



Boise Cascade®

ENGINEERED WOOD PRODUCTS

Specifier Guide | Canada West

BCI® Joist



BCI® JOIST SPECIFIER GUIDE | WEST

**Featuring
BCI® 5000, 6000, 6500, 60, and 90 Joists**

bc.com/ewp

Reorder #JOI-CW1000

What You're Made of Matters

When specifying products, choices matter. Finding the right balance of durability, cost-effectiveness, and proven performance is no small task. With Boise Cascade, you're choosing a product that's backed by our commitment to quality and reliability that has earned the trust of specifiers for over 60 years.

The Boise Cascade Difference

- Full line of EWP solutions for residential, multi-family and light commercial projects
- Reliable nationwide distribution network
- More than 60 years of proven performance
- Peace of mind with our limited lifetime warranty
- EWP product support from knowledgeable engineers
- Boise Cascade® suite of software helps design, size and analyze projects
- BC FloorValue® software helps optimize floor performance before the first nail is driven.

BCI® Joist Advantages

- Flat, quiet, and sturdy floors
- Lightweight and easy to handle for quick installation
- Flanges made with Versa-Lam® LVL for strong floors that last
- Long spans allow for cost-efficient floor and roof layouts
- Cut large holes, up to 24" in the web to easily run mechanicals and HVAC
- Can be trimmed on-site without specialized skills or tools
- 20% stronger than comparably sized dimension lumber.

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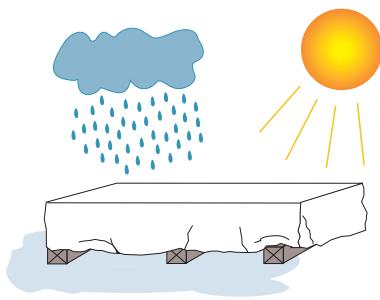
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CCMC Report Number 13300-R

Information in this document is for use only in Canada (Limit States Design). For use in the United States, refer to the BCI® Joist Specifier Guide applicable to your region.

PRODUCT STORAGE AND HANDLING

Protect product from rain and sun.



Keep product level and off the ground.

- BCI® and AJS® joists and Versa-Lam® LVL
 - must be stored, installed and used in accordance with the Boise Cascade EWP Installation Guide, building codes and, to the extent not inconsistent with the Boise Cascade EWP Installation Guide, usual and customary building practices and standards.
 - must be wrapped, covered, and stored off of the ground on stickers at all times prior to installation.
 - are intended only for applications that ensure no exposure to weather or the elements and an environment that is free from moisture from any source, or any pest, organism or substance which degrades or damages wood or glue bonds.

- Unload products carefully and support to reduce excessive bowing. Use forklifts and cranes carefully to avoid damaging product.
- Do not use a visibly damaged product. Contact your local Boise Cascade representative for assistance.
- Failure to correctly store, use, or install BCI® and AJS® joists or Versa-Lam® LVL in accordance with the Boise Cascade EWP Installation Guide will void the limited warranty.



Architectural Specifications

Scope — This work includes the complete furnishing and installation of all BCI® joists as shown on the drawings, herein specified and necessary to complete the work.

Materials — BCI® joists shall be manufactured by Boise Cascade Engineered Wood Products with oriented strand board webs, Versa-Lam® laminated veneer lumber flanges, and waterproof, structural adhesives.

Joist webs shall be rated Structural I Exposure 1 by an agency listed by a model code evaluation service. Strands on the face layers of the web panels shall be oriented vertically in the joist. The web panels shall be glued together to form a continuous web member. The web panels shall be machined to fit into a groove in the center of the wide face of the flange members so as to form a pressed glue joint at that junction.

Design — The BCI® joists shall be sized and detailed to fit the dimensions and loads indicated on the plans. All designs shall be in accordance with allowable values and section properties developed in accordance with ASTM D5055, CSA O86-19, and listed under a CCMC 13300-R product evaluation report.

Drawing — Additional drawings showing layout and detail necessary for determining fit and placement in the building are (are not) to be provided by the supplier.

Fabrication — The BCI® joists and section properties shall be manufactured in a plant evaluated for fabrication by the governing code evaluation service and under the supervision of a third-party inspection agency listed by the corresponding evaluation service.

Storage and Installation — The BCI® joists, if stored prior to erection, shall be stored in a vertical and level position and protected from the weather. They shall be handled with care so they are not damaged.

The BCI® joists are to be installed in accordance with the plans and the Boise Cascade Engineered Wood Products Installation Guide. Temporary construction loads which cause stresses beyond design limits are not permitted. Erection bracing shall be provided to keep the BCI® joists straight and plumb as required and to assure adequate lateral support for the individual BCI® joists and the entire system until the sheathing material has been applied.

Codes — The design shall be based on CSA O86-19 and the National Building Code of Canada 2020 (NBCC). BCI® joists shall be evaluated by the CCMC evaluation service.

Boise Cascade Chain-Of-Custody Certifications

Boise Cascade Engineered Wood Products (EWP) has a proven track record of providing quality wood products and a nationwide building materials distribution network for our customers, helping them to enhance their own businesses.

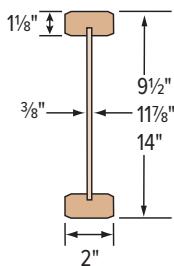
Boise Cascade engineered wood products build better homes with stronger, stiffer floors using only wood purchased in compliance with a number of green building programs.

Take a moment to view our sustainability certification at bc.com/portal/sustainability/certification-audits/ or go to bc.com/sustainability for more information.

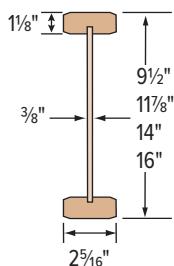
Boise Cascade engineered wood products throughout North America participate in SFI® Fiber Sourcing, SFI Chain of Custody, PEFC® Chain of Custody, and/or FSC® Chain-of-Custody and Controlled Wood certification programs. These programs offer the opportunity for homebuilders to achieve LEED® points in residential and commercial green building programs including LEED for Homes and LEED for New Construction.

Boise Cascade engineered wood products are also NAHB Research Center Green Approved, enabling homebuilders to also obtain green building points through the Green Building Standards.

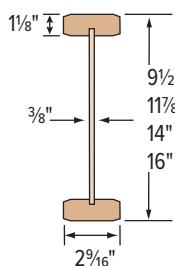
BCI Joist Product Profiles



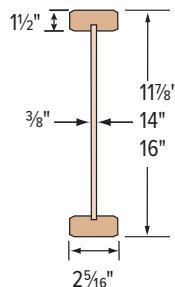
BCI® 5000



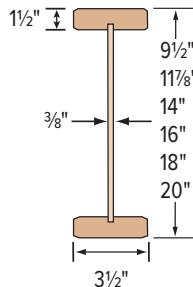
BCI® 6000



BCI® 6500



BCI® 60



BCI® 90

BCI® joists shall be installed in dry-use applications only, per their respective evaluation reports.

Factored Resistances (Limit States Design)

BCI® Joist		Factored Moment Resistance (lbs-ft)	Factored Shear Resistance (lbs)	Joist Stiffness EI (x10 ⁶ lbs-in ²)	Shear Deformation Coefficient, K (x10 ⁶ lbs)	Joist Weight (lbs/ft)	Factored End Bearing Resistance (lbs)		Factored Intermediate Bearing Resistance (lbs)	
							1 1/2" Min. Bearing Length ⁽¹⁾		3 1/2" Min. Bearing Length	
Series	Depth						No Web Stiffeners (lbs)	WITH Web Stiffeners (lbs)	No Web Stiffeners (lbs)	WITH Web Stiffeners (lbs)
5000	9 1/2"	4,130	2,330	160	5.2	2	1,500	1,780	3,310	3,710
	11 7/8"	5,300	2,560	265	6.4	2.3	1,500	2,250	3,550	4,500
	14"	6,280	2,880	390	7.6	2.5	1,500	2,410	3,710	4,810
6000	9 1/2"	5,310	2,490	190	5.2	2.2	1,850	2,170	3,790	4,180
	11 7/8"	6,810	2,640	320	6.5	2.5	1,850	2,250	3,950	4,500
	14"	8,080	3,040	470	7.6	2.7	1,850	2,410	4,100	4,970
	16"	9,220	3,430	635	8.7	2.9	1,850	2,560	4,180	5,290
6500	9 1/2"	5,880	2,490	210	5.3	2.3	1,850	2,170	3,790	4,180
	11 7/8"	7,540	2,640	350	6.5	2.6	1,850	2,250	3,950	4,500
	14"	8,950	3,040	515	7.7	2.9	1,850	2,410	4,100	4,970
	16"	10,210	3,430	690	8.7	3.1	1,850	2,560	4,180	5,290
60	11 7/8"	10,370	2,640	430	6.6	2.9	1,850	2,250	3,950	4,500
	14"	12,370	3,040	635	7.7	3.1	1,850	2,410	4,110	4,970
	16"	14,170	3,430	860	8.7	3.3	1,850	2,560	4,180	5,290
90	9 1/2"	12,250	2,640	380	5.4	3.6	1,850	2,250	4,190	4,970
	11 7/8"	15,870	3,390	645	6.7	3.9	1,970	2,920	4,780	5,840
	14"	18,940	3,710	940	7.8	4.1	1,970	3,080	4,810	6,080
	16"	21,700	4,020	1,275	8.9	4.4	2,050	3,390	4,900	6,310
	18" ⁽²⁾	24,430	4,340	1,660	10.0	4.6	N/A	3,630	N/A	6,550
	20" ⁽²⁾	27,130	4,500	2,100	11.1	4.8	N/A	3,950	N/A	6,790

(1) Minimum bearing length at end support is 1 1/2".

(2) BCI® joists deeper than 16" require web stiffeners at all bearing locations.

NOTES

- All resistance factors, as per CSA O86-19 have been applied.
- BCI® joist deflection under uniform load may be calculated with this equation:

$$\Delta = \frac{5wl^4}{384EI} + \frac{wl^2}{K}$$

Δ = deflection (in)

w = uniform load (lb/in)

l = clear span (in)

EI = bending stiffness (lb-in²)

K = shear deformation coefficient (lb)

Building Code Evaluation Report: CCMC 13300-R

Allowable Uniform Floor Load (PLF)

Design Span	Specified Loads (PLF)	BCI® 5000 Depth			BCI® 6000 Depth				BCI® 6500 Depth				BCI® 60 Depth			BCI® 90 Depth						
		9½"	11½"	14"	9½"	11½"	14"	16"	9½"	11½"	14"	16"	11½"	14"	16"	9½"	11½"	14"	16"	18"	20"	
6'	Unfactored Live Load for L/360	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Unfactored Total Load for L/240	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Factored Total Load	441	473	494	505	526	546	557	505	526	546	557	526	548	557	558	637	641	653	873	905	
8'	Unfactored Live Load for L/360	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Unfactored Total Load for L/240	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Factored Total Load	331	355	371	379	395	410	418	379	395	410	418	395	411	418	419	478	481	490	655	679	
10'	Unfactored Live Load for L/360	203	—	—	235	—	—	—	256	—	—	—	—	—	—	—	—	—	—	—	—	—
	Unfactored Total Load for L/240	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Factored Total Load	264	284	296	303	316	328	334	303	316	328	334	316	328	334	335	382	384	392	524	543	
12'	Unfactored Live Load for L/360	123	196	—	143	232	—	—	157	250	—	—	—	—	—	258	—	—	—	—	—	—
	Unfactored Total Load for L/240	184	—	—	215	—	—	—	235	—	—	—	—	—	—	—	—	—	—	—	—	—
	Factored Total Load	220	236	247	252	263	273	278	252	263	273	278	263	274	278	279	318	320	326	436	452	
14'	Unfactored Live Load for L/360	79	128	184	93	152	217	—	102	164	—	—	197	—	—	172	—	—	—	—	—	—
	Unfactored Total Load for L/240	119	192	—	139	—	—	—	153	—	—	—	—	—	—	—	—	—	—	—	—	—
	Factored Total Load	168	202	212	216	225	234	238	216	225	234	238	225	234	238	239	273	274	280	374	388	
16'	Unfactored Live Load for L/360	54	88	127	63	104	150	199	70	113	163	—	136	195	—	119	194	—	—	—	—	—
	Unfactored Total Load for L/240	81	132	—	95	157	—	—	105	170	—	—	—	—	—	179	—	—	—	—	—	—
	Factored Total Load	129	165	185	165	197	205	209	183	197	205	209	197	205	209	209	239	240	245	327	339	
18'	Unfactored Live Load for L/360		63	91	45	75	108	144	50	81	117	155	98	142	—	86	141	199	—	—	—	—
	Unfactored Total Load for L/240		94	137	68	112	162	—	75	122	176	—	147	—	—	129	212	—	—	—	—	—
	Factored Total Load		130	155	131	168	182	185	145	175	182	185	175	182	185	186	212	213	217	291	301	
20'	Unfactored Live Load for L/360		46	67		55	80	107	60	87	115	73	105	140	64	105	149	—	251	—	—	—
	Unfactored Total Load for L/240		69	101		83	120	160	90	131	—	109	158	—	96	158	—	—	—	—	—	—
	Factored Total Load		106	125		136	161	167	150	164	167	158	164	167	167	191	192	196	262	271		
22'	Unfactored Live Load for L/360			51		42	61	81	45	66	88	55	80	107	49	81	115	153	195	241		
	Unfactored Total Load for L/240			77		63	91	122	68	100	132	83	121	—	73	121	173	—	—	—	—	—
	Factored Total Load			103		112	133	152	124	147	152	143	149	152	152	173	174	178	238	246		
24'	Unfactored Live Load for L/360						47	63		51	68	43	63	84		63	90	120	154	191		
	Unfactored Total Load for L/240						71	95		77	103	65	94	126		95	135	—	—	—		
	Factored Total Load						112	128		124	139	131	137	139		159	160	163	218	226		
26'	Unfactored Live Load for L/360							50		41	54		50	67		50	72	96	123	154		
	Unfactored Total Load for L/240							75		61	82		75	100		75	108	144	185	—		
	Factored Total Load							109		105	120		126	128		147	148	150	201	208		
28'	Unfactored Live Load for L/360							40		44		40	54		40	58	78	100	125			
	Unfactored Total Load for L/240							61		66		60	81		61	87	117	150	188			
	Factored Total Load							94		104		117	119		136	137	140	187	194			
30'	Unfactored Live Load for L/360												44			48	64	82	103			
	Unfactored Total Load for L/240												66			72	96	124	155			
	Factored Total Load												111			128	130	174	181			

NOTES

- Loading conditions:
 - Unfactored live load values are limited by deflection equal to L/360. For deflections limited to L/480, multiply live load values by 0.75 (to reduce vibration).
 - Unfactored total load values are limited by deflection equal to L/240.
 - Factored total load values are limited by shear, end/interior reactions or bending moment. Values assume minimum bearing lengths without web stiffeners. 18" to 24" joists require web stiffeners.
 - All three loading cases must be checked. Where a live load value is not shown, the factored total load value will control.
 - For 2-ply, double all loading values (unfactored live load, unfactored total load, or factored total load).

► Table values:

- represent the most restrictive of simple or continuous span beams applications and assume an uniform loading. Span is measured center-to-center of the supports.
- Analyse continuous span beams with the BC Calc® software if the length of any span is less than half the length of an adjacent span.
- assume that lateral support is provided at each support and continuously along the compression edge of the beam.
- do not consider composite action from gluing and nailing floor sheathing.
- This table was designed to apply to a broad range of applications. It may be possible to exceed these limitations by analysing a specific application with the BC Calc® software.

Actual Deflection (in inches) Based on Span and Limit

Deflection Limit	Span												
	6'	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'
L/480	0.15"	0.20"	0.25"	0.30"	0.35"	0.40"	0.45"	0.50"	0.55"	0.60"	0.65"	0.70"	0.75"
L/360	0.20"	0.27"	0.33"	0.40"	0.47"	0.53"	0.60"	0.67"	0.73"	0.80"	0.87"	0.93"	1.00"
L/240	0.30"	0.40"	0.50"	0.60"	0.70"	0.80"	0.90"	1.00	1.10"	1.20"	1.30"	1.40"	1.50"

Residential Floor Span Tables (40 PSF Live Load, 15 PSF Dead Load)

About Floor Performance

Homeowner's expectations and opinions vary greatly due to the subjective nature of rating a new floor. Communication with the ultimate end user to determine their expectation is critical. **Vibration** is usually the cause of most complaints. Installing lateral bridging may help; however, squeaks may occur if not installed properly. Spacing the joists closer together does little to affect the perception of the floor's performance. The

most common methods used to increase the performance and reduce vibration of wood floor systems is to **increase the joist depth, limit joist deflections, glue and screw a thicker tongue-and-groove subfloor, install the joists vertically plumb with level-bearing supports, and install a direct-attached ceiling to the bottom flange of the joists.**

5/8" Plywood Subfloor — Glued and Nailed

BCI® Joist		Simple Span								Continuous Span							
		No Gypsum Ceiling Attached				1/2" Gypsum Ceiling Attached				No Gypsum Ceiling Attached				1/2" Gypsum Ceiling Attached			
Series	Depth	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
5000	9 1/2"	15'-2"	14'-4"	13'-11"	N/A	15'-8"	14'-10"	14'-4"	N/A	15'-10"	15'-0"	14'-6"	N/A	16'-4"	15'-6"	15'-0"	N/A
	11 7/8"	17'-0"	16'-1"	15'-6"	N/A	17'-7"	16'-7"	16'-1"	N/A	17'-9"	16'-9"	16'-2"	N/A	18'-5"	17'-4"	16'-9"	N/A
	14"	18'-7"	17'-5"	16'-10"	N/A	19'-4"	18'-0"	17'-5"	N/A	19'-7"	18'-3"	17'-7"	N/A	20'-6"	19'-1"	18'-3"	N/A
6000	9 1/2"	15'-8"	14'-10"	14'-4"	N/A	16'-2"	15'-3"	14'-9"	N/A	16'-5"	15'-6"	14'-11"	N/A	16'-10"	15'-11"	15'-5"	N/A
	11 7/8"	17'-7"	16'-7"	16'-0"	N/A	18'-1"	17'-1"	16'-6"	N/A	18'-5"	17'-3"	16'-8"	N/A	19'-1"	17'-10"	17'-3"	N/A
	14"	19'-4"	18'-0"	17'-4"	N/A	20'-1"	18'-8"	17'-11"	N/A	20'-5"	18'-11"	18'-2"	N/A	21'-3"	19'-9"	18'-11"	N/A
	16"	21'-0"	19'-6"	18'-8"	N/A	21'-10"	20'-4"	19'-5"	N/A	22'-3"	20'-7"	19'-9"	N/A	23'-1"	21'-6"	20'-7"	N/A
6500	9 1/2"	16'-0"	15'-1"	14'-7"	N/A	16'-5"	15'-6"	14'-11"	N/A	16'-8"	15'-9"	15'-2"	N/A	17'-1"	16'-2"	15'-8"	N/A
	11 7/8"	17'-10"	16'-10"	16'-3"	N/A	18'-5"	17'-4"	16'-9"	N/A	18'-9"	17'-7"	17'-0"	N/A	19'-6"	18'-1"	17'-6"	N/A
	14"	19'-9"	18'-3"	17'-8"	N/A	20'-5"	19'-0"	18'-2"	N/A	20'-10"	19'-4"	18'-6"	N/A	21'-7"	20'-1"	19'-3"	N/A
	16"	21'-5"	19'-10"	19'-0"	N/A	22'-3"	20'-8"	19'-9"	N/A	22'-8"	21'-0"	20'-1"	N/A	23'-6"	21'-10"	20'-11"	N/A
60	11 7/8"	18'-7"	17'-5"	16'-10"	N/A	19'-2"	17'-10"	17'-3"	N/A	19'-8"	18'-3"	17'-7"	N/A	20'-4"	18'-10"	18'-1"	N/A
	14"	20'-8"	19'-2"	18'-4"	N/A	21'-4"	19'-10"	18'-11"	N/A	21'-10"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-1"	N/A
	16"	22'-6"	20'-10"	19'-11"	N/A	23'-3"	21'-7"	20'-8"	N/A	23'-9"	22'-0"	21'-1"	N/A	24'-7"	22'-10"	21'-10"	N/A
90	9 1/2"	17'-9"	16'-8"	16'-1"	N/A	18'-1"	17'-0"	16'-5"	N/A	18'-8"	17'-5"	16'-10"	N/A	19'-2"	17'-10"	17'-2"	N/A
	11 7/8"	20'-5"	18'-10"	18'-0"	N/A	20'-11"	19'-4"	18'-6"	N/A	21'-7"	19'-11"	19'-0"	N/A	22'-2"	20'-6"	19'-7"	N/A
	14"	22'-8"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-7"	N/A	24'-0"	22'-2"	21'-1"	N/A	24'-8"	22'-9"	21'-9"	N/A
	16"	24'-8"	22'-9"	21'-8"	N/A	25'-4"	23'-5"	22'-4"	N/A	26'-1"	24'-1"	23'-0"	N/A	26'-10"	24'-10"	23'-8"	N/A
	18"	26'-7"	24'-6"	23'-4"	N/A	27'-4"	25'-3"	24'-1"	N/A	28'-1"	25'-11"	24'-9"	N/A	28'-11"	26'-9"	25'-6"	N/A
90	20"	28'-4"	26'-2"	24'-11"	N/A	29'-2"	27'-0"	25'-9"	N/A	30'-0"	27'-8"	26'-5"	N/A	30'-11"	28'-7"	27'-3"	N/A

3/4" Plywood Subfloor — Glued and Nailed

BCI® Joist		Simple Span								Continuous Span							
		No Gypsum Ceiling Attached				1/2" Gypsum Ceiling Attached				No Gypsum Ceiling Attached				1/2" Gypsum Ceiling Attached			
Series	Depth	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
5000	9 1/2"	16'-2"	15'-3"	14'-8"	13'-11"	16'-7"	15'-8"	15'-0"	13'-11"	16'-10"	15'-10"	15'-4"	14'-3"	17'-4"	16'-5"	15'-10"	14'-3"
	11 7/8"	18'-0"	17'-0"	16'-5"	15'-9"	18'-8"	17'-7"	16'-11"	16'-3"	19'-0"	17'-9"	17'-1"	16'-2"	19'-9"	18'-5"	17'-8"	16'-2"
	14"	20'-0"	18'-7"	17'-9"	17'-1"	20'-9"	19'-4"	18'-6"	17'-8"	21'-1"	19'-7"	18'-8"	17'-7"	21'-11"	20'-5"	19'-7"	17'-7"
6000	9 1/2"	16'-8"	15'-8"	15'-2"	14'-6"	17'-1"	16'-2"	15'-7"	14'-9"	17'-4"	16'-5"	15'-9"	15'-2"	17'-10"	16'-10"	16'-3"	15'-7"
	11 7/8"	18'-9"	17'-6"	16'-11"	16'-2"	19'-4"	18'-0"	17'-5"	16'-8"	19'-9"	18'-4"	17'-8"	16'-11"	20'-6"	19'-1"	18'-2"	17'-5"
	14"	20'-9"	19'-3"	18'-4"	17'-7"	21'-6"	20'-0"	19'-1"	18'-1"	21'-11"	20'-4"	19'-5"	18'-5"	22'-9"	21'-2"	20'-2"	19'-2"
	16"	22'-7"	20'-11"	20'-0"	18'-11"	23'-5"	21'-9"	20'-9"	19'-9"	23'-10"	22'-1"	21'-1"	20'-0"	24'-9"	23'-0"	22'-0"	20'-11"
6500	9 1/2"	16'-11"	15'-11"	15'-4"	14'-9"	17'-4"	16'-4"	15'-9"	15'-2"	17'-8"	16'-8"	16'-0"	15'-5"	18'-1"	17'-1"	16'-6"	15'-10"
	11 7/8"	19'-1"	17'-10"	17'-2"	16'-5"	19'-9"	18'-4"	17'-8"	16'-11"	20'-2"	18'-9"	17'-11"	17'-2"	20'-10"	19'-5"	18'-6"	17'-8"
	14"	21'-2"	19'-8"	18'-9"	17'-10"	21'-11"	20'-4"	19'-5"	18'-5"	22'-5"	20'-9"	19'-9"	18'-9"	23'-2"	21'-6"	20'-7"	19'-6"
	16"	23'-0"	21'-4"	20'-4"	19'-4"	23'-10"	22'-2"	21'-2"	20'-1"	24'-4"	22'-7"	21'-6"	20'-5"	25'-2"	23'-5"	22'-4"	21'-2"
60	11 7/8"	20'-0"	18'-6"	17'-9"	17'-0"	20'-7"	19'-1"	18'-2"	17'-5"	21'-1"	19'-7"	18'-8"	17'-9"	21'-9"	20'-2"	19'-3"	18'-3"
	14"	22'-2"	20'-6"	19'-7"	18'-7"	22'-10"	21'-2"	20'-2"	19'-2"	23'-5"	21'-8"	20'-8"	19'-7"	24'-2"	22'-5"	21'-5"	20'-3"
	16"	24'-2"	22'-4"	21'-3"	20'-2"	24'-10"	23'-1"	22'-0"	20'-10"	25'-6"	23'-7"	22'-6"	21'-2"	26'-3"	24'-5"	23'-3"	21'-2"
90	9 1/2"	18'-11"	17'-8"	17'-0"	16'-3"	19'-4"	18'-0"	17'-3"	16'-7"	20'-0"	18'-6"	17'-9"	17'-0"	20'-6"	19'-0"	18'-1"	17'-4"
	11 7/8"	21'-10"	20'-2"	19'-3"	18'-2"	22'-4"	20'-8"	19'-8"	18'-8"	23'-1"	21'-4"	20'-4"	19'-3"	23'-8"	21'-11"	20'-10"	19'-9"
	14"	24'-3"	22'-5"	21'-4"	20'-2"	24'-10"	23'-0"	21'-10"	20'-8"	25'-8"	23'-8"	22'-7"	21'-4"	26'-3"	24'-4"	23'-2"	21'-11"
	16"	26'-5"	24'-4"	23'-2"	21'-11"	27'-0"	25'-0"	23'-10"	22'-6"	27'-11"	25'-9"	24'-6"	23'-2"	28'-7"	26'-5"	25'-2"	23'-10"
	18"	28'-5"	26'-3"	24'-11"	23'-6"	29'-1"	26'-11"	25'-8"	24'-3"	30'-1"	27'-9"	26'-4"	24'-11"	30'-9"	28'-6"	27'-2"	25'-8"
90	20"	30'-4"	28'-0"	26'-7"	25'-1"	31'-1"	28'-9"	27'-5"	25'-11"	32'-1"	29'-7"	28'-2"	26'-7"	33'-0"	30'-5"	29'-0"	27'-5"

NOTES FOR TABLES ON PAGES 6 AND 7

- Tables are based on:
 - deflection limits of L/240 total load and L/360 live load.
 - uniform loads of 40 PSF live load and 15 PSF dead load (for standard term load duration).
 - minimum end bearing length is 1 1/2"; minimum interior bearing length is 3 1/2".
 - clear spans between supports.
- Joists deeper than 16" require web stiffeners at all bearing locations

- Spans shown are in accordance with NBCC2020.
- Tabulated values shown assume a glued and nailed subfloor and are in compliance with the CCMC Vibration Criteria "Concluding" Report (dated September 4, 1997), in accordance with CSA O86-19 Clause A.5.4.5.2 b) provision.
- Lateral support must be provided for the compression edge and also at the bearings to prevent lateral displacement or rotation.

(continued on page 7)

Residential Floor Span Tables (40 PSF Live Load, 15 PSF Dead Load)

19/32" Oriented Strand Board (OSB) Subfloor — Glued and Nailed

BCI® Joist		Simple Span								Continuous Span							
		No Gypsum Ceiling Attached				1/2" Gypsum Ceiling Attached				No Gypsum Ceiling Attached				1/2" Gypsum Ceiling Attached			
Series	Depth	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
5000	9 1/2"	15'-5"	14'-6"	14'-1"	N/A	15'-11"	15'-0"	14'-6"	N/A	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-8"	15'-2"	N/A
	11 1/8"	17'-3"	16'-3"	15'-8"	N/A	17'-9"	16'-10"	16'-3"	N/A	18'-0"	17'-0"	16'-5"	N/A	18'-8"	17'-7"	17'-0"	N/A
	14"	18'-10"	17'-8"	17'-1"	N/A	19'-8"	18'-4"	17'-8"	N/A	19'-11"	18'-6"	17'-10"	N/A	20'-9"	19'-4"	18'-7"	N/A
6000	9 1/2"	15'-11"	15'-0"	14'-6"	N/A	16'-4"	15'-5"	14'-11"	N/A	16'-7"	15'-8"	15'-2"	N/A	17'-1"	16'-2"	15'-7"	N/A
	11 1/8"	17'-9"	16'-9"	16'-2"	N/A	18'-4"	17'-3"	16'-8"	N/A	18'-8"	17'-6"	16'-11"	N/A	19'-5"	18'-1"	17'-5"	N/A
	14"	19'-7"	18'-2"	17'-7"	N/A	20'-4"	18'-11"	18'-2"	N/A	20'-9"	19'-3"	18'-5"	N/A	21'-6"	20'-0"	19'-2"	N/A
	16"	21'-4"	19'-9"	18'-11"	N/A	22'-2"	20'-7"	19'-9"	N/A	22'-7"	20'-11"	20'-0"	N/A	23'-5"	21'-10"	20'-11"	N/A
6500	9 1/2"	16'-2"	15'-3"	14'-9"	N/A	16'-7"	15'-8"	15'-2"	N/A	16'-10"	15'-11"	15'-4"	N/A	17'-4"	16'-4"	15'-10"	N/A
	11 1/8"	18'-1"	17'-0"	16'-5"	N/A	18'-8"	17'-6"	16'-11"	N/A	19'-1"	17'-9"	17'-2"	N/A	19'-9"	18'-4"	17'-8"	N/A
	14"	20'-0"	18'-7"	17'-10"	N/A	20'-9"	19'-3"	18'-5"	N/A	21'-2"	19'-7"	18'-9"	N/A	21'-11"	20'-5"	19'-6"	N/A
	16"	21'-9"	20'-2"	19'-4"	N/A	22'-7"	21'-0"	20'-1"	N/A	23'-0"	21'-4"	20'-5"	N/A	23'-10"	22'-2"	21'-3"	N/A
60	11 1/8"	18'-10"	17'-7"	17'-0"	N/A	19'-6"	18'-1"	17'-5"	N/A	19'-11"	18'-6"	17'-9"	N/A	20'-7"	19'-1"	18'-3"	N/A
	14"	20'-11"	19'-5"	18'-7"	N/A	21'-8"	20'-1"	19'-2"	N/A	22'-2"	20'-6"	19'-7"	N/A	22'-11"	21'-3"	20'-4"	N/A
	16"	22'-10"	21'-1"	20'-2"	N/A	23'-7"	21'-10"	20'-11"	N/A	24'-1"	22'-4"	21'-4"	N/A	24'-11"	23'-2"	22'-2"	N/A
90	9 1/2"	17'-11"	16'-10"	16'-3"	N/A	18'-4"	17'-3"	16'-7"	N/A	18'-11"	17'-7"	17'-0"	N/A	19'-5"	18'-0"	17'-4"	N/A
	11 1/8"	20'-8"	19'-1"	18'-3"	N/A	21'-3"	19'-7"	18'-9"	N/A	21'-10"	20'-2"	19'-3"	N/A	22'-5"	20'-9"	19'-10"	N/A
	14"	22'-11"	21'-2"	20'-2"	N/A	23'-7"	21'-10"	20'-10"	N/A	24'-3"	22'-5"	21'-5"	N/A	24'-11"	23'-1"	22'-0"	N/A
	16"	24'-11"	23'-0"	22'-0"	N/A	25'-8"	23'-9"	22'-7"	N/A	26'-5"	24'-4"	23'-3"	N/A	27'-2"	25'-1"	24'-0"	N/A
	18"	26'-11"	24'-9"	23'-8"	N/A	27'-8"	25'-7"	24'-4"	N/A	28'-5"	26'-3"	25'-0"	N/A	29'-3"	27'-1"	25'-10"	N/A
	20"	28'-9"	26'-6"	25'-3"	N/A	29'-6"	27'-4"	26'-0"	N/A	30'-5"	28'-0"	26'-9"	N/A	31'-3"	28'-11"	27'-7"	N/A

23/32" Oriented Strand Board (OSB) Subfloor — Glued and Nailed

BCI® Joist		Simple Span								Continuous Span							
		No Gypsum Ceiling Attached				1/2" Gypsum Ceiling Attached				No Gypsum Ceiling Attached				1/2" Gypsum Ceiling Attached			
Series	Depth	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
5000	9 1/2"	16'-3"	15'-4"	14'-9"	13'-11"	16'-8"	15'-9"	15'-0"	13'-11"	16'-11"	16'-0"	15'-5"	14'-3"	17'-5"	16'-6"	15'-11"	14'-3"
	11 1/8"	18'-1"	17'-1"	16'-6"	15'-10"	18'-10"	17'-8"	17'-0"	16'-4"	19'-2"	17'-10"	17'-2"	16'-2"	19'-11"	18'-6"	17'-9"	16'-2"
	14"	20'-1"	18'-8"	17'-11"	17'-2"	20'-11"	19'-6"	18'-7"	17'-9"	21'-3"	19'-9"	18'-10"	17'-7"	22'-1"	20'-7"	19'-8"	17'-7"
6000	9 1/2"	16'-9"	15'-9"	15'-2"	14'-7"	17'-2"	16'-3"	15'-8"	14'-9"	17'-6"	16'-6"	15'-10"	15'-3"	17'-11"	16'-11"	16'-4"	15'-8"
	11 1/8"	18'-10"	17'-7"	17'-0"	16'-3"	19'-6"	18'-1"	17'-6"	16'-9"	19'-11"	18'-6"	17'-9"	17'-0"	20'-7"	19'-2"	18'-4"	17'-6"
	14"	20'-11"	19'-5"	18'-6"	17'-8"	21'-8"	20'-1"	19'-3"	18'-3"	22'-1"	20'-6"	19'-6"	18'-6"	22'-10"	21'-3"	20'-4"	19'-4"
	16"	22'-9"	21'-1"	20'-1"	19'-1"	23'-6"	21'-11"	20'-11"	19'-10"	24'-0"	22'-3"	21'-3"	20'-2"	24'-11"	23'-2"	22'-2"	21'-0"
6500	9 1/2"	17'-0"	16'-0"	15'-5"	14'-10"	17'-5"	16'-5"	15'-10"	15'-2"	17'-9"	16'-9"	16'-1"	15'-5"	18'-3"	17'-2"	16'-7"	15'-11"
	11 1/8"	19'-3"	17'-11"	17'-3"	16'-6"	19'-10"	18'-5"	17'-9"	17'-0"	20'-4"	18'-10"	18'-0"	17'-3"	21'-0"	19'-6"	18'-8"	17'-9"
	14"	21'-4"	19'-9"	18'-10"	17'-11"	22'-0"	20'-6"	19'-7"	18'-6"	22'-6"	20'-11"	19'-11"	18'-11"	23'-3"	21'-8"	20'-8"	19'-7"
	16"	23'-2"	21'-6"	20'-6"	19'-5"	23'-11"	22'-3"	21'-3"	20'-2"	24'-6"	22'-8"	21'-8"	20'-6"	25'-4"	23'-7"	22'-6"	21'-2"
60	11 1/8"	20'-1"	18'-7"	17'-10"	17'-1"	20'-8"	19'-2"	18'-4"	17'-6"	21'-3"	19'-8"	18'-9"	17'-10"	21'-10"	20'-4"	19'-4"	18'-4"
	14"	22'-4"	20'-8"	19'-8"	18'-8"	23'-0"	21'-4"	20'-4"	19'-3"	23'-7"	21'-10"	20'-10"	19'-9"	24'-3"	22'-7"	21'-6"	20'-5"
	16"	24'-4"	22'-6"	21'-5"	20'-3"	25'-0"	23'-3"	22'-2"	21'-0"	25'-8"	23'-9"	22'-8"	21'-2"	26'-5"	24'-7"	23'-5"	21'-2"
90	9 1/2"	19'-1"	17'-9"	17'-1"	16'-4"	19'-6"	18'-1"	17'-5"	16'-8"	20'-2"	18'-8"	17'-10"	17'-1"	20'-7"	19'-1"	18'-2"	17'-5"
	11 1/8"	22'-0"	20'-4"	19'-4"	18'-3"	22'-6"	20'-10"	19'-10"	18'-9"	23'-3"	21'-6"	20'-5"	19'-4"	23'-10"	22'-0"	21'-0"	19'-10"
	14"	24'-5"	22'-7"	21'-5"	20'-3"	25'-0"	23'-2"	22'-0"	20'-10"	25'-10"	23'-10"	22'-8"	21'-5"	26'-5"	24'-6"	23'-4"	22'-0"
	16"	26'-7"	24'-6"	23'-4"	22'-0"	27'-2"	25'-2"	23'-11"	22'-8"	28'-1"	25'-11"	24'-8"	23'-3"	28'-9"	26'-8"	25'-4"	24'-0"
	18"	28'-7"	26'-5"	25'-1"	23'-8"	29'-3"	27'-1"	25'-9"	24'-4"	30'-3"	27'-11"	26'-7"	25'-1"	30'-11"	28'-8"	27'-4"	25'-10"
	20"	30'-7"	28'-2"	26'-9"	25'-3"	31'-3"	28'-11"	27'-7"	26'-0"	32'-4"	29'-10"	28'-4"	26'-9"	33'-3"	30'-8"	29'-2"	27'-7"

(Continued from page 6)

- Concentrated and/or additional partial uniform loads such as, but not limited to, heavier floor coverings, kitchen islands, or partition walls, may increase dead load beyond the limit of these tables. Specific deflection limits may also apply depending upon the type of floor covering. Such applications are beyond the scope of these tables and must be analyzed individually.
- The subfloor shall be CSA or APA rated, Canadian Softwood Plywood (CSP), Douglas Fir Plywood (DFP) or Oriented Strand Board (OSB).
- Subfloor adhesive shall comply with CGSB standard CAN-CGSB 71.26-M88 "Adhesive for Field-gluing Plywood to Lumber Framing for Floor Systems" or APA Performance Specification AFG-01.
- It may be possible to exceed the limitations of these tables by analysing a specific application with Boise Cascade BC Calc® or BC Framer® Software.
- Floor tile will increase the dead load and specific deflection limits may apply.

Deflection limit	Short/Long span ratio = a					
	factor ₁		0.50		0.60	
	factor ₂		0.70		0.80	
L/360	0.50"	0.57"	0.63"	0.70"	0.83"	1.00"
L/240	0.75"	0.85"	0.95"	1.05"	1.25"	1.50"
						1.75"

Actual Deflection Based on Span and Limit

Deflection limit	Span					
	15'	17'	19'	21'	25'	30'
L/360	0.50"	0.57"	0.63"	0.70"	0.83"	1.00"
L/240	0.75"	0.85"	0.95"	1.05"	1.25"	1.50"

Floor Framing

The illustration below is showing several suggested applications for the Boise Cascade EWP products. It is not intended to show an actual house under construction.

NO MIDSPAN BRIDGING IS REQUIRED FOR BCI® JOISTS

FOR INSTALLATION STABILITY:

Temporary strut lines (1x4 min.) 8' o.c. max.
Fasten at each joist with two 2 1/2" (8d) nails
minimum

F01 F02

BC Rimboard; see Rim Board
Details in this guide

Dimension lumber is not suitable for use as a rim board in BCI® floor systems.

For information on load bearing cantilevers, see Cantilever Details in this guide

SAFETY WARNING

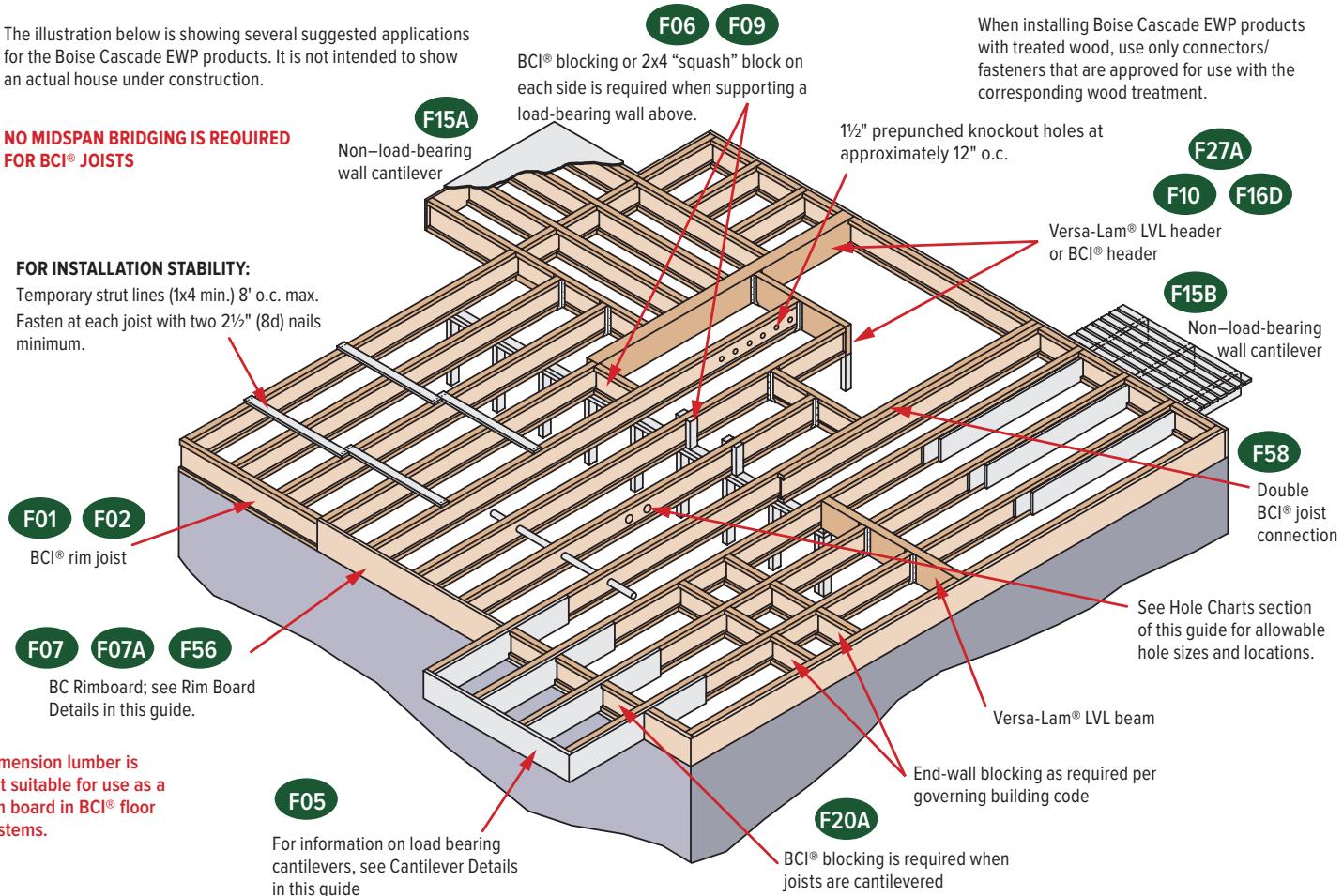
DO NOT ALLOW WORKERS ON BCI® JOISTS UNTIL ALL HANGERS, BCI® RIM JOISTS, RIM BOARDS, BCI® BLOCKING PANELS, X-BRACING AND TEMPORARY 1x4 STRUT LINES ARE INSTALLED AS SPECIFIED BELOW. SERIOUS ACCIDENTS CAN RESULT FROM INSUFFICIENT ATTENTION TO PROPER BRACING DURING CONSTRUCTION. ACCIDENTS CAN BE AVOIDED UNDER NORMAL CONDITIONS BY FOLLOWING THESE GUIDELINES.

- GUIDELINES:**

 - Build a braced end wall at the end of the bay, or permanently install the first eight feet of BCI® joists and the first course of sheathing. As an alternate, temporary sheathing may be nailed to the first four feet of BCI® joists at the end of the bay.
 - All rim joists, rim boards, x-bracing, blocking panels and hangers must be completely installed and properly nailed as each BCI® joist is set.
 - Install temporary 1x4 strut lines at 8' on-center or closer as additional BCI® joists are set. Nail the strut lines to the sheathed area or braced end wall, and to each BCI® joist with two 2½" (8d) nails.
 - The ends of cantilevers must be temporarily secured by strut lines on both the top and bottom flanges.
 - Straighten the BCI® joists to within 1/2" of true alignment before attaching strut lines and sheathing.
 - Remove the temporary strut lines only as required to install the permanent sheathing.
 - Failure to install temporary bracing may result in sideways buckling or roll-over under light construction loads.
 - Do not stack construction materials (sheathing, drywall, etc.) in the middle of BCI® joist spans. Contact Boise Cascade EWP Engineering for proper storage and shoring information.

PROTECT BCI® JOISTS FROM THE WEATHER

BCI® joists are intended only for applications that provide permanent protection from the weather. Product bundles should be covered and stored off of the ground on stickers. Also see Product Storage and Handling on page 2.



Backer and Filler Block Dimensions

Series	Backer Block Thickness	Filler Block Thickness
5000	3/4" or 7/8" wood panels	Two 3/4" wood panels or 2 x _
6000	1 1/8" or two 1/2" wood panels	2 x _ + 7/16" or 1/2" wood panel
6500	1 1/8" or two 5/8" wood panels	2 x _ + 5/8" or 3/4" wood panel
60	1 1/8" or two 1/2" wood panels	2 x _ + 7/16" or 1/2" wood panel
90	2 x _ lumber	Double 2 x _ lumber

- ▶ Cut backer and filler blocks to a maximum depth equal to the web depth minus $\frac{1}{4}$ " to avoid a forced fit.

BCI® Rim Joists and Blocking

Depth	Series	Vertical Load Capacity (PLF)	
		No W.S. ⁽¹⁾	W.S. ⁽²⁾
9½"	5000, 6000, 6500	3,300	N/A
	90	3,800	N/A
11⅞"	5000, 6000, 6500	3,100	N/A
	60, 90	3,600	N/A
14"	5000, 6000, 6500	2,900	N/A
	60, 90	3,450	N/A
16"	6000, 6500	2,750	3,600
	60, 90	3,300	3,900
18"	90	N/A	3,900
20"	90	N/A	3,900

(1) No web stiffeners required.

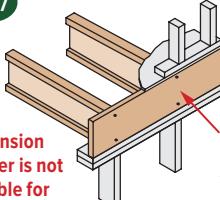
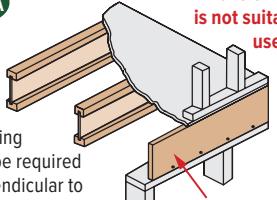
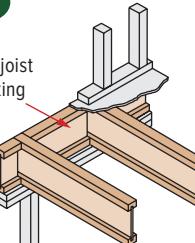
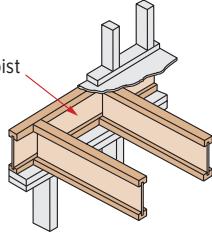
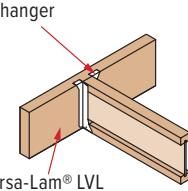
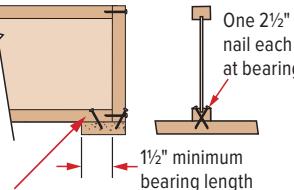
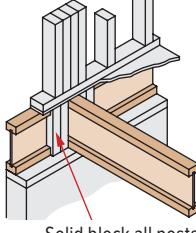
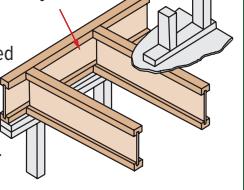
(2) Web stiffeners required at each end of blocking panel, values not applicable for rim joists.

N/A = Not applicable

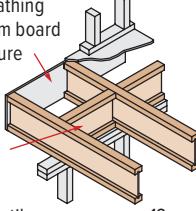
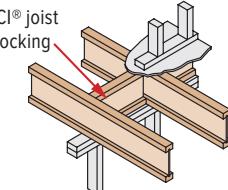
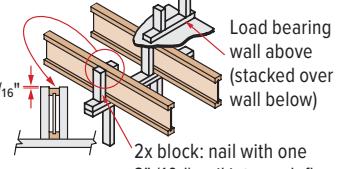
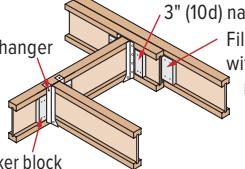
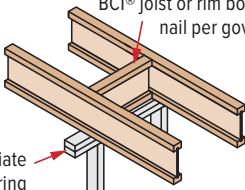
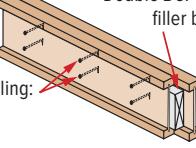
Floor Framing Details

Additional floor framing details are available in BC Framer® software

End Bearing Details

 <p>F07 Dimension lumber is not suitable for use as rim board with BCI® joists.</p>	 <p>F07A Rim board: Nail to BCI® joists with 2½" (8d) nail into each flange. Dimension lumber is not suitable for use as rim board with BCI® joists. Blocking may be required perpendicular to wall, consult design professional of record and/or local building official.</p>	 <p>F01 BCI® joist blocking</p>	 <p>F02 BCI® rim joist BCI® 90s rim joist requires 2x6 wall for minimum bearing</p>
 <p>F27A Top flange or face mount joist hanger Versa-Lam® LVL</p>	 <p>F52 One 2½" (8d) nail each side at bearing 1½" minimum bearing length To limit splitting flange, start nails at least 1½" from end. Nails may need to be driven at an angle to limit splitting of bearing plate.</p>	 <p>F08 Solid block all posts from above to bearing below.</p>	 <p>F03 BCI® rim joist BCI® floor joist must be designed to carry wall above when not stacked over wall below. Blocking required underneath braced wall panels and shear walls. Consult design professional of record.</p>

Intermediate Bearing Details

 <p>F05 Sheathing or rim board closure BCI® joist blocking required for cantilever</p> <p>For load bearing cantilever, see pages 12 and 13. Uplift on backspan shall be considered in all cantilever designs.</p>	 <p>F06 For load bearing wall above (stacked over wall below) BCI® joist blocking</p>	 <p>F09 Blocking may be required. Consult design professional of record and/or local building official. Load bearing wall above (stacked over wall below) 1/16" gap 2x block: nail with one 3" (10d) nail into each flange</p>	<table border="1"> <thead> <tr> <th rowspan="2">Size</th> <th colspan="4">Joist Spacing</th> </tr> <tr> <th>12"</th> <th>16"</th> <th>19.2"</th> <th>24"</th> </tr> </thead> <tbody> <tr> <td>2x4</td> <td>6,460</td> <td>4,840</td> <td>4,030</td> <td>3,230</td> </tr> <tr> <td>2x6</td> <td>10,140</td> <td>7,600</td> <td>6,330</td> <td>5,070</td> </tr> </tbody> </table> <p>► Squash blocks must be in full contact with upper floor and lower wall plate. ► Capacities shown are for double squash blocks at each joist, SPF or better.</p>	Size	Joist Spacing				12"	16"	19.2"	24"	2x4	6,460	4,840	4,030	3,230	2x6	10,140	7,600	6,330	5,070
Size	Joist Spacing																					
	12"	16"	19.2"	24"																		
2x4	6,460	4,840	4,030	3,230																		
2x6	10,140	7,600	6,330	5,070																		
 <p>F10 Joist hanger A backer block is required where top flange hanger load exceeds 350 lbs. All face mount hangers require backer blocks on both sides of the supporting joist's web. For top flange hangers install tight to top flange. For face mount hangers, install tight to the bottom flange.</p>	 <p>F28 BCI® joist or rim board blocking, nail per governing code. Intermediate bearing</p> <p>Joist blocking may be required in seismic areas for floor diaphragm strength. X-bracing is allowed as blocking only if the supporting wall is not a braced or shear wall and there is no wall above.</p>	 <p>F58 Double BCI® joist connection filler block (if required) Web filler nailing: 12" o.c.</p>	<p>► Filler block not required when all loads are top loaded and evenly applied to each ply (except BCI® 90). Side loads and/or uneven top loads require filler block.</p> <p>► See Boise Cascade Technical Note IJ-13 for further information.</p> <p>► Fasten floor sheathing to each ply per diaphragm nailing schedule.</p>																			

Lateral Support

- BCI® joists shall be laterally supported at the ends with hangers, rim board, BCI® rim joist or blocking panels. BCI® blocking panels or rim board are required at cantilever supports.
- Blocking may be required at intermediate bearings for floor diaphragm as per code, consult local building official.

Minimum Bearing Length For BCI® Joists

- 1½" is required at end supports. 3½" is required at cantilever and intermediate supports.
- Longer bearing lengths allow higher reaction values. Refer to the building code evaluation report or the BC Calc® software.

Web Stiffeners

- See Web Stiffener Requirements on page 10.

Nailing Requirements

- **BCI® rim joist, rim board or closure panel to BCI® joist:**
 - Rims or closure panel 1½" thick and less:** Two 2½" (8d) nails, one each in the top and bottom flange.
 - BCI® 5000 rim joist:** Two 3" (10d) nails, one each in the top and bottom flange.
 - BCI® 6000/60 rim joist:** Two 3½" (16d) nails, one each in the top and bottom flange.
 - BCI® 6500/90 rim joist:** Toe-nail top flange to rim joist with two 3" (10d) nails, one each side of flange.
- **BCI® rim joist, rim board or BCI® blocking panel to support:**
 - Min. 2½" (8d) nails at 6" o.c. per NBCC. When used for shear transfer, connect as specified by the design professional of record.

► BCI® joist to support:

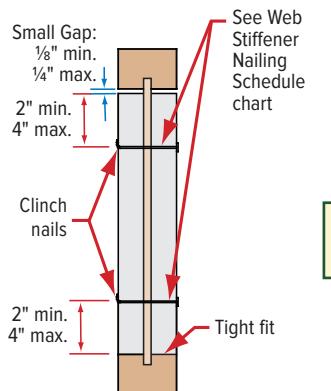
- Two 2½" (8d) nails, one on each side of the web, placed 1½" minimum from the end of the BCI® joist to limit splitting.

► Sheathing to BCI® joist:

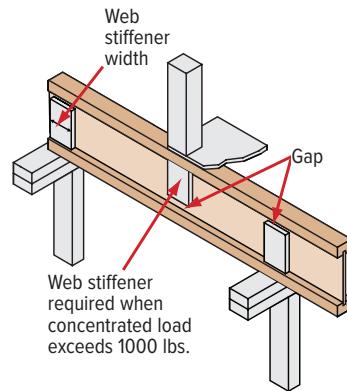
- Prescriptive nailing for residential floor sheathing requires 2½" (8d) common nails at 6" o.c. at edges and 12" o.c. in the field as per code.
- Maximum nail spacing for full lateral stability is 18" for BCI® 5000, 24" for larger BCI® joist series.
- 14 gauge staples may be substituted for 2½" (8d) nails if the staples penetrate at least 1" into the joist.
- Wood screws may be acceptable, contact local building official and/or Boise Cascade EWP Engineering for further information.

Web Stiffener Requirements

F16E



Web stiffeners applied to both sides of the joist web.



Web Stiffener Nailing Schedule

BCI® Joist		Bearing Location	
Series	Depth	End	Intermediate
5000	9 1/2"	2-8d	2-8d
	11 7/8"	2-8d	3-8d
	14"	2-8d	5-8d
6000	9 1/2"	2-8d	2-8d
	11 7/8"	2-8d	3-8d
	14"	2-8d	5-8d
	16"	2-8d	6-8d
6500	9 1/2"	2-8d	2-8d
	11 7/8"	2-8d	3-8d
	14"	2-8d	5-8d
	16"	2-8d	6-8d
60	11 7/8"	2-8d	3-8d
	14"	2-8d	5-8d
	16"	2-8d	6-8d
90	9 1/2"	2-16d	2-16d
	11 7/8"	3-16d	3-16d
	14"	5-16d	5-16d
	16"	6-16d	6-16d
	18"	7-16d	7-16d
	20"	8-16d	8-16d

Web Stiffener Specifications

BCI® Joist Series	For Structural Capacity (Min. Thick)	Lateral Restraint in Hanger	Minimum Width
5000	5/8"	3/4"	2 5/16"
6000	3/4"	7/8"	2 5/16"
6500	3/4"	1" or 1 1/8"	2 5/16"
60	3/4"	7/8"	2 5/16"
90	2x4 lumber (vertical)		

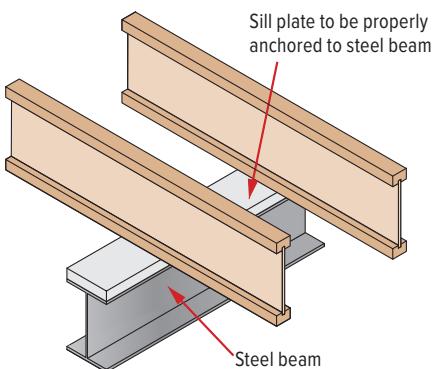
NOTES

Web stiffeners are optional except as noted below.

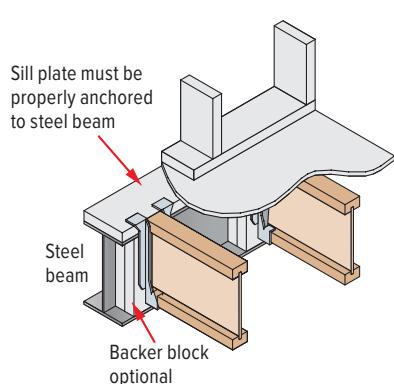
- Web stiffeners are always required:
 - at ALL bearing locations for 18" and 20" joists.
 - in hangers that do not extend up to support the top flange of the BCI® joist.
 - under concentrated loads that exceed 1,000 pounds. Install the web stiffeners snug to the top flange in this situation. Follow the nailing schedule for intermediate bearings.
 - in certain roof applications. See Roof Framing Details in this guide.
 - Web stiffeners may be of multiple thickness (e.g., BCI® 6500, double 1/2" panel OK).
- Web stiffeners may be required with sloped or skewed hangers or to achieve uplift values. Refer to the hanger manufacturer's installation requirements.
- **For BCI® 90 only:** Web stiffeners may be cut from structural rated wood panels, engineered rim board or 2x lumber.
- **For structural capacity:** Web stiffeners may be used to increase allowable reaction values. See the Factored Resistances section of this guide or use the BC Calc® software.

Connection Details

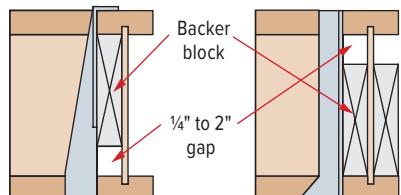
F15D Connection on Steel Beam



F15E Connection with Hanger on Steel Beam



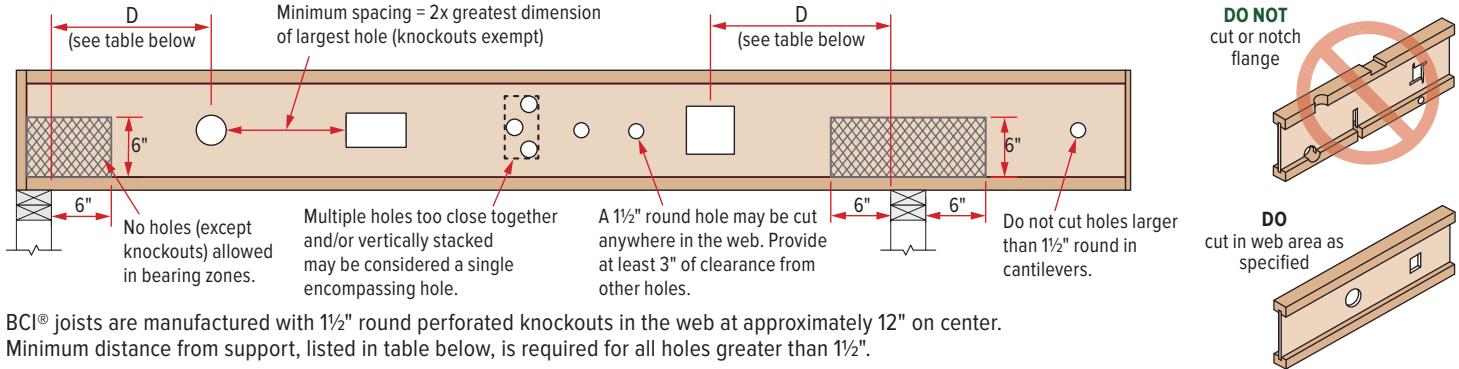
F16D Hanger Connections to BCI® Headers



Top Mount
Backer block shall be tight to bottom of top flange with 1/4" to 2" gap at top of bottom flange.

Face Mount
Backer block shall be tight to top of bottom flange with 1/4" to 2" gap at bottom of top flange.

Hole Charts for Residential Applications (40/15)



Minimum Distance (D) From Inside Face of Any Support To Centerline of Hole

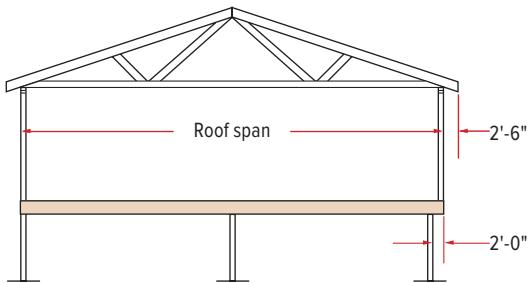
Hole Type	Span	Hole Size	9 1/2" Joist Depth				11 7/8" Joist Depth				14" Joist Depth				16" Joist Depth			
			3"	4"	5"	7"	3"	6"	8"	9 1/2"	3"	6"	9"	11 1/2"	6"	9"	11"	13 1/2"
			8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'	32'	34'	36'	38'
Round Holes ○	8'	0'-8"	0'-8"	0'-9"	0'-11"	0'-8"	0'-9"	0'-10"	0'-11"	0'-8"	0'-9"	0'-11"	1'-0"	0'-9"	0'-11"	1'-0"	1'-1"	
	10'	0'-8"	0'-8"	0'-9"	2'-0"	0'-8"	0'-9"	0'-10"	1'-11"	0'-8"	0'-9"	0'-11"	1'-4"	0'-9"	0'-11"	1'-0"	1'-1"	
	12'	0'-8"	0'-8"	0'-9"	3'-2"	0'-8"	0'-9"	1'-1"	3'-1"	0'-8"	0'-9"	0'-11"	2'-6"	0'-9"	0'-11"	1'-0"	1'-9"	
	14'	0'-8"	0'-8"	1'-1"	4'-5"	0'-8"	0'-9"	2'-2"	4'-4"	0'-8"	0'-9"	0'-11"	3'-8"	0'-9"	0'-11"	1'-0"	2'-10"	
	16'	0'-8"	0'-8"	2'-2"	5'-7"	0'-8"	0'-9"	3'-4"	5'-6"	0'-8"	0'-9"	1'-8"	4'-10"	0'-9"	0'-11"	1'-0"	4'-0"	
	18'	0'-8"	1'-9"	3'-3"	6'-10"	0'-8"	1'-10"	4'-6"	6'-9"	0'-8"	0'-9"	2'-9"	6'-1"	0'-9"	0'-11"	2'-0"	5'-2"	
	20'	1'-3"	2'-10"	4'-5"	8'-1"	0'-8"	2'-11"	5'-8"	8'-0"	0'-8"	0'-9"	3'-11"	7'-4"	0'-9"	0'-11"	3'-1"	6'-5"	
	22'	2'-4"	3'-11"	5'-7"	9'-5"	0'-8"	4'-0"	6'-10"	9'-3"	0'-8"	1'-5"	5'-1"	8'-7"	0'-9"	1'-9"	4'-2"	7'-8"	
	24'	3'-5"	5'-1"	6'-9"	10'-8"	1'-3"	5'-2"	8'-1"	10'-7"	0'-8"	2'-6"	6'-3"	9'-10"	0'-9"	2'-10"	5'-4"	8'-10"	
	26'	—	—	—	—	2'-4"	6'-4"	9'-4"	11'-10"	0'-8"	3'-7"	7'-5"	11'-1"	0'-9"	3'-11"	6'-6"	10'-2"	
	28'	—	—	—	—	3'-5"	7'-6"	10'-7"	13'-2"	1'-2"	4'-8"	8'-7"	12'-4"	1'-6"	5'-1"	7'-8"	11'-5"	
	30'	—	—	—	—	—	—	—	—	2'-3"	5'-10"	9'-10"	13'-8"	2'-6"	6'-2"	8'-11"	12'-8"	
	32'	—	—	—	—	—	—	—	—	3'-4"	7'-0"	11'-1"	14'-11"	3'-7"	7'-4"	10'-1"	13'-11"	
	34'	—	—	—	—	—	—	—	—	—	—	—	4'-8"	8'-6"	11'-4"	15'-3"		
Square Holes □	8'	0'-8"	0'-8"	0'-9"	1'-2"	0'-8"	0'-9"	0'-10"	1'-9"	0'-8"	0'-9"	0'-11"	1'-8"	0'-9"	0'-11"	1'-0"	1'-11"	
	10'	0'-8"	0'-8"	0'-9"	2'-3"	0'-8"	0'-9"	1'-7"	2'-11"	0'-8"	0'-9"	1'-0"	2'-9"	0'-9"	0'-11"	1'-2"	3'-1"	
	12'	0'-8"	0'-8"	1'-6"	3'-5"	0'-8"	1'-0"	2'-8"	4'-1"	0'-8"	0'-9"	2'-1"	3'-11"	0'-9"	0'-11"	2'-3"	4'-3"	
	14'	0'-9"	1'-8"	2'-7"	4'-8"	0'-8"	2'-0"	3'-10"	5'-4"	0'-8"	0'-9"	3'-3"	5'-2"	0'-9"	1'-6"	3'-5"	5'-6"	
	16'	1'-9"	2'-9"	3'-9"	5'-10"	0'-8"	3'-2"	5'-0"	6'-7"	0'-8"	1'-9"	4'-5"	6'-5"	0'-9"	2'-7"	4'-7"	6'-9"	
	18'	2'-11"	3'-10"	4'-11"	7'-1"	1'-8"	4'-3"	6'-3"	7'-10"	0'-8"	2'-10"	5'-7"	7'-8"	1'-0"	3'-9"	5'-9"	8'-0"	
	20'	4'-0"	5'-0"	6'-1"	8'-4"	2'-9"	5'-6"	7'-5"	9'-1"	1'-5"	4'-0"	6'-10"	8'-11"	2'-1"	4'-11"	7'-0"	9'-3"	
	22'	5'-2"	6'-2"	7'-3"	9'-7"	3'-10"	6'-8"	8'-8"	10'-5"	2'-6"	5'-1"	8'-0"	10'-2"	3'-2"	6'-1"	8'-2"	10'-7"	
	24'	6'-4"	7'-5"	8'-6"	10'-11"	5'-0"	7'-10"	10'-0"	11'-8"	3'-7"	6'-3"	9'-3"	11'-6"	4'-3"	7'-3"	9'-5"	11'-10"	
	26'	—	—	—	—	6'-2"	9'-1"	11'-3"	13'-0"	4'-8"	7'-6"	10'-6"	12'-9"	5'-4"	8'-5"	10'-8"	*	
	28'	—	—	—	—	7'-4"	10'-4"	12'-6"	*	5'-10"	8'-8"	11'-9"	*	6'-6"	9'-8"	12'-0"	*	
	30'	—	—	—	—	—	—	—	—	7'-0"	9'-10"	13'-1"	*	7'-8"	10'-11"	13'-3"	*	
	32'	—	—	—	—	—	—	—	—	8'-2"	11'-1"	14'-4"	*	8'-10"	12'-2"	14'-6"	*	
	34'	—	—	—	—	—	—	—	—	—	—	—	10'-1"	13'-5"	15'-10"	*		
Rectangular Holes ■	8'	6"x8"	6"x10"	6"x12"	5"x14"	7"x10"	7"x12"	7"x14"	7"x16"	8"x10"	8"x14"	8"x16"	8"x18"	8"x10"	8"x14"	8"x16"	8"x18"	
	10'	1'-3"	1'-11"	2'-6"	2'-0"	0'-11"	1'-6"	2'-3"	3'-0"	0'-11"	1'-7"	2'-4"	3'-1"	0'-11"	1'-1"	1'-2"	1'-10"	
	12'	2'-5"	3'-1"	3'-9"	3'-0"	2'-0"	2'-6"	3'-5"	4'-2"	1'-2"	2'-8"	3'-6"	4'-4"	0'-11"	1'-3"	2'-1"	3'-0"	
	14'	3'-7"	4'-3"	5'-0"	4'-6"	3'-2"	3'-6"	4'-8"	5'-5"	2'-3"	3'-10"	4'-8"	5'-7"	0'-11"	2'-4"	3'-3"	4'-2"	
	16'	4'-9"	5'-6"	6'-3"	5'-6"	4'-4"	5'-0"	5'-11"	6'-9"	3'-5"	5'-0"	5'-11"	6'-10"	1'-8"	3'-5"	4'-5"	5'-4"	
	18'	6'-0"	6'-9"	7'-6"	7'-0"	5'-6"	6'-0"	7'-2"	8'-0"	4'-7"	6'-3"	7'-2"	*	2'-9"	4'-7"	5'-7"	6'-7"	
	20'	7'-3"	8'-0"	8'-9"	8'-6"	6'-9"	7'-6"	8'-5"	*	5'-9"	7'-6"	8'-5"	*	3'-11"	5'-9"	6'-10"	7'-10"	
	22'	8'-6"	9'-3"	*	9'-6"	8'-0"	8'-6"	9'-8"	*	7'-0"	8'-9"	9'-9"	*	5'-1"	7'-0"	8'-0"	9'-1"	
	24'	9'-9"	10'-7"	*	*	9'-3"	10'-0"	11'-0"	*	8'-2"	10'-1"	11'-0"	*	6'-3"	8'-3"	9'-3"	10'-5"	
	26'	11'-0"	11'-10"	*	*	10'-6"	11'-0"	*	*	9'-5"	11'-4"	*	*	7'-5"	9'-6"	10'-7"	11'-8"	
	28'	—	—	—	—	11'-10"	12'-6"	*	*	10'-8"	12'-7"	*	*	8'-8"	10'-9"	11'-10"	13'-0"	
	30'	—	—	—	—	13'-1"	13'-6"	*	*	12'-0"	13'-11"	*	*	9'-10"	12'-0"	13'-1"	*	
	32'	—	—	—	—	—	—	—	—	13'-3"	*	*	*	11'-1"	13'-3"	14'-5"	*	
	34'	—	—	—	—	—	—	—	—	14'-6"	*	*	*	12'-4"	14'-6"	15'-8"	*	

* = Holes may be acceptable, contact your local distributor.

NOTES

- Tables assume
 - simple span application
 - uniformly loaded joists
 - maximum loads of 40 PSF live and 15 PSF dead.
- Hole may be positioned vertically anywhere in the web.
- For other load conditions or hole sizes, contact your local distributor.
- It may be possible to exceed the limitations of those tables by analysing a specific situation with the BC Calc® Software.

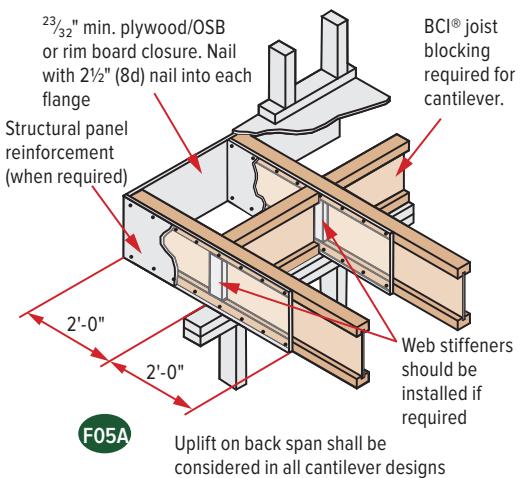
Reinforced Load-Bearing Cantilever



► The tables and details on pages 13–15 indicate the type of reinforcements, if any, that are required for load-bearing cantilevers up to a maximum length of 2'-0". Cantilevers longer than 2'-0" cannot be reinforced. Longer cantilevers with lower loads may be allowable without reinforcement. Analyse specific applications with the BC Calc® software.

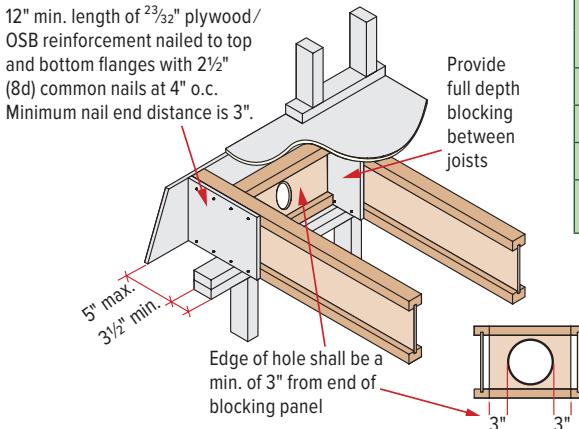
Plywood/OSB Reinforcement (If required per table on pages 14–15 or per BC Calc® analysis)

- $2\frac{3}{32}$ " min. x 48" long plywood/OSB-rated sheathing must match the full depth of the BCI® joist. Nail to the BCI® joist with 2½" (8d) nails at 6" o.c. and nail with four 8d nails into backer block. When reinforcing both sides, stagger nails to limit splitting. Install with face grain horizontal.
- These requirements assume a 100 PLF wall load is applied to the BCI® joist. Additional support may be required for other loadings; see BC Calc® software.
- For reinforcement requirements on BCI® joist depths greater than 16", contact Boise Cascade EWP Engineering.



Brick Ledge Cantilever

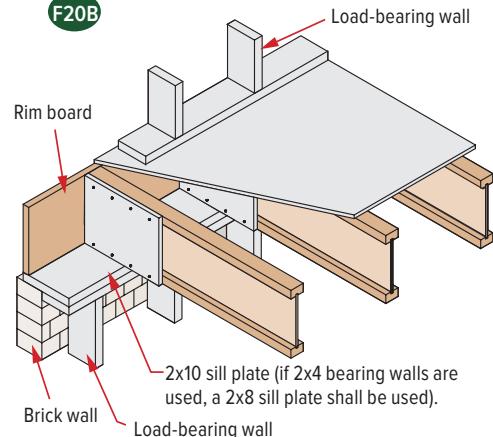
F20A



Max. Factored Vertical Load (PLF) for off-set bearing wall

Joist Depth	Joist o.c. spacing			
	12"	16"	19.2"	24"
9½"	2,846	2,135	1,779	1,423
11¾"	3,122	2,342	1,951	1,561
14"	3,450	2,588	2,156	1,725
16" or deeper	3,465	2,599	2,166	1,733

F20B

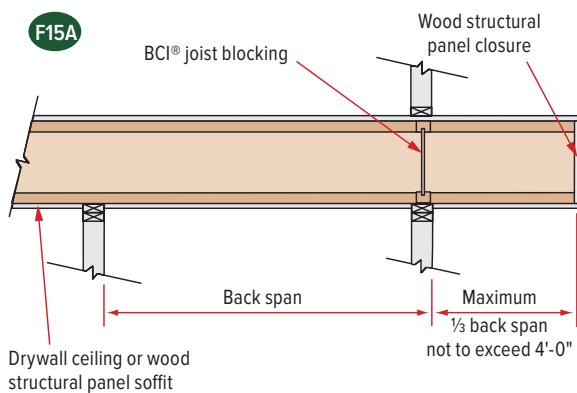


Non-Load-Bearing Wall Cantilever

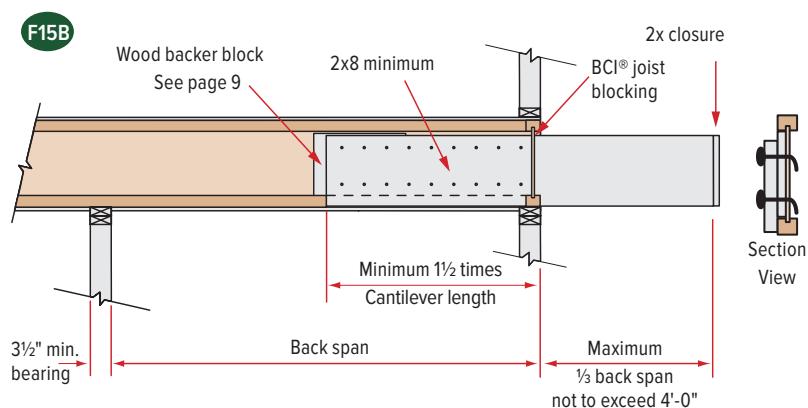
CAUTION: BCI® joists are intended only for applications that provide permanent protection from the weather.

Fasten the 2x8 minimum to the BCI® joist by nailing through the backer block and joist web with two rows of 3" (10d) nails at 6" on center. With BCI® 90 joists use 3½" (16d) nails. Clinch all nails.

F15A



F15B



- These details apply to cantilevers with uniform loads only.
- It may be possible to exceed the limitations of these details by analysing a specific application with the BC Calc® software.

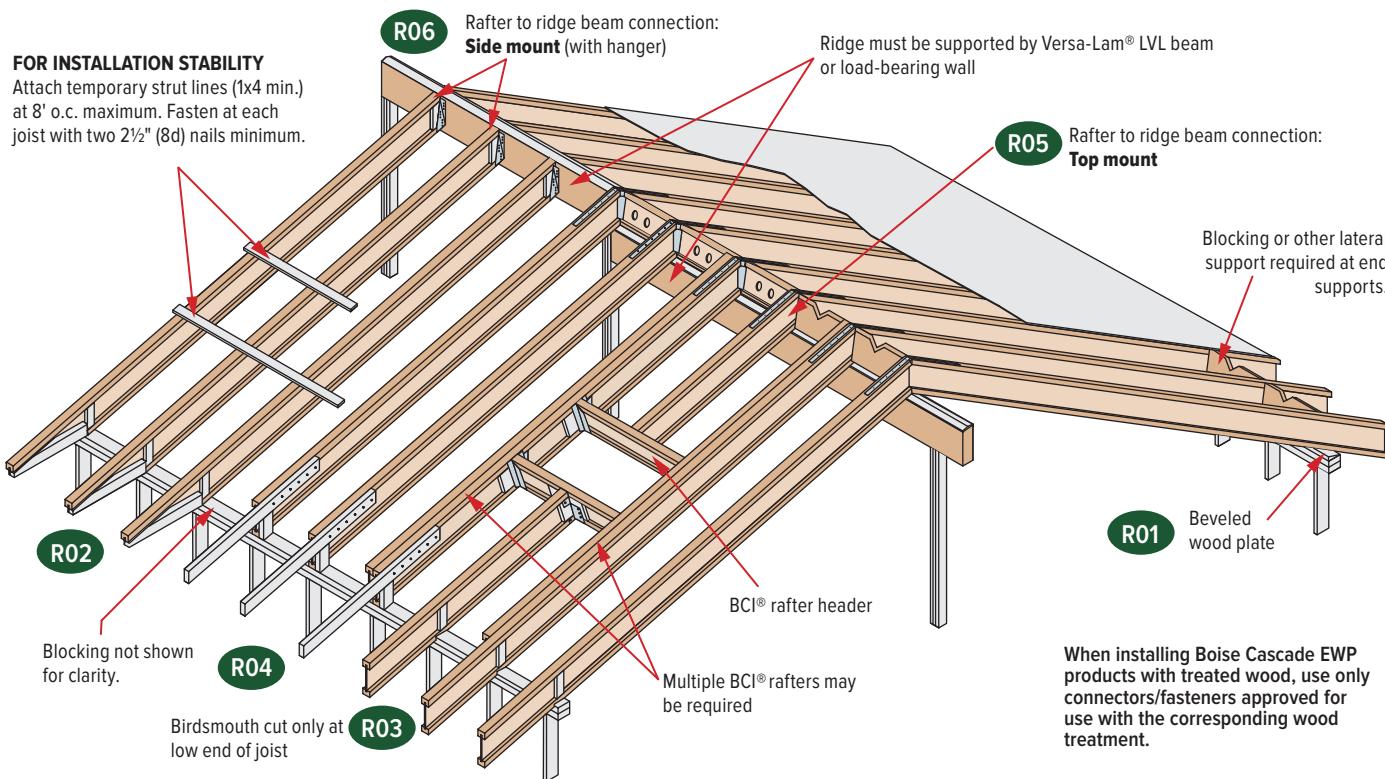
Reinforced Load-Bearing Cantilever Tables

Depth	Series	Roof Truss Span	Specified Snow Load (PSF)						Specified Snow Load (PSF)						Specified Snow Load (PSF)														
			30			40			50			30			40			50			30								
			Joist Spacing (inches)								Joist Spacing (inches)								Joist Spacing (inches)										
9 1/2"	5000	6000	16	19.2	24	16	19.2	24	16	19.2	24	16	19.2	24	16	19.2	24	16	19.2	24	16	19.2	24	16	19.2	24			
			24'	0	0	WS	0	0	X	0	X	X	24'	0	0	0	0	WS	0	0	X	24'	0	0	0	0	WS		
			26'	0	0	X	0	X	X	0	X	X	26'	0	0	0	0	0	1	0	WS	X	26'	0	0	0	0	WS	
			28'	0	0	X	0	X	X	X	X	X	28'	0	0	WS	0	0	X	0	1	X	28'	0	0	WS	0	WS	
			30'	0	0	X	0	X	X	X	X	X	30'	0	0	WS	0	0	X	0	1	X	30'	0	0	WS	0	WS	
			32'	0	WS	X	0	X	X	X	X	X	32'	0	0	WS	0	WS	X	0	1	X	32'	0	0	WS	0	WS	
	6500	6000	34'	0	X	X	X	X	X	X	X	X	34'	0	0	1	0	1	X	0	X	X	34'	0	0	WS	0	WS	
			36'	0	X	X	X	X	X	X	X	X	36'	0	0	X	0	1	X	1	X	X	36'	0	0	WS	0	WS	
			38'	0	X	X	X	X	X	X	X	X	38'	0	0	X	0	1	X	1	X	X	38'	0	0	WS	0	WS	
			40'	0	X	X	X	X	X	X	X	X	40'	0	0	X	0	1	X	1	X	X	40'	0	0	WS	0	WS	
			42'	0	X	X	X	X	X	X	X	X	42'	0	WS	X	0	X	X	2	X	X	42'	0	0	WS	0	WS	
			24'	0	0	0	0	0	1	0	0	X	24'	0	0	0	0	0	0	0	0	WS	24'	0	0	0	0	WS	
11 7/8"	5000	6000	26'	0	0	0	0	0	1	0	1	X	26'	0	0	0	0	0	0	0	0	WS	26'	0	0	0	0	WS	
			28'	0	0	WS	0	0	X	0	1	X	28'	0	0	0	0	0	0	0	0	WS	28'	0	0	WS	0	WS	
			30'	0	0	1	0	0	0	X	0	X	30'	0	0	0	0	0	WS	0	0	1	30'	0	0	WS	0	WS	
			32'	0	0	1	0	1	0	X	0	X	32'	0	0	0	0	0	WS	0	0	2	32'	0	0	WS	0	WS	
			34'	0	0	X	0	1	0	X	1	X	34'	0	0	0	0	0	WS	0	0	2	34'	0	0	WS	0	WS	
			36'	0	0	X	0	1	0	X	1	X	36'	0	0	0	0	0	1	0	0	WS	36'	0	0	WS	0	WS	
	6500	6000	38'	0	0	X	0	1	0	X	1	X	38'	0	0	WS	0	0	1	0	1	X	38'	0	0	WS	0	WS	
			40'	0	0	X	1	X	X	X	X	X	40'	0	0	WS	0	0	2	0	1	X	40'	0	0	WS	0	WS	
			42'	0	1	X	1	X	X	X	X	X	42'	0	0	WS	0	0	2	0	1	X	42'	0	0	WS	0	WS	
			24'	0	0	0	0	0	1	0	0	X	24'	0	0	WS	0	0	WS	0	WS	1	24'	0	0	0	0	WS	
			26'	0	0	0	0	0	2	0	1	X	26'	0	0	WS	0	0	WS	0	WS	X	26'	0	0	0	0	WS	
			28'	0	0	0	0	0	2	0	1	X	28'	0	0	WS	0	0	WS	1	0	WS	28'	0	0	WS	0	WS	
14"	5000	6000	30'	0	0	1	0	0	0	X	0	2	X	30'	0	0	WS	0	0	WS	0	0	1	30'	0	0	WS	0	WS
			32'	0	0	1	0	1	0	X	0	X	32'	0	0	WS	0	0	WS	0	0	2	32'	0	0	WS	0	WS	
			34'	0	0	2	0	1	0	X	1	X	34'	0	0	WS	0	0	WS	X	WS	1	34'	0	0	WS	0	WS	
			36'	0	0	2	0	2	0	X	2	X	36'	0	0	WS	0	0	WS	X	WS	1	36'	0	0	WS	0	WS	
			38'	0	0	X	0	2	0	X	2	X	38'	0	0	WS	0	0	WS	X	WS	1	38'	0	0	WS	0	WS	
			40'	0	0	X	1	X	X	X	X	X	40'	0	0	1	0	0	WS	X	WS	X	40'	0	0	WS	0	WS	
	6500	6000	42'	0	1	X	1	X	X	X	X	X	42'	0	0	WS	X	0	1	X	1	X	X	42'	0	0	WS	0	WS
			24'	0	0	WS	0	0	1	0	WS	X	24'	0	0	0	0	0	WS	0	0	WS	24'	0	0	0	0	WS	
			26'	0	0	0	0	0	1	0	0	X	26'	0	0	0	0	0	WS	0	0	X	26'	0	0	0	0	WS	
			28'	0	0	WS	0	0	X	0	1	X	28'	0	0	WS	0	0	WS	0	WS	X	28'	0	0	WS	0	WS	
			30'	0	0	WS	0	0	X	0	1	X	30'	0	0	WS	0	0	WS	0	WS	X	30'	0	0	WS	0	WS	
			32'	0	0	WS	0	0	X	0	1	X	32'	0	0	WS	0	0	WS	X	0	1	32'	0	0	WS	0	WS	
90"	6000	6000	34'	0	0	1	0	1	0	X	1	X	34'	0	0	WS	0	0	WS	X	0	1	34'	0	0	WS	0	WS	
			36'	0	0	2	0	1	0	X	1	X	36'	0	0	WS	0	0	WS	X	0	1	36'	0	0	WS	0	WS	
			38'	0	0	2	0	2	0	X	2	X	38'	0	0	WS	0	0	WS	X	0	1	38'	0	0	WS	0	WS	
			40'	0	0	X	1	X	X	X	X	X	40'	0	0	1	0	0	WS	X	WS	X	40'	0	0	WS	0	WS	
			42'	0	1	X	1	X	X	X	X	X	42'	0	0	WS	X	0	1	X	1	X	X	42'	0	0	WS	0	WS
			24'	0	0	0	0	0	1	0	0	X	24'	0	0	0	0	0	WS	0	0	0	24'	0	0	0	0	WS	
	6500	6000	26'	0	0	0	0	0	2	0	1	0	X	26'	0	0	0	0	0	WS	0	0	0	26'	0	0	0	0	WS
			28'	0	0	WS	0	0	X	0	1	X	28'	0	0	WS	0	0	WS	0	WS	X	28'	0	0	WS	0	WS	
			30'	0	0	WS	0	0	X	0	1	X	30'	0	0	WS	0	0	WS	0	WS	X	30'	0	0	WS	0	WS	
			32'	0	0	WS	0	0	X	0	1	X	32'	0	0	WS	0	0	WS	0	WS	X	32'	0	0	WS	0	WS	
			34'	0	0	1	0	1	0	X	1	X	34'	0	0	WS	0	0	WS	X	0	1	34'	0	0	WS	0	WS	
			36'	0	0	X	0	1	0	X	1	X	36'	0	0	WS	0	0	WS	X	0	1	36'	0	0	WS	0	WS	
147/8"	6000	6000	38'	0	0	X	0	1	0	X	1	X	38'	0	0	WS	0	0	WS	X	0	1	38'	0	0	WS	0	WS	
			40'	0	0	X	0	1	0	X	1	X	40'	0	0	1	0	0	WS	X	0	1	40'	0	0	WS	0	WS	
			42'	0	1	X	0	X	X	X	X	X	42'	0	0	WS	X	0	1	X	1	X	X	42'	0	0	WS	0	WS
			24'	0	0	0	0	0	0	0	0	X	24'	0	0	0	0	0	0	0	0	WS	24'	0	0	0	0	WS	
			26'	0	0	0	0	0	0	0	0	X	26'	0	0	0	0	0	0	0	0	WS	26'	0	0	0	0	WS	
			28'	0	0	WS	0	0	0	0	0	X	28'	0	0	WS	0	0	0	0	0	WS	28'</						

Roof Framing

FOR INSTALLATION STABILITY

Attach temporary strut lines (1x4 min.) at 8' o.c. maximum. Fasten at each joist with two 2½" (8d) nails minimum.



When installing Boise Cascade EWP products with treated wood, use only connectors/fasteners approved for use with the corresponding wood treatment.

SAFETY WARNING

DO NOT ALLOW WORKERS ON BCI® JOISTS UNTIL ALL HANGERS, BCI® RIM JOISTS, RIM BOARDS, BCI® BLOCKING PANELS, X-BRACING AND TEMPORARY 1x4 STRUT LINES ARE INSTALLED AS SPECIFIED BELOW. SERIOUS ACCIDENTS CAN RESULT FROM INSUFFICIENT ATTENTION TO PROPER BRACING DURING CONSTRUCTION. ACCIDENTS CAN BE AVOIDED UNDER NORMAL CONDITIONS BY FOLLOWING THESE GUIDELINES:

- Build a braced end wall at the end of the bay, or permanently install the first eight feet of BCI® joists and the first course of sheathing. As an alternate, temporary sheathing may be nailed to the first four feet of BCI® joists at the end of the bay.
- All hangers, BCI® rim joists, rim boards, BCI® blocking panels, and x-bracing must be completely installed and properly nailed as each BCI® joist is set.
- Install temporary 1x4 strut lines at no more than eight feet on-center as additional BCI® joists are set. Nail the strut lines to the sheathed area, or braced end wall, and to each BCI® joist with two 2½" (8d) nails.
- The ends of cantilevers must be temporarily secured by strut lines on both the top and bottom flanges.
- Straighten the BCI® joist to within ½" of true alignment before attaching strut lines and sheathing.
- Remove the temporary strut lines only as required to install the permanent sheathing.
- Failure to install temporary bracing may result in sideways buckling or roll-over under light construction loads.

Lateral Support

- BCI® joists must be laterally supported at the end supports (including supports adjacent to overhangs) with hangers, rim board, or blocking (Versa-Lam® LVL, Boise Cascade® Rimboard, or BCI® joist). Metal cross bracing or other x-bracing provides adequate lateral support for BCI® joists. Consult governing building code for roof diaphragm connection provisions.

Minimum Bearing Length For BCI® Joists

- ½" for all BCI® joists. 3½" is required at cantilever and intermediate supports.
- Longer bearing lengths allow higher reaction values. Refer to the building code evaluation report or the BC Calc® software.

Nailing Requirements

- **BCI® rim joist, rim board or closure panel to BCI® joist:**
 - Rims or closure panel 1½" thick and less: Two 2½" (8d) nails, one each in the top and bottom flange.
 - BCI® 5000 rim joist:** Two 3" (10d) nails, one each in the top and bottom flange.
 - BCI® 6000/60 rim joist:** Two 3½" (16d) nails, one each in the top and bottom flange.
 - BCI® 6500/90 rim joist:** Toe-nail top flange to rim joist with Two 3" (10d) nails, one each side of flange.
- **BCI® rim joist, rim board or BCI® blocking panel to support:**
 - Min. 2½" (8d) nails @ 6" o.c. per NBCC.
 - Connection per design professional of record's specification for shear transfer.
- **BCI® joist to support:**
 - Two 2½" (8d) nails, one on each side of the web, placed ½" minimum from the end of the BCI® joist to limit splitting.
- **Sheathing to BCI® joist:**
 - Prescriptive residential roof sheathing requires 2½" (8d) common nails at 6" o.c. at edges and 12" o.c. in the field as per code.
 - Maximum nail spacing for full lateral stability is 18" for BCI® 5000, 24" for larger BCI® joist series.
 - 14 gauge staples may be substituted for 2½" (8d) nails if the staples penetrate at least 1" into the joist.
 - Wood screws may be acceptable, contact local building official and/or Boise Cascade EWP Engineering for further information.

Web Stiffeners

- See **Web Stiffener Requirements** on page 10.

Maximum Slope

- Unless otherwise noted, all roof details are valid for slopes of 12:12 or less.

Ventilation

- All 1½" prepunched knock-out holes (spaced at 12" o.c. along the joist) may be knocked out for cross ventilation. When designing ventilation, using deeper joists than what is structurally required may be an advantage. Consult local building officials and/or ventilation specialists for specific requirements.

Birdsmouth Cuts

- BCI® joists may be birdsmouth cut only at the low end support.
- BCI® joists with birdsmouth cuts may cantilever up to 2'-6" past the low end support.
- The bottom flange must sit fully on the support and may not overhang the inside face of the support.
- Birdsmouth cuts are **NOT** allowed at high end or intermediate supports.

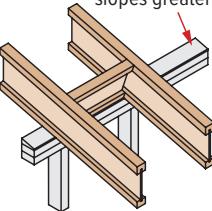
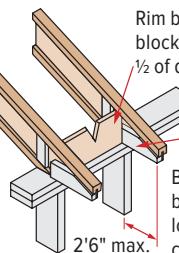
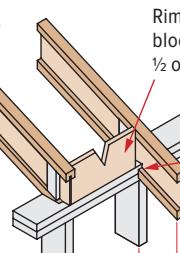
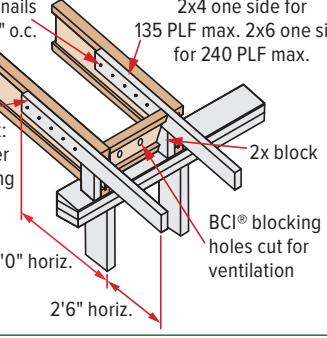
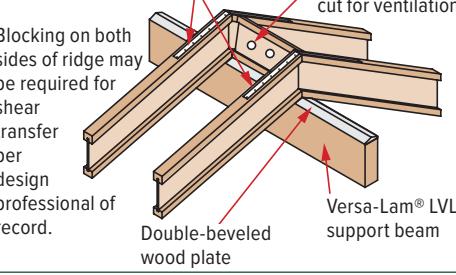
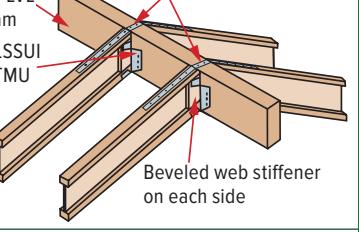
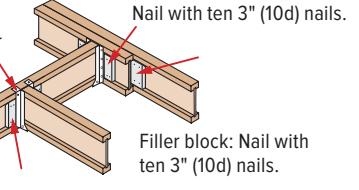
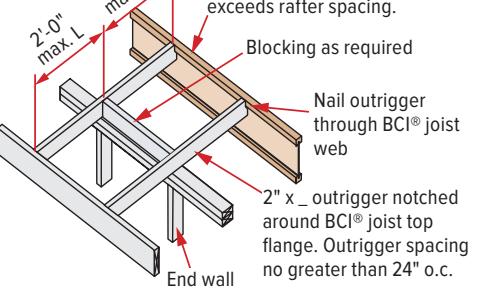
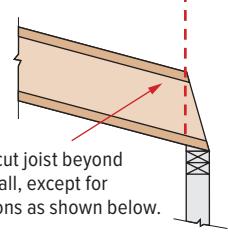
Backer and Filler Block Dimensions

Series	Backer Block Thickness	Filler Block Thickness
5000	¾" or ⅝" wood panels	Two ¾" wood panels or 2 x
6000	1⅛" or two ½" wood panels	2 x _ + ⅛" or ½" wood panel
6500	1⅛" or two ⅝" wood panels	2 x _ + ⅝" or ¾" wood panel
60	1⅛" or two ½" wood panels	2 x _ + ⅛" or ½" wood panel
90	2 x _ lumber	Double 2 x _ lumber

- Cut backer and filler blocks to a maximum depth equal to the web depth minus ¼" to avoid a forced fit.

Roof Framing Details

Additional roof framing details available with BC FRAMER® software

R01  <p>2x beveled plate for slopes greater than 1/4:12</p> <p>Simpson VPA or MiTek TMP connectors or equal can be used in lieu of beveled plate for slopes of 3:12 to 12:12.</p>	R02  <p>Rim board / Versa-Lam® LVL blocking. "V" cut 1/3 of length, 1/2 of depth.</p> <p>2x4 blocking for soffit support</p> <p>BCI® joist flange may be birdsmouth cut only at the low end of the joist and the cut flange must bear fully on plate; web stiffener required each side. Bottom flange shall be fully supported.</p> <p>2'6" max.</p>	R03  <p>Rim board / Versa-Lam® LVL blocking. "V" cut 1/3 of length, 1/2 of depth.</p> <p>Tight fit for lateral stability</p> <p>BCI® joist flange may be birdsmouth cut only at the low end of the joist and the cut flange must bear fully on plate; web stiffener required each side.</p> <p>2'6" max.</p>
R04  <p>10d nails at 6" o.c.</p> <p>135 PLF max. 2x6 one side for 240 PLF max.</p> <p>Backer block: Thickness per corresponding BCI® series</p> <p>2x block</p> <p>BCI® blocking holes cut for ventilation</p> <p>4'0" horiz.</p> <p>2'6" horiz.</p>	R05  <p>Simpson or MiTek LSTA24 strap, nailing per governing building code</p> <p>BCI® blocking holes cut for ventilation</p> <p>Blocking on both sides of ridge may be required for shear transfer per design professional of record.</p> <p>Double-beveled wood plate</p> <p>Versa-Lam® LVL support beam</p>	R06  <p>Simpson or MiTek LSTA24 strap where slope exceeds 7:12 (straps may be required for lower slopes in high-wind areas). Nailing per building code.</p> <p>Versa-Lam® LVL support beam</p> <p>Simpson LSSUI or MiTek TMU hanger</p> <p>Beveled web stiffener on each side</p>
R07  <p>Backer block (minimum 12" wide). Nail with ten 3" (10d) nails.</p> <p>Joist hanger</p> <p>Filler block: Nail with ten 3" (10d) nails.</p> <p>Backer block required where top flange joist hanger load exceeds 250 lbs. Install tight to top flange.</p>	R11  <p>Double joist may be required when L exceeds rafter spacing.</p> <p>2'0" max. L</p> <p>Blocking as required</p> <p>Nail outrigger through BCI® joist web</p> <p>2" x _ outrigger notched around BCI® joist top flange. Outrigger spacing no greater than 24" o.c.</p> <p>End wall</p>	DN05  <p>DO NOT bevel-cut joist beyond inside face of wall, except for specific conditions as shown below.</p>

BCI® Ceiling Joist with Bevel End Cut (For limited-access attics only)

CAUTION: DO NOT use BCI® joists as a collar/tension tie. Roof rafters shall be supported by ridge beam or other upper bearing support.

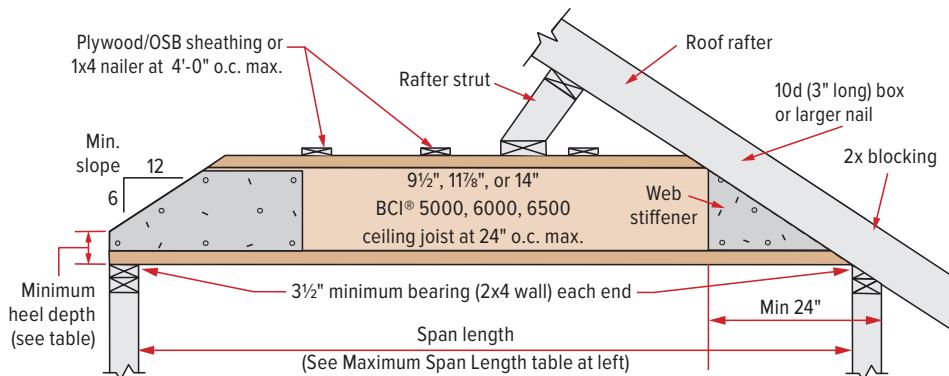
Maximum Span Lengths Without Roof Loads

9 1/2" BCI® 5000, 6000, 6500, 90	19'-6"
11 7/8" BCI® 5000, 6000, 6500	22'-0"
14" BCI® 6000, 6500	23'-0"

► If roof loads are present, see first two notes at right.

Minimum Heel Depths

Joist Depth	2 x 4	2 x 6
9 1/2"	2 1/2"	1 1/2"
11 7/8"	3 1/2"	2 1/2"
14"	4 1/2"	3 1/2"



Ceiling loads: Live Load 10 PSF, Dead Load 7 PSF

NOTES: ► Ceiling joist must be designed to carry all roof load transferred through rafter struts as shown.

► BCI® ceiling joist end reaction may not exceed 550 pounds.

► Minimum roof slope is 6:12.

► Detail is to be used only for ceiling joists with no access to attic space.

► Nail roof rafter to BCI® top flange with one 3" (10d) sinker or box nail.

► 1x4 nailers must be continuous and nailed to a braced end wall.

► Install a web stiffener on each side of BCI® joist at beveled ends. Nail roof rafter to BCI® joist per building code requirements for ceiling joist to roof rafter connection.

PROTECT BCI JOISTS FROM THE WEATHER

BCI joists are intended only for applications that provide permanent protection from the weather. Product bundles should be covered and stored off of the ground on stickers.

Roof Span Tables

Loads	BCI® Joist		Low Roof Slope (1/4:12 to 6:12)				High Roof Slope (< 6:12 to 12:12)			
	Series	Depth	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
Dead Load = 10 PSF	5000	9½"	23'-8"	21'-6"	20'-2"	18'-9"	21'-4"	19'-4"	18'-2"	16'-10"
		11¾"	28'-0"	25'-5"	23'-11"	21'-9"	25'-2"	22'-11"	21'-6"	19'-11"
		14"	31'-11"	28'-11"	26'-6"	23'-8"	28'-8"	26'-0"	24'-6"	22'-8"
	6000	9½"	25'-1"	22'-9"	21'-5"	19'-10"	22'-7"	20'-6"	19'-3"	17'-10"
		11¾"	29'-10"	27'-1"	25'-5"	23'-7"	26'-10"	24'-4"	22'-11"	21'-3"
		14"	33'-11"	30'-9"	28'-11"	26'-10"	30'-6"	27'-8"	26'-0"	24'-2"
		16"	37'-6"	34'-0"	32'-0"	28'-9"	33'-9"	30'-7"	28'-9"	26'-8"
	6500	9½"	25'-11"	23'-6"	22'-1"	20'-6"	23'-4"	21'-2"	19'-11"	18'-5"
		11¾"	30'-9"	27'-11"	26'-2"	24'-3"	27'-8"	25'-1"	23'-7"	21'-10"
		14"	35'-0"	31'-9"	29'-10"	27'-8"	31'-5"	28'-6"	26'-10"	24'-10"
		16"	38'-7"	35'-0"	32'-10"	30'-6"	34'-8"	31'-5"	29'-7"	27'-5"
Snow Load = 20 PSF	60	11¾"	32'-11"	29'-10"	28'-0"	26'-0"	29'-7"	26'-10"	25'-3"	23'-5"
		14"	37'-6"	34'-0"	31'-11"	29'-7"	33'-8"	30'-7"	28'-9"	26'-8"
		16"	41'-6"	37'-7"	35'-4"	32'-9"	37'-3"	33'-10"	31'-10"	29'-6"
	90	9½"	31'-6"	28'-7"	26'-10"	24'-11"	28'-4"	25'-9"	24'-2"	22'-5"
		11¾"	37'-7"	34'-1"	32'-1"	29'-8"	33'-10"	30'-8"	28'-10"	26'-9"
		14"	42'-8"	38'-8"	36'-4"	33'-8"	38'-4"	34'-10"	32'-8"	30'-4"
		16"	47'-3"	42'-10"	40'-3"	37'-3"	42'-6"	38'-6"	36'-3"	33'-7"
		18"	51'-7"	46'-9"	44'-0"	40'-9"	46'-4"	42'-1"	39'-7"	36'-8"
		20"	55'-10"	50'-7"	47'-7"	44'-1"	50'-2"	45'-6"	42'-9"	39'-8"
Dead Load = 10 PSF	5000	9½"	21'-7"	19'-7"	18'-4"	16'-7"	19'-6"	17'-9"	16'-8"	15'-5"
		11¾"	25'-6"	23'-2"	21'-0"	18'-9"	23'-1"	21'-0"	19'-9"	18'-3"
		14"	29'-0"	25'-1"	22'-10"	20'-5"	26'-3"	23'-10"	22'-2"	19'-10"
	6000	9½"	22'-10"	20'-8"	19'-5"	18'-0"	20'-8"	18'-9"	17'-8"	16'-4"
		11¾"	27'-2"	24'-7"	23'-2"	21'-5"	24'-7"	22'-4"	21'-0"	19'-5"
		14"	30'-10"	28'-0"	26'-0"	23'-2"	27'-11"	25'-4"	23'-10"	22'-1"
		16"	34'-1"	30'-5"	27'-9"	24'-10"	30'-11"	28'-0"	26'-4"	24'-1"
	6500	9½"	23'-7"	21'-5"	20'-1"	18'-7"	21'-4"	19'-5"	18'-3"	16'-11"
		11¾"	27'-11"	25'-4"	23'-10"	22'-1"	25'-4"	23'-0"	21'-7"	20'-0"
		14"	31'-10"	28'-10"	27'-1"	24'-5"	28'-10"	26'-2"	24'-7"	22'-9"
		16"	35'-1"	31'-10"	29'-3"	26'-1"	31'-9"	28'-10"	27'-1"	25'-1"
Snow Load = 30 PSF	60	11¾"	29'-11"	27'-2"	25'-6"	23'-7"	27'-1"	24'-7"	23'-1"	21'-5"
		14"	34'-1"	30'-11"	29'-0"	26'-11"	30'-10"	28'-0"	26'-4"	24'-5"
		16"	37'-9"	34'-2"	32'-2"	29'-9"	34'-2"	31'-0"	29'-2"	27'-0"
	90	9½"	28'-8"	26'-0"	24'-5"	22'-7"	26'-0"	23'-7"	22'-2"	20'-6"
		11¾"	34'-3"	31'-0"	29'-2"	27'-0"	31'-0"	28'-1"	26'-5"	24'-6"
		14"	38'-10"	35'-2"	33'-0"	30'-7"	35'-2"	31'-11"	30'-0"	27'-9"
		16"	43'-0"	38'-11"	36'-7"	33'-11"	38'-11"	35'-4"	33'-2"	30'-9"
		18"	46'-11"	42'-6"	40'-0"	37'-0"	42'-6"	38'-7"	36'-3"	33'-7"
		20"	50'-9"	46'-0"	43'-3"	40'-1"	46'-0"	41'-8"	39'-2"	36'-4"

NOTES FOR TABLES ON PAGES 16 AND 17

- Spans shown are in accordance with NBCC 2020.
- Maximum spans listed are the clear horizontal spans between supports (simple/multiple spans, or one span plus a 2-foot overhang).
- Minimum end bearing length at end support is 1½".
- Minimum interior bearing length is 3½".
- Joists deeper than 16" require web stiffeners at all bearing locations.
- Total load deflection is limited to L/180, live load deflection is limited to L/240. Check the local building code for other deflection limits that may apply.

- Lateral support must be provided for the compression edge and also at the bearings to prevent lateral displacement or rotation.
- Spans shown have not been evaluated for snow drift.
- Slope roof joists at least 1/4:12 to minimize ponding.
- Allowable spans and loads shall be adjusted and checked for wind loads as required by local building code.
- It may be possible to exceed the limitations of this table by analysing a specific application with the BC Calc® or BC Framer® software.

(continued on page 17)

WARNING: Use of Span Tables for Commercial Projects (NBCC 2020: Part 4): All projects within the scope of Part 4 of the National Building Code of Canada (NBCC) must consider the effects of concentrated loads, as stipulated in article 4.1.5.9. The designer of record must verify the effects of a concentrated load on the joists on all projects within the scope of Part 4 of NBCC. Table 4.1.5.9 lists concentrated loads that shall be analysed with respect to the intended use of the floor. Given the numerous possible permutations, the span tables listed above do not take the effects of concentrated loads into consideration.

Roof Span Tables

Loads	BCI® Joist		Low Roof Slope (1/4:12 to 6:12)				High Roof Slope (< 6:12 to 12:12)			
	Series	Depth	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
Dead Load = 10 PSF	5000	9½"	19'-8"	17'-10"	16'-6"	14'-9"	18'-3"	16'-6"	15'-6"	14'-5"
		11½"	23'-4"	20'-6"	18'-9"	16'-9"	21'-7"	19'-7"	18'-5"	16'-4"
		14"	25'-10"	22'-4"	20'-5"	18'-3"	24'-6"	21'-10"	19'-11"	17'-9"
	6000	9½"	20'-10"	18'-11"	17'-9"	16'-5"	19'-3"	17'-6"	16'-5"	15'-3"
		11½"	24'-10"	22'-6"	21'-2"	19'-0"	22'-11"	20'-10"	19'-7"	18'-2"
		14"	28'-3"	25'-5"	23'-2"	20'-8"	26'-1"	23'-8"	22'-3"	20'-2"
		16"	31'-3"	27'-1"	24'-9"	22'-1"	28'-10"	26'-2"	24'-2"	21'-7"
	6500	9½"	21'-7"	19'-6"	18'-4"	17'-0"	19'-11"	18'-1"	17'-0"	15'-9"
		11½"	25'-7"	23'-2"	21'-9"	20'-2"	23'-8"	21'-5"	20'-2"	18'-8"
		14"	29'-1"	26'-5"	24'-5"	21'-9"	26'-11"	24'-5"	22'-11"	21'-3"
		16"	32'-1"	28'-7"	26'-1"	23'-3"	29'-8"	26'-11"	25'-3"	22'-9"
	60	11½"	27'-4"	24'-10"	23'-3"	21'-7"	25'-3"	22'-11"	21'-7"	20'-0"
		14"	31'-2"	28'-3"	26'-6"	24'-7"	28'-10"	26'-2"	24'-7"	22'-9"
		16"	34'-6"	31'-3"	29'-5"	24'-9"	31'-10"	28'-11"	27'-2"	23'-7"
	90	9½"	26'-3"	23'-9"	22'-3"	20'-7"	24'-3"	22'-0"	20'-8"	19'-2"
		11½"	31'-3"	28'-4"	26'-7"	24'-7"	28'-11"	26'-3"	24'-8"	22'-10"
		14"	35'-6"	32'-2"	30'-2"	26'-5"	32'-10"	29'-9"	27'-11"	25'-2"
		16"	39'-4"	35'-7"	33'-5"	27'-6"	36'-4"	32'-11"	30'-11"	26'-2"
		18"	42'-11"	38'-11"	36'-6"	33'-10"	39'-8"	36'-0"	33'-10"	31'-4"
		20"	46'-6"	42'-1"	39'-7"	36'-7"	42'-11"	38'-11"	36'-7"	33'-10"
Dead Load = 10 PSF	5000	9½"	18'-3"	16'-6"	15'-0"	13'-5"	16'-11"	15'-4"	14'-5"	13'-4"
		11½"	21'-7"	18'-8"	17'-1"	15'-3"	20'-1"	18'-2"	16'-8"	14'-11"
		14"	23'-6"	20'-4"	18'-7"	16'-7"	22'-10"	19'-11"	18'-2"	16'-0"
	6000	9½"	19'-4"	17'-6"	16'-5"	15'-2"	17'-11"	16'-3"	15'-3"	14'-2"
		11½"	23'-0"	20'-10"	19'-4"	17'-3"	21'-4"	19'-4"	18'-2"	16'-10"
		14"	26'-2"	23'-1"	21'-1"	18'-10"	24'-3"	22'-0"	20'-8"	18'-6"
		16"	28'-7"	24'-9"	22'-6"	20'-2"	26'-10"	24'-4"	22'-1"	19'-9"
	6500	9½"	20'-0"	18'-1"	17'-0"	15'-8"	18'-6"	16'-10"	15'-9"	14'-7"
		11½"	23'-8"	21'-5"	20'-2"	18'-3"	22'-0"	19'-11"	18'-9"	17'-4"
		14"	27'-0"	24'-5"	22'-2"	19'-10"	25'-0"	22'-8"	21'-4"	19'-5"
		16"	29'-9"	26'-0"	23'-9"	20'-7"	27'-7"	25'-0"	23'-3"	19'-9"
	60	11½"	25'-4"	23'-0"	21'-7"	19'-11"	23'-6"	21'-4"	20'-0"	18'-7"
		14"	28'-11"	26'-2"	24'-7"	20'-7"	26'-10"	24'-4"	22'-10"	19'-9"
		16"	32'-0"	29'-0"	25'-9"	20'-7"	29'-8"	26'-11"	24'-9"	19'-9"
	90	9½"	24'-3"	22'-0"	20'-7"	19'-1"	22'-6"	20'-5"	19'-2"	17'-9"
		11½"	29'-0"	26'-3"	24'-7"	21'-11"	26'-11"	24'-5"	22'-11"	21'-2"
		14"	32'-11"	29'-9"	27'-5"	21'-11"	30'-6"	27'-8"	26'-0"	21'-0"
		16"	36'-5"	33'-0"	28'-7"	22'-10"	33'-10"	30'-8"	27'-5"	21'-11"
		18"	39'-9"	36'-0"	33'-10"	31'-4"	36'-11"	33'-6"	31'-5"	29'-1"
		20"	43'-1"	39'-0"	36'-7"	33'-10"	39'-11"	36'-3"	34'-0"	31'-6"

(CONTINUED FROM PAGE 16)

- For continuous spans over intermediate bearings, the shortest span shall not be less than 50% of the longest adjacent span. The end of the short span should be anchored to resist the uplift equal to:

Uplift = $L_2 \times (\text{factor}_1 \times W_{FD} - W_{FL}) / \text{factor}_2$, where:

W_{FD} = Factored dead load (lb/ft)

Factor₁ = $4a^2 + 3a^3 - 1$

W_{FL} = Factored live load (lb/ft)

Factor₂ = $8a(1+a)$

L_1 = Length of shorter span (ft)

a = short span/long span

L_2 = Length of longer span (ft)

Actual Deflection Based on Span and Limit

Deflection Limit	Span						
	15'	17'	20'	25'	30'	35'	40'
L/240	0.75"	0.85"	1.00"	1.25"	1.50"	1.75"	2.00"
L/180	1.00"	1.13"	1.33"	1.67"	2.00"	2.33"	2.67"

Short/Long span ratio = a	0.50	0.60	0.70	0.80	0.90	1.00
factor ₁	0.38	1.09	1.99	3.10	4.43	6.00
factor ₂	6.00	7.68	9.52	11.52	13.68	16.00

Roof Span Tables

Loads	BCI® Joist		Low Roof Slope (1/4:12 to 6:12)				High Roof Slope (< 6:12 to 12:12)			
	Series	Depth	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
Dead Load = 15 PSF	5000	9½"	22'-5"	20'-4"	19'-2"	17'-9"	20'-0"	18'-2"	17'-1"	15'-10"
		11¾"	26'-6"	24'-1"	22'-7"	20'-3"	23'-8"	21'-6"	20'-2"	18'-9"
		14"	30'-2"	27'-0"	24'-8"	22'-0"	26'-11"	24'-5"	23'-0"	20'-11"
	6000	9½"	23'-9"	21'-6"	20'-3"	18'-9"	21'-2"	19'-3"	18'-1"	16'-9"
		11¾"	28'-3"	25'-7"	24'-1"	22'-4"	25'-2"	22'-10"	21'-6"	19'-11"
		14"	32'-1"	29'-1"	27'-4"	25'-0"	28'-8"	26'-0"	24'-5"	22'-8"
		16"	35'-6"	32'-2"	29'-11"	26'-9"	31'-8"	28'-9"	27'-0"	25'-0"
	6500	9½"	24'-6"	22'-3"	20'-11"	19'-5"	21'-11"	19'-10"	18'-8"	17'-4"
		11¾"	29'-1"	26'-4"	24'-9"	23'-0"	25'-11"	23'-7"	22'-2"	20'-6"
		14"	33'-1"	30'-0"	28'-2"	26'-2"	29'-6"	26'-9"	25'-2"	23'-4"
		16"	36'-6"	33'-1"	31'-1"	28'-2"	32'-6"	29'-6"	27'-9"	25'-9"
Snow Load = 20 PSF	60	11¾"	31'-1"	28'-3"	26'-6"	24'-7"	27'-9"	25'-2"	23'-8"	22'-0"
		14"	35'-5"	32'-2"	30'-2"	28'-0"	31'-7"	28'-8"	27'-0"	25'-0"
		16"	39'-3"	35'-7"	33'-5"	31'-0"	35'-0"	31'-9"	29'-10"	27'-8"
	90	9½"	29'-10"	27'-0"	25'-5"	23'-6"	26'-7"	24'-2"	22'-8"	21'-0"
		11¾"	35'-7"	32'-3"	30'-4"	28'-1"	31'-9"	28'-10"	27'-1"	25'-1"
		14"	40'-4"	36'-7"	34'-4"	31'-10"	36'-0"	32'-8"	30'-8"	28'-5"
		16"	44'-8"	40'-6"	38'-1"	35'-3"	39'-10"	36'-2"	34'-0"	31'-6"
		18"	48'-9"	44'-3"	41'-7"	38'-6"	43'-6"	39'-6"	37'-1"	34'-5"
		20"	52'-9"	47'-10"	45'-0"	41'-8"	47'-1"	42'-8"	40'-2"	37'-3"
Dead Load = 15 PSF	5000	9½"	20'-8"	18'-9"	17'-7"	15'-8"	18'-7"	16'-10"	15'-10"	14'-9"
		11¾"	24'-5"	21'-9"	19'-10"	17'-9"	22'-0"	19'-11"	18'-9"	17'-1"
		14"	27'-5"	23'-8"	21'-8"	19'-4"	25'-0"	22'-8"	20'-9"	18'-7"
	6000	9½"	21'-10"	19'-10"	18'-7"	17'-3"	19'-8"	17'-10"	16'-9"	15'-7"
		11¾"	26'-0"	23'-7"	22'-2"	20'-2"	23'-5"	21'-3"	20'-0"	18'-6"
		14"	29'-7"	26'-10"	24'-7"	21'-11"	26'-7"	24'-2"	22'-8"	21'-0"
		16"	32'-8"	28'-9"	26'-3"	23'-5"	29'-5"	26'-8"	25'-1"	22'-6"
	6500	9½"	22'-7"	20'-6"	19'-3"	17'-10"	20'-4"	18'-5"	17'-4"	16'-1"
		11¾"	26'-9"	24'-3"	22'-10"	21'-2"	24'-1"	21'-10"	20'-7"	19'-1"
		14"	30'-6"	27'-8"	26'-0"	23'-1"	27'-5"	24'-10"	23'-5"	21'-8"
		16"	33'-7"	30'-6"	27'-8"	24'-8"	30'-3"	27'-5"	25'-9"	23'-11"
Snow Load = 30 PSF	60	11¾"	28'-8"	26'-0"	24'-5"	22'-7"	25'-9"	23'-5"	22'-0"	20'-5"
		14"	32'-8"	29'-7"	27'-10"	25'-9"	29'-4"	26'-8"	25'-1"	23'-3"
		16"	36'-2"	32'-9"	30'-9"	27'-10"	32'-6"	29'-6"	27'-8"	25'-8"
	90	9½"	27'-6"	24'-11"	23'-4"	21'-8"	24'-9"	22'-5"	21'-1"	19'-6"
		11¾"	32'-9"	29'-8"	27'-11"	25'-10"	29'-6"	26'-9"	25'-2"	23'-3"
		14"	37'-2"	33'-8"	31'-8"	29'-3"	33'-5"	30'-4"	28'-6"	26'-5"
		16"	41'-2"	37'-3"	35'-0"	30'-10"	37'-0"	33'-7"	31'-7"	28'-6"
		18"	44'-11"	40'-9"	38'-3"	35'-5"	40'-5"	36'-8"	34'-5"	31'-11"
		20"	48'-7"	44'-1"	41'-5"	38'-4"	43'-9"	39'-8"	37'-3"	34'-6"

NOTES FOR TABLES ON PAGES 18 AND 19

- Spans shown are in accordance with NBCC 2020.
- Maximum spans listed are the clear horizontal spans between supports (simple/multiple spans, or one span plus a 2-foot overhang).
- Minimum end bearing length at end support is 1½".
- Minimum interior bearing length is 3½".
- Joists deeper than 16" require web stiffeners at all bearing locations.
- Total load deflection is limited to L/180, live load deflection is limited to L/240. Check the local building code for other deflection limits that may apply.

- Lateral support must be provided for the compression edge and also at the bearings to prevent lateral displacement or rotation.
- Spans shown have not been evaluated for snow drift.
- Slope roof joists at least 1/4:12 to minimize ponding.
- Allowable spans and loads shall be adjusted and checked for wind loads as required by local building code.
- It may be possible to exceed the limitations of this table by analysing a specific application with the BC Calc® or BC Framer® software.

(continued on page 19)

WARNING: Use of Span Tables for Commercial Projects (NBCC 2020: Part 4): All projects within the scope of Part 4 of the National Building Code of Canada (NBCC) must consider the effects of concentrated loads, as stipulated in article 4.1.5.9. The designer of record must verify the effects of a concentrated load on the joists on all projects within the scope of Part 4 of NBCC. Table 4.1.5.9 lists concentrated loads that shall be analysed with respect to the intended use of the floor. Given the numerous possible permutations, the span tables listed above do not take the effects of concentrated loads into consideration.

Roof Span Tables

Loads	BCI® Joist		Low Roof Slope (1/4:12 to 6:12)				High Roof Slope (< 6:12 to 12:12)			
	Series	Depth	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
Dead Load = 15 PSF	5000	9½"	19'-4"	17'-4"	15'-9"	14'-1"	17'-6"	15'-10"	14'-11"	13'-10"
		11½"	22'-10"	19'-7"	17'-11"	16'-0"	20'-8"	18'-9"	17'-4"	15'-6"
		14"	24'-8"	21'-4"	19'-6"	17'-5"	23'-6"	20'-8"	18'-10"	16'-10"
	6000	9½"	20'-5"	18'-6"	17'-5"	16'-2"	18'-6"	16'-10"	15'-9"	14'-8"
		11½"	24'-4"	22'-1"	20'-4"	18'-2"	22'-0"	20'-0"	18'-9"	17'-5"
		14"	27'-8"	24'-3"	22'-2"	19'-9"	25'-0"	22'-8"	21'-4"	19'-2"
		16"	30'-0"	25'-11"	23'-8"	21'-2"	27'-8"	25'-1"	22'-11"	20'-5"
	6500	9½"	21'-2"	19'-2"	18'-0"	16'-8"	19'-2"	17'-4"	16'-4"	15'-1"
		11½"	25'-1"	22'-9"	21'-4"	19'-1"	22'-8"	20'-7"	19'-4"	17'-11"
		14"	28'-6"	25'-7"	23'-4"	20'-10"	25'-10"	23'-5"	22'-0"	20'-2"
		16"	31'-5"	27'-4"	24'-11"	22'-3"	28'-5"	25'-10"	24'-3"	21'-2"
	60	11½"	26'-10"	24'-4"	22'-10"	21'-2"	24'-3"	22'-0"	20'-8"	19'-2"
		14"	30'-7"	27'-8"	26'-0"	22'-8"	27'-8"	25'-1"	23'-7"	21'-2"
		16"	33'-10"	30'-8"	28'-4"	22'-8"	30'-7"	27'-9"	26'-1"	21'-2"
	90	9½"	25'-8"	23'-3"	21'-10"	20'-3"	23'-3"	21'-1"	19'-10"	18'-4"
		11½"	30'-8"	27'-9"	26'-1"	24'-2"	27'-9"	25'-2"	23'-8"	21'-11"
		14"	34'-9"	31'-6"	29'-7"	24'-2"	31'-6"	28'-6"	26'-10"	22'-7"
		16"	38'-6"	34'-11"	31'-5"	25'-1"	34'-10"	31'-7"	29'-5"	23'-6"
		18"	42'-1"	38'-1"	35'-9"	33'-2"	38'-1"	34'-6"	32'-5"	30'-0"
		20"	45'-6"	41'-3"	38'-9"	35'-10"	41'-2"	37'-4"	35'-1"	32'-6"
Dead Load = 15 PSF	5000	9½"	18'-3"	15'-10"	14'-6"	12'-11"	16'-7"	15'-1"	14'-2"	12'-7"
		11½"	20'-10"	18'-0"	16'-5"	14'-8"	19'-8"	17'-6"	16'-0"	14'-3"
		14"	22'-8"	19'-7"	17'-11"	15'-5"	22'-1"	19'-1"	17'-5"	14'-7"
	6000	9½"	19'-4"	17'-6"	16'-5"	14'-8"	17'-7"	15'-11"	15'-0"	13'-11"
		11½"	23'-0"	20'-5"	18'-8"	16'-8"	20'-11"	19'-0"	17'-10"	16'-2"
		14"	25'-9"	22'-3"	20'-4"	18'-2"	23'-9"	21'-7"	19'-9"	17'-8"
		16"	27'-6"	23'-10"	21'-9"	19'-1"	26'-3"	23'-2"	21'-1"	18'-0"
	6500	9½"	20'-0"	18'-1"	17'-0"	15'-6"	18'-2"	16'-6"	15'-6"	14'-4"
		11½"	23'-8"	21'-5"	19'-8"	17'-6"	21'-6"	19'-6"	18'-4"	17'-0"
		14"	27'-0"	23'-5"	21'-5"	19'-1"	24'-6"	22'-3"	20'-11"	18'-0"
		16"	29'-0"	25'-1"	22'-10"	19'-1"	27'-0"	24'-6"	22'-3"	18'-0"
	60	11½"	25'-4"	23'-0"	21'-7"	19'-1"	23'-1"	20'-11"	19'-8"	18'-2"
		14"	28'-11"	26'-2"	23'-11"	19'-1"	26'-3"	23'-10"	22'-4"	18'-0"
		16"	32'-0"	28'-8"	23'-11"	19'-1"	29'-1"	26'-4"	22'-7"	18'-0"
	90	9½"	24'-3"	22'-0"	20'-7"	19'-1"	22'-1"	20'-0"	18'-10"	17'-5"
		11½"	29'-0"	26'-3"	24'-7"	20'-4"	26'-4"	23'-11"	22'-5"	19'-3"
		14"	32'-11"	29'-9"	25'-5"	20'-4"	29'-11"	27'-1"	24'-1"	19'-3"
		16"	36'-5"	31'-10"	26'-6"	21'-2"	33'-1"	30'-0"	25'-0"	20'-0"
		18"	39'-9"	36'-0"	33'-10"	31'-4"	36'-2"	32'-9"	30'-9"	28'-6"
		20"	43'-1"	39'-0"	36'-7"	33'-5"	39'-1"	35'-5"	33'-3"	30'-10"

(CONTINUED FROM PAGE 18)

► For continuous spans over intermediate bearings, the shortest span must not be less than 50% of the longest adjacent span. The end of the short span should be anchored to resist the uplift equal to:

Uplift = $L_2 \times (\text{factor}_1 \times W_{FD} - W_{FL}) / \text{factor}_2$, where:

W_{FD} = Factored dead load (lb/ft)

$\text{Factor}_1 = 4a^2 + 3a^3 - 1$

W_{FL} = Factored live load (lb/ft)

$\text{Factor}_2 = 8a(1+a)$

L_1 = Length of shorter span (ft)

a = Short span/long span

L_2 = Length of longer span (ft)

Actual Deflection Based on Span and Limit

Deflection Limit	Span						
	15'	17'	20'	25'	30'	35'	40'
L/240	0.75"	0.85"	1.00"	1.25"	1.50"	1.75"	2.00"
L/180	1.00"	1.13"	1.33"	1.67"	2.00"	2.33"	2.67"

Short/Long span ratio = a	0.50	0.60	0.70	0.80	0.90	1.00
factor ₁	0.38	1.09	1.99	3.10	4.43	6.00
factor ₂	6.00	7.68	9.52	11.52	13.68	16.00

Roof Allowable Uniform Loads, PLF

Design Span	Specified Loads (PLF)	BCI® 5000			BCI® 6000			BCI® 6500				BCI® 60			BCI® 90						
		9½"	11½"	14"	9½"	11½"	14"	16"	9½"	11½"	14"	16"	11½"	14"	16"	9½"	11½"	14"	16"	18"	20"
6'	Unfactored Snow Load for L/240	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Unfactored Total Load for L/180	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Factored Total Load	441	473	494	505	526	546	557	505	526	546	557	526	548	557	558	637	641	653	873	905
8'	Unfactored Snow Load for L/240	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Unfactored Total Load for L/180	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Factored Total Load	331	355	371	379	395	410	418	379	395	410	418	395	411	418	419	478	481	490	655	679
10'	Unfactored Snow Load for L/240	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Unfactored Total Load for L/180	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Factored Total Load	264	284	296	303	316	328	334	303	316	328	334	316	328	334	335	382	384	392	524	543
12'	Unfactored Snow Load for L/240	184	—	215	—	—	—	235	—	—	—	—	—	—	—	—	—	—	—	—	—
	Unfactored Total Load for L/180	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Factored Total Load	220	236	247	252	263	273	278	252	263	273	278	263	274	278	279	318	320	326	436	452
14'	Unfactored Snow Load for L/240	119	192	—	139	—	—	—	153	—	—	—	—	—	—	—	—	—	—	—	—
	Unfactored Total Load for L/180	159	—	186	—	—	—	204	—	—	—	—	—	—	—	—	—	—	—	—	—
	Factored Total Load	168	202	212	216	225	234	238	216	225	234	238	225	234	238	239	273	274	280	374	388
16'	Unfactored Snow Load for L/240	81	132	—	95	157	—	—	105	170	—	—	—	—	—	179	—	—	—	—	—
	Unfactored Total Load for L/180	108	—	127	—	—	—	140	—	—	—	—	—	—	—	—	—	—	—	—	—
	Factored Total Load	129	165	185	165	197	205	209	183	197	205	209	197	205	209	209	239	240	245	327	339
18'	Unfactored Snow Load for L/240	58	94	137	68	112	162	—	75	122	176	—	147	—	—	129	212	—	—	—	—
	Unfactored Total Load for L/180	77	126	—	91	150	—	—	100	163	—	—	—	—	—	173	—	—	—	—	—
	Factored Total Load	101	130	155	131	168	182	185	145	175	182	185	212	182	185	186	212	213	217	291	301
20'	Unfactored Snow Load for L/240	42	69	101	50	83	120	160	55	90	131	—	109	158	—	96	158	—	—	—	—
	Unfactored Total Load for L/180	56	93	—	67	111	160	—	73	120	—	—	146	—	—	128	—	—	—	—	—
	Factored Total Load	82	106	125	106	136	161	167	117	150	164	167	158	164	167	167	191	192	196	262	271
22'	Unfactored Snow Load for L/240	32	52	77	38	63	91	122	41	68	100	132	83	121	—	73	121	173	—	—	—
	Unfactored Total Load for L/180	43	70	102	50	84	122	—	55	91	133	—	111	—	—	98	162	—	—	—	—
	Factored Total Load	68	87	103	87	112	133	152	97	124	147	152	143	149	152	152	173	174	178	238	246
24'	Unfactored Snow Load for L/240	25	41	59	29	49	71	95	32	53	77	103	65	94	126	57	95	135	—	—	—
	Unfactored Total Load for L/180	33	54	79	39	65	95	127	43	71	103	137	86	126	—	76	126	—	—	—	—
	Factored Total Load	57	73	87	73	94	112	128	81	104	124	139	131	137	139	139	159	160	163	218	225
26'	Unfactored Snow Load for L/240	—	32	47	23	38	56	75	25	42	61	82	51	75	100	45	75	108	144	—	—
	Unfactored Total Load for L/180	—	43	63	31	51	75	101	34	56	82	109	68	100	—	60	101	144	—	—	—
	Factored Total Load	—	62	74	62	80	95	109	69	89	105	120	121	126	128	128	147	148	150	201	208
28'	Unfactored Snow Load for L/240	26	38	—	31	45	61	20	34	49	66	41	60	81	36	61	87	117	150	188	—
	Unfactored Total Load for L/180	34	50	—	41	60	81	27	45	66	88	55	81	108	48	81	117	—	—	—	—
	Factored Total Load	54	64	—	69	82	94	60	76	91	104	105	117	119	119	136	137	140	187	194	
30'	Unfactored Snow Load for L/240	—	—	31	—	25	37	50	—	27	40	54	34	49	66	30	50	72	96	124	155
	Unfactored Total Load for L/180	—	—	41	—	34	49	66	—	37	54	72	45	66	89	40	66	96	128	165	—
	Factored Total Load	—	—	55	—	60	71	81	—	67	79	90	92	109	111	108	127	128	130	174	181

NOTES

- Loading conditions:
 - Unfactored snow load values are limited by deflection equal to L/240. For deflections limited to L/360, multiply snow load values by 0.67.
 - Unfactored total load values are limited by deflection equal to L/180.
 - Factored total load values are limited by shear, end/interior reactions or bending moment. Values also assume minimum bearing lengths without web stiffeners for joist depths of 16" or less. 18" to 24" joists require web stiffeners.
 - All three loading cases must be checked. Where a snow load value is not shown, the factored total load value will control.
- Table values:
 - represent the most restrictive of simple or continuous span beam applications and assume uniform loading. Span is measured center-to-center of the supports. Analyse continuous span beams with the BC Calc® software if the length of any span is less than half the length of an adjacent span.
 - assume that lateral support is provided at each support and continuously along the compression edge of the beam.
 - do not consider composite action from gluing and nailing floor sheathing.
- For 2-ply, double the factored total load, unfactored snow and total load values.
- This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analysing a specific application with the BC Calc® software.

Actual Deflection (in inches) Based on Span and Limit

Deflection Limit	Span												
	6'	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'
L/360	0.20	0.27	0.33	0.40	0.47	0.53	0.60	0.67	0.73	0.80	0.87	0.93	1.00
L/240	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
L/180	0.40	0.53	0.67	0.80	0.93	1.07	1.20	1.33	1.47	1.60	1.73	1.87	2.00

Dead Load Slope Factor

Joist Pitch	2:12	3:12	4:12	5:12	6:12	7:12	8:12	9:12	10:12	11:12	12:12
Slope Factor	1.014	1.031	1.054	1.083	1.118	1.158	1.202	1.250	1.302	1.357	1.414

PSF to PLF Conversion Table

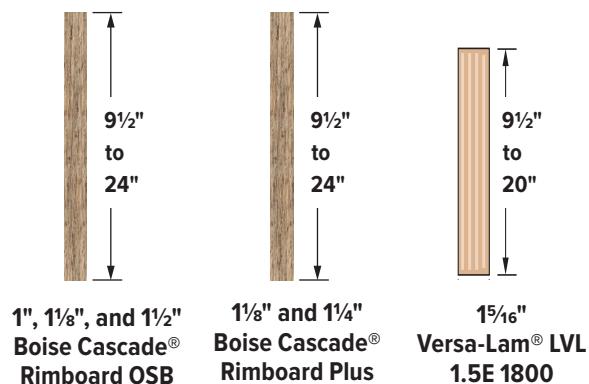
Joist Spacing	Load Per Square Foot (psf)						
	20	25	30	35	40	45	50
Load in Pounds per Linear Foot (plf)							
12"	20	25	30	35	40	45	50
16"	27	33	40	47	53	60	67
19.2"	32	40	48	56	64	72	80
24"	40	50	60	70	80	90	100

To Convert From Specified Load (plf) To Factored Load (plf)

Factored (PLF) = 1.25 x Specified Dead Load (PLF) + 1.50 x Specified Live/Snow Load (PLF).

Rim Board Product Profiles and Details

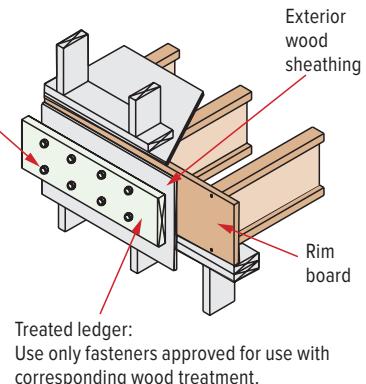
Product Profiles



F56 Ledger Detail

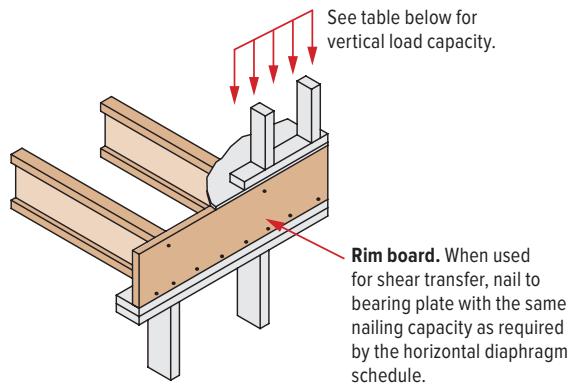
1/2" diameter through bolts (ASTM A307 Grades A&B, SAE J429 Grade 1 or higher) with washers and nuts;
or
1/2" diameter lag screws (full penetration).

- Either option provides:
- ▶ 585 lbs per fastener with 1 1/8" or thicker rim
 - ▶ 495 lbs per fastener with 1" rim

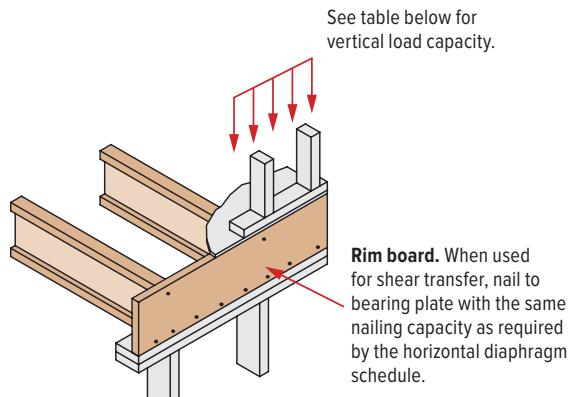


Design of moisture control by others; only structural components are shown above.

F07 Rim Board Perpendicular to BCI® Joists



F07 Rim Board Perpendicular to BCI® Joists



Rim Board Properties

Product	Thickness	$\phi H^{(1)}$ (lb/ft)	ϕV (lb/ft) ⁽²⁾			$\phi Z^{(3)}$ (lb)	$\phi P^{(4)}$ (lb)
			$d \leq 16"$	$16" < d \leq 20"$	$20" < d \leq 24"$		
Boise Cascade® Rimboard (C2)	1"	219	4,785	3,385	2,393	500	5,075
Boise Cascade® Rimboard (C1)	1 1/8"	219	7,033	6,018	4,640	584	5,075
Boise Cascade® Rimboard Plus (B2)	1 1/8"	243	7,033	6,018	4,640	584	5,075
Boise Cascade® Rimboard Plus (B1)	1 1/8"	243	7,468	6,018	4,640	584	5,075
Versa-Lam LVL 1.5E 1800	1 5/16"	(See note 5)	8,700	7,903	7,540	585	6,453

NOTES

- (1) ϕH = Factored horizontal (shear) load transfer capacity is based on the minimum nailing attachment schedule specified in NBCC 2020 and APA document W345 CA.
- (2) ϕV = Factored uniform bearing (vertical) load resistance. The uniform bearing load shall be simultaneously satisfied with the concentrated vertical load resistance, when applicable.
- (3) ϕZ = Factored lateral resistance of a 1/2" (12.7 mm) diameter lag screw.
- (4) ϕP = Factored concentrated vertical load resistance is based on 4 1/2" (114 mm) bearing length. The concentrated vertical load shall be simultaneously satisfied with the uniform bearing load capacity, when applicable.
- (5) Shall be evaluated as per section 11.5 of CSA 086-19
- ▶ All tabulated values apply to standard-term load duration and may be adjusted for other load durations in accordance with CSA 086-19.

Framing Connectors — MiTek

MiTek®

SINGLE I-JOIST – Canadian/Factored Resistance (lbs)

Joist Height	Top Mount Hangers ⁴						Face Mount Hangers															
	MiTek Stock No. ¹	Fastener Schedule ⁵		Uplift 115% ³	Down 100% ²		MiTek Stock No. ¹	Fastener Schedule ⁵		Uplift 115% ³	Down 100% ²											
		Header	Joist		DF	SPF		Header	Joist		DF	SPF										
BCI® 5000																						
9½"	TFL2095	(6) 10d	(2) 10d x 1½	265	2,370	1,960	IHFL20925 Min	(8) 10d	—	90	3,240	2,425										
11¾"	TFL20118						IHFL20925 Max		(2) 10d x 1½	405												
14"	TFL2014						IHFL20112 Min	(10) 10d	—	90												
BCI® 60/6000																						
9½"	TFL2395	(6) 10d	(2) 10d x 1½	265	2,370	1,960	IHFL23925 Min	(8) 10d	—	90	3,240	2,425										
11¾"	TFL23118						IHFL23925 Max		(2) 10d x 1½	405												
14"	TFL2314						IHFL23112 Min	(10) 10d	—	90												
16"	TFL2316						IHFL23112 Max	(12) 10d	(2) 10d x 1½	405												
BCI® 6500																						
9½"	TFL2595	(6) 10d	(2) 10d x 1½	265	2,370	1,960	THFI2595	(8) 10d	—	90	1,845	1,700										
11¾"	TFL25118						THFI25118		(10) 10d													
14"	TFL2514						THFI2514	(12) 10d	—													
16"	TFL2516						THFI2516 Min		90													
BCI® 90																						
11¾"	THO35118	(12) 10d	(2) 10d x 1½	485	3,910	3,385	IHFL35112 Min	(10) 10d	—	90	4,420	3,310										
14"	THO35140						IHFL35112 Max		(2) 10d x 1½	405												
16"	THO35160						IHFL3514 Min	(12) 10d	—	90												
18"	TFI418						IHFL3514 Max		(2) 10d x 1½	405												
20"	TFI420						IHFL3516 Min	(14) 10d	—	90												
Joist Height	Slope and Skew Hangers						Adjustable Height Hangers															
	MiTek Stock No. ^{1,6,9}	Fastener Schedule ⁵		Uplift 115% ³	Down 100% ²		MiTek Stock No. ^{1,7}	Fastener Schedule ⁵		Uplift 115% ³	Down 100% ²											
		Header	Joist		DF	SPF		Header	Joist		DF	SPF										
BCI® 5000																						
Joist Width = 2"																						
9½" - 14"	LSSH20-TZ Sloped Only	(10) 10d	(7) 10d x 1½	1,415	2,065	1,685	MSH2022	(6) 10d	(4) 10d	—	3,370	2,750										
LSSH20-TZ Skewed and/or Slope																						
BCI® 60/6000																						
Joist Width = 2½"																						
9½" - 16"	LSSH23-TZ Sloped Only	(10) 10d	(7) 10d x 1½	1,415	2,065	1,685	MSH2322	(6) 10d	(4) 10d x 1½	—	3,370	2,750										
LSSH23-TZ Skewed and/or Slope																						
BCI® 6500																						
Joist Width = 2½"																						
9½" - 16"	LSSH25-TZ Sloped Only	(18) 16d	(12) 10d x 1½	1,705	3,735	2,980	MSH322	(6) 10d	(4) 10d x 1½	—	3,370	2,750										
LSSH25-TZ Skewed and/or Slope																						
BCI® 90																						
Joist Width = 3½"																						
11¾" - 20"	LSSH35-TZ Sloped Only	(18) 16d	(12) 10d x 1½	2,315	4,505	3,860	MSH422	(6) 10d	(6) 10d	—	3,215	2,525										
LSSH35-TZ Skewed and/or Slope																						
Joist Height	Skewed 45° Hangers						Variable Pitch Connectors (Slope 12:12)															
	MiTek Stock No. ¹	Fastener Schedule ⁵		Uplift 115% ³	Down 100% ²		MiTek Stock No. ^{1,10}	Fastener Schedule ⁴		Uplift 115% ³	Down 100% ²											
		Header	Rafter		DF	SPF		Plate	Joist		DF	SPF										
BCI® 5000																						
Joist Width = 2"																						
9½" - 11¾"	SKH2020L/R	(14) 10d	(10) 10d x 1½	2,855	3,440	2,700	TMP21	(6) 10d	(4) 10d x 1½	400	1,815	1,425										
14"	SKH2024L/R						TMPh21															
BCI® 60/6000																						
Joist Width = 2½"																						
9½" - 11¾"	SKH2320L/R	(14) 10d	(10) 10d x 1½	2,855	3,440	2,700	TMPh23	(6) 10d	(4) 10d x 1½	400	2,770	2,830										
14" - 16"	SKH2324L/R						TMPh23															
BCI® 6500																						
Joist Width = 2½"																						
9½" - 11¾"	SKH2520L/R	(14) 10d	(10) 10d x 1½	2,855	3,440	2,700	TMPh25	(6) 10d	(4) 10d x 1½	400	2,770	2,175										
14" - 16"	SKH2524L/R						TMPh25															
BCI® 90																						
Joist Width = 3½"																						
11¾"	HD410_SKH45L/R_BV ⁷	(20) 16d	(10) 10d	3,053	5,870	4,625	TMPh4	(6) 10d	(4) 10d x 1½	400	2,770	2,175										
14" - 20"	HD414_SKH45L/R_BV ⁷						TMPh4															

Framing Connectors — MiTek

MiTek

DOUBLE I-JOIST – Canadian/Factored Resistance (lbs)

Joist Height	MiTek Stock No. ¹	Top Mount Hangers ⁴				Face Mount Hangers										
		Fastener Schedule ^{5,6}		Uplift 115% ³	Down 100% ²		MiTek Stock No. ¹	Fastener Schedule ^{5,6}		Uplift 115% ³	Down 100% ²					
		Header	Joist		DF	SPF		Header	Joist		DF	SPF				
Double BCI® 5000																
9½"	TH020950-2	(10) 16d	(6) 10d	2,140	3,355	3,320	IHF20952-2 Max	(24) 16d	(2) 10d x 1½	605	5,655	4,280				
11¾"	TH020118-2					3,662	IHF20112-2 Max									
14"	TH020140-2					4,610	IHF2014-2 Max									
Double BCI® 60/6000																
9½"	TH023950-2	(10) 16d	(6) 10d	2,140	5,090	4,570	IHF23925-2 Max	(24) 16d	(2) 10d x 1½	605	5,655	4,280				
11¾"	TH023118-2					4,545	IHF23118-2 Max									
14"	TH023140-2					5,545	IHF23140-2 Max									
16"	TH023160-2	(12) 16d	(6) 10d	2,140	5,090	4,570	IHF23160-2 Max	(24) 16d	(2) 10d x 1½	605	5,655	4,280				
Double BCI® 6500																
9½"	TH025950-2	(10) 16d	(12) 16d	2,140	5,090	5,545	IHF25925-2 Max	(24) 16d	(6) 10d	605	5,655	4,280				
11¾"	TH025118-2					4,570	IHF25112-2 Max									
14"	TH025140-2					5,545	THF25140-2	(20) 10d	(24) 10d	3,185	6,680	5,245				
Double BCI® 90																
11¾"	BPH7118	(10) 16d	(6) 10d	2,935	5,300	4,305	HD7120	(16) 16d	(6) 10d	2,460	5,030	4,180				
14"	BPH7114					4,305	HD7140	(20) 16d	(8) 10d	3,745	5,585	4,710				
16"	BPH7116					4,305	HD7160	(24) 16d		3,930						
18"	BPH7118					4,305	HD7180	(28) 16d		7,670						
20"	BPH7120					4,305	Skewed 45° Hangers									
Joist Height	MiTek Stock No. ¹⁷	Fastener Schedule ^{5,6}		Uplift 115% ³	Down 100% ²		MiTek Stock No. ¹⁰	Fastener Schedule ^{5,6}		Uplift 115% ³	Down 100% ²					
		Header	Joist		DF	SPF		Header	Joist		DF	SPF				
Double BCI® 5000																
Double BCI® 60/6000																
9½"	SKH2020L/R-2	(14) 10d	(10) 10d	3,490	5,320	4,175	See current MiTek Structural Products Catalog or BC Framer for specialty hanger options									
11¾"	SKH2024L/R-2	(16) 10d			3,485	4,950										
Double BCI® 6500																
9½"	SKH2520L/R-2	(14) 10d	(10) 10d	3,490	5,320	4,175	MSH2322-2 ⁸	(6) 10d	(4) 10d	–	3,475	2,830				
11¾"	SKH2324L/R-2	(16) 10d			3,485	4,950										
Double BCI® 90																
11¾"	HD7120-SK45L/R ⁸	(16) 16d	(8) 10d	2,015	4,675	3,670	See current MiTek Structural Products Catalog or BC Framer for specialty hanger options									
14"	HD7140-SK45L/R ⁸	(20) 16d			7,485	5,875										
16"	HD7160-SK45L/R ⁸	(24) 16d			8,250	6,475										
18"	HD7180-SK45L/R ⁸	(28) 16d														
20"																

- (1) **Shaded** hangers require web stiffeners at joist ends. Web stiffeners may be required for non-shaded hangers by I-joist manufacturers.
- (2) Factored resistance is based on hanger attachment to a DF-L or SPF species solid sawn lumber, or Versa-Lam® header.
- (3) Factored uplift resistance have been increased 15% for short-term wind and seismic loading; reduce for other load durations in accordance with the code.
- (4) Top mount hangers assume supporting headers to have a minimum height of 5½" and a minimum thickness of the length of the header nails. For wood nailer options or header materials not included in these tables, refer to the current MiTek Structural Products Catalog.

- (5) 10d x 1½" nails are 0.148" diameter x 1½" long, 10d nails are 0.148" diameter x 3" long and 16d nails are 0.162" diameter x 3½" long.
- (6) Hangers utilizing 16d nails are not compatible with BCI® joists.
- (7) Bevel cut required on end of joist to achieve design loads.
- (8) Hangers are special order. Consult MiTek for pricing and lead times.
- (9) Supplemental lateral support connection recommended when hanger height is less than 60% of joist height.
- (10) For additional sizes, stock numbers, and modifications not shown, refer to the current MiTek Structural Products Catalog.

For more information, please call 1.800.268.3434
or go to www.mitek.ca

Framing Connectors – Simpson Strong-Tie

SIMPSON

Strong-Tie

SINGLE I-JOISTS – Canadian/Factored Resistance (lbs)

Joist Height	Top Flange						Snap-In						Face Mount																							
	Model	B Dim	Fastener Type		Uplift (115)	Down Load DF SPF	Model	B Dim	Fastener Type		Uplift (115)	Down Load DF SPF	Model	B Dim	Fastener Type		Uplift (115)	Down Load DF SPF																		
			Header	Joist					Header	Joist					Header	Joist																				
BCI® 5000																																				
9½"	ITS2.06/9.5	2 (6) 10d	—	175	1,570	IUS2.06/9.5	2 (10) 10d	—	175	1,570	1,570	HU2.1/9	2½	2 (12) 10d	(2) #8x1¼WS	(6) 10d x 1½	1,470	1,640	1,640																	
11¾"	ITS2.06/11.88				1,690					1,690	1,690	LF2011	2 (14) 10d	(1) #8x1¼WS	105	1,688	1,688	1,698	1,698	1,698																
14"	ITS2.06/14				1,700					1,700	1,700	LF2014																								
BCI® 60/6000																																				
9½"	LT239	2 (6) 10d	(1) #8x1¼WS	105	2,625	1,725	IUS2.37/9.5	2 (8) 10d	—	175	1,930	1,690	LF239	2 (10) 10d	(1) #8x1¼WS	105	1,930	1,930	1,930																	
11¾"	LT231188				1,950	IUS2.37/11.88	1,950				1,820	LF2311	2 (12) 10d	(1) #8x1¼WS	105	1,950	1,950	1,950																		
14"	LT2314				1,990	IUS2.37/14	1,990				LF2314	1,990				1,990	1,990																			
16"	LT2316				2,000	1,690	IUS2.37/16				2,000	1,935	MIU2.37/16	2½	(24) 16d	(2) 10dx1½	375	2,150	2,150	2,150																
BCI® 6500																																				
9½"	LT259	2	(6) 10d	(1) #8x1¼WS	105	1,930	1,725	IUS2.56/9.5	2 (8) 10d	—	175	1,930	1,690	LF259	2 (10) 10d	(1) #8x1¼WS	105	1,930	1,930	1,930																
11¾"	LT251188	2				1,950		IUS2.56/11.88				1,950	1,820	LF2511	2 (12) 10d	(1) #8x1¼WS	105	1,950	1,950	1,950																
14"	LT2514	2				1,990		IUS2.56/14				1,990	LF2514	1,990				1,990	1,990																	
16"	LT2516	2				2,000		IUS2.56/16				2,000	1,935	MIU2.56/16	2½	(24) 16d	(2) 10dx1½	375	2,150	2,150	2,150															
BCI® 90																																				
9½"	LT359	2 (6) 10d	(2) #8x1¼WS	105	1,930	1,725	IUS3.56/11.88	2 (10) 10d	(12) 10d	—	175	2,190	1,685	LF3511	2 (12) 10d	(1) #8x1¼WS	105	2,190	2,190	2,190																
11¾"	LT351188				2,190		IUS3.56/14					2,210		LF3514				2,210	2,210	2,210																
14"	LT3514				2,210		IUS3.56/16					2,290		MIU3.56/16				2,525	2,525	2,525																
16"	LT3516				2,290		IUS3.56/16					2,370		MIU3.56/18	2½	(24) 16d	(2) 10dx1½	375	3,825	4,065	3,485															
Joist Height	45° Skew						Adjustable Height						Field Slope & Skew																							
	Model	B Dim	Fastener Type	Uplift	Down Load	Model	B Dim	Fastener Type	Uplift	Down Load	Model	B Dim	Fastener Type	Uplift	Down Load	Model	B Dim	Fastener Type	Uplift	Down Load																
BCI® 5000																																				
Joist Width = 2"																																				
9½"	SUR/L2.06/9	3 ¾/16 (14) 16d	(2) 10d x 1½	385	1,735	1,735	THAI2.06/22	2 ¼	(6) 10d	(2) 10d x 1½	—	1,865	1,865	LSSR2.1Z	3 ½	(14) 10d	(12) 10d x 1½	715	1,695	1,200																
11¾"	SUR/L2.06/11				2,135	2,135						2,280	2,280																							
14"	SUR/L2.06/11				2,165	2,165						2,525	2,385																							
BCI® 60/6000																																				
Joist Width = 2 ¾/16"																																				
9½"	SUR/L2.37/9	3 ¾/16 (14) 16d	(2) 10d x 1½	385	2,120	2,120	THAI3522	2 ¼	(6) 10d	(2) 10d x 1½	—	2,200	2,200	LSSR2.37Z	3 ½	(14) 10d	(12) 10d x 1½	715	1,695	1,200																
11¾"	SUR/L2.37/11				2,190	2,190						2,280	2,280																							
14"	SUR/L2.37/14				2,325	2,325						2,525	2,385																							
16"	SUR/L2.37/14				3,035	2,805						See Canadian Wood Construction Connectors catalogue for hanger selection.						See Canadian Wood Construction Connectors catalogue for hanger selection.																		
BCI® 6500																																				
Joist Width = 2 ¾/16"																																				
9½"	SUR/L2.56/9	3 ¾/16 (14) 16d	(2) 10d x 1½	385	2,120	2,120	THAI322	2 ¼	(6) 10d	(2) 10d x 1½	—	2,200	2,200	LSSR2.56Z	3 ½	(14) 10d	(12) 10d x 1½	715	1,695	1,200																
11¾"	SUR/L2.56/11				2,190	2,190						2,280	2,280																							
14"	SUR/L2.56/14				2,325	2,325						2,525	2,385																							
16"	SUR/L2.56/14				3,035	2,805						See Canadian Wood Construction Connectors catalogue for hanger selection.						See Canadian Wood Construction Connectors catalogue for hanger selection.																		
BCI® 90																																				
Joist Width = 3 ½/16"																																				
9½"	SUR/L410	2 ½/8 (14) 16d	(6) 16d	1,695	2,275	2,275	THAI422	2 ¼	(6) 10d	(2) 10d x 1½	—	2,265	2,265	LSSR410Z	3 ½	(14) 10d	(12) 10d x 1½	715	2,265	1,835																
11¾"	SUR/L414				3,010	2,875						2,980	2,385																							
14"	SUR/L414				3,255	2,895						See Canadian Wood Construction Connectors catalogue for hanger selection.						See Canadian Wood Construction Connectors catalogue for hanger selection.																		
16"	SUR/L414				3,570							See Canadian Wood Construction Connectors catalogue for hanger selection.						See Canadian Wood Construction Connectors catalogue for hanger selection.																		
18"	SUR/L414				3,850							See Canadian Wood Construction Connectors catalogue for hanger selection.						See Canadian Wood Construction Connectors catalogue for hanger selection.																		
20"	SUR/L414				4,080							See Canadian Wood Construction Connectors catalogue for hanger selection.						See Canadian Wood Construction Connectors catalogue for hanger selection.																		

Framing Connectors — Simpson Strong-Tie

SIMPSON

Strong-Tie

®

DOUBLE I-JOISTS – Canadian/Factored Resistance (lbs)

Joist Height	Top Flange						Face Mount						45° Skew																											
	Model	B Dim	Fastener Type		Uplift (115)	Down Load	Model	B Dim	Fastener Type		Uplift (115)	Down Load	Model	B Dim	Fastener Type		Uplift (115)	Down Load																						
			Header	Joist					Header	Joist					Header	Joist																								
Double BCI® 5000																																								
Joist Width = 4"																																								
9½"	MIT4.12/9.5	2½	(8) 16d	(2) 10d x 1½	450	3,490	2,420	MIU4.12/9	2½	(16) 16d	3,790	3,230	HSUR/L4.12/9	3	(18) 16d	(8) 16d	4,290	3,050																						
11½"	MIT4.12/11.88							MIU4.12/11		(20) 16d		4,550	HSUR/L4.12/11		(22) 16d		1,710		4,335																					
14"	MIT4.12/14							MIU4.12/14		(22) 16d		4,930	HSUR/L4.12/14		(26) 16d		2,565	4,920	4,635																					
Double BCI® 60/6000																																								
Joist Width = 4½"																																								
9½"	MIT359.5-2	2½	(8) 16d	(2) 10d x 1½	450	3,490	2,420	MIU4.75/9	2½	(16) 16d	3,420	3,230	HSUR/L4.75/9	2½	(26) 16d	(12) 16d	5,205	4,635																						
11½"	MIT3511.88-2							MIU4.75/11		(20) 16d		4,550	HSUR/L4.75/11																											
14"	MIT3514-2							MIU4.75/14		(22) 16d		4,930	HSUR/L4.75/14																											
16"	MIT4.75/16							MIU4.75/16		(24) 16d		3,485	HSUR/L4.75/16																											
Double BCI® 6500																																								
Joist Width = 5½"																																								
9½"	MIT39.5-2	2½	(8) 16d	(2) 10d x 1½	450	3,490	2,420	MIU5.12/9	2½	(16) 16d	4,420	3,230	HSUR/L5.12/9	2½	(26) 16d	(12) 16d	5,205	4,635																						
11½"	MIT311.88-2							MIU5.12/11		(20) 16d		4,550	HSUR/L5.12/11																											
14"	MIT314-2							MIU5.12/14		(22) 16d		4,930	HSUR/L5.12/14																											
16"	MIT5.12/16							MIU5.12/16		(24) 16d		3,485	HSUR/L5.12/16																											
Double BCI® 90																																								
Joist Width = 7"																																								
9½"	BA7.12/9.5	3	(16) 16d	(8) 10d x 1½	1,740	4,560	5,480	HU410-2	2½	(18) 16d	4,540	4,540	HU410-2X ¹	2½	(26) 16d	(12) 16d	5,205	4,020																						
11½"	BA7.12/11.88							HU412-2		(22) 16d		5,780	4,690	HU412-2X ¹																										
14"	BA7.12/14							HU414-2				6,470	6,185	HU414-2X ¹																										
16"	BA7.12/16							(26) 16d		(12) 16d																														
18"	BA7.12/18							3,685																																
20"	BA7.12/20							7,025																																
Adjustable Height																																								
Field Slope & Skew																																								
Double BCI® 5000																																								
Joist Width = 4"																																								
9½"	THAI-2 ²	2½	(6) 10d	(2) 10d x 1½	—	2,800	2,385	LSU4.12 ³	3½	(24) 16d	1,960	2,450	2,030																											
11½"																																								
14"																																								
Double BCI® 60/6000																																								
Joist Width = 4½"																																								
9½"	THAI-2 ²	2½	(6) 10d	(2) 10d x 1½	—	2,800	2,385	LSU3510-2 ³	3½	(24) 16d	1,960	2,450	2,030																											
11½"																																								
14"																																								
See Canadian Wood Construction Connectors catalogue for hanger selection.																																								
Double BCI® 6500																																								
Joist Width = 5½"																																								
9½"	THAI-2 ²	2½	(6) 10d	(2) 10d x 1½	—	2,800	2,385	LSU5.12 ³	3½	(24) 16d	1,960	2,600	1,845																											
11½"																																								
14"																																								
See Canadian Wood Construction Connectors catalogue for hanger selection.																																								
Double BCI® 90																																								
Joist Width = 7"																																								
9½"– 20"	See Canadian Wood Construction Connectors catalogue for hanger selection.																																							

NOTES FOR SIMPSON HANGERS ON PAGES 28–29

(1) Skewed option must be special ordered. Specify skew angle and direction (e.g. HU410-2x, SKR45').

(2) THAI-2 must be special ordered. Specify width between 4½" and 5½".

(3) LSU skew options must be factory ordered.

► Shaded hangers require web stiffeners at joist ends. Web stiffeners may be required for non-shaded hangers.

► B Dim is the depth of the hanger seat.

► WS = wood screw.

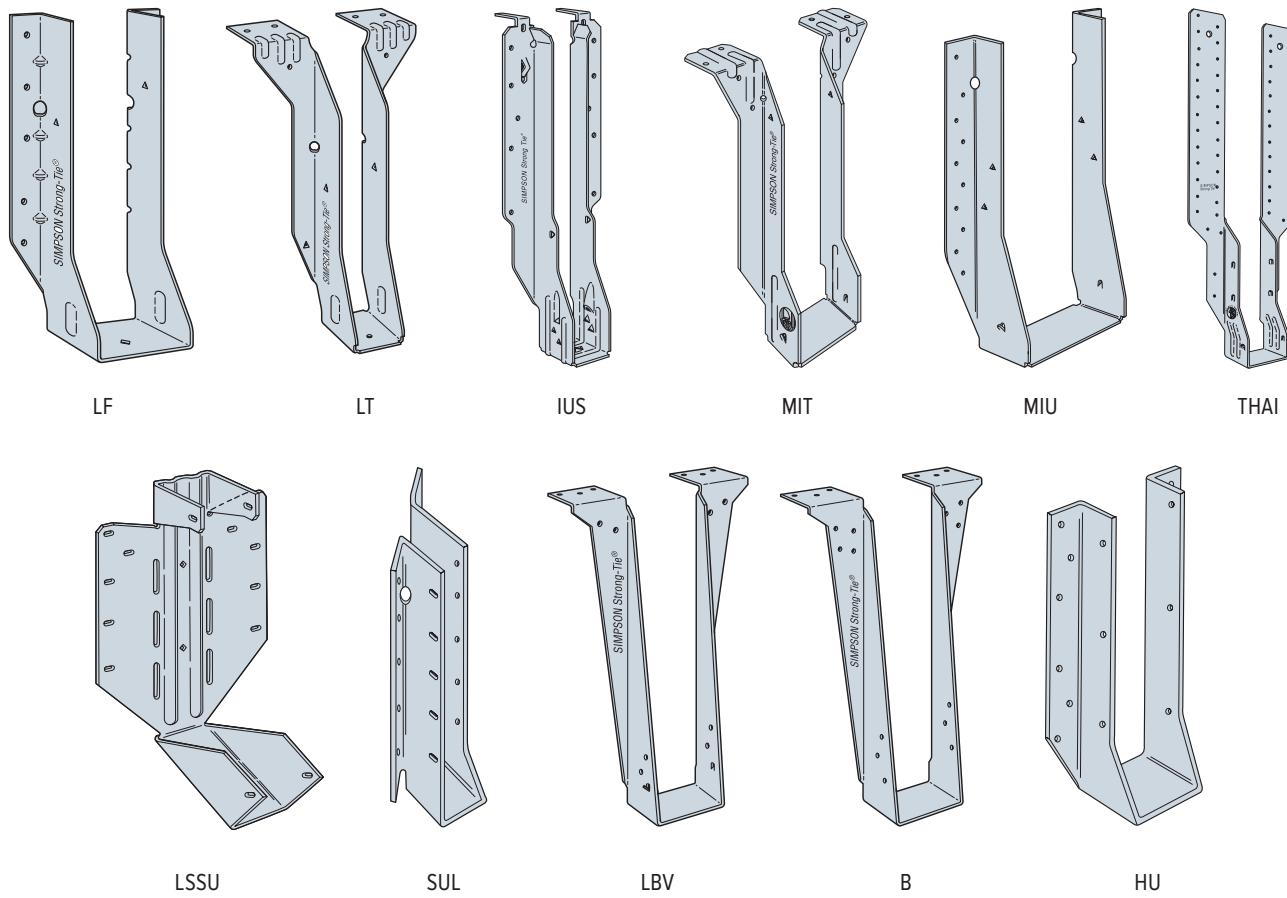
How To Pick A Hanger

1. Find your joist size in this guide. (single I-joist, double I-joist, beam, etc.)
2. Locate your connector type in the table.
 - Face mount
 - Top flange
 - Skewed
 - Sloped, etc.
3. Select a hanger from the table.
4. Confirm that your factored joist reaction is less than the factored resistance of hanger.
5. Check

General Notes

- ▶ See the current *Canadian Wood Construction Connectors* catalogue Important Information and General Notes sections, and for hanger models, joist sizes, and header situations not shown. Also see the Simpson Strong-Tie Publication *BCI I-JOISTS Connector Selection Guide*, Limit States Design version (CSG-BCCANBCI12) for installation information.
- ▶ Unless otherwise noted, factored resistances (downloads) listed address hanger/header/fastener limitations assuming header material is Douglas fir-larch or spruce pine fir or LVL. Joist reaction should be checked by a qualified designer to ensure proper hanger selection.
- ▶ Factored uplift resistances (uplift) listed assume SPF joist and header and have been increased by 15% for earthquake and wind loading with no further increase allowed. Reduce loads according to code for normal duration loading such as cantilever construction.
- ▶ If hanger height is less than 60% of joist height, joist rotation may occur; see Prevent Rotation section of the Simpson guide referenced above.
- ▶ Top flange hanger configuration and thickness of top flange need to be considered for flush frame conditions, see the Simpson guide referenced above.

- ▶ For this publication, carrying members are assumed to be at least 5½" tall for top flange hangers. The horizontal thickness of the carrying member must be at least the length of nail being used or the hanger top flange dimension, whichever is greater. **Exception:** narrower carrying members may be used with face mount hangers but the horizontal thickness must be at least 1¼" for 3" (10d) nails; 2" for 3½" (16d) nails. Clinch nails on back side.
- ▶ THAI hangers in this publication are based on a “top flange” installation and require that the carrying member have a horizontal thickness of at least 2½". Backer blocks are required when the header is an I-joist. Install 4 top nails and 2 face nails. THAI hangers are not rated for uplift.
- ▶ **NAILS:** 3½" (16d) = 0.162" dia. x 3 ½" long
3" (10d) = 0.148" dia. x 3" long
3" (10d) x 1½" = 0.148" dia. x 1½" long



Weights of Building Materials

CEILING	Pounds Per Square Foot (PSF)
Acoustical fiber tile ⁽¹⁾	1
Suspended steel channel system ⁽¹⁾	2
Suspended wood channel system	2.5
2x8 ceiling joists @ 16" o.c., R-49 insulation, 1/2" gypsum board	7
1" Plaster	8
1/2" gypsum board	2.2
5/8" gypsum board	2.75
ROOF	Pounds Per Square Foot (PSF)
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 ⁽¹⁾	8.7
2x8 rafters @ 16" o.c., fiberglass shingles, 15# felt, 3/8" sheathing	8
Skylight: metal frame w/ 3/8" wire glass ⁽¹⁾	8
FLOOR	Pounds Per Square Foot (PSF)
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 ⁽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
BCI [®] /AJS [®] joists @ 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
MISCELLANEOUS	Pounds Per Square Foot (PSF)
1" of sand	8
1" of water	5.2
Hay: baled, dry ⁽²⁾	15 pcf
Straw: baled, dry ⁽²⁾	8 pcf
Saturated soil (garden/landscaped roof)	135 pcf
Grand piano	1000 lbs
Hot Tub (tub & water weight)	150
Acrylic soaking tub — 2 person-80 gallon capacity (tub & water weight) ⁽⁵⁾	40

NOTES

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

Information from the Boise Cascade CANADA Technical Note GE-01.

SHEATHING	Pounds Per Square Foot (PSF)
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
11/8" Plywood – OSB ⁽³⁾	3.3 – 3.6
1/2" cementitious backerboard	3
11/2" softwood T & G decking	4.6
FRAMING	Pounds Per Square Foot (PSF)
2x4 @ 16" o.c.	1.1
2x6 @ 16" o.c.	1.7
2x8 @ 16" o.c.	2.2
2x10 @ 16" o.c.	2.9
2x12 @ 16" o.c.	3.5
BCI [®] 4500s, 5000 or 5000s @ 12" o.c.	2.0 – 2.9
BCI [®] 4500s, 5000 or 5000s @ 16" o.c.	1.5 – 2.2
BCI [®] 4500s, 5000 or 5000s @ 19.2" o.c.	1.3 – 2.8
BCI [®] 4500s, 5000 or 5000s @ 24" o.c.	1.0 – 1.5
BCI [®] 6000 or 6000s @ 12" o.c.	2.2 – 3.4
BCI [®] 6000 or 6000s @ 16" o.c.	1.7 – 2.6
BCI [®] 6000 or 6000s @ 19.2" o.c.	1.4 – 2.1
BCI [®] 6000 or 6000s @ 24" o.c.	1.1 – 1.7
BCI [®] 60, 60s, 6500 or 6500s @ 12" o.c.	2.3 – 3.8
BCI [®] 60, 60s, 6500 or 6500s @ 16" o.c.	1.7 – 2.9
BCI [®] 60, 60s, 6000 or 6500s @ 19.2" o.c.	1.4 – 2.4
BCI [®] 60, 60s, 6500 or 6500s @ 24" o.c.	1.2 – 1.9
BCI [®] 90 or 90s @ 12" o.c.	3.9 – 4.9
BCI [®] 90 or 90s @ 16" o.c.	2.9 – 3.7
BCI [®] 90 or 90s @ 19.2" o.c.	2.4 – 3.1
BCI [®] 90 or 90s @ 24" o.c.	1.9 – 2.5
AJS [®] 140, 150, 190 or 20 @ 12" o.c.	2.2 – 3.3
AJS [®] 140, 150, 190 or 20 @ 16" o.c.	1.7 – 2.5
AJS [®] 140, 150, 190 or 20 @ 19.2" o.c.	1.4 – 2.1
AJS [®] 140, 150, 190 or 20 @ 24" o.c.	1.1 – 1.7
AJS [®] 24, 25 or 30 @ 12" o.c.	3.1 – 3.9
AJS [®] 24, 25 or 30 @ 16" o.c.	2.3 – 2.9
AJS [®] 24, 25 or 30 @ 19.2" o.c.	1.9 – 2.4
AJS [®] 24, 25 or 30 @ 24" o.c.	1.6 – 2.0
AJS [®] 24 FMJ @ 12" o.c.	3.4 – 4.3
AJS [®] 24 FMJ @ 16" o.c.	2.6 – 3.2
AJS [®] 24 FMJ @ 19.2" o.c.	2.1 – 2.7
AJS [®] 24 FMJ @ 24" o.c.	1.7 – 2.1
WALL	Pounds Per Square Foot (PSF)
5/16" x 7 1/2" fiber cement lap siding	3
4" clay brick ⁽¹⁾	39
1/4" ceramic wall tile	3.1
13/4" Cultured Stone [®]	12
2x4 studs @ 16" o.c., 5/8" gypsum, insulation, 3/8" siding ⁽¹⁾	11
2x6 studs @ 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-thin face	30
3" Thick-solid glass block	40

(1) Minimum Design Loads for Buildings and Other Structures, ASCE 7-05 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, 998.

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

(5) Kohler[®] Specification Sheet K-1160-GLA 02/25/2018.

Boise Cascade is one of the largest producers of engineered wood products in North America. With coast-to-coast distribution, we strive to meet our customer's needs through regional product offerings, on-time delivery, and continued technical support long after the sale. We know our success depends upon yours. And that's why we offer a full line of innovative engineered wood products that give you the strength, stability, and consistent performance you need for each project—and every challenge.

AJS® Joists

Boise Cascade AJS® joists are engineered to perform. With solid-sawn flanges manufactured with proprietary MSR (machine stress rated) lumber, they're made to deliver strength and consistency you can count on.

Boise Cascade® OSB Rimboard

Give floors the support they need with Boise Cascade® OSB Rimboard — a one-step, easy-to-install solution designed for use with BCI® and AJS® Joists.

Versa-Stud® Wall Framing

Whether tackling a grand stairway, tall window walls, or beyond, Versa-Stud LVL is manufactured with the reliability and strength needed to get the job done right.

Versa-Lam® LVL Beams and Headers

Get industry-leading overall value without sacrificing strength. Versa-Lam LVL beams and headers resist twisting, shrinking, and splitting — creating flatter, quieter floors that keep customers happy.

BOISE GLULAM®

Adaptable. Affordable. Easy to install. With a variety of sizes and appearance grades, BOISE GLULAM® products are some of the most appealing engineered wood solutions available.

Boise Cascade Software Solutions

From 3D design tools to workflow management and beyond, the Boise Cascade® suite of software is built to make lumberyards, distributors, and their teams operate faster, stronger, and easier.

FASTER. STRONGER. EASIER.

Limited Lifetime Warranty

All Boise Cascade BCI® joist, Versa-Lam® LVL, and AJS® joist products are covered by a limited lifetime warranty for the expected life of the structure.

View the complete warranty on our website.

www.bc.com/terms-conditions/sales-terms-and-conditions/

Information provided herein was current at the time of printing but may be superseded by an updated version. Visit bc.com/ewp to confirm that this is the most current guide.

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Visit bc.com/ewp
or call 1-800-232-0788



Boise Cascade®
ENGINEERED WOOD PRODUCTS