Fixture Attachment—Drywall & Plaster Systems

Fixture Attachment Load Table[3]

Fastener Type	Size in.	Size mm	Base Assembly	Allowable Withdrawal Resistance lbf.	Allowable Withdrawal Resistance N[1]	Allowable Shear Resistance lbf.	Allowable Shear Resistance N[1]
toggle bolt or hollow	1/8	3.2	1/2" gypsum base or panels	20	89	40	178
wall fastener	3/16	4.8		30	134	50	223
	1/4	6.4		40	178	60	267
	1/8	3.2	1/2" gypsum base or panels	70	312	100	445
	3/16	4.8	& 25 ga. steel studs	80	356	125	556
	1/4	6.4		155	690	175	779
no. 8 sheet metal screw	—	—	1/2" gypsum base or panels	50	223	80	356
type S bugle head screw			& 25 ga. steel base	60	267	100	445
type S-12 bugle head screw	—	—	1/2" gypsum base or panels & 20 ga. steel insert	85	378	135	601
type S pan head screw	—	—	25 ga. steel to 25 ga. steel	70	312	120	534
two bolts welded to	3/16	4.8	grab bar attachment	175	779	200	890
steel insert	1/4	6.4		200	890	250	1113
bolt welded to 1-1/2"	1/4	6.4	plumber's bracket	200	890	250	1113
channel	5/16	7.9	see drawing on page 140	200	890	300	1334
plug and screw	#6	—	metal or gypsum	10	45	40	178
	#8	—	lath and plaster(2)	20	89	50	222
	#12	—		30	133	60	267
toggle bolt or	1/8	3.2	Metal or gypsum	75	334	50	222
hollow wall fastener	3/16	4.8	lath and plaster(2)	125	556	140	623
	1/4	6.4		175	778	150	667

(1)lbf and Newton for force measurements in American standard and SI units respectively. (2) Plaster having compressive strength of at least 900 psi was used to develop this data. (3) Values for steel system connections are based on standard gage thicknesses of 0.0179 inches for 25 ga., and 0.0329 inches for 20 ga. material. Consult the manufactured of the framing for different thicknesses of materials

Drywall, Plaster & Acoustical Ceiling Installation Tolerances

Standards of acceptability for installation of framing, drywall panels and joint treatment vary in different parts of the United States. Nevertheless, several organizations, including the Metal Lath/Steel Framing Association, Gypsum Association and American Society for Testing and Materials (ASTM), have published recommendations, standards and/or tolerances that may be required for a specific project.

Similarly, references for tolerances and quality in plasterwork and acoustical ceilings are available. References for tolerances and quality in plasterwork have been published by AIA MasterSpec and Diehl's "Manual of Lathing and Plastering." For acoustical ceilings construction, see the appropriate ASTM standards (page 474) or "Code of Practices for Acoustical Ceiling System Installation" in the Ceilings and Interior Systems Construction Association (CISCA) *Ceiling Systems Handbook*.

Contractors and their customers should reach agreement before starting the project regarding which tolerance standards will be used to judge acceptability of the work.

Gypsum Board Screw Usage

The number of fasteners used to install gypsum board varies with framing spacing, screw spacing, panel orientation and panel size. The charts below show estimated screw usage per thousand square feet of gypsum board for both horizontal and vertical board attachment. Allowance should be made for loss.

Horizontal Board Attachment (Screws/1000 ft.²)

Framing Spacing				
	Screw Spacing (Inches)			
4′ x 8′ Board	**8**	**12**	**16**	**24**
8″	2844	2031	1625	1219
12″	1969	1406	1125	844
16″	1531	1094	875	656
24″	1094	781	625	469
4′ x 10′ Board				
8″	2800	2000	1600	1200
12″	1925	1375	1100	825
16″	1488	1063	850	638
24″	1050	750	600	450
4′ x 12′ Board				
8″	2780	1980	1590	1190
12″	1900	1360	1090	820
16″	1460	1050	840	630
24″	1030	730	590	440

Vertical Board Attachment (Screws/1000 ft.²)

Framing Spacing				
	Screw Spacing (Inches)			
4′ x 8′ Board	**8**	**12**	**16**	**24**
8″	2844	1969	1531	1094
12″	2031	1406	1094	781
16″	1625	1125	875	625
24″	1219	844	656	469
4′ x 10′ Board				
8″	2800	1925	1488	1050
12″	2000	1375	1063	750
16″	1600	1100	850	600
24″	1200	825	638	450
4′ x 12′ Board				
8″	2771	1896	1458	1021
12″	1979	1354	1042	729
16″	1583	1083	833	583
24″	1188	813	625	438

Metric Terms & Equivalents

Basic Units

Quantity	Metric (SI) Unit	Symbol	U.S.A. equivalent (nom.)(1)
Length	millimeter	mm	0.039 in.
	meter	m	3.281 ft.
			1.094 yd.
Area	meter	m^2	10.763 $ft.^2$
			1.195 $yd.^2$
Volume	meter	m^3	35.314 $ft.^3$
			1.307 $yd.^3$
Volume (Fluid)	liter	L	33.815 oz.
			0.264 gal.
Mass (Weight)	gram	g	0.035 oz.
	kilogram	kg	2.205 lb.
	ton	t	2,204 lb.
			1.102 tons
Force	newton	N	0.225 lbf.
Temperature (Interval)	kelvin	K	1.8^oF
	degree celsius	^oC	1.8^oF
Temperature	celsius	^oC	$(^oF-32)5/9$
Thermal Resistance		$K \bullet m^2$ / W	$5.679\ ft.^2 \bullet hr \bullet {}^oF$ / Btu
Heat Transfer	watt	W	3.412 Btu/hr.
Pressure	kilopascal	kPa	0.145 $lb./in.^2$ (psi)
	pascal	Pa	20.890 $lb./ft.^2$ (psf)

(1) To convert U.S.A. units to SI units, divide by U.S.A. equivalent

Prefixes (Order of Magnitude)

Prefix	Symbol	Factor
mega	M	$1000000 = 10^{+6}$
kilo	k	$1000 = 10^{+3}$
centi(1)	c	$0.01 = 10^{-2}$
milli	m	$0.001 = 10^{-3}$
micro	μ(mu)	$0.000001 = 10^{-6}$

(1) Limited use only.

Metric Conversion

The table on the following page provides metric equivalents for the dimensions of USG products. “Soft” conversions merely apply a conversion factor that translates feet and inches (according to which the products were manufactured) into metric units; “hard” metric measurements are given for products actually manufactured in metric sizes.

Metric Equivalents

Dimension	Conversion Type[1]	in. or ft.	mm[2]
SHEETROCK Brand Gypsum Panels			
Thickness	Soft	1/4″	6
		3/8″	10
		1/2″	13
		5/8″	16
		3/4″	19
		1″	25
Width	Hard	24″	600
		48″	1200
Length	Hard	8′	2400
		10′	3000
		12′	3600
USG Ceilings Ceiling Tiles			
Thickness	Soft	3/4″	19
		5/8″	16
Width	Hard	24”	600
		48″	1200
Length	Hard	24″	600
		48″	1200
Steel Stud Framing			
Thickness (gauge)[3]	Soft	0.0209 (25)	0.53
		0.0270 (22)	0.69
		0.0329 (20)	0.84
Depth	Soft	1-5/8″	41
		2-1/2″	64
		3-1/2″	89
		3-5/8″	92
		4″	102
Length	Hard	8′	2400
		10′	3000
		12′	3600
Mineral Wool Insulation			
Thickness	Soft	1″	25
		1-1/2″	38
		2″	51
		3″	76
		4″	102
		6″	152
Width	Hard	16″	400
		24″	600
Length	Hard	48″	1200

(1) Conversion Type: “Soft” is metric relabeling with no physical change of dimension; “hard” is a physical change to the metric dimension shown.

(2) Conversion factors: Inches X 25.4 = mm; Feet X 304.8 = mm.

(3) Thickness shown is for standard steel gauge. Consult SSMA documents for information regarding current steel framing designations and base steel thickness. Some drywall steel is thinner than the standard gauge specified.

Notes: Availability: Items above are not stocked in metric lengths or widths. Minimum quantity orders may be required. Lead time should be determined; upcharges may apply. Geographic availability may vary and should be verified for the project location.

Lengths: Shown on SHEETROCK Brand Gypsum Panels and steel stud framing for illustration purposes only.

Framing Spacing: 16″ o.c. converts to 400 mm o.c.; 24″ converts to 600 mm o.c.

Specification Standards

The following listings contain existing standard specifications that apply to USG materials described in this handbook. Where ASTM, local codes, etc., require product variance, consult your USG representative.

Specification Standards

Product	ASTM Designation
Plaster	
RED TOP gypsum plaster	C28
RED TOP wood fiber plaster	C28
STRUCTO-LITE plaster	C28
RED TOP gauging plaster	C28
RED TOP keenes cement	
regular	C61
quick trowel	C61
STRUCTO-GAUGE plaster	C28
STRUCTO-BASE plaster	C28
IMPERIAL plaster	C587
DIAMOND plaster	C587
Gypsum Lathing	
ROCKLATH plaster base 3/8″ & 1/2″	C37
IMPERIAL gypsum base 1/2″ & 5/8″	C588
Lime	
RED TOP and GRAND PRIZE finish limes	C206 type N
IVORY finish lime	C206 type S
Gypsum Panels[1]	
SHEETROCK Brand (plain) (foil-back)	C1396
SHEETROCK Brand sq. edge	C1396
SHEETROCK Brand tap. edge	C1396
SHEETROCK Brand bev. edge	C1396
5/8″ SHEETROCK Brand FIRECODE Core	C1396
SHEETROCK Brand FIRECODE C core	C1396
SHEETROCK Brand ULTRACODE panels	C1396
SHEETROCK Brand gypsum coreboard panels	C1396
SHEETROCK Brand shaft wall liner panels	C1396
SHEETROCK Brand exterior gypsum ceiling board	C1396
SHEETROCK Brand interior gypsum ceiling board	C1396
FIBEROCK Brand Abuse-Resistant panels	C1278
FIBEROCK Brand Abuse-Resistant VHI panels	C1278
FIBEROCK Brand Aqua-Tough Interior panels	C1278
FIBEROCK Brand Tile Backerboard panels	C1278
FIBEROCK Brand Underlayment panels	C1278
Cement Panels	
DUROCK Brand cement board	C1325, C1186 (ANSI A 118.9)
Roof Boards	
SECUROCK Roof board	C1278
Sheathing	
SHEETROCK Brand gypsum sheathing	C1396
FIBEROCK Brand Aqua-Tough Exterior sheathing	C1396
Joint Treatment	
SHEETROCK Brand joint compounds	C475

Specification Standards (continued)

Product	ASTM Designation
Accessories	
Structural steel joists, runners	C645, C955, A568, A653, A792 (alum.-zinc coating), A591 (galv. coating)
25, 22 ga. studs, 25, 22 ga. runners	C645, A568 (steel), A653, A463 (alum. coating), A792 (alum.-zinc coating) A591 (galv. coating)
20 ga. studs, 20 ga. runners	C645, A568 (steel), A653 (galv. coating), A792 (alum.-zinc coating) A591 (galv. coating)
Resilient channels	A568 (steel), A525 (galv. coating), A792 (alum.-zinc coating)
Zinc Control Joints	C841
DUR-A-BEAD corner bead	C1047
SHEETROCK Brand metal trims	C1047
Shaft wall/area separation wall studs	A653 A792 (alum.-zinc coating) A591 (galv. coating)
Drywall screws	C1002, C954
SHEETROCK Brand acoustical sealant	C834
Acoustical Units—Prefabricated	
Cast ceiling panels	E1264
Water-felted ceiling panels	E1264
Ceiling Suspension System	
DONN	C635

(1) ASTMC1396 is the consolidated product standard for gypsum board products. It replaces separate standards C36, C79, C442, C630, C931, and C960. The obsolete standards may stil be used in the building code of some jurisdictions.

ASTM Application Standards

There are also standards for application of many of the products in this Handbook. See the specification standards listed below for more information.

Application Standards

Product	Application Standard
Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels	C636
Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products	C754
Specification for Application and Finishing of Gypsum Board	C840
Specification for Installation of Interior Lathing and Furring	C841
Specification for Application of Interior Gypsum Plaster	C842
Specification for Application of Gypsum Veneer Plaster	C843
Specification for Application of Gypsum Base to Receive Gypsum Veneer Plaster	C844
Specification for Installation of Load-Bearing Steel Studs and Related Accessories	C1007
Specification for Application of Gypsum Sheathing	C1280
Standard Practice for Application of Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels in Areas Requiring Moderate Seismic Restraint	E580

ASTM Standards for Performance Specifications & Test Methods

Performance Specifications and Test Methods

ASTM E84, Standard Test Method for Surface Burning Characteristics of Building Materials, describes the method of establishing Flame Spread and Smoke Developed values.

ASTM E119, Standard Test Methods for Fire Tests of Building Construction and Materials, describes the method of establishing fire-resistant hourly ratings for floor/ceiling and/or roof/ceiling construction assemblies. Underwriters Laboratories, Inc. Fire Resistance Designs are established under this test method.

ASTM E136, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 °C, describes the method for determining the acceptability of a material for use in noncombustible construction.

Fed. Standard 209(E), Clean Room and Work Station Requirements for Controlled Environments, describes the method of establishing Clean Room Classification values. See also ISO 14644-1.

ASTM C367, Standard Test Methods for Strength Properties of Prefabricated Architectural Acoustical Tile or Lay-in Ceiling Panels, describes the method of establishing strength properties of acoustical ceiling tiles and panels.

ASTM E413, Standard Classification for Rating Sound Insulation, provides criteria to establish Ceiling Attenuation Class (CAC) of an acoustical ceiling, similar to STC ratings for walls.

ASTM C423, Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method, describes the method of establishing Noise Reduction Coefficient (NRC) values.

ASTM C473, Standard Test Methods for Physical Testing of Gypsum Panel Products, describes the test methods used to establish the physical cahacteristics of gypsum board and panel products.

ASTM C627, Standard Test method for Evaluating Ceramic Floor Tile installation Systems Using the Robinson Floor Type Tester, provides a standardized procedure for evaluating performance of ceramic floor tile installations under conditions similar to actual specific usages.

ASTM C635, Standard Specification for the Manufacture, Performance and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings, provides classification criteria by load capacity, along with manufacturing tolerance, coating, and inspection criteria for suspension systems.

ASTM C636, Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels, provides for the installation of individual components, such as hangers, carrying channels, main runners, cross runners, splines, assembly devices and ceiling fixtures.

ASTM C645, Standard Specification for Nonstructural Steel Framing Members, covers nonstructural steel framing members in interior construction assemblies

ASTM C754, Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products, describes installation of drywall grid systems.

ASTM C840, Standard Specification for Application and Finishing of Gypsum Board, provides standard methods for hangin and finishing various type of gypsum board products.

ASTM C841, Standard Specification for Installation of Interior Lathing and Furring, is the installation standard for plaster and lath. It applies to plaster and lath ceilings.

ASTM 1177, Standard Specifications for Glass Mat Gypsum Substrate, covers the requirements for glass mat gypsum substrate designed to be used as exterior substrate or sheathing for weather barriers.

ASTM C1396, Standard Specifications for Gypsum Board, is a consolidated standard covering required properties for gypsum board. This standard consolidates and replaces ASTM Standards C36, C79, C442, C630, C931 and C960.

ASTM C1629 / C1629M – 06, Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels, establishes classifications of abuse resistance based on minimum abuse-resistance performance of nondecorated interior gypsum panel products and fiber-reinforced cement panels (abuse-resistant wall panels).

ASTM E1110, Standard Classification for Determination of Articulation Class, provides criteria to establish ceiling Articulation Class (AC) of an acoustical ceiling, generally applies to open plan ceilings in lieu of a NRC rating.

ASTM E1111, Standard Test Method for Measuring the Interzone Attenuation of Ceiling Systems, describes the method of establishing Articulation Class (AC) values.

ASTM E1264, **Standard Classification for Acoustical Ceiling Products** (replaced Federal Spec. SS-S-118 "Sound Controlling Acoustical Tiles and Panels"), provides general classification by type and form, acoustical rating qualification, light reflectance coefficient qualification, and surface burning fire classification of acoustical ceiling tiles and panels for use in specifying a ceiling panel or tile.

ASTM E1414, Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum (Adaptation of the AMA-I-II-1967 "Test Method for Ceiling Sound Transmission Test by Two-Room Method"), describes the method of establishing Ceiling Attenuation Class (CAC) values.

ASTM E1433, **Standard Guide for Selection of Standards on Environmental Acoustics,** is intended to assist acoustical consultants, architects, specifiers and others in understanding ASTM standards in environmental acoustics, as referenced in E413, E1110, E1264, etc.

ASTM E1477, Standard Test Method for Luminous Reflection Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers, describes the method of establishing Light Reflectance (LR) values.

ASTM E492, Standard Test Method for Laboratory Measurement of Impact, covers the laboratory measurement of impact sound transmission of floor-ceiling assemblies using a standardized tapping machine.

Products/UL Designations

The USG products listed below are identified in the UL Fire Resistance Directory by the designations shown.

Products/UL Designations

UL Type Designation	Drywall, Cement Board and Plaster Board Products
R	SHEETROCK Brand Gypsum Panels
SCX	SHEETROCK Brand Gypsum Panels, FIRECODE Core
C	SHEETROCK Brand Gypsum Panels, FIRECODE C Core
SCX	SHEETROCK Brand Gypsum Panels, FIRECODE Core, MOLD TOUGH
C	SHEETROCK Brand Gypsum Panels, FIRECODE C Core, MOLD TOUGH
AR	SHEETROCK Brand Abuse-Resistant Gypsum Panels
SLX	SHEETROCK Brand Gypsum Liner Panels
ULTRACODE	SHEETROCK Brand Gypsum Panels, ULTRACODE Core
SHX	SHEETROCK Brand Gypsum Sheathing, FIRECODE Core
USGX	SECUROCK Brand Glass-Mat Sheathing
IPR	IMPERIAL Brand Plaster Base
IP-X1	IMPERIAL Brand Plaster Base (Type X)
IP-X2	IMPERIAL Brand Plaster Base (Type C)
IP-X3	IMPERIAL Brand Plaster Base, ULTRACODE Core
FRX-G	FIBEROCK Brand Panels
FRX-G	Securock Roof Board
DCB	DUROCK Brand Cement Board
UL Type Designation	**Acoustical Tile and Panel Products**
FC-CB	Gypsum Lay-In Ceiling Panel
AP, AP-1	CAST FIRECODE Ceiling Product (SANDRIFT, *CLIMAPLUS*, FROST, GLACIER, "F" FISSURED Ceiling Panels) WET FELTED FIRECODE Ceiling Product (Fissured, Radar, Radar *CLIMAPLUS* Ceiling Panels)
FR-83	WET FELTED FIRECODE Ceiling Product (Illusion, Aspen, Fissured, Pebbled, Radar *CLIMAPLUS*, Radar *CLIMAPLUS* High NRC/CAC, Touchstone Ceiling Panels)
FR-83	WET FELTED FIRECODE Ceiling Product (Rock Face *CLIMAPLUS*)
FR-4	Radar Ceramic *CLIMAPLUS*
FR-2	WET FELTED FIRECODE Ceiling Product
M	Clean Room *CLIMAPLUS*
FR-X1	X Technology FIRECODE Ceiling Product (ECLIPSE *CLIMAPLUS*)
ASTRO-FR	X Technology FIRECODE Ceiling Product (ASTRO *CLIMAPLUS*)

Permeance—USG Products

Permeance—USG Products

Moisture Vapor Permeance		
Product[1]	**Finish**	**Perms[2,3]**
Gypsum Panels		
3/8″ Sheetrock Brand Regular		35
1/2″ Sheetrock Brand Regular		35
1/2″ Sheetrock Brand Regular	1-coat flat latex paint	30
1/2″ Sheetrock Brand Regular	2-coats flat latex paint	30
1/2″ Sheetrock Brand Regular	2-coats gloss enamel (oil)	1
5/8″ Sheetrock Brand Regular		30
5/8″ Sheetrock Brand Firecode Core		25
1/2″ Sheetrock Brand Firecode C Core		30
5/8″ Sheetrock Brand Firecode C Core		25
1/2″ Sheetrock Brand Mold Tough		30
5/8″ Sheetrock Brand Mold Tough Firecode C Core		30
5/8″ Sheetrock Brand Mold Tough Firecode Core		25
1″ Sheetrock Brand Gypsum Liner Panel		25
Gypsum Base		
1/2″ Imperial Brand		30
1/2″ Imperial Brand	Diamond Brand Veneer Finish	25
1/2″ Imperial Brand	1 Coat Imperial Veneer Finish	5
1/2″ Imperial Brand	Imperial Brand Veneer Basecoat/ Imperial Brand Veneer Finish	8
5/8″ Imperial Brand		25
1/2″ Imperial Brand Firecode C		30
5/8″ Imperial Brand Firecode C		25
3/8″ gypsum base and 1/2″ gypsum plaster, metal lath and 3/4″ gypsum plaster		20
Gypsum Sheathing		
1/2″ Sheetrock Brand Gypsum Sheathing, Regular		25
1/2" Securock Glass-Mat Sheating		33
5/8" Securock Glass-Mat Sheathing Firecode Core		26
1/2″ Fiberock Aqua-Tough Exterior Sheathing		20
5/8″ Fiberock Aqua-Tough Exterior Sheathing		25

(1) All foil-back products, less than 0.06 perms.
(2) All tests comply with ASTM E96 (desiccant method).
(3) Grain per sq. ft. per in. of water vapor pressure difference (grain/ft.^{2}-h.-in.-Hg) (grams/m^2/24 hours).
(4) Comply with Federal Specification CCC-2-408C, Type I
(5) Data based on physical testing. Values greater than 10 were rounded to the nearest 5 perms. Values less than 10 were rounded to the nearest integer.

Thermal Coefficients of Linear Expansion of Common Building Materials

Unrestrained 40º–100ºF. (4º–38ºC)

	Coefficient	
Material	**x10^{-6}in./ (in.ºF)**	**x10^{-6} mm/ (mm.ºC)**
Gypsum Panels and Bases	9.0	16.2
Gypsum Plaster (sanded 100:2, 100:3)	7.0	12.6
Wood Fiber Plaster (sanded 100:1)	8.0	14.4
Structo-Lite Plaster	7.3	13.1
Aluminum, Wrought	12.8	23.0
Steel, Medium	6.7	12.1
Brick, Masonry	3.1	5.6
Cement, Portland	5.9	10.6
Concrete	7.9	14.2
Fir (parallel to fiber)	2.1	3.8
Fir (perpendicular to fiber)	3.2	5.8

Hygrometric Coefficients of Expansion (Unrestrained)

	Inches/Inch/% R.H. (5%–90% R.H.)
Gypsum Panels and Bases	7.2 x 10^{-6}
Gypsum Plaster (sanded 100:2, 100:3)	1.5 x 10^{-6}
Wood Fiber Plaster (sanded 100:1)	2.8 x 10^{-6}
Structo-Lite Plaster	4.8 x 10^{-6}
Vermiculite Gypsum Plaster (sanded 100:2)	3.8 x 10^{-6}

Thermal Resistance Coefficients of Building & Insulating Materials(1)

Thickness			Density		Resistance (R-Value)	
in	mm	Product	lb/ft³	kg/m³	hr.ft.²°F/Btu	K.m²/W
2, 2-1/2	50.8-63.5	Mineral Wool Insulation	2.5	48.1	7.7-9.3	1.23
3, 3-1/2	76.2-88.9	Mineral Wool Insulation	2.5	48.1	11.1-13.0	1.94
5-1/4, 6	133.4-152.4	Mineral Wool Insulation	2.5	48.1	19.4-22.2	3.35
1	25.4	Extruded Polystyrene Insulation	2.2	35.2	5.00	0.88
1/2	12.7	SHEETROCK Brand Gypsum Panels	43	690.2	0.45	0.08
5/8	15.9	SHEETROCK Brand Gypsum Panels	43	690.2	0.56	0.10
1/2	12.7	SHEETROCK Brand Gypsum Panels, FIRECODE C Core	50	800.9	0.45	0.08
5/8	15.9	SHEETROCK Brand Gypsum Panels, FIRECODE and FIRECODE C Core	50	800.9	0.56	0.10
1/2	12.7	IMPERIAL Brand Gypsum Base	43	690.2	0.45	0.08
5/8	15.9	IMPERIAL Brand Gypsum Base	43	690.2	0.56	0.10
1/2	12.7	IMPERIAL Brand Gypsum Base, FIRECODE C Core	50	800.9	0.45	0.08
5/8	15.9	IMPERIAL Brand Gypsum Base, FIRECODE and FIRECODE C Core	50	800.9	0.56	0.10
3/8	9.5	ROCKLATH Plaster Base	50	800.9	0.32	0.06
1/2	12.7	SHEETROCK Brand Gypsum Sheathing	50	800.9	0.45	0.08
1/2	12.7	SECUROCK Glass-Mat Sheathing	48	769	0.5	0.09
5/8	15.9	SECUROCK Glass-Mat Sheathing FIRECODE Core	52	833	0.5	0.09
1/2	12.7	Sanded Plaster	105	1681.9	0.09	0.02
1/2	12.7	Plaster with Lightweight Aggregate	45	720.8	0.32	0.06
4	101.6	Common Brick	120	1922.2	0.80	0.14
1/2	12.7	DUROCK Brand Cement Board	72	1153.3	0.26	0.05
1/2	12.7	DUROCK Brand Exterior Cement Board	72	1153.3	0.26	0.05
4	101.6	Face Brick	130	2082.4	0.44	0.08
1	25.4	Portland Cement Stucco with Sand Aggregate	116	1858.1	0.20	0.04
4	101.6	Concrete Block, 3-oval Core, Cinder Aggregate			1.11	0.20
8	203.2	Concrete Block, 3-oval Core, Cinder Aggregate			1.72	0.30
12	304.8	Concrete Block, 3-oval Core, Cinder Aggregate			1.89	0.33
—	—	Vapor-Permeable Felt			0.06	0.01
—	—	Vapor-Retarder Plastic Film		Negl.	—	
1	25.4	Stone			0.08	0.01
1 x 8	25.4-203.2	Wood Drop Siding			0.79	0.14
3/4 x 10	19.1-254.0	Beveled Wood Siding			1.05	0.18
3/4, 3-1/2	19.1-88.9	Plain Air Space, non-reflective(2)			0.92	0.17
		Wet Felted Ceiling Tiles				
		Cast Ceilings Tiles				
		X Tech Mineral Wool Ceiling Tiles				
		Fiberglass Ceiling Tiles				

(1) All factors based on data from 1981 ASHRAE Handbook of Fundamentals, Factors at 75°, mean temperature. (2) Conditions: heat, flow horizontal; mean temperature 50°F; temperature differential 30°F; E (emissivity) 0 82.