

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.