Boise Cascade®
ENGINEERED WOOD PRODUCTS

CANADA Technical Note GE-01

Weights of Building Materials In Pounds Per Square Foot (PSF)

PRODUCT WEIGHTS: The product weights in this document include Boise Cascade Engineered Wood Products as well as additional building materials used for the **floors, walls and roofs** to assist in properly **estimating dead loads** (completed weight of a building measured in pounds per square foot) on joists and beams.

ROOF

Fiberglass shingles	3
Asphalt shingles [1]	2
Wood shingles [1]	3
Spanish clay tile [1]	19
Concrete roof tile	12
Lightweight clay tile	6
Composition Roofing:	
Three-ply ready roofing [1]	1
Four-ply felt and gravel [1]	5.5
Five-ply felt and gravel [1]	6
20 gage metal deck [1]	2.5
18 gage metal deck [1]	3
0.05” thick polyvinyl chloride polymer membrane [4]	0.35
1” fiberglass batt insulation	0.04
1” loose fiberglass insulation	0.04
1” loose cellulose insulation	0.14
1” rigid insulation [1]	1.5
Blowing wool insulation R-38 (16”deep)	0.62
3/16” slate [1]	7
1/4” slate [1]	10
Single-ply (no ballast) [1]	0.7
Single-ply (ballasted)	11
Dry gravel	8.7
2x8 rafters at 16” o.c., fiberglass shingles, 15# felt, 3/8” sheathing	8
Skylight: metal frame w/ 3/8” wire glass [1]	8

FLOOR

1” reinforced regular weight concrete	12.5
1” plain lightweight concrete [1]	8
7/16” cementitious backerboard	3
Ceramic or quarry tile (3/4”) on 1/2” mortar bed [1]	16
Ceramic or quarry tile (3/4”) on 1” mortar bed [1]	23
1” mortar bed	12
1” slate (per mm thickness) [1]	15
3/8” marble tile	6
3/8” ceramic floor tile	4.7
Hardwood flooring, 7/7-in [1]	4
1/4” linoleum or asphalt tile [1]	1

FLOOR cont.

BCI® and AJS® joists at 16” o.c., 3/4” sheathing, 1/2” gypsum board	10
3/4” Gyp-Crete® topping	6.5
Carpet & Pad	2.0
Waterproofing Membranes	
Bituminous, smooth surface [1]	1.5
Liquid applied [1]	1

FRAMING

Solid sawn 2x4 at 16” o.c.	1.1
Solid sawn 2x6 at 16” o.c.	1.7
Solid sawn 2x8 at 16” o.c.	2.2
Solid sawn 2x10 at 16” o.c.	2.9
Solid sawn 2x12 at 16” o.c.	3.5
BCI 4500s, 5000 or 5000s at 12” o.c.	2.0 – 2.9
BCI 4500s, 5000 or 5000s at 16” o.c.	1.5 – 2.2
BCI 4500s, 5000 or 5000s at 19.2” o.c.	1.3 – 2.8
BCI 4500s, 5000 or 5000s at 24” o.c	1.0 – 1.5
BCI 6000 or 6000s at 12” o.c.	2.2 – 3.4
BCI 6000 or 6000s at 16” o.c.	1.7 – 2.6
BCI 6000 or 6000s at19.2” o.c.	1.4 - 2.1
BCI 6000 or 6000s at 24” o.c.	1.1 - 1.7
BCI 60, 60s, 6500 or 6500s at 12” o.c.	2.3 – 3.8
BCI 60, 60s, 6500 or 6500s at 16” o.c.	1.7 – 2.9
BCI 60, 60s, 6000 or 6500s at19.2” o.c.	1.4 – 2.4
BCI 60, 60s, 6500 or 6500s at 24” o.c.	1.2 – 1.9
BCI 90 or 90s at 12” o.c.	3.9 – 4.9
BCI 90 or 90s at 16” o.c.	2.9 – 3.7
BCI 90 or 90s at 19.2” o.c.	2.4 – 3.1
BCI 90 or 90s at 24” o.c.	1.9 – 2.5
AJS 140, 150, 190 or 20 at 12” o.c.	2.2 – 3.3
AJS 140, 150, 190 or 20 at 16” o.c.	1.7 – 2.5
AJS 140, 150, 190 or 20 at 19.2” o.c.	1.4 – 2.1
AJS 140, 150, 190 or 20 at 24” o.c.	1.1 – 1.7
AJS 24, 25 or 30 at 12” o.c.	3.1 – 3.9
AJS 24, 25 or 30 at 16” o.c.	2.3 – 2.9
AJS 24, 25 or 30 at 19.2” o.c.	1.9 – 2.4
AJS 24, 25 or 30 at 24” o.c.	1.6 – 2.0
AJS 24 FMJ at 12” o.c.	3.4 – 4.3
AJS 24 FMJ at 16” o.c.	2.6 – 3.2
AJS 24 FMJ at 19.2” o.c.	2.1 – 2.7
AJS 24 FMJ at 24” o.c.	1.7 – 2.1

Weights of Building Materials in Pounds Per Square Foot (PSF)

CEILING

Acoustical fiber board [1]	1
Suspended steel channel system [1]	2
Suspended wood channel system	2.5
2x8 ceiling joists at 16" o.c., R-49 insulation, 1/2" gypsum board	7
1" Plaster	8
1/2" gypsum board [1]	2.2
5/8" gypsum board [1]	2.75

SHEATHING

11/32" or 3/8" Plywood – OSB[3]	1.0 - 1.2
15/32" or 1/2" Plywood - OSB[3]	1.4 - 1.7
19/32" or 5/8" Plywood - OSB[3]	1.8 - 2.1
23/32" or 3/4" Plywood - OSB[3]	2.2 - 2.5
7/8" Plywood - OSB[3]	2.6 - 2.9
1 1/8" Plywood - OSB[3]	3.3 - 3.6
1/2" cementitious backerboard	3
1-1/2" softwood T & G decking	4.6

WALL

5/16" x 7-1/2" fiber cement lap siding	3
4" clay brick [1]	39
1/4" ceramic wall tile	3.1
1 ¾" Cultured Stone®	12
2x4 studs at 16" o.c., 5/8" gypsum, insulation, 3/8" siding [1]	11
2x6 studs at 16" o.c., 5/8" gypsum, insulation, 3/8" siding [1]	12
Wood or steel studs, 1/2" gypsum board each side [1]	8
Exterior stud walls w/ brick veneer [1]	48
Windows: glass, frame and sash [1]	8
Stucco 10 Log Wall: 10" diameter	26
Glass Block	
4" thick - standard (hollow)	20
3" thick - standard (hollow)	16
4" thick - thick face	30
3" thick - solid glass block	40

MISCELLANEOUS

For additional assistance, we've also included the following list of items for additional sizing consideration.

1" of sand	8
1" of water	5.2
Hay: baled (dry) [2]	15 PCF [2]
Straw: baled (dry) [2]	8 PCF [2]
Saturated soil (garden/landscaped roof)	135 PCF
Grand Piano	1000 LB
Hot Tub (tub & water weight)	150
Acrylic soaking tub – 2 Person – 80 gallon capacity (tub & water weight) [5]	40

Include at least 1.5 psf in all dead load summations to account for incidentals such as plumbing, ducts, light fixtures, etc.

(1) Minimum Design Loads for Buildings and Other Structures, ASCE 7-16, Table C3.1-1a.

(2) National Farm Building Code (Canada) 1995. Value in pounds per cubic foot (PCF), multiply by maximum height to obtain PSF.

(3) Approximate Engineering Dead Load Weight of Wood Structural Panels, APA EWS TT-019, 1998.

(4) Duro-Last® General Specifications, Duro-Last® Roofing, Inc. 2005

(5) Kohler® Specification Sheet K-1160-GLA, 02/25/2018