

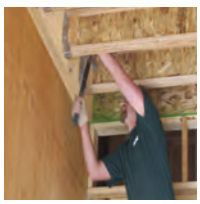






LIMIT STATES DESIGN
CANADA

FRAME FASTER




CCMC Report Number 13300-R
BCI®

BCI® SPECIFIER GUIDE WESTERN CANADA

Boise Cascade®
ENGINEERED WOOD PRODUCTS

High Performance
Floor & Roof Systems

WBCISG CA EN 04/14/2017 r 03/06/2020

Makes Designing Homes Easier

Architects, engineers, and designers trust Boise Cascade's Engineered Wood Products to provide a better system for framing floors, roofs and walls.

It's the SIMPLE FRAMING SYSTEM®, featuring beams, joists, studs, columns and rim boards that work together as a system, so you spend less time cutting and fitting. In fact, the SIMPLE FRAMING SYSTEM® uses fewer pieces and longer lengths than conventional framing, so you'll complete jobs in less time.

You'll Build Better Homes with the SIMPLE FRAMING SYSTEM®

Now it's easier than ever to design and build better floor systems. When you specify the SIMPLE FRAMING SYSTEM®, your clients will have fewer problems with squeaky floors and ceiling gypsum board cracks. The SIMPLE FRAMING SYSTEM® also means overall better floor, roof and wall framing than dimension lumber allows.

Better Framing Doesn't Have to Cost More

Boise Cascade EWP SIMPLE FRAMING SYSTEM® often costs less than conventional framing methods when the resulting reduced labor and materials waste are considered. There's less sorting and cost associated with disposing of waste because you order only what you need. Although our longer lengths help your clients get the job done faster, they cost no more.

Environmentally Sound

As an added bonus, floor, roof and wall systems built with Boise Cascade Joists require about half the number of trees as those built with dimension lumber. This helps you design a home both you and future generations will be proud to own.

What Makes the SIMPLE FRAMING SYSTEM® So Simple?

☑ Floor and Roof Framing with Boise Cascade Joists

Light in weight, but heavy-duty, Boise Cascade Joists have a better strength/weight ratio than dimension lumber. Knockouts can be removed for cross-ventilation and wiring.

☑ Ceilings Framed with Boise Cascade Joists

The consistent size of Boise Cascade Joists helps keep gypsum board flat and free of unsightly nail pops and ugly shadows, while keeping finish work to a minimum.

☑ VERSA-LAM® Beams for Floor and Roof Framing

These highly-stable beams are free of the large-scale defects that plague dimension beams. The result is quieter, flatter floors (no camber) and no shrinkage-related call-backs.

☑ VERSA-STUD® and VERSA-LAM® Columns for Wall Framing

VERSA-STUD® laminated veneer lumber wall framing is engineered for the high quality builder who wants . . .

- Stronger walls to resist wind loads.
- Stiffer walls for a solid feel.
- Straight walls for a high quality finish.

☑ Boise Cascade Rimboard

Boise Cascade EWP offer several engineered rimboard products regionally, including BC RIM BOARD® OSB, VERSA-RIM®, VERSA-STRAND™ 0.8 (check supplier or Boise Cascade EWP representative for availability). These products work with ALLJoist® and BCI® Joists to provide a solid connection at the critical floor/wall intersection.

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BCI® Joist 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 graded 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 O86-14, and listed under CCMC 13300-R report product evaluation.

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 O86-14 and the National Building Code of Canada (NBCC). The BCI® Joists shall be evaluated by the CCMC evaluation service.

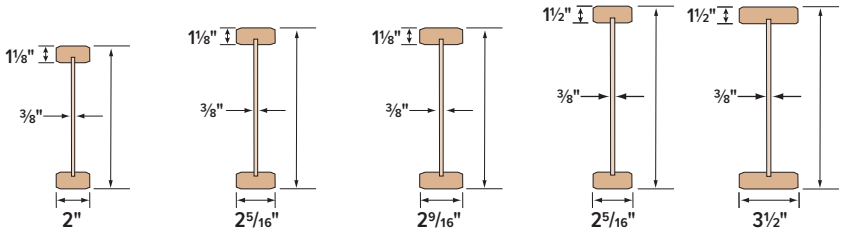
Boise Cascade Chain-Of-Custody Certifications

Boise Cascade Engineered Wood Products 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 site at http://www.bc.com/sustainability/certification-audits/ or view our green brochure at www.bc.com/inst11.

Boise Cascade Engineered Wood Products throughout North America can now be ordered FSC® Chain-of-Custody (COC) certified, enabling homebuilders to achieve LEED® points residential and commercial green building programs including LEED for Homes and LEED for New Construction. Boise Cascade Engineered Wood Products are available as PEFC® Chain-of-Custody certified, SFI® Chain-of-Custody certified and SFI® Fiber-Sourcing certified, as well as NAHB Research Center Green Approved, enabling homebuilders to also obtain green building points through the Green Building Standards.

Western Product Profiles



BCI® 5000 1.7
9½", 11⅞", 14", 16"

BCI® 6000 1.8
9½", 11⅞", 14", 16"

BCI® 6500 1.8
9½", 11⅞", 14", 16"

BCI® 60 2.0
11⅞", 14", 16", 18"

BCI® 90 2.0
11⅞", 14", 16", 18", 20"

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

Factored Resistances

Limit States Design (CANADA)

Joist Series	Joist Depth	Factored Moment Resistance	Factored Shear Resistance	Joist Stiffness EI	Shear Deformation Coefficient, K	Joist Weight	Factored End Bearing Resistance (lbs) 1½" Min. Bearing Length[2]		Factored Intermediate Bearing Resistance (lbs) 3½" Min. Bearing Length	
							No Web Stiffeners	WITH Web Stiffeners	No Web Stiffeners	WITH Web Stiffeners
	[in]	[lbs-ft]	[lbs]	[x10⁶ lbs-in²]	[x10⁶ lbs]	[lbs/ft]	[lbs]	[lbs]	[lbs]	[lbs]
BCI® 5000 1.7	9½	4130	2330	160	5.2	2	1500	1780	3310	3710
	11⅞	5300	2560	265	6.4	2.3	1500	2250	3550	4500
	14	6280	2880	390	7.6	2.5	1500	2410	3710	4810
BCI® 6000 1.8	9½	5310	2490	190	5.2	2.2	1850	2170	3790	4180
	11⅞	6810	2640	320	6.5	2.5	1850	2250	3950	4500
	14	8080	3040	470	7.6	2.7	1850	2410	4100	4970
	16	9220	3430	635	8.7	2.9	1850	2560	4180	5290
BCI® 6500 1.8	9½	5880	2490	210	5.3	2.3	1850	2170	3790	4180
	11⅞	7540	2640	350	6.5	2.6	1850	2250	3950	4500
	14	8950	3040	515	7.7	2.9	1850	2410	4100	4970
	16	10210	3430	690	8.7	3.1	1850	2560	4180	5290
BCI® 60 2.0	11⅞	10370	2640	430	6.6	2.9	1850	2250	3950	4500
	14	12370	3040	635	7.7	3.1	1850	2410	4110	4970
	16	14170	3430	860	8.7	3.3	1850	2560	4180	5290
BCI® 90 2.0	11⅞	15870	3390	645	6.7	3.9	1970	2920	4780	5840
	14	18940	3710	940	7.8	4.1	1970	3080	4810	6080
	16	21700	4020	1275	8.9	4.4	2050	3390	4900	6310
	18	24430	4340	1660	10.0	4.6	N/A	3630	N/A	6550
	20	27130	4500	2100	11.1	4.8		3950		6790

NOTES

1. All resistance factors, as per CSA O86-14 have been applied.
2. Minimum bearing length at end support is 1½".
3. BCI® Joists deeper than 16" require web stiffeners at all bearing locations
4. The BCI® Joist deflection under uniform load may be calculated with the equation to the right:

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

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 REPORTS
- CCMC Report Number 13300-R

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" or 19/32" Subfloor (Nailed)

Live Load: 40 psf		SIMPLE SPAN								CONTINUOUS SPAN							
Dead Load: 15 psf		Without Gypsum Ceiling Attached				½" Gypsum Ceiling Attached				Without Gypsum Ceiling Attached				½" Gypsum Ceiling Attached			
Joist Series	Depth [in]	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
BCI® 5000 1.7	9½	14'-2"	13'-3"	12'-8"	N/A	14'-7"	13'-7"	13'-1"	N/A	15'-4"	14'-4"	13'-9"	N/A	15'-10"	14'-9"	14'-2"	N/A
	11⅞	15'-11"	14'-10"	14'-3"	N/A	16'-5"	15'-4"	14'-8"	N/A	17'-3"	16'-1"	15'-6"	N/A	17'-9"	16'-7"	15'-11"	N/A
	14	17'-4"	16'-2"	15'-6"	N/A	17'-10"	16'-8"	16'-0"	N/A	19'-0"	17'-6"	16'-10"	N/A	19'-9"	18'-1"	17'-5"	N/A
BCI® 6000 1.8	9½	14'-9"	13'-9"	13'-3"	N/A	15'-2"	14'-2"	13'-7"	N/A	16'-0"	14'-11"	14'-4"	N/A	16'-5"	15'-4"	14'-9"	N/A
	11⅞	16'-7"	15'-5"	14'-10"	N/A	17'-0"	15'-10"	15'-3"	N/A	17'-11"	16'-9"	16'-1"	N/A	18'-7"	17'-3"	16'-6"	N/A
	14	18'-0"	16'-10"	16'-2"	N/A	18'-7"	17'-3"	16'-7"	N/A	19'-11"	18'-3"	17'-6"	N/A	20'-8"	18'-11"	18'-0"	N/A
	16	19'-8"	18'-0"	17'-3"	N/A	20'-4"	18'-8"	17'-9"	N/A	21'-9"	19'-11"	18'-11"	N/A	22'-7"	20'-8"	19'-8"	N/A
BCI® 6500 1.8	9½	15'-1"	14'-1"	13'-6"	N/A	15'-5"	14'-5"	13'-10"	N/A	16'-4"	15'-3"	14'-7"	N/A	16'-9"	15'-8"	15'-0"	N/A
	11⅞	16'-11"	15'-9"	15'-1"	N/A	17'-4"	16'-2"	15'-6"	N/A	18'-4"	17'-1"	16'-5"	N/A	19'-0"	17'-7"	16'-10"	N/A
	14	18'-5"	17'-2"	16'-5"	N/A	19'-1"	17'-7"	16'-11"	N/A	20'-5"	18'-9"	17'-10"	N/A	21'-2"	19'-5"	18'-5"	N/A
	16	20'-1"	18'-5"	17'-7"	N/A	20'-10"	19'-1"	18'-1"	N/A	22'-3"	20'-5"	19'-5"	N/A	23'-1"	21'-2"	20'-1"	N/A
BCI® 60 2.0	11⅞	17'-7"	16'-5"	15'-9"	N/A	18'-0"	16'-10"	16'-2"	N/A	19'-5"	17'-10"	17'-1"	N/A	20'-0"	18'-4"	17'-6"	N/A
	14	19'-6"	17'-11"	17'-2"	N/A	20'-1"	18'-5"	17'-7"	N/A	21'-7"	19'-9"	18'-9"	N/A	22'-4"	20'-5"	19'-5"	N/A
	16	21'-3"	19'-5"	18'-5"	N/A	21'-11"	20'-1"	19'-1"	N/A	23'-7"	21'-7"	20'-6"	N/A	24'-4"	22'-4"	21'-2"	N/A
BCI® 90 2.0	11⅞	19'-6"	17'-10"	17'-1"	N/A	20'-0"	18'-3"	17'-6"	N/A	21'-7"	19'-9"	18'-9"	N/A	22'-3"	20'-4"	19'-3"	N/A
	14	21'-8"	19'-10"	18'-9"	N/A	22'-3"	20'-4"	19'-4"	N/A	24'-1"	22'-0"	20'-11"	N/A	24'-9"	22'-8"	21'-6"	N/A
	16	23'-8"	21'-7"	20'-5"	N/A	24'-3"	22'-2"	21'-0"	N/A	26'-3"	24'-0"	22'-9"	N/A	27'-0"	24'-8"	23'-5"	N/A
	18	25'-6"	23'-3"	22'-1"	N/A	26'-2"	24'-0"	22'-8"	N/A	28'-4"	25'-10"	24'-6"	N/A	29'-1"	26'-8"	25'-3"	N/A
	20	27'-3"	24'-11"	23'-7"	N/A	28'-0"	25'-8"	24'-4"	N/A	30'-3"	27'-8"	26'-3"	N/A	31'-2"	28'-6"	27'-1"	N/A

3/4" or 23/32" Subfloor (Nailed)

Live Load: 40 psf		SIMPLE SPAN								CONTINUOUS SPAN							
Dead Load: 15 psf		Without Gypsum Ceiling Attached				½" Gypsum Ceiling Attached				Without Gypsum Ceiling Attached				½" Gypsum Ceiling Attached			
Joist Series	Depth [in]	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
BCI® 5000 1.7	9½	14'-10"	13'-10"	13'-3"	12'-7"	15'-2"	14'-2"	13'-7"	12'-11"	16'-0"	15'-0"	14'-4"	13'-8"	16'-6"	15'-4"	14'-9"	14'-0"
	11⅞	16'-8"	15'-6"	14'-10"	14'-2"	17'-1"	15'-11"	15'-3"	14'-6"	18'-0"	16'-10"	16'-1"	15'-4"	18'-8"	17'-4"	16'-7"	15'-9"
	14	18'-2"	16'-11"	16'-2"	15'-5"	18'-9"	17'-5"	16'-8"	15'-10"	20'-1"	18'-5"	17'-6"	16'-8"	20'-9"	19'-1"	18'-1"	17'-3"
BCI® 6000 1.8	9½	15'-5"	14'-5"	13'-9"	13'-1"	15'-9"	14'-9"	14'-1"	13'-5"	16'-8"	15'-7"	14'-11"	14'-2"	17'-1"	16'-0"	15'-4"	14'-7"
	11⅞	17'-4"	16'-2"	15'-5"	14'-8"	17'-9"	16'-6"	15'-10"	15'-1"	18'-11"	17'-6"	16'-9"	15'-11"	19'-6"	17'-11"	17'-2"	16'-4"
	14	19'-0"	17'-7"	16'-10"	16'-0"	19'-7"	18'-0"	17'-3"	16'-5"	21'-1"	19'-3"	18'-3"	17'-4"	21'-9"	20'-0"	18'-11"	17'-10"
	16	20'-9"	19'-0"	18'-0"	17'-1"	21'-5"	19'-8"	18'-7"	17'-7"	23'-0"	21'-1"	19'-11"	18'-9"	23'-9"	21'-10"	20'-8"	19'-5"
BCI® 6500 1.8	9½	15'-9"	14'-8"	14'-1"	13'-4"	16'-1"	15'-0"	14'-4"	13'-8"	17'-0"	15'-11"	15'-3"	14'-6"	17'-5"	16'-3"	15'-7"	14'-10"
	11⅞	17'-8"	16'-5"	15'-9"	15'-0"	18'-1"	16'-10"	16'-1"	15'-4"	19'-5"	17'-10"	17'-1"	16'-3"	20'-0"	18'-4"	17'-6"	16'-8"
	14	19'-6"	17'-11"	17'-2"	16'-4"	20'-1"	18'-5"	17'-7"	16'-8"	21'-7"	19'-9"	18'-9"	17'-8"	22'-3"	20'-5"	19'-4"	18'-2"
	16	21'-3"	19'-5"	18'-5"	17'-5"	21'-11"	20'-1"	19'-0"	17'-11"	23'-7"	21'-7"	20'-5"	19'-2"	24'-3"	22'-4"	21'-1"	19'-10"
BCI® 60 2.0	11⅞	18'-6"	17'-2"	16'-5"	15'-7"	19'-0"	17'-6"	16'-9"	16'-0"	20'-6"	18'-9"	17'-10"	17'-0"	21'-1"	19'-4"	18'-3"	17'-4"
	14	20'-8"	18'-10"	17'-11"	17'-0"	21'-2"	19'-5"	18'-4"	17'-5"	22'-10"	20'-11"	19'-9"	18'-7"	23'-6"	21'-7"	20'-5"	19'-2"
	16	22'-6"	20'-7"	19'-5"	18'-3"	23'-1"	21'-2"	20'-0"	18'-9"	24'-11"	22'-10"	21'-7"	20'-3"	25'-8"	23'-6"	22'-3"	20'-11"
BCI® 90 2.0	11⅞	20'-8"	18'-10"	17'-10"	17'-0"	21'-1"	19'-3"	18'-2"	17'-3"	22'-10"	20'-11"	19'-9"	18'-7"	23'-5"	21'-5"	20'-3"	19'-0"
	14	23'-0"	20'-11"	19'-9"	18'-7"	23'-6"	21'-6"	20'-3"	19'-0"	25'-6"	23'-3"	22'-0"	20'-8"	26'-1"	23'-10"	22'-7"	21'-2"
	16	25'-0"	22'-10"	21'-7"	20'-2"	25'-7"	23'-5"	22'-1"	20'-9"	27'-9"	25'-5"	24'-0"	22'-6"	28'-5"	26'-0"	24'-7"	23'-1"
	18	27'-0"	24'-8"	23'-3"	21'-9"	27'-7"	25'-3"	23'-11"	22'-5"	29'-11"	27'-5"	25'-10"	24'-3"	30'-7"	28'-1"	26'-7"	24'-11"
	20	28'-11"	26'-4"	24'-11"	23'-4"	29'-6"	27'-0"	25'-7"	23'-11"	32'-0"	29'-3"	27'-8"	25'-11"	32'-10"	30'-1"	28'-5"	26'-8"

*See notes on page 6.

Residential Floor Span Tables (Glued & Nailed)

5/8" or 19/32" Subfloor (Glued & Nailed)

Live Load: 40 psf / Dead Load: 15 psf		SIMPLE SPAN								CONTINUOUS SPAN							
		Without Gypsum Ceiling Attached				½" Gypsum Ceiling Attached				Without Gypsum Ceiling Attached				½" Gypsum Ceiling Attached			
Joist Series	Depth [in]	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
BCI® 5000 1.7	9½	15'-2"	14'-4"	13'-11"	N/A	15'-8"	14'-10"	14'-4"	N/A	16'-5"	15'-6"	15'-0"	N/A	17'-0"	16'-1"	15'-7"	N/A
	11⅞	17'-0"	16'-1"	15'-6"	N/A	17'-7"	16'-7"	16'-1"	N/A	18'-6"	17'-4"	16'-10"	N/A	19'-3"	18'-0"	17'-5"	N/A
	14	18'-7"	17'-5"	16'-10"	N/A	19'-4"	18'-0"	17'-5"	N/A	20'-6"	19'-1"	18'-4"	N/A	21'-5"	20'-0"	19'-2"	N/A
BCI® 6000 1.8	9½	15'-8"	14'-10"	14'-4"	N/A	16'-2"	15'-3"	14'-9"	N/A	17'-0"	16'-0"	15'-6"	N/A	17'-6"	16'-6"	16'-0"	N/A
	11⅞	17'-7"	16'-7"	16'-0"	N/A	18'-1"	17'-1"	16'-6"	N/A	19'-3"	17'-11"	17'-4"	N/A	20'-0"	18'-7"	17'-11"	N/A
	14	19'-4"	18'-0"	17'-4"	N/A	20'-1"	18'-8"	17'-11"	N/A	21'-4"	19'-10"	19'-0"	N/A	22'-3"	20'-8"	19'-10"	N/A
	16	21'-0"	19'-6"	18'-8"	N/A	21'-10"	20'-4"	19'-5"	N/A	23'-3"	21'-7"	20'-8"	N/A	24'-2"	22'-6"	21'-7"	N/A
BCI® 6500 1.8	9½	16'-0"	15'-1"	14'-7"	N/A	16'-5"	15'-6"	14'-11"	N/A	17'-3"	16'-4"	15'-9"	N/A	17'-9"	16'-9"	16'-3"	N/A
	11⅞	17'-10"	16'-10"	16'-3"	N/A	18'-5"	17'-4"	16'-9"	N/A	19'-8"	18'-3"	17'-7"	N/A	20'-5"	19'-0"	18'-2"	N/A
	14	19'-9"	18'-3"	17'-8"	N/A	20'-5"	19'-0"	18'-2"	N/A	21'-10"	20'-3"	19'-5"	N/A	22'-8"	21'-1"	20'-2"	N/A
	16	21'-5"	19'-10"	19'-0"	N/A	22'-3"	20'-8"	19'-9"	N/A	23'-9"	22'-0"	21'-1"	N/A	24'-8"	22'-11"	22'-0"	N/A
BCI® 60 2.0	11⅞	18'-7"	17'-5"	16'-10"	N/A	19'-2"	17'-10"	17'-3"	N/A	20'-7"	19'-1"	18'-3"	N/A	21'-3"	19'-9"	18'-11"	N/A
	14	20'-8"	19'-2"	18'-4"	N/A	21'-4"	19'-10"	18'-11"	N/A	22'-11"	21'-2"	20'-3"	N/A	23'-8"	22'-0"	21'-0"	N/A
	16	22'-6"	20'-10"	19'-11"	N/A	23'-3"	21'-7"	20'-8"	N/A	24'-11"	23'-1"	22'-1"	N/A	25'-9"	23'-11"	22'-11"	N/A
BCI® 90 2.0	11⅞	20'-5"	18'-10"	18'-0"	N/A	20'-11"	19'-4"	18'-6"	N/A	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-7"	N/A
	14	22'-8"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-7"	N/A	25'-1"	23'-2"	22'-2"	N/A	25'-10"	23'-11"	22'-10"	N/A
	16	24'-8"	22'-9"	21'-8"	N/A	25'-4"	23'-5"	22'-4"	N/A	27'-4"	25'-3"	24'-1"	N/A	28'-1"	26'-0"	24'-10"	N/A
	18	26'-7"	24'-6"	23'-4"	N/A	27'-4"	25'-3"	24'-1"	N/A	29'-5"	27'-2"	25'-11"	N/A	30'-3"	28'-0"	26'-9"	N/A
	20	28'-4"	26'-2"	24'-11"	N/A	29'-2"	27'-0"	25'-9"	N/A	31'-6"	29'-0"	27'-8"	N/A	32'-4"	29'-11"	28'-7"	N/A

3/4" or 23/32" Subfloor (Glued & Nailed)

Live Load: 40 psf / Dead Load: 15 psf		SIMPLE SPAN								CONTINUOUS SPAN							
		Without Gypsum Ceiling Attached				½" Gypsum Ceiling Attached				Without Gypsum Ceiling Attached				½" Gypsum Ceiling Attached			
Joist Series	Depth [in]	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
BCI® 5000 1.7	9½	16'-2"	15'-3"	14'-8"	13'-11"	16'-7"	15'-8"	15'-0"	13'-11"	17'-5"	16'-5"	15'-10"	14'-3"	18'-0"	17'-0"	15'-11"	14'-3"
	11⅞	18'-0"	17'-0"	16'-5"	15'-9"	18'-8"	17'-7"	16'-11"	16'-3"	19'-11"	18'-6"	17'-9"	16'-2"	20'-8"	19'-4"	18'-1"	16'-2"
	14	20'-0"	18'-7"	17'-9"	17'-1"	20'-9"	19'-4"	18'-6"	17'-8"	22'-1"	20'-6"	19'-7"	17'-7"	23'-0"	21'-5"	19'-9"	17'-7"
BCI® 6000 1.8	9½	16'-8"	15'-8"	15'-2"	14'-6"	17'-1"	16'-2"	15'-7"	14'-9"	18'-0"	17'-0"	16'-4"	15'-8"	18'-7"	17'-6"	16'-10"	16'-2"
	11⅞	18'-9"	17'-6"	16'-11"	16'-2"	19'-4"	18'-0"	17'-5"	16'-8"	20'-8"	19'-2"	18'-4"	17'-6"	21'-5"	20'-0"	19'-1"	18'-1"
	14	20'-9"	19'-3"	18'-4"	17'-7"	21'-6"	20'-0"	19'-1"	18'-1"	22'-11"	21'-3"	20'-4"	19'-3"	23'-10"	22'-2"	21'-2"	20'-1"
	16	22'-7"	20'-11"	20'-0"	18'-11"	23'-5"	21'-9"	20'-9"	19'-9"	25'-0"	23'-2"	22'-1"	20'-11"	25'-11"	24'-2"	23'-1"	21'-2"
BCI® 6500 1.8	9½	16'-11"	15'-11"	15'-4"	14'-9"	17'-4"	16'-4"	15'-9"	15'-2"	18'-4"	17'-3"	16'-8"	15'-11"	19'-0"	17'-9"	17'-1"	16'-5"
	11⅞	19'-1"	17'-10"	17'-2"	16'-5"	19'-9"	18'-4"	17'-8"	16'-11"	21'-1"	19'-7"	18'-8"	17'-10"	21'-10"	20'-4"	19'-5"	18'-5"
	14	21'-2"	19'-8"	18'-9"	17'-10"	21'-11"	20'-4"	19'-5"	18'-5"	23'-5"	21'-9"	20'-9"	19'-8"	24'-3"	22'-7"	21'-7"	20'-5"
	16	23'-0"	21'-4"	20'-4"	19'-4"	23'-10"	22'-2"	21'-2"	20'-1"	25'-6"	23'-7"	22'-6"	21'-2"	26'-4"	24'-6"	23'-5"	21'-2"
BCI® 60 2.0	11⅞	20'-0"	18'-6"	17'-9"	17'-0"	20'-7"	19'-1"	18'-2"	17'-5"	22'-1"	20'-6"	19'-6"	18'-6"	22'-9"	21'-2"	20'-2"	19'-2"
	14	22'-2"	20'-6"	19'-7"	18'-7"	22'-10"	21'-2"	20'-2"	19'-2"	24'-6"	22'-9"	21'-8"	20'-6"	25'-3"	23'-6"	22'-5"	20'-10"
	16	24'-2"	22'-4"	21'-3"	20'-2"	24'-10"	23'-1"	22'-0"	20'-10"	26'-8"	24'-9"	23'-7"	21'-2"	27'-6"	25'-7"	24'-5"	21'-2"
BCI® 90 2.0	11⅞	21'-10"	20'-2"	19'-3"	18'-2"	22'-4"	20'-8"	19'-8"	18'-8"	24'-2"	22'-4"	21'-4"	20'-2"	24'-9"	22'-11"	21'-10"	20'-8"
	14	24'-3"	22'-5"	21'-4"	20'-2"	24'-10"	23'-0"	21'-10"	20'-8"	26'-11"	24'-10"	23'-7"	22'-4"	27'-6"	25'-6"	24'-3"	23'-0"
	16	26'-5"	24'-4"	23'-2"	21'-11"	27'-0"	25'-0"	23'-10"	22'-6"	29'-3"	27'-0"	25'-8"	24'-3"	29'-11"	27'-9"	26'-5"	24'-10"
	18	28'-5"	26'-3"	24'-11"	23'-6"	29'-1"	26'-11"	25'-8"	24'-3"	31'-6"	29'-1"	27'-8"	26'-1"	32'-3"	29'-10"	28'-5"	26'-11"
	20	30'-4"	28'-0"	26'-7"	25'-1"	31'-1"	28'-9"	27'-5"	25'-11"	34'-0"	31'-0"	29'-6"	27'-10"	35'-1"	31'-11"	30'-5"	28'-9"

NOTES

1. Spans shown are in accordance with NBCC 2015.
2. Tables are based on the uniform standard loads of 40 psf live load and 15 psf dead load (for Standard Term Load Duration).
3. Floor tile will increase the dead load and specific deflection limits may apply.
4. Maximum spans listed are the clear spans between supports.
5. Minimum end bearing length is 1½".
6. Minimum interior bearing length is 3½".
7. Joists deeper than 16" require web stiffeners at all bearing locations
8. Tabulated values shown assume a glued and nailed subfloor and are in compliance with the CCMC Vibration Criteria "Concluding " Report (dated September 4, 1997).
9. The subfloor shall be CSA rated Oriented Strand Board (OSB), Canadian Softwood Plywood (CSP) or Douglas Fir Plywood (DFP).
10. **Total load deflection is limited to L/240**
11. **Live load deflection is limited to L/360.**
12. Lateral support must be provided for the compression edge and also at the bearings to prevent lateral displacement or rotation.
13. It may be possible to exceed the limitations of these tables by analyzing a specific application with Boise Cascade BC CALC® or BC FRAMER® Software.
14. 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.
15. When using continuous spans over an intermediate bearing, 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 = $L_2*(factor_1*W_{FD}-W_{FL})/factor_2$

where: W_{FD} = Factored dead load (lb/ft)
W_{FL} = Factored live load (lb/ft)
L_2 = Length of longer span (ft)
$factor_2 = 8a(1+a)$
L_1 = Length of shorter span (ft)
$factor_1 = 4a^2 + 3a^3 - 1$
a = Short span/Long span

Short/Long span ratio = a	0.5	0.6	0.7	0.8	0.9	1
$factor_1$	0.38	1.09	1.99	3.10	4.43	6.00
$factor_2$	6	7.68	9.52	11.52	13.68	16

16. Actual deflection based on span and deflection limit.

Deflection limit	Actual deflection (in)						
	Span (ft)						
	15	17	19	21	25	30	35
L/360	0.50	0.57	0.63	0.70	0.83	1.00	1.17
L/240	0.75	0.85	0.95	1.05	1.25	1.50	1.75

17. WARNING: Use of Span Tables for Commercial Projects (NBCC 2015: 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 (2015). Table 4.1.5.9 in NBCC (2015) lists concentrated loads that shall be analyzed 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.

Allowable Uniform Floor Load [PLF]

Design Span (ft)	Joist Series	BCI® 5000			BCI® 6000				BCI® 6500				BCI® 60			BCI® 90				
	Joist Depth (in)	9½	11⅞	14	9½	11⅞	14	16	9½	11⅞	14	16	11⅞	14	16	11⅞	14	16	18	20
6	Unfactored Live Load for L / 360 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	441	473	494	505	526	546	557	505	526	546	557	526	548	557	637	641	653	873	905
8	Unfactored Live Load for L / 360 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	331	355	371	379	395	410	418	379	395	410	418	395	411	418	478	481	490	655	679
10	Unfactored Live Load for L / 360 [plf]	203	-	-	235	-	-	-	256	-	-	-	-	-	-	-	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	264	284	296	303	316	328	334	303	316	328	334	316	328	334	382	384	392	524	543
12	Unfactored Live Load for L / 360 [plf]	123	196	-	143	232	-	-	157	250	-	-	-	-	-	-	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	184	-	-	215	-	-	-	235	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	220	236	247	252	263	273	278	252	263	273	278	263	274	278	318	320	326	436	452
14	Unfactored Live Load for L / 360 [plf]	79	128	184	93	152	217	-	102	164	-	-	197	-	-	-	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	119	192	-	139	-	-	-	153	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	168	202	212	216	225	234	238	216	225	234	238	225	234	238	273	274	280	374	388
16	Unfactored Live Load for L / 360 [plf]	54	88	127	63	104	150	199	70	113	163	-	136	195	-	194	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	81	132	-	95	157	-	-	105	170	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	129	165	185	165	197	205	209	183	197	205	209	197	205	209	239	240	245	327	339
18	Unfactored Live Load for L / 360 [plf]		63	91	45	75	108	144	50	81	117	155	98	142	-	141	199	-	-	-
	Unfactored Total Load for L / 240 [plf]		94	137	68	112	162	-	75	122	176	-	147	-	-	212	-	-	-	-
	Factored Total Load [plf]		130	155	131	168	182	185	145	175	182	185	175	182	185	212	213	217	291	301
20	Unfactored Live Load for L / 360 [plf]		46	67		55	80	107		60	87	115	73	105	140	105	149	-	251	-
	Unfactored Total Load for L / 240 [plf]		69	101		83	120	160		90	131	-	109	158	-	158	-	-	-	-
	Factored Total Load [plf]		106	125		136	161	167		150	164	167	158	164	167	191	192	196	262	271
22	Unfactored Live Load for L / 360 [plf]			51		42	61	81		45	66	88	55	80	107	81	115	153	195	241
	Unfactored Total Load for L / 240 [plf]			77		63	91	122		68	100	132	83	121	-	121	173	-	-	-
	Factored Total Load [plf]			103		112	133	152		124	147	152	143	149	152	173	174	178	238	246
24	Unfactored Live Load for L / 360 [plf]						47	63			51	68	43	63	84	63	90	120	154	191
	Unfactored Total Load for L / 240 [plf]						71	95			77	103	65	94	126	95	135	-	-	-
	Factored Total Load [plf]						112	128			124	139	131	137	139	159	160	163	218	226
26	Unfactored Live Load for L / 360 [plf]							50			41	54		50	67	50	72	96	123	154
	Unfactored Total Load for L / 240 [plf]							75			61	82		75	100	75	108	144	185	-
	Factored Total Load [plf]							109			105	120		126	128	147	148	150	201	208
28	Unfactored Live Load for L / 360 [plf]							40				44		40	54	40	58	78	100	125
	Unfactored Total Load for L / 240 [plf]							61				66		60	81	61	87	117	150	188
	Factored Total Load [plf]							94				104		117	119	136	137	140	187	194
30	Unfactored Live Load for L / 360 [plf]														44		48	64	82	103
	Unfactored Total Load for L / 240 [plf														66		72	96	124	155
	Factored Total Load [plf]														111		128	130	174	181

NOTES

1. Total Factored Load values are limited by shear, end/interior reactions or bending moment.
2. 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 (recommended for less vibration).
3. Unfactored Total Load values are limited by deflection equal to L / 240.
4. All three loading cases must be checked. Where a Live Load value is not shown, the Factored Total Load value will control.
5. Joists deeper than 16" require web stiffeners at all bearing locations.
6. 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. Analyze continuous span beams with the BC CALC® software if the length of any span is less than half the length of an adjacent span.
7. Table values assume that lateral support is provided at each support and continuously along the compression edge of the beam.
8. Table values do not consider composite action from gluing and nailing floor sheathing.
9. Total Factored Load values assume minimum bearing lengths without web stiffeners.
10. For 2-ply, double the Factored Total Load, Unfactored Live and Total Load values.
11. This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® software.

Deflection limit	Actual deflection based on Span and Limit (in)												
	Span (ft)												
	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

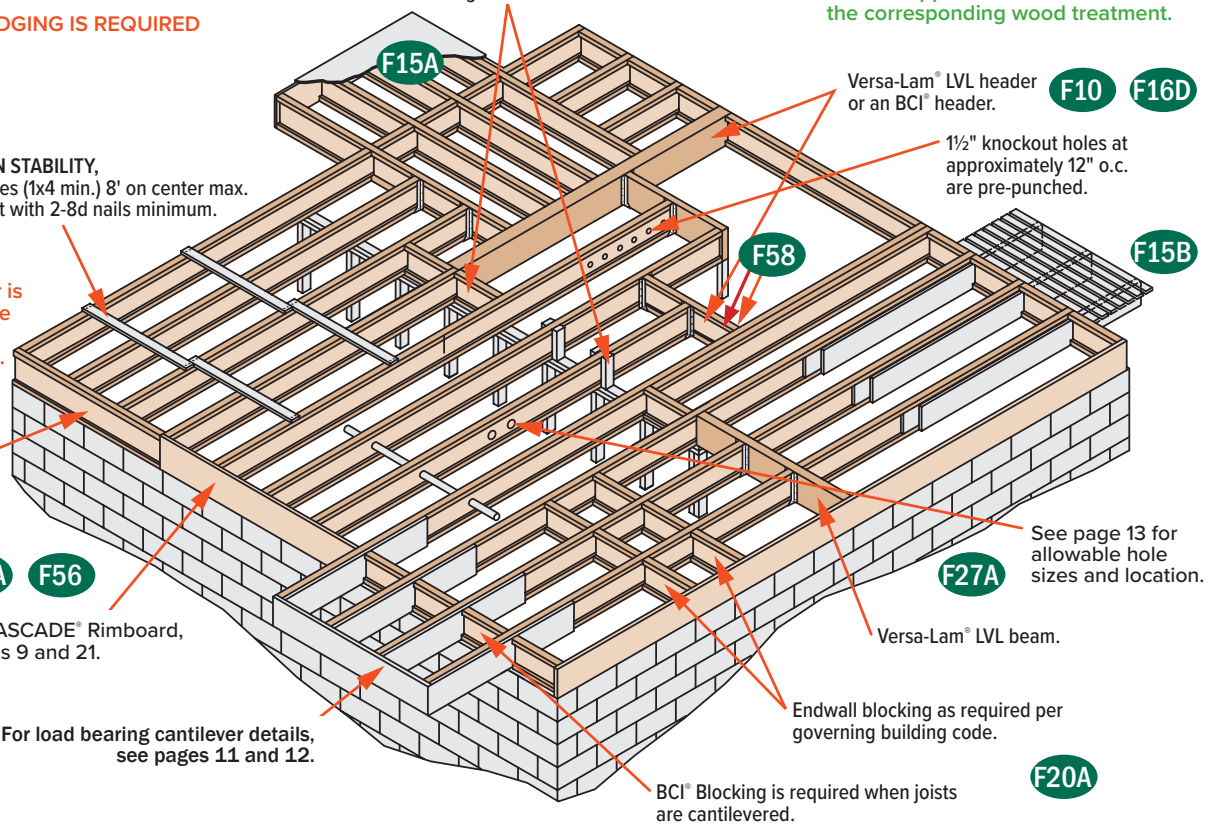
Floor Framing

NOTE
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

F06 F09
BCI® blocking or 2x4 "squash" block on each side required when supporting a load-bearing wall above.

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



BCI® Joists, VERSA-LAM® and ALLJOIST® 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. VERSA-LAM®, ALLJOIST®, and BCI® Joists must be wrapped, covered, and stored off of the ground on stickers at all times prior to installation. VERSA-LAM®, ALLJOIST® and BCI® Joists are intended only for applications that assure 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. Failure to correctly store, use or install VERSA-LAM®, ALLJOIST®, and BCI® Joist in accordance with the Boise Cascade EWP Installation Guide will void the limited warranty.

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 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 ½ inch 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.

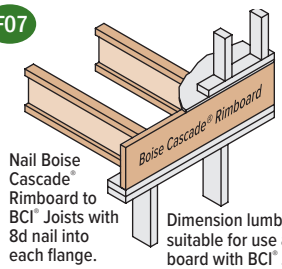
PRODUCT HANDLING TO AND AT JOB SITES

There are some differences between engineered wood products and traditional lumber products in terms of product handling: Avoid handling and storing BCI® Joists in the flat direction. VERSA-LAM® is denser and due to the coating applied to the surface, can be more apt to sliding. Please consider these differences when transporting and handling engineered wood products.

Additional floor framing details available with BC FRAMER® software

END BEARING DETAILS

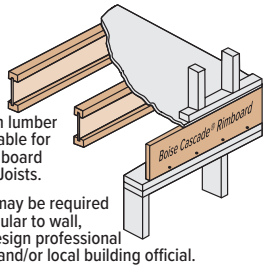
F07



Nail Boise Cascade® Rimboard to BCI® Joists with 8d nail into each flange.

Dimension lumber is not suitable for use as rim board with BCI® Joists.

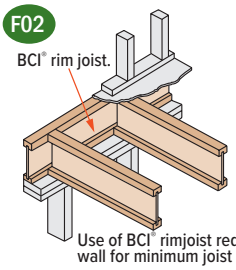
F07A



Dimension lumber is not suitable for use as rimboard with BCI® Joists.

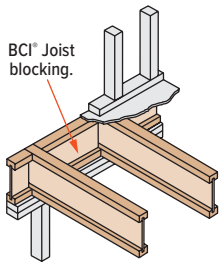
Blocking may be required perpendicular to wall, consult design professional of record and/or local building official.

F02

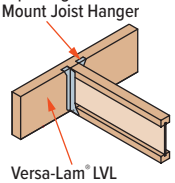


Use of BCI® rimjoist requires 2x6 wall for minimum joist bearing.

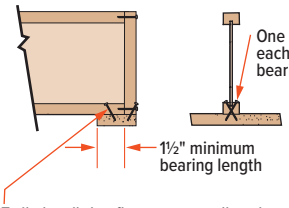
F01



F27A

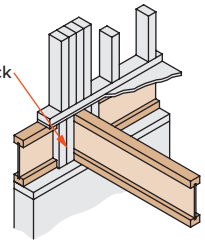


F52

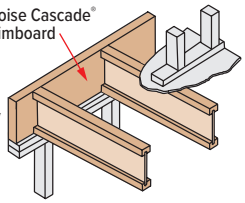


To limit splitting flange, start nails at least 1½" from end. Nails may need to be driven at an angle to limit splitting of bearing plate.

F08



F03

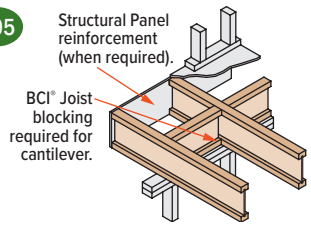


NOTE: BCI® floor joist must be designed to carry wall above when not stacked over wall below.

Blocking required underneath braced wall panels and shear walls, consult design professional of record.

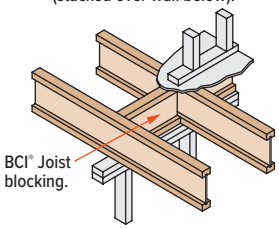
INTERMEDIATE BEARING DETAILS

F05



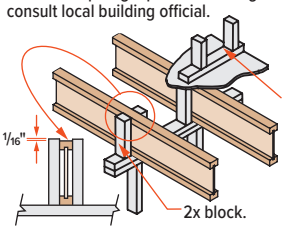
For load bearing cantilever, see pages 11 and 12. Uplift on backspan shall be considered in all cantilever designs.

F06



Blocking may be required at intermediate bearings for floor diaphragm per NBCC in high seismic areas, consult local building official.

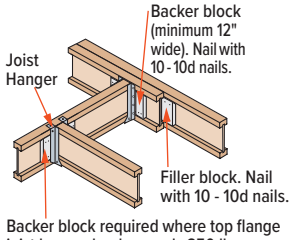
F09



Double Squash Block Vertical Load [lb/ft]				
Size	Joist Spacing [in]			
	12	16	19.2	24
2x4	6460	4840	4030	3230
2x6	10140	7600	6330	5070

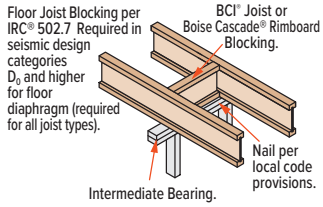
1. Squash blocks are to be in full contact with upper floor and lower wall plate.
2. Capacities shown are for a double squash blocks at each joist, SPF or better.

F10



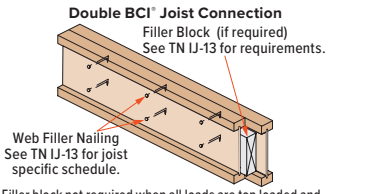
Backer block required where top flange joist hanger load exceeds 250 lbs. Install tight to top flange.

F28



Cross bracing OK as blocking only if support below is not a braced wall panel or shear wall and no wall exists above.

F58



- Filler block not required when all loads are top loaded and evenly applied to each ply (except BCI® 90 and AJS® 25, 30). Side loads and/or uneven top loads require filler block.
- See Boise Cascade Technical Note IJ-13 for further information.
- Fasten floor sheathing to each ply per diaphragm nailing schedule.

LATERAL SUPPORT

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

MINIMUM BEARING LENGTH FOR BCI® JOISTS

- Minimum end bearing: 1½" 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 1¼ inches thick and less: 2-8d nails, one each in the top and bottom flange.
  - BCI® 5000 rim joist: 2-10d box nails, one each in the top and bottom flange.
  - BCI® 6000/60 rim joist: 2-16d box nails, one each in the top and bottom flange.
  - BCI® 6500/90 rim joist: Toe-nail top flange to rim joist with 2-10d box nails, one each side of flange.
- BCI® rim joist, rim board or BCI® blocking panel to support:
  - Min. 8d nails @ 6" o.c. per NBCC.
  - Connection per design professional of record's specification for shear transfer.
- BCI® joist to support:
  - 2-8d nails, one on each side of the web, placed 1½ inches minimum from the end of the BCI® Joist to limit splitting.
- Sheathing to BCI® joist:
  - Prescriptive residential floor sheathing nailing requires 8d common nails @ 6" o.c. on edges and @ 12" o.c. in the field as per NBCC.
  - Maximum bracing spacing for full lateral stability: 18" for 5000, 24" for larger BCI® Joist series.
  - 14 gauge staples may be substituted for 8d nails if the staples penetrate at least 1 inch into the joist.
  - Wood screws may be acceptable, contact local building official and/or Boise Cascade EWP Engineering for further information.

BACKER AND FILLER BLOCK DIMENSIONS

Series	Backer Block Thickness	Filler Block Thickness
5000 1.7	¾" or ⅞" wood panels	Two ¾" wood panels or 2 x _
6000 1.8	1⅛" or two ½" wood panels	2 x _ + 7/16" or ½" wood panel
6500 1.8	1⅛" or two ⅝" wood panels	2 x _ + ⅝" or ¾" wood panel
60 2.0	1⅛" or two ½" wood panels	2 x _ + 7/16" or ½" wood panel
90 2.0	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.

WEB STIFFENER REQUIREMENTS

- See *Web Stiffener Requirements* on page 10.

PROTECT BCI® JOISTS FROM THE WEATHER

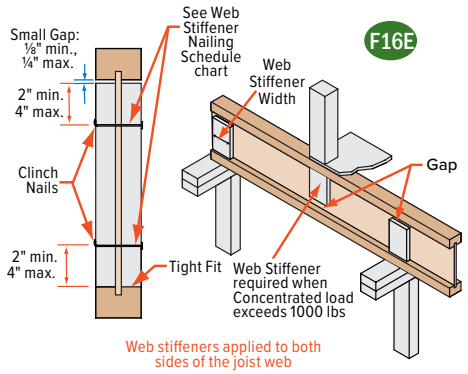
- BCI® Joists are intended only for applications that provide permanent protection from the weather. Bundles of product should be covered and stored off of the ground on stickers.

BCI® RIM JOISTS AND BLOCKING

Depth [in]	Series	Vertical Load Capacity (plf)	
		No W.S.(1)	W.S.(2)
9½"	5000 1.7, 6000 1.8, 6500 1.8	2900	N/A
11⅞"	5000 1.7, 6000 1.8, 6500 1.8	2700	N/A
	60 2.0, 90 2.0	3150	N/A
14"	5000 1.7, 6000 1.8, 6500 1.8	2500	N/A
	60 2.0, 90 2.0	3050	N/A
16"	6000 1.8, 6500 1.8	2400	3150
	60 2.0, 90 2.0	2900	3400
18"	60 2.0, 90 2.0	N/A	3400
20"	90 2.0	N/A	3400

(1) No web stiffeners required.
(2) Web stiffeners required at each end of blocking, values not applicable for rim joists.
N/A: Not applicable

Web Stiffener Requirements



Web Stiffener Specifications

BCI® Joist Series	For Structural Capacity (Min. Thick)	Lateral Restraint in Hanger	Minimum Width
5000 1.7	⅝"	¾"	$2^{5}/_{16}$"
6000 1.8	¾"	⅞"	$2^{5}/_{16}$"
6500 1.8	¾"	1" or 1⅛"	$2^{5}/_{16}$"
60 2.0	¾"	⅞"	$2^{5}/_{16}$"
90 2.0	2x4 lumber (vertical)		

NOTES:

Web stiffeners are optional except as noted below.

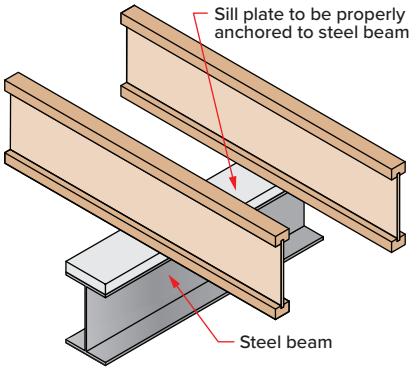
- Web stiffeners are always required for all 18" and 20" BCI® Joists at all bearing locations.
- Web stiffeners are always required in hangers that do not extend up to support the top flange of the BCI® Joist. Web stiffeners may be required with certain sloped or skewed hangers or to achieve uplift values. Refer to the hanger manufacturer's installation requirements.
- Web stiffeners are always required in certain roof applications. See *Roof Framing Details* on page 14.
- Web stiffeners are always required under concentrated loads that exceed 1000 pounds. Install the web stiffeners snug to the top flange in this situation. Follow the nailing schedule for intermediate bearings.
- Web stiffeners may be cut from structural rated wood panels, engineered rimboard or 2x lumber (BCI® 90 only).
- Lateral Restraint in Hanger: Web stiffeners required when hanger does not laterally support the top flange (e.g., adjustable height hangers). Web stiffeners may be of multiple thickness (e.g., BCI® 6500, double ½" panel OK).
- Web stiffeners may be used to increase allowable reaction values. See *Factored Resistances* on page 4 or the BC CALC® software.

Web Stiffener Nailing Schedule

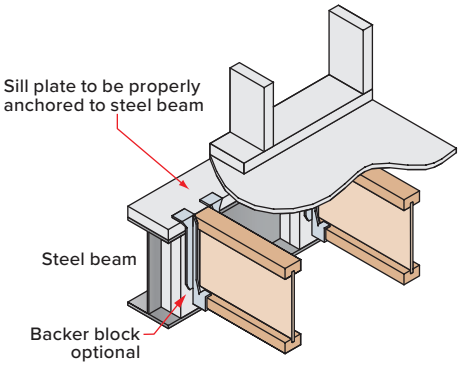
BCI® Joist Series	Joist Depth	Bearing Location	
		End	Intermediate
5000 1.7	9½"	2-8d	2-8d
	11⅞"	2-8d	3-8d
	14"	2-8d	5-8d
6000 1.8	9½"	2-8d	2-8d
	11⅞"	2-8d	3-8d
	14"	2-8d	5-8d
	16"	2-8d	6-8d
6500 1.8	9½"	2-8d	2-8d
	11⅞"	2-8d	3-8d
	14"	2-8d	5-8d
	16"	2-8d	6-8d
60 2.0	11⅞"	2-8d	3-8d
	14"	2-8d	5-8d
	16"	2-8d	6-8d
90 2.0	11⅞"	3-16d	3-16d
	14"	5-16d	5-16d
	16"	6-16d	6-16d
	18"	7-16d	7-16d
	20"	8-16d	8-16d

Connection Details

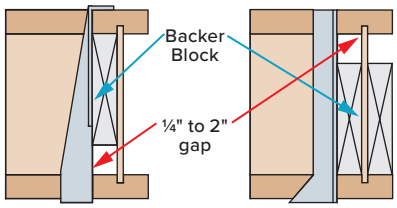
F15D Connection on Steel Beam



F15E Connection with Hanger on Steel Beam



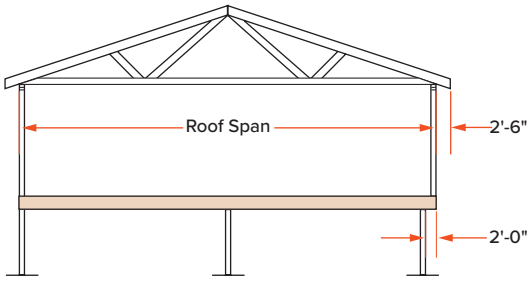
F16D Hanger Connections to BCI® Headers



"Top Mount" Backer block shall be tight to bottom of top flange with ¼" to 2" gap at top of bottom flange.

"Face Mount" Backer block shall be tight to top of bottom flange with ¼" to 2" gap at bottom of top flange.

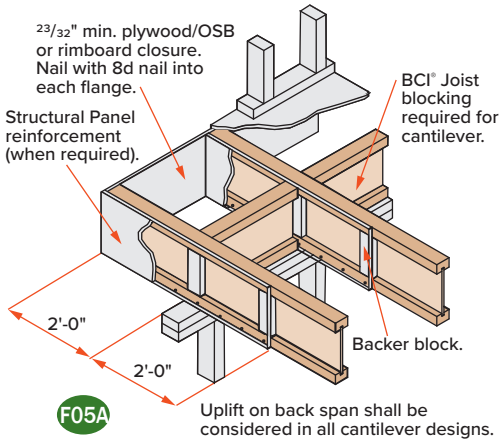
Reinforced Load Bearling Cantilever Details



- The tables and details on pages 11 and 12 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. **However, longer cantilevers with lower loads may be allowable without reinforcement. Analyze specific applications with the BC CALC® software.**

PLYWOOD / OSB REINFORCEMENT (If Required per Table on page 12)

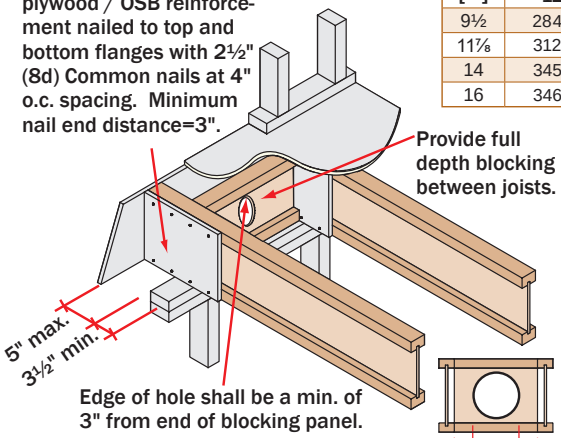
- 23/32" Min. x 48" long plywood / OSB rated sheathing must match the full depth of the BCI® Joist. Nail to the BCI® Joist with 8d nails at 6" o.c. and nail with 4-8d nails into backer block. When reinforcing both sides, stagger nails to limit splitting. Install with horizontal face grain.
- The tables on page 12 assume a wall weight of 100 plf, in addition to the roof loading shown. Applications with loading that exceeds the loads shown shall be analyzed with BC CALC® software.
- Contact Boise Cascade EWP Engineering for reinforcement requirements on BCI® Joist depths greater than 16".



Brick Ledge Load Bearing Cantilever Details

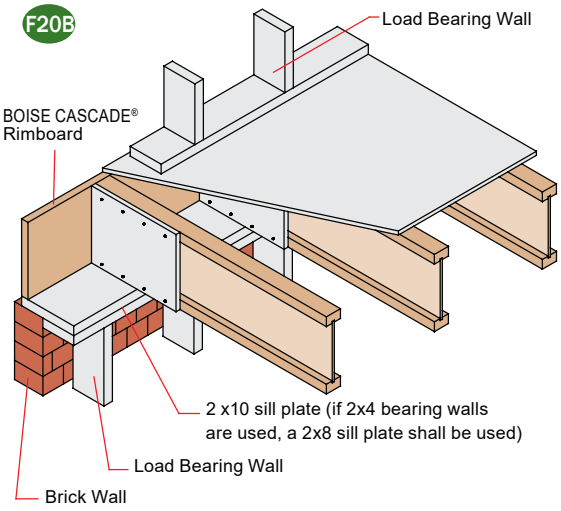
F20A

12" min. length of 23/32" plywood / OSB reinforcement nailed to top and bottom flanges with 2½" (8d) Common nails at 4" o.c. spacing. Minimum nail end distance=3".



Joist depth [in]	Maximum Factored Vertical load for the off-set bearing wall [plf]			
	Joist o.c. spacing [in]			
	12	16	19.2	24
9½	2846	2135	1779	1423
11⅞	3122	2342	1951	1561
14	3450	2588	2156	1725
16	3465	2599	2166	1733

F20B

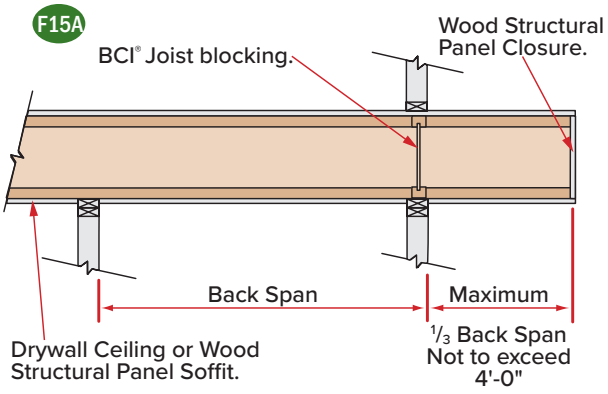


Non-Load Bearing Wall Cantilever Details

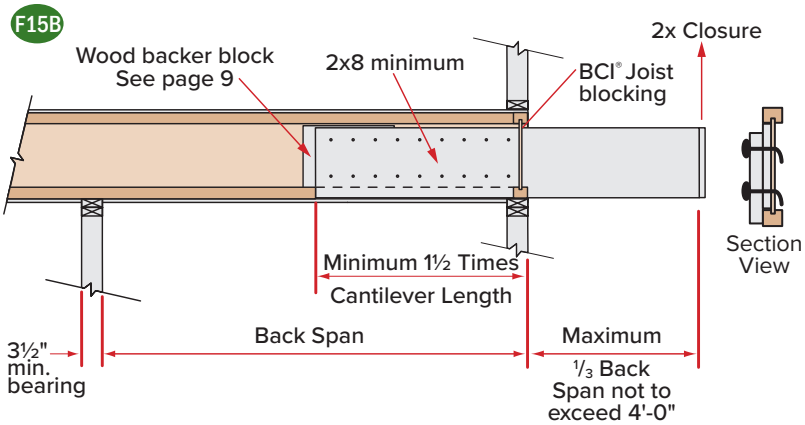
BCI® Joists are intended only for applications that provide permanent protection from the weather.

Fasten the 2x8 minimum to the BCI® Joist by nailing through the backer block and joist web with 2 rows of 10d nails at 6" on center. Use 16d nails with BCI® 90 2.0 joists. 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 analyzing a specific application with the BC CALC® software.

Reinforced Load Bearing Cantilever Tables

BCI® Joists

KEY TO TABLE

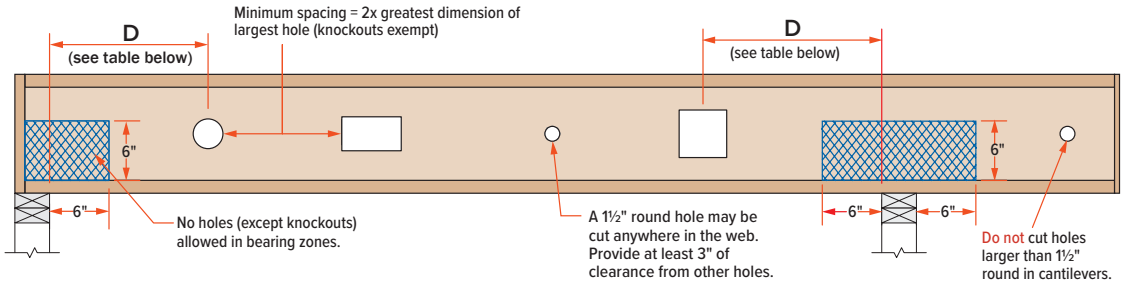
- **0** No Reinforcement Required
- **WS** Web Stiffeners at Support
- **1** Web Stiffeners Plus One Reinforcer
- **2** Web Stiffeners Plus Two Reinforcers
- **X** Use Deeper Joists or Closer Spacing

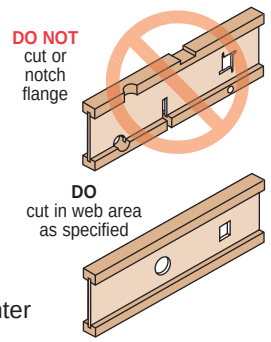
Joist Depth [in]	Joist Series	Roof Truss Span [ft]	Specified Snow Load [psf]								
			30			40			50		
			Joist Spacing [in]								
			16	19.2	24	16	19.2	24	16	19.2	24
9½"	BCI® 5000 1.7	24	0	0	WS	0	WS	x	0	x	x
		26	0	0	x	0	WS	x	0	x	x
		28	0	0	x	0	WS	x	WS	x	x
		30	0	0	x	0	x	x	1	x	x
		32	0	WS	x	0	x	x	x	x	x
		34	0	WS	x	WS	x	x	x	x	x
		36	0	WS	x	WS	x	x	x	x	x
		38	0	1	x	x	x	x	x	x	x
		40	0	x	x	x	x	x	x	x	x
		42	0	x	x	x	x	x	x	x	x
	BCI® 6000 1.8	24	0	0	0	0	0	1	0	0	x
		26	0	0	0	0	0	x	0	1	x
		28	0	0	WS	0	0	x	0	1	x
		30	0	0	1	0	0	x	0	x	x
		32	0	0	1	0	1	x	0	x	x
		34	0	0	x	0	1	x	1	x	x
		36	0	0	x	0	1	x	1	x	x
		38	0	0	x	0	x	x	x	x	x
		40	0	WS	x	1	x	x	x	x	x
		42	0	1	x	1	x	x	x	x	x
	BCI® 6500 1.8	24	0	0	0	0	0	x	0	0	x
		26	0	0	WS	0	0	x	0	1	x
		28	0	0	WS	0	0	x	0	1	x
		30	0	0	1	0	0	x	0	x	x
		32	0	0	x	0	1	x	0	x	x
		34	0	0	x	0	1	x	1	x	x
		36	0	0	x	0	1	x	1	x	x
		38	0	0	x	0	x	x	2	x	x
		40	0	WS	x	1	x	x	x	x	x
		42	0	1	x	1	x	x	x	x	x
11⅞"	BCI® 5000 1.7	24	0	0	WS	0	0	1	0	WS	x
		26	0	0	WS	0	WS	1	0	WS	x
		28	0	0	WS	0	WS	x	0	1	x
		30	0	0	WS	0	WS	x	WS	1	x
		32	0	0	1	0	WS	x	WS	1	x
		34	0	WS	1	0	1	x	1	x	x
		36	0	WS	1	WS	1	x	1	x	x
		38	0	WS	x	WS	1	x	1	x	x
		40	0	WS	x	WS	2	x	1	x	x
		42	0	1	x	1	x	x	x	x	x
	BCI® 6000 1.8	24	0	0	0	0	0	WS	0	0	x
		26	0	0	0	0	0	1	0	WS	x
		28	0	0	WS	0	0	x	0	1	x
		30	0	0	WS	0	0	x	0	1	x
		32	0	0	WS	0	WS	x	0	1	x
		34	0	0	1	0	1	x	0	x	x
		36	0	0	x	0	1	x	1	x	x
		38	0	0	x	0	1	x	1	x	x
		40	0	0	x	0	x	x	1	x	x
		42	0	WS	x	0	x	x	2	x	x
	BCI® 6500 1.8	24	0	0	0	0	0	WS	0	0	x
		26	0	0	WS	0	0	1	0	WS	x
		28	0	0	WS	0	0	x	0	1	x
		30	0	0	WS	0	0	x	0	1	x
		32	0	0	WS	0	WS	x	0	1	x
		34	0	0	1	0	1	x	0	x	x
		36	0	0	x	0	1	x	1	x	x
		38	0	0	x	0	1	x	1	x	x
		40	0	0	x	0	x	x	1	x	x
		42	0	WS	x	0	x	x	2	x	x
	BCI® 60 2.0	24	0	0	0	0	0	WS	0	0	x
		26	0	0	WS	0	0	x	0	WS	x
		28	0	0	WS	0	0	x	0	1	x
		30	0	0	WS	0	0	x	0	1	x
		32	0	0	WS	0	WS	x	0	x	x
		34	0	0	x	0	1	x	0	x	x
		36	0	0	x	0	1	x	1	x	x
		38	0	0	x	0	1	x	1	x	x
		40	0	WS	x	0	x	x	2	x	x
		42	0	WS	x	0	x	x	2	x	x
	BCI® 90 2.0	24	0	0	0	0	0	0	0	0	WS
		26	0	0	0	0	0	0	0	0	WS
		28	0	0	0	0	0	0	0	0	WS
		30	0	0	0	0	0	WS	0	0	1
		32	0	0	0	0	0	WS	0	0	2
		34	0	0	0	0	0	WS	0	0	x
		36	0	0	0	0	0	1	0	WS	x
		38	0	0	WS	0	0	1	0	1	x
		40	0	0	WS	0	0	2	0	1	x
		42	0	0	WS	0	0	x	0	2	x

Joist Depth [in]	Joist Series	Roof Truss Span [ft]	Specified Snow Load [psf]								
			30			40			50		
			Joist Spacing [in]								
			16	19.2	24	16	19.2	24	16	19.2	24
14"	BCI® 5000 1.7	24	0	0	WS	0	0	WS	0	WS	1
		26	0	0	WS	0	0	WS	0	WS	x
		28	0	0	WS	0	WS	1	0	WS	x
		30	0	0	WS	0	WS	1	0	WS	x
		32	0	0	WS	0	WS	x	WS	1	x
		34	0	0	WS	0	WS	x	WS	1	x
		36	0	WS	WS	0	WS	x	WS	1	x
		38	0	WS	1	WS	1	x	WS	x	x
		40	0	WS	x	WS	1	x	1	x	x
		42	0	WS	x	WS	1	x	1	x	x
	BCI® 6000 1.8	24	0	0	0	0	0	WS	0	0	WS
		26	0	0	0	0	0	WS	0	WS	x
		28	0	0	WS	0	0	WS	0	WS	x
		30	0	0	WS	0	0	WS	0	WS	x
		32	0	0	WS	0	0	x	0	WS	x
		34	0	0	WS	0	WS	x	0	1	x
		36	0	0	WS	0	WS	x	0	1	x
		38	0	0	WS	0	WS	x	WS	x	x
		40	0	0	1	0	WS	x	WS	x	x
		42	0	WS	x	0	1	x	1	x	x
	BCI® 6500 1.8	24	0	0	0	0	0	WS	0	0	WS
		26	0	0	WS	0	0	WS	0	WS	x
		28	0	0	WS	0	0	WS	0	WS	x
		30	0	0	WS	0	0	WS	0	WS	x
		32	0	0	WS	0	WS	x	0	WS	x
		34	0	0	WS	0	WS	x	0	1	x
		36	0	0	WS	0	WS	x	WS	1	x
		38	0	0	WS	0	WS	x	WS	x	x
		40	0	0	x	0	WS	x	WS	x	x
		42	0	WS	x	0	1	x	1	x	x
	BCI® 60 2.0	24	0	0	0	0	0	WS	0	0	WS
		26	0	0	WS	0	0	WS	0	WS	x
		28	0	0	WS	0	0	WS	0	WS	x
		30	0	0	WS	0	0	WS	0	WS	x
		32	0	0	WS	0	WS	x	0	WS	x
		34	0	0	WS	0	WS	x	0	1	x
		36	0	0	WS	0	WS	x	WS	1	x
		38	0	0	WS	0	WS	x	WS	x	x
		40	0	0	WS	0	WS	x	WS	x	x
		42	0	0	WS	0	WS	x	WS	x	x
	BCI® 90 2.0	24	0	0	0	0	0	0	0	0	WS
		26	0	0	0	0	0	0	0	0	WS
		28	0	0	0	0	0	0	0	0	WS
		30	0	0	0	0	0	WS	0	0	WS
		32	0	0	0	0	0	WS	0	0	WS
		34	0	0	WS	0	0	WS	0	WS	WS
		36	0	0	WS	0	0	WS	0	WS	x
		38	0	0	WS	0	0	WS	0	WS	x
		40	0	0	WS	0	0	WS	0	WS	x
		42	0	0	WS	0	WS	WS	0	WS	x
16"	BCI® 6000 1.8	24	0	0	0	0	0	WS	0	0	WS
		26	0	0	0	0	0	WS	0	WS	WS
		28	0	0	WS	0	0	WS	0	WS	WS
		30	0	0	WS	0	0	WS	0	WS	x
		32	0	0	WS	0	WS	WS	0	WS	x
		34	0	0	WS	0	WS	WS	0	WS	x
		36	0	0	WS	0	WS	x	WS	WS	x
		38	0	0	WS	0	WS	x	WS	WS	x
		40	0	0	WS	0	WS	x	WS	1	x
		42	0	WS	WS	0	WS	x	WS	x	x
	BCI® 6500 1.8	24	0	0	0	0	0	WS	0	0	WS
		26	0	0	WS	0	0	WS	0	WS	WS
		28	0	0	WS	0	0	WS	0	WS	x
		30	0	0	WS	0	0	WS	0	WS	x
		32	0	0	WS	0	WS	WS	0	WS	x
		34	0	0	WS	0	WS	x	0	WS	x
		36	0	0	WS	0	WS	x	WS	WS	x
		38	0	0	WS	0	WS	x	WS	WS	x
		40	0	0	WS	0	WS	x	WS	x	x
		42	0	WS	WS	0	WS	x	WS	x	x
	BCI® 60 2.0	24	0	0	0	0	0	WS	0	0	WS
		26	0	0	WS	0	0	WS	0	WS	WS
		28	0	0	WS	0	0	WS	0	WS	x
		30	0	0	WS	0	0	WS	0	WS	x
		32	0	0	WS	0	WS	WS	0	WS	x
		34	0	0	WS	0	WS	x	0	WS	x
		36	0	0	WS	0	WS	x	WS	WS	x
		38	0	0	WS	0	WS	x	WS	WS	x
		40	0	WS	WS	0	WS	x	WS	x	x
		42	0	WS	WS	0	WS	x	WS	x	x
	BCI® 90 2.0	24	0	0	0	0	0	0	0	0	WS
		26	0	0	0	0	0	WS	0	0	WS
		28	0	0	0	0	0	WS	0	0	WS
		30	0	0	0	0	0	WS	0	0	WS
		32	0	0	0	0	0	WS	0	0	WS
		34	0	0	WS	0	0	WS	0	WS	WS
		36	0	0	WS	0	0	WS	0	WS	x
		38	0	0	WS	0	0	WS	0	WS	x
		40	0	0	WS	0	0	WS	0	WS	x
		42	0	0	WS	0	WS	WS	0	WS	x

1. Tables are based on the following loads: [15] psf specified floor dead load, [40] psf specified floor live load, [100] plf specified wall dead load, [10] psf specified roof dead load and the listed specified snow load (Standard Term Load Duration).
2. Cut [48"] long reinforcers to match the joist depth. Use min. ⅜" plywood/OSB-rated sheathing, Exposure [1], [48/24] Span Rating panels. The face grain must be horizontal (measure the [48"] dimension along the long edge of the panel).
3. Fasten the reinforcer to the joist flanges with 2½" ([8]d) nails at [6"] o.c. When reinforcing both sides, stagger the nails to avoid splitting the joist flanges.
4. Attach web stiffeners per intermediate *Web Stiffener Nailing Schedule* on page [10].
5. Use the BC CALC® software to analyze conditions that are not covered by this table. It may be possible to exceed the limitations of this table by analyzing a specific application with BC CALC® software.

Hole Cutting Charts for Residential Applications (40/15)





BCI® Joists are manufactured with 1½" round perforated knockouts in the web at approximately 12" on center
Minimum distance from support, listed in table below, is required for all holes greater than 1½"

TABLE 1 ROUND HOLES

Minimum distance from inside face of any support to centerline of hole **JOIST DEPTH • HOLE SIZE [IN]**

Span [ft]	9½"				11⅞"				14"				16"			
	3"	6"	9"	12"	3"	6"	9"	12"	3"	6"	9"	12"	3"	6"	9"	12"
8'	1' - 0"	1' - 0"	-	-	1' - 0"	1' - 0"	-	-	1' - 0"	1' - 0"	1' - 0"	-	1' - 0"	1' - 0"	1' - 0"	1' - 0"
10'	1' - 0"	1' - 0"	-	-	1' - 0"	1' - 0"	-	-	1' - 0"	1' - 0"	1' - 0"	-	1' - 0"	1' - 0"	1' - 0"	1' - 0"
12'	1' - 0"	2' - 0"	-	-	1' - 0"	1' - 0"	-	-	1' - 0"	1' - 0"	1' - 0"	-	1' - 0"	1' - 0"	1' - 0"	1' - 0"
14'	1' - 0"	3' - 0"	-	-	1' - 0"	1' - 0"	-	-	1' - 0"	1' - 0"	1' - 0"	-	1' - 0"	1' - 0"	1' - 0"	2' - 0"
16'	1' - 0"	4' - 0"	-	-	1' - 0"	1' - 0"	-	-	1' - 0"	1' - 0"	2' - 0"	-	1' - 0"	1' - 0"	1' - 0"	3' - 0"
18'	1' - 0"	5' - 0"	-	-	1' - 0"	2' - 0"	-	-	1' - 0"	1' - 0"	3' - 0"	-	1' - 0"	1' - 0"	1' - 0"	4' - 0"
20'	1' - 6"	6' - 6"	-	-	1' - 0"	3' - 0"	-	-	1' - 0"	1' - 0"	4' - 0"	-	1' - 0"	1' - 0"	2' - 0"	5' - 0"
22'	2' - 6"	7' - 6"	-	-	1' - 0"	4' - 0"	-	-	1' - 0"	1' - 6"	5' - 6"	-	1' - 0"	1' - 0"	3' - 0"	6' - 6"
24'	3' - 6"	9' - 0"	-	-	1' - 6"	5' - 6"	-	-	1' - 0"	2' - 6"	6' - 6"	-	1' - 0"	1' - 0"	4' - 0"	7' - 6"
26'	-	-	-	-	2' - 6"	6' - 6"	-	-	1' - 0"	4' - 0"	7' - 6"	-	1' - 0"	2' - 0"	5' - 0"	9' - 0"
28'	-	-	-	-	3' - 6"	7' - 6"	-	-	1' - 6"	5' - 0"	9' - 0"	-	1' - 0"	3' - 0"	6' - 6"	10' - 0"
30'	-	-	-	-	-	-	-	-	2' - 6"	6' - 0"	10' - 0"	-	1' - 0"	4' - 0"	7' - 6"	11' - 6"
32'	-	-	-	-	-	-	-	-	3' - 6"	7' - 0"	11' - 6"	-	2' - 0"	5' - 0"	8' - 6"	12' - 6"
34''	-	-	-	-	-	-	-	-	-	-	-	-	3' - 0"	6' - 0"	10' - 0"	14' - 0"

TABLE 2 SQUARE HOLES

Minimum distance from inside face of any support to centerline of hole **JOIST DEPTH • HOLE SIZE [IN]**

Span [ft]	9½"				11⅞"				14"				16"			
	3"	6"	9"	12"	3"	6"	9"	12"	3"	6"	9"	12"	3"	6"	9"	12"
8'	1' - 0"	1' - 0"	-	-	1' - 0"	1' - 0"	-	-	1' - 0"	1' - 0"	1' - 0"	-	1' - 0"	1' - 0"	1' - 0"	1' - 0"
10'	1' - 0"	1' - 6"	-	-	1' - 0"	1' - 0"	-	-	1' - 0"	1' - 0"	1' - 0"	-	1' - 0"	1' - 0"	1' - 0"	2' - 0"
12'	1' - 0"	2' - 6"	-	-	1' - 0"	1' - 0"	-	-	1' - 0"	1' - 0"	2' - 0"	-	1' - 0"	1' - 0"	1' - 0"	3' - 6"
14'	1' - 0"	3' - 6"	-	-	1' - 0"	2' - 0"	-	-	1' - 0"	1' - 0"	3' - 0"	-	1' - 0"	1' - 0"	2' - 0"	4' - 6"
16'	2' - 0"	4' - 6"	-	-	1' - 0"	3' - 0"	-	-	1' - 0"	1' - 6"	4' - 0"	-	1' - 0"	1' - 0"	3' - 0"	6' - 0"
18'	3' - 0"	6' - 0"	-	-	2' - 0"	4' - 0"	-	-	1' - 0"	3' - 0"	5' - 6"	-	1' - 0"	1' - 6"	4' - 0"	7' - 0"
20'	4' - 0"	7' - 0"	-	-	3' - 0"	5' - 6"	-	-	1' - 6"	4' - 0"	6' - 6"	-	1' - 0"	3' - 0"	5' - 6"	8' - 6"
22'	5' - 0"	8' - 6"	-	-	4' - 0"	6' - 6"	-	-	2' - 6"	5' - 0"	8' - 0"	-	1' - 6"	4' - 0"	6' - 6"	9' - 6"
24'	6' - 6"	9' - 6"	-	-	5' - 0"	8' - 0"	-	-	3' - 6"	6' - 0"	9' - 0"	-	2' - 6"	5' - 0"	8' - 0"	11' - 0"
26'	-	-	-	-	6' - 0"	9' - 0"	-	-	5' - 0"	7' - 6"	10' - 6"	-	3' - 6"	6' - 0"	9' - 0"	12' - 0"
28'	-	-	-	-	7' - 6"	10' - 6"	-	-	6' - 0"	8' - 6"	11' - 6"	-	5' - 0"	7' - 6"	10' - 0"	13' - 6"
30'	-	-	-	-	-	-	-	-	7' - 0"	10' - 0"	13' - 0"	-	6' - 0"	8' - 6"	11' - 6"	14' - 6"
32'	-	-	-	-	-	-	-	-	8' - 0"	11' - 0"	14' - 0"	-	7' - 0"	10' - 0"	12' - 6"	*
34'	-	-	-	-	-	-	-	-	-	-	-	-	8' - 6"	11' - 0"	14' - 0"	*

TABLE 3 RECTANGULAR HOLES

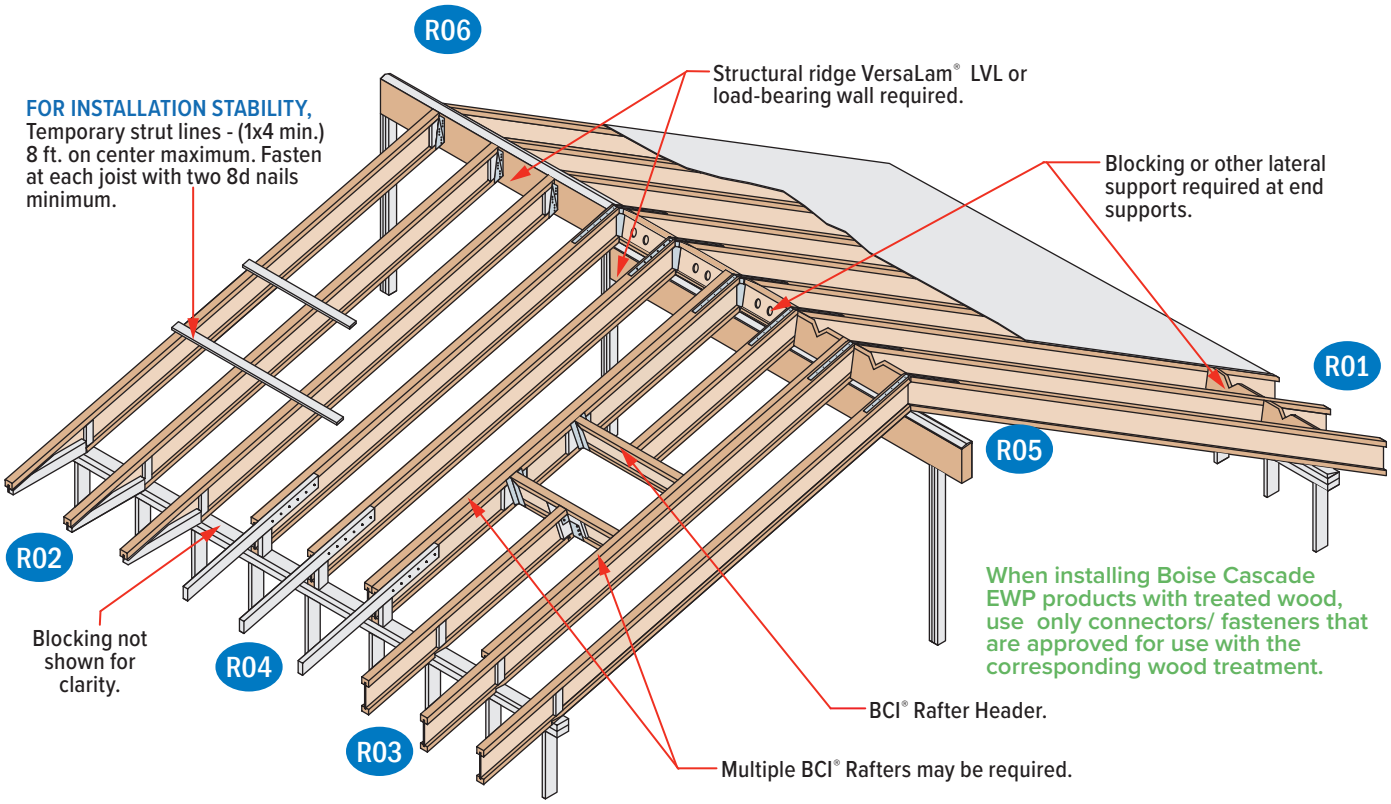
Minimum distance from inside face of any support to centerline of hole **JOIST DEPTH • HOLE SIZE [IN]**

Span [ft]	9½"				11⅞"				14"				16"			
	5"x8"	5"x10"	5"x12"	5"x14"	7"x10"	7"x12"	7"x14"	7"x16"	10"x12"	10"x14"	10"x16"	10"x18"	12"x14"	12"x16"	12"x18"	12"x20"
8'	1' - 0"	1' - 0"	1' - 6"	2' - 0"	1' - 0"	1' - 6"	2' - 0"	2' - 6"	1' - 6"	2' - 0"	3' - 0"	*	2' - 0"	3' - 0"	*	*
10'	1' - 6"	2' - 0"	2' - 6"	3' - 0"	2' - 0"	2' - 6"	3' - 0"	3' - 6"	2' - 6"	3' - 6"	4' - 6"	*	3' - 6"	4' - 0"	*	*
12'	2' - 6"	3' - 0"	4' - 0"	4' - 6"	3' - 0"	3' - 6"	4' - 6"	5' - 0"	4' - 0"	4' - 6"	5' - 6"	*	4' - 6"	5' - 6"	*	*
14'	4' - 0"	4' - 6"	5' - 0"	5' - 6"	4' - 0"	5' - 0"	5' - 6"	6' - 6"	5' - 0"	6' - 0"	*	*	6' - 0"	6' - 6"	*	*
16'	5' - 0"	5' - 6"	6' - 6"	7' - 0"	5' - 6"	6' - 0"	7' - 0"	7' - 6"	6' - 6"	7' - 0"	*	*	7' - 0"	*	*	*
18'	6' - 0"	7' - 0"	7' - 6"	8' - 6"	6' - 6"	7' - 6"	8' - 0"	*	7' - 6"	8' - 6"	*	*	8' - 6"	*	*	*
20'	7' - 6"	8' - 0"	9' - 0"	9' - 6"	8' - 0"	8' - 6"	9' - 6"	*	9' - 0"	*	*	*	9' - 6"	*	*	*
22'	8' - 6"	9' - 6"	10' - 0"	*	9' - 0"	10' - 0"	10' - 6"	*	10' - 0"	*	*	*	*	*	*	*
24'	10' - 0"	10' - 6"	11' - 6"	*	10' - 6"	11' - 0"	*	*	11' - 6"	*	*	*	*	*	*	*
26'	-	-	-	-	11' - 6"	12' - 6"	*	*	*	*	*	*	*	*	*	*
28'	-	-	-	-	13' - 0"	13' - 6"	*	*	*	*	*	*	*	*	*	*
30'	-	-	-	-	-	-	-	-	*	*	*	*	*	*	*	*
32'	-	-	-	-	-	-	-	-	*	*	*	*	*	*	*	*
34'	-	-	-	-	-	-	-	-	-	-	-	-	*	*	*	*

NOTES

1. Hole may be positioned vertically anywhere in the web.
2. Tables 1-3 are for uniformly loaded maximum loads of 40 psf live loads and 15 psf dead loads on simple span application.
3. For other load conditions or hole sizes, contact your local distributor.
4. It may be possible to exceed the limitations of those tables by analysing a specific situation with the BC CALC® Software.
5. * = Holes may be acceptable, contact your local distributor.

BCI® Rafters



SAFETY WARNING

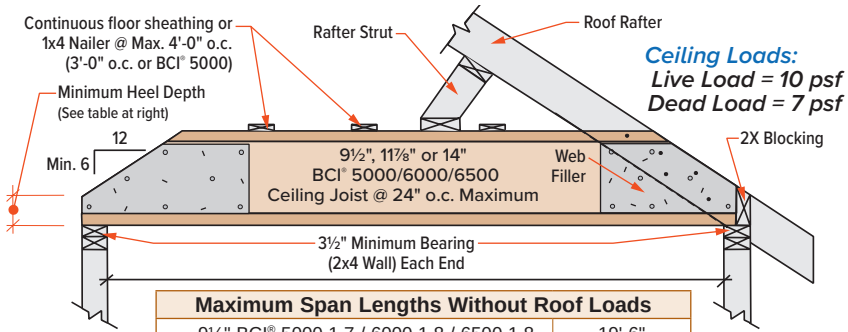
DO NOT ALLOW WORKERS ON BCI® JOISTS UNTIL ALL HANGERS, BCI® RIM JOISTS, RIM BOARDS, BCI® BLOCKING PANELS, X-BRACING AND TEMPORARY 1x4 STRUT LINES ARE INSTALLED AS SPECIFIED BELOW.

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 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 ½ inch 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.

BCI® Ceiling Joist with Bevel End Cut *(For Limited-Access Attics Only)*

BCI® Joist shall not be used as collar/tension tie. Roof rafter shall be supported by ridge beam or other upper bearing support.



Maximum Span Lengths Without Roof Loads	
9½" BCI® 5000 1.7 / 6000 1.8 / 6500 1.8	19'-6"
11⅞" BCI® 5000 1.7 / 6000 1.8 / 6500 1.8	22'-0"
14" BCI® 6000 1.8 / 6500 1.8	25'-0"

(If roof loads present, see Notes 2 & 3 at right)

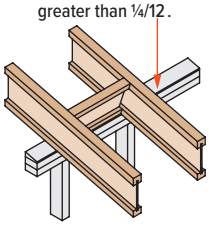
Minimum Heel Depths	Joist Depth	End Wall	
		2 x 4	2 x 6
	9½"	2½"	1½"
	11⅞"	3½"	2½"
	14"	4½"	3½"

NOTES

1) Detail is to be used only for ceiling joists with no access to attic space.
2) Ceiling joist must be designed to carry all roof load transferred through rafter struts as shown.
3) BCI® ceiling joist end reaction may not exceed 550 pounds.
4) Minimum roof slope is 6/12.
5) Nail roof rafter to BCI® top flange with 1 - 10d (3" long) box or larger nail.
6) 1x4 nailers must be continuous and nailed to a braced end wall.
7) Install a web filler 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.

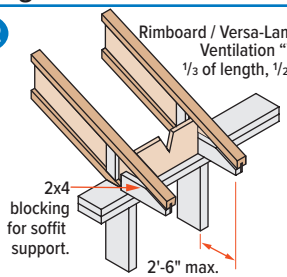
Additional roof framing details available with BC FRAMER® software

R01



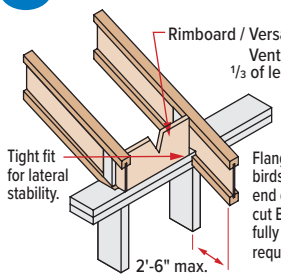
Simpson VPA or USP TMP connectors or equal can be used in lieu of beveled plate for slopes from 3/12 to 12/12.

R02

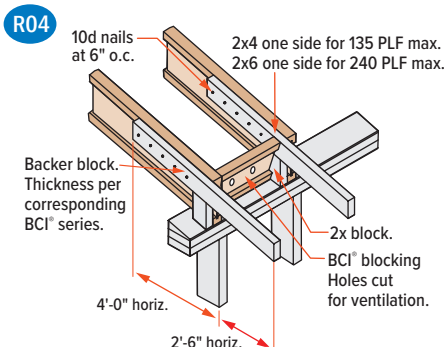


Flange of BCI® Joists may be birdsmouth cut only at the low end of the joist. Birdsmouth cut BCI® Joist flange must bear fully on plate, web stiffener required each side. Bottom flange shall be fully supported.

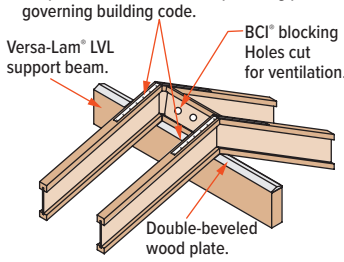
R03



R04

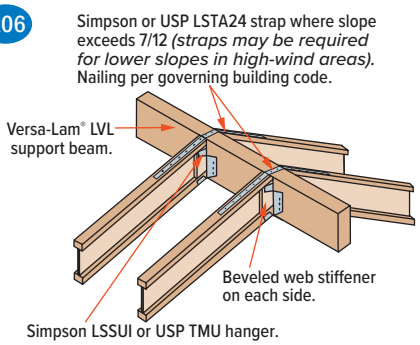


R05

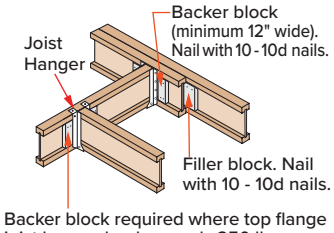


Blocking on both sides of ridge may be required for shear transfer per design professional of record.

R06

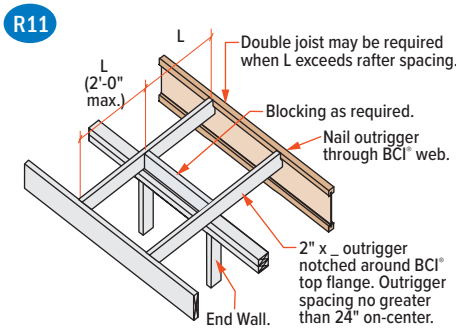


R07

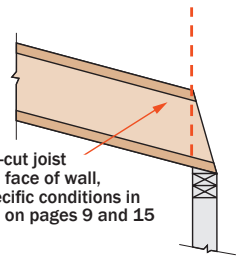


Backer block required where top flange joist hanger load exceeds 250 lbs. Install tight to top flange.

R11



DN05



DO NOT bevel-cut joist beyond inside face of wall, except for specific conditions in details shown on pages 9 and 15 of this guide.

LATERAL SUPPORT

- BCI® Joists must be laterally supported at end supports (including supports adjacent to overhangs) with hangers, rimboard, or blocking (VERSA-LAM®, 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

- Minimum end bearing: 1½" 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 1¼ inches thick and less: 2-8d nails, one each in the top and bottom flange.
  - BCI® 5000 rim joist: 2-10d box nails, one each in the top and bottom flange.
  - BCI® 6000/60 rim joist: 2-16d box nails, one each in the top and bottom flange.
  - BCI® 6500/90 rim joist: Toe-nail top flange to rim joist with 2-10d box nails, one each side of flange.
- BCI® rim joist, rim board or BCI® blocking panel to support:
  - Min. 8d nails @ 6" o.c. per NBCC.
  - Connection per design professional of record's specification for shear transfer.
- BCI® joist to support:
  - 2-8d nails, one on each side of the web, placed 1½ inches minimum from the end of the BCI® Joist to limit splitting.
- Sheathing to BCI® joist:
  - Prescriptive residential floor sheathing nailing requires 8d common nails @ 6" o.c. on edges and @ 12" o.c. in the field as per NBCC.
  - Maximum nail spacing for minimum lateral stability: 18" for BCI® 5000, 24" for larger BCI® joist series.
  - 14 gauge staples may be substituted for 8d nails if the staples penetrate at least 1 inch into the joist.
  - Wood screws may be acceptable, contact local building official and/or Boise Cascade EWP Engineering for further information.

BACKER AND FILLER BLOCK DIMENSIONS

Series	Backer Block Thickness	Filler Block Thickness
5000 1.7	¾" or ⅞" wood panels	Two ¾" wood panels or 2 x _
6000 1.8	1⅛" or two ½" wood panels	2 x _ + 7/16" or ½" wood panel
6500 1.8	1⅛" or two ⅝" wood panels	2 x _ + ⅝" or ¾" wood panel
60 2.0	1⅛" or two ½" wood panels	2 x _ + 7/16" or ½" wood panel
90 2.0	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.

WEB STIFFENER REQUIREMENTS

- See *Web Stiffener Requirements* on page 10.

MAXIMUM SLOPE

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

VENTILATION

- The 1½ inch, pre-stamped knock-out holes spaced at 12 inches on center along the BCI® Joist may all be knocked out and used for cross ventilation. Deeper joists that what is structurally needed may be advantageous in ventilation design. Consult local building official and/or ventilation specialist for specific ventilation 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. High end supports and intermediate supports may not be birdsmouth cut.

PROTECT BCI® JOISTS FROM THE WEATHER

- BCI® Joists are intended only for applications that provide permanent protection from the weather. Bundles of BCI® Joists should be covered and stored off of the ground on stickers.

Roof Span Tables

Loads	Joist Series	Depth (in)	Low Roof Slope (0.25/12 to 6/12)				High Roof Slope (< 6/12 to 12/12)			
			o.c. spacing				o.c. spacing			
			12"	16"	19.2"	24"	12"	16"	19.2"	24"
Specified Dead Load = 10 psf Specified Snow Load = 20 psf	BCI® 5000 1.7	9½"	23'-6"	21'-4"	20'-1"	18'-7"	21'-1"	19'-2"	18'-0"	16'-8"
		11⅞"	28'-0"	25'-5"	23'-10"	21'-8"	25'-1"	22'-9"	21'-5"	19'-10"
		14"	31'-10"	28'-10"	26'-6"	23'-8"	28'-6"	25'-10"	24'-4"	22'-6"
	BCI® 6000 1.8	9½"	25'-1"	22'-9"	21'-4"	19'-9"	22'-6"	20'-4"	19'-2"	17'-9"
		11⅞"	29'-9"	27'-0"	25'-4"	23'-6"	26'-8"	24'-2"	22'-9"	21'-1"
		14"	33'-9"	30'-7"	28'-9"	26'-8"	30'-3"	27'-5"	25'-9"	23'-11"
		16"	37'-5"	33'-11"	31'-11"	28'-9"	33'-6"	30'-5"	28'-7"	26'-6"
	BCI® 6500 1.8	9½"	25'-10"	23'-5"	22'-0"	20'-5"	23'-2"	21'-0"	19'-9"	18'-3"
		11⅞"	30'-9"	27'-10"	26'-2"	24'-3"	27'-6"	25'-0"	23'-5"	21'-9"
		14"	34'-10"	31'-7"	29'-8"	27'-6"	31'-3"	28'-4"	26'-7"	24'-8"
		16"	38'-6"	34'-11"	32'-10"	30'-5"	34'-7"	31'-4"	29'-5"	27'-3"
	BCI® 60 2.0	11⅞"	32'-10"	29'-9"	27'-11"	25'-11"	29'-5"	26'-8"	25'-1"	23'-2"
		14"	37'-4"	33'-10"	31'-9"	29'-5"	33'-5"	30'-4"	28'-6"	26'-4"
		16"	41'-4"	37'-6"	35'-3"	32'-7"	37'-1"	33'-7"	31'-7"	29'-3"
	BCI® 90 2.0	11⅞"	37'-6"	34'-0"	31'-11"	29'-7"	33'-8"	30'-6"	28'-7"	26'-6"
		14"	42'-7"	38'-7"	36'-3"	33'-7"	38'-2"	34'-7"	32'-6"	30'-1"
		16"	47'-1"	42'-8"	40'-1"	37'-2"	42'-3"	38'-3"	35'-11"	33'-3"
		18"	51'-6"	46'-8"	43'-10"	40'-7"	46'-2"	41'-10"	39'-4"	36'-5"
		20"	55'-8"	50'-6"	47'-5"	43'-11"	49'-11"	45'-3"	42'-6"	39'-5"
Specified Dead Load = 10 psf Specified Snow Load = 30 psf	BCI® 5000 1.7	9½"	21'-5"	19'-5"	18'-3"	16'-6"	19'-4"	17'-6"	16'-5"	15'-3"
		11⅞"	25'-6"	23'-1"	20'-11"	18'-8"	23'-0"	20'-10"	19'-7"	18'-1"
		14"	28'-11"	25'-0"	22'-10"	20'-5"	26'-2"	23'-8"	22'-3"	19'-9"
	BCI® 6000 1.8	9½"	22'-10"	20'-8"	19'-5"	18'-0"	20'-7"	18'-8"	17'-6"	16'-2"
		11⅞"	27'-1"	24'-6"	23'-1"	21'-4"	24'-5"	22'-2"	20'-10"	19'-3"
		14"	30'-9"	27'-10"	25'-11"	23'-2"	27'-9"	25'-1"	23'-7"	21'-10"
		16"	34'-0"	30'-5"	27'-8"	24'-9"	30'-9"	27'-10"	26'-2"	24'-2"
	BCI® 6500 1.8	9½"	23'-6"	21'-4"	20'-0"	18'-6"	21'-3"	19'-3"	18'-1"	16'-9"
		11⅞"	27'-11"	25'-4"	23'-9"	22'-0"	25'-2"	22'-10"	21'-5"	19'-10"
		14"	31'-8"	28'-8"	27'-0"	24'-5"	28'-7"	25'-11"	24'-4"	22'-6"
		16"	35'-1"	31'-9"	29'-2"	26'-1"	31'-8"	28'-8"	26'-11"	24'-11"
	BCI® 60 2.0	11⅞"	29'-10"	27'-1"	25'-5"	23'-6"	26'-11"	24'-5"	22'-11"	21'-2"
		14"	33'-11"	30'-9"	28'-10"	26'-9"	30'-7"	27'-9"	26'-1"	24'-1"
		16"	37'-7"	34'-1"	32'-0"	28'-4"	33'-11"	30'-9"	28'-10"	26'-8"
	BCI® 90 2.0	11⅞"	34'-1"	30'-11"	29'-0"	26'-10"	30'-9"	27'-10"	26'-2"	24'-2"
		14"	38'-9"	35'-1"	32'-11"	30'-6"	34'-11"	31'-8"	29'-8"	27'-6"
		16"	42'-10"	38'-10"	36'-5"	33'-2"	38'-8"	35'-0"	32'-10"	30'-5"
		18"	46'-10"	42'-5"	39'-10"	36'-10"	42'-3"	38'-3"	35'-11"	33'-3"
		20"	50'-8"	45'-11"	43'-1"	39'-11"	45'-8"	41'-5"	38'-11"	36'-0"

NOTES

1. Spans shown are in accordance with NBCC 2015.
2. Maximum spans listed are the clear horizontal spans between supports (simple/multiple spans, or one span + 2ft overhang).
3. Minimum end bearing length at end support is 1½".
4. Minimum interior bearing length is 3½".
5. Joists deeper than 16" require web stiffeners at all bearing locations.
6. **Total load deflection is limited to L/180.**
7. **Live load deflection is limited to L/240.**
8. Check the local building code for other deflection limits that may apply.
9. Spans shown have not been evaluated for snow drift.
10. Lateral support must be provided for the compression edge and also at the bearings to prevent lateral displacement or rotation.
11. Slope roof joists at least ¼" over 12" to minimize ponding.
11. Allowable spans and loads shall be adjusted and checked for wind loads as required by local building code.
12. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® or BC FRAMER® software.
13. When using continuous spans over an intermediate bearing, the shortest span shall not be less than 50% of the longest adjacent span.
15. Uplift = L_2*(factor$_1$*W_{FD}-W_{FL})/factor$_2$
    where: W_{FD} = Factored dead load (lb/ft)
    W_{FL} = Factored live load (lb/ft)
    L_2 = Length of longer span (ft)
    factor$_2$ = 8a(1+a)
    L_1 = Length of shorter span (ft)
    factor$_1$ = $4a^2 + 3a^3 - 1$
    a = Short span/Long span

Short/Long span ratio = a	0.5	0.6	0.7	0.8	0.9	1
factor$_1$	0.38	1.09	1.99	3.10	4.43	6.00
factor$_2$	6	7.68	9.52	11.52	13.68	16

16. Actual deflection based on span and deflection limit.

Deflection limit	Actual deflection (in) Span (ft)						
	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

17. WARNING: Use of Span Tables for Commercial Projects (NBCC2015: 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 (2015). Table 4.1.5.9 in NBCC (2015) lists concentrated loads that shall be analyzed 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.

Loads	Joist Series	Depth (in)	Low Roof Slope (0.25/12 to 6/12)				High Roof Slope (< 6/12 to 12/12)			
			o.c. spacing				o.c. spacing			
			12"	16"	19.2"	24"	12"	16"	19.2"	24"
Specified Dead Load = 10 psf Specified Snow Load = 40 psf	BCI® 5000 1.7	9½"	19'-7"	17'-9"	16'-8"	14'-8"	18'-0"	16'-4"	15'-4"	14'-2"
		11⅞"	23'-4"	20'-6"	18'-8"	16'-8"	21'-5"	19'-5"	18'-3"	16'-3"
		14"	25'-10"	22'-4"	20'-4"	18'-2"	24'-4"	21'-9"	19'-10"	17'-9"
	BCI® 6000 1.8	9½"	20'-10"	18'-11"	17'-9"	16'-5"	19'-2"	17'-4"	16'-3"	15'-1"
		11⅞"	24'-9"	22'-5"	21'-1"	18'-11"	22'-9"	20'-8"	19'-4"	17'-11"
		14"	28'-1"	25'-5"	23'-1"	20'-8"	25'-10"	23'-5"	22'-0"	20'-4"
		16"	31'-2"	27'-1"	24'-9"	22'-1"	28'-8"	25'-11"	24'-1"	21'-6"
	BCI® 6500 1.8	9½"	21'-6"	19'-6"	18'-3"	16'-11"	19'-9"	17'-11"	16'-10"	15'-7"
		11⅞"	25'-7"	23'-2"	21'-9"	20'-1"	23'-6"	21'-3"	20'-0"	18'-6"
		14"	29'-0"	26'-3"	24'-4"	21'-9"	26'-8"	24'-2"	22'-8"	21'-0"
		16"	32'-1"	28'-6"	26'-0"	22'-7"	29'-6"	26'-8"	25'-1"	21'-6"
	BCI® 60 2.0	11⅞"	27'-4"	24'-9"	23'-2"	21'-4"	25'-1"	22'-9"	21'-4"	19'-9"
		14"	31'-0"	28'-1"	26'-4"	22'-2"	28'-6"	25'-10"	24'-3"	21'-1"
		16"	34'-5"	31'-2"	28'-3"	22'-7"	31'-7"	28'-8"	26'-10"	21'-6"
	BCI® 90 2.0	11⅞"	31'-2"	28'-3"	26'-6"	24'-6"	28'-8"	25'-11"	24'-4"	22'-6"
		14"	35'-5"	32'-0"	30'-1"	26'-0"	32'-6"	29'-5"	27'-8"	24'-9"
		16"	39'-2"	35'-5"	33'-1"	26'-5"	36'-0"	32'-7"	30'-7"	25'-2"
		18"	42'-10"	38'-9"	36'-4"	33'-8"	39'-4"	35'-8"	33'-5"	30'-11"
		20"	46'-4"	41'-11"	39'-4"	36'-5"	42'-7"	38'-7"	36'-2"	33'-6"
Specified Dead Load = 10 psf Specified Snow Load = 50 psf	BCI® 5000 1.7	9½"	18'-2"	16'-5"	15'-0"	13'-4"	16'-9"	15'-2"	14'-2"	13'-1"
		11⅞"	21'-7"	18'-8"	17'-0"	15'-2"	19'-11"	18'-0"	16'-8"	14'-10"
		14"	23'-6"	20'-4"	18'-6"	16'-8"	22'-7"	19'-11"	18'-2"	16'-0"
	BCI® 6000 1.8	9½"	19'-4"	17'-6"	16'-5"	15'-2"	17'-10"	16'-1"	15'-1"	13'-11"
		11⅞"	22'-11"	20'-9"	19'-6"	17'-3"	21'-2"	19'-2"	17'-11"	16'-7"
		14"	26'-0"	23'-1"	21'-1"	18'-5"	24'-0"	21'-9"	20'-4"	17'-8"
		16"	28'-6"	24'-8"	22'-6"	18'-9"	26'-7"	24'-1"	22'-1"	18'-0"
	BCI® 6500 1.8	9½"	19'-11"	18'-0"	16'-11"	15'-8"	18'-4"	16'-7"	15'-7"	14'-5"
		11⅞"	23'-8"	21'-5"	20'-1"	17'-9"	21'-10"	19'-9"	18'-6"	17'-0"
		14"	26'-10"	24'-3"	22'-2"	18'-5"	24'-9"	22'-5"	21'-0"	17'-8"
		16"	29'-8"	26'-0"	23'-5"	18'-9"	27'-5"	24'-9"	22'-6"	18'-0"
	BCI® 60 2.0	11⅞"	25'-3"	22'-10"	21'-5"	17'-9"	23'-3"	21'-1"	19'-9"	17'-0"
		14"	28'-9"	26'-0"	23'-1"	18'-5"	26'-6"	23'-11"	22'-2"	17'-8"
		16"	31'-10"	28'-2"	23'-5"	18'-9"	29'-4"	26'-7"	22'-6"	18'-0"
	BCI® 90 2.0	11⅞"	28'-10"	26'-1"	24'-6"	21'-5"	26'-7"	24'-0"	22'-6"	20'-7"
		14"	32'-9"	29'-8"	27'-0"	21'-7"	30'-2"	27'-4"	25'-7"	20'-9"
		16"	36'-3"	32'-10"	27'-6"	22'-0"	33'-5"	30'-2"	26'-5"	21'-1"
		18"	39'-8"	35'-10"	33'-8"	29'-5"	36'-6"	33'-0"	31'-0"	28'-3"
		20"	42'-11"	38'-10"	36'-5"	30'-6"	39'-6"	35'-9"	33'-6"	29'-3"

NOTES

1. Spans shown are in accordance with NBCC 2015.
2. Maximum spans listed are the clear horizontal spans between supports (simple/ multiple spans, or one span + 2ft overhang).
3. Minimum end bearing length at end support is 1½".
4. Minimum interior bearing length is 3½".
5. Joists deeper than 16" require web stiffeners at all bearing locations.
6. **Total load deflection is limited to L/180.**
7. **Live load deflection is limited to L/240.**
8. Check the local building code for other deflection limits that may apply.
9. Spans shown have not been evaluated for snow drift.
10. Lateral support must be provided for the compression edge and also at the bearings to prevent lateral displacement or rotation.
11. Slope roof joists at least ¼" over 12" to minimize ponding.
11. Allowable spans and loads shall be adjusted and checked for wind loads as required by local building code.
12. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® or BC FRAMER® software.
13. When using continuous spans over an intermediate bearing, the shortest span shall not be less than 50% of the longest adjacent span.
15. Uplift = L_2*(factor$_1$*W_{FD}-W_{FL})/factor$_2$
    where: W_{FD} = Factored dead load (lb/ft)
    W_{FL} = Factored live load (lb/ft)
    L_2 = Length of longer span (ft)
    factor$_2$ = 8a(1+a)
    L_1 = Length of shorter span (ft)
    factor$_1$ = $4a^2 + 3a^3 - 1$
    a = Short span/Long span

Short/Long span ratio = a	0.5	0.6	0.7	0.8	0.9	1
factor$_1$	0.38	1.09	1.99	3.10	4.43	6.00
factor$_2$	6	7.68	9.52	11.52	13.68	16

16. Actual deflection based on span and deflection limit.

Deflection limit	Actual deflection (in) Span (ft)						
	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

17. WARNING: Use of Span Tables for Commercial Projects (NBCC2015: 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 (2015). Table 4.1.5.9 in NBCC (2015) lists concentrated loads that shall be analyzed 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	Joist Series	Depth (in)	Low Roof Slope (0.25/12 to 6/12)				High Roof Slope (< 6/12 to 12/12)			
			o.c. spacing				o.c. spacing			
			12"	16"	19.2"	24"	12"	16"	19.2"	24"
Specified Dead Load = 15 psf Specified Snow Load = 20 psf	BCI® 5000 1.7	9½"	22'-3"	20'-2"	18'-11"	17'-7"	19'-10"	17'-11"	16'-10"	15'-7"
		11⅞"	26'-6"	24'-0"	22'-7"	20'-2"	23'-7"	21'-4"	20'-1"	18'-7"
		14"	30'-1"	26'-11"	24'-7"	21'-11"	26'-9"	24'-3"	22'-10"	20'-10"
	BCI® 6000 1.8	9½"	23'-8"	21'-6"	20'-2"	18'-8"	21'-1"	19'-1"	17'-11"	16'-8"
		11⅞"	28'-2"	25'-6"	24'-0"	22'-3"	25'-1"	22'-8"	21'-4"	19'-9"
		14"	31'-11"	28'-11"	27'-2"	24'-11"	28'-5"	25'-9"	24'-2"	22'-5"
		16"	35'-5"	32'-1"	29'-10"	26'-8"	31'-6"	28'-6"	26'-10"	24'-10"
	BCI® 6500 1.8	9½"	24'-6"	22'-2"	20'-10"	19'-3"	21'-9"	19'-9"	18'-6"	17'-2"
		11⅞"	29'-1"	26'-4"	24'-9"	22'-11"	25'-10"	23'-5"	22'-0"	20'-4"
		14"	32'-11"	29'-10"	28'-1"	26'-0"	29'-4"	26'-7"	24'-11"	23'-1"
		16"	36'-5"	33'-0"	31'-1"	28'-1"	32'-5"	29'-5"	27'-7"	25'-7"
	BCI® 60 2.0	11⅞"	31'-0"	28'-2"	26'-5"	24'-6"	27'-7"	25'-0"	23'-6"	21'-9"
		14"	35'-3"	32'-0"	30'-0"	27'-10"	31'-5"	28'-5"	26'-9"	24'-9"
		16"	39'-1"	35'-5"	33'-3"	30'-10"	34'-9"	31'-6"	29'-7"	27'-5"
	BCI® 90 2.0	11⅞"	35'-6"	32'-2"	30'-2"	27'-11"	31'-7"	28'-7"	26'-10"	24'-10"
		14"	40'-3"	36'-6"	34'-3"	31'-9"	35'-10"	32'-5"	30'-6"	28'-3"
		16"	44'-6"	40'-4"	37'-11"	35'-1"	39'-7"	35'-11"	33'-9"	31'-3"
		18"	48'-8"	44'-1"	41'-5"	38'-4"	43'-4"	39'-3"	36'-10"	34'-2"
		20"	52'-8"	47'-9"	44'-10"	41'-6"	46'-10"	42'-6"	39'-11"	36'-11"
Specified Dead Load = 15 psf Specified Snow Load = 30 psf	BCI® 5000 1.7	9½"	20'-6"	18'-7"	17'-5"	15'-7"	18'-4"	16'-8"	15'-8"	14'-6"
		11⅞"	24'-5"	21'-8"	19'-9"	17'-8"	21'-10"	19'-10"	18'-7"	17'-0"
		14"	27'-4"	23'-8"	21'-7"	19'-3"	24'-10"	22'-6"	20'-8"	18'-6"
	BCI® 6000 1.8	9½"	21'-10"	19'-9"	18'-7"	17'-2"	19'-7"	17'-9"	16'-8"	15'-5"
		11⅞"	25'-11"	23'-6"	22'-1"	20'-1"	23'-3"	21'-1"	19'-9"	18'-4"
		14"	29'-5"	26'-8"	24'-6"	21'-11"	26'-4"	23'-11"	22'-5"	20'-9"
		16"	32'-7"	28'-9"	26'-2"	23'-5"	29'-3"	26'-6"	24'-10"	22'-5"
	BCI® 6500 1.8	9½"	22'-6"	20'-5"	19'-2"	17'-9"	20'-2"	18'-3"	17'-2"	15'-11"
		11⅞"	26'-9"	24'-3"	22'-9"	21'-1"	24'-0"	21'-9"	20'-5"	18'-10"
		14"	30'-4"	27'-6"	25'-10"	23'-0"	27'-2"	24'-8"	23'-2"	21'-5"
		16"	33'-7"	30'-5"	27'-7"	24'-8"	30'-1"	27'-3"	25'-7"	23'-4"
	BCI® 60 2.0	11⅞"	28'-7"	25'-11"	24'-4"	22'-6"	25'-7"	23'-2"	21'-9"	20'-2"
		14"	32'-6"	29'-5"	27'-8"	24'-11"	29'-1"	26'-4"	24'-9"	22'-11"
		16"	36'-0"	32'-7"	30'-8"	25'-4"	32'-3"	29'-3"	27'-5"	23'-4"
	BCI® 90 2.0	11⅞"	32'-8"	29'-7"	27'-9"	25'-8"	29'-3"	26'-6"	24'-10"	23'-0"
		14"	37'-1"	33'-7"	31'-6"	29'-2"	33'-3"	30'-1"	28'-3"	26'-1"
		16"	41'-0"	37'-2"	34'-10"	29'-8"	36'-9"	33'-3"	31'-3"	27'-4"
		18"	44'-10"	40'-7"	38'-1"	35'-3"	40'-2"	36'-5"	34'-2"	31'-7"
		20"	48'-6"	43'-11"	41'-3"	38'-2"	43'-6"	39'-5"	37'-0"	34'-3"

NOTES

1. Spans shown are in accordance with NBCC 2015.
2. Maximum spans listed are the clear horizontal spans between supports (simple/multiple spans, or one span + 2ft overhang).
3. Minimum end bearing length at end support is 1½".
4. Minimum interior bearing length is 3½".
5. Joists deeper than 16" require web stiffeners at all bearing locations.
6. **Total load deflection is limited to L/180.**
7. **Live load deflection is limited to L/240.**
8. Check the local building code for other deflection limits that may apply.
9. Spans shown have not been evaluated for snow drift.
10. Lateral support must be provided for the compression edge and also at the bearings to prevent lateral displacement or rotation.
11. Slope roof joists at least ¼" over 12" to minimize ponding.
12. Allowable spans and loads shall be adjusted and checked for wind loads as required by local building code.
13. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® or BC FRAMER® software.
14. When using continuous spans over an intermediate bearing, the shortest span shall not be less than 50% of the longest adjacent span.
15. Uplift = L_2*(factor$_1$*W_{FD}-W_{FL})/factor$_2$
    where: W_{FD} = Factored dead load (lb/ft)
    W_{FL} = Factored live load (lb/ft)
    L_2 = Length of longer span (ft)
    factor$_2$ = 8a(1+a)
    L_1 = Length of shorter span (ft)
    factor$_1$ = $4a^2 + 3a^3 - 1$
    a = Short span/Long span

Short/Long span ratio = a	0.5	0.6	0.7	0.8	0.9	1
factor$_1$	0.38	1.09	1.99	3.10	4.43	6.00
factor$_2$	6	7.68	9.52	11.52	13.68	16

16 Actual deflection based on span and deflection limit.

Deflection limit	Actual deflection (in) Span (ft)						
	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

17. WARNING: Use of Span Tables for Commercial Projects (NBCC2015: 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 (2015). Table 4.1.5.9 in NBCC (2015) lists concentrated loads that shall be analyzed 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.

Loads	Joist Series	Depth (in)	Low Roof Slope (0.25/12 to 6/12)				High Roof Slope (< 6/12 to 12/12)			
			o.c. spacing				o.c. spacing			
			12"	16"	19.2"	24"	12"	16"	19.2"	24"
Specified Dead Load = 15 psf Specified Snow Load = 40 psf	BCI® 5000 1.7	9½"	19'-2"	17'-4"	15'-9"	14'-0"	17'-3"	15'-8"	14'-8"	13'-7"
		11⅞"	22'-10"	19'-7"	17'-10"	15'-11"	20'-7"	18'-7"	17'-3"	15'-5"
		14"	24'-8"	21'-4"	19'-5"	17'-4"	23'-4"	20'-7"	18'-10"	16'-9"
	BCI® 6000 1.8	9½"	20'-5"	18'-6"	17'-4"	16'-1"	18'-5"	16'-8"	15'-7"	14'-5"
		11⅞"	24'-3"	22'-0"	20'-3"	18'-1"	21'-10"	19'-9"	18'-7"	17'-2"
		14"	27'-6"	24'-3"	22'-1"	19'-9"	24'-9"	22'-5"	21'-1"	18'-11"
		16"	29'-11"	25'-11"	23'-7"	20'-7"	27'-6"	24'-11"	22'-10"	19'-3"
	BCI® 6500 1.8	9½"	21'-1"	19'-1"	17'-11"	16'-7"	19'-0"	17'-2"	16'-1"	14'-11"
		11⅞"	25'-0"	22'-8"	21'-3"	19'-1"	22'-6"	20'-5"	19'-2"	17'-9"
		14"	28'-5"	25'-8"	23'-3"	20'-3"	25'-7"	23'-2"	21'-9"	18'-11"
		16"	31'-5"	27'-3"	24'-10"	20'-7"	28'-3"	25'-7"	24'-1"	19'-3"
	BCI® 60 2.0	11⅞"	26'-9"	24'-3"	22'-9"	19'-6"	24'-1"	21'-10"	20'-5"	18'-3"
		14"	30'-5"	27'-6"	25'-4"	20'-3"	27'-4"	24'-9"	23'-3"	18'-11"
		16"	33'-8"	30'-6"	25'-9"	20'-7"	30'-4"	27'-6"	24'-1"	19'-3"
	BCI® 90 2.0	11⅞"	30'-7"	27'-8"	25'-11"	23'-7"	27'-6"	24'-11"	23'-4"	21'-7"
		14"	34'-8"	31'-5"	29'-5"	23'-9"	31'-3"	28'-3"	26'-6"	22'-2"
		16"	38'-4"	34'-9"	30'-3"	24'-2"	34'-6"	31'-3"	28'-3"	22'-7"
		18"	41'-11"	38'-0"	35'-8"	32'-4"	37'-9"	34'-2"	32'-1"	29'-8"
		20"	45'-4"	41'-1"	38'-7"	33'-6"	40'-10"	37'-0"	34'-9"	31'-4"
Specified Dead Load = 15 psf Specified Snow Load = 50 psf	BCI® 5000 1.7	9½"	18'-2"	15'-10"	14'-5"	12'-10"	16'-5"	14'-10"	13'-11"	12'-6"
		11⅞"	20'-9"	17'-11"	16'-4"	14'-9"	19'-6"	17'-5"	15'-11"	13'-11"
		14"	22'-8"	19'-7"	17'-10"	15'-5"	22'-2"	19'-0"	17'-4"	14'-7"
	BCI® 6000 1.8	9½"	19'-4"	17'-6"	16'-5"	14'-7"	17'-5"	15'-9"	14'-10"	13'-8"
		11⅞"	22'-11"	20'-5"	18'-7"	16'-5"	20'-9"	18'-9"	17'-7"	15'-6"
		14"	25'-8"	22'-3"	20'-3"	17'-1"	23'-6"	21'-3"	19'-8"	16'-1"
		16"	27'-6"	23'-9"	21'-9"	17'-5"	26'-1"	23'-1"	20'-7"	16'-5"
	BCI® 6500 1.8	9½"	19'-11"	18'-0"	16'-11"	15'-5"	18'-0"	16'-3"	15'-3"	14'-1"
		11⅞"	23'-8"	21'-5"	19'-7"	16'-5"	21'-5"	19'-4"	18'-2"	15'-6"
		14"	26'-10"	23'-5"	21'-4"	17'-1"	24'-3"	21'-11"	20'-2"	16'-1"
		16"	28'-11"	25'-0"	21'-9"	17'-5"	26'-10"	24'-4"	20'-7"	16'-5"
	BCI® 60 2.0	11⅞"	25'-3"	22'-10"	20'-6"	16'-5"	22'-10"	20'-8"	19'-5"	15'-6"
		14"	28'-9"	25'-8"	21'-4"	17'-1"	26'-0"	23'-6"	20'-2"	16'-2"
		16"	31'-10"	26'-1"	21'-9"	17'-5"	28'-9"	24'-8"	20'-7"	16'-5"
	BCI® 90 2.0	11⅞"	28'-10"	26'-1"	24'-6"	19'-11"	26'-1"	23'-7"	22'-1"	18'-9"
		14"	32'-9"	29'-8"	25'-0"	20'-0"	29'-7"	26'-9"	23'-8"	18'-11"
		16"	36'-3"	30'-7"	25'-6"	20'-5"	32'-9"	28'-11"	24'-1"	19'-3"
		18"	39'-8"	35'-10"	33'-8"	27'-3"	35'-10"	32'-5"	30'-5"	25'-9"
		20"	42'-11"	38'-10"	35'-4"	28'-3"	38'-9"	35'-1"	32'-11"	26'-9"

NOTES

1. Spans shown are in accordance with NBCC 2015.
2. Maximum spans listed are the clear horizontal spans between supports (simple/multiple spans, or one span + 2ft overhang).
3. Minimum end bearing length at end support is 1½".
4. Minimum interior bearing length is 3½".
5. Joists deeper than 16" require web stiffeners at all bearing locations.
6. **Total load deflection is limited to L/180.**
7. **Live load deflection is limited to L/240.**
8. Check the local building code for other deflection limits that may apply.
9. Spans shown have not been evaluated for snow drift.
10. Lateral support must be provided for the compression edge and also at the bearings to prevent lateral displacement or rotation.
11. Slope roof joists at least ¼" over 12" to minimize ponding.
12. Allowable spans and loads shall be adjusted and checked for wind loads as required by local building code.
13. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® or BC FRAMER® software.
14. When using continuous spans over an intermediate bearing, the shortest span shall not be less than 50% of the longest adjacent span.
15. Uplift = L_2*($factor_1$*W_{FD}-W_{FL})/$factor_2$
    where: W_{FD} = Factored dead load (lb/ft)
    W_{FL} = Factored live load (lb/ft)
    L_1 = Length of shorter span (ft)
    L_2 = Length of longer span (ft)
    $factor_1 = 4a^2 + 3a^3 - 1$
    $factor_2 = 8a(1+a)$
    a = Short span/Long span

Short/Long span ratio = a	0.5	0.6	0.7	0.8	0.9	1
$factor_1$	0.38	1.09	1.99	3.10	4.43	6.00
$factor_2$	6	7.68	9.52	11.52	13.68	16

16. Actual deflection based on span and deflection limit.

Deflection limit	Actual deflection (in) Span (ft)						
	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

17. WARNING: Use of Span Tables for Commercial Projects (NBCC2015: 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 (2015). Table 4.1.5.9 in NBCC (2015) lists concentrated loads that shall be analyzed 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 Allowable Uniform Loads, PLF

Design Span (ft)	Joist Series	BCI® 5000			BCI® 6000				BCI® 6500				BCI® 60			BCI® 90				
	Joist Depth (in)	9½	11⅞	14	9½	11⅞	14	16	9½	11⅞	14	16	11⅞	14	16	11⅞	14	16	18	20
6	Unfactored Snow Load for L / 240 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Unfactored Total Load for L / 180 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	441	473	494	505	526	546	557	505	526	546	557	526	548	557	637	641	653	873	905
8	Unfactored Snow Load for L / 240 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Unfactored Total Load for L / 180 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	331	355	371	379	395	410	418	379	395	410	418	395	411	418	478	481	490	655	679
10	Unfactored Snow Load for L / 240 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Unfactored Total Load for L / 180 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	264	284	296	303	316	328	334	303	316	328	334	316	328	334	382	384	392	524	543
12	Unfactored Snow Load for L / 240 [plf]	184	-	-	215	-	-	-	235	-	-	-	-	-	-	-	-	-	-	-
	Unfactored Total Load for L / 180 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-
	Factored Total Load [plf]	220	236	247	252	263	273	278	252	263	273	278	263	274	278	318	320	326	436	452
14	Unfactored Snow Load for L / 240 [plf]	119	192	-	139	-	-	-	153	-	-	-	-	-	-	-	-	-	-	-
	Unfactored Total Load for L / 180 [plf]	159	-	-	186	-	-	-	204	-	-	-	-	-	-	-	-			-
	Factored Total Load [plf]	168	202	212	216	225	234	238	216	225	234	238	225	234	238	273	274	280	374	388
16	Unfactored Snow Load for L / 240 [plf]	81	132	-	95	157	-	-	105	170	-	-	-	-	-	-	-	-	-	-
	Unfactored Total Load for L / 180 [plf]	108	-	-	127	-	-	-	140	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	129	165	185	165	197	205	209	183	197	205	209	197	205	209	239	240	245	327	339
18	Unfactored Snow Load for L / 240 [plf]	58	94	137	68	112	162	-	75	122	176	-	147	-	-	212	-	-	-	-
	Unfactored Total Load for L / 180 [plf]	77	126	-	91	150	-	-	100	163	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	101	130	155	131	168	182	185	145	175	182	185	212	182	185	212	213	217	291	301
20	Unfactored Snow Load for L / 240 [plf]	42	69	101	50	83	120	160	55	90	131	-	109	158	-	158	-	-	-	-
	Unfactored Total Load for L / 180 [plf]	56	93	-	67	111	160	-	73	120	-	-	146	-	-	-	-	-	-	-
	Factored Total Load [plf]	82	106	125	106	136	161	167	117	150	164	167	158	164	167	191	192	196	262	271
22	Unfactored Snow Load for L / 240 [plf]	32	52	77	38	63	91	122	41	68	100	132	83	121	-	121	173	-	-	-
	Unfactored Total Load for L / 180 [plf]	43	70	102	50	84	122	-	55	91	133	-	111	-	-	162	-	-	-	-
	Factored Total Load [plf]	68	87	103	87	112	133	152	97	124	147	152	143	149	152	173	174	178	238	246
24	Unfactored Snow Load for L / 240 [plf]	25	41	59	29	49	71	95	32	53	77	103	65	94	126	95	135	-	-	-
	Unfactored Total Load for L / 180 [plf]	33	54	79	39	65	95	127	43	71	103	137	86	126	-	126	-	-	-	-
	Factored Total Load [plf]	57	73	87	73	94	112	128	81	104	124	139	131	137	139	159	160	163	218	225
26	Unfactored Snow Load for L / 240 [plf]		32	47	23	38	56	75	25	42	61	82	51	75	100	75	108	144	-	-
	Unfactored Total Load for L / 180 [plf]		43	63	31	51	75	101	34	56	82	109	68	100	-	101	144	-	-	-
	Factored Total Load [plf]		62	74	62	80	95	109	69	89	105	120	121	126	128	147	148	150	201	208
28	Unfactored Snow Load for L / 240 [plf]		26	38		31	45	61	20	34	49	66	41	60	81	61	87	117	150	188
	Unfactored Total Load for L / 180 [plf]		34	50		41	60	81	27	45	66	88	55	81	108	81	117	-	-	-
	Factored Total Load [plf]		54	64		69	82	94	60	76	91	104	105	117	119	136	137	140	187	194
30	Unfactored Snow Load for L / 240 [plf]			31		25	37	50		27	40	54	34	49	66	50	72	96	124	155
	Unfactored Total Load for L / 180 [plf]			41		34	49	66		37	54	72	45	66	89	66	96	128	165	-
	Factored Total Load [plf]			55		60	71	81		67	79	90	92	109	111	127	128	130	174	181

NOTES

1. Total Factored Load values are limited by shear, end/interior reactions or bending moment.
2. 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.
3. Unfactored Total Load values are limited by deflection equal to L / 180.
4. All three loading cases must be checked. Where a Snow Load value is not shown, the Factored Total Load value will control.
5. 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. Analyze continuous span beams with the BC CALC® software if the length of any span is less than half the length of an adjacent span.
6. Table values assume that lateral support is provided at each support and continuously along the compression edge of the beam.
7. Table values do not consider composite action from gluing and nailing floor sheathing
8. Total Factored Load values assume minimum bearing lengths without web stiffeners.
9. For 2-ply, double the Factored Total Load, Unfactored Snow and Total Load values.
10. This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® software.

Deflection limit	Actual deflection based on Span and Limit (in)												
	Span (ft)												
	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

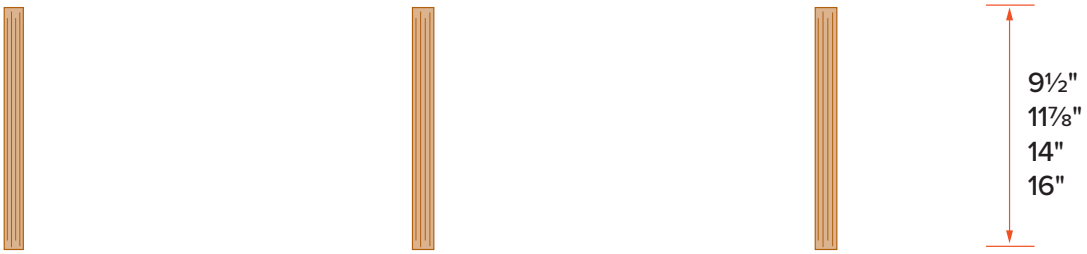
DEAD LOAD SLOPE FACTOR											
Joist Pitch	2/12	3/12	4/12	5/12	6/12	7/12	8/12	9/12	10/12	11/12	12/12
Slope Factor	1.014	1.031	1.054	1.083	1.118	1.158	1.202	1.250	1.302	1.357	1.414

PSF to PLF CONVERSION TABLE								
Joist Spacing	LOAD (psf)							
	20	25	30	35	40	45	50	60
12"	20	25	30	35	40	45	50	60
16"	27	33	40	47	53	60	67	80
19.2"	32	40	48	56	64	72	80	96
24"	40	50	60	70	80	90	100	120

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)

BOISE CASCADE® Rimboard Product Profiles



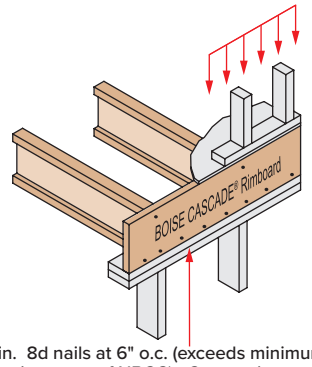
1⅛"
Boise Cascade® Rimboard OSB

1¼"
Versa-Strand® 0.8 (Durastrand®)

1⁵⁄₁₆"
Versa-Lam® LVL 1.5E 1800

F07 Perpendicular

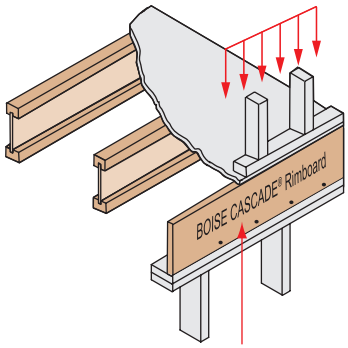
See chart for vertical load resistance.



Min. 8d nails at 6" o.c. (exceeds minimum requirements of NBCC). Connection per design professional of record's specification for shear transfer.

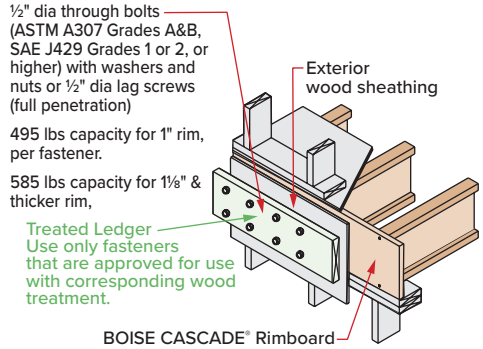
F07A Parallel

See chart for vertical load resistance.



Min. 8d nails at 6" o.c. (exceeds minimum requirements of NBCC). Connection per design professional of record's specification for shear transfer.

F56



Design of moisture control by others (only structural components shown above)

BOISE CASCADE® Rimboard Properties

Rim Board Type	Thickness [in]	φH	φV [lbs/ft]		φZ	φP
		[lbs/ft]	d ≤ 16"	d > 16"	[lbs]	[lbs]
BOISE CASCADE® Rimboard	1⅛"	235	7340	5000	585	5840
BOISE CASCADE® Rimboard Plus	1⅛"	260	8090	5340	585	5840
VERSA-STRAND® 0.8E	1¼"	310	9460	5820	830	8990
VERSA-LAM® 1.5E 1800	1⁵⁄₁₆"	SEE NOTE 7	10440	9483	585	7743

NOTES

1. φH = Factored horizontal (shear) load transfer capacity is based on the minimum nailing attachment schedule specified in NBCC 2015 and APA document D340CA.
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 ½ inch (12.7 mm) diameter lag screw.
4. φP = Factored concentrated vertical load resistance based on 4½ inch (114 mm) bearing length. The concentrated vertical load shall be simultaneously satisfied with the uniform bearing load capacity, when applicable.
5. All tabulated values are applicable to the standard-term load duration and permitted to be adjusted for other load durations in accordance with CSA O86-14.
6. See CCMC Evaluation Report No. 13143 for further product information on Boise Cascade VERSA-STRAND 0.8E.
7. Shall be evaluated as per section 11.5 of CSA O86-14.

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

USP STRUCTURAL CONNECTORS MiTek

Joist Height	USP Stock No.[1]	Top Mount Hangers[4] Fastener Schedule[5] Header	Fastener Schedule[5] Joist	Uplift 115%[3] DF	Uplift 115%[3] SPF	Down 100%[2] DF	Down 100%[2] SPF	USP Stock No.[1]	Face Mount Hangers Fastener Schedule[5] Header	Fastener Schedule[5] Joist	Uplift 115%[3] DF	Uplift 115%[3] SPF	Down 100%[2] DF	Down 100%[2] SPF
BCI® 5000								**Joist Width = 2″**						
9-1/2	TFL2095	(6) 10d	(2) 10d x 1-1/2	265	205	2370	1960	THF20925 Min	(8) 10d	(2) 10d x 1-1/2	410	500	2920	2395
								THF20925 Max	(12) 10d	(2) 10d x 1-1/2	410	500	3090	2530
11-7/8	TFL20118	(6) 10d	(2) 10d x 1-1/2	265	205	2370	1960	THF20112 Min	(8) 10d	(2) 10d x 1-1/2	410	500	2920	2395
								THF20112 Max	(16) 10d	(2) 10d x 1-1/2	410	500	3965	3245
14	TFL2014	(6) 10d	(2) 10d x 1-1/2	265	205	2370	1960	THF20140 Min	(12) 10d	(2) 10d x 1-1/2	410	500	3655	2995
								THF20140 Max	(20) 10d	(2) 10d x 1-1/2	410	500	3875	3175
BCI® 60/6000								**Joist Width = 2-5/16″**						
9-1/2	TFL2395	(6) 10d	(2) 10d x 1-1/2	265	205	2370	1960	THF23925	(12) 10d	(2) 10d x 1-1/2	320	260	3310	2600
11-7/8	TFL23118	(6) 10d	(2) 10d x 1-1/2	265	205	2370	1960	THF23118	(14) 10d	(2) 10d x 1-1/2	690	565	3310	2600
14	TFL2314	(6) 10d	(2) 10d x 1-1/2	265	205	2370	1960	THF23140	(18) 10d	(2) 10d x 1-1/2	690	565	4405	3460
16	TFL2316	(6) 10d	(2) 10d x 1-1/2	265	205	2370	1960	THF23160	(22) 10d	(2) 10d x 1-1/2	690	565	4405	3460
BCI® 6500								**Joist Width = 2-9/16″**						
9-1/2	TFL2595	(6) 10d	(2) 10d x 1-1/2	265	205	2370	1960	THFI2595	(8) 10d	-- --	235	185	2345	1845
11-7/8	TFL25118	(6) 10d	(2) 10d x 1-1/2	265	205	2370	1960	THFI25118	(10) 10d	-- --	235	185	2345	1845
14	TFL2514	(6) 10d	(2) 10d x 1-1/2	265	205	2370	1960	THFI2514	(12) 10d	-- --	235	185	4605	3615
16	TFL2516	(6) 10d	(2) 10d x 1-1/2	265	205	2370	1960	THF26160	(22) 10d	(2) 10d x 1-1/2	690	565	4405	3460
BCI® 90								**Joist Width = 3-1/2″**						
11-7/8	THO35118	(10) 10d	(2) 10d x 1-1/2	485	380	2950	2620	THF35112	(16) 10d	(2) 10d x 1-1/2	445	365	5075	4115
14	THO35140	(12) 10d	(2) 10d x 1-1/2	485	380	3910	3385	THF35140	(20) 10d	(2) 10d x 1-1/2	445	365	6680	5245
16	THO35160	(12) 10d	(2) 10d x 1-1/2	485	380	3910	3385	THF35157	(22) 10d	(2) 10d x 1-1/2	445	365	6680	5245
18	TFI418	(6) 16d	(2) 10d x 1-1/2	505	395	3685	3290	THF35165	(24) 10d	(8) 10d x 1-1/2	2335	1915	6680	5245
20	TFI420	(6) 16d	(2) 10d x 1-1/2	505	395	3685	3290	THF35165	(24) 10d	(8) 10d x 1-1/2	2335	1915	6680	5245

Joist Height	USP Stock No.[1,6,9]	Slope and Skew Hangers Fastener Schedule[5] Header	Fastener Schedule[5] Joist	Uplift 115%[3] DF	Uplift 115%[3] SPF	Down 100%[2] DF	Down 100%[2] SPF	USP Stock No.[1,7]	Adjustable Height Hangers Fastener Schedule[5] Header	Fastener Schedule[5] Joist	Uplift 115%[3] DF	Uplift 115%[3] SPF	Down 100%[2] DF	Down 100%[2] SPF
BCI® 5000								**Joist Width = 2″**						
9-1/2 to 14	LSSH20 Sloped Only	(10) 10d	(7) 10d x 1-1/2	1555	1220	2535	1990	MSH2022	(6) 10d	(4) 10d	-- --	-- --	3370	2750
	LSSH20 Skewed and or Sloped	(10) 10d	(7) 10d x 1-1/2	1555	1220	2535	1990							
BCI® 60/6000								**Joist Width = 2-5/16″**						
9-1/2 to 16	LSSH23 Sloped Only	(10) 10d	(7) 10d x 1-1/2	1555	1220	2535	1990	MSH2322	(6) 10d	(4) 10d x 1-1/2	-- --	-- --	3370	2750
	LSSH23 Skewed and or Sloped	(10) 10d	(7) 10d x 1-1/2	1555	1220	2535	1990							
BCI® 6500								**Joist Width = 2-9/16″**						
9-1/2 to 16	LSSH25 Sloped Only	(18) 16d	(12) 10d x 1-1/2	1895	1490	4125	3240	MSH322	(6) 10d	(4) 10d x 1-1/2	-- --	-- --	3370	2750
	LSSH25 Skewed and or Sloped	(14) 16d	(12) 10d x 1-1/2	1895	1490	2895	3420							
BCI® 90								**Joist Width = 3-1/2″**						
11-7/8 to 20	LSSH35 Sloped Only	(18) 16d	(12) 10d x 1-1/2	2515	1975	5065	3980	MSH422	(6) 10d	(6) 10d	-- --	-- --	3215	2525
	LSSH35 Skewed & or Sloped	(14) 16d	(12) 10d x 1-1/2	2515	1975	3045	3980	MSH426 (20˚)	(6) 10d	(6) 10d			4340	3405

Joist Height	USP Stock No.[1]	Skewed 45° Hangers Fastener Schedule[5] Header	Fastener Schedule[5] Rafter	Uplift 115%[3] DF	Uplift 115%[3] SPF	Down 100%[2] DF	Down 100%[2] SPF	Joist Wdith	USP Stock No.[1,10]	Variable Pitch Connectors (Slope 12/12) Fastener Schedule[4] Plate	Fastener Schedule[4] Joist	Uplift 115%[3] DF	Uplift 115%[3] SPF	Down 100%[2] DF	Down 100%[2] SPF
BCI® 5000								**Joist Width = 2″**							
9-1/2 - 11-7/8	SKH2020L/R	(14) 10d	(10) 10d x 1-1/2	2855	2240	3440	2700	2″	TMP21	(6) 10d	(4) 10d x 1-1/2	400	315	1815	1425
14	SKH2024L/R	(16) 10d	(10) 10d x 1-1/2	2855	2240	4640	3645		TMPH21	(10) 10d	(8) 10d x 1-1/2	375	295	4120	3235
BCI® 60/6000								**Joist Width = 2-5/16″**							
9-1/2 - 11-7/8	SKH2320L/R	(14) 10d	(10) 10d x 1-1/2	2855	2240	3440	2700	2-5/16″	TMP23	(6) 10d	(4) 10d x 1-1/2	400	315	2770	2175
14 - 16	SKH2324L/R	(16) 10d	(10) 10d x 1-1/2	2855	2240	4640	3645		TMPH23	(10) 10d	(8) 10d x 1-1/2	375	295	4120	3235
BCI® 6500								**Joist Width = 2-9/16″**							
9-1/2 - 11-7/8	SKH2520L/R	(14) 10d	(10) 10d x 1-1/2	2855	2240	3440	2700	2-9/16″	TMP25	(6) 10d	(4) 10d x 1-1/2	400	315	2770	2175
14 - 16	SKH2524L/R	(16) 10d	(10) 10d x 1-1/2	2855	2240	4640	3645		TMPH25	(10) 10d	(8) 10d x 1-1/2	375	295	4120	3235
BCI® 90								**Joist Width = 3-1/2″**							
11-7/8	HD410_SKH45L/R_BV[7]	(18) 16d	(10) 10d	3325	2615	7485	5875	3-1/2″	TMP4	(6) 10d	(4) 10d x 1-1/2	400	315	2770	2175
14 - 20	HD414_SKH45L/R_BV[7]	(24) 16d	(10) 10d	3220	2615	8250	6475		TMPH4	(10) 10d	(8) 10d x 1-1/2	375	295	4120	3235

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

Joist Height	Top Mount Hangers[4] USP Stock No.[1]	Fastener Schedule[5,6] Header	Fastener Schedule[5,6] Joist	Uplift 115%[3] DF	Uplift 115%[3] SPF	Down 100%[2] DF	Down 100%[2] SPF	Face Mount Hangers USP Stock No.[1]	Fastener Schedule[5,6] Header	Fastener Schedule[5,6] Joist	Uplift 115%[3] DF	Uplift 115%[3] SPF	Down 100%[2] DF	Down 100%[2] SPF
Double BCI® 5000								**Joist Width = 4″**						
9-1/2	THO20950-2	(10) 16d	(6) 10d	2140	1670	3355	3100	THF20925-2	(12) 10d	(6) 10d	3185	2610	5035	4125
11-7/8	THO20118-2	(10) 16d	(6) 10d	2140	1670	3355	3425	THF20112-2	(16) 10d	(6) 10d	3185	2610	5350	4385
14	THO20140-2	(10) 16d	(6) 10d	2140	1670	3355	4305	THF20140-2	(20) 10d	(6) 10d	3185	2610	6735	5290
Double BCI® 60/6000								**Joist Width = 4-5/8″**						
9-1/2	THO23950-2	(10) 16d	(6) 10d	2140	1670	5090	4570	THF23925-2	(14) 10d	(6) 10d	3185	2610	5075	4115
11-7/8	THO23118-2	(10) 16d	(6) 10d	2140	1670	5090	4570	THF23118-2	(16) 10d	(6) 10d	3185	2610	6855	5380
14	THO23140-2	(12) 16d	(6) 10d	2140	1670	5090	5545	THF23140-2	(20) 10d	(6) 10d	3185	2610	6680	5245
16	THO23160-2	(12) 16d	(6) 10d	2140	1670	5090	5545	THF23160-2	(24) 10d	(6) 10d	3185	2610	6680	5245
Double BCI® 6500								**Joist Width = 5-1/8″**						
9-1/2	THO25950-2	(10) 16d	(6) 10d	2140	1670	5090	4570	THF25925-2	(12) 10d	(6) 10d	3185	2610	5075	4115
11-7/8	THO25118-2	(10) 16d	(6) 10d	2140	1670	5090	4570	THF25112-2	(16) 10d	(6) 10d	3185	2610	5075	4115
14	THO25140-2	(12) 16d	(6) 10d	2140	1670	5090	5545	THF25140-2	(20) 10d	(6) 10d	3185	2610	6680	5245
16	THO25160-2	(12) 16d	(6) 10d	2140	1670	5090	5545	THF25160-2	(24) 10d	(6) 10d	3185	2610	6680	5245
Double BCI® 90								**Joist Width = 7″**						
11-7/8	BPH71118	(10) 16d	(6) 10d	2935	2290	5300	4305	HD7120	(16) 16d	(6) 10d	2685	2105	4675	3670
14	BPH7114	(10) 16d	(6) 10d	2935	2290	5300	4305	HD7140	(20) 16d	(8) 10d	2685	2105	7485	5875
16	BPH7116	(10) 16d	(6) 10d	2935	2290	5300	4305	HD7160	(24) 16d	(8) 10d	2685	2105	8250	6475
18	BPH7118	(10) 16d	(6) 10d	2935	2290	5300	4305	HD7180	(28) 16d	(8) 10d	2685 / 2105	6475	8250	6475
20	BPH7120	(10) 16d	(6) 10d	2935	2290	5300	4305	HD7180	(28) 16d	(8) 10d	2685 / 2105	6475	8250	6475

Joist Height	Skewed 45° Hangers USP Stock No.[1,7]	Fastener Schedule[5,6] Header	Fastener Schedule[5,6] Joist	Uplift 115%[3] DF	Uplift 115%[3] SPF	Down 100%[2] DF	Down 100%[2] SPF	Adjustable Height Hangers USP Stock No.[1,10]	Fastener Schedule[5,6] Header	Fastener Schedule[5,6] Joist	Uplift 115%[3] DF	Uplift 115%[3] SPF	Down 100%[2] DF	Down 100%[2] SPF
Double BCI® 5000								**Joist Width = 4″**						
9-1/2	SKH2020L/R-2	(14) 10d	(10) 10d	3490	2740	5320	4175	See current USP Full Line Catalog or BC Framer for specialty hanger options						
11-7/8	SKH2020L/R-2	(14) 10d	(10) 10d	3490	2740	5320	4175							
14	SKH2024L/R-2	(16) 10d	(10) 10d	3485	2735	4950	3885							
Double BCI® 60/6000								**Joist Width = 4-5/8″**						
9-1/2	SKH2320L/R-2	(14) 10d	(10) 10d	3490	2740	5320	4175	MSH2322-2[8]	(6) 10d	(4) 10d	-- --	-- --	3475	2830
11-7/8	SKH2320L/R-2	(14) 10d	(10) 10d	3490	2740	5320	4175	MSH2322-2[8]	(6) 10d	(4) 10d	-- --	-- --	3475	2830
14	SKH2324L/R-2	(16) 10d	(10) 10d	3485	2735	4950	3885	MSH2322-2[8]	(6) 10d	(4) 10d	-- --	-- --	3475	2830
16	SKH2324L/R-2	(16) 10d	(10) 10d	3485	2735	4950	3885	MSH2322-2[8]	(6) 10d	(4) 10d	-- --	-- --	3475	2830
Double BCI® 6500								**Joist Width = 5-1/8″**						
9-1/2	SKH2520L/R-2	(14) 10d	(10) 10d	3490	2740	5320	4175	See current USP Full Line Catalog or BC Framer for specialty hanger options						
11-7/8	SKH2520L/R-2	(14) 10d	(10) 10d	3490	2740	5320	4175							
14	SKH2524L/R-2	(16) 10d	(10) 10d	3485	2735	4950	3885							
16	SKH2524L/R-2	(16) 10d	(10) 10d	3485	2735	4950	3885							
Double BCI® 90								**Joist Width = 7″**						
11-7/8	HD7120-SK45L/R[8]	(16) 16d	(6) 10d	2015	1580	4675	3670	See current USP Full Line Catalog or BC Framer for specialty hanger options						
14	HD7140-SK45L/R[8]	(20) 16d	(8) 10d	2015	1580	7485	5875							
16	HD7160-SK45L/R[8]	(24) 16d	(8) 10d	2015	1580	8250	6475							
18	HD7180-SK45L/R[8]	(28) 16d	(8) 10d	2015	1580	8250	6475							
20	HD7180-SK45L/R[8]	(28) 16d	(8) 10d	2015	1580	8250	6475							

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 5-1/2" 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 USP Product Catalog.

5) 10d x 1-1/2 nails are 0.148" diameter x 1-1/2" long, 10d nails are 0.148" diameter x 3" long and 16d nails are 0.162" diameter x 3-1/2" 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 USP 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 USP's Full Line Catalog.

For more information, please call 1.800.328.5934
or go to www.USPconnectors.com

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

SIMPSON Strong-Tie®

Joist Height	Top Flange							Snap-In							Face Mount						
	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		DF	SPF			Header	Joist		DF	SPF			Header	Joist		DF	SPF
BCI 4500								**Joist Width = 1¾"**													
9½	LT179	2	6-10d	1-#8x1½WS	105	2625	1725	IUS1.81/9.5	2	8-10d	—	145	2385	1690	LF179	2	10-10d	1-#8x1½WS	105	2525	2155
11⅞	LT171188	2	6-10d	1-#8x1½WS	105	2625	1725	IUS1.81/11.88	2	10-10d	—	145	2565	1820	LF1711	2	12-10d	1-#8x1½WS	105	2845	2155
14	LT1714	2	6-10d	1-#8x1½WS	105	2625	1725	IUS1.81/14	2	12-10d	—	145	2565	1820	LF1714	2	14-10d	1-#8x1½WS	105	2845	2155
16	LT1716	2	6-10d	1-#8x1½WS	105	2625	1725	IUS1.81/16	2	14-10d	—	145	2725	1935	MIU1.81/16	2½	24-16d	2-10dx1½	450	3555	2690
BCI 5000[2]								**Joist Width = 2"**													
9½	ITS2.06/9.5	2	6-10d	—	175	2235	1690	IUS2.06/9.5	2	8-10d	—	145	2385	1690	LF209	2	10-10d	1-#8x1½WS	105	2525	2155
11⅞	ITS2.06/11.88	2	6-10d	—	175	2235	1690	IUS2.06/11.88	2	10-10d	—	145	2565	1820	LF2011	2	12-10d	1-#8x1½WS	105	2880	2270
14	ITS2.06/14	2	6-10d	—	175	2235	1690	IUS2.06/14	2	12-10d	—	145	2565	1820	LF2014	2	14-10d	1-#8x1½WS	105	3235	2385
BCI 60/6000[2]								**Joist Width = 2 5/16"**													
9½	LT239	2	6-10d	1-#8x1½WS	105	2625	1725	IUS2.37/9.5	2	8-10d	—	145	2385	1690	LF239	2	10-10d	1-#8x1½WS	105	2525	2155
11⅞	LT231188	2	6-10d	1-#8x1½WS	105	2625	1725	IUS2.37/11.88	2	10-10d	—	145	2565	1820	LF2311	2	12-10d	1-#8x1½WS	105	2880	2270
14	LT2314	2	6-10d	1-#8x1½WS	105	2625	1725	IUS2.37/14	2	12-10d	—	145	2565	1820	LF2314	2	14-10d	1-#8x1½WS	105	3235	2385
16	LT2316	2	6-10d	1-#8x1½WS	105	2625	1725	IUS2.37/16	2	14-10d	—	145	2725	1935	MIU2.37/16	2½	24-16d	2-10dx1½	450	4695	3485
BCI 6500[2]								**Joist Width = 2 9/16"**													
9½	LT259	2	6-10d	1-#8x1½WS	105	2625	1725	IUS2.56/9.5	2	8-10d	—	145	2385	1690	LF259	2	10-10d	1-#8x1½WS	105	2525	2155
11⅞	LT251188	2	6-10d	1-#8x1½WS	105	2625	1725	IUS2.56/11.88	2	10-10d	—	145	2565	1820	LF2511	2	12-10d	1-#8x1½WS	105	2880	2270
14	LT2514	2	6-10d	1-#8x1½WS	105	2625	1725	IUS2.56/14	2	12-10d	—	145	2565	1820	LF2514	2	14-10d	1-#8x1½WS	105	3235	2385
16	LT2516	2	6-10d	1-#8x1½WS	105	2625	1725	IUS2.56/16	2	14-10d	—	145	2725	1935	MIU2.56/16	2½	24-16d	2-10dx1½	450	4930	3485
BCI 90								**Joist Width = 3½"**													
11⅞	LT351188	2	6-10d	2-#8x1½WS	105	2625	1725	IUS3.56/11.88	2	12-10d	—	145	2370	1685	LF3511	2	12-10d	2-#8x1½WS	105	2880	2270
14	LT3514	2	6-10d	2-#8x1½WS	105	2625	1725	IUS3.56/14	2	12-10d	—	145	2370	1685	LF3514	2	14-10d	2-#8x1½WS	105	3235	2385
16	LT3516	2	6-10d	2-#8x1½WS	105	2625	1725	IUS3.56/16	2	14-10d	—	145	2370	1685	MIU3.56/16	2½	24-16d	2-10dx1½	450	4930	3485
18	MIT418	2½	8-16d	2-10dx1½	450	3490	2420	No IUS Hanger for these sizes							MIU3.56/18	2½	26-16d	2-10dx1½	450	4930	3485
20	MIT420	2½	8-16d	2-10dx1½	450	3490	2420								MIU3.56/20	2Z\x	28-16d	2-10dx1Z\x	450	4930	3485

1. Shaded hangers require web stiffeners at joist ends. Web stiffeners may be required by others for non-shaded hangers.
2. At max capacity shown hangers may exceed standard ⅛" deflection by 1/32".
3. The B Dim is the depth of the hanger seat.
4. WS = wood screw

Joist Height	45° Skew							Adjustable Height							Field Slope & 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		DF	SPF			Header	Joist		DF	SPF			Header	Joist		DF	SPF
BCI 4500								**Joist Width = 1¾"**													
9½	SUR/L1.81/9	3	12-16d	2-10dx1½	275	3140	2220	THAI1.81/22	2¼	6-10d	2-10dx1½	—	2810	2385	LSSUI25	3½	9-10d	7-10dx1½	1240	2090	1485
11⅞	SUR/L1.81/11	3	16-16d	2-10dx1½	275	3140	2220	THAI1.81/22	2¼	6-10d	2-10dx1½	—	2810	2385	LSSUI25	3½	9-10d	7-10dx1½	1240	2090	1485
14	SUR/L1.81/14	3	20-16d	2-10dx1½	275	3140	2220	THAI1.81/22	2¼	6-10d	2-10dx1½	—	2810	2385	LSSUI25	3½	9-10d	7-10dx1½	1240	2090	1485
16	SUR/L1.81/14	3	20-16d	2-10dx1½	275	3140	2220	See Canadian *Wood Construction Connectors* catalogue for hanger selection.							See Canadian *Wood Construction Connectors* catalogue for hanger selection.						
BCI 5000[2]								**Joist Width = 2"**													
9½	SUR/L2.06/9	3/16	14-16d	2-10dx1½	385	3950	2805	THAI2.06/22	2¼	6-10d	2-10dx1½	—	2810	2385	LSSUI2.06	3½	9-10d	7-10dx1½	1240	2090	1485
11⅞	SUR/L2.06/11	3/16	16-16d	2-10dx1½	385	3950	2805	THAI2.06/22	2¼	6-10d	2-10dx1½	—	2810	2385	LSSUI2.06	3½	9-10d	7-10dx1½	1240	2090	1485
14	SUR/L2.06/11	3/16	18-16d	2-10dx1½	385	3950	2805	THAI2.06/22	2¼	6-10d	2-10dx1½	—	2810	2385	LSSUI2.06	3½	9-10d	7-10dx1½	1240	2090	1485
BCI 60/6000[2]								**Joist Width = 2 5/16"**													
9½	SUR/L2.37/9	3/16	14-16d	2-10dx1½	385	3950	2805	THAI3522	2¼	6-10d	2-10dx1½	—	2810	2385	LSSUI35	3½	9-10d	7-10dx1½	1240	2090	1485
11⅞	SUR/L2.37/11	3/16	16-16d	2-10dx1½	385	3950	2805	THAI3522	2¼	6-10d	2-10dx1½	—	2810	2385	LSSUI35	3½	9-10d	7-10dx1½	1240	2090	1485
14	SUR/L2.37/14	3/16	18-16d	2-10dx1½	385	3950	2805	THAI3522	2¼	6-10d	2-10dx1½	—	2810	2385	LSSUI35	3½	9-10d	7-10dx1½	1240	2090	1485
16	SUR/L2.37/14	3/16	18-16d	2-10dx1½	385	3950	2805	See Canadian Wood Construction Connectors catalogue for hanger selection.							See Canadian Wood Construction Connectors catalogue for hanger selection.						
BCI 6500[2]								**Joist Width = 2 9/16"**													
9½	SUR/L2.56/9	3/16	14-16d	2-10dx1½	385	3950	2805	THAI322	2¼	6-10d	2-10dx1½	—	2810	2385	LSSUH310	3½	14-16d	12-10dx1½	1625	2620	1860
11⅞	SUR/L2.56/11	3/16	16-16d	2-10dx1½	385	3950	2805	THAI322	2¼	6-10d	2-10dx1½	—	2810	2385	LSSUH310	3½	14-16d	12-10dx1½	1625	2620	1860
14	SUR/L2.56/14	3/16	18-16d	2-10dx1½	385	3950	2805	THAI322	2¼	6-10d	2-10dx1½	—	2810	2385	LSSUH310	3½	14-16d	12-10dx1½	1625	2620	1860
16	SUR/L2.56/14	3/16	18-16d	2-10dx1½	385	3950	2805	See Canadian Wood Construction Connectors catalogue for hanger selection.							See Canadian Wood Construction Connectors catalogue for hanger selection.						
BCI 90								**Joist Width = 3½"**													
11⅞	SUR/L410	2⅝	14-16d	6-16d	1695	4065	2875	THAI422	2¼	6-10d	2-10dx1½	—	2810	2385	LSSU410	3½	14-16d	12-10dx1½	1625	3055	2170
14	SUR/L414	2⅝	18-16d	8-16d	2265	4095	2895	THAI422	2¼	6-10d	2-10dx1½	—	2810	2385	LSSU410	3½	14-16d	12-10dx1½	1625	3055	2170
16	SUR/L414	2⅝	18-16d	8-16d	2265	4095	2895	See Canadian Wood Construction Connectors catalogue for hanger selection.							See Canadian Wood Construction Connectors catalogue for hanger selection.						
18	SUR/L414	2⅝	18-16d	8-16d	2265	4095	2895														
20	SUR/L414	2⅝	18-16d	8-16d	2265	4095	2895														

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

SIMPSON Strong-Tie

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		DF	SPF			Header	Joist		DF	SPF			Header	Joist		DF	SPF
Double BCI 4500								**Joist Width = 3½"**													
9½	MIT49.5	2½	8-16d	2-10dx1½	450	3490	2420	MIU3.56/9	2½	16-16d	2-10dx1½	450	4550	3230	HSUR/L410	$2^{7}/_{16}$	20-16d	6-16d	1840	5270	3745
11⅞	MIT411.88	2½	8-16d	2-10dx1½	450	3490	2420	MIU3.56/11	2½	20-16d	2-10dx1½	450	4550	3230	HSUR/L410	$2^{7}/_{16}$	20-16d	6-16d	1840	5270	3745
14	MIT414	2½	8-16d	2-10dx1½	450	3490	2420	MIU3.56/14	2½	22-16d	2-10dx1½	450	4930	3485	HSUR/L414	$2^{7}/_{16}$	26-16d	8-16d	2455	6875	4880
16	MIT416	2½	8-16d	2-10dx1½	450	3490	2420	MIU3.56/16	2½	24-16d	2-10dx1½	450	4930	3485	HSUR/L414	$2^{7}/_{16}$	26-16d	8-16d	2455	6875	4880
Double BCI 5000[3]								**Joist Width = 4"**													
9½	MIT4.12/9.5	2½	8-16d	2-10dx1½	450	3490	2420	MIU4.12/9	2½	16-16d	2-10dx1½	450	4550	3230	HSUR/L4.12/9	3	12-16d	2-10dx1½	275	2995	2350
11⅞	MIT4.12/11.88	2½	8-16d	2-10dx1½	450	3490	2420	MIU4.12/11	2½	20-16d	2-10dx1½	450	4550	3230	HSUR/L4.12/11	3	16-16d	2-10dx1½	275	4195	2965
14	MIT4.12/14	2½	8-16d	2-10dx1½	450	3490	2420	MIU4.12/14	2½	22-16d	2-10dx1½	450	4930	3485	HSUR/L4.12/14	3	20-16d	2-10dx1½	275	4195	2965
Double BCI 60								**Joist Width = 4⅝"**													
11⅞	MIT3511.88-2	2½	8-16d	2-10dx1½	450	3490	2420	MIU4.75/11	2½	20-16d	2-10dx1½	450	4550	3230	HSUR/L4.75/11	2¾	16-16d	2-10dx1½	275	4190	2965
14	MIT3514-2	2½	8-16d	2-10dx1½	450	3490	2420	MIU4.75/14	2½	22-16d	2-10dx1½	450	4930	3485	HSUR/L4.75/14	2¾	20-16d	2-10dx1½	275	4190	2965
16	MIT4.75/16	2½	8-16d	2-10dx1½	450	3490	2420	MIU4.75/16	2½	24-16d	2-10dx1½	450	4930	3485	HSUR/L4.75/16	2¾	24-16d	2-10dx1½	275	4190	2965
Double BCI 6000[3]								**Joist Width = 4⅝"**													
9½	MIT359.5-2	2½	8-16d	2-10dx1½	450	3490	2420	MIU4.75/9	2½	16-16d	2-10dx1½	450	4550	3230	HSUR/L4.75/9	2¾	12-16d	2-10dx1½	275	2995	2350
11⅞	MIT3511.88-2	2½	8-16d	2-10dx1½	450	3490	2420	MIU4.75/11	2½	20-16d	2-10dx1½	450	4550	3230	HSUR/L4.75/11	2¾	16-16d	2-10dx1½	275	4190	2965
14	MIT3514-2	2½	8-16d	2-10dx1½	450	3490	2420	MIU4.75/14	2½	22-16d	2-10dx1½	450	4930	3485	HSUR/L4.75/14	2¾	20-16d	2-10dx1½	275	4190	2965
16	MIT4.75/16	2½	8-16d	2-10dx1½	450	3490	2420	MIU4.75/16	2½	24-16d	2-10dx1½	450	4930	3485	HSUR/L4.75/16	2¾	24-16d	2-10dx1½	275	4190	2965
Double BCI 6500[3]								**Joist Width = 5⅛"**													
9½	MIT39.5-2	2½	8-16d	2-10dx1½	450	3490	2420	MIU5.12/9	2½	16-16d	2-10dx1½	450	4550	3230	HSUR/L5.12/9	$2^{13}/_{16}$	12-16d	2-10dx1½	275	2995	2350
11⅞	MIT311.88-2	2½	8-16d	2-10dx1½	450	3490	2420	MIU5.12/11	2½	20-16d	2-10dx1½	450	4550	3230	HSUR/L5.12/11	$2^{13}/_{16}$	16-16d	2-10dx1½	275	4190	2965
14	MIT314-2	2½	8-16d	2-10dx1½	450	3490	2420	MIU5.12/14	2½	22-16d	2-10dx1½	450	4930	3485	HSUR/L5.12/14	$2^{13}/_{16}$	20-16d	2-10dx1½	275	4190	2965
16	MIT5.12/16	2½	8-16d	2-10dx1½	450	3490	2420	MIU5.12/16	2½	24-16d	2-10dx1½	450	4930	3485	HSUR/L5.12/16	$2^{13}/_{16}$	24-16d	2-10dx1½	275	4190	2965
Double BCI 90								**Joist Width = 7"**													
11⅞	B7.12/11.88	2½	14-16d	6-16d	1650	5940	3910	HU412-2	2½	22-16d	8-16d	2455	5780	4690	HU412-2X[2]	2½	22-16d	8-16d	1840	3755	3045
14	B7.12/14	2½	14-16d	6-16d	1650	5940	3910	HU414-2	2½	26-16d	12-16d	3685	7025	5780	HU414-2X[2]	2½	26-16d	12-16d	2760	4565	3755
16	B7.12/16	2½	14-16d	6-16d	1650	5940	3910	HU414-2	2½	26-16d	12-16d	3685	7025	5780	HU414-2X[2]	2½	26-16d	12-16d	2760	4565	3755
18	B7.12/18	2½	14-16d	6-16d	1650	5940	3910	HU414-2	2½	26-16d	12-16d	3685	7025	5780	See Canadian *Wood Construction Connectors* catalogue for hanger selection.						
20	B7.12/20	2½	14-16d	6-16d	1650	5940	3910	See Canadian *Wood Construction Connectors* catalogue for hanger selection.													

1. Shaded hangers require web stiffeners at joist ends. Web stiffeners may be required by others for non-shaded hangers.
2. Skew option must be special ordered. Specify skew angle and direction (e.g. HU412-2x, SKR45˚).
3. At max capacity shown hangers may exceed standard ⅛" deflection by $^{1}/_{32}$".
4. THAI-2 must be special ordered. Specify width between 3⅛" and 5 $^{5}/_{16}$".
5. LSU's are field sloped only. Skew option must be factory ordered.
6. The B Dim is the length of the hanger seat.

Joist Height	Adjustable Height							Field Slope & Skew						
	Model	B Dim	Fastener Type		Uplift (115)	Down Load		Model	B Dim	Fastener Type		Uplift (115)	Down Load	
			Header	Joist		DF	SPF			Header	Joist		DF	SPF
Double BCI 4500						**Joist Width = 3½"**								
9½	THAI422	2½	6-10d	2-10dx1½	—	2810	2385	LSSU410	3½	14-16d	12-10dx1½	1625	3055	2170
11⅞	THAI422	2½	6-10d	2-10dx1½	—	2810	2385	LSSU410	3½	14-16d	12-10dx1½	1625	3055	2170
14	THAI422	2½	6-10d	2-10dx1½	—	2810	2385	LSSU410	3½	14-16d	12-10dx1½	1625	3055	2170
16	See Canadian Wood Construction Connectors catalogue for hanger selection.							See Canadian Wood Construction Connectors catalogue for hanger selection.						
Double BCI 5000[3]						**Joist Width = 4"**								
9½	THAI-2[4]	2½	6-10d	2-10dx1½	—	2800	2385	LSU4.12[5]	3½	24-16d	16-10dx1½	1960	3765	2675
11⅞	THAI-2[4]	2½	6-10d	2-10dx1½	—	2800	2385	LSU4.12[5]	3½	24-16d	16-10dx1½	1960	3765	2675
14	THAI-2[4]	2½	6-10d	2-10dx1½	—	2800	2385	LSU4.12[5]	3½	24-16d	16-10dx1½	1960	3765	2675
Double BCI 60/6000[3]						**Joist Width = 4⅝"**								
9½	THAI-2[4]	2½	6-10d	2-10dx1½	—	2800	2385	LSU3510.2[5]	3½	24-16d	16-10dx1½	1960	3765	2675
11⅞	THAI-2[4]	2½	6-10d	2-10dx1½	—	2800	2385	LSU3510.2[5]	3½	24-16d	16-10dx1½	1960	3765	2675
14	THAI-2[4]	2½	6-10d	2-10dx1½	—	2800	2385	LSU3510.2[5]	3½	24-16d	16-10dx1½	1960	3765	2675
16	See Canadian Wood Construction Connectors catalogue for hanger selection.							See Canadian Wood Construction Connectors catalogue for hanger selection.						
Double BCI 6500[3]						**Joist Width = 5⅛"**								
9½	THAI-2[4]	2½	6-10d	2-10dx1½	—	2800	2385	LSU5.12[5]	3½	24-16d	16-10dx1½	1285	2600	1845
11⅞	THAI-2[4]	2½	6-10d	2-10dx1½	—	2800	2385	LSU5.12[5]	3½	24-16d	16-10dx1½	1285	2600	1845
14	THAI-2[4]	2½	6-10d	2-10dx1½	—	2800	2385	LSU5.12[5]	3½	24-16d	16-10dx1½	1285	2600	1845
16	See Canadian Wood Construction Connectors catalogue for hanger selection.							See Canadian Wood Construction Connectors catalogue for hanger selection.						
Double BCI 90						**Joist Width = 7"**								
11⅞	See Canadian Wood Construction Connectors catalogue for hanger selection.							See Canadian Wood Construction Connectors catalogue for hanger selection.						
14														
16														
18														
20														

HOW TO PICK A HANGER:

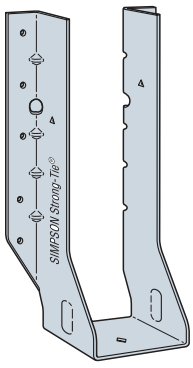
1. Find your joist size in this guide. (Single I-Joist, Double I-Joist, Beam, etc.)
2. Locate your connector type in the table.
   - Face mount, top flange, skewed, sloped, etc.
3. Select a hanger from the table.
4. Confirm that your factored joist reaction is less than the factored resistance of hanger.
5. Check to see if the bearing length "B dim" meets the bearing length requirement of the I-Joist. If yes, you have successfully selected your hanger.

If you did not find a suitable hanger, please see the current Canadian *Wood Construction Connectors* catalogue or call Simpson Strong-Tie at 800-999-5099.

You will need the following information:
- Download
- Uplift
- Header condition
- Bearing length requirement

General Notes

1. See current Canadian Wood Construction Connectors catalogue for Important Information and General Notes section and for hanger models, joist sizes, and header situations not shown. See pages 10-11 of the Simpson Strong-Tie Publication CSG-BCCANBCI12 BCI I-JOISTS Connector Selection Guide, Limit States Design" version for installation information.
2. 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.
3. 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.
4. If hanger height is less than 60% of joist height, joist rotation may occur; see Prevent Rotation information on page 2 of the Simpson guide referenced in Note 1 above.
5. Top flange hanger configuration and thickness of top flange need to be considered for flush frame conditions, see page 10 of the Simpson guide referenced in Note 1 to the left.
6. For this publication, carrying members are assumed to be at least 5½ inches 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 1¾ inches for 3" (10d) nails; 2 inches for 3½" (16d) nails. Clinch nails on back side.
7. 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 inches. 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
8. 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



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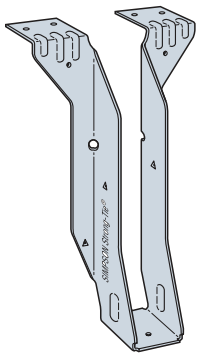
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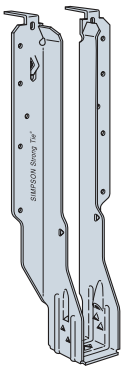
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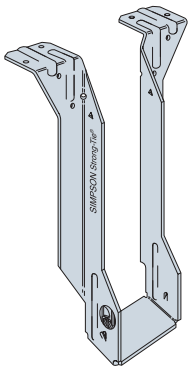
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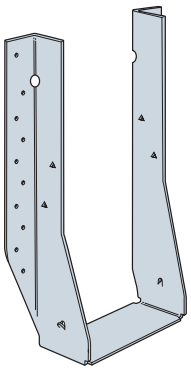
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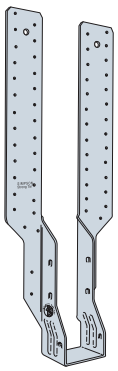
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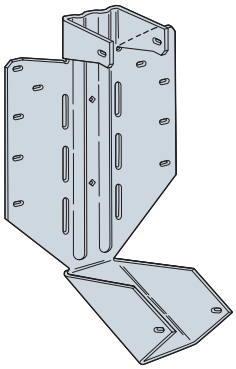
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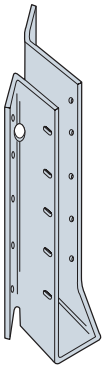
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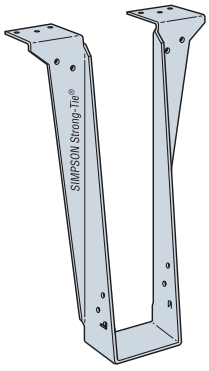

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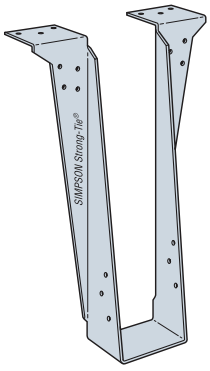

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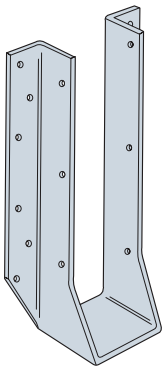
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Weights of Building Materials

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, ½" gypsum board	7
1" Plaster	8
½" gypsum board	2.2
⅝" 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
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
1" fiberglass batt insulation	0.04
1" loose fiberglass insulation	0.04
1" loose cellulose insulation	0.14
1" rigid insulation (1)	1.5
3/16" slate (1)	7
¼" 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, ⅜" sheathing	8
Skylight: metal frame w/ ⅜" 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 (¾") on ½" mortar bed (1)	16
Ceramic or quarry tile (¾") on 1" mortar bed (1)	23
1" mortar bed	12
1" slate (1)	15
⅜" marble tile	6
⅜" ceramic floor tile (1)	4.7
Hardwood flooring, 7/7-in (1)	4
¼" linoleum or asphalt tile (1)	1
BCI®/AJS® joists @ 16" o.c., ¾" sheathing, ½" gypsum board	10
¾" 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(2)
Straw: baled, dry (2)	8 PCF(2)
Saturated soil (garden/landscaped roof)	135 PCF
Grand piano	1000 LBS

(1) Minimum Design Loads for Buildings and Other Structures, ASCE 7-05.
(2) National Farm Building Code (Canada) 1995. Value in pounds per cubic foot (PCF), multiply by maximum height to obtain PSF.

SHEATHING	Pounds Per Square Foot [PSF]
11/32" or ⅜" Plywood – OSB (3)	1.0 – 1.2
15/32" or ½" Plywood – OSB (3)	1.4 – 1.7
19/32" or ⅝" Plywood – OSB (3)	1.8 – 2.1
23/32" or ¾" Plywood – OSB (3)	2.2 – 2.5
⅞" Plywood – OSB (3)	2.6 – 2.9
1⅛" Plywood – OSB (3)	3.3 – 3.6
½" cementitious backerboard	3
1½" softwood T & G decking	4.6
FLOOR 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.	2.1 – 2.9
BCI® 4500s, 5000 or 5000s @ 16" o.c.	1.6 – 2.2
BCI® 4500s, 5000 or 5000s @ 19.2" o.c.	1.3 – 1.8
BCI® 4500s, 5000 or 5000s @ 24" o.c.	1.1 – 1.5
BCI® 6000 or 6000s @ 12" o.c.	2.5 – 3.4
BCI® 6000 or 6000s @ 16" o.c.	1.9 – 2.6
BCI® 6000 or 6000s @19.2" o.c.	1.6 - 2.1
BCI® 6000 or 6000s @ 24" o.c.	1.3 - 1.7
BCI® 60, 60s, 6500 or 6500s @ 12" o.c.	2.5 – 3.8
BCI® 60, 60s, 6500 or 6500s @ 16" o.c.	1.9 – 2.9
BCI® 60, 60s, 6000 or 6500s @19.2" o.c.	1.6 – 2.4
BCI® 60, 60s, 6500 or 6500s @ 24" o.c.	1.3 – 1.9
BCI® 90, 90s or 90e @ 12" o.c.	3.9 – 5.4
BCI® 90, 90s or 90e @ 16" o.c.	2.9 – 4.1
BCI® 90, 90s or 90e @ 19.2" o.c.	2.4 – 3.4
BCI® 90, 90s or 90e @ 24" o.c.	1.9 – 2.7
AJS® 140 or 20 @ 12" o.c.	2.2 – 3.3
AJS® 140 or 20 @ 16" o.c.	1.7 – 2.5
AJS® 140 or 20 @ 19.2" o.c.	1.4 – 2.1
AJS® 140 or 20 @ 24" o.c.	1.1 – 1.7
AJS® 25 @ 12" o.c.	3.1 – 5.4
AJS® 25 @ 16" o.c.	2.3 – 4.1
AJS® 25 @ 19.2" o.c.	1.9 – 3.4
AJS® 25 @ 24" o.c.	1.6 – 2.7
WALL	**Pounds Per Square Foot [PSF]**
5/16" x 7½" fiber cement lap siding	3
4" clay brick (1)	39
¼" ceramic wall tile (1)	3.1
1¾" Cultured Stone	12
2x4 studs @ 16" o.c., ⅝" gypsum, insulation, ⅜" siding (1)	11
2x6 studs @ 16" o.c., ⅝" gypsum, insulation, ⅜" siding (1)	12
Wood or steel studs, ½" gypsum board each side (1)	8
Exterior stud walls w/ brick veneer (1)	48
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
Windows: glass, frame and sash (1)	8
Include at least 1.5 psf in all dead load summations to account for incidentals such as plumbing, ducts, light fixtures, etc.	

(3) Approximate Engineering Dead Load Weight of Wood Structural Panels, APA EWS TT-019, 2005.

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