

TABLE 30. COEFFICIENTS OF TRANSMISSION (U) OF FLAT ROOFS COVERED WITH BUILT-UP ROOFING WITH METAL LATH AND PLASTER CEILINGS.

Note.—These coefficients are expressed in Btu per hour per square foot per 1 deg Fahr difference in temperature between the air on the two sides and are based on an outside wind exposure of 15 miles per hour.

DES AND ARE BASED ON AN OUTSIDE WIND

The values of U in this Table are based on the following Internal Conductivities or Conductances which are expressed in B.t.u. per Hr. per Sq.ft. per 1" Roofing
Concrete 8.30 per 1"
Gypsum (Fiber Concrete) 1.66 per 1"
Wood (Yellow Pine or Fir) 1.00 per 1"
Rigid Insulation (Board form) 0.33 per 1"
Flexible Insulation 0.27 per 1"
Corkboard 0.30 per 1"
Plaster board 3.73 per 1"
Cellular Gypsum (24") 0.77 per 1"
Plaster (Gypsum) 2.32 per 1"

Number	Thickness of Insulation	Kind of Insulation
1	0"	No Insulation
2	$\frac{1}{4}$ "	Rigid Insulation (Board form)
3	1"	
4	$1\frac{1}{2}$ "	
5	2"	
6	1"	Corkboard
7	$1\frac{1}{2}$ "	
8	2"	
9	$\frac{1}{4}$ "	Flexible Insulation (Not compressed)
10	1"	
11	2"	Cellular Gypsum

Concrete Roofs

Thickness - X

$1\frac{5}{8}$ "	2"	3"	4"	5"	6"	1"	$1\frac{1}{2}$ "	2"	3"	4"	Thickness - X
A	B	C	D	E	F	G	H	I	J	K	L
0.370	0.363	0.348	0.334	0.321	0.309	0.304	0.262	0.242	0.195	0.163	0.247
0.237	0.235	0.228	0.222	0.216	0.211	0.208	0.187	0.177	0.150	0.131	0.179
0.174	0.173	0.169	0.166	0.163	0.160	0.158	0.146	0.140	0.123	0.109	0.141
0.138	0.137	0.135	0.133	0.131	0.129	0.128	0.120	0.115	0.104	0.094	0.116
0.114	0.113	0.112	0.110	0.109	0.108	0.107	0.101	0.098	0.089	0.082	0.099
0.166	0.164	0.161	0.158	0.155	0.153	0.151	0.140	0.134	0.118	0.106	0.135
0.130	0.129	0.127	0.125	0.123	0.121	0.121	0.113	0.110	0.099	0.090	0.110
0.107	0.106	0.105	0.104	0.103	0.101	0.101	0.096	0.092	0.085	0.078	0.093
0.219	0.217	0.212	0.207	0.202	0.197	0.194	0.176	0.167	0.143	0.126	0.169
0.156	0.155	0.152	0.150	0.147	0.144	0.143	0.133	0.128	0.113	0.102	0.129
0.188	0.187	0.183	0.179	0.175	0.172	0.170	0.156	0.148	0.129	0.114	

Wood Roofs

Thickness - X

$1\frac{5}{8}$ "	2"	3"	4"	Thickness - X
G	H	I	J	K
0.304	0.262	0.242	0.195	0.163
0.208	0.187	0.177	0.150	0.131
0.158	0.146	0.140	0.123	0.109
0.128	0.120	0.115	0.104	0.094
0.107	0.101	0.098	0.089	0.082
0.151	0.140	0.134	0.118	0.106
0.121	0.113	0.110	0.099	0.090
0.101	0.096	0.092	0.085	0.078
0.194	0.176	0.167	0.143	0.126
0.143	0.133	0.128	0.113	0.102
0.172	0.170	0.156	0.148	0.129

Gypsum Fiber Concrete (8 1/4% Gypsum-12 1/2% Wood Fiber)

Thickness - X

$2\frac{1}{4}$ "	3"	Thickness - X
L	M	N
0.247	0.215	0.398
0.179	0.162	0.248
0.141	0.130	0.180
0.116	0.108	0.142
0.099	0.093	0.117
0.135	0.125	0.113
0.110	0.104	0.133
0.093	0.088	0.109
0.169	0.154	0.229
0.129	0.120	0.161

Flat Metal Roofs

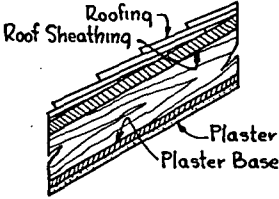
a Pre-cast cement.

b Nominal thickness specified—actual thicknesses used in computations.

c The figures in this table may be used with sufficient accuracy for wood lath and plaster ceilings.

TABLE 31. COEFFICIENTS OF TRANSMISSION (U) OF PITCHED ROOFS OVER HEATED ATTICS

Note.—These coefficients are expressed in Btu per hour per square foot per 1 deg Fahr difference in temperature between the air on the two sides and are based on an outside wind exposure of 15 miles per hour.

The values of U in this Table are based on the following Internal Conductivities or Conductances which are expressed in B.t.u. per Hr. per Sq. Ft. per 1°F				Typical Construction 							
Asphalt or Composition Roofing		6.50	as applied								
Asbestos Shingles		6.00	as applied								
Slate Shingles		10.37	per 1"								
Wood (Yellow Pine or Fir)		1.00	per 1"								
Wood Lath & Plaster		2.00	as applied								
Plaster board		3.73	per 1"								
Plaster (Gypsum)		2.32	per 1"								
Rigid Insulation (Board form)		0.33	per 1"								
Flexible Insulation		0.27	per 1"								
Cork board		0.30	per 1"								
Cellular Gypsum (18*)		0.59	per 1"								
Flaked Gypsum (24") Dry		0.48	per 1"								

Number	Type of Roofing and Roof Sheathing	Insulation between Roof Rafters	Type of Ceiling							
			No Ceiling	Metal Lath and 3/4" Plaster	Plaster board 5/8" and 3/4" Plaster	Wood Lath and 1/2" Plaster	1/2" Rigid Insulation 1/2" Plaster	1/2" Rigid Insulation 1/2" Plaster	1 1/2" Cork board and 1/2" Plaster	2" Cork board and 1/2" Plaster
			A	B	C	D	E	F	G	H
1	Wood Shingles on Wood Strips ^a	None	0.483	0.303	0.289	0.288	0.212	0.161	0.122	0.102
2		1/2" Flexible ^b		0.165	0.161	0.160	0.134	0.111	0.091	0.079
3		1" Flexible ^b		0.126	0.124	0.124	0.107	0.092	0.078	0.069
4		3 3/8" Cellular ^c Gypsum		0.112	0.110	0.110	0.097	0.085	0.072	0.065
5		3 3/8" Flaked ^c Gypsum		0.097	0.096	0.096	0.085	0.076	0.066	0.059
6	Asphalt Shingles or Composition Roofing on Wood Sheathing	None	0.518	0.316	0.301	0.300	0.219	0.164	0.124	0.103
7		1/2" Flexible ^b		0.169	0.165	0.164	0.136	0.113	0.092	0.080
8		1" Flexible ^b		0.129	0.126	0.126	0.109	0.094	0.079	0.070
9		3 3/8" Cellular ^c Gypsum		0.120	0.117	0.117	0.102	0.088	0.076	0.067
10		3 3/8" Flaked ^c Gypsum		0.102	0.101	0.101	0.089	0.079	0.068	0.061
11	Rigid Asbestos Shingles on Wood Sheathing	None	0.515	0.315	0.300	0.298	0.218	0.164	0.124	0.103
12		1/2" Flexible ^b		0.169	0.164	0.164	0.136	0.113	0.092	0.080
13		1" Flexible ^b		0.129	0.126	0.126	0.109	0.093	0.079	0.070
14		3 3/8" Cellular ^c Gypsum		0.119	0.117	0.117	0.102	0.088	0.075	0.067
15		3 3/8" Flaked ^c Gypsum		0.102	0.101	0.100	0.089	0.079	0.068	0.061
16	Slate or Tile and Roofing Felt on Wood Sheathing	None	0.548	0.327	0.311	0.309	0.224	0.167	0.126	0.104
17		1/2" Flexible ^b		0.172	0.167	0.167	0.138	0.114	0.093	0.081
16		1" Flexible ^b		0.131	0.128	0.127	0.110	0.095	0.080	0.070
17		3 3/8" Cellular ^c Gypsum		0.121	0.118	0.118	0.103	0.089	0.076	0.067
18		3 3/8" Flaked ^c Gypsum		0.103	0.101	0.101	0.090	0.079	0.069	0.062

^aBased on 1 in. by 4 in. strips spaced 2 in.

^bCan also be applied to underside of roof rafters with furring strips between.

^cAssumed 3 3/8 in. thick, based on 2 in. by 4 in. rafters.

The coefficient used for cellular gypsum, 0.59 is for 18 lb. weight—weights as low as 12 lb. may be used.

