

The thicknesses upon which the coefficients in Tables 12 to 36, inclusive, are based, are as follows:

Brick veneer.....	4 in.
Plaster and metal lath.....	3/4 in.
Plaster (on wood lath, plasterboard, rigid insulation, board form, or corkboard).....	1/2 in.
Slate (Roofing).....	1/2 in.
Stucco on wire mesh reinforcing.....	1 in.
Tar and gravel or slag-surfaced built-up roofing.....	3/8 in.
Wood shingles (average thickness).....	5/8 in.
Wood siding or clapboard (average thickness).....	5/8 in.
1-in. Lumber (S-2-S).....	2 5/8 in.
1 1/2-in. Lumber (S-2-S).....	1 5/8 in.
2-in. Lumber (S-2-S).....	1 5/8 in.
2 1/2-in. Lumber (S-2-S).....	2 1/8 in.
3-in. Lumber (S-2-S).....	2 5/8 in.
4-in. Lumber (S-2-S).....	3 5/8 in.
Finish flooring (Maple or Oak).....	1 3/16 in.

TABLE 8. CONDUCTIVITIES (*k*) AND CONDUCTANCES (*C*) OF BUILDING MATERIALS AND INSULATIONS

Based on Tests Conducted at the University of Illinois,
By A. C. Willard, L. C. Lichty and L. A. Harding^a

MATERIAL	DESCRIPTION	DENSITY (LB. PER CU. FT.)	MEAN TEMP. (DEG. FAHR.)	CONDUCT- IVITY (<i>k</i>) OR CONDUCT- ANCE (<i>C</i>)
Asbestos.....	Sheet.....	48.3	110	0.29
Asbestos Board.....	Corrugated.....	20.4	110	0.48
Brickwork.....	Mortar bond and dry conditions.....	132.0	100	4.00
Brickwork.....	Damp or wet.....	.....	.....	5.00 ^b
Cement mortar.....	.....	.....	.....	8.00 ^c
Concrete.....	Stone 1-2-4 mix.....	140.0	110	8.30
Corkboard.....	Pure; no added binder.....	9.7	.....	0.32
2 in. hollow clay tile, 1/2 in. plaster both sides.....	.....	120.0	110	1.00 ^b
4 in. hollow clay tile, 1/2 in. plaster both sides.....	.....	127.0	100	0.60 ^b
6 in. hollow clay tile, 1/2 in. plaster both sides.....	.....	124.3	105	0.47 ^b
Magnesia Board.....	.....	13.5	110	0.51
Plaster.....	Cement.....	.....	.....	8.00 ^d
Roofings.....	Built-up bitumen and felt, gravel or slag surfaced.....	.....	.....	1.325 ^d
Roofings.....	Built-up bitumen and felt, gravel or slag surfaced.....	.....	.....	5.30 ^{d-b}
Stucco.....	.....	.....	.....	8.00 ^e
Wood (Fir, one-surface finished).....	Across grain.....	33.4	.....	1.00

^aIn addition to the conductivity values for the authorities listed, considerable work of importance pertaining to the heat transmission of various types of construction and materials has been done by the late Prof. John R. Allen and Prof. A. J. Wood of the Engineering Experiment Station of Pennsylvania State College.

^bFor thickness stated or used in construction, not per 1 in. thickness.

^cCalculated from 2 in. tile tests.

^dCement mortar and stucco assumed same as cement plaster.

^eRoofing, 0.15 in. thick (1.34 lb. per sq. ft.), covered with gravel (0.83 lb. per sq. ft.), combined thickness assumed 0.25.

The conductivity of plaster varies with the composition. Note range of values from 2.32 to 8.0. The average value for plaster is probably about 5.0. On account of the comparatively high conductivity of plaster and the fact that it is seldom applied more than 1/2 in. thick, this material does not appreciably effect the overall transmission of a construction, excepting in the case of thin uninsulated walls.

ⁱRecommended value. See *Mechanical Equipment of Buildings*, by Harding and Willard, Vol. 1, second edition, 1929, p. 182.

^pSee Chapter LX, by Chas. H. Herter of the Report of the Insulation Committee, A. S. R. E., Annual Meeting, 1922, Revised to 1924, entitled, Heat Transmission of Insulating Materials for a more comprehensive collection of heat transmission data relating to building and insulating materials.

TABLE 9. CONDUCTIVITIES (*k*) AND CONDUCTANCES (*C*) OF BUILDING MATERIALS AND INSULATIONS

Based on Tests Conducted at Armour Institute of Technology, By J. C. Peebles^a

MATERIAL	DESCRIPTION	DENSITY (LB. PER CU. FT.)	MEAN TEMP. (DEG. FAHR.)	CONDUCT- IVITY (<i>k</i>) OR CONDUCT- ANCE (<i>C</i>)
Aerocrete.....	Cellular concrete.....	40.0	75	1.06
Aerocrete.....	Cellular concrete.....	50.0	75	1.44
Aerocrete.....	Cellular concrete.....	60.0	75	1.80
Aerocrete.....	Cellular concrete.....	70.0	75	2.18
Aerocrete.....	Cellular concrete.....	65.0	75	6.00 ^b
Asbestos shingles.....	.....	70.0	75	6.50 ^b
Asphalt shingles.....	Chemically treated wood fibre with plain paper.....	3.62	70	0.25
Balsam Woolb.....	Commercial thickness 3/8 in.....	.....	.....	0.50
Beaver Fibre Wallboard.....	Granular fill insulation made from combined silicate of lime and alumina.....	4.2	72	0.24
Calice.....	Rigid insulation made from sugar cane fibre.....	13.5	70	0.33
Celotex.....	.....	.....	.....	.....
Certainted Insulating Board.....	Commercial thickness 3/8 in.....	25.9	.....	0.39
Concrete.....	Stone.....	145.0	75	6.30
Concrete.....	Cinder.....	110.0	75	5.20
Dry Zero Blanketh.....	Pliable slab form of insulation made from ceiba fibres.....	1.9	75	0.23
Dry Zero Blanketh.....	Pliable slab form of insulation made from ceiba fibres.....	1.6	75	0.24
Dry Zero Blanketh.....	Pliable slab form of insulation made from ceiba fibres.....	1.5	75	0.24
Flax-li-numb.....	Flax fibre.....	12.1	70	0.30
Haydite Concrete.....	Heat treated clay aggregate concrete.....	73.0	.....	1.62
Homasote "A" Building Board.....	Made from wood and other vegetable fibres chemically treated.....	22.2	75	0.38
Inso Board.....	Rigid insulation made from wheat straw.....	17.0	68	0.33
Insulite.....	Rigid insulation made from wood pulp.....	16.5	70	0.34
Keystone Hairb.....	Hair felt between layers of paper; 1/4 in. thick.....	11.0	75	0.25
Lith.....	Rock wool, flax and straw pulp with binder.....	14.5	75	0.38
Maftex.....	Rigid insulation made from licorice roots.....	16.1	81	0.34
Maple Flooring.....	Across grain.....	40.0	75	1.20
Masonite.....	Rigid insulation made from exploded wood fibre.....	19.8	75	0.33
Plaster Board.....	Gypsum between layers of heavy paper.....	62.8	70	1.41
Pyrocell or Insulux.....	Cellular gypsum—dry.....	30.0	75	0.92
Pyrocell or Insulux.....	Cellular gypsum—dry.....	24.0	75	0.74
Pyrocell or Insulux.....	Cellular gypsum—dry.....	18.0	75	0.57
Pyrocell or Insulux.....	Cellular gypsum—dry.....	12.0	75	0.40
Roofing.....	Composition or prepared.....	.....	75	6.50 ^b
Sprayo-Flake.....	Shredded paper with silica binder.....	4.5	.....	0.25
Thermofil.....	Dry, fluffy, flaked gypsum.....	24.0	75	0.48
Thermofil.....	Dry, fluffy, flaked gypsum.....	18.0	75	0.34
Thermasote "A" Insulating Board.....	Made from wood fibre, chemically treated.....	18.6	75	0.34
Torfoleum.....	Peat moss compressed into sheet form.....	11.0	70	0.26
Weatherwood.....	Rigid insulation made from hard pine fibres.....	72.0	70	0.32
Wood Lath and Plasterk.....	Lime plaster.....	.....	75	2.0 ^b
Yellow Pine.....	Across grain.....	.....	.....	1.00

^aIn addition to the conductivity values for the authorities listed, considerable work of importance pertaining to the heat transmission of various types of construction and materials has been done by the late Prof. John R. Allen and Prof. A. J. Wood of the Engineering Experiment Station of Pennsylvania State College.

^bFor thickness stated or used in construction, not per 1 in. thickness.

^cNot compressed.

^kThickness of lime plaster and wood lath from back of lath to face of plaster, about 3/8 in.

^pSee Chapter LX, by Chas. H. Herter of the Report of the Insulation Committee, A. S. R. E., Annual Meeting, 1922, Revised to 1924, entitled, Heat Transmission of Insulating Materials for a more comprehensive collection of heat transmission data relating to building and insulating materials.