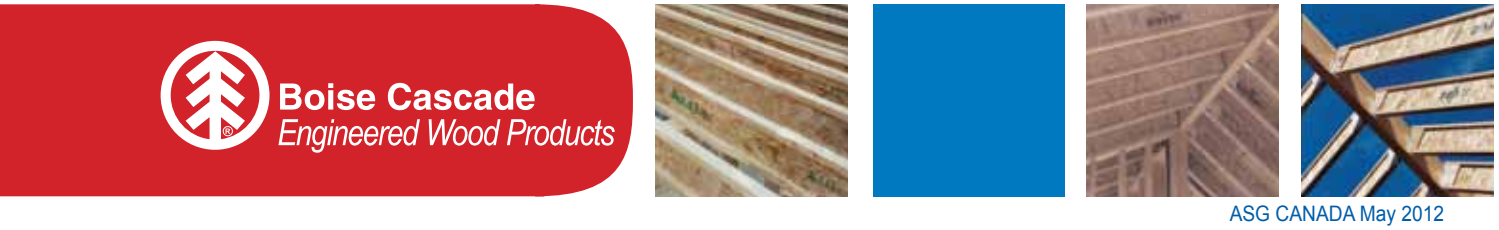










LIMIT STATES DESIGN
CANADA

ALLJoist®

SPECIFIER GUIDE

INCLUDES AJS® 140 / 20 / 25

CCMC Report Number
12787-R ALLJOIST®

High Performance
Floor & Roof Systems

Boise Cascade
Engineered Wood Products

ASG CANADA May 2012

It's the SIMPLE FRAMING SYSTEM®, featuring beams, joists 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 and roof framing than dimension lumber allows.

Better Framing Doesn't Have to Cost More

Boise Cascade Engineered Wood Products' 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 and roof systems built with AJS® 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 ALLJOIST® Product

Light in weight, but heavy-duty, ALLJOIST® Product (AJS® Joists) have a better strength / weight ratio than dimension lumber. Knockouts can be removed for cross-ventilation and wiring.

☑ Ceilings Framed with AJS® Joists

The consistent size of AJS® 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

☑ VERSA-STUD® and VERSA-LAM® Columns for wall 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.

☑ Boise Cascade Rimboard

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

Table of Contents

ALLJOIST® Specifications, Lifetime Guarantee, Certification 3
ALLJOIST® Product Profiles, Factored Resistances. 4
Residential Floor Span Tables . . . . . 5 - 6
ALLJOIST® Floor Allowable Uniform Load Table 7
ALLJOIST® Floor Framing Details 8-9
Web Stiffeners, Connection Details 10
ALLJOIST® Cantilever Details and Tables. 11-12
ALLJOIST® Joist Hole Cutting Charts for Residential Applications. 13 - 14
ALLJOIST® Roof Framing Details . . . . . 15 - 16
ALLJOIST® Roof Span Tables . . . . . 17 - 20
ALLJOIST® Roof Allowable Uniform Load Table 21
Boise Cascade Rimboard Profiles and Properties 22
Framing Connectors - Simpson Strong-Tie . . . . . 23 - 24
Framing Connectors - USP . . . . . 25 - 26
Weights of Building Materials. 27
Distributor Locations 28

Scope: This work includes the complete furnishing and installation of all AJS® Joists as shown on the drawings, herein specified and necessary to complete the work.

Materials: AJS® Joists shall be manufactured by Boise Cascade Engineered Wood Products with oriented strand board webs, machine stress rated (MSR) lumber flanges and waterproof, structural adhesives.

Joist webs shall be rated Structural I Exposure 1 by an agency listed by a model code evaluation service. 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 AJS® 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 O86-09, and listed under a CCMC 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 AJS® 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 AJS® 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 AJS® 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 AJS® Joists straight and plumb as required and to assure adequate lateral support for the individual AJS® Joists and the entire system until the sheathing material has been applied.

Codes: The AJS® Joists shall be evaluated by the CCMC evaluation service.

Lifetime Guaranteed Quality and Performance

Boise Cascade warrants its BCI® Joist, VERSA-LAM®, and ALLJOIST® products to comply with our specifications, to be free from defects in material and workmanship, and to meet or exceed our performance specifications for the normal and expected life of the structure when correctly stored, installed and used according to our Installation Guide.

For information about
Boise Cascade's engineered wood products,
including sales terms and conditions, warranties and disclaimers,
visit our website at
www.BC.com/ewp

Boise Cascade Chain-of-Custody Certifications

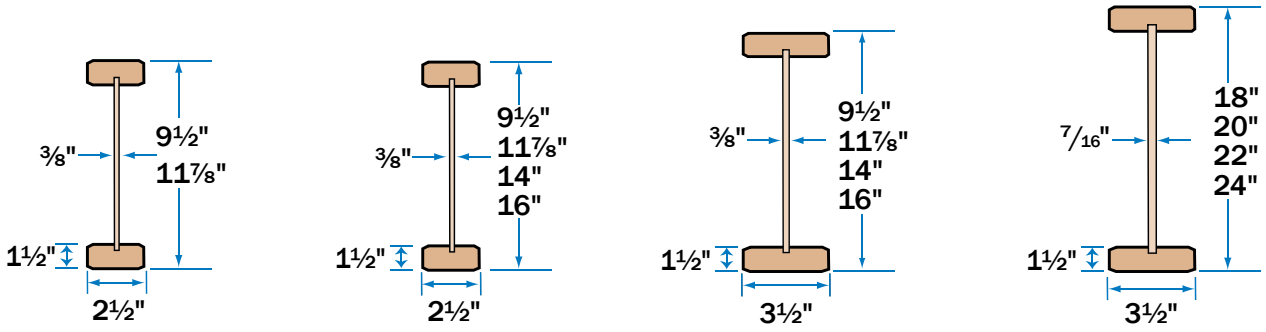
Boise Cascade Engineered Wood Products has a proven track record of providing quality wood products and a nationwide building materials distribution network for our customers, helping them to enhance their own businesses.

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.html or view our green brochure at http://www.bc.com/wood/ewp/Boise_EWP_Green.html.

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.

ALLJOIST® PRODUCT PROFILES

AJS® 140 — AJS® 20 — AJS® 25 — AJS® 25 Deeper Depths



FACTORED RESISTANCES

Limit States Design (CANADA)

AJS® Joist Series	Joist Depth	Factored Moment Resistance	Factored Shear Resistance	Joist Stiffness EI	Shear Deformation Coefficient, K	Joist Weight	Factored End Bearing Resistance (lbs)		Factored Intermediate Bearing Resistance (lbs)	
							1½" Min. Bearing Length(2)		3½" Min. Bearing Length	
							No Web Stiffeners	WITH Web Stiffeners	No Web Stiffeners	WITH Web Stiffeners
	[in]	[lbs-ft]	[lbs]	[x10^6 lbs-in^2]	[x10^6 lbs]	[lbs/ft]	[lbs]	[lbs]	[lbs]	[lbs]
AJS® 140	9½	4095	1830	182	5.2	2.2	1500	1955	3705	3865
	11⅞	5305	2350	311	6.6	2.5	1505	2105	3770	4415
AJS® 20	9½	5675	1830	232	5.2	2.5	1500	1955	3705	3865
	11⅞	7350	2350	394	6.6	2.8	1505	2105	3770	4415
	14	8850	2825	579	7.8	3.0	1515	2240	3835	4940
	16	10265	3255	789	8.9	3.3	1530	2365	3890	5420
AJS® 25	9½	8935	1830	322	5.3	3.1	1500	1955	4100	4495
	11⅞	11575	2350	545	6.7	3.4	1505	2105	4245	5035
	14	13940	2825	798	7.9	3.7	1515	2240	4370	5520
	16	16165	3255	1082	9.1	3.9	1530	2365	4495	5995
	18(3)	18260	4750	1427	12.3	4.6	--	3535	--	7450
	20(3)	20405	5110	1813	13.7	4.9	--	3930	--	8065
	22(3)	22375	5475	2249	15.0	5.1	--	3930	--	8255
	24(3)	24325	5820	2738	16.5	5.4	--	3930	--	8435

NOTES:

(1) All resistance factors, as per CSA O86-09 have been applied.

(2) Minimum end bearing length is 1½" for 9½" to 16" depths and 1¾" for 18" and deeper.

(3) AJS® Joists deeper than 16" require web stiffeners at all bearing locations.

(4) The AJS® 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 = Centerline to centerline [in]
EI = Stiffness value from table [lb-in^2]
K = Shear deflection factor from table [lb]

BUILDING CODE EVALUATION REPORTS

- CCMC Report Number 12787-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"
AJS® 140	9½	14'-7"	13'-7"	13'-1"	N/A	15'-0"	14'-0"	13'-5"	N/A	15'-10"	14'-9"	14'-2"	N/A	16'-3"	15'-2"	14'-7"	N/A
	11⅞	16'-5"	15'-4"	14'-9"	N/A	16'-11"	15'-9"	15'-2"	N/A	17'-10"	16'-8"	16'-0"	N/A	18'-5"	17'-2"	16'-5"	N/A
AJS® 20	9½	15'-4"	14'-4"	13'-9"	N/A	15'-9"	14'-8"	14'-1"	N/A	16'-8"	15'-6"	14'-11"	N/A	17'-1"	15'-11"	15'-3"	N/A
	11⅞	17'-4"	16'-2"	15'-6"	N/A	17'-9"	16'-6"	15'-10"	N/A	18'-11"	17'-6"	16'-10"	N/A	19'-7"	17'-11"	17'-3"	N/A
	14	19'-1"	17'-7"	16'-10"	N/A	19'-8"	18'-1"	17'-4"	N/A	21'-2"	19'-4"	18'-5"	N/A	21'-10"	20'-0"	19'-0"	N/A
	16	20'-10"	19'-1"	18'-1"	N/A	21'-6"	19'-8"	18'-8"	N/A	23'-1"	21'-2"	20'-1"	N/A	23'-10"	21'-11"	20'-9"	N/A
AJS® 25	9½	16'-5"	15'-4"	14'-9"	N/A	16'-10"	15'-8"	15'-0"	N/A	17'-10"	16'-8"	16'-0"	N/A	18'-3"	17'-0"	16'-4"	N/A
	11⅞	18'-8"	17'-3"	16'-7"	N/A	19'-2"	17'-8"	16'-11"	N/A	20'-8"	18'-11"	18'-0"	N/A	21'-3"	19'-6"	18'-6"	N/A
	14	20'-9"	19'-0"	18'-0"	N/A	21'-4"	19'-6"	18'-6"	N/A	23'-1"	21'-1"	20'-0"	N/A	23'-9"	21'-9"	20'-7"	N/A
	16	22'-8"	20'-8"	19'-8"	N/A	23'-4"	21'-4"	20'-3"	N/A	25'-2"	23'-0"	21'-10"	N/A	25'-11"	23'-9"	22'-6"	N/A
	18	24'-9"	22'-7"	21'-5"	N/A	25'-5"	23'-3"	22'-1"	N/A	27'-4"	25'-1"	23'-9"	N/A	28'-2"	25'-10"	24'-6"	N/A
	20	26'-6"	24'-2"	22'-11"	N/A	27'-2"	24'-11"	23'-8"	N/A	29'-4"	26'-10"	25'-5"	N/A	30'-2"	27'-8"	26'-3"	N/A
	22	28'-2"	25'-9"	24'-5"	N/A	28'-11"	26'-6"	25'-2"	N/A	31'-2"	28'-6"	27'-1"	N/A	32'-1"	29'-5"	27'-11"	N/A
	24	29'-9"	27'-2"	25'-10"	N/A	30'-7"	28'-1"	26'-8"	N/A	33'-2"	30'-2"	28'-8"	N/A	34'-5"	31'-2"	29'-7"	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"
AJS® 140	9½	15'-3"	14'-3"	13'-7"	12'-11"	15'-7"	14'-7"	13'-11"	13'-3"	16'-6"	15'-5"	14'-9"	14'-1"	16'-11"	15'-10"	15'-2"	14'-2"
	11⅞	17'-2"	16'-0"	15'-4"	14'-7"	17'-7"	16'-5"	15'-9"	15'-0"	18'-9"	17'-4"	16'-8"	15'-10"	19'-5"	17'-10"	17'-1"	16'-3"
AJS® 20	9½	16'-1"	15'-0"	14'-4"	13'-7"	16'-5"	15'-3"	14'-8"	13'-11"	17'-5"	16'-3"	15'-6"	14'-9"	17'-9"	16'-7"	15'-11"	15'-1"
	11⅞	18'-1"	16'-10"	16'-1"	15'-4"	18'-7"	17'-3"	16'-6"	15'-8"	20'-0"	18'-4"	17'-6"	16'-8"	20'-7"	18'-11"	17'-11"	17'-1"
	14	20'-2"	18'-5"	17'-7"	16'-9"	20'-9"	19'-0"	18'-0"	17'-1"	22'-4"	20'-5"	19'-4"	18'-2"	23'-0"	21'-1"	20'-0"	18'-9"
	16	22'-1"	20'-2"	19'-0"	17'-11"	22'-8"	20'-9"	19'-8"	18'-5"	24'-5"	22'-4"	21'-2"	19'-9"	25'-1"	23'-1"	21'-10"	19'-9"
AJS® 25	9½	17'-2"	16'-0"	15'-4"	14'-7"	17'-6"	16'-4"	15'-7"	14'-10"	18'-10"	17'-5"	16'-8"	15'-10"	19'-3"	17'-9"	17'-0"	16'-2"
	11⅞	19'-9"	18'-0"	17'-3"	16'-5"	20'-2"	18'-5"	17'-7"	16'-9"	21'-10"	20'-0"	18'-11"	17'-10"	22'-5"	20'-6"	19'-5"	18'-3"
	14	22'-0"	20'-1"	19'-0"	17'-10"	22'-6"	20'-7"	19'-6"	18'-3"	24'-4"	22'-3"	21'-1"	19'-5"	25'-0"	22'-11"	21'-8"	19'-5"
	16	24'-0"	21'-11"	20'-8"	**19'-5"**	24'-7"	22'-6"	21'-3"	**19'-11"**	26'-7"	24'-4"	23'-0"	19'-9"	27'-3"	25'-0"	23'-8"	19'-9"
	18	26'-2"	23'-11"	22'-7"	21'-2"	26'-9"	24'-6"	23'-2"	21'-9"	28'-11"	26'-6"	25'-1"	23'-6"	29'-7"	27'-2"	25'-9"	24'-2"
	20	28'-0"	25'-7"	24'-2"	22'-8"	28'-7"	26'-3"	24'-10"	23'-4"	31'-0"	28'-4"	26'-10"	25'-2"	31'-9"	29'-2"	27'-7"	25'-11"
	22	29'-9"	27'-2"	25'-8"	24'-1"	30'-5"	27'-11"	26'-5"	24'-10"	33'-1"	30'-2"	28'-6"	26'-9"	34'-2"	31'-0"	29'-4"	27'-7"
	24	31'-6"	28'-9"	27'-2"	25'-6"	32'-2"	29'-7"	28'-0"	26'-3"	35'-8"	31'-11"	30'-2"	28'-4"	36'-10"	32'-11"	31'-1"	29'-2"

NOTES:

1. Spans shown are in accordance with NBCC 2010.
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" for 9½" to 16" depths, and 1¾" for 18" to 24" depths. Bold spans have a minimum end bearing length of 3½".
6. Minimum interior bearing length is 3½".
7. Tabulated values shown assume a glued and nailed subfloor and are in compliance with the CCMC Vibration Criteria "Concluding " Report (dated September 4, 1997).
8. The subfloor shall be CSA rated Oriented Strand Board (OSB), Canadian Softwood Plywood (CSP) or Douglas Fir Plywood (DFP).
9. **Total load deflection is limited to L/240.**
10. **Live load deflection is limited to L/360.**
11. Lateral support must be provided for the compression edge and also at the bearings to prevent lateral displacement or rotation.
12. 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.
13. 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.
14. 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

15. 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

16. WARNING: Use of Span Tables for Commercial Projects (NBCC2010: 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 (2010). Table 4.1.5.9 in NBCC (2010) 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.

RESIDENTIAL FLOOR SPAN TABLES (GLUED & NAILED)

5/8" or 19/32" Subfloor (Glued & 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"
AJS® 140	9½	15'-7"	14'-9"	14'-3"	N/A	16'-0"	15'-2"	14'-8"	N/A	16'-10"	15'-11"	15'-5"	N/A	17'-4"	16'-5"	15'-11"	N/A
	11⅞	17'-6"	16'-6"	16'-0"	N/A	18'-0"	17'-0"	16'-5"	N/A	19'-2"	17'-10"	17'-3"	N/A	19'-11"	18'-6"	17'-10"	N/A
AJS® 20	9½	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-2"	N/A	17'-7"	16'-7"	16'-0"	N/A	18'-1"	17'-1"	16'-6"	N/A
	11⅞	18'-3"	17'-2"	16'-7"	N/A	18'-10"	17'-8"	17'-0"	N/A	20'-2"	18'-9"	18'-0"	N/A	20'-11"	19'-5"	18'-7"	N/A
	14	20'-3"	18'-10"	18'-0"	N/A	21'-0"	19'-6"	18'-8"	N/A	22'-6"	20'-10"	19'-11"	N/A	23'-3"	21'-7"	20'-8"	N/A
	16	22'-1"	20'-6"	19'-7"	N/A	22'-10"	21'-3"	20'-4"	N/A	24'-6"	22'-8"	21'-8"	N/A	25'-4"	23'-7"	22'-7"	N/A
AJS® 25	9½	17'-3"	16'-2"	15'-8"	N/A	17'-7"	16'-7"	16'-0"	N/A	18'-10"	17'-7"	16'-11"	N/A	19'-4"	18'-0"	17'-4"	N/A
	11⅞	19'-8"	18'-2"	17'-6"	N/A	20'-2"	18'-8"	17'-11"	N/A	21'-9"	20'-2"	19'-3"	N/A	22'-5"	20'-9"	19'-10"	N/A
	14	21'-10"	20'-2"	19'-3"	N/A	22'-6"	20'-10"	19'-10"	N/A	24'-2"	22'-4"	21'-4"	N/A	24'-11"	23'-1"	22'-1"	N/A
	16	23'-9"	21'-11"	21'-0"	N/A	24'-6"	22'-8"	21'-8"	N/A	26'-4"	24'-4"	23'-3"	N/A	27'-2"	25'-2"	24'-0"	N/A
	18	25'-10"	23'-10"	22'-9"	N/A	26'-7"	24'-7"	23'-6"	N/A	28'-7"	26'-5"	25'-3"	N/A	29'-5"	27'-3"	26'-1"	N/A
	20	27'-7"	25'-6"	24'-4"	N/A	28'-5"	26'-4"	25'-2"	N/A	30'-7"	28'-3"	26'-11"	N/A	31'-6"	29'-2"	27'-11"	N/A
	22	29'-4"	27'-1"	25'-10"	N/A	30'-2"	27'-11"	26'-8"	N/A	32'-6"	30'-0"	28'-7"	N/A	33'-9"	31'-0"	29'-7"	N/A
	24	31'-0"	28'-7"	27'-4"	N/A	31'-11"	29'-7"	28'-3"	N/A	34'-11"	31'-8"	30'-3"	N/A	36'-4"	32'-10"	31'-4"	N/A

3/4" or 23/32" Subfloor (Glued & 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"
AJS® 140	9½	16'-7"	15'-7"	15'-1"	14'-3"	17'-0"	16'-0"	15'-6"	14'-3"	17'-11"	16'-11"	15'-10"	14'-2"	18'-6"	17'-5"	15'-10"	14'-2"
	11⅞	18'-8"	17'-6"	16'-10"	16'-2"	19'-3"	18'-0"	17'-4"	16'-3"	20'-7"	19'-2"	18'-3"	16'-2"	21'-4"	19'-11"	18'-1"	16'-2"
AJS® 20	9½	17'-3"	16'-3"	15'-8"	15'-0"	17'-7"	16'-7"	16'-0"	15'-4"	18'-9"	17'-7"	16'-11"	16'-3"	19'-4"	18'-0"	17'-4"	16'-8"
	11⅞	19'-7"	18'-2"	17'-6"	16'-10"	20'-2"	18'-9"	17'-11"	17'-3"	21'-8"	20'-1"	19'-2"	18'-3"	22'-4"	20'-10"	19'-10"	18'-10"
	14	21'-10"	20'-2"	19'-3"	18'-3"	22'-5"	20'-10"	19'-11"	18'-11"	24'-1"	22'-4"	21'-4"	19'-5"	24'-10"	23'-1"	22'-1"	19'-5"
	16	23'-9"	22'-0"	20'-11"	**19'-10"**	24'-5"	22'-9"	21'-8"	**20'-7"**	26'-3"	24'-4"	23'-2"	19'-9"	27'-1"	25'-2"	24'-1"	19'-9"
AJS® 25	9½	18'-3"	17'-2"	16'-6"	15'-10"	18'-8"	17'-6"	16'-10"	16'-2"	20'-2"	18'-8"	17'-11"	17'-2"	20'-8"	19'-2"	18'-4"	17'-6"
	11⅞	21'-1"	19'-6"	18'-7"	17'-8"	21'-7"	20'-0"	19'-1"	18'-1"	23'-4"	21'-7"	20'-7"	19'-1"	23'-11"	22'-2"	21'-2"	19'-1"
	14	23'-5"	21'-8"	20'-7"	**19'-6"**	24'-0"	22'-3"	21'-2"	**20'-1"**	25'-11"	23'-11"	22'-10"	19'-5"	26'-7"	24'-8"	23'-6"	19'-5"
	16	25'-6"	23'-6"	22'-5"	**21'-2"**	26'-1"	24'-2"	23'-1"	**21'-10"**	28'-2"	26'-1"	24'-8"	19'-9"	28'-11"	26'-10"	24'-8"	19'-9"
	18	27'-7"	25'-6"	24'-4"	23'-0"	28'-4"	26'-3"	25'-0"	23'-8"	30'-7"	28'-3"	26'-11"	25'-5"	31'-4"	29'-1"	27'-9"	26'-3"
	20	29'-6"	27'-3"	26'-0"	24'-7"	30'-3"	28'-1"	26'-9"	25'-4"	32'-8"	30'-2"	28'-9"	27'-2"	33'-10"	31'-1"	29'-8"	28'-1"
	22	31'-4"	29'-0"	27'-7"	26'-1"	32'-2"	29'-10"	28'-5"	26'-11"	35'-5"	32'-1"	30'-6"	28'-10"	36'-7"	33'-2"	31'-6"	29'-10"
	24	33'-4"	30'-7"	29'-1"	27'-6"	34'-5"	31'-6"	30'-0"	28'-5"	38'-1"	34'-4"	32'-3"	30'-6"	39'-5"	35'-9"	33'-6"	31'-6"

NOTES:

1. Spans shown are in accordance with NBCC 2010.
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" for 9½" to 16" depths, and 1¾" for 18" to 24" depths. Bold spans have a minimum end bearing length of 3½".
6. Minimum interior bearing length is 3½".
7. Tabulated values shown assume a glued and nailed subfloor and are in compliance with the CCMC Vibration Criteria "Concluding " Report (dated September 4, 1997).
8. The subfloor shall be CSA rated Oriented Strand Board (OSB), Canadian Softwood Plywood (CSP) or Douglas Fir Plywood (DFP).
9. **Total load deflection is limited to L/240.**
10. **Live load deflection is limited to L/360.**
11. Lateral support must be provided for the compression edge and also at the bearings to prevent lateral displacement or rotation.
12. 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.
13. 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.
14. 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_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

15. 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

16. WARNING: Use of Span Tables for Commercial Projects (NBCC2010: 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 (2010). Table 4.1.5.9 in NBCC (2010) 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	AJS® 140		AJS® 20				AJS® 25							
	Joist Depth (in)	9½	11⅞	9½	11⅞	14	16	9½	11⅞	14	16	18	20	22	24
6	Unfactored Live Load for L / 360 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	488	501	488	501	505	510	488	501	505	510	993	1075	1100	1124
8	Unfactored Live Load for L / 360 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	366	376	366	376	378	382	366	376	378	382	745	806	825	843
10	Unfactored Live Load for L / 360 [plf]	227	-	277	-	-	-	-	-	-	-	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	292	301	292	301	303	306	292	301	303	306	596	645	660	674
12	Unfactored Live Load for L / 360 [plf]	138	227	170	-	-	-	225	-	-	-	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	207	-	-	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	244	250	244	250	252	255	244	250	252	255	496	537	550	562
14	Unfactored Live Load for L / 360 [plf]	89	148	111	182	-	-	149	-	-	-	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	134	-	167	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	209	215	209	215	216	218	209	215	216	218	425	460	471	482
16	Unfactored Live Load for L / 360 [plf]	61	102	76	126	181	-	103	168	-	-	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	92	153	115	-	-	-	155	-	-	-	-	-	-	-
	Factored Total Load [plf]	183	188	183	188	189	191	183	188	189	191	372	403	412	421
18	Unfactored Live Load for L / 360 [plf]	43	73	54	91	131	-	74	122	-	-	304	-	-	-
	Unfactored Total Load for L / 240 [plf]	65	109	82	136	-	-	111	-	-	-	-	-	-	-
	Factored Total Load [plf]	162	167	162	167	168	170	162	167	168	170	331	358	366	374
20	Unfactored Live Load for L / 360 [plf]		54	40	67	97	130	55	91	130	-	228	285	-	-
	Unfactored Total Load for L / 240 [plf]		81	60	101	146	-	82	136	-	-	-	-	-	-
	Factored Total Load [plf]		150	146	150	151	153	146	150	151	153	298	322	330	337
22	Unfactored Live Load for L / 360 [plf]		41		51	74	100	41	69	99	133	176	220	268	-
	Unfactored Total Load for L / 240 [plf]		61		77	111	-	62	104	-	-	264	-	-	-
	Factored Total Load [plf]		136		136	137	139	133	136	137	139	270	293	300	306
24	Unfactored Live Load for L / 360 [plf]				40	58	78		54	78	104	138	173	211	254
	Unfactored Total Load for L / 240 [plf]				60	87	117		81	117	-	207	259	-	-
	Factored Total Load [plf]				125	126	127		125	126	127	248	268	275	281
26	Unfactored Live Load for L / 360 [plf]						62		43	62	83	110	138	169	204
	Unfactored Total Load for L / 240 [plf]						93		64	93	-	165	207	-	-
	Factored Total Load [plf]						117		115	116	117	229	248	254	259
28	Unfactored Live Load for L / 360 [plf]						50			50	67	89	112	137	166
	Unfactored Total Load for L / 240 [plf]						75			75	101	133	168	206	-
	Factored Total Load [plf]						109			108	109	212	230	235	241
30	Unfactored Live Load for L / 360 [plf]						41			41	55	73	92	113	136
	Unfactored Total Load for L / 240 [plf]						61			61	83	109	138	169	205
	Factored Total Load [plf]						102			101	102	198	215	220	224

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. 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 Live 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/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

AJS® Joists

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 ALLJOIST® PRODUCT

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

F06 F09

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

F15A

VERSA-LAM® header or an AJS® header. F10 F16D F27A

1½" knockout holes at approximately 12" o.c. are pre-punched.

FOR INSTALLATION STABILITY, Temporary strut lines (1x4 min.) 8' on center max. Fasten at each joist with 2-2½" (8d) nails minimum.

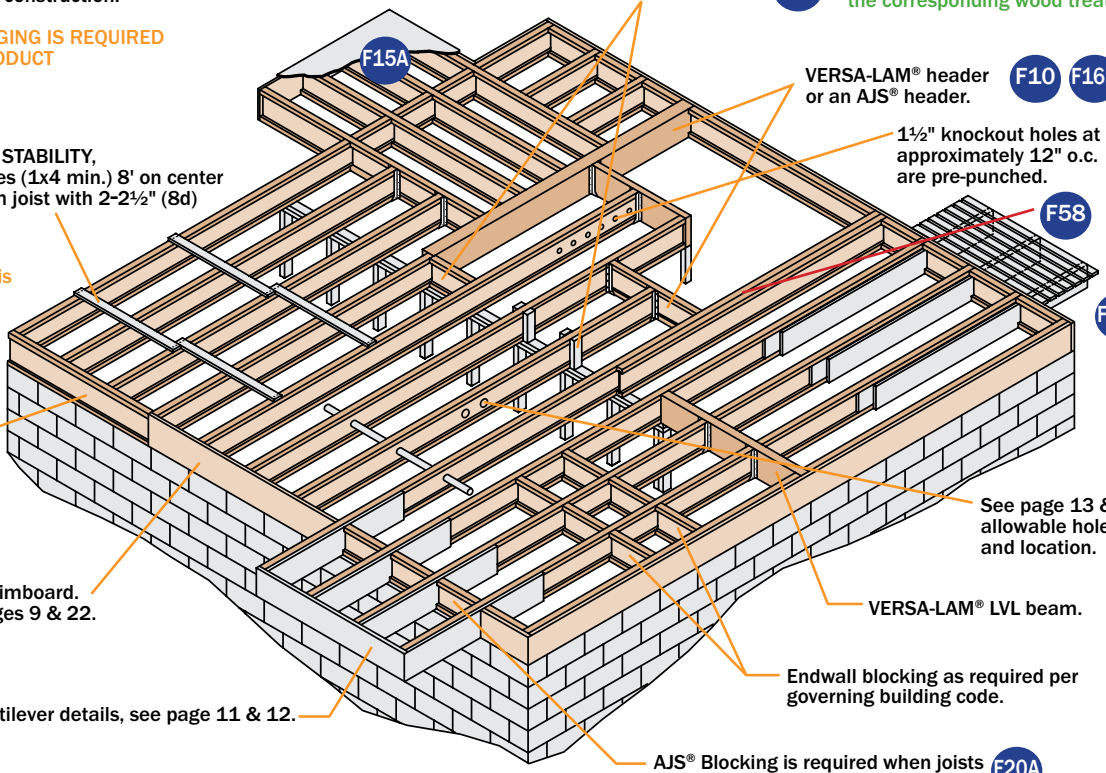
F58

F15B

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

F01 F02

AJS® rim joist. See page 9.



See page 13 & 14 for allowable hole sizes and location.

F07A F07 Boise Rimboard. See pages 9 & 22.

F56

VERSA-LAM® LVL beam.

Endwall blocking as required per governing building code.

For load bearing cantilever details, see page 11 & 12.

F05

AJS® Blocking is required when joists are cantilevered. F20A

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 AJS® JOISTS UNTIL ALL HANGERS, AJS® RIM JOISTS, RIM BOARDS, AJS® 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:

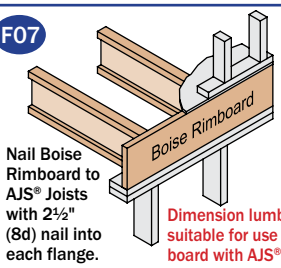
- Build a braced end wall at the end of the bay, or permanently install the first eight feet of AJS® Joist and the first course of sheathing. As an alternate, temporary sheathing may be nailed to the first four feet of AJS® Joist at the end of the bay.
- All hangers, AJS® rim joists, rim boards, AJS® blocking panels, and x-bracing must be completely installed and properly nailed as each AJS® Joist is set.
- Install temporary 1x4 strut lines at no more than eight feet on center as additional AJS® Joists are set. Nail the strut lines to the sheathed area, or braced end wall, and to each AJS® Joist with 2-2½" (8d) nails.
- The ends of cantilevers must be temporarily secured by strut lines on both the top and bottom flanges.
- Straighten the AJS® Joist to within 1/2 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 AJS® Joist spans, contact Boise Cascade EWP Engineering for proper storage and shoring information.

FLOOR FRAMING DETAILS

Additional floor framing details available with BC FRAMER® software

END BEARING DETAILS

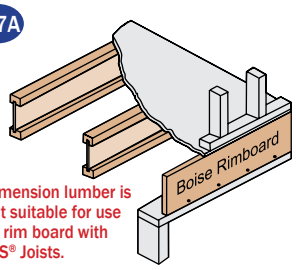
F07



Nail Boise Rimboard to AJS® Joists with 2½" (8d) nail into each flange.

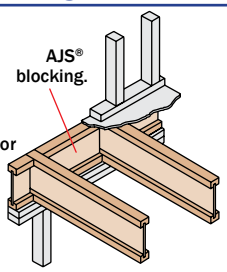
Dimension lumber is not suitable for use as rim board with AJS® Joists.

F07A



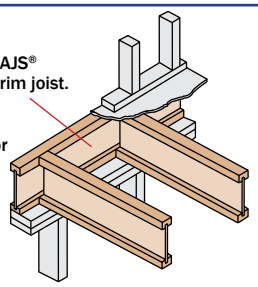
Dimension lumber is not suitable for use as rim board with AJS® Joists.

F01



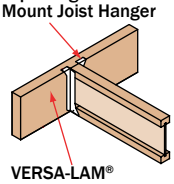
AJS® 25 requires 2x6 wall for minimum bearing.

F02

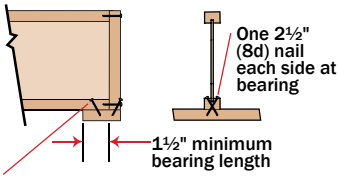


AJS® 25 requires 2x6 wall for minimum bearing.

F27A

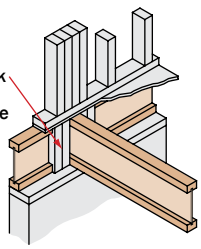


F52

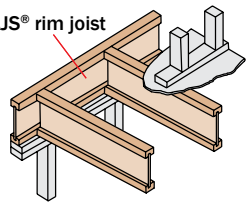


To limit splitting flange, start nails at least 1½" from end. Nails may need to be driven at an angle to limit splitting of bearing plate.

F08



F03



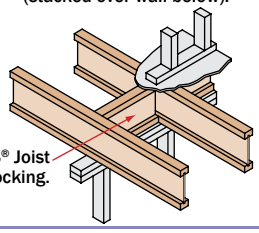
AJS® 25 requires 2x6 wall for minimum bearing.

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

INTERMEDIATE BEARING DETAILS

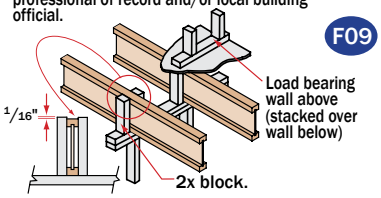
F06

For load bearing wall above (stacked over wall below).



F09

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

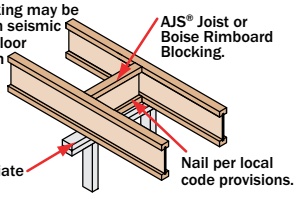


Nail block with one 3" (10d) nail into each flange.

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

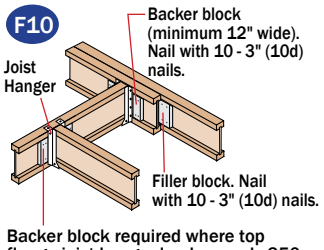
1. Squash blocks are to be in full contact with upper floor and lower wall plate.
2. Capacities shown are for a double squash blocks at each joist, SPF or better.

Joist blocking may be required in seismic areas for floor diaphragm strength.



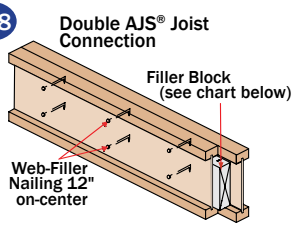
Cross bracing OK as blocking only if support below is not a braced wall panel or shear wall and no wall exists above.

F10



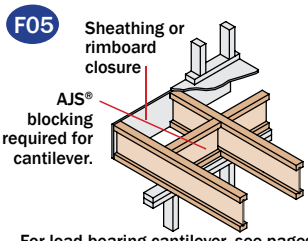
Backer block required where top flange joist hanger load exceeds 250 lbs. Install tight to top flange.

F58



Connection valid for all applications. Contact Boise Cascade EWP Engineering for specific conditions.

F05



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

AJS® RIM JOISTS AND BLOCKING

Joist Depth	Vertical Load Transfer Capacity (plf)
9½"	2950
11⅞"	2650
14"	2350
16"	2100
18" - 20"	5100(1)
22" - 24"	4250 (1)

1) Web stiffeners required at each end of blocking panel. Distance between stiffeners must be less than 24".

LATERAL SUPPORT

- AJS® Joists must be laterally supported at the ends with hangers, AJS® rim joists, rim boards, AJS® blocking panels or x-bracing. AJS® blocking panels or x-bracing are required at cantilever supports.
- Blocking may be required at intermediate bearings for floor diaphragm as per Code, consult local building official.

MINIMUM BEARING LENGTH FOR AJS® JOISTS

- 1½ inches is required at end supports (1¾ inches for 18" to 24" deep). 3½ inches 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

- AJS® rim joist, rim board or closure panel to AJS® Joist:
  - Rims or closure panel 1¼ inches thick and less: 2-2½" (8d) nails, one each in the top and bottom flange.
  - AJS® 140/20 rim joist: 2-3½" (16d) box nails, one each in the top and bottom flange.
  - AJS® 25 rim joist: Toe-nail top flange to rim joist with 2-10d box nails, one each side of flange.
- AJS® rim joist, rim board or AJS® blocking panel to support
  - 2½" (8d) nails at 6 inches on center.
  - When used for shear transfer, follow the building designer's specification.
- AJS® Joist to support:
  - 2-2½" (8d) nails, one on each side of the web, placed 1½ inches minimum from the end of the AJS® Joist to limit splitting.
- Sheathing to AJS® Joist:
  - Prescriptive residential floor sheathing nailing requires 2½" (8d) common nails @ 6" o.c. on edges and @ 12" o.c. in the field as per Code.
  - Maximum nail spacing for minimum lateral stability = 24".
  - 14 gauge staples may be substituted for 2½" (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

Joist Series	Backer Block Thickness	Filler Block Thickness
AJS® 140	1⅛" or two ½" wood panels	2 x __ + ⅝" wood panel
AJS® 20	1⅛" or two ½" wood panels	2 x __ + ⅝" wood panel
AJS® 25	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.
- For deeper AJS® 25 Joists, stack 2x lumber or use multiple pieces of ¾" wood panels.

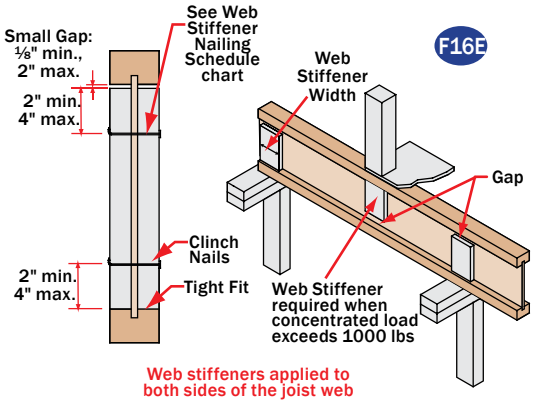
WEB STIFFENER REQUIREMENTS

- See Web Stiffener Requirements on page 10.

PROTECT AJS® JOISTS FROM THE WEATHER

- AJS® Joists is 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.

WEB STIFFENER REQUIREMENTS



Web Stiffener Nailing Schedule		
Joist Series	Joist Depth	Nailing
AJS® 140 / 20 / 25	9½" – 11⅞"	3-3" (10d)
	14" – 24"	5-3" (10d)

Web Stiffener Specifications			
Series	For Structral Capacity (Min. Thick)	Lateral Restraint in Hanger	Minimum Width
AJS® 140/20	1½"	1"	$2^{5}/_{16}$"
AJS® 25	2x4 lumber (vertical)		

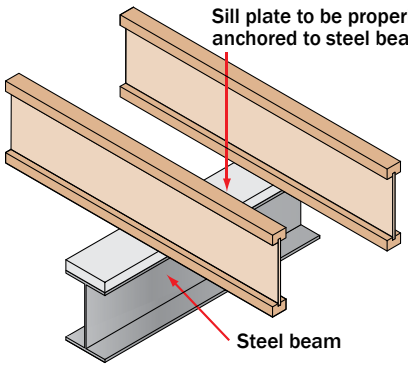
NOTES:

Web stiffeners are optional except as noted below:

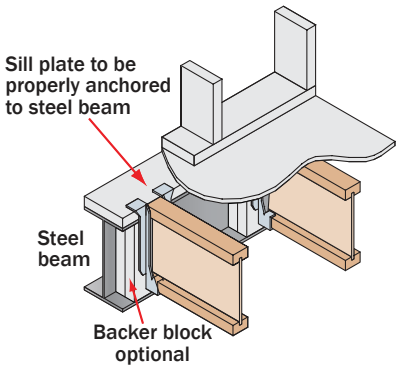
1. Stiffeners required at **ALL** bearing locations for all 18" to 24" deep joists.
2. Web stiffeners are always required in hangers that do not extend up to support the top flange of the AJS® Joist. Web stiffeners may be required with certain sloped or skewed hangers or to achieve uplift values. Refer to the hanger manufacturer's installation requirements.
3. Web stiffeners may be cut from structural rated wood panels, engineered rimboard or 2x lumber (AJS® 25 only).
4. For Structural Capacity: Web stiffeners needed to increase the AJS® Joist's reaction capacity at a specific bearing location.
5. Web stiffeners are always required in certain roof applications. *See Roof Framing Details* on pages 15 & 16.
6. 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.
7. Web stiffeners may be used to increase allowable reaction values. See *Factored Resistances Limit States Design (CANADA)* on page 4 of this guide or the BC CALC® software.

CONNECTION DETAILS

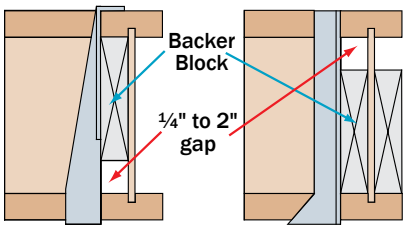
F15D Connection on Steel Beam



F15E Connection with Hanger on Steel Beam



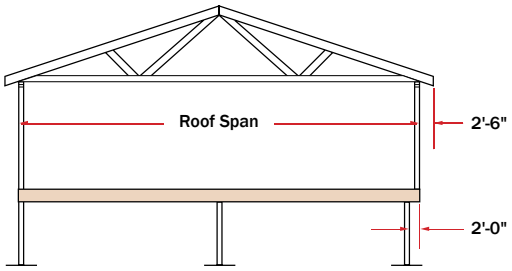
F16D Hanger Connections to AJS® Headers



"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 bottom of top flange with ¼" to 2" gap at top of bottom flange.

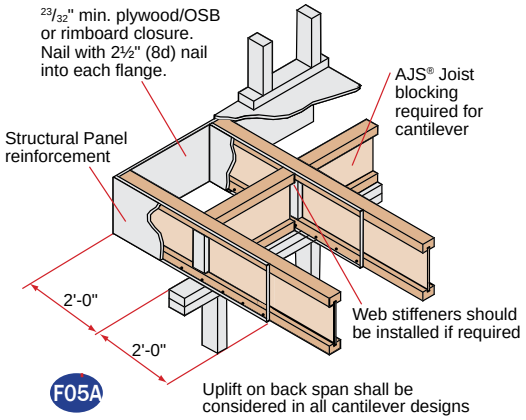
REINFORCED LOAD BEARING CANTILEVER DETAIL



- 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.**

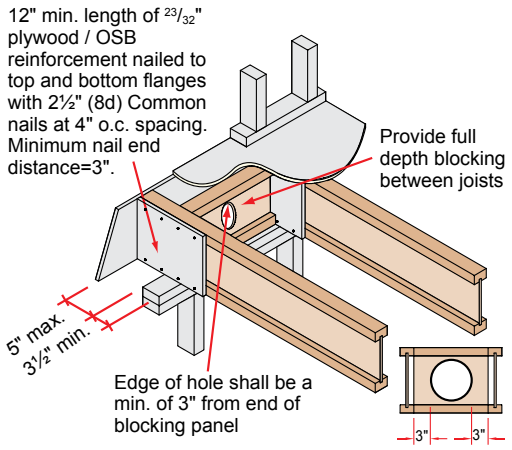
PLYWOOD / OSB REINFORCEMENT (If Required per Table on page 12)

- $^{23}/_{32}$" Min. x 48" long plywood / OSB rated sheathing must match the full depth of the AJS® Joist. Nail to the AJS® Joist with 2½" (8d) nails at 6" o.c. and nail with 4-2½" (8d) nails into backer block. When reinforcing both sides, stagger nails to limit splitting. Install with horizontal face grain.
- These requirements assume a 100 PLF wall load and applied to the AJS® Joists series. Additional support may be required for other loadings. See BC CALC® software.
- Contact Boise Cascade EWP Engineering for reinforcement requirements on AJS® Joist depths greater than 16".



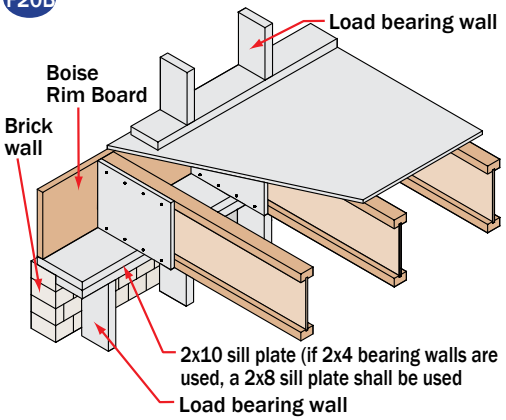
BRICK LEDGE LOAD BEARING CANTILEVER DETAILS

F20A



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	2346	1759	1466	1173
11⅞	2912	2184	1820	1456
14	3420	2565	2138	1710
16 or higher	3465	2599	2166	1733

F20B

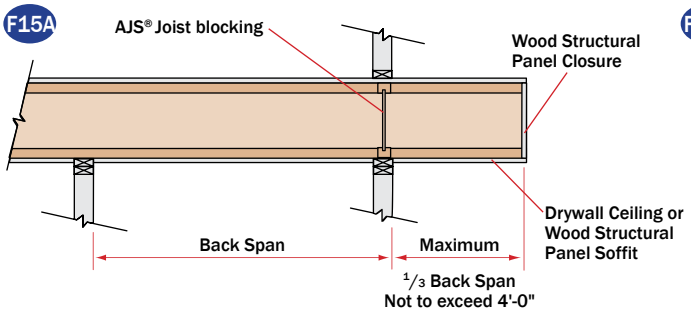


NON-LOAD BEARING WALL CANTILEVER DETAILS

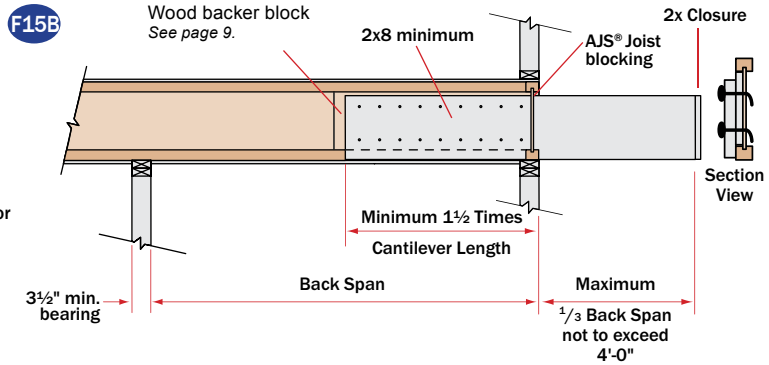
AJS® Joists are intended only for applications that provide permanent protection from the weather.

Fasten the 2x8 minimum to the AJS® Joist by nailing through the backer block and joist web with 2 rows of 3" (10d) nails at 6" on center. Use 3½" (16d) nails with AJS® 25 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 analysing a specific application with the BC CALC® software.

REINFORCED LOAD BEARING CANTILEVER TABLES

AJS® Joists

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"	AJS® 140	24	0	0	2	0	2	X	1	X	X
		26	0	1	X	1	X	X	2	X	X
		28	0	1	X	1	X	X	X	X	X
		30	0	1	X	1	X	X	X	X	X
		32	0	2	X	X	X	X	X	X	X
		34	1	X	X	X	X	X	X	X	X
		36	1	X	X	X	X	X	X	X	X
		38	1	X	X	X	X	X	X	X	X
		40	1	X	X	X	X	X	X	X	X
		42	2	X	X	X	X	X	X	X	X
	AJS® 20	24	0	0	2	0	2	X	1	X	X
		26	0	1	X	1	X	X	2	X	X
		28	0	1	X	1	X	X	X	X	X
		30	0	1	X	2	X	X	X	X	X
		32	0	2	X	2	X	X	X	X	X
		34	1	2	X	X	X	X	X	X	X
		36	1	X	X	X	X	X	X	X	X
		38	1	X	X	X	X	X	X	X	X
		40	2	X	X	X	X	X	X	X	X
		42	2	X	X	X	X	X	X	X	X
	AJS® 25	24	0	0	X	0	X	X	2	X	X
		26	0	1	X	1	X	X	2	X	X
		28	0	1	X	2	X	X	X	X	X
		30	0	2	X	2	X	X	X	X	X
		32	0	2	X	X	X	X	X	X	X
		34	1	X	X	X	X	X	X	X	X
		36	1	X	X	X	X	X	X	X	X
		38	2	X	X	X	X	X	X	X	X
		40	2	X	X	X	X	X	X	X	X
		42	X	X	X	X	X	X	X	X	X
11⅞"	AJS® 140	24	0	0	0	0	0	1	0	1	X
		26	0	0	WS	0	0	X	0	1	X
		28	0	0	1	0	1	X	0	1	X
		30	0	0	1	0	1	X	1	X	X
		32	0	0	1	0	1	X	1	X	X
		34	0	0	2	0	2	X	1	X	X
		36	0	0	X	1	X	X	1	X	X
		38	0	1	X	1	X	X	X	X	X
		40	0	1	X	1	X	X	X	X	X
		42	0	1	X	1	X	X	X	X	X
	AJS® 20	24	0	0	WS	0	0	X	0	1	X
		26	0	0	WS	0	WS	X	0	1	X
		28	0	0	1	0	1	X	0	2	X
		30	0	0	1	0	1	X	1	X	X
		32	0	0	X	0	1	X	1	X	X
		34	0	0	X	0	2	X	1	X	X
		36	0	WS	X	1	X	X	2	X	X
		38	0	1	X	1	X	X	2	X	X
		40	0	1	X	1	X	X	X	X	X
		42	0	1	X	2	X	X	X	X	X
	AJS® 25	24	0	0	0	0	0	2	0	1	X
		26	0	0	0	0	0	X	0	1	X
		28	0	0	1	0	1	X	0	2	X
		30	0	0	1	0	1	X	1	X	X
		32	0	0	2	0	2	X	1	X	X
		34	0	0	2	0	2	X	2	X	X
		36	0	0	X	1	X	X	2	X	X
		38	0	1	X	1	X	X	X	X	X
		40	0	1	X	2	X	X	X	X	X
		42	0	1	X	2	X	X	X	X	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"	AJS® 20	24	0	0	WS	0	0	WS	0	WS	1
		26	0	0	WS	0	WS	1	0	WS	X
		28	0	0	WS	0	WS	1	0	WS	X
		30	0	0	WS	0	WS	X	WS	1	X
		32	0	0	WS	0	WS	X	WS	1	X
		34	0	WS	WS	0	WS	X	WS	1	X
		36	0	WS	1	WS	1	X	WS	X	X
		38	0	WS	1	WS	1	X	1	X	X
		40	0	WS	1	WS	1	X	1	X	X
		42	0	WS	X	WS	X	X	1	X	X
	AJS® 25	24	0	0	0	0	0	WS	0	0	1
		26	0	0	0	0	0	1	0	0	2
		28	0	0	0	0	0	1	0	WS	2
		30	0	0	0	0	0	2	0	1	X
		32	0	0	WS	0	0	2	0	1	X
		34	0	0	WS	0	WS	X	0	1	X
		36	0	0	1	0	1	X	0	2	X
		38	0	0	1	0	1	X	1	2	X
		40	0	0	1	0	1	X	1	X	X
		42	0	0	2	0	2	X	1	X	X
16"	AJS® 20	24	0	0	WS	0	0	WS	0	WS	WS
		26	0	0	WS	0	WS	WS	0	WS	WS
		28	0	0	WS	0	WS	WS	0	WS	1
		30	0	0	WS	0	WS	WS	WS	WS	X
		32	0	0	WS	0	WS	1	WS	WS	X
		34	0	WS	WS	WS	WS	1	WS	WS	X
		36	0	WS	WS	WS	WS	X	WS	WS	X
		38	0	WS	WS	WS	WS	X	WS	1	X
		40	0	WS	WS	WS	WS	X	WS	1	X
		42	0	WS	WS	WS	WS	X	WS	X	X
	AJS® 25	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	1
		30	0	0	0	0	0	WS	0	WS	1
		32	0	0	0	0	0	1	0	WS	2
		34	0	0	WS	0	WS	1	0	WS	2
		36	0	0	WS	0	WS	1	0	WS	X
		38	0	0	WS	0	WS	2	WS	1	X
		40	0	0	WS	0	WS	2	WS	1	X
		42	0	0	WS	0	WS	X	WS	2	X
18" to 24"	AJS® 25	24	WS	WS	WS	WS	WS	WS	WS	WS	WS
		26	WS	WS	WS	WS	WS	WS	WS	WS	WS
		28	WS	WS	WS	WS	WS	WS	WS	WS	WS
		30	WS	WS	WS	WS	WS	WS	WS	WS	WS
		32	WS	WS	WS	WS	WS	WS	WS	WS	WS
		34	WS	WS	WS	WS	WS	WS	WS	WS	WS
		36	WS	WS	WS	WS	WS	WS	WS	WS	WS
		38	WS	WS	WS	WS	WS	WS	WS	WS	WS
		40	WS	WS	WS	WS	WS	WS	WS	WS	WS
		42	WS	WS	WS	WS	WS	WS	WS	WS	WS

KEY TO TABLE

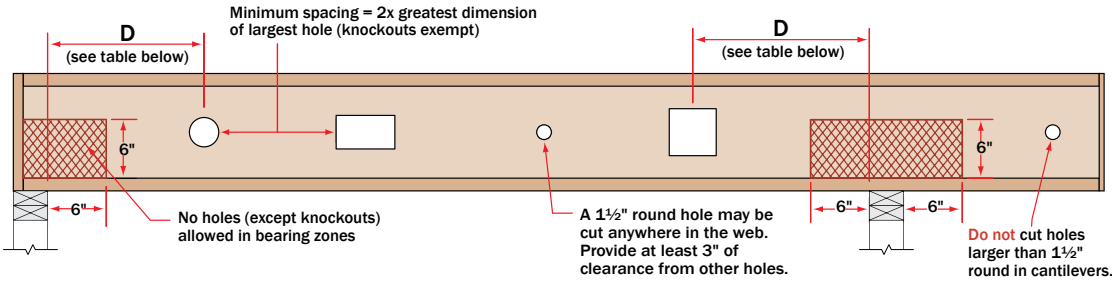
0 . . . . No Reinforcement Required
WS . . . . Web Stiffeners at Support
1 . . . . Web Stiffeners Plus One Reinforcer
2 . . . . Web Stiffeners Plus Two Reinforcers
X . . . . Use Deeper Joists or Closer Spacing

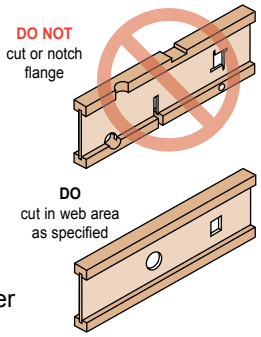
Tables are based on the following loads: 15 psf specified floor dead load, 40 psf specified floor live load, 100 plf specified wall dead load, 10 psf specified roof dead load and the listed specified snow load (Standard Term Load Duration).

NOTES:

1. Cut 48" long reinforcers to match the joist depth. Use min. $^{23}/_{32}$" APA 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).
2. Minimum bearing length is 3½".
3. Fasten the reinforcer to the joist flanges with 2½" (8d) nails at 6" o.c. When reinforcing both sides, stagger the nails to limit 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)





AJS® 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 the 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' - 6"	-	-	1' - 0"	1' - 0"	-	-	1' - 0"	1' - 0"	1' - 0"	-	1' - 0"	1' - 0"	1' - 0"	1' - 0"
10'	1' - 0"	2' - 6"	-	-	1' - 0"	1' - 0"	-	-	1' - 0"	1' - 0"	1' - 0"	-	1' - 0"	1' - 0"	1' - 0"	1' - 0"
12'	1' - 0"	4' - 0"	-	-	1' - 0"	1' - 0"	-	-	1' - 0"	1' - 0"	1' - 0"	-	1' - 0"	1' - 0"	1' - 0"	1' - 6"
14'	1' - 0"	5' - 0"	-	-	1' - 0"	1' - 0"	-	-	1' - 0"	1' - 0"	1' - 6"	-	1' - 0"	1' - 0"	1' - 0"	2' - 6"
16'	2' - 0"	6' - 6"	-	-	1' - 0"	2' - 0"	-	-	1' - 0"	1' - 0"	2' - 6"	-	1' - 0"	1' - 0"	1' - 0"	3' - 6"
18'	3' - 0"	7' - 6"	-	-	1' - 0"	3' - 6"	-	-	1' - 0"	1' - 0"	4' - 0"	-	1' - 0"	1' - 0"	1' - 0"	4' - 6"
20'	4' - 0"	9' - 0"	-	-	1' - 0"	4' - 6"	-	-	1' - 0"	1' - 0"	5' - 0"	-	1' - 0"	1' - 0"	2' - 0"	6' - 0"
22'	5' - 0"	10' - 0"	-	-	1' - 6"	5' - 6"	-	-	1' - 0"	2' - 6"	6' - 0"	-	1' - 0"	1' - 0"	3' - 0"	7' - 0"
24'	6' - 6"	11' - 6"	-	-	2' - 6"	7' - 0"	-	-	1' - 0"	3' - 6"	7' - 6"	-	1' - 0"	1' - 0"	4' - 0"	8' - 0"
26'	-	-	-	-	4' - 0"	8' - 0"	-	-	1' - 0"	4' - 6"	8' - 6"	-	1' - 0"	1' - 6"	5' - 6"	9' - 6"
28'	-	-	-	-	5' - 0"	9' - 0"	-	-	2' - 0"	5' - 6"	10' - 0"	-	1' - 0"	2' - 6"	6' - 6"	10' - 6"
30'	-	-	-	-	-	-	-	-	3' - 0"	7' - 0"	11' - 0"	-	1' - 0"	4' - 0"	7' - 6"	12' - 0"
32'	-	-	-	-	-	-	-	-	4' - 0"	8' - 0"	12' - 6"	-	1' - 6"	5' - 0"	9' - 0"	13' - 0"
34'	-	-	-	-	-	-	-	-	-	-	-	-	2' - 6"	6' - 0"	10' - 0"	14' - 6"

TABLE 2 SQUARE HOLES

Minimum distance from inside face of any support to the 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' - 6"	-	-	1' - 0"	1' - 0"	-	-	1' - 0"	1' - 0"	1' - 0"	-	1' - 0"	1' - 0"	1' - 0"	1' - 0"
10'	1' - 0"	2' - 6"	-	-	1' - 0"	1' - 0"	-	-	1' - 0"	1' - 0"	1' - 0"	-	1' - 0"	1' - 0"	1' - 0"	2' - 6"
12'	1' - 6"	4' - 0"	-	-	1' - 0"	1' - 6"	-	-	1' - 0"	1' - 0"	2' - 6"	-	1' - 0"	1' - 0"	1' - 0"	3' - 6"
14'	2' - 6"	5' - 0"	-	-	1' - 0"	2' - 6"	-	-	1' - 0"	1' - 0"	3' - 6"	-	1' - 0"	1' - 0"	2' - 0"	4' - 6"
16'	3' - 6"	6' - 6"	-	-	1' - 6"	4' - 0"	-	-	1' - 0"	2' - 0"	4' - 6"	-	1' - 0"	1' - 0"	3' - 0"	6' - 0"
18'	5' - 0"	7' - 6"	-	-	2' - 6"	5' - 0"	-	-	1' - 0"	3' - 0"	6' - 0"	-	1' - 0"	1' - 6"	4' - 0"	7' - 0"
20'	6' - 0"	9' - 0"	-	-	3' - 6"	6' - 6"	-	-	2' - 0"	4' - 6"	7' - 0"	-	1' - 0"	2' - 6"	5' - 6"	8' - 6"
22'	7' - 0"	10' - 0"	-	-	5' - 0"	7' - 6"	-	-	3' - 0"	5' - 6"	8' - 6"	-	1' - 0"	3' - 6"	6' - 6"	10' - 0"
24'	8' - 6"	11' - 6"	-	-	6' - 0"	8' - 6"	-	-	4' - 0"	6' - 6"	9' - 6"	-	2' - 0"	5' - 0"	7' - 6"	11' - 0"
26'	-	-	-	-	7' - 0"	10' - 0"	-	-	5' - 0"	8' - 0"	11' - 0"	-	3' - 6"	6' - 0"	9' - 0"	12' - 6"
28'	-	-	-	-	8' - 6"	11' - 0"	-	-	6' - 0"	9' - 0"	12' - 0"	-	4' - 6"	7' - 0"	10' - 0"	13' - 6"
30'	-	-	-	-	-	-	-	-	7' - 6"	10' - 0"	13' - 6"	-	5' - 6"	8' - 6"	11' - 6"	*
32'	-	-	-	-	-	-	-	-	8' - 6"	11' - 6"	14' - 6"	-	6' - 6"	9' - 6"	12' - 6"	*
34'	-	-	-	-	-	-	-	-	-	-	-	-	8' - 0"	11' - 0"	14' - 0"	*

TABLE 3 RECTANGULAR HOLES

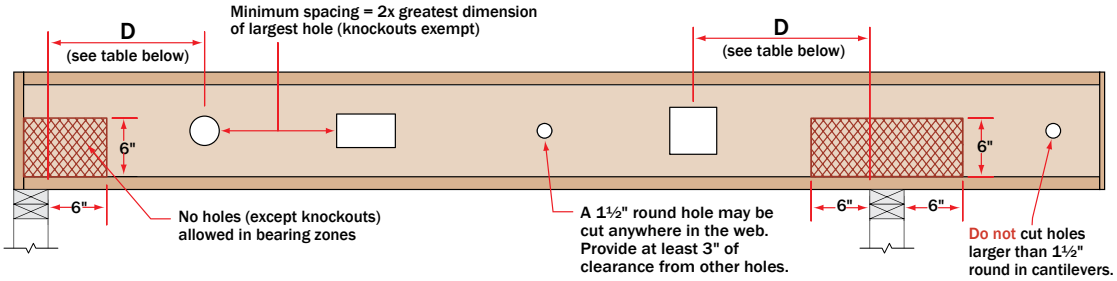
Minimum distance from inside face of any support to the centerline of hole — JOIST DEPTH • HOLE SIZE [IN]

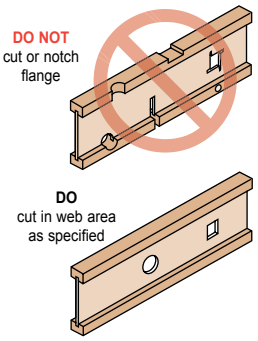
Span [ft]	9½"				11⅞"				14"				16"			
	5"x8"	5"x10"	5"x12"	5"x14"	7"x10"	7"x12"	7"x14"	7"x16"	10"x12"	10"x14"	10"x16"	10"x18"	10"x16"	10"x18"	12"x14"	12"x16"
8'	1' - 6"	2' - 0"	2' - 0"	2' - 6"	1' - 0"	1' - 6"	2' - 0"	2' - 6"	1' - 6"	2' - 6"	3' - 0"	*	1' - 6"	2' - 6"	2' - 0"	3' - 0"
10'	2' - 6"	3' -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

NOTES:

1. Hole may be positioned vertically anywhere in the web.
2. Tables 1-6 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.

14 HOLE CUTTING CHARTS FOR RESIDENTIAL APPLICATIONS (40/15)





AJS® 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 4 ROUND HOLES

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

Span [ft]	18"				20"				22"				24"			
	3"	6"	9"	12"	6"	9"	12"	15"	6"	9"	12"	15"	9"	12"	15"	18"
8'	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	2' - 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"	3' - 6"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"
12'	1' - 0"	1' - 0"	1' - 0"	2' - 6"	1' - 0"	1' - 0"	1' - 0"	4' - 6"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	2' - 0"
14'	1' - 0"	1' - 0"	1' - 0"	3' - 6"	1' - 0"	1' - 0"	1' - 0"	6' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 6"	1' - 0"	1' - 0"	1' - 0"	3' - 6"
16'	1' - 0"	1' - 0"	1' - 0"	4' - 6"	1' - 0"	1' - 0"	1' - 0"	7' - 0"	1' - 0"	1' - 0"	1' - 0"	2' - 6"	1' - 0"	1' - 0"	1' - 0"	4' - 6"
18'	1' - 0"	1' - 0"	1' - 0"	6' - 0"	1' - 0"	1' - 0"	1' - 6"	8' - 6"	1' - 0"	1' - 0"	1' - 0"	3' - 6"	1' - 0"	1' - 0"	1' - 0"	5' - 6"
20'	1' - 0"	1' - 0"	1' - 0"	7' - 0"	1' - 0"	1' - 0"	2' - 6"	9' - 6"	1' - 0"	1' - 0"	1' - 0"	5' - 0"	1' - 0"	1' - 0"	1' - 0"	7' - 0"
22'	1' - 0"	1' - 0"	1' - 6"	8' - 6"	1' - 0"	1' - 0"	3' - 6"	*	1' - 0"	1' - 0"	1' - 0"	6' - 0"	1' - 0"	1' - 0"	2' - 0"	8' - 0"
24'	1' - 0"	1' - 0"	2' - 6"	9' - 6"	1' - 0"	1' - 0"	5' - 0"	*	1' - 0"	1' - 0"	1' - 0"	7' - 0"	1' - 0"	1' - 0"	3' - 6"	9' - 6"
26'	1' - 0"	1' - 0"	3' - 6"	11' - 0"	1' - 0"	1' - 0"	6' - 0"	*	1' - 0"	1' - 0"	2' - 6"	8' - 6"	1' - 0"	1' - 0"	4' - 6"	10' - 6"
28'	1' - 0"	1' - 0"	4' - 6"	12' - 0"	1' - 0"	1' - 0"	7' - 0"	*	1' - 0"	1' - 0"	3' - 6"	9' - 6"	1' - 0"	1' - 0"	5' - 6"	12' - 0"
30'	1' - 0"	1' - 0"	5' - 6"	13' - 6"	1' - 0"	2' - 0"	8' - 6"	*	1' - 0"	1' - 0"	4' - 6"	11' - 0"	1' - 0"	1' - 0"	6' - 6"	13' - 0"
32'	1' - 0"	1' - 0"	7' - 0"	14' - 6"	1' - 0"	3' - 0"	9' - 6"	*	1' - 0"	1' - 0"	5' - 6"	12' - 0"	1' - 0"	2' - 6"	8' - 0"	14' - 6"
34'	1' - 0"	1' - 6"	8' - 0"	16' - 0"	1' - 0"	4' - 6"	11' - 0"	*	1' - 0"	1' - 0"	6' - 6"	13' - 6"	1' - 0"	3' - 6"	9' - 0"	15' - 6"

NOTES:

1. Hole may be positioned vertically anywhere in the web.
2. Tables 1-6 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.

TABLE 5 SQUARE HOLES

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

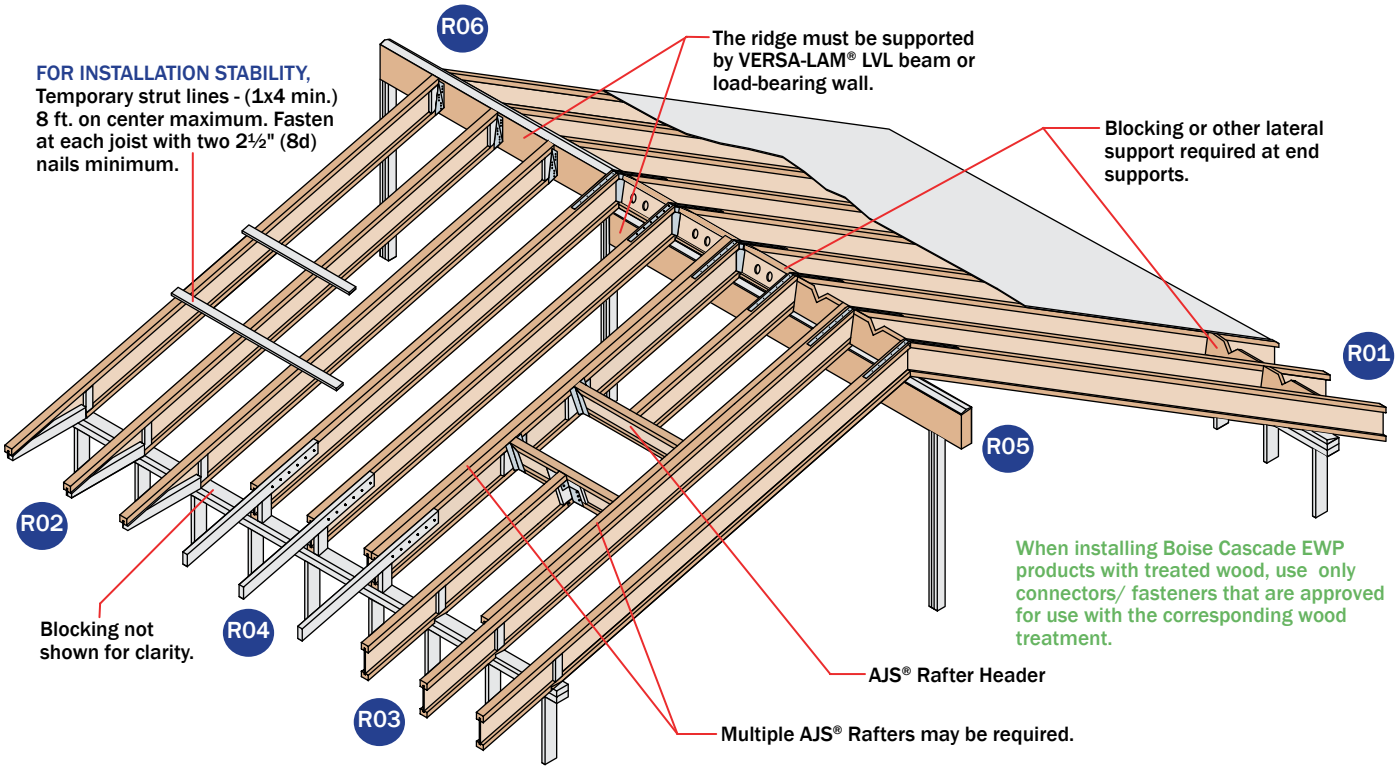
Span [ft]	18"				20"				22"				24"			
	3"	6"	9"	12"	6"	9"	12"	15"	6"	9"	12"	15"	9"	12"	15"	18"
8'	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 6"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	3' - 0"
10'	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"	3' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 6"	1' - 0"	1' - 0"	1' - 0"	4' - 6"
12'	1' - 0"	1' - 0"	1' - 0"	1' - 6"	1' - 0"	1' - 0"	1' - 0"	4' - 0"	1' - 0"	1' - 0"	1' - 0"	2' - 6"	1' - 0"	1' - 0"	1' - 6"	5' - 6"
14'	1' - 0"	1' - 0"	1' - 0"	3' - 0"	1' - 0"	1' - 0"	1' - 6"	5' - 6"	1' - 0"	1' - 0"	1' - 0"	4' - 0"	1' - 0"	1' - 0"	2' - 6"	*
16'	1' - 0"	1' - 0"	1' - 0"	4' - 0"	1' - 0"	1' - 0"	2' - 6"	6' - 6"	1' - 0"	1' - 0"	1' - 6"	5' - 0"	1' - 0"	1' - 0"	4' - 0"	*
18'	1' - 0"	1' - 0"	1' - 6"	5' - 0"	1' - 0"	1' - 0"	3' - 6"	8' - 0"	1' - 0"	1' - 0"	2' - 6"	6' - 6"	1' - 0"	1' - 6"	5' - 0"	*
20'	1' - 0"	1' - 0"	2' - 6"	6' - 6"	1' - 0"	1' - 6"	5' - 0"	9' - 0"	1' - 0"	1' - 0"	3' - 6"	7' - 6"	1' - 0"	2' - 6"	6' - 0"	*
22'	1' - 0"	1' - 0"	3' - 6"	7' - 6"	1' - 0"	2' - 6"	6' - 0"	10' - 6"	1' - 0"	1' - 0"	4' - 6"	9' - 0"	1' - 0"	3' - 6"	7' - 6"	*
24'	1' - 0"	1' - 6"	5' - 0"	9' - 0"	1' - 0"	3' - 6"	7' - 0"	11' - 6"	1' - 0"	2' - 0"	6' - 0"	10' - 0"	1' - 0"	4' - 6"	8' - 6"	*
26'	1' - 0"	2' - 6"	6' - 0"	10' - 0"	1' - 0"	4' - 6"	8' - 6"	*	1' - 0"	3' - 0"	7' - 0"	11' - 6"	2' - 0"	5' - 6"	10' - 0"	*
28'	1' - 0"	3' - 6"	7' - 0"	11' - 6"	2' - 0"	5' - 6"	9' - 6"	*	1' - 0"	4' - 6"	8' - 0"	12' - 6"	3' - 0"	7' - 0"	11' - 0"	*
30'	1' - 0"	4' - 6"	8' - 6"	12' - 6"	3' - 0"	7' - 0"	11' - 0"	*	2' - 0"	5' - 6"	9' - 6"	14' - 0"	4' - 0"	8' - 0"	12' - 6"	*
32'	2' - 6"	5' - 6"	9' - 6"	14' - 0"	4' - 6"	8' - 0"	12' - 0"	*	3' - 0"	6' - 6"	10' - 6"	15' - 0"	5' - 6"	9' - 0"	13' - 6"	*
34'	3' - 6"	7' - 0"	10' - 6"	15' - 0"	5' - 6"	9' - 0"	13' - 6"	*	4' - 0"	7' - 6"	12' - 0"	16' - 6"	6' - 6"	10' - 6"	15' - 0"	*

TABLE 6 RECTANGULAR HOLES

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

Span [ft]	18"				20"				22"				24"			
	10"x18"	12"x14"	12"x16"	12"x18"	12"x16"	12"x18"	14"x16"	14"x18"	12"x18"	14"x16"	14"x18"	16"x18"	14"x18"	14"x20"	16"x18"	16"x20"
8'	1' - 6"	1' - 0"	1' - 6"	3' - 0"	1' - 0"	1' - 6"	1' - 6"	3' - 0"	1' - 0"	1' - 0"	2' - 0"	3' - 0"	1' - 0"	2' - 0"	2' - 0"	3' - 6"
10'	2' - 6"	1' - 6"	3' - 0"	4' - 0"	1' - 6"	3' - 0"	3' - 0"	4' - 6"	2' - 0"	1' - 6"	3' - 0"	4' - 6"	2' - 0"	3' - 6"	3' - 0"	*
12'	4' - 0"	3' - 0"	4' - 0"	5' - 6"	2' - 6"	4' - 0"	4' - 0"	5' - 6"	3' - 0"	3' - 0"	4' - 0"	5' - 6"	3' - 0"	4' - 6"	4' - 6"	*
14'	5' - 0"	4' - 0"	5' - 6"	6' - 6"	4' - 0"	5' - 6"	5' - 6"	*	4' - 0"	4' - 0"	5' - 6"	*	4' - 0"	6' - 0"	5' - 6"	*
16'	6' - 6"	5' - 0"	6' - 6"	*	5' - 0"	6' - 6"	6' - 6"	*	5' - 6"	5' - 0"	6' - 6"	*	5' - 6"	7' - 0"	7' - 0"	*
18'	7' - 6"	6' - 6"	8' - 0"	*	6' - 6"	8' - 0"	8' - 0"	*	6' - 6"	6' - 6"	8' - 0"	*	6' - 6"	8' - 6"	8' - 0"	*
20'	9' - 0"	7' - 6"	9' - 0"	*	7' - 6"	9' - 0"	9' - 0"	*	7' - 6"	7' - 6"	9' - 0"	*	8' - 0"	9' - 6"	9' - 6"	*
22'	10' - 0"	9' - 0"	10' - 6"	*	9' - 0"	10' - 6"	10' - 6"	*	9' - 0"	9' - 0"	10' - 6"	*	9' - 0"	*	10' - 6"	*
24'	11' - 6"	10' - 0"	11' - 6"	*	10' - 0"	11' - 6"	11' - 6"	*	10' - 6"	10' - 0"	*	*	10' - 6"	*	*	*
26'	12' - 6"	11' - 6"	*	*	11' - 6"	*	*	*	11' - 6"	11' - 6"	*	*	11' - 6"	*	*	*
28'	*	12' - 6"	*	*	12' - 6"	*	*	*	13' - 0"	12' - 6"	*	*	13' - 0"	*	*	*
30'	*	14' - 0"	*	*	14' - 0"	*	*	*	14' - 0"	14' - 0"	*	*	14' - 6"	*	*	*
32'	*	15' - 6"	*	*	15' - 0"	*	*	*	15' - 6"	15' - 6"	*	*	15' - 6"	*	*	*
34'	*	16' - 6"	*	*	16' - 6"	*	*	*	16' - 6"	16' - 6"	*	*	*	*	*	*

AJS® Rafters



SAFETY WARNING

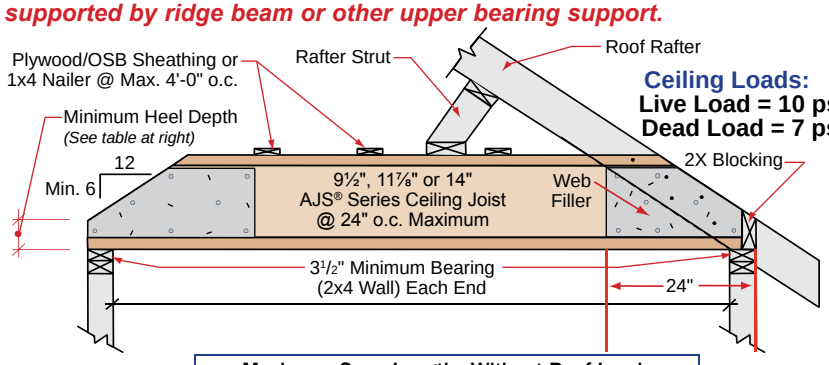
DO NOT ALLOW WORKERS ON AJS® JOISTS UNTIL ALL HANGERS, AJS® RIM JOISTS, RIM BOARDS, AJS® BLOCKING PANELS, X-BRACING AND TEMPORARY 1x4 STRUT LINES ARE INSTALLED AS SPECIFIED BELOW.

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 AJS® Joists and the first course of sheathing. As an alternate, temporary sheathing may be nailed to the first four feet of AJS® Joists at the end of the bay.
- All hangers, AJS® rim joists, rim boards, AJS® blocking panels, and x-bracing must be completely installed and properly nailed as each AJS® Joist is set.
- Install temporary 1x4 strut lines at no more than eight feet on center as additional AJS® Joists are set. Nail the strut lines to the sheathed area, or braced end wall, and to each AJS® Joist with two 2½" (8d) nails.
- The ends of cantilevers must be temporarily secured by strut lines on both the top and bottom flanges.
- Straighten the AJS® Joist 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.

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

AJS® 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" AJS® 140, 20, 25	19'-6"
11⅞" AJS® 140, 20, 25	22'-0"
14" AJS® 140, 20, 25	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"

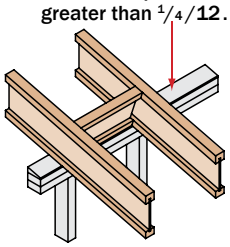
NOTES:

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) AJS® ceiling joist end reaction may not exceed 550 pounds.
4) Minimum roof slope is 6/12.
5) Nail roof rafter to AJS® top flange with 1-3½" (16d) sinker or box nail.
6) 1x4 nailers must be continuous and nailed to a braced end wall.
7) Install a web stiffener on each side of AJS® Joist at beveled ends. Nail roof rafter to AJS® Joist per building code requirements for ceiling joist to roof rafter connection.

ROOF FRAMING DETAILS

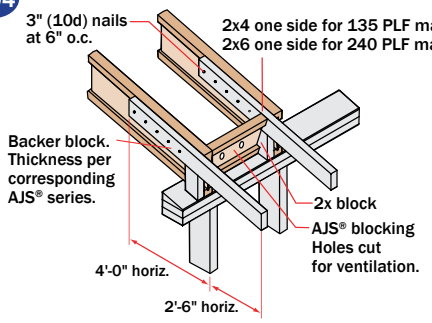
Additional roof framing details available with BC FRAMER® software

R01

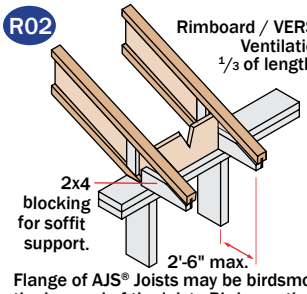


Simpson VPA or USP TMP connectors or equal can be used in lieu of beveled plate for slopes from 3/12 to 12/12.

R04

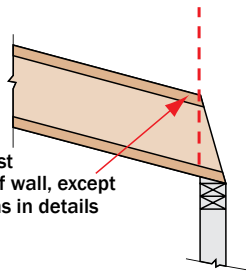


R02



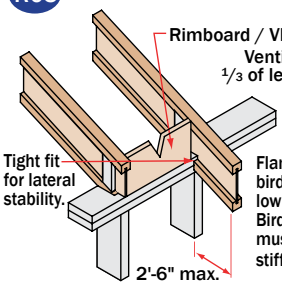
Flange of AJS® Joists may be birdsmouth cut only at the low end of the joist. Birdsmouth cut AJS® joist must bear fully on plate, web stiffener required each side. Bottom flange shall be fully supported.

DN05



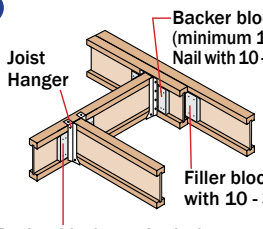
DO NOT bevel-cut joist beyond inside face of wall, except for specific conditions in details shown on page 15.

R03



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

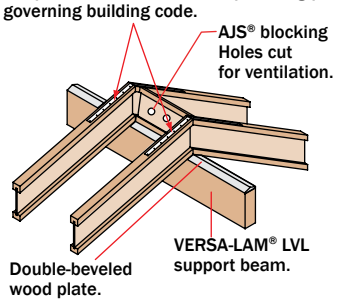
R07



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

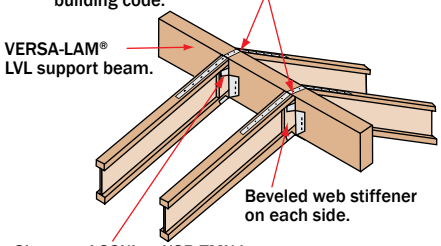
R05

Simpson or USP LSTA24 strap, nailing per governing building code.

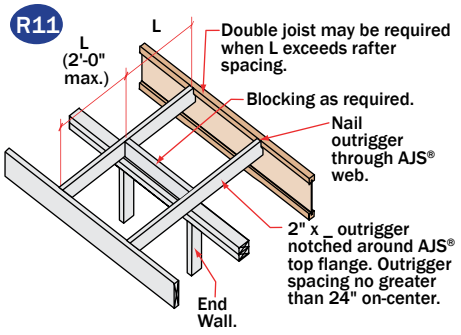


R06

Simpson or USP LSTA24 strap where slope exceeds 7/12 *(straps may be required for lower slopes in high-wind areas).* Nailing per governing building code.



R11



LATERAL SUPPORT

- AJS® Joists must be laterally supported at the ends with hangers, AJS® rim joists, rim boards, AJS® blocking panels or x-bracing. AJS® blocking panels or x-bracing are required at cantilever supports.
- Blocking may be required at intermediate bearings for floor diaphragm as per Code, consult local building official.

MINIMUM BEARING LENGTH FOR AJS® JOISTS

- 1½ inches is required at end supports (1¾ inches for 18" to 24" deep). 3½ inches 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

- AJS® rim joist, rim board or closure panel to AJS® Joist:
  - Rims or closure panel 1¾ inches thick and less: 2-2½" (8d) nails, one each in the top and bottom flange.
  - AJS® 140 / 20 rim joist: 2-3½" (16d) box nails, one each in the top and bottom flange.
  - AJS® 25 rim joist: Toe-nail top flange to rim joist with 2-3" (10d) box nails, one each side of flange.
- AJS® rim joist, rim board or AJS® blocking panel to support:
  - 2½" (8d) nails at 6 inches on center.
  - When used for shear transfer, follow the building designer's specification.
- AJS® Joist to support:
  - 2-2½" (8d) nails, one on each side of the web, placed 1½ inches minimum from the end of the AJS® Joist to limit splitting.
- Sheathing to AJS® Joist:
  - Prescriptive residential roof sheathing nailing requires 2½" (8d) common nails @ 6" o.c. on edges and @ 12" o.c. in the field as per Code.
  - Maximum nail spacing for minimum lateral stability = 24".
  - 14 gauge staples may be substituted for 2½" (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
AJS® 140	1⅛" or two ½" wood panels	2 x __ + ⅝" wood panel
AJS® 20	1⅛" or two ½" wood panels	2 x __ + ⅝" wood panel
AJS® 25	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.
- For deeper AJS® 25 Joists, stack 2x lumber or use multiple pieces of ¾" wood panels.

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 AJS® Joist may all be knocked out and used for cross ventilation. Deeper joists than what is structurally needed may be advantageous in ventilation design. Consult local building official and/or ventilation specialist for specific ventilation requirements.

BIRDSMOUTH CUTS

- AJS® Joists may be birdsmouth cut only at the low end support. AJS® 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 AJS® JOISTS FROM THE WEATHER

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

Loads	Joist Series	Depth (in)	Low Roof Slope (0.25/12 to 6/12) o.c. spacing				High Roof Slope (< 6/12 to 12/12) o.c. spacing			
			12"	16"	19.2"	24"	12"	16"	19.2"	24"
Specified Dead Load = 10 psf Specified Snow Load = 20 psf	AJS® 140	9½"	24'-8"	22'-4"	21'-0"	19'-0"	22'-1"	20'-0"	18'-10"	17'-5"
		11⅞"	29'-6"	26'-9"	24'-4"	21'-9"	26'-5"	23'-11"	22'-6"	20'-10"
	AJS® 20	9½"	26'-8"	24'-2"	22'-9"	21'-1"	23'-11"	21'-8"	20'-5"	18'-10"
		11⅞"	31'-11"	28'-11"	27'-2"	25'-2"	28'-7"	25'-11"	24'-4"	22'-6"
		14"	36'-3"	32'-11"	30'-11"	28'-2"	32'-6"	29'-6"	27'-8"	25'-8"
		16"	40'-3"	36'-6"	33'-11"	30'-3"	36'-1"	32'-8"	30'-9"	28'-5"
	AJS® 25	9½"	29'-9"	27'-0"	25'-4"	23'-6"	26'-8"	24'-2"	22'-8"	21'-0"
		11⅞"	35'-6"	32'-2"	30'-3"	28'-0"	31'-10"	28'-10"	27'-1"	25'-1"
		14"	40'-4"	36'-7"	34'-4"	31'-10"	36'-2"	32'-9"	30'-9"	28'-6"
		16"	44'-8"	40'-6"	38'-1"	**35'-3"**	40'-0"	36'-4"	34'-1"	31'-7"
		18"	49'-1"	44'-6"	41'-10"	38'-9"	44'-0"	39'-11"	37'-6"	34'-9"
		20"	53'-2"	48'-3"	45'-4"	42'-0"	47'-8"	43'-3"	40'-7"	37'-8"
		20"	57'-2"	51'-10"	48'-8"	44'-10"	51'-3"	46'-5"	43'-8"	40'-5"
		24"	60'-0"	55'-4"	52'-0"	46'-10"	54'-9"	49'-7"	46'-8"	43'-3"
Specified Dead Load = 10 psf Specified Snow Load = 30 psf	AJS® 140	9½"	22'-5"	20'-4"	18'-4"	16'-5"	20'-3"	18'-4"	17'-2"	15'-11"
		11⅞"	26'-7"	23'-0"	21'-0"	18'-9"	24'-2"	21'-11"	20'-4"	18'-2"
	AJS® 20	9½"	24'-3"	22'-0"	20'-8"	19'-1"	21'-11"	19'-10"	18'-8"	17'-3"
		11⅞"	29'-0"	26'-3"	24'-8"	22'-1"	26'-2"	23'-8"	22'-3"	20'-7"
		14"	33'-0"	29'-11"	27'-2"	24'-3"	29'-9"	27'-0"	25'-4"	23'-5"
		16"	36'-7"	32'-0"	29'-3"	**26'-0"**	33'-0"	29'-11"	28'-1"	24'-9"
	AJS® 25	9½"	27'-1"	24'-6"	23'-0"	21'-3"	24'-5"	22'-1"	20'-9"	19'-2"
		11⅞"	32'-3"	29'-3"	27'-6"	25'-5"	29'-1"	26'-5"	24'-9"	22'-11"
		14"	36'-8"	33'-3"	31'-2"	26'-0"	33'-1"	30'-0"	28'-2"	24'-5"
		16"	40'-7"	36'-10"	32'-11"	26'-4"	36'-8"	33'-2"	31'-0"	24'-9"
		18"	44'-8"	40'-6"	38'-0"	34'-11"	40'-4"	36'-6"	34'-4"	31'-9"
		20"	48'-4"	43'-10"	41'-2"	36'-11"	43'-8"	39'-7"	37'-2"	34'-5"
		22"	52'-0"	47'-2"	43'-4"	38'-8"	46'-11"	42'-6"	40'-0"	37'-0"
		24"	55'-6"	49'-6"	45'-2"	40'-4"	50'-1"	45'-5"	42'-8"	39'-2"

NOTES:

1. Spans shown are in accordance with NBCC 2010.
2. Maximum spans listed are the clear horizontal spans between supports (simple/ multiple spans, or one span + 2ft overhang).
3. Minimum end bearing length is 1½" for 9½" to 16" depths, and 1¾" for 18" to 24" depths. Bold spans have a minimum end bearing length of 3½".
4. Minimum interior bearing length is 3½".
5. **Total load deflection is limited to L/180.**
6. **Live load deflection is limited to L/240.**
7. Check the local building code for other deflection limits that may apply.
8. Spans shown have not been evaluated for snow drift.
9. Lateral support must be provided for the compression edge and also at the bearings to prevent lateral displacement or rotation.
10. 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.
14. 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)
    L_1 = Length of shorter 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

15. 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

16. WARNING: Use of Span Tables for Commercial Projects (NBCC2010: 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 (2010). Table 4.1.5.9 in NBCC (2010) 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 = 10 psf Specified Snow Load = 40 psf	AJS® 140	9½"	20'-6"	17'-11"	16'-4"	14'-7"	18'-10"	17'-1"	16'-0"	14'-3"
		11⅞"	23'-9"	20'-6"	18'-8"	16'-8"	22'-7"	20'-0"	18'-3"	16'-3"
	AJS® 20	9½"	22'-2"	20'-1"	18'-10"	17'-5"	20'-5"	18'-6"	17'-4"	16'-0"
		11⅞"	26'-6"	24'-0"	22'-1"	19'-8"	24'-5"	22'-1"	20'-9"	19'-2"
		14"	30'-2"	26'-7"	24'-3"	20'-8"	27'-9"	25'-2"	23'-7"	19'-9"
		16"	33'-0"	28'-7"	26'-3"	21'-0"	30'-9"	27'-11"	25'-0"	20'-0"
	AJS® 25	9½"	24'-9"	22'-5"	21'-0"	19'-5"	22'-9"	20'-7"	19'-4"	17'-10"
		11⅞"	29'-6"	26'-9"	25'-1"	20'-4"	27'-2"	24'-7"	23'-1"	19'-5"
		14"	33'-6"	30'-4"	25'-11"	20'-8"	30'-10"	27'-11"	24'-8"	19'-9"
		16"	37'-2"	31'-6"	26'-3"	21'-0"	34'-2"	30'-0"	25'-0"	20'-0"
		18"	40'-10"	37'-0"	34'-9"	31'-2"	37'-7"	34'-0"	32'-0"	29'-7"
		20"	44'-3"	40'-1"	36'-11"	32'-11"	40'-8"	36'-11"	34'-8"	32'-1"
		20"	47'-7"	42'-4"	38'-8"	34'-6"	43'-9"	39'-8"	37'-3"	33'-8"
		24"	50'-10"	44'-2"	40'-4"	36'-0"	46'-9"	42'-4"	39'-4"	35'-2"
Specified Dead Load = 10 psf Specified Snow Load = 50 psf	AJS® 140	9½"	19'-0"	16'-4"	14'-11"	13'-4"	17'-6"	15'-10"	14'-7"	13'-0"
		11⅞"	21'-7"	18'-8"	17'-0"	15'-2"	20'-11"	18'-3"	16'-8"	14'-11"
	AJS® 20	9½"	20'-7"	18'-7"	17'-5"	15'-8"	18'-11"	17'-1"	16'-1"	14'-10"
		11⅞"	24'-7"	22'-3"	20'-1"	16'-11"	22'-8"	20'-6"	19'-2"	16'-3"
		14"	27'-11"	24'-2"	21'-6"	17'-2"	25'-9"	23'-4"	20'-8"	16'-6"
		16"	30'-1"	26'-2"	21'-10"	17'-5"	28'-7"	25'-2"	20'-11"	16'-9"
	AJS® 25	9½"	22'-11"	20'-8"	19'-5"	16'-2"	21'-1"	19'-1"	17'-10"	15'-7"
		11⅞"	27'-4"	24'-9"	21'-2"	16'-11"	25'-2"	22'-9"	20'-4"	16'-3"
		14"	31'-0"	25'-10"	21'-6"	17'-2"	28'-7"	24'-9"	20'-8"	16'-6"
		16"	**34'-5"**	26'-2"	21'-10"	17'-5"	31'-8"	25'-2"	20'-11"	16'-9"
		18"	37'-10"	34'-3"	31'-9"	28'-5"	34'-11"	31'-7"	29'-8"	27'-5"
		20"	41'-0"	36'-10"	33'-7"	30'-0"	37'-10"	34'-3"	32'-2"	29'-5"
		22"	44'-1"	38'-7"	35'-2"	31'-6"	40'-8"	36'-10"	34'-7"	30'-10"
		24"	46'-6"	40'-3"	36'-9"	32'-10"	43'-5"	39'-4"	36'-0"	32'-2"

NOTES:

1. Spans shown are in accordance with NBCC 2010.
2. Maximum spans listed are the clear horizontal spans between supports (simple/ multiple spans, or one span + 2ft overhang).
3. Minimum end bearing length is 1½" for 9½" to 16" depths, and 1¾" for 18" to 24" depths. Bold spans have a minimum end bearing length of 3½".
4. Minimum interior bearing length is 3½".
5. **Total load deflection is limited to L/180.**
6. **Live load deflection is limited to L/240.**
7. Check the local building code for other deflection limits that may apply.
8. Spans shown have not been evaluated for snow drift.
9. Lateral support must be provided for the compression edge and also at the bearings to prevent lateral displacement or rotation.
10. 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.
14. 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

15. 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

16. WARNING: Use of Span Tables for Commercial Projects (NBCC2010: 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 (2010). Table 4.1.5.9 in NBCC (2010) 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 = 20 psf	AJS® 140	9½"	23'-4"	21'-1"	19'-10"	17'-8"	20'-9"	18'-9"	17'-8"	16'-4"
		11⅞"	27'-10"	24'-9"	22'-7"	20'-2"	24'-10"	22'-6"	21'-1"	19'-2"
	AJS® 20	9½"	25'-3"	22'-11"	21'-6"	19'-11"	22'-6"	20'-4"	19'-1"	17'-8"
		11⅞"	30'-2"	27'-4"	25'-8"	23'-9"	26'-10"	24'-4"	22'-10"	21'-2"
		14"	34'-4"	31'-1"	29'-3"	26'-1"	30'-6"	27'-8"	26'-0"	24'-1"
		16"	38'-0"	34'-6"	31'-5"	28'-1"	33'-10"	30'-8"	28'-10"	26'-8"
	AJS® 25	9½"	28'-2"	25'-6"	23'-11"	22'-2"	25'-0"	22'-8"	21'-4"	19'-9"
		11⅞"	33'-7"	30'-5"	28'-7"	26'-5"	29'-10"	27'-1"	25'-5"	23'-6"
		14"	38'-2"	34'-7"	32'-6"	**30'-1"**	33'-11"	30'-9"	28'-11"	26'-9"
		16"	42'-3"	38'-3"	36'-0"	30'-6"	37'-7"	34'-1"	32'-0"	27'-6"
		18"	46'-5"	42'-1"	39'-7"	36'-8"	41'-4"	37'-5"	35'-2"	32'-7"
		20"	50'-3"	45'-7"	42'-10"	39'-8"	44'-9"	40'-7"	38'-1"	35'-4"
		20"	54'-0"	49'-0"	46'-1"	41'-8"	48'-1"	43'-7"	41'-0"	38'-0"
		24"	57'-9"	52'-4"	48'-7"	43'-5"	51'-4"	46'-7"	43'-9"	40'-7"
Specified Dead Load = 15 psf Specified Snow Load = 30 psf	AJS® 140	9½"	21'-5"	19'-0"	17'-4"	15'-6"	19'-3"	17'-5"	16'-4"	14'-10"
		11⅞"	25'-2"	21'-9"	19'-10"	17'-8"	23'-0"	20'-10"	19'-0"	17'-0"
	AJS® 20	9½"	23'-3"	21'-1"	19'-9"	18'-4"	20'-10"	18'-10"	17'-9"	16'-5"
		11⅞"	27'-9"	25'-2"	23'-4"	20'-10"	24'-11"	22'-6"	21'-2"	19'-7"
		14"	31'-7"	28'-2"	25'-8"	**22'-10"**	28'-4"	25'-8"	24'-1"	21'-5"
		16"	35'-0"	30'-3"	27'-7"	23'-7"	31'-5"	28'-5"	**26'-9"**	21'-9"
	AJS® 25	9½"	25'-11"	23'-6"	22'-0"	20'-4"	23'-3"	21'-0"	19'-9"	18'-3"
		11⅞"	30'-11"	28'-0"	26'-3"	22'-10"	27'-8"	25'-1"	23'-7"	21'-1"
		14"	35'-1"	31'-10"	29'-0"	23'-3"	31'-6"	28'-6"	**26'-9"**	21'-5"
		16"	38'-11"	**35'-3"**	29'-5"	23'-7"	34'-10"	31'-7"	27'-2"	21'-9"
		18"	42'-9"	38'-9"	36'-5"	33'-0"	38'-4"	34'-9"	32'-8"	30'-3"
		20"	46'-4"	42'-0"	39'-1"	34'-11"	41'-6"	37'-8"	35'-4"	32'-9"
		22"	49'-9"	44'-10"	40'-11"	36'-7"	44'-8"	40'-5"	38'-0"	35'-2"
		24"	53'-2"	46'-10"	42'-8"	38'-2"	47'-8"	43'-3"	40'-7"	36'-8"

NOTES:

1. Spans shown are in accordance with NBCC 2010.
2. Maximum spans listed are the clear horizontal spans between supports (simple/ multiple spans, or one span + 2ft overhang).
3. Minimum end bearing length is 1½" for 9½" to 16" depths, and 1¾" for 18" to 24" depths. Bold spans have a minimum end bearing length of 3½".
4. Minimum interior bearing length is 3½".
5. **Total load deflection is limited to L/180.**
6. **Live load deflection is limited to L/240.**
7. Check the local building code for other deflection limits that may apply.
8. Spans shown have not been evaluated for snow drift.
9. Lateral support must be provided for the compression edge and also at the bearings to prevent lateral displacement or rotation.
10. 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.
14. 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

15. 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

16. WARNING: Use of Span Tables for Commercial Projects (NBCC2010: 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 (2010). Table 4.1.5.9 in NBCC (2010) 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 = 40 psf	AJS® 140	9½"	19'-10"	17'-2"	15'-8"	13'-11"	18'-1"	16'-4"	15'-1"	13'-6"
		11⅞"	22'-8"	19'-7"	17'-10"	15'-11"	21'-8"	18'-11"	17'-3"	15'-5"
	AJS® 20	9½"	21'-9"	19'-8"	18'-6"	16'-6"	19'-7"	17'-9"	16'-8"	15'-5"
		11⅞"	26'-0"	23'-1"	21'-1"	18'-7"	23'-5"	21'-2"	19'-11"	17'-5"
		14"	29'-4"	25'-4"	23'-1"	18'-11"	26'-7"	24'-1"	22'-1"	17'-8"
		16"	31'-7"	27'-4"	24'-0"	19'-2"	29'-6"	26'-4"	22'-5"	17'-11"
	AJS® 25	9½"	24'-3"	21'-11"	20'-7"	17'-10"	21'-10"	19'-9"	18'-6"	16'-8"
		11⅞"	28'-11"	26'-2"	23'-3"	18'-7"	26'-0"	23'-7"	21'-9"	17'-5"
		14"	32'-10"	28'-5"	23'-8"	18'-11"	29'-7"	26'-7"	22'-1"	17'-8"
		16"	36'-5"	28'-9"	24'-0"	19'-2"	32'-9"	26'-11"	22'-5"	17'-11"
		18"	40'-0"	36'-3"	33'-4"	29'-9"	36'-1"	32'-8"	30'-8"	28'-5"
		20"	43'-4"	38'-8"	35'-3"	31'-6"	39'-1"	35'-5"	33'-3"	30'-5"
		20"	46'-7"	40'-6"	36'-11"	33'-0"	42'-0"	38'-0"	35'-9"	31'-11"
		24"	48'-9"	42'-3"	38'-6"	34'-5"	44'-10"	40'-8"	37'-3"	33'-3"
Specified Dead Load = 15 psf Specified Snow Load = 50 psf	AJS® 140	9½"	18'-2"	15'-9"	14'-4"	12'-10"	17'-2"	15'-3"	13'-11"	12'-5"
		11⅞"	20'-9"	18'-0"	16'-5"	14'-7"	20'-2"	17'-6"	15'-11"	14'-2"
	AJS® 20	9½"	20'-7"	18'-7"	16'-11"	15'-0"	18'-7"	16'-10"	15'-9"	14'-2"
		11⅞"	24'-7"	21'-2"	19'-4"	15'-8"	22'-2"	20'-1"	18'-6"	14'-10"
		14"	26'-11"	23'-3"	19'-11"	15'-11"	25'-3"	22'-8"	18'-10"	15'-1"
		16"	29'-0"	24'-3"	20'-3"	16'-2"	28'-0"	22'-11"	19'-1"	15'-3"
	AJS® 25	9½"	22'-11"	20'-8"	18'-10"	15'-0"	20'-8"	18'-8"	17'-6"	14'-2"
		11⅞"	27'-4"	23'-6"	19'-7"	15'-8"	24'-8"	22'-3"	18'-6"	14'-10"
		14"	31'-0"	23'-11"	19'-11"	15'-11"	28'-1"	22'-8"	18'-10"	15'-1"
		16"	32'-5"	24'-3"	20'-3"	16'-2"	30'-7"	22'-11"	19'-1"	15'-3"
		18"	37'-10"	33'-6"	30'-7"	27'-4"	34'-2"	31'-0"	29'-1"	26'-7"
		20"	41'-0"	35'-5"	32'-4"	28'-11"	37'-1"	33'-7"	31'-6"	28'-1"
		22"	42'-11"	37'-2"	33'-11"	30'-3"	39'-10"	36'-1"	32'-11"	29'-5"
		24"	44'-9"	38'-9"	35'-4"	31'-7"	42'-7"	37'-8"	34'-4"	30'-8"

NOTES:

1. Spans shown are in accordance with NBCC 2010.
2. Maximum spans listed are the clear horizontal spans between supports (simple/ multiple spans, or one span + 2ft overhang).
3. Minimum end bearing length is 1½" for 9½" to 16" depths, and 1¾" for 18" to 24" depths.
4. Minimum interior bearing length is 3½".
5. **Total load deflection is limited to L/180.**
6. **Live load deflection is limited to L/240.**
7. Check the local building code for other deflection limits that may apply.
8. Spans shown have not been evaluated for snow drift.
9. Lateral support must be provided for the compression edge and also at the bearings to prevent lateral displacement or rotation.
10. 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.
14. 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

15. 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

16. WARNING: Use of Span Tables for Commercial Projects (NBCC2010: 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 (2010). Table 4.1.5.9 in NBCC (2010) 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	AJS® 140		AJS® 20				AJS® 25							
	Joist Depth (in)	9½	11⅞	9½	11⅞	14	16	9½	11⅞	14	16	18	20	22	24
6	Unfactored Live Load for L / 360 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	488	501	488	501	505	510	488	501	505	510	993	1075	1100	1124
8	Unfactored Live Load for L / 360 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	366	376	366	376	378	382	366	376	378	382	745	806	825	843
10	Unfactored Live Load for L / 360 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	292	301	292	301	303	306	292	301	303	306	596	645	660	674
12	Unfactored Live Load for L / 360 [plf]	207	-	-	-	-	-	-	-	-	-	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	244	250	244	250	252	255	244	250	252	255	496	537	550	562
14	Unfactored Live Load for L / 360 [plf]	134	-	167	-	-	-	-	-	-	-	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	179	-	-	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	209	215	209	215	216	218	209	215	216	218	425	460	471	482
16	Unfactored Live Load for L / 360 [plf]	92	153	115	-	-	-	155	-	-	-	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	122	-	153	-	-	-	-	-	-	-	-	-	-	-
	Factored Total Load [plf]	183	188	183	188	189	191	183	188	189	191	372	403	412	421
18	Unfactored Live Load for L / 360 [plf]	65	109	82	136	-	-	111	-	-	-	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	87	146	109	-	-	-	148	-	-	-	-	-	-	-
	Factored Total Load [plf]	162	167	162	167	168	170	162	167	168	170	331	358	366	374
20	Unfactored Live Load for L / 360 [plf]	48	81	60	101	146	-	82	136	-	-	-	-	-	-
	Unfactored Total Load for L / 240 [plf]	64	108	81	135	-	-	110	-	-	-	-	-	-	-
	Factored Total Load [plf]	146	150	146	150	151	153	146	150	151	153	298	322	330	337
22	Unfactored Live Load for L / 360 [plf]	36	61	46	77	111	-	62	104	-	-	264	-	-	-
	Unfactored Total Load for L / 240 [plf]	48	82	61	102	-	-	83	-	-	-	-	-	-	-
	Factored Total Load [plf]	133	136	133	136	137	139	133	136	137	139	270	293	300	306
24	Unfactored Live Load for L / 360 [plf]	28	47	35	60	87	117	49	81	117	-	207	259	-	-
	Unfactored Total Load for L / 240 [plf]	37	63	47	80	116	-	65	108	-	-	-	-	-	-
	Factored Total Load [plf]	122	125	122	125	126	127	122	125	126	127	248	268	275	281
26	Unfactored Live Load for L / 360 [plf]		37	28	47	69	93	38	64	93	-	165	207	-	-
	Unfactored Total Load for L / 240 [plf]		50	37	63	92	-	51	86	-	-	220	-	-	-
	Factored Total Load [plf]		115	112	115	116	117	112	115	116	117	229	248	254	259
28	Unfactored Live Load for L / 360 [plf]		30		38	55	75	31	52	75	101	133	168	206	-
	Unfactored Total Load for L / 240 [plf]		40		51	74	100	41	69	100	-	178	224	-	-
	Factored Total Load [plf]		107		107	108	109	104	107	108	109	212	230	235	241
30	Unfactored Live Load for L / 360 [plf]				31	45	61	25	42	61	83	109	138	169	205
	Unfactored Total Load for L / 240 [plf]				41	60	82	34	57	82	-	146	184	-	-
	Factored Total Load [plf]				100	101	102	97	100	101	102	198	215	220	224

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. 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 Live 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)

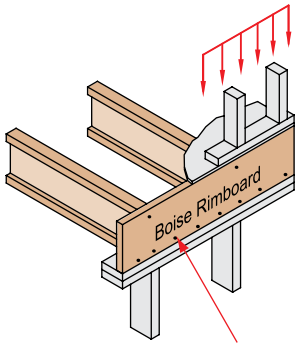
Boise Cascade Rimboard Product Profiles

1" & 1⅛" BC RIM BOARD® OSB

1¼" VERSA-STRAND® 0.8E

F07 Perpendicular

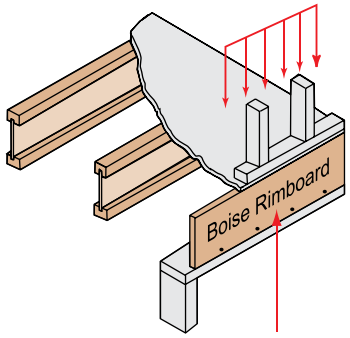
See chart for vertical load capacity.



When used for shear transfer, nail to bearing plate with the same nailing capacity as required by the horizontal diaphragm schedule.

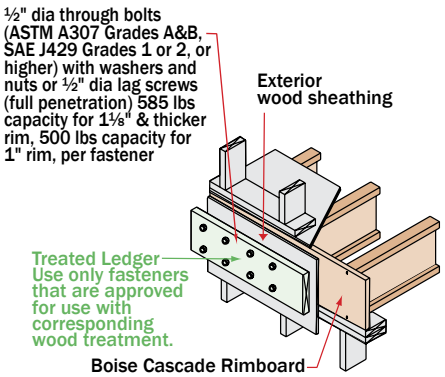
F07A Parallel

See chart for vertical load capacity.



When used for shear transfer, nail to bearing plate with the same nailing capacity as required by the horizontal diaphragm schedule.

F56



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

BOISE CASCADE RIMBOARD PROPERTIES

Rim Board Type	Thickness [in]	φH(1)	φV [lb/ft](2)		φZ(3)	φP(4)
		[lb/ft]	d ≤ 16"	d > 16"	[lb]	[lb]
Boise Cascade Rimboard	1"	235	5500	2750	495	5840
	1⅛"	235	7340	5000	585	5840
Boise Cascade Rimboard Plus	1⅛"	260	8090	5340	585	5840
Boise Cascade VERSA-STRAND® 0.8E	1¼"	310	9460	5820	830	8990

NOTES:

1. φH = Factored horizontal (shear) load transfer capacity is based on the minimum nailing attachment schedule specified in NBCC 2005 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 O86-09.
6. See CCMC Evaluation Report No. 13143-R for further product information on Boise Cascade VERSA-STRAND 0.8E.

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

Joist Height	Top Flange							Snap -In							Face Mount						
	Model	B Dim	Fastener Type		Uplift (115)	DownLoad		Model	B Dim	Fastener Type		Uplift (115)	DownLoad		Model	B Dim	Fastener Type		Uplift (115)	DownLoad	
			Header	Joist		DF	SPF			Header	Joist		DF	SPF			Header	Joist		DF	SPF
AJS 140, 20																					
9½	LT259	2	6-10d	1-#8x1¼ws	105	2625	1725	IUS2.56/9.5	2	8-10d	.	145	2385	1690	LF259	2	10-10d	1-#8x1¼ws	105	2525	2155
11⅞	LT251188	2	6-10d	1-#8x1¼ws	105	2625	1725	IUS2.56/11.88	2	10-10d	.	145	2565	1820	LF2511	2	12-10d	1-#8x1¼ws	105	2880	2270
14	LT2514	2	6-10d	1-#8x1¼ws	105	2625	1725	IUS2.56/14	2	12-10d	.	145	2565	1820	LF2514	2	14-10d	1-#8x1¼ws	105	3235	2385
16	LT2516	2	6-10d	1-#8x1¼ws	105	2625	1725	IUS2.56/16	2	14-10d	.	145	2725	1935	MIU2.56/16	2½	24-16d	2-10dx1½	450	4930	3485
AJS 25																					
9½	LT359	2	6-10d	2-#8x1¼ws	105	2625	1725	IUS3.56/9.5	2	10-10d	.	145	2370	1685	LF359	2	10-10d	2-#8x1¼ws	105	2525	2155
11⅞	LT351188	2	6-10d	2-#8x1¼ws	105	2625	1725	IUS3.56/11.88	2	12-10d	.	145	2370	1685	LF3511	2	12-10d	2-#8x1¼ws	105	2880	2270
14	LT3514	2	6-10d	2-#8x1¼ws	105	2625	1725	IUS3.56/14	2	12-10d	.	145	2370	1685	LF3514	2	14-10d	2-#8x1¼ws	105	3235	2385
16	LT3516	2	6-10d	2-#8x1¼ws	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	6-16d	2-10dx1½	320	3490	2420	No IUS Hanger for these sizes							MIU3.56/18	2½	26-16d	2-10dx1½	450	4930	3485

Joist Height	45° Skew							Adjustable Height							Field Slope & Skew						
	Model	B Dim	Fastener Type		Uplift (115)	DownLoad		Model	B Dim	Fastener Type		Uplift (115)	DownLoad		Model	B Dim	Fastener Type		Uplift (115)	DownLoad	
			Header	Joist		DF	SPF			Header	Joist		DF	SPF			Header	Joist		DF	SPF
AJS 140, 20																					
9½	SUR/L2.56/9	3⅜16	14-16d	2-10dx1½	385	3950	2805	THAI322	2¼	6-10d	2-10dx1½	-	3000	2385	LSSUH310	3½	14-16d	12-10dx1½	1625	2620	1860
11⅞	SUR/L2.56/11	3⅜16	16-16d	2-10dx1½	385	3950	2805	THAI322	2¼	6-10d	2-10dx1½	-	3000	2385	LSSUH310	3½	14-16d	12-10dx1½	1625	2620	1860
14	SUR/L2.56/14	3⅜16	18-16d	2-10dx1½	385	3950	2805	THAI322	2¼	6-10d	2-10dx1½	-	3000	2385	LSSUH310	3½	14-16d	12-10dx1½	1625	2620	1860
16	SUR/L2.56/14	3⅜16	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.						
AJS 25																					
9½	SUR/L410	2⅝	14-16d	6-16d	1695	4065	2875	THAI422	2¼	6-10d	2-10dx1½	-	3000	2385	LSSU410	3½	14-16d	12-10dx1½	1625	3055	2170
11⅞	SUR/L410	2⅝	14-16d	6-16d	1695	4065	2875	THAI422	2¼	6-10d	2-10dx1½	-	3000	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	-	3000	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														

1. Shaded hangers require web stiffeners at joist ends. Web stiffeners may be required for non-shaded hangers by others.
2. The B Dim is the depth of the hanger seat.
4. WS = wood screw

For more information, call Simpson Strong-Tie at 800-999-5099 or visit their website at www.strongtie.com

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

Joist Height	Top Flange							Face Mount							45° Skew						
	Model	B Dim	Fastener Type		Uplift (115)	DownLoad		Model	B Dim	Fastener Type		Uplift (115)	DownLoad		Model	B Dim	Fastener Type		Uplift (115)	DownLoad	
			Header	Joist		DF	SPF			Header	Joist		DF	SPF			Header	Joist		DF	SPF
Double AJS 140, 20																					
9½	MIT39.5-2	2½	8-16d	2-10dx1½	450	3490	2420	MIU5.12/9	2½	16-16d	2-10dx1½	450	4550	3230	HSUR/5.12/9	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/5.12/11	2 13⁄16	16-16d	2-10dx1½	275	4195	2965
14	MIT314-2	2½	8-16d	2-10dx1½	450	3490	2420	MIU5.12/14	2½	22-16d	2-10dx1½	450	4930	3485	HSUR/5.12/14	2 13⁄16	20-16d	2-10dx1½	275	4195	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/5.12/16	2 13⁄16	24-16d	2-10dx1½	275	4195	2965
Double AJS 25																					
9½	B7.12/9.5	2½	14-16d	6-16d	1650	5940	3910	HU410-2	2½	18-16d	8-16d	2455	5780	4690	HU410-2x[4]	2½	18-16d	8-16d	1840	3755	3045
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[4]	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[4]	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[4]	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	HU414-2x[4]	2½	26-16d	12-16d	2760	4565	3755

Joist Height	Adjustable Height							Field Slope & Skew						
	Model	B Dim	Fastener Type		Uplift (115)	DownLoad		Model	B Dim	Fastener Type		Uplift (115)	DownLoad	
			Header	Joist		DF	SPF			Header	Joist		DF	SPF
Double AJS 140, 20														
9½	THAI-2[2]	2½	6-10d	2-10dx1½	-	2800	2800	LSU5.12[3]	3½	24-16d	16-10dx1½	1285	2600	1845
11⅞	THAI-2[2]	2½	6-10d	2-10dx1½	-	2800	2800	LSU5.12[3]	3½	24-16d	16-10dx1½	1285	2600	1845
14	THAI-2[2]	2½	6-10d	2-10dx1½	-	2800	2800	LSU5.12[3]	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 AJS 25														
9½	See Canadian Wood Construction Connectors catalogue for hanger selection.							See Canadian Wood Construction Connectors catalogue for hanger selection.						
11⅞														
14														
16														
18														

1. Shaded hangers require web stiffeners at joist ends. Web stiffeners may be required for non-shaded hangers by others.
2. THAI-2 must be special ordered, specify hanger seat width between 3⅛" and 5 5⁄16".
3. LSU5.12 skew options must be factory ordered.
4. Skewed option must be special ordered. Specify skew angle and direction (i.e. HU410-2X, SKR 45°).
5. The B Dim is the depth of the hanger seat.
6. Double AJS® 25 (Joist Width = 7") Adjustable Height and Field Slope & Skew Hangers - *See Wood Construction Connectors Catalogue for hanger selection.*

General Notes

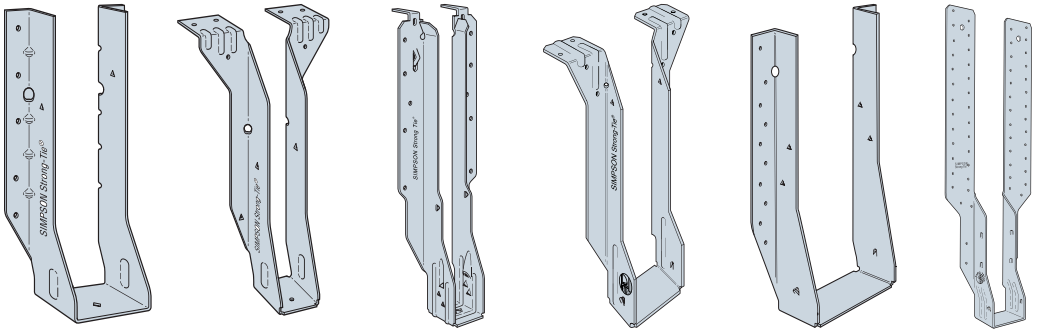
1. See current Canadian Wood Construction Connectors catalogue for Important Information and General Notes section and for hanger models, joist sizes, and header situations not shown. See pages 10-11 of the Simpson Strong-Tie Publication CSG-BCCANAJS12 " AJS I-JOISTS Connector Selection Guide, Limit 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

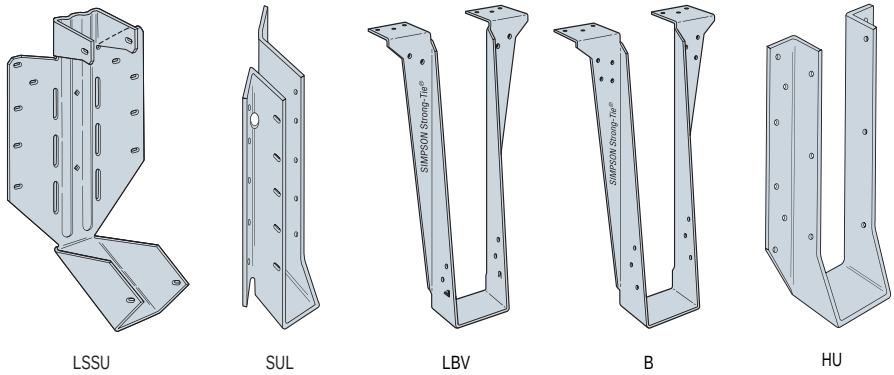
HOW TO PICK A HANGER:

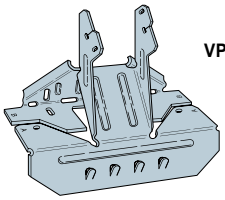
1. Find your joist size in this guide. (Single I-Joist, Double I-Joist, Beam, etc.)
2. Locate your connector type in the table.
   - Face mount, top flange, skewed, sloped, etc.
3. Select a hanger from the table.
4. Confirm that your factored joist reaction is less than the factored resistance of hanger.
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







VPA - Variable Pitch Connectors

Joist Width	Model No.	Fasteners		Factored Resistances							
		Top Plate	Rafter	Uplift [160]		Download [100]		Lateral Load [160]			
								DF		SPF	
				DF	SPF	DF	SPF	F_1	F_2	F_1	F_2
2½	VPA3	9-10d	2-10dx1½	405	370	2050	1855	695	405	615	370
3½	VPA4	11-10d	2-10dx1½	405	370	2050	1855	695	405	615	370

VPA Connector - 18 gauge

- This variable pitch connector allows a sloped beam to sit on a top plate without having to notch, birdmouth, bevel, or toe nail. It also provides uplift capacity. Adjustable from 3:12 to 12:12 pitch.
- VPAs are not appropriate for applications that require more than 2" of bearing, such as intermediate supports.

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

USP STRUCTURAL CONNECTORS® A GIBRALTAR INDUSTRIES COMPANY

Top Mount Hangers[5]

Joist Height	USP Stock No.[1,5]	Fastener Schedule[4] Header	Fastener Schedule[4] Joist	DF-L/SP Down[2] 100%	DF-L/SP Uplift[3] 115%	S-P-F Down[2] 100%	S-P-F Uplift[3] 115%
AJS™ 140 or AJS™ 20				**Joist Width = 2-1/2″**			
9-1/2	TFL2595	(6) 10d	(2) 10d x 1-1/2	2495	745	1771	530
11-7/8	TFL25118	(6) 10d	(2) 10d x 1-1/2	2495	745	1771	530
14	TFL2514	(6) 10d	(2) 10d x 1-1/2	2495	745	1771	530
16	TFL2516	(6) 10d	(2) 10d x 1-1/2	2495	745	1771	530
AJS™ 25				**Joist Width = 3-1/2″**			
9-1/2	THO35950	(10) 10d	(2) 10d x 1-1/2	2975	500	2115	355
11-7/8	THO35118	(10) 10d	(2) 10d x 1-1/2	2975	500	2115	355
14	THO35140	(12) 10d	(2) 10d x 1-1/2	4450	500	3160	355
16	THO35160	(12) 10d	(2) 10d x 1-1/2	4450	500	3160	355
18	TFI418	(6) 16d	(2) 10d x 1-1/2	4190	545	2975	385

Face Mount Hangers

USP Stock No.[1]	Fastener Schedule[4] Header	Fastener Schedule[4] Joist	DF-L/SP Down[2] 100%	DF-L/SP Uplift[3] 115%	S-P-F Down[2] 100%	S-P-F Uplift[3] 115%
THF25925	(12) 10d	(2) 10d x 1-1/2	3310	335	2350	238
THF25112	(14) 10d	(2) 10d x 1-1/2	3310	720	2350	511
THF25140	(18) 10d	(2) 10d x 1-1/2	4405	720	3128	511
THF25160	(22) 10d	(2) 10d x 1-1/2	4405	720	3128	511
THF35925	(12) 10d	(2) 10d x 1-1/2	5240	465	3720	330
THF35112	(16) 10d	(2) 10d x 1-1/2	5240	465	3720	330
THF35140	(20) 10d	(2) 10d x 1-1/2	6680	465	4743	330
THF35157	(22) 10d	(2) 10d x 1-1/2	6680	465	4743	330
THF35157	(22) 10d	(2) 10d x 1-1/2	6680	465	4743	330

Adjustable Height Hangers

Joist Height	USP Stock No.[1,6]	Fastener Schedule[4] Header	Fastener Schedule[4] Joist	DF-L/SP Down[2] 100%	DF-L/SP Uplift[3] 115%	S-P-F Down[2] 100%	S-P-F Uplift[3] 115%
AJS™ 140 or AJS™ 20				**Joist Width = 2-1/2″**			
9-1/2	-- --	-- --	-- --	-- --	-- --	-- --	-- --
11-7/8	MSH318	(6) 10d	(4) 10d x 1-1/2	1185	-- --	840	-- --
14	MSH318	(6) 10d	(4) 10d x 1-1/2	1185	-- --	840	-- --
16	MSH318	(6) 10d	(4) 10d x 1-1/2	1185	-- --	840	-- --
AJS™ 25				**Joist Width = 3-1/2″**			
9-1/2	MSH422	(6) 10d	(4) 10d	1105	-- --	785	-- --
11-7/8	MSH422	(6) 10d	(4) 10d	1105	-- --	785	-- --
14	-- --	-- --	-- --	-- --	-- --	-- --	-- --
16	-- --	-- --	-- --	-- --	-- --	-- --	-- --
18	-- --	-- --	-- --	-- --	-- --	-- --	-- --

Slope and Skew Hangers

USP Stock No.[1]	Fastener Schedule[4] Header	Fastener Schedule[4] Joist	DF-L/SP Down[2] 100%	DF-L/SP Uplift[3] 115%	S-P-F Down[2] 100%	S-P-F Uplift[3] 115%
LSSH25	(14) 16d	(12) 10d x 1-1/2	4260	1955	3025	1390
LSSH25	(14) 16d	(12) 10d x 1-1/2	4260	1955	3025	1390
LSSH25	(14) 16d	(12) 10d x 1-1/2	4260	1955	3025	1390
LSSH25[8]	(14) 16d	(12) 10d x 1-1/2	4260	1955	3025	1390
LSSH35	(14) 16d	(12) 10d x 1-1/2	5230	2595	3715	1845
LSSH35	(14) 16d	(12) 10d x 1-1/2	5230	2595	3715	1845
LSSH35	(14) 16d	(12) 10d x 1-1/2	5230	2595	3715	1845
LSSH35[8]	(14) 16d	(12) 10d x 1-1/2	5230	2595	3715	1845
LSSH35[8]	(14) 16d	(12) 10d x 1-1/2	5230	2595	3715	1845

Skewed 45° Hangers

Joist Height	USP Stock No.[1]	Fastener Schedule[4] Plate	Fastener Schedule[4] Rafter	DF-L/SP Down[2] 100%	DF-L/SP Uplift[3] 115%	S-P-F Down[2] 100%	S-P-F Uplift[3] 115%
AJS™ 140 or AJS™ 20			**Joist Width = 2-1/2″**				
9-1/2	SKH2520L/R	(14) 10d	(10) 10d x 1-1/2	3265	2910	2320	2065
11-7/8	SKH2520L/R	(14) 10d	(10) 10d x 1-1/2	3265	2910	2320	2065
14	SKH2524L/R	(16) 10d	(10) 10d x 1-1/2	3265	2910	2320	2065
16	SKH2524L/R	(16) 10d	(10) 10d x 1-1/2	3265	2910	2320	2065
AJS™ 25			**Joist Width = 3-1/2″**				
9-1/2	SKH410L/R[7]	(16) 16d	(10) 16d	3690	3560	2620	2530
11-7/8	SKH410L/R[7]	(16) 16d	(10) 16d	3690	3560	2620	2530
14	SKH414L/R[7]	(22) 16d	(10) 16d	7405	3560	5260	2530
16	SKH414L/R[7]	(22) 16d	(10) 16d	7405	3560	5260	2530
18	SKH414L/R[7]	(22) 16d	(10) 16d	7405	3560	5260	2530

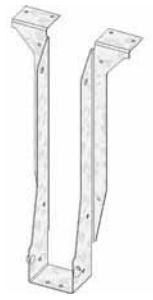
Variable Pitch Connectors

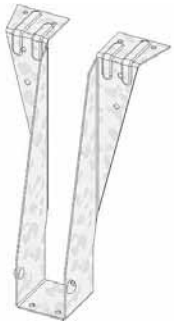
Joist Width	USP Stock No.[1]	Fastener Schedule[4] Header	Fastener Schedule[4] Joist	DF-L/SP Down[2] 100%	DF-L/SP Uplift[3] 115%	S-P-F Down[2] 100%	S-P-F Uplift[3] 115%
AJS™ 140 or AJS™ 20							
2-1/2	TMP25	(6) 10d	(4) 10d x 1-1/2	2630	275	2630	275
	TMPH25	(10) 10d	(8) 10d x 1-1/2	3485	250	2995	215
AJS™ 25							
3-1/2	TMP4	(6) 10d	(4) 10d x 1-1/2	2835	275	2835	275
	TMPH4	(10) 10d	(8) 10d x 1-1/2	3485	250	2995	215

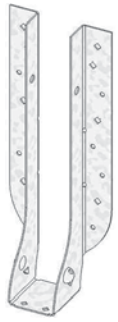
1) Shaded hangers require web stiffeners at joist ends. Web stiffeners may be required for non-shaded hangers by I-joist manufacturers.
2) Loads listed are based on 2001 NDS® and hanger attachment to a DF-L, SP, or S-P-F species solid sawn or LVL header. Loads are governed by test results; no further increase shall be permitted.
3) Uplift loads have been increased 15% for wind and seismic loading; no further increase shall be permitted.
4) 10d x 1-1/2″ nails are 9 gauge (0.148″™ diameter) by 1-1/2″ long.
Minimum nail penetration shall be 1-1/2″ for 10d nails.

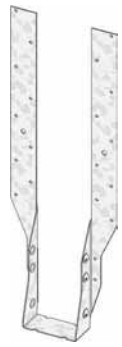
1) Shaded hangers require web stiffeners at joist ends. Web stiffeners may be required for non-shaded hangers by I-joist manufacturers.
2) Loads listed are based on 2001 NDS® and hanger attachment to a DF-L, SP, or S-P-F species solid sawn or LVL header. Some loads may be increased for duration of load adjustments. Refer to USP Full Line Catalog for details.
3) Uplift loads have been increased 15% for wind and seismic loading; no further increase shall be permitted.
4) 10d x 1-1/2″ nails are 9 gauge (0.148″ diameter) by 1-1/2″ long.
Minimum nail penetration shall be 1-1/2″ for 10d nails.
16d sinkers (0.148″ diameter) by 3-1/4″ long may be substituted for 10d common nails with no load reduction.
5) Top Mount Hangers require minimum 3″ header width for THO series hanger 3-1/2″ minimum header thickness for all other stock numbers.
6) For additional sizes, stock numbers, and modifications not shown, refer to USP's Full Line Catalog.
7) Miter cut required on end of joist to achieve design loads.
8) LSTA24 strap required along top chord for lateral restraint.

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

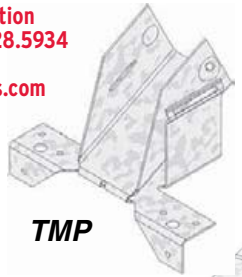

TFL

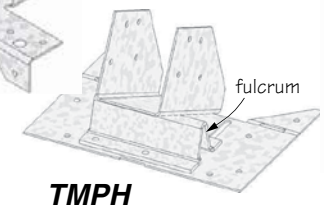

THO


***THF** single*

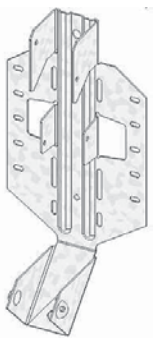

MSH


SKH_L
left shown


TMP



TMPH


LSSH

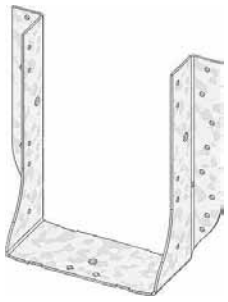
DOUBLE I-JOISTS – Canadian/Factored Resistance (lbs)

Joist Height	Top Mount Hangers[5] USP Stock No.[1,5]	Fastener Schedule[4] Header	Fastener Schedule[4] Joist	DF-L/SP Down[2] 100%	DF-L/SP Uplift[3] 115%	S-P-F Down[2] 100%	S-P-F Uplift[3] 115%	Face Mount Hangers USP Stock No.[1]	Fastener Schedule[4] Header	Fastener Schedule[4] Joist	DF-L/SP Down[2] 100%	DF-L/SP Uplift[3] 115%	S-P-F Down[2] 100%	S-P-F Uplift[3] 115%
AJS™ 140 or AJS™ 20							**Joist Width = 5″**							
9-1/2	THO25950-2	(10) 16d	(6) 10d	6005	2210	4265	1570	THF25925-2	(12) 10d	(6) 10d	5240	3325	3720	2361
11-7/8	THO25118-2	(10) 16d	(6) 10d	6005	2210	4265	1570	THF25112-2	(16) 10d	(6) 10d	5240	3325	3720	2361
14	THO25140-2	(12) 16d	(6) 10d	6645	2210	4715	1570	THF25140-2	(20) 10d	(6) 10d	6680	3325	4743	2361
16	THO25160-2	(12) 16d	(6) 10d	6645	2210	4715	1570	THF25160-2	(24) 10d	(6) 10d	6680	3325	4743	2361
18	THO25180-2	(14) 16d	(6) 10d	9500	2210	6745	1570	THF25160-2	(24) 10d	(6) 10d	6680	3325	4743	2361
AJS™ 25							**Joist Width = 7″**							
9-1/2	BPH7195	(10) 16d	(6) 10d	5055	1245	4725	885	HD7100	(12) 16d	(6) 10d	7215	4435	5123	3149
11-7/8	BPH71118	(10) 16d	(6) 10d	5055	1245	4725	885	HD7120	(16) 16d	(6) 10d	7215	4435	5123	3149
14	BPH7114	(10) 16d	(6) 10d	5055	1245	4725	885	HD7120	(16) 16d	(6) 10d	7215	4435	5123	3149
16	BPH7116	(10) 16d	(6) 10d	5055	1245	4725	885	HD7160	(24) 16d	(8) 10d	7215	4435	5123	3149
18	BPH7118	(10) 16d	(6) 10d	5055	1245	4725	885	HD7160	(24) 16d	(8) 10d	7215	4435	5123	3149

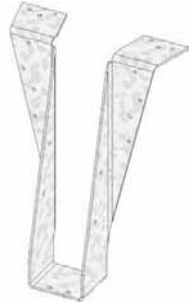
Joist Height	Adjustable Height Hangers USP Stock No.[1,8]	Fastener Schedule[4] Header	Fastener Schedule[4] Joist	DF-L/SP Down[2] 100%	DF-L/SP Uplift[3] 115%	S-P-F Down[2] 100%	S-P-F Uplift[3] 115%	Skewed 45° Hangers USP Stock No.[1]	Fastener Schedule[4] Plate	Fastener Schedule[4] Rafter	DF-L/SP Down[2] 100%	DF-L/SP Uplift[3] 115%	S-P-F Down[2] 100%	S-P-F Uplift[3] 115%
AJS™ 140 or AJS™ 20							**Joist Width = 5″**							
9-1/2	MSH2622-2	(6) 10d	(4) 10d	1490	-- --	1055	-- --	SKH2520L/R-2[7]	(14) 10d	(10) 10d	5430	3565	3855	2530
11-7/8	MSH2622-2	(6) 10d	(4) 10d	1490	-- --	1055	-- --	SKH2524L/R-2[7]	(16) 10d	(10) 10d	5055	3560	3590	2530
14	MSH2622-2	(6) 10d	(4) 10d	1490	-- --	1055	-- --	SKH2524L/R-2[7]	(16) 10d	(10) 10d	5055	3560	3590	2530
16	MSH2622-2	(6) 10d	(4) 10d	1490	-- --	1055	-- --	SKH2524L/R-2[7]	(16) 10d	(10) 10d	5055	3560	3590	2530
AJS™ 25							**Joist Width = 7″**							
9-1/2	-- --	-- --	-- --	-- --	-- --	-- --	-- --	HD7100-SK45L/R[6,7]	(12) 16d	(6) 10d	7215	3325	5123	2360
11-7/8	MSH422-2	(8) 16d	(6) 16d	2295	-- --	1630	-- --	HD7120-SK45L/R[6,7]	(16) 16d	(6) 10d	7215	3325	5123	2360
14	MSH422-2	(8) 16d	(6) 16d	2295	-- --	1630	-- --	HD7120-SK45L/R[6,7]	(16) 16d	(6) 10d	7215	3325	5123	2360
16	MSH422-2	(8) 16d	(6) 16d	2295	-- --	1630	-- --	HD7160-SK45L/R[6,7]	(24) 16d	(8) 10d	7215	3325	5123	2360
18	MSH422-2	(8) 16d	(6) 16d	2295	-- --	1630	-- --	HD7160-SK45L/R[6,7]	(24) 16d	(8) 10d	7215	3325	5123	2360

1) Shaded hangers require web stiffeners at joist ends. Web stiffeners may be required for non-shaded hangers by I-joist manufacturers.
2) Loads listed are based on 2001 NDS® and hanger attachment to a DF-L, SP, or S-P-F species solid sawn or LVL header.
Some loads may be increased for duration of load adjustments. Refer to USP Full Line Catalog for details.
3) Uplift loads have been increased 15% for wind and seismic loading; no further increase shall be permitted.
4) 10d x 1-1/2″ nails are 9 gauge (0.148"" diameter) by 1-1/2″ long.
Minimum nail penetration shall be 1-1/2″ for 10d nails and 1-5/8″ for 16d nails.
16d sinkers (0.148″ diameter) by 3-1/4″ long may be substituted for 10d common nails with no load reduction.
5) Top Mount Hangers require minimum 3" header width for THO series hangers; 3-1/2" minimum header thickness for all other stock numbers.
6) Hangers are special order. Consult USP for pricing and lead times.
7) Miter cut required on end of joist to achieve design loads.
8) For additional sizes, stock numbers, and modifications not shown, refer to USP's Full Line Catalog.

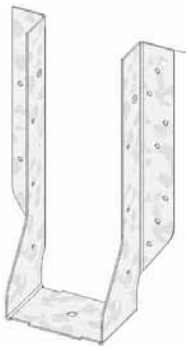
For further information please call 1.800.328.5934 or go to www.USPconnectors.com



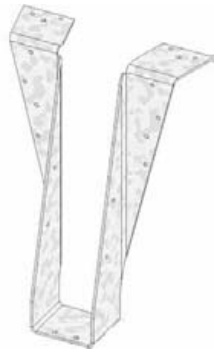
HD



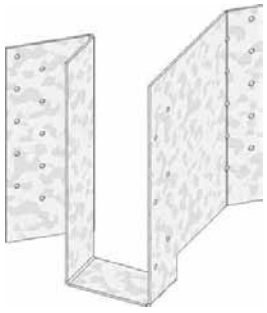
BPH



THF Double



THO Double



SKH_L Double
left shown

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 PSF(2)
Straw: baled, dry (2)	8 PSF(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.

ALLJoist®

Great products are only the beginning.®

Boise Cascade Engineered Wood Products are manufactured by Boise Cascade
Distributed across Canada by CanWelBroadLeaf Building Materials Division
Sold by your better local building materials retailer

CanWelBroadLeaf™
Products You Want. People You Trust.

www.canwelbroadleaf.com

Langley
5350 – 275th Street
Langley, BC V4W 4A3
Phone: 604 607-6885
1 800 665-3448

Saskatoon
11 Capital Circle
Corman Park, SK S7R 0H4
Phone: 306 933-2500
1 877 954-4448

Brampton
15 West Drive
Brampton, ON L6T 3T5
Phone: 905 792-9903
1 800 792-9903

Dartmouth
70 Simmonds Drive
Dartmouth, NS B3B 1P6
Phone: 902 468-9865
1 800 565-7913

Kelowna
205 Campion Street
Kelowna , BC V1X 7S9
Phone: 250 765-2036
1 877 488-8899

Regina
1055 Fleury Street
Regina, SK S4N 4W9
Phone: 306 569-9071
1 800 567-6226

Ottawa
700 Industriel Avenue, Suite 401
Ottawa, ON K1G 0Y9
Phone: 613 247-8682
1 800 267-1305

Deer Lake
10 Spillway Road
Dear lake, NL A8A 3E7
Phone: 709 635-4345
1 800 563-7517

Calgary
4510 – 76th Ave S.E.
Calgary, AB T2C 2V2
Phone: 403 279-7108
1 877 656-6166

Winnipeg
350 De Baets Street
Winnipeg, MB R2J 0H4
Phone: 204 633-4890
1 800 665-1923

Blainville
651, boulevard Industriel
Blainville, QC J7C 3V3
Phone: 450 435-6911
1 800 361-5345

St-John's
42 Sagona Avenue
Donovans Industriel Park
Mount-Pearl, NL A1N 4R3
Phone: 709 745-6760
1 888 745-6760

Edmonton
11553 – 154th Street
Edmonton, AB T5M 3N7
Phone: 780 451-3850
1 800 268-7569

Sudbury
725 Martindale Road
Sudbury, ON P3E 4P8
Phone: 705 674-6469
1 800 461-1105

Québec
170, Liverpool
St-Augustin-de-Desmaures, QC G3A 2M5
Phone: 418 878-6081
1 877 877-6081

Your local retailer

The information provided herein was up-to-date at the time of printing. This document may be superseded by a updated version. Please confirm that this specifier guide is the most current version at www.bc.com/ewp.

CCMC Report Number 12787-R
ALLJOIST®

The information in this document pertains to use in CANADA ONLY, Limit States Design. Refer to the ALLJOIST Specifier Guide for use in the United States.

455, boulevard Fénelon, suite 102
Dorval (Québec) QC H9S 5T8
www.BC.com/ewp

Boise Cascade
Engineered Wood Products