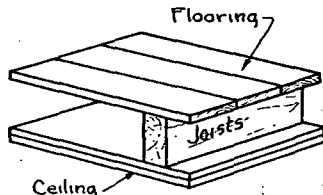


TABLE 29. COEFFICIENTS OF TRANSMISSION (*U*) OF FRAME CONSTRUCTION FLOORS AND CEILINGS

Note.—THESE COEFFICIENTS ARE EXPRESSED IN B.T.U. PER HOUR PER SQUARE FOOT PER 1 DEG. FAHR. DIFFERENCE IN TEMPERATURE BETWEEN THE AIR ON THE TWO SIDES AND ARE BASED ON STILL-AIR (NO WIND) CONDITIONS ON BOTH SIDES.

| The values of <i>U</i> 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<br>Wood (Yellow Pine or Fir) 1.00 per 1"<br>Wood (Maple) 1.20 per 1"<br>Plaster (Gypsum) 2.32 per 1"<br>Plaster board 3.73 per 1"<br>Wood Lath & Plaster 2.00 as applied<br>Cork board 0.30 per 1"<br>Rigid Insulation (Board form) 0.33 per 1"<br>Cellular Gypsum (18") 0.59 per 1"<br>Flaked Gypsum, Dry (18") 0.34 per 1"<br>Flexible Insulation 0.27 per 1" |                                                     |                                                 | Typical Construction<br> |                                   |                                                                       |                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------------------------------------------|-------------------------------------------------------------------|
| Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Type of Ceiling                                     | Insulation between Joists                       | Type of Flooring                                                                                          |                                   |                                                                       |                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                     |                                                 | No Flooring                                                                                               | 1" Yellow Pine Flooring on Joists | 1" Yellow Pine Flooring on 1" Rigid Insulation (Board form) on Joists | 1" Maple or Oak Flooring on 1" Yellow Pine Sub-flooring on Joists |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                     |                                                 | A                                                                                                         | B                                 | C                                                                     | D                                                                 |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | No Ceiling                                          | None                                            |                                                                                                           | 0.440                             | 0.264                                                                 | 0.339                                                             |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Metal Lath & Plaster (1/2")                         | None                                            | 0.551                                                                                                     | 0.298                             | 0.200                                                                 | 0.239                                                             |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Wood Lath & Plaster (1/2")                          | None                                            | 0.502                                                                                                     | 0.272                             | 0.192                                                                 | 0.230                                                             |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Plaster board & Plaster (1/2")                      | None                                            | 0.506                                                                                                     | 0.273                             | 0.193                                                                 | 0.230                                                             |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1/2" Rigid Insulation (Board form) & Plaster (1/2") | None                                            | 0.310                                                                                                     | 0.204                             | 0.156                                                                 | 0.179                                                             |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Wood Lath & Plaster (1/2")                          | 1/2" Flexible <sup>a</sup> Insulation           | 0.210                                                                                                     | 0.155                             | 0.126                                                                 | 0.140                                                             |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Wood Lath & Plaster (1/2")                          | 1/2" Rigid Insulation (Board form) <sup>a</sup> | 0.226                                                                                                     | 0.163                             | 0.131                                                                 | 0.148                                                             |
| 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Wood Lath & Plaster (1/2")                          | Cellular Gypsum Fill (2") <sup>a-c</sup>        | 0.186                                                                                                     | 0.141                             | 0.117                                                                 | 0.129                                                             |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Wood Lath & Plaster (1/2")                          | Flaked Gypsum Fill (2") <sup>c</sup>            | 0.127                                                                                                     | 0.105                             | 0.090                                                                 | 0.098                                                             |
| 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1 1/2" Cork board & Plaster (1/2")                  | None                                            | 0.149                                                                                                     | 0.119                             | 0.101                                                                 | 0.110                                                             |
| 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2" Cork board & Plaster (1/2")                      | None                                            | 0.119                                                                                                     | 0.100                             | 0.087                                                                 | 0.093                                                             |

<sup>a</sup>The value of *U* is the same if insulation is applied to underside of joists and lath and plaster ceiling separated by furring strips.

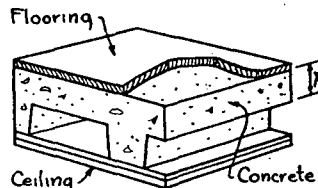
<sup>b</sup>Based on actual thickness of approximately 3/4 in. for 1 in. yellow pine flooring.

<sup>c</sup>Thickness of fill assumed 2 in.

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

TABLE 30. COEFFICIENTS OF TRANSMISSION (*U*) OF CONCRETE CONSTRUCTION FLOORS AND CEILINGS

Note.—THESE COEFFICIENTS ARE EXPRESSED IN B.T.U. PER HOUR PER SQUARE FOOT PER 1 DEG. FAHR. DIFFERENCE IN TEMPERATURE BETWEEN THE AIR ON THE TWO SIDES AND ARE BASED ON STILL-AIR (NO WIND) CONDITIONS ON BOTH SIDES.

| The values of <i>U</i> 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<br>Tile or Terrazzo 10.00 per 1"<br>Concrete (Stone 1:2:4 mix) 8.30 per 1"<br>Cement Mortar 8.00 per 1"<br>Wood (Yellow Pine or Fir) 1.00 per 1"<br>Wood (Maple) 1.20 per 1"<br>Plaster board 3.73 per 1"<br>Plaster (Gypsum) 2.32 per 1"<br>Cork board 0.30 per 1"<br>Rigid Insulation (Board form) 0.33 per 1" |                                                                             |                | Typical Construction<br> |                                                                         |                                                                                                   |                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------------------|
| Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Type of Ceiling                                                             | Thickness, in. | Type of Flooring                                                                                            |                                                                         |                                                                                                   |                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                             |                | No Flooring <sup>a</sup> (Concrete bare)                                                                    | 1" Yellow Pine Floor <sup>b</sup> on Wood Sleepers embedded in Concrete | 1 1/2" Maple or Oak Flooring on 1" Yellow Pine Sub-flooring on Wood Sleepers embedded in Concrete | 1" Terrazzo or Tile Flooring on Concrete |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                             |                | A                                                                                                           | B                                                                       | C                                                                                                 | D                                        |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | No Ceiling                                                                  | 4"             | 0.508                                                                                                       | 0.364                                                                   | 0.292                                                                                             | 0.483                                    |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                             | 6"             | 0.452                                                                                                       | 0.334                                                                   | 0.273                                                                                             | 0.433                                    |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                             | 8"             | 0.408                                                                                                       | 0.310                                                                   | 0.256                                                                                             | 0.392                                    |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                             | 10"            | 0.372                                                                                                       | 0.288                                                                   | 0.241                                                                                             | 0.358                                    |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1/2" Plaster applied directly to underside of Concrete                      | 4"             | 0.457                                                                                                       | 0.337                                                                   | 0.275                                                                                             | 0.437                                    |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                             | 6"             | 0.411                                                                                                       | 0.311                                                                   | 0.258                                                                                             | 0.395                                    |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                             | 8"             | 0.374                                                                                                       | 0.290                                                                   | 0.243                                                                                             | 0.361                                    |
| 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                             | 10"            | 0.344                                                                                                       | 0.271                                                                   | 0.230                                                                                             | 0.332                                    |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Suspended or Furred Metal Lath & Plaster Ceiling                            | 4"             | 0.312                                                                                                       | 0.251                                                                   | 0.215                                                                                             | 0.303                                    |
| 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                             | 6"             | 0.299                                                                                                       | 0.237                                                                   | 0.204                                                                                             | 0.282                                    |
| 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                             | 8"             | 0.272                                                                                                       | 0.224                                                                   | 0.195                                                                                             | 0.264                                    |
| 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                             | 10"            | 0.255                                                                                                       | 0.212                                                                   | 0.186                                                                                             | 0.249                                    |
| 13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Suspended or Furred Ceiling of 1/2" Plaster board & Plaster                 | 4"             | 0.297                                                                                                       | 0.241                                                                   | 0.208                                                                                             | 0.289                                    |
| 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                             | 6"             | 0.277                                                                                                       | 0.228                                                                   | 0.198                                                                                             | 0.270                                    |
| 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                             | 8"             | 0.260                                                                                                       | 0.216                                                                   | 0.189                                                                                             | 0.254                                    |
| 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                             | 10"            | 0.245                                                                                                       | 0.206                                                                   | 0.181                                                                                             | 0.239                                    |
| 17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Suspended or Furred Ceiling of 1/2" Rigid Insulation (Board form) & Plaster | 4"             | 0.217                                                                                                       | 0.185                                                                   | 0.165                                                                                             | 0.212                                    |
| 18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                             | 6"             | 0.206                                                                                                       | 0.178                                                                   | 0.159                                                                                             | 0.202                                    |
| 19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                             | 8"             | 0.197                                                                                                       | 0.170                                                                   | 0.153                                                                                             | 0.193                                    |
| 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                             | 10"            | 0.187                                                                                                       | 0.163                                                                   | 0.147                                                                                             | 0.184                                    |
| 21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1/2" Plaster on 1 1/2" Cork board set in 1/2" Cement Mortar on Concrete     | 4"             | 0.138                                                                                                       | 0.124                                                                   | 0.115                                                                                             | 0.136                                    |
| 22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                             | 6"             | 0.133                                                                                                       | 0.121                                                                   | 0.112                                                                                             | 0.132                                    |
| 23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                             | 8"             | 0.129                                                                                                       | 0.117                                                                   | 0.109                                                                                             | 0.128                                    |
| 24                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                             | 10"            | 0.125                                                                                                       | 0.114                                                                   | 0.106                                                                                             | 0.124                                    |
| 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1/2" Plaster on 2" Cork board set in 1/2" Cement Mortar on Concrete         | 4"             | 0.112                                                                                                       | 0.103                                                                   | 0.097                                                                                             | 0.111                                    |
| 26                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                             | 6"             | 0.109                                                                                                       | 0.101                                                                   | 0.094                                                                                             | 0.108                                    |
| 27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                             | 8"             | 0.106                                                                                                       | 0.098                                                                   | 0.092                                                                                             | 0.105                                    |
| 28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                             | 10"            | 0.104                                                                                                       | 0.096                                                                   | 0.090                                                                                             | 0.103                                    |

<sup>a</sup>The figures in column "A" are sufficiently accurate for concrete floors covered with carpet or linoleum.

<sup>b</sup>The figures in column "B" are sufficiently accurate for 1 3/4 in. maple or oak flooring applied directly over the concrete on wood sleepers.