



ALLJOIST[®]

INTRODUCING

AJS[®] 150/190



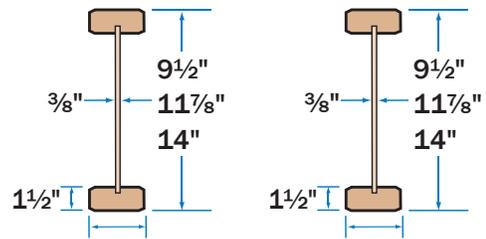
*Longer spans
exceed the
competition*

US Version

The information in this document pertains to use in the UNITED STATES ONLY, Allowable Stress Design. Refer to the ALLJOIST Specifier Guide Canada for use in Canada, Limit States Design.



AJS[®] 150 — AJS[®] 190



AJS® Joist Series	Depth [inches]	Weight [plf]	Moment [ft-lbs]	EI x 10 ⁶ [lb-in ²]	K x 10 ⁶ [lbs]	Shear [lbs]	End Reaction [lbs]				Intermediate Reaction [lbs]			
							1½" Bearing		3½" Bearing		3½" Bearing		5¼" Bearing	
							No WS ⁽¹⁾	WS ⁽²⁾	No WS ⁽¹⁾	WS ⁽²⁾	No WS ⁽¹⁾	WS ⁽²⁾	No WS ⁽¹⁾	WS ⁽²⁾
AJS® 150	9½	2.2	2820	194	5.2	1160	950	1240	1175	1480	2350	2450	2350	2450
	11⅞	2.5	3650	331	6.6	1490	955	1335	1215	1595	2390	2800	2390	2800
	14	2.7	4390	487	7.8	1790	960	1420	1250	1700	2430	3130	2430	3130
AJS® 190	9½	2.5	3895	244	5.2	1160	950	1240	1175	1480	2350	2450	2350	2450
	11⅞	2.8	5045	414	6.6	1490	955	1335	1215	1595	2390	2800	2390	2800
	14	3.0	6070	608	7.8	1790	960	1420	1250	1700	2430	3130	2430	3130

NOTES:

- (1) No web stiffeners required.
- (2) Web stiffeners required.
- (3) Not applicable, web stiffeners required.
- Moment, shear and reaction values based upon a load duration of 100% and may be adjusted for other load durations.
- Design values listed are applicable for Allowable Stress Design (ASD).

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

Δ = deflection [in]
 w = uniform load [lb/in]
 l = clear span [in]
 EI = bending stiffness [lb-in²]
 K = shear deformation coefficient [lb]

BUILDING CODE EVALUATION REPORT

- ICC ESR 1144 (IBC, IRC)

AJS® 150/190 Residential Floor Span Tables

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 flanges of the joists.

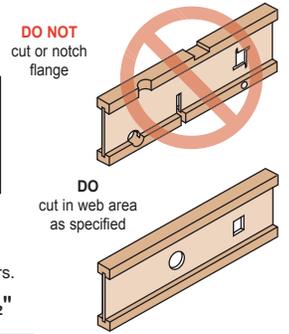
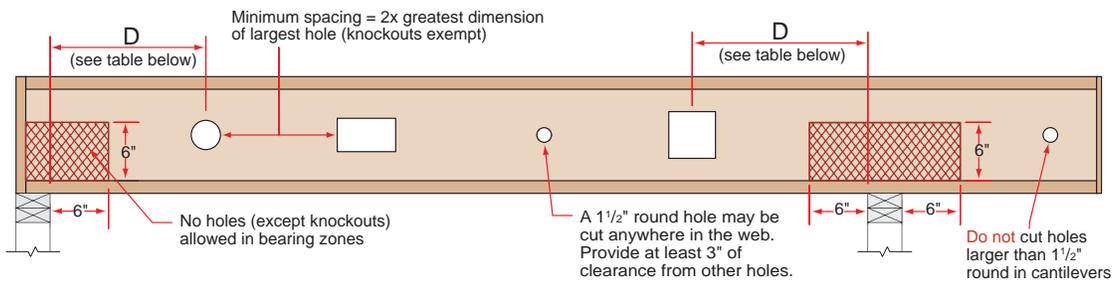
The floor span tables listed below offer three very different performance options, based on performance requirements of the homeowner.

Joist Depth	ALLJOIST® Series	★★★ THREE STAR ★★★				★★★ FOUR STAR★★★				CAUTION	★ MINIMUM STIFFNESS ALLOWED BY CODE ★		CAUTION		
		Live Load deflection limited to L/480: The common industry and design community standard for residential floor joists, 33% stiffer than L/360 code minimum. However, floor performance may still be an issue in certain applications, especially with 9½" and 11⅞" deep joists without a direct-attached ceiling.								Live Load deflection limited to L/960+: A floor that is 100% stiffer than the three star floor. A premium floor that 100% stiffer than the 3 star floor for the discriminating homeowner.				Live Load deflection limited to L/360: Floors that meet the minimum building code L/360 criteria are structurally sound to carry the specified loads; however, there is a much higher risk of floor performance issues. This table should only be used for applications where floor performance is not a concern.	
		12" O.C.	16" O.C.	19.2" O.C.	24" O.C.	12" O.C.	16" O.C.	19.2" O.C.	24" O.C.	12" O.C.	16" O.C.	19.2" O.C.	24" O.C.		
9½"	150	18'-1"	16'-7"	15'-8"	14'-7"	14'-2"	12'-11"	12'-2"	11'-3"	20'-1"	18'-3"	16'-7"	14'-10"		
	190	19'-4"	17'-8"	16'-8"	15'-6"	15'-1"	13'-9"	12'-11"	12'-0"	21'-5"	19'-7"	18'-6"	17'-3"		
11⅞"	150	21'-7"	19'-8"	18'-7"	17'-0"	16'-10"	15'-4"	14'-6"	13'-5"	23'-11"	20'-9"	18'-11"	16'-11"		
	190	23'-0"	21'-0"	19'-10"	18'-6"	18'-0"	16'-4"	15'-5"	14'-4"	25'-6"	23'-4"	22'-0"	19'-0"		
14"	150	24'-6"	22'-4"	20'-10"	18'-7"	19'-2"	17'-6"	16'-5"	15'-3"	26'-4"	22'-9"	20'-9"	18'-7"		
	190	26'-1"	23'-10"	22'-6"	19'-1"	20'-5"	18'-7"	17'-6"	16'-3"	28'-11"	26'-5"	23'-11"	19'-1"		

- Table values based on residential floor loads of 40 psf live load and 10 psf dead load (12 psf dead load for AJS® 25 joists).
- Table values assume that 23/32" min. plywood/OSB rated sheathing is glued and nailed to joists.
- Table values represent the most restrictive of simple or multiple span applications.
- Table values are the maximum allowable clear distance between supports. Analyze multiple span joists with BC Calc sizing software if the length of any span is less than half the length of an adjacent span.
- Table values assume minimum bearing lengths without web stiffeners for joist depths of 16" inches and less (18" joists require web stiffeners at all bearing locations).
- 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® sizing software.

Shaded values do not satisfy the requirements of the North Carolina State Building Code. Refer to the THREE STAR table when spans exceed 20 feet.

AJS® Joists are manufactured with 1½" round perforated knockouts in the web at approximately 12" on center

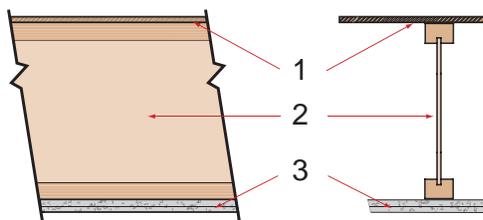


Minimum distance from support, listed in table below, is required for all holes greater than 1½"

MINIMUM DISTANCE (D) FROM ANY SUPPORT TO THE CENTERLINE OF THE HOLE																
Round Hole Diameter [in]		2	3	4	5	6	6½	7	8	8¾	9	10	11	12	13	
Rectangular Hole Side [in]		-	-	2	4	6	6	-	-	-	-	-	-	-	-	
Any 9½" Joist	Span [ft]	8	2'-7"	2'-11"	3'-4"	3'-9"	4'-0"	4'-0"								
		12	3'-11"	4'-5"	5'-0"	5'-7"	6'-0"	6'-0"								
		16	5'-2"	5'-11"	6'-9"	7'-6"	8'-0"	8'-0"								
Round Hole Diameter [in]		2	3	4	5	6	6½	7	8	8¾	9	10	11	12	13	
Rectangular Hole Side [in]		-	-	-	2	3	4	5	7	8	-	-	-	-	-	
Any 11½" Joist	Span [ft]	8	1'-8"	2'-0"	2'-4"	2'-9"	3'-1"	3'-3"	3'-5"	3'-9"	4'-0"					
		12	2'-6"	3'-0"	3'-7"	4'-1"	4'-7"	4'-11"	5'-2"	5'-8"	6'-0"					
		16	3'-4"	4'-0"	4'-9"	5'-6"	6'-2"	6'-6"	6'-11"	7'-7"	8'-0"					
		20	4'-2"	5'-1"	5'-11"	6'-10"	7'-9"	8'-2"	8'-7"	9'-6"	10'-0"					
Round Hole Diameter [in]		2	3	4	5	6	6½	7	8	8¾	9	10	11	12	13	
Rectangular Hole Side [in]		-	-	-	-	2	3	3	5	6	6	8	9	-	-	
Any 14" Joist	Span [ft]	8	1'-0"	1'-2"	1'-6"	1'-10"	2'-2"	2'-4"	2'-6"	2'-11"	3'-2"	3'-3"	3'-7"	3'-11"		
		12	1'-3"	1'-9"	2'-3"	2'-9"	3'-4"	3'-7"	3'-10"	4'-4"	4'-9"	4'-10"	5'-4"	5'-11"		
		16	1'-8"	2'-4"	3'-0"	3'-9"	4'-5"	4'-9"	5'-1"	5'-10"	6'-5"	6'-6"	7'-2"	7'-10"		
		20	2'-1"	2'-11"	3'-10"	4'-8"	5'-6"	6'-0"	6'-5"	7'-3"	8'-0"	8'-1"	9'-0"	9'-10"		
		24	2'-6"	3'-7"	4'-7"	5'-7"	6'-8"	7'-2"	7'-8"	8'-9"	9'-7"	9'-9"	10'-9"	11'-10"		
Round Hole Diameter [in]		2	3	4	5	6	6½	7	8	8¾	9	10	11	12	13	
Rectangular Hole Side [in]		-	-	-	-	-	-	2	3	5	5	6	8	9	10	
Any 16" Joist	Span [ft]	8	1'-0"	1'-1"	1'-2"	1'-2"	1'-5"	1'-7"	1'-9"	2'-1"	2'-4"	2'-5"	2'-9"	3'-1"	3'-5"	3'-9"
		12	1'-0"	1'-1"	1'-2"	1'-7"	2'-1"	2'-4"	2'-7"	3'-1"	3'-7"	3'-8"	4'-2"	4'-8"	5'-2"	5'-8"
		16	1'-0"	1'-1"	1'-6"	2'-2"	2'-10"	3'-2"	3'-6"	4'-2"	4'-9"	4'-10"	5'-6"	6'-2"	6'-10"	7'-7"
		20	1'-0"	1'-1"	1'-10"	2'-9"	3'-7"	4'-0"	4'-5"	5'-3"	6'-0"	6'-1"	6'-11"	7'-9"	8'-7"	9'-5"
		24	1'-0"	1'-3"	2'-3"	3'-3"	4'-3"	4'-9"	5'-3"	6'-3"	7'-2"	7'-4"	8'-4"	9'-4"	10'-4"	11'-4"

- Select a table row based on joist depth and the actual joist span rounded up to the nearest table span. Scan across the row to the column headed by the appropriate round hole diameter or rectangular hole side. Use the longest side of a rectangular hole. The table value is the closest that the centerline of the hole may be to the centerline of the nearest support.
- The entire web may be cut out. **DO NOT** cut the flanges. Holes apply to either single or multiple joists in repetitive member conditions.
- For multiple holes, the amount of uncut web between holes must equal at least twice the diameter (or longest side) of the largest hole.
- 1½" round knockouts in the web may be removed by using a short piece of metal pipe and hammer.
- Holes may be positioned vertically anywhere in the web. The joist may be set with the 1½" knockout holes turned either up or down.
- This table was designed to apply to the design conditions covered by tables elsewhere in this publication. Use the BC CALC® software to check other hole sizes or holes under other design conditions. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® software.

One-Hour Floor/Ceiling Assembly



Contact your local Boise representative for specific assembly information and other fire-resistive options.

FIRE ASSEMBLY COMPONENTS

1. Min. ¾" tongue-and-groove plywood or 23/32" APA Rated Sheathing (Exposure 1 or exterior glue)
2. AJS® Joists at 24" o.c. or less.
3. Two layers ½" Type C or two layers 5/8" Type X gypsum board
4. When constructed with resilient channels, STC = 50.

American Wood Council - DCA 3



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Boise Cascade 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 under U.S. Green Building Council® 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 National Green Building Standard.

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.

If in doubt, ask!
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