

**ENERGY INFORMATION
FOR
MASONRY CONSTRUCTION**

TABLE B-3a. Average weight of completed wall¹, pounds per square foot³ and Equivalent solid thickness, inches³ Weight of grout 140 pcf (2240 kg/m³)

Wall Thickness	Hollow Concrete Block												Equivalent solid thickness ² inches ³						
	Light Weight 103 pcf				Medium Weight 115 pcf				Normal Weight 135 pcf							Hollow Clay Block 120 pcf			
	6"	8"	10"	12"	6"	8"	10"	12"	6"	8"	10"	12"	4"	6"	8"	6"	8"	10"	12"
Solid Grouted Wall	52	75	93	118	58	78	198	124	63	84	109	133	38	56	77	5.6	7.6	9.6	11.6
Vertical cores grouted at	16" o.c.	41	60	69	88	47	60	86	52	66	80	103	33	45	59	4.5	5.8	7.2	8.5
	24" o.c.	37	55	61	79	43	55	78	48	61	72	94	31	42	54	4.1	5.2	6.3	7.5
	32" o.c.	36	52	57	74	42	52	74	47	58	68	89	30	40	51	4.0	4.9	5.9	7.0
	40" o.c.	35	50	55	71	41	50	72	46	56	66	85	29	39	49	3.8	4.7	5.7	6.7
No grout in wall	48" o.c.	34	49	53	69	40	49	70	45	55	64	83	28	38	48	3.7	4.6	5.5	6.5
		26	33	36	47	32	36	41	37	42	47	62	25	30	35	3.4	4.0	4.7	5.5

1. The above table gives the average weights of completed walls of various thickness in pounds per square foot of wall face area. An average amount has been added into these values to include the weight of bond beams and reinforcing steel.
 2. Equivalent solid thickness means the calculated thickness of the wall if there were no hollow cores, and is obtained by dividing the volume of solid material in the wall by the face area of the wall.
- This Equivalent Solid Thickness (EST) is for the determination of area for structural design only, e.g. $f_s = P/(EST)b$. It is NOT to use to obtain fire ratings. Fire rating thickness is based either on equivalent solid thickness of ungrouted units only or solid grouted walls.
3. To convert pound per square foot to kilo pascals multiply the value psf by 0.0479. To convert inches to millimetres multiply inches by 25.4.

*Reprinted from the Reinforced Masonry Engineering Handbook by James E. Amrhein S.E., Masonry Institute of America.

TABLE 3. Average Weight of Reinforced and Grouted Brick Walls (psf) 10 psf per 1" Thickness

Wall Thickness	Weight psf	Wall Thickness	Weight psf
8"	80	10"	100
8½"	85	11"	110
9	90	12"	120
9½"	95	13"	130

TABLE 6b. Block 6" high, 16" long, 2 cells

JOINT REINF. ONLY ¹	Vertical Steel Spacing, Inches							
	48	40	32	24	16	8	0	100
108 ²	83.3	80.0	75.0	66.7	.50	0	0	100
48	16.7	20.0	25.0	33.3	52.8	100	0	100
42	78.7	75.6	70.8	63.0	47.2	0	0	100
36	21.3	24.4	29.2	37.0	43.7	0	0	100
30	74.7	70.0	65.6	58.3	43.7	0	0	100
24	25.3	30.0	34.4	41.7	56.3	100	0	100
18	71.4	68.6	64.3	57.1	42.9	0	0	100
12	28.6	31.4	35.7	42.9	57.1	100	0	100
6	69.4	66.7	62.5	55.6	41.7	0	0	100
	30.6	33.3	37.5	44.4	58.3	100	0	100
	66.7	64.0	60.0	53.7	40.0	0	0	100
	33.3	36.0	40.0	46.7	60.0	100	0	100
	62.5	60.0	56.2	50.0	37.5	0	0	100
	37.5	40.0	43.8	50.0	62.5	100	0	100
	55.6	53.3	50.0	44.4	33.3	0	0	100
	44.4	46.7	50.0	55.6	66.7	100	0	100
	41.7	40.0	37.5	33.3	25.0	0	0	100
	58.3	60.0	62.5	66.7	75.0	100	0	100
	0	0	0	0	0	0	0	100
	100	100	100	100	100	100	100	100

1. Reinforcing steel grouted in vertical cells only. Horizontal steel in joints. Ungrouted cells are uninterrupted.
2. Wall 9'0" high, Top 6" bond beam reinforced and grouted only. Joint reinforcing below bond beam, vertical cells are uninterrupted.
3. Horizontal bond beam 6" high.

TABLE 6. Percent UngROUTED/Percent Grouted Wall Area, Block

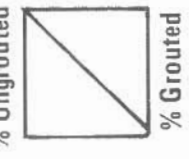


TABLE 6a. Block 8" high, 16" long, 2 cells

JOINT REINF. ONLY ¹	Vertical Steel Spacing, Inches							
	48	40	32	24	16	8	0	100
104 ²	83.3	80.0	75.0	66.7	50.0	0	0	100
48	16.7	20.0	25.0	33.3	50.0	100	0	100
40	76.9	73.8	69.2	61.5	46.2	0	0	100
32	23.1	26.2	30.8	38.5	53.8	100	0	100
24	69.4	66.7	62.5	55.6	41.7	0	0	100
16	30.6	33.3	37.5	44.4	58.3	100	0	100
8	66.7	64.0	60.0	53.3	40.0	0	0	100
	33.3	36.0	40.0	46.7	60.0	100	0	100
	62.5	60.0	56.2	50.0	37.5	0	0	100
	37.5	40.0	43.8	50.0	62.5	100	0	100
	55.6	53.3	50.0	44.4	33.3	0	0	100
	44.4	46.7	50.0	55.6	66.7	100	0	100
	41.7	40.0	37.5	33.3	25.0	0	0	100
	58.3	60.0	62.5	66.7	75.0	100	0	100
	0	0	0	0	0	0	0	100
	100	100	100	100	100	100	100	100

1. Reinforcing steel grouted in vertical cells only. Horizontal steel in joints. Ungrouted cells are uninterrupted.
2. Wall 8'8" high, top 8" bond beam reinforced and grouted. Joints reinforcing below bond beam, vertical cells are uninterrupted.
3. Horizontal bond beam 8" high.

TABLE 6d. Block 4" high, 12" long, 2 cells

JOINT REINF ONLY ¹	Vertical Steel Spacing, Inches									
	48	42	36	30	24	18	12	6	100	100
108 ⁴	87.5	85.7	83.3	80.0	75.0	63.7	50.0	0	100	100
48	12.5	14.3	16.7	20.0	25.0	33.3	50.0	0	100	100
44	81.0	79.4	77.2	74.1	69.4	61.7	46.2	0	100	100
40	19.0	20.6	22.8	25.9	30.5	38.3	58.7	0	100	100
36	80.2	78.6	76.4	73.3	68.7	61.1	47.3	0	100	100
32	19.8	21.4	23.6	26.7	31.3	39.9	54.2	0	100	100
28	79.5	77.9	75.8	72.7	68.2	60.6	45.5	0	100	100
24	20.5	22.1	24.2	27.3	31.8	39.4	59.4	0	100	100
20	78.7	77.1	75.0	72.0	67.5	60.0	45.0	0	100	100
16	21.3	22.9	25.0	28.0	32.5	40.0	55.0	0	100	100
12	77.8	76.2	74.1	71.1	66.7	59.3	44.4	0	100	100
8	22.2	23.8	25.9	28.9	33.3	40.7	55.6	0	100	100
4	76.6	75.0	72.9	70.0	65.6	58.3	43.7	0	100	100
	23.4	25.0	27.1	30.0	34.4	41.7	56.3	0	100	100
	75.0	73.5	71.5	68.6	64.3	57.1	42.9	0	100	100
	25.0	26.5	28.5	31.4	35.7	42.9	57.1	0	100	100
	72.9	71.4	69.4	66.7	62.7	55.6	41.7	0	100	100
	27.1	28.6	30.6	33.3	37.5	44.4	58.3	0	100	100
	70.0	68.6	66.7	64.0	60.0	53.3	40.0	0	100	100
	30.0	31.4	33.3	36.0	40.0	46.7	60.0	0	100	100
	75.6	74.3	72.7	70.0	66.2	59.0	43.7	0	100	100
	34.4	35.7	37.5	40.0	43.8	50.0	62.5	0	100	100
	58.3	57.1	55.6	53.3	50.0	44.4	33.3	0	100	100
	41.7	42.9	44.4	46.7	50.0	55.6	66.7	0	100	100
	43.7	42.9	41.7	40.0	37.5	33.3	25.0	0	100	100
	56.3	57.1	58.3	60.0	62.5	66.7	75.0	0	100	100
	0	0	0	0	0	0	0	0	100	100
	100	100	100	100	100	100	100	100	100	100

1. Reinforcing steel grouted in vertical cells only. Horizontal steel in joints. UngROUTED cells are uninterupted.
2. Wall 9'0" high, top 8" bond beam reinforced and grouted.
3. Joint reinforcing below bond beam, cells are uninterupted.
4. Horizontal bond beam 8" high.

TABLE 6c. Block 4" high, 12" long, 2 cells

JOINT REINF ONLY ¹	Vertical Steel Spacing, Inches									
	48	42	36	30	24	18	12	6	100	100
108 ²	83.3	81.0	77.8	73.3	66.7	55.6	33.3	0	100	100
48	16.7	19.0	22.2	26.7	33.3	44.4	66.7	0	100	100
40	81.0	79.4	77.2	74.1	69.4	61.7	46.2	0	100	100
32	19.0	20.6	22.8	25.9	30.6	38.3	53.7	0	100	100
24	72.9	71.4	69.4	66.7	62.5	55.6	41.7	0	100	100
16	27.1	28.6	30.6	33.3	37.5	44.4	58.3	0	100	100
8	70.0	68.6	66.7	64.0	60.0	53.3	40.0	0	100	100
	30.0	31.4	33.3	36.0	40.0	46.7	60.0	0	100	100
	65.6	64.3	62.5	60.0	56.2	50.0	37.5	0	100	100
	34.4	35.7	37.5	40.0	43.8	50.0	62.5	0	100	100
	58.3	57.1	55.6	53.3	50.0	44.4	33.3	0	100	100
	41.7	42.9	44.4	46.7	50.0	55.6	66.7	0	100	100
	43.7	42.9	41.7	40.0	37.5	33.3	25.0	0	100	100
	56.3	57.1	58.3	60.0	62.5	66.7	75.0	0	100	100
	0	0	0	0	0	0	0	0	100	100
	100	100	100	100	100	100	100	100	100	100

1. Reinforcing steel grouted in vertical cells only. Horizontal steel in joints. UngROUTED cells are uninterupted.
2. Wall 9'0" high, top 8" bond beam reinforced and grouted.
3. Joint reinforcing below bond beam, cells are uninterupted.

TABLE 7a. R and U Values*, 8" Building Brick Wall; Solid Grouted

Surface Treatment	Solid Grout @90 pcf		Solid Grout @100 pcf		Solid Grout @110 pcf		Solid Grout @120 pcf		Solid Grout @140 pcf		Width and Type of Brick
	R	U	R	U	R	U	R	U	R	U	
Brick Exposed Both Sides	2.69	0.37	2.61	0.38	2.51	0.40	2.43	0.41	2.27	0.44	3" Solid
	3.29	0.30	3.21	0.31	3.11	0.32	3.03	0.33	2.87	0.35	3" Cored
Plain Gypsum Board on 3/4" Furring	2.57	0.39	2.53	0.40	2.48	0.40	2.44	0.41	2.36	0.42	3 1/2" Solid
	3.27	0.31	3.23	0.31	3.18	0.31	3.14	0.32	3.06	0.33	3 1/2" Cored
Foil Backed Gypsum Board on 3/4" Furring	4.11	0.24	4.03	0.25	3.93	0.25	3.85	0.26	3.69	0.27	3" Solid
	4.71	0.21	4.63	0.22	4.53	0.22	4.45	0.22	4.29	0.23	3" Cored
1" Fiberglass Board and 1/2" Gypsum Board	3.99	0.25	3.95	0.25	3.90	0.26	3.86	0.26	3.78	0.26	3 1/2" Solid
	4.69	0.21	4.65	0.22	4.60	0.22	4.56	0.22	4.48	0.22	3 1/2" Cored
1" Polystyro-foam Board and 1/2" Gypsum Board	5.68	0.18	5.60	0.18	5.50	0.18	5.42	0.18	5.26	0.19	3" Solid
	6.28	0.16	6.20	0.16	6.10	0.16	6.02	0.17	5.86	0.17	3" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	5.56	0.18	5.52	0.18	5.47	0.18	5.43	0.18	5.35	0.19	3 1/2" Solid
	6.26	0.16	6.22	0.16	6.17	0.16	6.13	0.16	6.05	0.17	3 1/2" Cored
1" Fiberglass Board and 1/2" Gypsum Board	7.14	0.14	7.06	0.14	6.96	0.14	6.88	0.15	6.72	0.15	3" Solid
	7.74	0.13	7.66	0.13	7.56	0.13	7.48	0.13	7.32	0.14	3" Cored
1" Polystyro-foam Board and 1/2" Gypsum Board	7.02	0.14	6.98	0.14	6.93	0.14	6.89	0.15	6.81	0.15	3 1/2" Solid
	7.72	0.13	7.68	0.13	7.63	0.13	7.59	0.13	7.51	0.13	3 1/2" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	8.14	0.12	8.06	0.12	7.96	0.13	7.88	0.13	7.72	0.13	3" Solid
	8.74	0.11	8.66	0.12	8.56	0.12	8.48	0.12	8.32	0.12	3" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	8.02	0.12	7.98	0.13	7.93	0.13	7.89	0.13	7.81	0.13	3 1/2" Solid
	8.72	0.11	8.68	0.12	8.63	0.12	8.59	0.12	8.51	0.12	3 1/2" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	9.39	0.11	9.31	0.11	9.21	0.11	9.13	0.11	8.97	0.11	3" Solid
	9.99	0.10	9.91	0.10	9.81	0.10	9.73	0.10	9.57	0.10	3" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	9.27	0.11	9.23	0.11	9.18	0.11	9.14	0.11	9.06	0.11	3 1/2" Solid
	9.97	0.11	9.93	0.10	9.88	0.10	9.84	0.10	9.76	0.10	3 1/2" Cored

*Includes surface air films; air to air. Width of brick = 3" Width of grout = 2" R of cored brick = 0.30 per inch R of solid brick = 0.20 per inch
 Width of brick = 3 1/2" Width of grout = 1" Cores approximately 20% or more

TABLE 7b. R and U Values*, 8" Building Brick Wall; Cavity Insulation

Surface Treatment	No Insulation Fill (Void)		Vermiculite Fill		Perlite Fill		Urea Form-aldehyde Foam		Polyurethane Foam		Width and Type of Brick
	R	U	R	U	R	U	R	U	R	U	
Brick Exposed Both Sides	3.02	0.33	6.31	0.16	7.45	0.13	12.05	0.08	14.55	0.07	3" Solid
	3.62	0.28	6.91	0.14	8.05	0.12	12.65	0.08	15.15	0.07	3" Cored
Plain Gypsum Board on 3/4" Furring	3.22	0.31	4.38	0.23	4.95	0.20	7.25	0.14	8.50	0.12	3 1/2" Solid
	3.92	0.26	5.08	0.20	5.65	0.18	7.95	0.13	9.25	0.11	3 1/2" Cored
Foil Backed Gypsum Board on 3/4" Furring	4.44	0.23	7.73	0.13	8.57	0.19	13.47	0.07	15.97	0.06	3" Solid
	5.04	0.20	8.33	0.12	9.47	0.11	14.07	0.07	16.57	0.06	3" Cored
1" Fiberglass Board and 1/2" Gypsum Board	4.64	0.22	5.80	0.17	6.37	0.16	8.67	0.12	9.92	0.10	3 1/2" Solid
	5.34	0.19	6.50	0.15	7.07	0.14	9.37	0.11	10.62	0.09	3 1/2" Cored
1" Polystyro-foam Board and 1/2" Gypsum Board	6.01	0.17	9.30	0.11	10.44	0.10	15.04	0.07	17.54	0.06	3" Solid
	6.61	0.15	9.90	0.10	11.04	0.09	15.64	0.06	18.14	0.06	3" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	6.21	0.16	7.37	0.14	7.94	0.13	10.24	0.10	11.49	0.09	3 1/2" Solid
	6.91	0.14	8.07	0.12	8.64	0.12	10.94	0.09	12.19	0.08	3 1/2" Cored
1" Polystyro-foam Board and 1/2" Gypsum Board	7.47	0.13	10.76	0.09	11.90	0.08	16.50	0.06	19.00	0.05	3" Solid
	8.07	0.12	11.36	0.09	12.50	0.08	17.10	0.06	19.60	0.05	3" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	7.67	0.13	8.83	0.11	9.40	0.11	11.70	0.09	12.95	0.08	3 1/2" Solid
	8.37	0.12	9.53	0.10	10.10	0.10	12.40	0.08	13.65	0.07	3 1/2" Cored
1" Polystyro-foam Board and 1/2" Gypsum Board	8.47	0.12	11.76	0.09	12.90	0.08	17.50	0.06	20.00	0.05	3" Solid
	9.07	0.11	12.36	0.08	13.50	0.07	18.10	0.06	20.60	0.05	3" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	8.67	0.12	9.83	0.10	10.40	0.10	12.70	0.08	13.95	0.07	3 1/2" Solid
	9.37	0.11	10.53	0.09	11.10	0.09	13.40	0.07	14.65	0.07	3 1/2" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	9.72	0.10	13.01	0.08	14.15	0.07	18.75	0.05	21.25	0.05	3" Solid
	10.32	0.10	13.61	0.07	14.75	0.07	19.35	0.05	21.85	0.05	3" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	9.92	0.10	11.08	0.09	11.65	0.09	13.95	0.07	15.20	0.07	3 1/2" Solid
	10.62	0.09	11.78	0.08	12.35	0.08	14.65	0.07	15.90	0.06	3 1/2" Cored

*Includes surface air films; air to air. Width of brick = 3" Width of insulating fill = 2" R of cored brick = 0.30 per inch R of solid brick = 0.20 per inch
 Width of brick = 3 1/2" Width of insulating fill = 1" Cores approximately 20% or more

TABLE 8a R and U Values* 8½" Building Brick Wall; Solid Grouted

Surface Treatment	Solid Grout @90 pcf		Solid Grout @100 pcf		Solid Grout @110 pcf		Solid Grout @120 pcf		Solid Grout @140 pcf		Width and Type of Brick
	R	U	R	U	R	U	R	U	R	U	
Brick Exposed	2.85	0.35	2.75	0.36	2.63	0.38	2.53	0.40	2.33	0.43	3" Solid 3" Cored
	3.45	0.29	3.35	0.30	3.23	0.31	3.13	0.32	2.93	0.34	
Both Sides	2.73	0.37	2.67	0.37	2.60	0.39	2.54	0.39	2.42	0.41	3½" Solid 3½" Cored
	3.43	0.29	3.37	0.30	3.30	0.30	3.24	0.31	3.12	0.32	
Plain Gypsum Board on 3/4" Furring	4.27	0.23	4.17	0.24	4.05	0.25	3.95	0.25	3.75	0.27	3" Solid 3" Cored
	4.87	0.21	4.77	0.21	4.65	0.22	4.55	0.22	4.35	0.23	
Foil Backed Gypsum Board on 3/4" Furring	4.15	0.24	4.09	0.24	4.02	0.25	3.96	0.25	3.84	0.26	3½" Solid 3½" Cored
	4.85	0.21	4.79	0.21	4.72	0.21	4.66	0.21	4.54	0.22	
1" Fiberglass Board and 1/2" Gypsum Board	5.84	0.17	5.74	0.17	5.62	0.18	5.52	0.18	5.32	0.19	3" Solid 3" Cored
	6.44	0.16	6.34	0.16	6.22	0.16	6.12	0.16	5.92	0.17	
1" Polystyro-foam Board and 1/2" Gypsum Board	5.72	0.17	5.65	0.18	5.59	0.18	5.53	0.18	5.41	0.19	3½" Solid 3½" Cored
	6.42	0.16	6.36	0.16	6.29	0.16	6.23	0.16	6.11	0.16	
1" Poly Urethane Board and 1/2" Gypsum Board	7.30	0.14	7.20	0.14	7.08	0.14	6.98	0.14	6.78	0.15	3" Solid 3" Cored
	7.90	0.13	7.80	0.13	7.68	0.13	7.58	0.13	7.38	0.14	
1" Polystyro-foam Board and 1/2" Gypsum Board	7.19	0.14	7.12	0.14	7.05	0.14	6.99	0.14	6.87	0.15	3½" Solid 3½" Cored
	7.88	0.13	7.82	0.13	7.75	0.13	7.69	0.13	7.57	0.13	
1" Poly Urethane Board and 1/2" Gypsum Board	8.30	0.12	8.20	0.12	8.08	0.12	7.98	0.13	7.78	0.13	3" Solid 3" Cored
	8.90	0.11	8.80	0.11	8.68	0.12	8.58	0.12	8.38	0.12	
1" Poly Urethane Board and 1/2" Gypsum Board	8.18	0.12	8.12	0.12	8.05	0.12	7.99	0.13	7.87	0.13	3½" Solid 3½" Cored
	8.88	0.11	8.82	0.11	8.75	0.11	8.69	0.12	8.57	0.12	
1" Poly Urethane Board and 1/2" Gypsum Board	9.55	0.10	9.45	0.11	9.33	0.11	9.23	0.11	9.03	0.11	3" Solid 3" Cored
	10.15	0.10	10.05	0.10	9.93	0.10	9.83	0.10	9.63	0.10	
1" Poly Urethane Board and 1/2" Gypsum Board	9.43	0.11	9.37	0.11	9.30	0.11	9.24	0.11	9.12	0.11	3½" Solid 3½" Cored
	10.13	0.10	10.07	0.10	10.00	0.10	9.94	0.10	9.82	0.10	

*Includes surface air films; air to air. Width of brick = 3" Width of Grout = 2½" R of cored brick = 0.30 per inch R of solid brick = 0.20 per inch
Width of brick = 3½" Width of Grout = 1½" Cores approximately 20% or more

TABLE 8b R and U Values* 8½" Building Brick Wall; Cavity Insulation

Surface Treatment	No Insulation Fill (Void)		Vermiculite Fill		Perlite Fill		Urea Formaldehyde Foam		Polyurethane Foam		Width and Type of Brick
	R	U	R	U	R	U	R	U	R	U	
Brick Exposed	3.02	0.33	7.33	0.14	8.80	0.11	14.55	0.07	17.68	0.06	3" Solid 3" Cored
	3.62	0.28	7.98	0.13	9.40	0.11	15.15	0.07	18.28	0.05	
Both Sides	3.22	0.31	5.45	0.18	6.30	0.16	9.75	0.10	11.63	0.09	3½" Solid 3½" Cored
	3.92	0.26	6.15	0.16	7.00	0.14	10.45	0.10	12.33	0.08	
Plain Gypsum Board on 3/4" Furring	4.44	0.23	8.80	0.11	10.22	0.10	15.97	0.06	19.10	0.05	3" Solid 3" Cored
	5.34	0.19	9.40	0.11	10.82	0.09	16.57	0.06	19.70	0.05	
Foil Backed Gypsum Board on 3/4" Furring	4.64	0.22	6.87	0.15	7.72	0.13	11.17	0.09	13.05	0.08	3½" Solid 3½" Cored
	5.34	0.19	7.57	0.13	8.42	0.12	11.87	0.08	13.75	0.07	
1" Fiberglass Board and 1/2" Gypsum Board	6.01	0.17	10.37	0.10	11.79	0.08	17.54	0.06	20.67	0.05	3" Solid 3" Cored
	6.61	0.15	10.97	0.09	12.39	0.08	18.14	0.06	21.27	0.05	
1" Polystyro-foam Board and 1/2" Gypsum Board	6.21	0.16	8.44	0.12	9.29	0.11	12.74	0.08	14.62	0.07	3½" Solid 3½" Cored
	6.91	0.14	9.14	0.11	9.99	0.10	13.44	0.07	15.32	0.07	
1" Poly Urethane Board and 1/2" Gypsum Board	7.47	0.13	11.83	0.08	13.25	0.08	19.00	0.05	22.13	0.05	3" Solid 3" Cored
	8.07	0.12	12.43	0.08	13.85	0.07	19.60	0.05	22.73	0.05	
1" Polystyro-foam Board and 1/2" Gypsum Board	7.67	0.13	9.90	0.10	10.75	0.09	14.20	0.07	16.08	0.06	3½" Solid 3½" Cored
	8.37	0.12	10.60	0.09	11.45	0.09	14.90	0.07	16.78	0.06	
1" Poly Urethane Board and 1/2" Gypsum Board	8.47	0.12	12.83	0.08	14.25	0.07	20.00	0.05	23.13	0.04	3" Solid 3" Cored
	9.07	0.11	13.43	0.07	14.85	0.07	20.60	0.05	23.73	0.04	
1" Poly Urethane Board and 1/2" Gypsum Board	8.67	0.12	10.90	0.09	11.75	0.09	15.20	0.07	17.08	0.06	3½" Solid 3½" Cored
	9.36	0.11	11.60	0.09	12.45	0.08	15.90	0.06	17.78	0.06	
1" Poly Urethane Board and 1/2" Gypsum Board	9.72	0.10	14.08	0.07	15.50	0.06	21.25	0.05	24.38	0.04	3" Solid 3" Cored
	10.32	0.10	14.68	0.07	16.10	0.06	21.85	0.05	24.98	0.04	
1" Poly Urethane Board and 1/2" Gypsum Board	9.92	0.10	12.15	0.08	13.00	0.08	16.45	0.06	18.33	0.05	3½" Solid 3½" Cored
	10.62	0.09	12.85	0.08	13.70	0.07	17.15	0.06	19.03	0.05	

*Includes surface air films; air to air. Width of brick = 3" Width of insulating fill = 2½" R of cored brick = 0.30 per inch R of solid brick = 0.20 per inch
Width of brick = 3½" Width of insulating fill = 1½" Cores approximately 20% or more

TABLE 9a R and U Values* 9" Building Brick Wall; Solid Grouted

Surface Treatment	Solid Grout @90 pcf		Solid Grout @100 pcf		Solid Grout @110 pcf		Solid Grout @120 pcf		Solid Grout @140 pcf		Width and Type of Brick
	R	U	R	U	R	U	R	U	R	U	
Brick Exposed Both Sides	3.01	0.33	2.89	0.35	2.74	0.36	2.62	0.38	2.38	0.42	3" Solid
	3.61	0.28	3.49	0.29	3.34	0.30	3.22	0.31	2.98	0.34	3" Cored
Plain Gypsum Board on 3/4" Furring	3.21	0.31	3.09	0.32	2.94	0.34	2.82	0.35	2.47	0.40	3 1/2" Solid
	3.91	0.26	3.79	0.26	3.64	0.27	3.52	0.28	3.17	0.32	3 1/2" Cored
Foil Backed Gypsum Board on 3/4" Furring	4.43	0.23	4.31	0.23	4.16	0.24	4.04	0.25	3.80	0.26	3" Solid
	5.03	0.20	4.91	0.20	4.76	0.21	4.64	0.22	4.40	0.23	3" Cored
1" Fiberglass Board and 1/2" Gypsum Board	4.31	0.23	4.23	0.24	4.13	0.24	4.05	0.25	3.89	0.26	3 1/2" Solid
	5.01	0.20	4.93	0.20	4.83	0.21	4.75	0.21	4.59	0.22	3 1/2" Cored
1" Polystyrene foam Board and 1/2" Gypsum Board	6.00	0.17	5.88	0.17	5.73	0.17	5.61	0.18	5.37	0.19	3" Solid
	6.60	0.15	6.48	0.15	6.33	0.16	6.21	0.16	5.97	0.17	3" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	5.88	0.17	5.80	0.17	5.70	0.18	5.62	0.18	5.46	0.18	3 1/2" Solid
	6.58	0.15	6.50	0.15	6.40	0.16	6.32	0.16	6.16	0.16	3 1/2" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	7.46	0.13	7.34	0.14	7.19	0.14	7.07	0.14	6.83	0.15	3" Solid
	8.06	0.12	7.94	0.13	7.79	0.13	7.67	0.13	7.43	0.13	3" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	7.34	0.14	7.26	0.14	7.16	0.14	7.08	0.14	6.92	0.14	3 1/2" Solid
	8.04	0.12	7.96	0.13	7.86	0.13	7.78	0.13	7.62	0.13	3 1/2" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	8.46	0.12	8.34	0.12	8.19	0.12	8.07	0.12	7.83	0.13	3" Solid
	9.06	0.11	8.94	0.11	8.79	0.11	8.67	0.12	8.43	0.12	3" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	8.34	0.12	8.26	0.12	8.16	0.12	8.08	0.12	7.92	0.13	3 1/2" Solid
	9.04	0.11	8.96	0.11	8.86	0.11	8.78	0.11	8.62	0.12	3 1/2" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	9.71	0.10	9.59	0.10	9.44	0.11	9.32	0.11	9.08	0.11	3" Solid
	10.31	0.10	10.19	0.10	10.04	0.10	9.92	0.10	9.68	0.10	3" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	9.59	0.10	9.51	0.11	9.41	0.11	9.33	0.11	9.17	0.11	3 1/2" Solid
	10.29	0.10	10.21	0.10	10.11	0.10	10.03	0.10	9.87	0.10	3 1/2" Cored

*Includes surface air films; air to air. Width of brick = 3" Width of Grout = 3" R of cored brick = 0.30 per inch R of solid brick = 0.20 per inch
 Width of brick = 3 1/2" Width of Grout = 2" Cores approximately 20% or more

TABLE 9b R and U Values* 9" Building Brick Wall; Cavity Insulation

Surface Treatment	No Insulation Fill (Void)		Vermiculite Fill		Perlite Fill		Urea Form-aldehyde Foam		Polyurethane Foam		Width and Type of Brick
	R	U	R	U	R	U	R	U	R	U	
Brick Exposed Both Sides	3.02	0.33	8.44	0.12	10.15	0.10	17.05	0.06	20.08	0.05	3" Solid
	3.62	0.28	9.04	0.11	10.75	0.09	17.65	0.06	21.40	0.05	3" Cored
Plain Gypsum Board on 3/4" Furring	3.22	0.31	6.51	0.15	7.65	0.13	12.25	0.08	14.75	0.07	3 1/2" Solid
	3.92	0.26	7.21	0.14	8.35	0.12	12.95	0.08	15.45	0.06	3 1/2" Cored
Foil Backed Gypsum Board on 3/4" Furring	4.44	0.23	9.86	0.10	11.57	0.09	18.47	0.05	22.22	0.05	3" Solid
	5.04	0.20	10.46	0.10	12.17	0.08	19.07	0.05	22.82	0.04	3" Cored
1" Fiberglass Board and 1/2" Gypsum Board	4.64	0.22	7.93	0.13	9.07	0.11	13.67	0.07	16.17	0.06	3 1/2" Solid
	5.34	0.19	8.63	0.12	9.77	0.10	14.37	0.07	16.87	0.06	3 1/2" Cored
1" Polystyrene foam Board and 1/2" Gypsum Board	6.01	0.17	11.43	0.09	13.14	0.08	20.04	0.05	23.79	0.04	3" Solid
	6.61	0.15	12.03	0.08	13.74	0.07	20.64	0.05	24.39	0.04	3" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	6.21	0.16	9.50	0.11	10.64	0.09	15.24	0.07	17.74	0.06	3 1/2" Solid
	6.91	0.14	10.20	0.10	11.34	0.09	15.94	0.06	18.44	0.05	3 1/2" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	7.47	0.13	12.89	0.08	14.60	0.07	21.50	0.05	25.25	0.04	3" Solid
	8.07	0.12	13.49	0.07	15.20	0.07	22.10	0.05	25.85	0.04	3" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	7.67	0.13	10.96	0.09	12.10	0.08	16.70	0.06	19.20	0.05	3 1/2" Solid
	8.37	0.12	11.66	0.09	12.80	0.08	17.40	0.06	19.90	0.05	3 1/2" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	8.47	0.12	13.89	0.07	15.60	0.06	22.50	0.04	26.25	0.04	3" Solid
	9.07	0.11	14.49	0.07	16.20	0.06	23.10	0.04	26.85	0.04	3" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	8.67	0.12	11.96	0.08	13.10	0.08	17.70	0.06	20.20	0.05	3 1/2" Solid
	9.37	0.11	12.66	0.08	13.80	0.07	18.40	0.05	20.90	0.05	3 1/2" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	9.72	0.10	15.14	0.07	16.85	0.06	23.75	0.04	27.50	0.04	3" Solid
	10.32	0.10	15.74	0.06	17.45	0.06	24.35	0.04	28.10	0.04	3" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	9.92	0.10	13.21	0.08	14.35	0.07	18.95	0.05	21.45	0.05	3 1/2" Solid
	10.62	0.09	13.91	0.07	15.05	0.07	19.65	0.05	22.15	0.05	3 1/2" Cored

*Includes surface air films; air to air. Width of brick = 3" Width of insulating fill = 3" R of cored brick = 0.30 per inch R of solid brick = 0.20 per inch
 Width of brick = 3 1/2" Width of insulating fill = 2" Cores approximately 20% or more

TABLE 10a R and U Values* 9½" Building Brick Wall; Solid Grouted

Surface Treatment	Solid Grout @90 pcf		Solid Grout @100 pcf		Solid Grout @110 pcf		Solid Grout @120 pcf		Solid Grout @140 pcf		Width and Type of Brick
	R	U	R	U	R	U	R	U	R	U	
Brick Exposed	3.17	0.32	3.03	0.33	2.86	0.35	2.72	0.37	2.44	0.41	3" Solid 3" Cored
	3.77	0.27	3.63	0.28	3.46	0.29	3.32	0.30	3.04	0.33	
Both Sides	3.05	0.33	2.95	0.34	2.83	0.35	2.73	0.37	2.53	0.40	3½" Solid 3½" Cored
	3.75	0.27	3.65	0.27	3.53	0.28	3.43	0.29	3.23	0.31	
Plain Gypsum Board on 3/4" Furring	4.59	0.22	4.45	0.22	4.28	0.23	4.14	0.24	3.86	0.26	3" Solid 3" Cored
	5.19	0.19	5.05	0.20	4.88	0.21	4.74	0.21	4.46	0.22	
Foil Backed Gypsum Board on 3/4" Furring	4.47	0.22	4.37	0.23	4.25	0.24	4.15	0.24	3.95	0.25	3½" Solid 3½" Cored
	5.17	0.19	5.07	0.20	4.95	0.20	4.85	0.21	4.65	0.22	
1" Fiberglass Board and 1/2" Gypsum Board	6.16	0.16	6.02	0.17	5.85	0.17	5.71	0.18	5.43	0.18	3" Solid 3" Cored
	6.76	0.15	6.62	0.15	6.45	0.16	6.31	0.16	6.03	0.17	
1" Polystyro-foam Board and 1/2" Gypsum Board	6.04	0.17	5.94	0.17	5.82	0.17	5.72	0.17	5.52	0.18	3½" Solid 3½" Cored
	6.74	0.15	6.64	0.15	6.52	0.15	6.42	0.16	6.22	0.16	
1" Polyurethane Board and 1/2" Gypsum Board	7.62	0.13	7.48	0.13	7.31	0.14	7.17	0.14	6.89	0.15	3" Solid 3" Cored
	8.22	0.12	8.08	0.12	7.91	0.13	7.77	0.13	7.49	0.13	
1" Polystyro-foam Board and 1/2" Gypsum Board	7.50	0.13	7.40	0.14	7.28	0.14	7.18	0.14	6.98	0.14	3½" Solid 3½" Cored
	8.20	0.12	8.10	0.12	7.98	0.13	7.88	0.13	7.68	0.13	
1" Polystyro-foam Board and 1/2" Gypsum Board	8.62	0.12	8.48	0.12	8.31	0.12	8.17	0.12	7.89	0.13	3" Solid 3" Cored
	9.22	0.11	9.08	0.11	8.91	0.11	8.77	0.11	8.49	0.12	
1" Poly Urethane Board and 1/2" Gypsum Board	8.50	0.12	8.40	0.12	8.28	0.12	8.18	0.12	7.98	0.13	3½" Solid 3½" Cored
	9.20	0.11	9.10	0.11	8.98	0.11	8.88	0.11	8.68	0.12	
1" Poly Urethane Board and 1/2" Gypsum Board	9.87	0.10	9.73	0.10	9.56	0.10	9.42	0.11	9.14	0.11	3" Solid 3" Cored
	10.47	0.10	10.33	0.10	10.15	0.10	10.02	0.10	9.74	0.10	
1" Poly Urethane Board and 1/2" Gypsum Board	9.75	0.10	9.65	0.10	9.53	0.10	9.43	0.11	9.23	0.11	3½" Solid 3½" Cored
	10.45	0.10	10.35	0.10	10.23	0.10	10.13	0.10	9.93	0.10	

*Includes surface air films; air to air. Width of brick = 3" Width of Grout = 3/4" R of cored brick = 0.30 per inch R of solid brick = 0.20 per inch
Width of brick = 3½" Width of Grout = 2½" Cores approximately 20% or more

TABLE 10b R and U Values* 9½" Building Brick Wall; Cavity Insulation

Surface Treatment	No Insulation Fill (Void)		Vermiculite Fill		Perlite Fill		Urea Form-aldehyde Foam		Polyurethane Foam		Width and Type of Brick
	R	U	R	U	R	U	R	U	R	U	
Brick Exposed	3.02	0.33	9.51	0.11	11.50	0.09	19.55	0.05	23.93	0.04	3" Solid 3" Cored
	3.62	0.28	10.11	0.10	12.10	0.08	20.15	0.05	24.53	0.04	
Both Sides	3.22	0.31	7.58	0.13	9.00	0.11	14.75	0.07	17.88	0.06	3½" Solid 3½" Cored
	3.92	0.26	8.28	0.12	9.70	0.10	15.45	0.06	18.58	0.05	
Plain Gypsum Board on 3/4" Furring	4.44	0.23	10.93	0.09	12.92	0.03	20.97	0.05	25.35	0.04	3" Solid 3" Cored
	5.04	0.20	11.53	0.09	13.52	0.07	21.57	0.05	25.95	0.04	
Foil Backed Gypsum Board on 3/4" Furring	4.64	0.22	9.00	0.11	10.42	0.10	16.17	0.06	19.30	0.05	3½" Solid 3½" Cored
	5.34	0.19	9.70	0.10	11.12	0.09	16.87	0.06	20.00	0.05	
1" Fiberglass Board and 1/2" Gypsum Board	6.01	0.17	12.50	0.08	14.49	0.07	22.54	0.04	26.92	0.04	3" Solid 3" Cored
	6.61	0.15	13.10	0.08	15.09	0.07	23.14	0.04	27.52	0.04	
1" Polystyro-foam Board and 1/2" Gypsum Board	6.21	0.16	10.48	0.10	11.90	0.08	17.65	0.06	20.78	0.05	3½" Solid 3½" Cored
	6.91	0.14	11.27	0.09	12.69	0.08	18.44	0.05	21.57	0.05	
1" Poly Urethane Board and 1/2" Gypsum Board	7.47	0.13	13.96	0.07	15.95	0.06	24.00	0.04	28.38	0.04	3" Solid 3" Cored
	8.07	0.12	14.56	0.07	16.55	0.06	24.60	0.04	28.98	0.03	
1" Polystyro-foam Board and 1/2" Gypsum Board	7.67	0.13	12.03	0.08	13.45	0.07	19.20	0.05	22.33	0.04	3½" Solid 3½" Cored
	8.37	0.12	12.73	0.08	14.15	0.07	19.90	0.05	23.03	0.04	
1" Poly Urethane Board and 1/2" Gypsum Board	8.47	0.12	14.96	0.07	16.95	0.06	25.00	0.04	29.38	0.03	3" Solid 3" Cored
	9.07	0.11	15.56	0.06	17.55	0.06	25.60	0.04	29.98	0.03	
1" Polystyro-foam Board and 1/2" Gypsum Board	8.67	0.12	13.03	0.08	14.45	0.07	20.20	0.05	23.33	0.04	3½" Solid 3½" Cored
	9.37	0.11	13.73	0.07	15.15	0.07	20.90	0.05	24.03	0.04	
1" Poly Urethane Board and 1/2" Gypsum Board	9.72	0.10	16.21	0.06	18.20	0.05	26.25	0.04	30.63	0.03	3" Solid 3" Cored
	10.32	0.10	16.81	0.06	18.80	0.05	26.85	0.04	31.23	0.03	
1" Poly Urethane Board and 1/2" Gypsum Board	9.92	0.10	14.28	0.07	15.70	0.06	21.45	0.05	24.58	0.04	3½" Solid 3½" Cored
	10.62	0.10	14.98	0.07	16.40	0.06	22.15	0.05	25.28	0.04	

*Includes surface air films; air to air. Width of brick = 3" Width of insulating fill = 3½" R of cored brick = 0.30 per inch R of solid brick = 0.20 per inch
Width of brick = 3½" Width of insulating fill = 2½" Cores approximately 20% or more

TABLE 11a R and U Values* 10" Building Brick Wall; Solid Grouted

Surface Treatment	Solid Grout @90 pcf		Solid Grout @100 pcf		Solid Grout @110 pcf		Solid Grout @120 pcf		Solid Grout @140 pcf		Width and Type of Brick
	R	U	R	U	R	U	R	U	R	U	
Brick Exposed Both Sides	3.33	0.30	3.17	0.32	2.97	0.34	2.81	0.36	2.49	0.40	3" Solid 3" Cored
	3.93	0.25	3.77	0.27	3.57	0.28	3.41	0.29	3.09	0.32	
Plain Gypsum Board on 3/4" Furring	3.21	0.31	3.09	0.32	2.94	0.34	2.82	0.35	2.58	0.39	3 1/2" Solid 3 1/2" Cored
	3.91	0.26	3.79	0.26	3.64	0.27	3.52	0.28	3.28	0.30	
Foil Backed Gypsum Board on 3/4" Furring	4.75	0.21	4.59	0.22	4.39	0.23	4.23	0.24	3.91	0.26	3" Solid 3" Cored
	5.35	0.19	5.19	0.19	4.99	0.20	4.83	0.21	4.51	0.22	
1" Fiberglass Board and 1/2" Gypsum Board	4.63	0.22	4.51	0.22	4.36	0.23	4.24	0.24	4.00	0.25	3 1/2" Solid 3 1/2" Cored
	5.33	0.19	5.21	0.19	5.06	0.20	4.94	0.20	4.70	0.21	
1" Polystyrene foam Board and 1/2" Gypsum Board	6.32	0.16	6.16	0.16	5.96	0.17	5.80	0.17	5.48	0.18	3" Solid 3" Cored
	6.92	0.14	6.76	0.15	6.56	0.15	6.40	0.16	6.08	0.16	
1" Polyurethane Board and 1/2" Gypsum Board	6.20	0.16	6.08	0.16	5.93	0.17	5.81	0.17	5.57	0.18	3 1/2" Solid 3 1/2" Cored
	6.90	0.14	6.78	0.15	6.63	0.15	6.51	0.15	6.27	0.16	
1" Polyurethane Board and 1/2" Gypsum Board	7.78	0.13	7.62	0.13	7.42	0.13	7.26	0.14	6.94	0.14	3" Solid 3" Cored
	8.38	0.12	8.22	0.12	8.02	0.12	7.86	0.13	7.54	0.13	
1" Polyurethane Board and 1/2" Gypsum Board	7.66	0.13	7.54	0.13	7.39	0.14	7.27	0.14	7.03	0.14	3 1/2" Solid 3 1/2" Cored
	8.36	0.12	8.24	0.12	8.09	0.12	7.97	0.13	7.73	0.13	
1" Polystyrene foam Board and 1/2" Gypsum Board	8.78	0.11	8.62	0.12	8.42	0.12	8.26	0.12	7.94	0.13	3" Solid 3" Cored
	9.38	0.11	9.22	0.11	9.02	0.11	8.86	0.11	8.54	0.12	
1" Polyurethane Board and 1/2" Gypsum Board	8.66	0.12	8.54	0.12	8.39	0.12	8.27	0.12	8.03	0.12	3 1/2" Solid 3 1/2" Cored
	9.36	0.11	9.24	0.11	9.09	0.11	8.97	0.11	8.73	0.11	
1" Polyurethane Board and 1/2" Gypsum Board	10.03	0.10	9.87	0.10	9.67	0.10	9.51	0.11	9.19	0.11	3" Solid 3" Cored
	10.63	0.09	10.47	0.10	10.27	0.10	10.11	0.10	9.79	0.10	
1" Polyurethane Board and 1/2" Gypsum Board	9.91	0.10	9.79	0.10	9.64	0.10	9.52	0.11	9.28	0.11	3 1/2" Solid 3 1/2" Cored
	10.61	0.09	10.49	0.10	10.34	0.10	10.22	0.10	9.98	0.10	

*Includes surface air films; air to air.

Width of brick = 3" Width of Grout = 4"
Width of brick = 3 1/2" Width of Grout = 3"

R of cored brick = 0.30 per inch
Cores approximately 20% or more

R of solid brick = 0.20 per inch

TABLE 11b R and U Values* 10" Building Brick Wall; Cavity Insulation

Surface Treatment	No Insulation Fill (Void)		Vermiculite Fill		Perlite Fill		Urea Form-aldehyde Foam		Polyurethane Foam		Width and Type of Brick
	R	U	R	U	R	U	R	U	R	U	
Brick Exposed Both Sides	3.02	0.33	10.57	0.09	12.85	0.08	22.05	0.05	27.05	0.04	3" Solid 3" Cored
	3.62	0.28	11.17	0.09	13.45	0.07	22.65	0.04	27.65	0.04	
Plain Gypsum Board on 3/4" Furring	3.22	0.31	8.64	0.12	10.35	0.10	17.25	0.06	21.00	0.05	3 1/2" Solid 3 1/2" Cored
	3.92	0.26	9.34	0.11	11.05	0.09	17.95	0.06	21.70	0.05	
Foil Backed Gypsum Board on 3/4" Furring	4.44	0.23	11.99	0.08	14.27	0.07	23.47	0.04	28.47	0.04	3" Solid 3" Cored
	5.04	0.20	12.59	0.08	14.87	0.07	24.07	0.04	29.07	0.03	
1" Fiberglass Board and 1/2" Gypsum Board	4.64	0.22	10.06	0.10	11.77	0.08	18.67	0.05	22.42	0.04	3 1/2" Solid 3 1/2" Cored
	5.34	0.19	10.76	0.09	12.47	0.08	19.37	0.05	23.12	0.04	
1" Polystyrene foam Board and 1/2" Gypsum Board	6.01	0.17	13.56	0.07	15.84	0.06	25.04	0.04	30.04	0.03	3" Solid 3" Cored
	6.61	0.15	14.16	0.07	16.44	0.06	25.64	0.04	30.64	0.03	
1" Polyurethane Board and 1/2" Gypsum Board	6.21	0.16	11.63	0.09	13.34	0.07	20.24	0.05	23.99	0.04	3 1/2" Solid 3 1/2" Cored
	6.91	0.14	12.33	0.08	14.04	0.07	20.94	0.05	24.69	0.04	
1" Polyurethane Board and 1/2" Gypsum Board	7.47	0.13	15.02	0.07	17.30	0.06	26.50	0.04	31.50	0.03	3" Solid 3" Cored
	8.07	0.12	15.62	0.06	17.90	0.06	27.10	0.04	32.10	0.03	
1" Polystyrene foam Board and 1/2" Gypsum Board	7.67	0.13	13.09	0.08	14.80	0.07	21.70	0.05	25.45	0.04	3 1/2" Solid 3 1/2" Cored
	8.37	0.12	13.79	0.07	15.50	0.06	22.40	0.04	26.15	0.04	
1" Polyurethane Board and 1/2" Gypsum Board	8.47	0.12	16.02	0.06	18.30	0.05	27.50	0.04	32.50	0.03	3" Solid 3" Cored
	9.07	0.11	16.62	0.06	18.90	0.05	28.10	0.04	33.10	0.03	
1" Polyurethane Board and 1/2" Gypsum Board	8.67	0.12	14.09	0.07	15.80	0.06	22.70	0.04	26.45	0.04	3 1/2" Solid 3 1/2" Cored
	9.37	0.11	14.79	0.07	16.50	0.06	23.40	0.04	27.15	0.04	
1" Polyurethane Board and 1/2" Gypsum Board	9.72	0.10	17.27	0.06	19.55	0.05	28.75	0.03	33.75	0.03	3" Solid 3" Cored
	10.32	0.10	17.87	0.06	20.15	0.05	29.35	0.03	34.35	0.03	
1" Polyurethane Board and 1/2" Gypsum Board	9.92	0.10	15.34	0.07	17.05	0.06	23.95	0.04	27.70	0.04	3 1/2" Solid 3 1/2" Cored
	10.62	0.09	16.04	0.07	17.75	0.06	24.65	0.04	28.40	0.04	

*Includes surface air films; air to air.

Width of brick = 3" Width of insulating fill = 4"
Width of brick = 3 1/2" Width of insulating fill = 3"

R of cored brick = 0.30 per inch
Cores approximately 20% or more

R of solid brick = 0.20 per inch

TABLE 12a R and U Values* 11" Building Brick Wall; Solid Grouted

Surface Treatment	Solid Grout @90 pcf		Solid Grout @100 pcf		Solid Grout @110 pcf		Solid Grout @120 pcf		Solid Grout @140 pcf		Width and Type of Brick
	R	U	R	U	R	U	R	U	R	U	
Brick Exposed	3.65	0.27	3.45	0.29	3.20	0.31	3.00	0.33	2.60	0.38	3" Solid 3" Cored
	4.25	0.24	4.05	0.25	3.80	0.26	3.60	0.28	3.20	0.31	
Both Sides	3.53	0.28	3.37	0.30	3.17	0.32	3.01	0.33	2.69	0.37	3 1/2" Solid 3 1/2" Cored
	4.23	0.24	4.07	0.25	3.87	0.26	3.71	0.27	3.39	0.29	
Plain Gypsum Board on 3/4" Furring	5.09	0.20	4.87	0.21	4.62	0.22	4.42	0.23	4.02	0.25	3" Solid 3" Cored
	5.67	0.18	5.47	0.18	5.22	0.19	5.02	0.20	4.62	0.22	
Foil Backed Gypsum Board on 3/4" Furring	4.95	0.20	4.79	0.21	4.59	0.22	4.43	0.23	4.11	0.24	3 1/2" Solid 3 1/2" Cored
	5.65	0.18	5.49	0.18	5.29	0.19	5.13	0.19	4.81	0.21	
Brick Exposed	6.64	0.15	6.44	0.16	6.19	0.16	5.99	0.17	5.59	0.18	3" Solid 3" Cored
	7.24	0.14	7.04	0.14	6.79	0.15	6.59	0.15	6.19	0.16	
Both Sides	6.52	0.15	6.36	0.16	6.15	0.16	6.00	0.17	5.68	0.18	3 1/2" Solid 3 1/2" Cored
	7.22	0.14	7.06	0.14	6.86	0.15	6.70	0.15	6.38	0.16	
1" Fiberglass Board and 1/2" Gypsum Board	8.10	0.12	7.90	0.13	7.65	0.13	7.45	0.13	7.05	0.14	3" Solid 3" Cored
	8.70	0.11	8.50	0.12	8.25	0.12	8.05	0.12	7.65	0.13	
Both Sides	7.98	0.13	7.82	0.13	7.62	0.13	7.46	0.13	7.14	0.14	3 1/2" Solid 3 1/2" Cored
	8.68	0.12	8.52	0.12	8.32	0.12	8.16	0.12	7.84	0.13	
1" Polystyrene foam Board and 1/2" Gypsum Board	9.10	0.11	8.90	0.11	8.65	0.12	8.45	0.12	8.05	0.13	3" Solid 3" Cored
	9.70	0.10	9.50	0.11	9.25	0.11	9.05	0.11	8.65	0.12	
Both Sides	8.98	0.11	8.82	0.11	8.62	0.12	8.46	0.12	8.14	0.12	3 1/2" Solid 3 1/2" Cored
	9.68	0.10	9.52	0.11	9.32	0.11	9.16	0.11	8.84	0.11	
1" Poly Urethane Board and 1/2" Gypsum Board	10.35	0.10	10.15	0.10	9.90	0.10	9.70	0.10	9.30	0.11	3" Solid 3" Cored
	10.95	0.09	10.75	0.09	10.50	0.10	10.30	0.10	9.90	0.10	
Both Sides	10.23	0.10	10.07	0.10	9.87	0.10	9.71	0.10	9.39	0.11	3 1/2" Solid 3 1/2" Cored
	10.93	0.09	10.77	0.09	10.57	0.09	10.41	0.10	10.09	0.10	

*Includes surface air films; air to air. Width of brick = 3" Width of Grout = 5" R of cored brick = 0.30 per inch R of solid brick = 0.20 per inch
Width of brick = 3 1/2" Width of Grout = 4" Cores approximately 20% or more

TABLE 12b R and U Values* 11" Building Brick Wall; Cavity Insulation

Surface Treatment	No Insulation Fill (Void)		Vermiculite Fill		Perlite Fill		Urea Form-aldehyde Foam		Polyurethane Foam		Width and Type of Brick
	R	U	R	U	R	U	R	U	R	U	
Brick Exposed	3.02	0.33	12.70	0.08	15.55	0.06	27.05	0.04	33.30	0.03	3" Solid 3" Cored
	3.62	0.28	13.30	0.08	16.15	0.06	27.65	0.04	33.90	0.03	
Both Sides	3.22	0.31	10.77	0.09	13.05	0.08	22.25	0.04	27.25	0.04	3 1/2" Solid 3 1/2" Cored
	3.92	0.26	11.47	0.09	13.75	0.07	22.95	0.04	27.95	0.04	
Plain Gypsum Board on 3/4" Furring	4.44	0.23	14.12	0.07	16.97	0.06	28.47	0.04	34.72	0.03	3" Solid 3" Cored
	5.04	0.20	14.72	0.07	17.57	0.06	29.07	0.03	35.32	0.03	
Foil Backed Gypsum Board on 3/4" Furring	4.64	0.22	12.19	0.08	14.47	0.07	23.67	0.04	28.67	0.03	3 1/2" Solid 3 1/2" Cored
	5.34	0.19	12.89	0.08	15.17	0.07	24.37	0.04	29.37	0.03	
Brick Exposed	6.01	0.17	15.69	0.06	18.54	0.05	30.04	0.03	36.29	0.03	3" Solid 3" Cored
	6.61	0.15	16.29	0.06	19.14	0.05	30.64	0.03	36.89	0.03	
Both Sides	6.21	0.16	13.76	0.07	16.04	0.06	25.24	0.04	30.24	0.03	3 1/2" Solid 3 1/2" Cored
	6.91	0.14	14.46	0.07	16.74	0.06	25.94	0.04	30.94	0.03	
1" Fiberglass Board and 1/2" Gypsum Board	7.47	0.13	17.15	0.06	20.00	0.05	31.50	0.03	37.75	0.03	3" Solid 3" Cored
	8.07	0.12	17.75	0.06	20.60	0.05	32.10	0.03	38.35	0.03	
Both Sides	7.67	0.13	15.22	0.07	17.50	0.06	26.70	0.04	31.70	0.03	3 1/2" Solid 3 1/2" Cored
	8.37	0.12	15.92	0.06	18.20	0.05	27.40	0.04	32.40	0.03	
1" Polystyrene foam Board and 1/2" Gypsum Board	8.47	0.12	18.15	0.06	21.00	0.05	32.50	0.03	38.75	0.03	3" Solid 3" Cored
	9.07	0.11	18.75	0.05	21.60	0.05	33.10	0.03	39.35	0.03	
Both Sides	8.67	0.12	16.22	0.06	18.50	0.05	27.70	0.04	32.70	0.03	3 1/2" Solid 3 1/2" Cored
	9.37	0.11	16.92	0.06	19.20	0.05	28.40	0.04	33.40	0.03	
1" Poly Urethane Board and 1/2" Gypsum Board	9.72	0.10	19.40	0.05	22.25	0.04	33.75	0.03	40.00	0.03	3" Solid 3" Cored
	10.32	0.10	20.00	0.05	22.85	0.04	34.35	0.03	40.60	0.03	
Both Sides	9.92	0.10	17.47	0.06	19.75	0.05	28.95	0.03	33.95	0.03	3 1/2" Solid 3 1/2" Cored
	10.62	0.09	18.17	0.06	20.45	0.05	29.65	0.03	34.65	0.03	

*Includes surface air films; air to air. Width of brick = 3" Width of insulating fill = 5" R of cored brick = 0.30 per inch R of solid brick = 0.20 per inch
Width of brick = 3 1/2" Width of insulating fill = 4" Cores approximately 20% or more

TABLE 13a. R and U Values*, 12" Building Brick Wall; Solid Grouted

Surface Treatment	Solid Grout @90 pcf		Solid Grout @100 pcf		Solid Grout @110 pcf		Solid Grout @120 pcf		Solid Grout @140 pcf		Width and Type of Brick
	R	U	R	U	R	U	R	U	R	U	
Brick Exposed	3.97	0.25	3.73	0.27	3.43	0.29	3.19	0.31	2.71	0.37	3" Solid
	4.57	0.22	4.33	0.23	4.03	0.25	3.79	0.26	3.31	0.30	3" Cored
Both Sides	3.85	0.26	3.65	0.27	3.40	0.29	3.20	0.31	2.91	0.34	3 1/2" Solid
	4.55	0.22	4.35	0.23	4.10	0.24	3.90	0.26	3.61	0.28	3 1/2" Cored
Plain Gypsum Board on 3/4" Furring	5.39	0.19	5.15	0.19	4.85	0.21	4.61	0.22	4.13	0.24	3" Solid
	5.99	0.17	5.75	0.17	5.45	0.18	5.21	0.19	4.73	0.21	3" Cored
Foil Backed Gypsum Board on 3/4" Furring	5.27	0.19	5.07	0.20	4.82	0.21	4.62	0.22	4.33	0.23	3 1/2" Solid
	5.97	0.17	5.77	0.17	5.52	0.18	5.32	0.19	5.03	0.20	3 1/2" Cored
1" Fiberglass Board and 1/2" Gypsum Board	6.96	0.14	6.72	0.15	6.42	0.16	6.18	0.16	5.70	0.18	3" Solid
	7.56	0.13	7.32	0.14	7.02	0.14	6.78	0.15	6.30	0.16	3" Cored
1" Polystyrene-foam Board and 1/2" Gypsum Board	6.84	0.15	6.64	0.15	6.39	0.16	6.19	0.16	5.90	0.17	3 1/2" Solid
	7.54	0.13	7.34	0.14	7.09	0.14	6.89	0.15	6.60	0.15	3 1/2" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	8.42	0.12	8.18	0.12	7.88	0.13	7.64	0.13	7.16	0.14	3" Solid
	9.02	0.11	8.78	0.11	8.48	0.12	8.24	0.12	7.76	0.13	3" Cored
1" Polystyrene-foam Board and 1/2" Gypsum Board	8.30	0.12	8.10	0.12	7.85	0.13	7.65	0.13	7.36	0.14	3 1/2" Solid
	9.00	0.11	8.80	0.11	8.55	0.12	8.35	0.12	8.06	0.12	3 1/2" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	9.42	0.11	9.18	0.11	8.88	0.11	8.64	0.12	8.16	0.12	3" Solid
	10.02	0.10	9.78	0.10	9.48	0.11	9.24	0.11	8.76	0.11	3" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	9.30	0.11	9.10	0.11	8.85	0.11	8.65	0.12	8.36	0.12	3 1/2" Solid
	10.00	0.10	9.80	0.10	9.55	0.10	9.35	0.11	9.06	0.11	3 1/2" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	10.67	0.09	10.43	0.10	10.13	0.10	9.89	0.10	9.41	0.11	3" Solid
	11.27	0.09	11.03	0.09	10.73	0.09	10.49	0.10	10.01	0.10	3" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	10.55	0.09	10.35	0.10	10.10	0.10	9.90	0.10	9.61	0.10	3 1/2" Solid
	11.25	0.09	11.05	0.09	10.80	0.09	10.60	0.09	10.31	0.10	3 1/2" Cored

*Includes surface air films; air to air. Width of brick = 3" Width of Grout = 6" R of cored brick = 0.30 per inch R of solid brick = 0.20 per inch
 Width of brick = 3 1/2" Width of Grout = 5" Cores approximately 20% or more

TABLE 13b. R and U Values*, 12" Building Brick Wall, Cavity Insulation

Surface Treatment	No Insulation Fill (Void)		Vermiculite Fill		Perlite Fill		Urea Form-aldehyde Foam		Polyurethane Foam		Width and Type of Brick
	R	U	R	U	R	U	R	U	R	U	
Brick Exposed	3.02	0.33	14.83	0.07	18.25	0.05	32.05	0.03	39.55	0.03	3" Solid
	3.62	0.28	15.43	0.06	18.85	0.05	32.65	0.03	40.15	0.02	3" Cored
Both Sides	3.22	0.31	12.90	0.08	15.75	0.06	27.25	0.04	32.50	0.03	3 1/2" Solid
	3.92	0.26	13.60	0.07	16.45	0.06	27.95	0.04	34.20	0.03	3 1/2" Cored
Plain Gypsum Board on 3/4" Furring	4.44	0.23	16.25	0.06	19.67	0.05	33.47	0.03	40.97	0.02	3" Solid
	5.04	0.20	16.85	0.06	20.27	0.05	34.07	0.03	41.57	0.02	3" Cored
Foil Backed Gypsum Board on 3/4" Furring	4.64	0.22	14.32	0.07	17.17	0.06	28.67	0.03	34.92	0.03	3 1/2" Solid
	5.34	0.19	15.02	0.07	17.87	0.06	29.37	0.03	35.62	0.03	3 1/2" Cored
1" Fiberglass Board and 1/2" Gypsum Board	6.01	0.17	17.82	0.06	21.24	0.05	35.04	0.03	42.54	0.02	3" Solid
	6.61	0.15	18.42	0.05	21.84	0.05	35.64	0.03	43.14	0.02	3" Cored
1" Polystyrene-foam Board and 1/2" Gypsum Board	6.21	0.16	15.89	0.06	18.74	0.05	30.24	0.03	36.49	0.03	3 1/2" Solid
	6.91	0.14	16.59	0.06	19.44	0.05	30.94	0.03	37.19	0.03	3 1/2" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	7.47	0.13	19.28	0.05	22.70	0.04	36.50	0.03	44.00	0.02	3" Solid
	8.07	0.12	19.88	0.05	23.30	0.04	37.10	0.03	44.60	0.02	3" Cored
1" Polystyrene-foam Board and 1/2" Gypsum Board	7.67	0.13	17.35	0.06	20.20	0.05	31.70	0.03	37.95	0.03	3 1/2" Solid
	8.37	0.12	18.05	0.06	20.90	0.05	32.40	0.03	38.65	0.03	3 1/2" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	8.47	0.12	20.28	0.05	23.70	0.04	37.50	0.03	45.00	0.02	3" Solid
	9.07	0.11	20.88	0.05	24.30	0.04	38.10	0.03	45.60	0.02	3" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	8.67	0.12	18.35	0.05	21.20	0.05	32.70	0.03	38.95	0.03	3 1/2" Solid
	9.37	0.11	19.05	0.05	21.90	0.05	33.40	0.03	39.65	0.03	3 1/2" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	9.72	0.10	21.53	0.05	24.95	0.04	38.75	0.03	46.25	0.02	3" Solid
	10.32	0.10	22.13	0.05	25.55	0.04	39.35	0.03	48.50	0.02	3" Cored
1" Poly Urethane Board and 1/2" Gypsum Board	9.92	0.10	19.60	0.05	22.45	0.04	33.95	0.03	40.20	0.02	3 1/2" Solid
	10.62	0.09	20.30	0.05	23.15	0.04	34.65	0.03	40.90	0.02	3 1/2" Cored

*Includes surface air films; air to air. Width of brick = 3" Width of insulating fill = 6" R of cored brick = 0.30 per inch R of solid brick = 0.20 per inch
 Width of brick = 3 1/2" Width of insulating fill = 5" Cores approximately 20% or more

TABLE 14a. R and U Values*, 4" Clay Block—Solid Grouted**

Surface Treatment	Solid Grout @90 pcf		Solid Grout @100 pcf		Solid Grout @110 pcf		Solid Grout @120 pcf		Solid Grout @140 pcf	
	R	U	R	U	R	U	R	U	R	U
Clay Block Exposed Both Sides	1.75	0.57	1.70	0.59	1.63	0.61	1.57	0.64	1.44	0.69
Plain Gypsum Board on 3/4" Furring	3.17	0.32	3.12	0.32	3.05	0.33	2.95	0.33	2.86	0.35
Foil Backed Gypsum Board on 3/4" Furring	4.74	0.21	4.69	0.21	4.62	0.22	4.56	0.22	4.43	0.23
1" Fiberglass Board and 1/2" Gypsum Board	6.20	0.16	6.15	0.16	6.08	0.16	6.02	0.17	5.89	0.17
1" Polystyrafoam Board and 1/2" Gypsum Board	7.20	0.14	7.15	0.14	7.08	0.14	7.02	0.14	6.89	0.15
1" Poly Urethane Board and 1/2" Gypsum Board	8.45	0.12	8.40	0.12	8.33	0.12	8.27	0.12	8.14	0.12

*Includes surface air films; air to air.

**R of clay block = 0.20 per inch.

TABLE 14b. R and U Values*, 4" Clay Block—Cells Insulated**

Surface Treatment	No Insulation Fill (Void)		Vermiculite Fill		Perlite Fill		Urea Form-aldehyde Foam		Polyurethane Foam	
	R	U	R	U	R	U	R	U	R	U
Clay Block Exposed Both Sides	1.93	0.52	2.67	0.37	2.77	0.36	2.99	0.33	3.05	0.33
Plain Gypsum Board on 3/4" Furring	3.35	0.30	4.09	0.24	4.19	0.24	4.41	0.23	4.47	0.22
Foil Backed Gypsum Board on 3/4" Furring	4.92	0.20	5.66	0.18	5.76	0.17	5.98	0.17	6.04	0.17
1" Fiberglass Board and 1/2" Gypsum Board	6.38	0.16	7.12	0.14	7.22	0.14	7.44	0.13	7.50	0.13
1" Polystyrafoam Board and 1/2" Gypsum Board	7.38	0.14	8.12	0.12	8.22	0.12	8.44	0.12	8.50	0.12
1" Poly Urethane Board and 1/2" Gypsum Board	8.63	0.12	9.37	0.11	9.47	0.11	9.69	0.10	9.75	0.10

*Includes surface air films; air to air.

**R of clay block = 0.20 per inch.

TABLE 15a. R and U Values*, 6" Clay Block—Solid Grouted**

Surface Treatment	Solid Grout @90 pcf		Solid Grout @100 pcf		Solid Grout @110 pcf		Solid Grout @120 pcf		Solid Grout @140 pcf	
	R	U	R	U	R	U	R	U	R	U
Clay Block Exposed Both Sides	2.20	0.45	2.14	0.47	2.05	0.49	1.98	0.50	1.82	0.55
Plain Gypsum Board on 3/4" Furring	3.62	0.28	3.56	0.28	3.47	0.29	3.40	0.29	3.24	0.31
Foil Backed Gypsum Board on 3/4" Furring	5.19	0.19	5.13	0.19	5.04	0.20	4.97	0.20	4.81	0.21
1" Fiberglass Board and 1/2" Gypsum Board	6.65	0.15	6.59	0.15	6.50	0.15	6.43	0.16	6.27	0.16
1" Polystyrafoam Board and 1/2" Gypsum Board	7.65	0.13	7.59	0.13	7.50	0.13	7.43	0.13	7.27	0.14
1" Poly Urethane Board and 1/2" Gypsum Board	8.90	0.11	8.84	0.11	8.75	0.11	8.68	0.12	8.52	0.12

*Includes surface air films; air to air.

**R of clay block = 0.20 per inch.

TABLE 15b. R and U Values*, 6" Clay Block—Cells Insulated**

Surface Treatment	No Insulation Fill (Void)		Vermiculite Fill		Perlite Fill		Urea Form-aldehyde Foam		Polyurethane Foam	
	R	U	R	U	R	U	R	U	R	U
Clay Block Exposed Both Sides	2.23	0.45	3.30	0.30	3.42	0.29	3.66	0.27	3.72	0.27
Plain Gypsum Board on 3/4" Furring	3.65	0.27	4.72	0.21	4.84	0.21	5.08	0.20	5.14	0.19
Foil Backed Gypsum Board on 3/4" Furring	5.22	0.19	6.29	0.16	6.41	0.16	6.65	0.15	6.71	0.15
1" Fiberglass Board and 1/2" Gypsum Board	6.68	0.15	7.75	0.13	7.87	0.13	8.11	0.12	8.17	0.12
1" Polystyrafoam Board and 1/2" Gypsum Board	7.68	0.13	8.75	0.11	8.87	0.11	9.11	0.11	9.17	0.11
1" Poly Urethane Board and 1/2" Gypsum Board	8.93	0.11	10.00	0.10	10.12	0.10	10.36	0.10	10.42	0.10

*Includes surface air films; air to air.

**R of clay block = 0.20 per inch.

TABLE 16a R and U Values* 8" Clay Block; Solid Grouted**

Surface Treatment	Solid Grout @90 pcf		Solid Grout @100 pcf		Solid Grout @110 pcf		Solid Grout @120 pcf		Solid Grout @140 pcf		Length of Clay Block
	R	U	R	U	R	U	R	U	R	U	
Clay Block Exposed Both Sides	2.61	0.38	2.54	0.39	2.43	0.41	2.33	0.43	2.01	0.50	12"
	2.70	0.37	2.60	0.38	2.46	0.41	2.34	0.43	1.96	0.51	16"
Plain Gypsum Board on 3/4" Furring	4.03	0.25	3.96	0.25	3.85	0.26	3.75	0.27	3.43	0.29	12"
	4.12	0.24	4.02	0.25	3.88	0.26	3.76	0.27	3.38	0.30	16"
Foil Backed Gypsum Board on 3/4" Furring	5.60	0.18	5.53	0.18	5.42	0.18	5.32	0.19	5.00	0.20	12"
	5.69	0.18	5.59	0.18	5.45	0.18	5.33	0.19	4.95	0.20	16"
1" Fiberglass Board and 1/2" Gypsum Board	7.06	0.14	6.99	0.14	6.88	0.15	6.78	0.15	6.46	0.15	12"
	7.15	0.14	7.05	0.14	6.91	0.14	6.79	0.15	6.41	0.16	16"
1" Polystyrafoam Board and 1/2" Gypsum Board	8.06	0.12	7.99	0.13	7.88	0.13	7.78	0.13	7.46	0.13	12"
	8.15	0.12	8.05	0.12	7.91	0.13	7.79	0.13	7.41	0.13	16"
1" Poly Urethane Board and 1/2" Gypsum Board	9.31	0.11	9.24	0.11	9.13	0.11	9.03	0.11	8.71	0.11	12"
	9.40	0.11	9.30	0.11	9.16	0.11	9.04	0.11	8.66	0.12	16"

*Includes surface air films; air to air.

**R of clay block = 0.20 per inch.

TABLE 16b R and U Values* 8" Clay Block; Cells Insulated**

Surface Treatment	No Insulation Fill (Void)		Vermiculite Fill		Perlite Fill		Urea Form-aldehyde Foam		Polyurethane Foam		Length of Clay Block
	R	U	R	U	R	U	R	U	R	U	
Clay Block Exposed Both Sides	2.40	0.42	3.67	0.27	3.75	0.27	3.92	0.25	3.97	0.25	12"
	2.37	0.42	4.15	0.24	4.28	0.23	4.54	0.22	4.61	0.22	16"
Plain Gypsum Board on 3/4" Furring	3.82	0.26	5.09	0.20	5.17	0.19	5.34	0.19	5.39	0.19	12"
	3.79	0.26	5.57	0.18	5.70	0.18	5.96	0.17	6.03	0.17	16"
Foil Backed Gypsum Board on 3/4" Furring	5.39	0.19	6.66	0.15	6.74	0.15	6.91	0.14	6.96	0.14	12"
	5.36	0.19	7.14	0.14	7.27	0.14	7.53	0.13	7.60	0.13	16"
1" Fiberglass Board and 1/2" Gypsum Board	6.85	0.15	8.12	0.12	8.20	0.12	8.37	0.12	8.42	0.12	12"
	6.82	0.15	8.60	0.12	8.73	0.11	8.99	0.11	9.06	0.11	16"
1" Polystyrafoam Board and 1/2" Gypsum Board	7.85	0.13	9.12	0.11	9.20	0.11	9.37	0.11	9.42	0.11	12"
	7.82	0.13	9.60	0.10	9.73	0.10	9.99	0.10	10.05	0.10	16"
1" Poly Urethane Board and 1/2" Gypsum Board	9.10	0.11	10.37	0.10	10.45	0.10	10.62	0.09	10.67	0.09	12"
	9.07	0.11	10.85	0.09	10.98	0.09	11.24	0.09	11.31	0.09	16"

*Includes surface air films; air to air.

**R of clay block = 0.20 per inch.

TABLE 17a R and U Values* 6" Concrete Block; Solid Grouted

Surface Treatment	Solid GROUT Density 90 pcf		Solid GROUT Density 100 pcf		Solid GROUT Density 110 pcf		Solid GROUT Density 120 pcf		Solid GROUT Density 140 pcf		Density of Block pcf
	R	U	R	U	R	U	R	U	R	U	
Block Exposed Both Sides	2.62	0.38	2.51	0.40	2.36	0.42	2.23	0.45	1.97	0.51	90
	2.52	0.40	2.41	0.41	2.27	0.44	2.14	0.47	1.88	0.53	100
	2.39	0.42	2.28	0.44	2.14	0.47	2.03	0.49	1.77	0.56	110
	2.27	0.44	2.17	0.46	2.04	0.49	1.93	0.53	1.68	0.59	120
Plain Gypsum Board on 3/4" Furring	2.14	0.47	2.05	0.49	1.93	0.52	1.82	0.55	1.59	0.63	130
	4.04	0.25	3.93	0.25	3.78	0.26	3.65	0.27	3.39	0.30	90
	3.94	0.25	3.83	0.26	3.69	0.27	3.56	0.28	3.30	0.30	100
	3.81	0.26	3.70	0.27	3.56	0.28	3.45	0.29	3.19	0.31	110
Foil Backed Gypsum Board on 3/4" Furring	3.69	0.27	3.59	0.28	3.46	0.29	3.35	0.30	3.10	0.32	120
	3.56	0.28	3.47	0.29	3.35	0.30	3.24	0.31	3.01	0.33	130
	5.61	0.18	5.50	0.18	5.35	0.19	5.22	0.19	4.96	0.20	90
	5.51	0.18	5.40	0.19	5.26	0.19	5.13	0.19	4.87	0.21	100
1" Fiberglass Board and 1/2" Gypsum Board	5.38	0.19	5.27	0.19	5.13	0.19	5.02	0.20	4.76	0.21	110
	5.26	0.19	5.16	0.19	5.03	0.20	4.92	0.20	4.67	0.21	120
	5.13	0.19	5.04	0.19	4.92	0.20	4.81	0.21	4.58	0.22	130
	7.07	0.14	6.96	0.14	6.81	0.15	6.68	0.15	6.42	0.16	90
1" Polystyrene-foam Board and 1/2" Gypsum Board	6.97	0.14	6.86	0.15	6.72	0.15	6.59	0.15	6.33	0.16	100
	6.84	0.15	6.73	0.15	6.59	0.15	6.48	0.15	6.22	0.16	110
	6.72	0.15	6.62	0.15	6.49	0.15	6.38	0.16	6.13	0.16	120
	6.59	0.15	6.50	0.15	6.38	0.16	6.27	0.16	6.04	0.17	130
1" Polyurethane Foam and 1/2" Gypsum Board	8.07	0.12	7.96	0.13	7.81	0.13	7.68	0.13	7.42	0.13	90
	7.97	0.13	7.86	0.13	7.72	0.13	7.59	0.13	7.33	0.14	100
	7.84	0.13	7.73	0.13	7.59	0.13	7.48	0.13	7.22	0.14	110
	7.72	0.13	7.62	0.13	7.49	0.13	7.38	0.14	7.13	0.14	120
1" Polyurethane Foam and 1/2" Gypsum Board	7.59	0.13	7.50	0.13	7.38	0.14	7.27	0.14	7.04	0.14	130
	9.32	0.11	9.21	0.11	9.06	0.11	8.93	0.11	8.67	0.12	90
	9.22	0.11	9.11	0.11	8.97	0.11	8.84	0.11	8.58	0.12	100
	9.09	0.11	8.98	0.11	8.84	0.11	8.73	0.11	8.47	0.12	110
1" Polyurethane Foam and 1/2" Gypsum Board	8.97	0.11	8.87	0.11	8.74	0.11	8.63	0.12	8.38	0.12	120
	8.84	0.11	8.75	0.11	8.63	0.12	8.52	0.12	8.29	0.12	130

*Includes surface air films; air to air.

TABLE 17b R and U Values* 6" Concrete Block; Cells Insulated

Surface Treatment	No Insulation Fill (Void)		Vermiculite Fill		Perlite Fill		Urea Formaldehyde Foam		Polyurethane Foam		Density of Block pcf
	R	U	R	U	R	U	R	U	R	U	
Block Exposed Both Sides	2.48	0.40	5.45	0.18	5.89	0.17	6.91	0.14	7.23	0.14	90
	2.38	0.42	5.15	0.19	5.54	0.18	6.43	0.16	6.70	0.15	100
	2.25	0.44	4.72	0.21	5.04	0.20	5.75	0.17	5.95	0.17	110
	2.14	0.47	4.32	0.23	4.57	0.22	5.13	0.19	5.29	0.19	120
Plain Gypsum Board on 3/4" Furring	2.02	0.50	3.85	0.26	4.04	0.25	4.44	0.23	4.56	0.22	130
	3.90	0.26	6.87	0.15	7.31	0.14	8.33	0.12	8.65	0.12	90
	3.80	0.26	6.57	0.15	6.96	0.14	7.85	0.13	8.12	0.12	100
	3.67	0.27	6.14	0.16	6.44	0.16	7.17	0.14	7.37	0.14	110
Foil Backed Gypsum Board on 3/4" Furring	3.56	0.28	5.74	0.17	5.99	0.17	6.55	0.15	6.71	0.15	120
	3.44	0.29	5.27	0.19	5.46	0.18	5.86	0.17	5.98	0.17	130
	5.47	0.18	8.44	0.12	8.88	0.11	9.99	0.10	10.22	0.10	90
	5.37	0.19	8.14	0.12	8.53	0.12	9.42	0.11	9.69	0.10	100
1" Fiberglass Board and 1/2" Gypsum Board	5.24	0.19	7.71	0.13	8.03	0.12	8.74	0.11	8.94	0.11	110
	5.13	0.19	7.31	0.14	7.56	0.13	8.12	0.12	8.28	0.12	120
	5.01	0.20	6.84	0.15	7.03	0.14	7.43	0.13	7.55	0.13	130
	6.93	0.14	9.90	0.10	10.34	0.10	11.36	0.09	11.68	0.09	90
1" Polystyrene-foam Board and 1/2" Gypsum Board	6.83	0.15	9.60	0.10	9.99	0.10	10.88	0.09	11.15	0.09	100
	6.70	0.15	9.17	0.11	9.49	0.11	10.20	0.10	10.40	0.10	110
	6.59	0.15	8.77	0.11	9.02	0.11	9.58	0.10	9.74	0.10	120
	6.47	0.15	8.30	0.12	8.49	0.12	8.89	0.11	9.01	0.11	130
1" Polyurethane Foam and 1/2" Gypsum Board	7.93	0.13	10.90	0.09	11.34	0.09	12.36	0.08	12.68	0.08	90
	7.83	0.13	10.60	0.09	10.99	0.09	11.88	0.08	12.15	0.08	100
	7.70	0.13	10.17	0.10	10.49	0.10	11.20	0.09	11.40	0.09	110
	7.59	0.13	9.77	0.10	10.02	0.10	10.58	0.09	10.74	0.09	120
1" Polyurethane Foam and 1/2" Gypsum Board	7.47	0.13	9.33	0.11	9.49	0.11	9.89	0.10	10.01	0.10	130
	9.18	0.11	12.15	0.08	12.59	0.08	13.61	0.07	13.93	0.07	90
	9.08	0.11	11.85	0.08	12.24	0.08	13.13	0.08	13.40	0.07	100
	8.89	0.11	11.42	0.09	11.74	0.09	12.45	0.08	12.65	0.08	110
1" Polyurethane Foam and 1/2" Gypsum Board	8.84	0.11	11.02	0.09	11.27	0.09	11.83	0.08	11.99	0.08	120
	8.72	0.11	10.55	0.09	10.74	0.09	11.14	0.09	11.26	0.09	130

*Includes surface air films; air to air.

TABLE 18a. R and U Values*, 8" Concrete Block-Solid Grouted

Surface Treatment	Solid Grout Density 90 pcf		Solid Grout Density 100 pcf		Solid Grout Density 110 pcf		Solid Grout Density 120 pcf		Solid Grout Density 140 pcf		Density of Block pcf
	R	U	R	U	R	U	R	U	R	U	
Block Exposed Both Sides	3.23	0.31	3.07	0.33	2.87	0.35	2.70	0.37	2.34	0.43	90
	3.09	0.32	2.95	0.34	2.75	0.36	2.59	0.39	2.23	0.45	100
	2.92	0.34	2.78	0.36	2.59	0.39	2.43	0.41	2.09	0.48	110
	2.76	0.36	2.63	0.38	2.45	0.41	2.30	0.43	1.97	0.51	120
	2.58	0.39	2.46	0.41	2.30	0.44	2.16	0.46	1.84	0.54	130
Plain Gypsum Board on 3/4" Furring	4.65	0.22	4.49	0.22	4.29	0.23	4.12	0.24	3.76	0.27	90
	4.51	0.22	4.37	0.23	4.17	0.24	4.01	0.25	3.65	0.27	100
	4.34	0.23	4.20	0.24	4.01	0.25	3.85	0.26	3.51	0.29	110
	4.18	0.24	4.05	0.25	3.87	0.26	3.72	0.27	3.39	0.30	120
	4.00	0.25	3.88	0.26	3.72	0.27	3.58	0.28	3.26	0.31	130
Foil Backed Gypsum Board on 3/4" Furring	6.22	0.16	6.06	0.16	5.86	0.17	5.69	0.18	5.33	0.19	90
	6.08	0.16	5.94	0.17	5.74	0.17	5.58	0.18	5.22	0.19	100
	5.91	0.17	5.77	0.17	5.58	0.18	5.42	0.18	5.08	0.20	110
	5.75	0.17	5.62	0.18	5.44	0.18	5.29	0.19	4.96	0.20	120
	5.57	0.18	5.45	0.18	5.29	0.19	5.15	0.19	4.83	0.21	130
1" Fiberglass Board and 1/2" Gypsum Board	7.68	0.13	7.52	0.13	7.32	0.14	7.15	0.14	6.79	0.15	90
	7.54	0.13	7.40	0.14	7.20	0.14	7.04	0.14	6.68	0.15	100
	7.37	0.14	7.23	0.14	7.04	0.14	6.88	0.15	6.54	0.15	110
	7.21	0.14	7.08	0.14	6.90	0.14	6.75	0.15	6.42	0.16	120
	7.03	0.14	6.91	0.14	6.75	0.15	6.61	0.15	6.29	0.16	130
1" Polystyrene foam Board and 1/2" Gypsum Board	8.68	0.12	8.52	0.12	8.32	0.12	8.15	0.12	7.79	0.13	90
	8.54	0.12	8.40	0.12	8.20	0.12	8.04	0.12	7.68	0.13	100
	8.37	0.12	8.23	0.12	8.04	0.12	7.88	0.13	7.54	0.13	110
	8.21	0.12	8.08	0.12	7.90	0.13	7.55	0.13	7.42	0.13	120
	8.03	0.12	7.91	0.13	7.75	0.13	7.61	0.13	7.29	0.14	130
1" Poly Urethane Foam and 1/2" Gypsum Board	9.93	0.10	9.77	0.10	9.57	0.10	9.40	0.11	9.04	0.11	90
	9.79	0.10	9.65	0.10	9.45	0.11	9.29	0.11	8.93	0.11	100
	9.62	0.10	9.48	0.11	9.29	0.11	9.13	0.11	8.79	0.11	110
	9.46	0.11	9.33	0.11	9.15	0.11	9.00	0.11	8.67	0.12	120
	9.28	0.11	9.16	0.11	9.00	0.11	8.86	0.11	8.54	0.12	130

*Includes surface air films; air to air.

TABLE 18b R and U Values* 8" Concrete Block; Cells Insulated

Surface Treatment	No Insulation Fill (Void)		Vermiculite Fill		Perlite Fill		Urea Formaldehyde Foam		Polyurethane Foam		Density of Block pcf
	R	U	R	U	R	U	R	U	R	U	
Block Exposed Both Sides	2.70	0.37	6.63	0.15	7.10	0.14	8.16	0.12	8.47	0.12	90
	2.58	0.39	6.24	0.16	6.65	0.15	7.56	0.13	7.82	0.13	100
	2.43	0.41	5.67	0.18	6.01	0.17	6.72	0.15	6.92	0.14	110
	2.30	0.44	5.15	0.19	5.41	0.18	5.97	0.17	6.12	0.16	120
	2.16	0.46	4.53	0.22	4.73	0.21	5.13	0.19	5.24	0.19	130
Plain Gypsum Board on 3/4" Furring	4.12	0.24	8.05	0.12	8.52	0.12	9.58	0.10	9.89	0.10	90
	4.00	0.25	7.66	0.13	8.07	0.12	8.98	0.11	9.24	0.11	100
	3.85	0.26	7.09	0.14	7.43	0.13	8.14	0.12	8.34	0.12	110
	3.72	0.27	6.57	0.15	6.83	0.15	7.39	0.14	7.54	0.13	120
	3.58	0.28	5.95	0.17	6.15	0.16	6.55	0.15	6.66	0.15	130
Foil Backed Gypsum Board on 3/4" Furring	5.69	0.18	9.62	0.10	10.09	0.10	11.15	0.09	11.46	0.09	90
	5.57	0.18	9.23	0.11	9.64	0.10	10.55	0.09	10.81	0.09	100
	5.42	0.18	8.66	0.12	9.00	0.11	9.71	0.10	9.91	0.10	110
	5.29	0.19	8.14	0.12	8.40	0.12	8.96	0.11	9.11	0.11	120
	5.15	0.19	7.52	0.13	7.72	0.13	8.12	0.12	8.23	0.12	130
1" Fiberglass Board and 1/2" Gypsum Board	7.15	0.14	11.08	0.09	11.55	0.09	12.61	0.08	12.92	0.08	90
	7.03	0.14	10.69	0.09	11.10	0.09	12.01	0.08	12.27	0.08	100
	6.88	0.15	10.12	0.10	10.46	0.10	11.17	0.09	11.37	0.09	110
	6.75	0.15	9.60	0.10	9.86	0.10	10.42	0.10	10.57	0.09	120
	6.61	0.15	8.98	0.11	9.18	0.11	9.58	0.10	9.69	0.10	130
1" Polystyrene foam Board and 1/2" Gypsum Board	8.15	0.12	12.08	0.08	12.55	0.08	13.61	0.07	13.92	0.07	90
	8.03	0.12	11.69	0.09	12.10	0.08	13.01	0.08	13.27	0.08	100
	7.88	0.13	11.12	0.09	11.46	0.09	12.17	0.08	12.37	0.08	110
	7.75	0.13	10.60	0.09	10.86	0.09	11.42	0.09	11.57	0.09	120
	7.61	0.13	9.98	0.10	10.18	0.10	10.58	0.09	10.69	0.09	130
1" Poly Urethane Foam and 1/2" Gypsum Board	9.40	0.11	13.33	0.07	13.80	0.07	14.86	0.07	15.17	0.07	90
	9.28	0.11	12.94	0.08	13.35	0.07	14.26	0.07	14.52	0.07	100
	9.13	0.11	12.37	0.08	12.71	0.08	13.42	0.07	13.62	0.07	110
	9.00	0.11	11.85	0.08	12.11	0.08	12.67	0.08	12.82	0.08	120
	8.86	0.11	11.23	0.09	11.43	0.09	11.83	0.08	11.94	0.08	130

*Includes surface air films; air to air.

TABLE 19a R and U Values* 10" Concrete Block; Solid Grouted

Surface Treatment	Solid Grout Density 90 pcf		Solid Grout Density 100 pcf		Solid Grout Density 110 pcf		Solid Grout Density 120 pcf		Solid Grout Density 140 pcf		Density of Block pcf
	R	U	R	U	R	U	R	U	R	U	
Block Exposed Both Sides	3.81	0.26	3.62	0.28	3.36	0.30	3.14	0.32	2.66	0.38	90
	3.65	0.27	3.47	0.29	3.22	0.31	3.00	0.33	2.54	0.39	100
	3.44	0.29	3.26	0.31	3.03	0.33	2.82	0.35	2.37	0.42	110
	3.24	0.31	3.08	0.33	2.86	0.35	2.67	0.37	2.23	0.45	120
	3.01	0.33	2.87	0.35	2.67	0.37	2.49	0.40	2.09	0.48	130
Plain Gypsum Board on 3/4" Furring	5.23	0.19	5.04	0.20	4.78	0.21	4.56	0.22	4.08	0.24	90
	5.07	0.20	4.89	0.20	4.64	0.22	4.42	0.23	3.96	0.25	100
	4.86	0.21	4.68	0.21	4.45	0.22	4.24	0.24	3.79	0.26	110
	4.66	0.21	4.50	0.22	4.28	0.23	4.09	0.24	3.65	0.27	120
	4.43	0.23	4.29	0.23	4.09	0.24	3.91	0.26	3.51	0.29	130
Foil Backed Gypsum Board on 3/4" Furring	6.81	0.15	6.62	0.15	6.36	0.16	6.14	0.16	5.65	0.18	90
	6.65	0.15	6.46	0.15	6.21	0.16	6.00	0.17	5.53	0.18	100
	6.43	0.16	6.25	0.16	6.02	0.17	5.82	0.17	5.36	0.19	110
	6.23	0.16	6.07	0.16	5.85	0.17	5.66	0.18	5.22	0.19	120
	5.99	0.17	5.85	0.17	5.65	0.18	5.48	0.18	5.08	0.20	130
1" Fiberglass Board and 1/2" Gypsum Board	8.27	0.12	8.08	0.12	7.82	0.13	7.60	0.13	7.11	0.14	90
	8.11	0.12	7.92	0.13	7.67	0.13	7.46	0.13	6.99	0.14	100
	7.89	0.13	7.71	0.13	7.48	0.13	7.28	0.14	6.82	0.15	110
	7.69	0.13	7.53	0.13	7.31	0.14	7.12	0.14	6.68	0.15	120
	7.45	0.13	7.31	0.14	7.11	0.14	6.94	0.14	6.54	0.15	130
1" Polystyrene foam Board and 1/2" Gypsum Board	9.27	0.11	9.08	0.11	8.82	0.11	8.60	0.12	8.11	0.12	90
	9.11	0.11	8.92	0.11	8.67	0.12	8.46	0.12	7.99	0.12	100
	8.89	0.11	8.71	0.11	8.48	0.12	8.28	0.12	7.82	0.13	110
	8.69	0.12	8.53	0.12	8.31	0.12	8.12	0.12	7.68	0.13	120
	8.45	0.12	8.31	0.12	8.11	0.12	7.94	0.13	7.54	0.13	130
1" Poly Urethane Foam and 1/2" Gypsum Board	10.51	0.10	10.32	0.10	10.06	0.10	9.84	0.10	9.36	0.11	90
	10.35	0.10	10.17	0.10	9.92	0.10	9.70	0.10	9.24	0.11	100
	10.14	0.10	9.96	0.10	9.73	0.10	9.52	0.11	9.07	0.11	110
	9.94	0.10	9.78	0.10	9.56	0.10	9.37	0.11	8.93	0.11	120
	9.71	0.10	9.57	0.10	9.37	0.11	9.19	0.11	8.79	0.11	130

*Includes surface air films; air to air.

TABLE 19b R and U Values* 10" Concrete Block; Cells Insulated

Surface Treatment	No Insulation Fill (Void)		Vermiculite Fill		Perlite Fill		Urea Formaldehyde Foam		Polyurethane Foam		Density of Block pcf
	R	U	R	U	R	U	R	U	R	U	
Block Exposed Both Sides	2.87	0.35	7.73	0.13	8.22	0.12	9.27	0.11	9.57	0.10	90
	2.73	0.37	7.25	0.14	7.67	0.13	8.57	0.12	8.82	0.11	100
	2.56	0.39	6.55	0.15	6.89	0.15	7.59	0.13	7.79	0.13	110
	2.41	0.42	5.91	0.17	6.17	0.16	6.72	0.15	6.87	0.15	120
	2.25	0.44	5.16	0.19	5.36	0.19	5.75	0.17	5.85	0.17	130
Plain Gypsum Board on 3/4" Furring	4.29	0.23	9.15	0.11	9.64	0.10	10.69	0.09	10.98	0.09	90
	4.15	0.24	8.67	0.12	9.09	0.11	9.99	0.10	10.24	0.10	100
	3.98	0.25	7.97	0.13	8.31	0.12	9.01	0.11	9.21	0.11	110
	3.83	0.26	7.33	0.14	7.59	0.13	8.14	0.12	8.29	0.12	120
	3.67	0.27	6.58	0.15	6.78	0.15	7.17	0.14	7.27	0.14	130
Foil Backed Gypsum Board on 3/4" Furring	5.86	0.17	10.72	0.09	11.21	0.09	12.26	0.08	12.55	0.08	90
	5.72	0.17	10.24	0.10	10.66	0.09	11.56	0.09	11.81	0.08	100
	5.55	0.18	9.54	0.10	9.88	0.10	10.58	0.09	10.78	0.09	110
	5.40	0.19	8.90	0.11	9.16	0.11	9.71	0.10	9.86	0.10	120
	5.24	0.19	8.15	0.12	8.35	0.12	8.74	0.11	8.84	0.11	130
1" Fiberglass Board and 1/2" Gypsum Board	7.32	0.14	12.18	0.08	12.67	0.08	13.72	0.07	14.01	0.07	90
	7.18	0.14	11.70	0.09	12.12	0.08	13.02	0.08	13.27	0.08	100
	7.01	0.14	11.00	0.09	11.34	0.09	12.04	0.08	12.24	0.08	110
	6.86	0.15	10.36	0.10	10.62	0.09	11.17	0.09	11.32	0.09	120
	6.70	0.15	9.61	0.10	9.81	0.10	10.20	0.10	10.30	0.10	130
1" Polystyrene foam Board and 1/2" Gypsum Board	8.32	0.12	13.18	0.08	13.67	0.07	14.72	0.07	15.01	0.07	90
	8.18	0.12	12.70	0.08	13.12	0.08	14.02	0.07	14.27	0.07	100
	8.01	0.12	12.00	0.08	12.34	0.08	13.04	0.08	13.24	0.08	110
	7.86	0.13	11.36	0.09	11.62	0.09	12.17	0.08	12.32	0.08	120
	7.70	0.13	10.61	0.09	10.81	0.09	11.20	0.09	11.30	0.09	130
1" Poly Urethane Foam and 1/2" Gypsum Board	9.57	0.10	14.43	0.07	14.92	0.07	15.97	0.06	16.26	0.06	90
	9.43	0.11	13.97	0.07	14.37	0.07	15.27	0.07	15.52	0.06	100
	9.26	0.11	13.25	0.06	13.59	0.07	14.29	0.07	14.49	0.07	110
	9.11	0.11	12.61	0.08	12.87	0.08	13.42	0.07	13.57	0.07	120
	8.95	0.11	11.86	0.08	12.06	0.08	12.45	0.08	12.55	0.08	130

*Includes surface air films; air to air.

TABLE 20a. R and U Values*, 12" Concrete Block-Solid Grouted

Surface Treatment	Solid Grout Density 90 pcf		Solid Grout Density 100 pcf		Solid Grout Density 110 pcf		Solid Grout Density 120 pcf		Solid Grout Density 140 pcf		Density of Block pcf
	R	U	R	U	R	U	R	U	R	U	
Block Exposed Both Sides	4.40	0.23	4.17	0.24	3.86	0.26	3.59	0.28	2.98	0.34	90
	4.21	0.24	3.99	0.25	3.69	0.27	3.43	0.29	2.84	0.35	100
	3.95	0.25	3.74	0.27	3.46	0.29	3.21	0.31	2.65	0.38	110
	3.71	0.27	3.52	0.28	3.26	0.31	3.03	0.33	2.50	0.40	120
	3.43	0.29	3.26	0.31	3.03	0.33	2.82	0.35	2.33	0.43	130
Plain Gypsum Board on 3/4" Furring	5.82	0.17	5.59	0.18	5.28	0.19	5.01	0.20	4.40	0.23	90
	5.63	0.18	5.41	0.18	5.11	0.20	4.85	0.21	4.26	0.23	100
	5.37	0.19	5.16	0.19	4.88	0.20	4.63	0.22	4.07	0.25	110
	5.13	0.19	4.94	0.20	4.68	0.21	4.45	0.22	3.92	0.26	120
	4.85	0.21	4.68	0.21	4.45	0.22	4.24	0.24	3.75	0.27	130
Foil Backed Gypsum Board on 3/4" Furring	7.39	0.14	7.16	0.14	6.85	0.15	6.58	0.15	5.97	0.17	90
	7.20	0.14	6.98	0.14	6.68	0.15	6.42	0.16	5.83	0.17	100
	6.94	0.14	6.73	0.15	6.45	0.15	6.20	0.16	5.64	0.18	110
	6.70	0.15	6.51	0.15	6.25	0.16	6.02	0.17	5.49	0.18	120
	6.42	0.16	6.25	0.16	6.02	0.17	5.81	0.17	5.32	0.19	130
1" Fiberglass Board and 1/2" Gypsum Board	8.85	0.11	8.62	0.12	8.31	0.12	8.04	0.12	7.43	0.13	90
	8.66	0.12	8.44	0.12	8.14	0.12	7.88	0.13	7.29	0.14	100
	8.40	0.12	8.19	0.12	7.91	0.13	7.66	0.13	7.10	0.14	110
	8.16	0.12	7.97	0.13	7.71	0.13	7.48	0.13	6.95	0.14	120
	7.88	0.13	7.71	0.13	7.48	0.13	7.27	0.14	6.78	0.15	130
1" Polystyrene foam Board and 1/2" Gypsum Board	9.85	0.10	9.62	0.10	9.31	0.11	9.04	0.11	8.43	0.12	90
	9.66	0.10	9.44	0.11	9.14	0.11	8.88	0.11	8.29	0.12	100
	9.40	0.11	9.19	0.11	8.91	0.11	8.66	0.12	8.10	0.12	110
	9.16	0.11	8.97	0.11	8.71	0.11	8.48	0.12	7.95	0.13	120
	8.88	0.11	8.71	0.11	8.48	0.12	8.27	0.12	7.78	0.13	130
1" Poly Urethane Foam and 1/2" Gypsum Board	11.10	0.09	10.87	0.09	10.56	0.09	10.29	0.10	9.68	0.10	90
	10.91	0.09	10.69	0.09	10.39	0.10	10.13	0.10	9.54	0.10	100
	10.65	0.09	10.44	0.10	10.16	0.10	9.91	0.10	9.35	0.11	110
	10.41	0.10	10.22	0.10	9.96	0.10	9.73	0.10	9.20	0.11	120
	10.13	0.10	9.96	0.10	9.73	0.10	9.52	0.11	9.03	0.11	130

*Includes surface air films; air to air.

TABLE 20b. R and U Values*, 12" Concrete Block ; Cells Insulated

Surface Treatment	No Insulation Fill (Void)		Vermiculite Fill		Perlite Fill		Urea Form-aldehyde Foam		Polyurethane Foam		Density of Block pcf
	R	U	R	U	R	U	R	U	R	U	
Block Exposed Both Sides	2.97	0.34	8.80	0.11	9.31	0.11	10.39	0.10	10.69	0.09	90
	2.83	0.35	8.24	0.12	8.68	0.12	9.60	0.10	9.85	0.10	100
	2.65	0.38	7.43	0.13	7.78	0.13	8.50	0.12	8.69	0.12	110
	2.50	0.40	6.68	0.15	6.96	0.14	7.51	0.13	7.66	0.13	120
	2.34	0.43	5.81	0.17	6.02	0.17	6.40	0.16	6.52	0.15	130
Plain Gypsum Board on 3/4" Furring	4.39	0.23	10.22	0.10	10.73	0.09	11.81	0.08	12.11	0.08	90
	4.25	0.24	9.66	0.10	10.10	0.10	11.02	0.09	11.27	0.09	100
	4.07	0.25	8.85	0.11	9.20	0.11	9.92	0.10	10.11	0.10	110
	3.92	0.25	8.10	0.12	8.38	0.12	8.93	0.11	9.08	0.11	120
	3.76	0.27	7.23	0.14	7.44	0.13	7.83	0.13	7.94	0.13	130
Foil Backed Gypsum Board on 3/4" Furring	5.96	0.17	11.79	0.08	12.30	0.08	13.38	0.07	13.68	0.07	90
	5.82	0.17	11.23	0.09	11.67	0.09	12.59	0.08	12.84	0.08	100
	5.64	0.18	10.42	0.10	10.77	0.09	11.49	0.09	11.68	0.09	110
	5.49	0.18	9.67	0.10	9.95	0.10	10.50	0.10	10.65	0.09	120
	5.33	0.19	8.80	0.11	9.01	0.11	9.40	0.11	9.51	0.11	130
1" Fiberglass Board and 1/2" Gypsum Board	7.42	0.13	13.25	0.08	13.76	0.07	14.84	0.07	15.14	0.07	90
	7.28	0.14	12.69	0.08	13.13	0.08	14.05	0.07	14.30	0.07	100
	7.10	0.14	11.88	0.08	12.23	0.08	12.95	0.08	13.14	0.08	110
	6.95	0.14	11.13	0.09	11.41	0.09	11.95	0.08	12.11	0.08	120
	6.79	0.15	10.26	0.10	10.47	0.10	10.85	0.09	10.97	0.09	130
1" Polystyrene foam Board and 1/2" Gypsum Board	8.42	0.12	14.25	0.07	14.76	0.07	15.84	0.06	16.14	0.06	90
	8.28	0.12	13.69	0.07	14.13	0.07	15.05	0.07	15.30	0.07	100
	8.10	0.12	12.88	0.08	13.23	0.08	13.95	0.07	14.14	0.07	110
	7.95	0.13	12.13	0.08	12.41	0.08	12.96	0.08	13.11	0.08	120
	7.79	0.13	11.26	0.09	11.47	0.09	11.86	0.08	11.97	0.08	130
1" Poly Urethane Foam and 1/2" Gypsum Board	9.67	0.10	15.50	0.06	16.01	0.06	17.09	0.06	17.39	0.06	90
	9.53	0.10	14.94	0.07	15.38	0.07	16.30	0.06	16.55	0.06	100
	9.35	0.11	14.13	0.07	14.48	0.07	15.20	0.07	15.39	0.06	110
	9.20	0.11	13.38	0.07	13.66	0.07	14.21	0.07	14.36	0.07	120
	9.04	0.11	12.51	0.08	12.72	0.08	13.11	0.08	13.22	0.08	130

*Includes surface air films; air to air.

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