Conductance and Resistance Values for Wall-Insulation Materials

| Material | Description | Conductivity $k$, Btu/(h) ($ft^2$) (°F/in.) | Thickness (in.) | Conductance $C$, Btu/(h) ($ft^2$) (°F) | Resistance $R$, 1/[Btu/(h) ($ft^2$) (°F)] |
|---|---|---|---|---|---|
| Styrofoam SM and TG | 2.1 lb/$ft^3$ | 0.19 | $\frac{3}{4}$ | 0.25 | 3.93 |
| | | | 1 | 0.19 | 5.26 |
| | | | $1\frac{1}{2}$ | 0.13 | 7.89 |
| | | | 2 | 0.95 | 10.52 |
| Wood shredded | Cemented in preformed slabs | 0.60 | 1 | 0.60 | 1.67 |
| Insulating board | Building and service board, decorative ceiling panels | 0.38 | $\frac{3}{8}$ | 1.01 | 0.99 |
| | | | $\frac{1}{2}$ | 0.76 | 1.32 |
| | | | $\frac{9}{16}$ | 0.68 | 1.48 |
| | | | $\frac{3}{4}$ | 0.51 | 1.98 |
| Thermal, acoustical fiber glass | | 0.39 | $2\frac{3}{4}$ | 0.14 | 7.00 |
| | | 0.36 | 4 | 0.09 | 11.00 |
| | | 0.34 | $6\frac{1}{2}$ | 0.05 | 19.00 |
| Corkboard | 6.4 lb/$ft^3$ | 0.26 | 1 | 0.26 | 3.85 |
| Expanded polystyrene | | | | | |
| Extruded | 1.8 lb/$ft^3$ | 0.25 | 1 | 0.25 | 4.00 |
| Molded beads | 1.0 lb/$ft^3$ | 0.26 | 1 | 0.26 | 3.85 |
| Urethane foam thurane (dow chemical) | 1.9 lb/$ft^3$ | 0.17 | $\frac{3}{4}$ | 0.23 | 4.41 |
| | | | $1\frac{1}{2}$ | 0.11 | 8.82 |
| | | | 2 | 0.09 | 11.76 |
| Fiberglass perimeter | | | 1 | 0.23 | 4.30 |
| Insulation | | | $1\frac{1}{4}$ | 0.19 | 5.40 |
| Fiberglas form board | | | 1 | 0.25 | 4.00 |

*Source:* Courtesy of Johns-Mansville, Denver, CO.