

R-Value Comparison

Wall Construction: 8" Hollow Concrete Block

Density of concrete used in block, lbs./cubic foot	60	80	100	120	140
Approximate weight of masonry, lbs./square foot	24	32	40	47	55

WALL DETAILS	"R" Value				
(1) No insulation	3.1	2.9	2.6	2.3	1.8
(2) No insulation, 1/2" gypsum on furring strip	4.7	4.3	4.0	3.7	3.2
(3) No insulation, 1/2" foil backed gypsum on furring strip	6.7	6.7	6.3	5.9	5.3
(4) Loose Fill insulation in cores	8.3	7.1	5.6	4.8	2.9
(5) Loose Fill insulation + 1/2" gypsum on furring strip	10.0	8.3	7.1	5.9	4.2
(6) Loose Fill insulation + 1/2" foil backed gypsum on furring strip	12.5	10.0	9.1	8.3	6.3
(7) 1" rigid glass fiber insulation & 1/2" gypsum applied directly to wall surface	7.1	7.1	6.7	6.7	5.9
(8) 1" polystyrene insulation & 1/2" gypsum board applied directly to wall surface	8.3	8.3	8.3	7.7	7.1
(9) 1" polyurethane insulation & 1/2" gypsum board applied directly to wall surface	10.0	10.0	9.1	9.1	8.3
(10) Same as (7) plus cores filled with loose-fill insulation	12.5	11.1	10.0	9.1	7.1
(11) Same as (8) plus cores filled with loose-fill insulation	14.3	12.5	11.1	10.0	8.3
(12) Same as (9) plus cores filled with loose-fill insulation	14.3	14.3	12.5	11.1	9.1
(13) R-7 blanket insulation, 1/2" gypsum board	11.1	10.0	10.0	10.0	9.1
(14) Foamed-in-place insulation in cores	14.3	11.1	9.1	6.7	4.5
(15) Foamed-in-place insulation in cores, 1/2" gypsum board on furring strips	16.7	12.5	10.0	8.3	5.9
(16) Foamed-in-place insulation in cores, 1/2" foil-backed gyp. board on furring strips	16.7	14.3	12.5	10.0	8.3

Source: National Concrete Masonry Association ("NCMA")
Parallel Path Calculation Method

"U" Value = 1
"R"

R-Value Comparison

Wall Construction: 12" Hollow Concrete Block

Density of concrete used in block, lbs./cubic foot	60	80	100	120	140
Approximate weight of masonry, lbs./square foot	24	32	40	47	55

WALL DETAILS	"R" Value				
(1) No insulation	4.2	3.4	2.9	2.6	2.0
(2) No insulation, 1/2" gypsum on furring strip	5.6	5.0	4.3	4.0	3.4
(3) No insulation, 1/2" foil backed gypsum on furring strip	7.7	7.1	6.7	6.3	5.6
(4) Loose Fill insulation in cores	12.5	10.0	7.7	5.9	3.4
(5) Loose Fill insulation + 1/2" gypsum on furring strip	12.5	11.1	9.1	7.7	4.8
(6) Loose Fill insulation + 1/2" foil backed gypsum on furring strip	14.3	12.5	11.1	10.0	7.1
(7) 1" rigid glass fiber insulation & 1/2" gypsum applied directly to wall surface	8.3	7.7	7.7	7.1	6.7
(8) 1" polystyrene insulation & 1/2" gypsum board applied directly to wall surface	10.0	9.1	8.3	8.3	7.7
(9) 1" polyurethane insulation & 1/2" gypsum board applied directly to wall surface	11.1	10.0	10.0	9.1	9.1
(10) Same as (7) plus cores filled with loose-fill insulation	16.7	14.3	12.5	10.0	7.7
(11) Same as (8) plus cores filled with loose-fill insulation	16.7	14.3	12.5	10.0	7.7
(12) Same as (9) plus cores filled with loose-fill insulation	20.0	16.7	14.3	12.5	10.0
(13) R-7 blanket insulation, 1/2" gypsum board	11.1	11.1	10.0	10.0	9.1
(14) Foamed-in-place insulation in cores	20.0	16.7	12.5	10.0	6.7
(15) Foamed-in-place insulation in cores, 1/2" gypsum board on furring strips	25.0	20.0	14.3	11.1	7.7
(16) Foamed-in-place insulation in cores, 1/2" foil-backed gyp. board on furring strips	25.0	20.0	16.7	14.3	10.0

Source: National Concrete Masonry Association (NCMA)
Parallel Path Calculation Method

"U" Value = 1
"R"