360	0.369
	12	0.313	0.320	0.327	0.334	0.338	0.355	0.364
	1/2	0.523	0.534	0.545	0.556	0.563	0.590	0.606
	3/4	0.468	0.477	0.487	0.497	0.503	0.528	0.542
	1	0.421	0.430	0.440	0.449	0.455	0.477	0.490
	1 1/4	0.383	0.391	0.399	0.407	0.412	0.433	0.444
	1 1/2	0.359	0.366	0.375	0.383	0.387	0.407	0.419
	2	0.333	0.340	0.348	0.356	0.360	0.378	0.389
	2 1/2	0.314	0.320	0.327	0.335	0.339	0.355	0.365
	3	0.296	0.302	0.310	0.317	0.321	0.337	0.347
	3 1/2	0.286	0.291	0.298	0.304	0.307	0.323	0.332
	4	0.278	0.284	0.290	0.296	0.300	0.315	0.323
	4 1/2	0.270	0.276	0.282	0.287	0.291	0.305	0.313
	5	0.263	0.269	0.275	0.280	0.284	0.298	0.305
	6	0.257	0.262	0.267	0.273	0.277	0.290	0.297
	8	0.244	0.249	0.254	0.260	0.263	0.276	0.283
	10	0.235	0.240	0.245	0.250	0.253	0.265	0.272
	12	0.230	0.234	0.239	0.245	0.247	0.260	0.267
2	1/2	0.461	0.471	0.481	0.491	0.496	0.520	0.534
	3/4	0.409	0.418	0.427	0.436	0.441	0.463	0.475
	1	0.366	0.374	0.382	0.390	0.395	0.415	0.427
	1 1/4	0.333	0.340	0.347	0.355	0.359	0.377	0.387
	1 1/2	0.310	0.316	0.323	0.330	0.334	0.351	0.360
	2	0.286	0.292	0.298	0.304	0.308	0.323	0.331
	2 1/2	0.268	0.274	0.279	0.285	0.289	0.302	0.310
	3	0.252	0.257	0.262	0.268	0.272	0.284	0.292
	3 1/2	0.241	0.246	0.251	0.257	0.260	0.272	0.280
	4	0.232	0.237	0.242	0.247	0.250	0.262	0.269
	4 1/2	0.225	0.230	0.235	0.240	0.243	0.255	0.262
	5	0.218	0.223	0.228	0.233	0.236	0.247	0.253
	6	0.213	0.217	0.221	0.226	0.228	0.239	0.245
	8	0.200	0.204	0.208	0.213	0.215	0.225	0.231
	10	0.189	0.193	0.197	0.201	0.204	0.214	0.220
	12	0.185	0.190	0.194	0.198	0.200	0.210	0.216