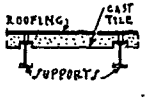
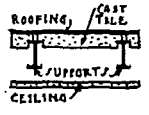
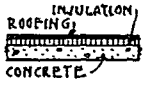
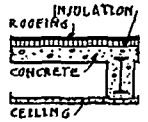
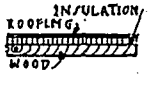
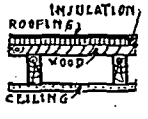
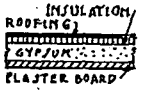
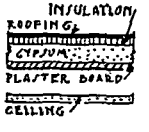
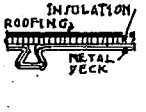
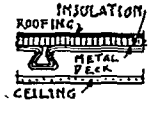
## Table 11. Coefficients of Transmission ($U$) of Various Types of Flat Roofs Covered with Built-Up Roofing[a]

| Typical Construction: Without Ceilings | Typical Construction: With Metal Lath and Plaster Ceilings[d] | Type of Roof Deck | Thickness of Roof Deck (Inches) | No. |
|---|---|---|---|---|
|  |  | **Precast Cement Tile** | 1⅝ | 1 |
|  |  | **Concrete**<br>**Concrete**<br>**Concrete** | 2<br>4<br>6 | 2<br>3<br>4 |
|  |  | **Wood**<br>**Wood**<br>**Wood**<br>**Wood** | 1[b]<br>1½[b]<br>2[b]<br>4[b] | 5<br>6<br>7<br>8 |
|  |  | **Gypsum Fiber Concrete[c]** (2 in.) **on Plaster Board** (⅜ in.)<br>**Gypsum Fiber Concrete[c]** (3 in.) **on Plaster Board** (⅜ in.)<br>**Gypsum Fiber Concrete[c]** (2 in.) **on Rigid Insulation Board** (½ in.)<br>**Gypsum Fiber Concrete[c]** (2 in.) **on Rigid Insulation Board** (1 in.) | 2⅜<br>3⅜<br>2½<br>3 | 9<br>10<br>11<br>12 |
|  |  | **Flat Metal Roofs** Coefficient of transmission of bare corrugated iron (no roofing) is 1.50 Btu per hour per square foot of projected area per degree Fahrenheit difference in temperature, based on an outside wind velocity of 15 mph. | ..... | 13 |

[a] *Computed from factors marked by * in Table 2.*
[b] Nominal thicknesses specified—actual thicknesses used in calculations.
[c] Gypsum fiber concrete—87½ per cent gypsum, 12½ per cent wood fiber.





*Coefficients are expressed in Btu per hour per square foot per degree Fahrenheit difference in temperature between the air on the two sides, and are based on an outside wind velocity of 15 mph.*

| Without Ceiling—Under Side of Roof Exposed | | | | | | | | With Metal Lath and Plaster Ceilings[d] | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No Insulation | Rigid Insulation (½ in.) | Rigid Insulation (1 in.) | Rigid Insulation (1½ in.) | Rigid Insulation (2 in.) | Corkboard (1 in.) | Corkboard (1½ in.) | Corkboard (2 in.) | No Insulation | Rigid Insulation (½ in.) | Rigid Insulation (1 in.) | Rigid Insulation (1½ in.) | Rigid Insulation (2 in.) | Corkboard (1 in.) | Corkboard (1½ in.) | Corkboard (2 in.) |
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |
| 0.84 | 0.37 | 0.24 | 0.18 | 0.14 | 0.22 | 0.16 | 0.13 | 0.43 | 0.26 | 0.19 | 0.15 | 0.12 | 0.18 | 0.14 | 0.11 |
| 0.82 | 0.37 | 0.24 | 0.17 | 0.14 | 0.22 | 0.16 | 0.13 | 0.42 | 0.26 | 0.19 | 0.15 | 0.12 | 0.18* | 0.14 | 0.11 |
| 0.72 | 0.34 | 0.23 | 0.17 | 0.13 | 0.21 | 0.16 | 0.12 | 0.40 | 0.25 | 0.18 | 0.14 | 0.12 | 0.17 | 0.13 | 0.11 |
| 0.64 | 0.33 | 0.22 | 0.16 | 0.13 | 0.21 | 0.15 | 0.12 | 0.37 | 0.24 | 0.18 | 0.14 | 0.11 | 0.17 | 0.13 | 0.11 |
| 0.49 | 0.28 | 0.20 | 0.15 | 0.12 | 0.19 | 0.14 | 0.12 | 0.32 | 0.21 | 0.16 | 0.13 | 0.11 | 0.15 | 0.12 | 0.10 |
| 0.37 | 0.24 | 0.18 | 0.14 | 0.11 | 0.17 | 0.13 | 0.11 | 0.26 | 0.19 | 0.15 | 0.12 | 0.10 | 0.14 | 0.11 | 0.095 |
| 0.32 | 0.22 | 0.16 | 0.13 | 0.11 | 0.16 | 0.12 | 0.10 | 0.24 | 0.17 | 0.14 | 0.11 | 0.097 | 0.13 | 0.11 | 0.092 |
| 0.23 | 0.17 | 0.14 | 0.11 | 0.096 | 0.13 | 0.11 | 0.091 | 0.18 | 0.14 | 0.12 | 0.10 | 0.087 | 0.11 | 0.096 | 0.082 |
| 0.40 | 0.25 | 0.18 | 0.14 | 0.12 | 0.17 | 0.13 | 0.11 | 0.27 | 0.19 | 0.15 | 0.12 | 0.10 | 0.14 | 0.12 | 0.097 |
| 0.32 | 0.22 | 0.16 | 0.13 | 0.11 | 0.15 | 0.12 | 0.10 | 0.23 | 0.17 | 0.14 | 0.11 | 0.097 | 0.13 | 0.11 | 0.091 |
| 0.26 | 0.19 | 0.15 | 0.12 | 0.10 | 0.14 | 0.11 | 0.10 | 0.20 | 0.16 | 0.13 | 0.11 | 0.09 | 0.12 | 0.10 | 0.087 |
| 0.19 | 0.15 | 0.12 | 0.10 | 0.09 | 0.12 | 0.10 | 0.08 | 0.16 | 0.13 | 0.11 | 0.09 | 0.08 | 0.10 | 0.09 | 0.077 |
| 0.95 | 0.39 | 0.25 | 0.18 | 0.14 | 0.23 | 0.17 | 0.13 | 0.46 | 0.27 | 0.19 | 0.15 | 0.12 | 0.18 | 0.14 | 0.11 |

[d] These coefficients may be used with sufficient accuracy for wood lath and plaster, or plaster board and plaster ceilings. It is assumed that there is an air space between the under side of the roof deck and the upper side of the ceiling.