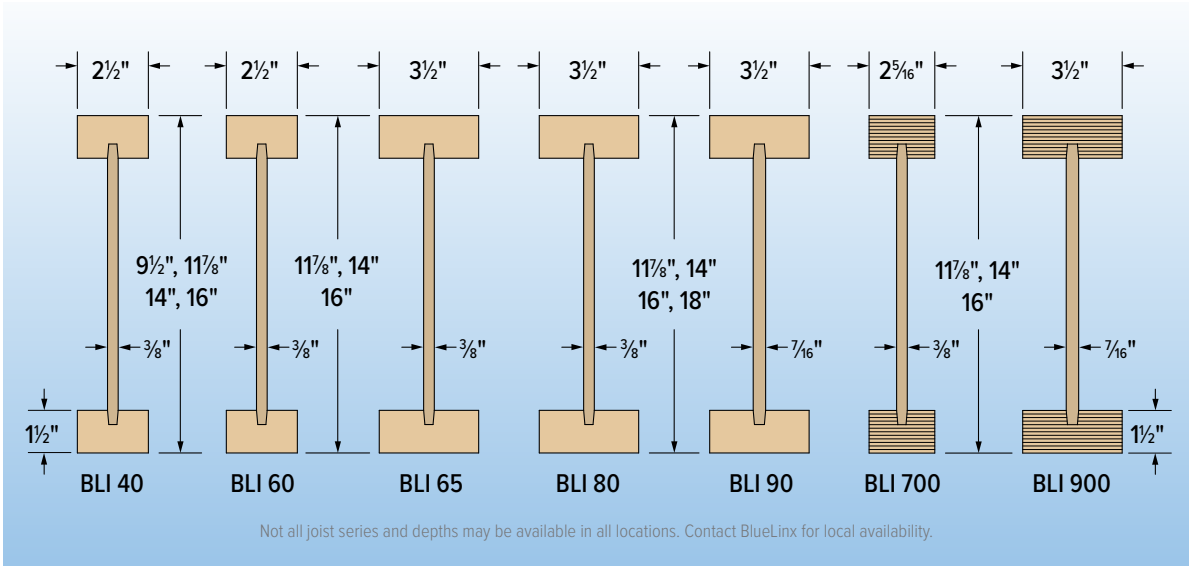

Not all joist series and depths may be available in all locations. Contact BlueLinx for local availability.

Design Properties for BLI Joists

Joist Series	Joist Depth	EI (10^6 in^2-lbs)	Maximum Moment [a,b] (ft-lbs)	Maximum Shear [b] (lbs)	1¾" End Reaction [b,c,d] (lbs)	3½" Intermediate Reaction [b,c] (lbs)	Weight (plf)
BLI 40	9½"	193	2735	1185	1130	2160	2.6
	11⅞"	330	3545	1480	1200	2500	2.9
	14"	482	4270	1750	1200	2500	3.1
	16"	657	4950	2000	1200	2500	3.4
BLI 60	11⅞"	396	4900	1570	1200	2500	2.9
	14"	584	5895	1750	1200	2500	3.1
	16"	799	6835	2000	1200	2500	3.4
BLI 65	11⅞"	454	5085	1620	1200	2810	3.3
	14"	664	6125	1815	1200	3020	3.6
	16"	901	7105	2000	1200	3265	3.8
BLI 80	11⅞"	547	6970	1590	1290	2810	3.7
	14"	802	8390	1835	1325	3020	3.9
	16"	1092	9730	2070	1330	3100	4.1
	18"	1413	11000	2300	1340	3100	4.3
BLI 90	11⅞"	601	8515	1650	1315	2810	3.7
	14"	877	10255	1865	1325	3020	3.9
	16"	1187	11895	2070	1330	3265	4.1
	18"	1546	13455	2450	1340	3200	4.3
BLI 700	11⅞"	420	6595	1420	1160	2460	2.9
	14"	613	7865	1710	1160	2460	3.2
	16"	841	9010	1970	1160	2460	3.5
BLI 900	11⅞"	661	10145	1925	1400	3355	4.1
	14"	965	12100	2125	1400	3355	4.4
	16"	1306	13865	2330	1400	3355	4.7

a. No increase permitted for repetitive member use factor.
b. Tabulated values for maximum moment, shear, and reactions are for normal load duration and may be increased for other load durations in accordance with applicable building codes.
c. Tabulated maximum reactions are without bearing stiffeners. For maximum reactions with bearing stiffeners or with other bearing lengths, visit www.buildonCENTER.com.
d. For the maximum end reaction with an end bearing length of 4", use the tabulated maximum shear value. Maximum reactions for end bearing lengths between 1¾" and 4" may be determined by interpolation. Bearing stiffeners are required for end reactions exceeding 1550 lbs.

$$\text{Deflection (inches)} = \frac{22.5wL^4}{EI} + \frac{2.308wL^2}{d \times 10^5}$$

w = uniform load (plf)
L = span (feet)
EI = stiffness constant (in^2-lbs)
d = joist depth (inches)

FRAMING SYSTEM DESIGN CONSIDERATIONS

onCENTER® BLI joists provide the floor system designer several alternatives regarding joist series and depths. Exploring these options along with joist spacing should enable the designer to determine the optimal floor with consideration to the satisfaction of the end-user and the costs associated with the selection.

The following factors will affect floor system performance:

- *Span*
- *Spacing*
- *Joist series and depth*
- *Type of subfloor used, and how it is attached*
- *Elevation of supports*
- *Type of support*
- *Presence of gypsum wallboard underneath*
- *Size of room and contents the floor is supporting*

Floor performance may be estimated by the familiar “L/x” fraction, where "x" is span divided by live load deflection (both in inches). The traditional building code requirement of L/360 was developed over a century ago. The wood I-joist industry has found through experience that I-joist floors should be designed to a more stringent L/480, which results in a floor that is one-third stiffer than one designed at the code minimum L/360.

There are other factors that influence floor performance. Gluing the subfloor to the joist framing has been found to significantly enhance floor performance. All floor span tables in this guide reflect this enhancement. A thicker subfloor will increase composite action with the joists as well as transverse floor stiffness. X-bridging or BLI blocking panels (refer to detail F21 on page 16) properly installed at the center of the span will also increase transverse floor stiffness. A gypsum wallboard ceiling attached directly to the joists will enhance system performance by providing damping.

Note that a floor supporting large open areas with minimal furniture, such as an oversized great room, may be more prone to vibration than the same floor supporting smaller rooms, since the latter will have added damping from partition walls and contents of the additional rooms.

Quality of workmanship also can contribute to floor performance. Uneven bearing elevations, while generally not detrimental to the structural integrity of the building, may result in the perception of a poor performing floor. A floor with joists supported by beams will feel less solid than one with joists supported by walls.

When installing hangers, the installer should leave a 1/16" gap between the header and joist and firmly seat each joist in the bottom of the hanger. The gap, firm seating and tight nailing will help reduce squeaks caused by movement in the hanger.

As part of our commitment to customer service, you may call BlueLinx at 877-914-7770 to discuss your project needs and determine how the superior performance of onCENTER Framing Systems best fits into your next project.