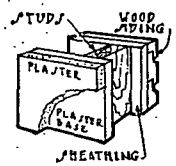
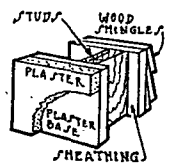
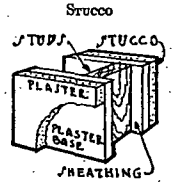
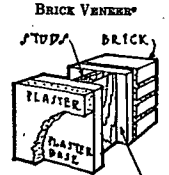
## Table 4. Coefficients of Transmission ($U$) of Frame Walls

*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 a wind velocity of 15 mph.*

### No Insulation Between Studs[a] (See Table 5)

| Exterior Finish | Interior Finish | Type of Sheathing: Gypsum (½ in. thick) A | Plywood (⅜ in. thick) B | Wood[f] (²⁵⁄₃₂ in. thick) Bldg. Paper[e] C | Insulating Board (²⁵⁄₃₂ in. thick) D | Wall Number |
|---|---|---|---|---|---|---|
| Wood Siding (Clapboard)   | Metal Lath and Plaster[b] | 0.33 | 0.32 | 0.26 | 0.20 | 1 |
| | Gypsum Board (⅜ in.) Decorated | 0.32 | 0.32 | 0.25 | 0.20 | 2 |
| | Wood Lath and Plaster | 0.31 | 0.31 | 0.25 | 0.19 | 3 |
| | Gypsum Lath (⅜ in.) Plastered[c] | 0.31 | 0.31 | 0.25 | 0.19 | 4 |
| | Plywood (⅜ in.) Plain or Decorated | 0.30 | 0.30 | 0.24 | 0.19 | 5 |
| | Insulating Board (½ in.) Plain or Decorated | 0.23 | 0.23 | 0.19 | 0.16 | 6 |
| | Insulating Board Lath (½ in.) Plastered[c] | 0.22 | 0.22 | 0.19 | 0.15 | 7 |
| | Insulating Board Lath (1 in.) Plastered[c] | 0.17 | 0.17 | 0.15 | 0.12 | 8 |
| Wood[d] Shingles   | Metal Lath and Plaster[b] | 0.25 | 0.25 | 0.26 | 0.17 | 9 |
| | Gypsum Board (⅜ in.) Decorated | 0.25 | 0.25 | 0.25 | 0.17 | 10 |
| | Wood Lath and Plaster | 0.24 | 0.24 | 0.25 | 0.16 | 11 |
| | Gypsum Lath (⅜ in.) Plastered[c] | 0.24 | 0.24 | 0.25 | 0.16 | 12 |
| | Plywood (⅜ in.) Plain or Decorated | 0.24 | 0.24 | 0.24 | 0.16 | 13 |
| | Insulating Board (½ in.) Plain or Decorated | 0.19 | 0.19 | 0.19 | 0.14 | 14 |
| | Insulating Board Lath (½ in.) Plastered[c] | 0.19 | 0.18 | 0.19 | 0.13 | 15 |
| | Insulating Board Lath (1 in.) Plastered[c] | 0.14 | 0.14 | 0.15 | 0.11 | 16 |
| Stucco   | Metal Lath and Plaster[b] | 0.43 | 0.42 | 0.32 | 0.23 | 17 |
| | Gypsum Board (⅜ in.) Decorated | 0.42 | 0.41 | 0.31 | 0.23 | 18 |
| | Wood Lath and Plaster | 0.40 | 0.39 | 0.30 | 0.22 | 19 |
| | Gypsum Lath (⅜ in.) Plastered[c] | 0.39 | 0.39 | 0.30 | 0.22 | 20 |
| | Plywood (⅜ in.) Plain or Decorated | 0.39 | 0.38 | 0.29 | 0.22 | 21 |
| | Insulating Board (½ in.) Plain or Decorated | 0.27 | 0.27 | 0.22 | 0.18 | 22 |
| | Insulating Board Lath (½ in.) Plastered[c] | 0.26 | 0.26 | 0.22 | 0.17 | 23 |
| | Insulating Board Lath (1 in.) Plastered[c] | 0.19 | 0.19 | 0.16 | 0.14 | 24 |
| Brick Veneer[e]   | Metal Lath and Plaster[b] | 0.37 | 0.36 | 0.28 | 0.21 | 25 |
| | Gypsum Board (⅜ in.) Decorated | 0.36 | 0.36 | 0.28 | 0.21 | 26 |
| | Wood Lath and Plaster | 0.35 | 0.34 | 0.27 | 0.20 | 27 |
| | Gypsum Lath (⅜ in.) Plastered[c] | 0.34 | 0.34 | 0.27 | 0.20 | 28 |
| | Plywood (⅜ in.) Plain or Decorated | 0.34 | 0.33 | 0.27 | 0.20 | 29 |
| | Insulating Board (½ in.) Plain or Decorated | 0.25 | 0.25 | 0.21 | 0.17 | 30 |
| | Insulating Board Lath (½ in.) Plastered[c] | 0.24 | 0.24 | 0.20 | 0.16 | 31 |
| | Insulating Board Lath (1 in.) Plastered[c] | 0.18 | 0.18 | 0.15 | 0.13 | 32 |

[a] Coefficients not weighted; effect of studding neglected.
[b] Plaster assumed ⅝ in. thick.
[c] Plaster assumed ½ in. thick.
[d] Furring strips between wood shingles and all sheathings except wood.
[e] Small air space and mortar between building paper and brick veneer neglected.
[f] Nominal thickness, 1 in.



## Table 5. Coefficients of Transmission ($U$) of Frame Walls with Insulation Between Framing[a,b]

*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 a wind velocity of 15 mph.*

| Coefficient with *no* insulation between framing | Coefficient with insulation between framing: Blanket or bat insulation between framing[c] (Thickness below) 1 in. A | 2 in. B | 3 in. C | 3½ in. loose mineral wool between framing D | Number |
|---|---|---|---|---|---|
| 0.11 | 0.078 | 0.064 | 0.055 | 0.051 | 33 |
| 0.12 | 0.083 | 0.067 | 0.057 | 0.054 | 34 |
| 0.13 | 0.088 | 0.070 | 0.059 | 0.056 | 35 |
| 0.14 | 0.092 | 0.073 | 0.061 | 0.058 | 36 |
| 0.15 | 0.097 | 0.075 | 0.062 | 0.059 | 37 |
| 0.16 | 0.10 | 0.077 | 0.065 | 0.060 | 38 |
| 0.17 | 0.10 | 0.080 | 0.066 | 0.062 | 39 |
| 0.18 | 0.11 | 0.082 | 0.068 | 0.063 | 40 |
| 0.19 | 0.11 | 0.084 | 0.069 | 0.064 | 41 |
| 0.20 | 0.12 | 0.087 | 0.070 | 0.066 | 42 |
| 0.21 | 0.12 | 0.088 | 0.072 | 0.067 | 43 |
| 0.22 | 0.12 | 0.090 | 0.073 | 0.069 | 44 |
| 0.23 | 0.12 | 0.093 | 0.074 | 0.069 | 45 |
| 0.24 | 0.12 | 0.094 | 0.076 | 0.070 | 46 |
| 0.25 | 0.13 | 0.095 | 0.076 | 0.072 | 47 |
| 0.26 | 0.13 | 0.096 | 0.077 | 0.072 | 48 |
| 0.27 | 0.14 | 0.097 | 0.078 | 0.073 | 49 |
| 0.28 | 0.14 | 0.098 | 0.078 | 0.073 | 50 |
| 0.29 | 0.14 | 0.10 | 0.080 | 0.075 | 51 |
| 0.30 | 0.14 | 0.10 | 0.080 | 0.075 | 52 |
| 0.31 | 0.14 | 0.10 | 0.082 | 0.076 | 53 |
| 0.32 | 0.15 | 0.10 | 0.082 | 0.076 | 54 |
| 0.33 | 0.15 | 0.11 | 0.083 | 0.077 | 55 |
| 0.34 | 0.15 | 0.11 | 0.083 | 0.078 | 56 |
| 0.35 | 0.15 | 0.11 | 0.085 | 0.078 | 57 |
| 0.36 | 0.16 | 0.11 | 0.085 | 0.079 | 58 |
| 0.37 | 0.16 | 0.11 | 0.087 | 0.080 | 59 |
| 0.38 | 0.16 | 0.11 | 0.087 | 0.080 | 60 |
| 0.39 | 0.16 | 0.11 | 0.087 | 0.081 | 61 |
| 0.40 | 0.16 | 0.11 | 0.088 | 0.082 | 62 |
| 0.41 | 0.16 | 0.11 | 0.088 | 0.082 | 63 |
| 0.42 | 0.16 | 0.11 | 0.088 | 0.082 | 64 |
| 0.43 | 0.17 | 0.11 | 0.090 | 0.083 | 65 |
| 0.44 | 0.17 | 0.12 | 0.090 | 0.083 | 66 |

[a] This table may be used for determining the coefficients of transmission of frame constructions with the types and thicknesses of insulation indicated in Columns A to D inclusive between framing. Columns A, B and C may be used for walls, ceilings or roofs with only one air space between framing but are not applicable to ceilings with *no* flooring above. (See Table 10.) Column D is applicable to walls only. *Example:* Find the coefficient of transmission of a frame wall consisting of wood siding, ²⁵⁄₃₂ in. insulating board sheathing, studs, gypsum lath and plaster, *with 2 in. blanket insulation between studs.* According to Table 4, a wall of this construction with *no insulation* between studs has a coefficient of 0.19 (Wall No. 4D). Referring to Column B above, it will be found that a wall of this value with 2 in. blanket insulation between the studs has a coefficient of 0.084.
[b] Coefficients corrected for 2 x 4 framing, 16 in. o. c.—15 per cent of surface area.
[c] Based on one air space between framing.