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| **R-Value Table - English (US) Units**

|  |  |  |
| --- | --- | --- |
| **Material** | **R/Inchhr·ft2·°F/Btu**  | **R/Thicknesshr·ft2·°F/Btu**  |
| **Insulation Materials** |
| Fiberglass Batts | 3.14-4.30 |   |
|    3 1/2" Fiberglass Batt |   | 11.00 |
|    3 5/8" Fiberglass Batt |   | 13.00 |
|    3 1/2" Fiberglass Batt (high density) |   | 15.00 |
|    6 1/2" Fiberglass Batt |   | 19.00 |
|    5 1/4" Fiberglass Batt (high density) |   | 21.00 |
|    8" Fiberglass Batt |   | 25.00 |
|    8" Fiberglass Batt (high density) |   | 30.00 |
|    9 1/2" Fiberglass Batt |   | 30.00 |
|    12" Fiberglass Batt  |   | 38.00 |
| Fiberglass Blown (attic) | 2.20-4.30 |   |
| Fiberglass Blown (wall) | 3.70-4.30 |   |
| Rock Wool Batt | 3.14-4.00 |   |
| Rock Wool Blown (attic) | 3.10-4.00 |   |
| Rock Wool Blown (wall) | 3.10-4.00 |   |
| Cellulose Blown (attic) | 3.60-3.701 |   |
| Cellulose Blown (wall) | 3.80-3.901 |   |
| Vermiculite | 2.13 |   |
| Autoclaved Aerated Concrete | 1.05 |   |
| Urea Terpolymer Foam | 4.48 |   |
| Rigid Fiberglass (> 4lb/ft3) | 4.00 |   |
| Expanded Polystyrene (beadboard) | 4.00 |   |
| Extruded Polystyrene | 5.00 |   |
| Polyurethane (foamed-in-place) | 6.25 |   |
| Polyisocyanurate (foil-faced) | 5.0-5.6 |   |
| **Construction Materials** |
| Concrete Block 4" |   | 0.80 |
| Concrete Block 8" |   | 1.11 |
| Concrete Block 12" |   | 1.28 |
| Brick 4" common |   | 0.80 |
| Brick 4" face |   | 0.44 |
| Poured Concrete | 0.08 |   |
| Soft Wood Lumber | 1.25 |   |
|    2" nominal (1 1/2") |   | 1.88 |
|    2x4 (3 1/2") |   | 4.38 |
|    2x6 (5 1/2") |   | 6.88 |
| Cedar Logs and Lumber | 1.33 |   |
| **Sheathing Materials** |
| Plywood | 1.25 |   |
|    1/4" |   | 0.31 |
|    3/8" |   | 0.47 |
|    1/2" |   | 0.63 |
|    5/8" |   | 0.77 |
|    3/4" |   | 0.94 |
| Fiberboard | 2.64 |   |
|    1/2" |   | 1.32 |
|    25/32" |   | 2.06 |
| Fiberglass (3/4") |   | 3.00 |
|    (1") |   | 4.00 |
|    (1 1/2") |  | 6.00 |
| Extruded Polystyrene (3/4") |   | 3.75 |
|    (1") |   | 5.00 |
|    (1 1/2") |   | 7.50 |
| Foil-faced Polyisocyanurate   (3/4") |   | 5.40 |
|    (1") |   | 7.20 |
|    (1 1/2") |   | 10.80 |
| Building Paper |  | 0.06 |
| **Siding Materials** |
| Hardboard (1/2") |   | 0.34 |
| Plywood (5/8") |   | 0.77 |
|    (3/4") |   | 0.93 |
| Wood Bevel Lapped |   | 0.80 |
| Aluminum, Steel, Vinyl   (hollow backed) |   | 0.61 |
|    (w/ 1/2" Insulating board) |   | 1.80 |
| Brick 4" |   | 0.44 |
| **Interior Finish Materials** |
| Gypsum Board (drywall 1/2") |   | 0.45 |
|    (5/8") |   | 0.56 |
| Paneling (3/8") |   | 0.47 |
| **Flooring Materials** |
| Plywood | 1.25 |   |
|    (3/4") |   | 0.93 |
| Particle Board (underlayment) | 1.31 |   |
|    (5/8") |   | 0.82 |
| Hardwood Flooring | 0.91 |   |
|    (3/4") |   | 0.68 |
| Tile, Linoleum |   | 0.05 |
| Carpet (fibrous pad) |   | 2.08 |
|    (rubber pad) |   | 1.23 |
| **Roofing Materials** |
| Asphalt Shingles |   | 0.44 |
| Wood Shingles |   | 0.97 |
| Ceramic Tile – ¼ in |  | 0.02 |
| **Windows** |
| Single Glass |   | 0.91 |
|    w/storm |   | 2.00 |
| Double insulating glass   (3/16") air space |   | 1.61 |
|    (1/4" air space) |   | 1.69 |
|    (1/2" air space) |   | 2.04 |
|    (3/4" air space) |   | 2.38 |
|    (1/2" w/ Low-E 0.20) |   | 3.13 |
|    (w/ suspended film) |   | 2.77 |
|    (w/ 2 suspended films) |   | 3.85 |
|    (w/ suspended film and low-E) |   | 4.05 |
| Triple insulating glass   (1/4" air spaces) |   | 2.56 |
|    (1/2" air spaces) |   | 3.23 |
| Addition for tight fitting drapes or shades, or closed blinds |   | 0.29 |
| **Doors** |  |  |
| Wood Hollow Core Flush    (1 3/4") |   | 2.17 |
|    Solid Core Flush (1 3/4") |   | 3.03 |
|    Solid Core Flush (2 1/4") |   | 3.70 |
|    Panel Door w/ 7/16" Panels    (1 3/4") |   | 1.85 |
| Storm Door (wood 50% glass) |   | 1.25 |
|    (metal) |   | 1.00 |
| Metal Insulating    (2" w/ urethane) |   | 15.00 |
| **Air Films** |
| Summer | Interior Wall |   | 0.68 |
| Exterior Wall |   | 0.25 |
| Interior Ceiling Horizontal |   | 0.92 |
| Interior Ceiling 45° |   | 0.76 |
| Exterior Ceiling |   | 0.25 |
| Winter | Interior Wall |   | 0.68 |
| Exterior Wall |   | 0.17 |
| Interior Ceiling Horizontal |   | 0.61 |
| Interior Ceiling 45° |   | 0.62 |
| Exterior Ceiling |   | 0.17 |
| **Air Spaces** |
| 1/2" to 4" approximately |   | 1.00 |
| Aluminum foil facing air space |  | 3.00 |

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| 1 [Measured Thermal Resistance of Cellulose Insulation Products Commercially Available in 2007](http://www.coloradoenergy.org/procorner/stuff/ASHRAE_R-Value_Report_Truncated.pdf) |

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