DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT Housing - Federal Housing Commissioner	Series and Series Number: **MATERIALS RELEASE NO:** 1242e (Supersedes issue dated April 17, 2019)
TO: DIRECTORS, SINGLE FAMILY HOCs **DIRECTORS, MULTIFAMILY HUBs**	**ISSUE DATE** July 27, 2023
	REVIEW DATE July 27, 2026

SUBJECT: **1. Product** BCI® PREFABRICATED WOOD I-JOISTS

2. Name and address of Manufacturer

Boise Cascade Wood Products, LLC
P. O. Box 2400
White City, OR 97503-0400

Data on the nonstandard product described herein have been reviewed by the Department of Housing and Urban Development (HUD) and determination has been made that it is considered suitable from a technical standpoint for the use indicated herein. This Release does not purport to establish a comparative quality or value rating for this product as compared to standard products normally used in the same manner.

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USE: BCI® joists are used as floor joists and roof rafters.

DESCRIPTION:

The BCI joists are prefabricated wood I-joists with laminated veneer lumber flanges and oriented strand board (OSB) webs. The I-joists have parallel top and bottom flanges, resulting in a constant-depth joist. The web-to-web joints are glued joints and conform to the specifications in the approved quality control manual. The BCI joists are available in various lengths and depths. See Table 1 for joist dimensions and material specifications.

REQUIREMENTS:

Adhesives are of the types specified in the Boise Cascade Wood Products, LLC manufacturing standards and which comply with ASTM D 2559 (Adhesives for Bonded Structural Wood Products for Use Under Exterior Exposure Conditions), ASTM D7247 (Standard Test Method for Evaluating the Shear Strength of Adhesive Bonds in Laminated Wood Products at Elevated Temperatures) and ASTM D5055 (Standard Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists).

All OSB webs shall conform to U.S. Product Standard to PS-2, Performance Standard for Wood-Based Structural-Use Panels. OSB for all depths of joists shall be Exposure 1 panel having a span rating of 24/0.

The LVL flanges shall be manufactured to meet the requirements set forth in Materials Release 1241d.

DESIGN:

Design of BCI joists shall be in accordance with the current Boise Cascade Engineered Wood Products Specifier Guide and this Materials Release (MR). The allowable design properties for BCI joists listed in Tables 2, 3, 4, and 7 of this MR shall not be exceeded. Minimum distances from supports for various web hole sizes in joists subjected to uniformly loaded simple-span conditions are shown in Tables 8 - 13.

The allowable location of holes can be determined by calculating the allowable shear capacity (based on the reduction in shear capacity) of BCI joists at web holes, Vhole, using the equations shown below. All dimensions and shear values are in units of inches and pounds, respectively:

BCI Joists with OSB web, circular hole:

$$V_{hole} = V_r\left[B_C - M_C\left(\frac{holediameter}{joistdepth - 2 \times flangedepth}\right)\right]$$

BCI Joists with OSB web, square, rectangular or obround hole:

$$V_{hole} = V_r\left[B_R - M_D\left(\frac{hole\ depth}{joist\ depth - 2 \times flange\ depth}\right) - M_L\left(\frac{hole\ length}{18}\right)\right]$$

where:

Vr = Shear value, for the joist, provided in Table 2;
BC = 0.88 (except for BCI 90e joists with depth >16")
0.91 for BCI 90e joists with depths > 16";
MC = 0.69 (except for BCI 90e joists with depth >16")
0.84 for BCI 90e joists with depths > 16";
BR = 0.60 (except for BCI 90e joists with depth >16")
0.57 for BCI 90e joists with depths > 16"
MD = 0.28 for all BCI joists;
ML = 0.29 (except at obround hole) for all BCI ‘1000 (XXOO)’ series joists; 0.25 for all obround holes and BCI ‘100(XXO)’ and ‘10(XX)’ series joists;

Knockout holes installed during the manufacturing process may be utilized wherever present.

Allowable floor spans for certain specific conditions are noted in Table 14. Minimum bearing length for simple spans shall be 1 1/2 (38.1 mm). Minimum bearing length at intermediate support points for multiple-span joists shall be 3 1/2 inches (89 mm).

When joists are used as simple-span members, the design shear shall be equal to the end reaction.

No repetitive member increase of the allowable moment is applicable for joists.

The compression flange shall be laterally supported in accordance with the design. Joist ends shall be restrained to prevent rollover as by diaphragm sheathing attached to the top flange and to an end wall or shear transfer panel or blocking or cross-bracing capable of transferring the larger of 50 pounds per foot (730N/m) or the required shear force due to wind seismic or soil conditions. Bridging as required by the Minimum Property Standards (MPS) for wood frame construction, is not required in BCI floor and roof joist applications.

Adjustments for duration of load provided for wood members and their connections shall be in accordance with the MPS.

Total I-joist deflection is caused by two types of stresses, bending and shear. Bending deflection shall be calculated using standard engineering formulae. Shear deflection in BCI joists shall be calculated using the formula: D=8M/K where D is the deflection in inches, M is the maximum applied moment in inch-pounds, and the value for K is given in Table 2.

Minimum on-center spacing for nails installed in the flange of BCI joists is shown in Tables 6 and 7. Allowable lateral and withdrawal values for nails installed perpendicular or parallel to the flange glue lines shall be as provided in the MPS for nails installed in solid-sawn lumber having a specific gravity of 0.50, such as Douglas-fir and larch. Nails installed perpendicular to the flange glue lines are assigned the same allowable shear values for horizontal wood diaphragms as those provided in the MPS for nails installed in solid-sawn lumber having a specific gravity of 0.50.

INSTALLATION AND LIMITATIONS:

Installation of BCI joists shall be in accordance with the current Boise Cascade Engineered Wood Products Specifier Guide. Plans shall include loading conditions, joist sizes, spans, support conditions, stiffener locations, connections, and web hole locations. When conditions differ from those described in the Specifier Guide and Table 14 of this report, design calculations shall accompany the plans.

BCI joists shall be restricted to covered installation with dry conditions of use. Dry conditions of use are those environmental conditions represented by sawn lumber in which the moisture content is less than 16 percent. Web stiffeners, when required, shall be installed by as shown in Figure 1. Fire resistive and sound rated assemblies shall be constructed in accordance with Figures 2-13.

TABLE 1—JOIST DESCRIPTIONS FOR BCI JOISTS

JOIST SERIES	FLANGE				WEB MATERIAL	RANGE OF JOIST DEPTHS (inches)
	MATERIAL	XX Series	XX0 Series	XX00 Series		
		depth x width (inches)				
BCI40,400,4000-1.3 BCI40S,400S,4000S-1.3	VERSA-LAM [1]	1.125 x 1.5	1.31 x 1.5	1.5 x 1.5	3/8" OSB	9 1/2 to 14
BCI40,400,4000-1.4 BCI40S,400S,4000S-1.4	VERSA-LAM [1]	1.125 x 1.5	1.31 x 1.5	1.5 x 1.5	3/8" OSB	9 1/2 to 14
BCI40,400,4000-1.5 BCI40S,400S,4000S-1.5	VERSA-LAM [1]	1.125 x 1.5	1.31 x 1.5	1.5 x 1.5	3/8" OSB	9 1/2 to 14
BCI40,400,4000-1.6 BCI40S,400S,4000S-1.6	VERSA-LAM [1]	1.125 x 1.5	1.31 x 1.5	1.5 x 1.5	3/8" OSB	9 1/2 to 14
BCI40,400,4000-1.7 BCI40S,400S,4000S-1.7	VERSA-LAM [1]	1.125 x 1.5	1.31 x 1.5	1.5 x 1.5	3/8" OSB	9 1/2 to 14
BCI40,400,4000-1.8 BCI40S,400S,4000S-1.8	VERSA-LAM [1]	1.125 x 1.5	1.31 x 1.5	1.5 x 1.5	3/8" OSB	9 1/2 to 14
BCI40,400,4000-1.9 BCI40S,400S,4000S-1.9	VERSA-LAM [1]	1.125 x 1.5	1.31 x 1.5	1.5 x 1.5	3/8" OSB	9 1/2 to 14
BCI40,400,4000-2.0 BCI40S,400S,4000S-2.0	VERSA-LAM [1]	1.125 x 1.5	1.31 x 1.5	1.5 x 1.5	3/8" OSB	9 1/2 to 14
BCI40,400,4000-2.1 BCI40S,400S,4000S-2.1	VERSA-LAM [1]	1.125 x 1.5	1.31 x 1.5	1.5 x 1.5	3/8" OSB	9 1/2 to 14
BCI40,400,4000-2.2 BCI40S,400S,4000S-2.2	VERSA-LAM [1]	1.125 x 1.5	1.31 x 1.5	1.5 x 1.5	3/8" OSB	9 1/2 to 14
BCI45,450,4500-1.3 BCI45S,450S,4500S-1.3	VERSA-LAM [1]	1.125 x 1.75	1.31 x 1.75	1.5 x 1.75	3/8" OSB	9 1/2 to 16
BCI45,450,4500-1.4 BCI45S,450S,4500S-1.4	VERSA-LAM [1]	1.125 x 1.75	1.31 x 1.75	1.5 x 1.75	3/8" OSB	9 1/2 to 16
BCI45,450,4500-1.5 BCI45S,450S,4500S-1.5	VERSA-LAM [1]	1.125 x 1.75	1.31 x 1.75	1.5 x 1.75	3/8" OSB	9 1/2 to 16
BCI45,450,4500-1.6 BCI45S,450S,4500S-1.6	VERSA-LAM [1]	1.125 x 1.75	1.31 x 1.75	1.5 x 1.75	3/8" OSB	9 1/2 to 16
BCI45,450,4500-1.7 BCI45S,450S,4500S-1.7	VERSA-LAM [1]	1.125 x 1.75	1.31 x 1.75	1.5 x 1.75	3/8" OSB	9 1/2 to 16
BCI45,450,4500-1.8 BCI45S,450S,4500S-1.8	VERSA-LAM [1]	1.125 x 1.75	1.31 x 1.75	1.5 x 1.75	3/8" OSB	9 1/2 to 16
BCI45,450,4500-1.9 BCI45S,450S,4500S-1.9	VERSA-LAM [1]	1.125 x 1.75	1.31 x 1.75	1.5 x 1.75	3/8" OSB	9 1/2 to 16
BCI45,450,4500-2.0 BCI45S,450S,4500S-2.0	VERSA-LAM [1]	1.125 x 1.75	1.31 x 1.75	1.5 x 1.75	3/8" OSB	9 1/2 to 16
BCI45,450,4500-2.1 BCI45S,450S,4500S-2.1	VERSA-LAM [1]	1.125 x 1.75	1.31 x 1.75	1.5 x 1.75	3/8" OSB	9 1/2 to 16
BCI45,450,4500-2.2 BCI45S,450S,4500S-2.2	VERSA-LAM [1]	1.125 x 1.75	1.31 x 1.75	1.5 x 1.75	3/8" OSB	9 1/2 to 16
BCI50,500,5000-1.3 BCI50S,500S,5000S-1.3	VERSA-LAM [1]	1.125 x 2.0	1.31 x 2.0	1.5 x 2.0	3/8" OSB	9 1/2 to 16
BCI50,500,5000-1.4 BCI50S,500S,5000S-1.4	VERSA-LAM [1]	1.125 x 2.0	1.31 x 2.0	1.5 x 2.0	3/8" OSB	9 1/2 to 16
BCI50,500,5000-1.5 BCI50S,500S,5000S-1.5	VERSA-LAM [1]	1.125 x 2.0	1.31 x 2.0	1.5 x 2.0	3/8" OSB	9 1/2 to 16
BCI50,500,5000-1.6 BCI50S,500S,5000S-1.6	VERSA-LAM [1]	1.125 x 2.0	1.31 x 2.0	1.5 x 2.0	3/8" OSB	9 1/2 to 16
BCI50,500,5000-1.7 BCI50S,500S,5000S-1.7	VERSA-LAM [1]	1.125 x 2.0	1.31 x 2.0	1.5 x 2.0	3/8" OSB	9 1/2 to 16
BCI50,500,5000-1.8 BCI50S,500S,5000S-1.8	VERSA-LAM [1]	1.125 x 2.0	1.31 x 2.0	1.5 x 2.0	3/8" OSB	9 1/2 to 16
BCI50,500,5000-1.9 BCI50S,500S,5000S-1.9	VERSA-LAM [1]	1.125 x 2.0	1.31 x 2.0	1.5 x 2.0	3/8" OSB	9 1/2 to 16
BCI50,500,5000-2.0 BCI50S,500S,5000S-2.0	VERSA-LAM [1]	1.125 x 2.0	1.31 x 2.0	1.5 x 2.0	3/8" OSB	9 1/2 to 16
BCI50,500,5000-2.1 BCI50S,500S,5000S-2.1	VERSA-LAM [1]	1.125 x 2.0	1.31 x 2.0	1.5 x 2.0	3/8" OSB	9 1/2 to 16
BCI50,500,5000-2.2 BCI50S,500S,5000S-2.2	VERSA-LAM [1]	1.125 x 2.0	1.31 x 2.0	1.5 x 2.0	3/8" OSB	9 1/2 to 16

For SI: 1 inch = 25.4 mm

[1] VERSA-LAM LVL with proprietary grading as described in the Quality Control Manual associated with this report.

TABLE 1 (CONT.)—JOIST DESCRIPTIONS FOR BCI JOISTS

JOIST SERIES	FLANGE				WEB	RANGE OF
	MATERIAL	XX Series	XX0 Series	XX00 Series	MATERIAL	JOIST DEPTHS
		depth x width (inches)				(inches)
BCI60,600,6000-1.3 BCI60S,600S,6000S-1.3	VERSA-LAM [1]	11.25 x 2.31	13.1 x 2.31	15 x 2.31	3/8" OSB	9 1/2 to 20
BCI60,600,6000-1.4 BCI60S,600S,6000S-1.4	VERSA-LAM [1]	11.25 x 2.31	13.1 x 2.31	15 x 2.31	3/8" OSB	9 1/2 to 20
BCI60,600,6000-1.5 BCI60S,600S,6000S-1.5	VERSA-LAM [1]	11.25 x 2.31	13.1 x 2.31	15 x 2.31	3/8" OSB	9 1/2 to 20
BCI60,600,6000-1.6 BCI60S,600S,6000S-1.6	VERSA-LAM [1]	11.25 x 2.31	13.1 x 2.31	15 x 2.31	3/8" OSB	9 1/2 to 20
BCI60,600,6000-1.7 BCI60S,600S,6000S-1.7	VERSA-LAM [1]	11.25 x 2.31	13.1 x 2.31	15 x 2.31	3/8" OSB	9 1/2 to 20
BCI60,600,6000-1.8 BCI60S,600S,6000S-1.8	VERSA-LAM [1]	11.25 x 2.31	13.1 x 2.31	15 x 2.31	3/8" OSB	9 1/2 to 20
BCI60,600,6000-1.9 BCI60S,600S,6000S-1.9	VERSA-LAM [1]	11.25 x 2.31	13.1 x 2.31	15 x 2.31	3/8" OSB	9 1/2 to 20
BCI60,600,6000-2.0 BCI60S,600S,6000S-2.0	VERSA-LAM [1]	11.25 x 2.31	13.1 x 2.31	15 x 2.31	3/8" OSB	9 1/2 to 20
BCI60,600,6000-2.1 BCI60S,600S,6000S-2.1	VERSA-LAM [1]	11.25 x 2.31	13.1 x 2.31	15 x 2.31	3/8" OSB	9 1/2 to 20
BCI60,600,6000-2.2 BCI60S,600S,6000S-2.2	VERSA-LAM [1]	11.25 x 2.31	13.1 x 2.31	15 x 2.31	3/8" OSB	9 1/2 to 20
BCI65,650,6500-1.3 BCI65S,650S,6500S-1.3	VERSA-LAM [1]	11.25 x 2.55	13.1 x 2.55	15 x 2.55	3/8" OSB	9 1/2 to 20
BCI65,650,6500-1.4 BCI65S,650S,6500S-1.4	VERSA-LAM [1]	11.25 x 2.55	13.1 x 2.55	15 x 2.55	3/8" OSB	9 1/2 to 20
BCI65,650,6500-1.5 BCI65S,650S,6500S-1.5	VERSA-LAM [1]	11.25 x 2.55	13.1 x 2.55	15 x 2.55	3/8" OSB	9 1/2 to 20
BCI65,650,6500-1.6 BCI65S,650S,6500S-1.6	VERSA-LAM [1]	11.25 x 2.55	13.1 x 2.55	15 x 2.55	3/8" OSB	9 1/2 to 20
BCI65,650,6500-1.7 BCI65S,650S,6500S-1.7	VERSA-LAM [1]	11.25 x 2.55	13.1 x 2.55	15 x 2.55	3/8" OSB	9 1/2 to 20
BCI65,650,6500-1.8 BCI65S,650S,6500S-1.8	VERSA-LAM [1]	11.25 x 2.55	13.1 x 2.55	15 x 2.55	3/8" OSB	9 1/2 to 20
BCI65,650,6500-1.9 BCI65S,650S,6500S-1.9	VERSA-LAM [1]	11.25 x 2.55	13.1 x 2.55	15 x 2.55	3/8" OSB	9 1/2 to 20
BCI65,650,6500-2.0 BCI65S,650S,6500S-2.0	VERSA-LAM [1]	11.25 x 2.55	13.1 x 2.55	15 x 2.55	3/8" OSB	9 1/2 to 20
BCI65,650,6500-2.1 BCI65S,650S,6500S-2.1	VERSA-LAM [1]	11.25 x 2.55	13.1 x 2.55	15 x 2.55	3/8" OSB	9 1/2 to 20
BCI65,650,6500-2.2 BCI65S,650S,6500S-2.2	VERSA-LAM [1]	11.25 x 2.55	13.1 x 2.55	15 x 2.55	3/8" OSB	9 1/2 to 20
BCI90,900,9000-1.3 BCI90S,900S,9000S-1.3	VERSA-LAM [1]	11.25 x 3.5	13.1 x 3.5	15 x 3.5	3/8" OSB	9 1/2 to 20
BCI90,900,9000-1.4 BCI90S,900S,9000S-1.4	VERSA-LAM [1]	11.25 x 3.5	13.1 x 3.5	15 x 3.5	3/8" OSB	9 1/2 to 20
BCI90,900,9000-1.5 BCI90S,900S,9000S-1.5	VERSA-LAM [1]	11.25 x 3.5	13.1 x 3.5	15 x 3.5	3/8" OSB	9 1/2 to 20
BCI90,900,9000-1.6 BCI90S,900S,9000S-1.6	VERSA-LAM [1]	11.25 x 3.5	13.1 x 3.5	15 x 3.5	3/8" OSB	9 1/2 to 20
BCI90,900,9000-1.7 BCI90S,900S,9000S-1.7	VERSA-LAM [1]	11.25 x 3.5	13.1 x 3.5	15 x 3.5	3/8" OSB	9 1/2 to 20
BCI90,900,9000-1.8 BCI90S,900S,9000S-1.8	VERSA-LAM [1]	11.25 x 3.5	13.1 x 3.5	15 x 3.5	3/8" OSB	9 1/2 to 20
BCI90,900,9000-1.9 BCI90S,900S,9000S-1.9	VERSA-LAM [1]	11.25 x 3.5	13.1 x 3.5	15 x 3.5	3/8" OSB	9 1/2 to 20
BCI90,900,9000-2.0 BCI90S,900S,9000S-2.0	VERSA-LAM [1]	11.25 x 3.5	13.1 x 3.5	15 x 3.5	3/8" OSB	9 1/2 to 20
BCI90,900,9000-2.1 BCI90S,900S,9000S-2.1	VERSA-LAM [1]	11.25 x 3.5	13.1 x 3.5	15 x 3.5	3/8" OSB	9 1/2 to 20
BCI90,900,9000-2.2 BCI90S,900S,9000S-2.2	VERSA-LAM [1]	11.25 x 3.5	13.1 x 3.5	15 x 3.5	3/8" OSB	9 1/2 to 20
BCI90e-2.0	VERSA-LAM [1]			15 x 3.5	7/16" OSB	9 1/2 to 24

For SI: 1 inch = 25.4 mm

[1] VERSA-LAM LVL with proprietary grading as described in the Quality Control Manual associated with this report.

TABLE 2—REFERENCE DESIGN VALUES FOR BCI JOISTS[1], [4]

DEPTH (in)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)
9 1/2	40-1.3	1570	110	6	1450	400-1.3	1395	105	6	1450	4000-1.3	1210	95	5	1450
11 7/8		2035	195	7	1625		1795	180	7	1625		1545	165	6	1600
14		2425	285	8	1825		2135	265	8	1825		1835	240	7	1750
9 1/2	45-1.3	1845	130	6	1475	450-1.3	1640	120	6	1475	4500-1.3	1425	110	5	1475
11 7/8		2390	220	7	1625		2115	205	7	1625		1825	185	6	1625
14		2850	330	8	1825		2510	300	8	1825		2160	275	8	1825
16		3265	450	9	1975		2870	415	9	1975		2465	375	9	1975
9 1/2	50-1.3	2120	145	6	1475	500-1.3	1885	135	6	1475	5000-1.3	1640	125	5	1475
11 7/8		2745	250	7	1625		2430	230	7	1625		2100	210	6	1625
14		3275	370	8	1825		2890	340	8	1825		2490	310	8	1825
16		3750	505	9	1975		3305	465	9	1975		2840	420	9	1975
9 1/2	60-1.3	2465	170	6	1575	600-1.3	2195	155	6	1575	6000-1.3	1910	140	5	1575
11 7/8		3190	285	7	1675		2830	265	7	1675		2450	240	6	1675
14		3805	425	8	1925		3360	385	8	1925		2900	350	8	1925
16		4360	580	9	2175		3845	530	9	2175		3310	475	9	2175
18		4910	760	10	2375		4320	695	10	2375		3715	625	10	2375
20		5450	970	11	2450		4790	885	11	2450		4115	800	11	2450
9 1/2	65-1.3	2725	185	6	1575	650-1.3	2430	170	6	1575	6500-1.3	2115	155	5	1575
11 7/8		3530	315	7	1675		3130	290	7	1675		2710	260	7	1675
14		4210	465	8	1925		3720	425	8	1925		3215	380	8	1925
16		4825	630	9	2175		4255	575	9	2175		3670	520	9	2175
18		5430	830	10	2375		4780	755	10	2375		4115	680	10	2375
20		6030	1060	11	2450		5300	965	11	2450		4560	870	11	2450
9 1/2	90-1.3	3770	250	6	1675	900-1.3	3365	230	6	1675	9000-1.3	2935	210	5	1675
11 7/8		4885	425	7	2150		4335	390	7	2150		3765	350	7	2150
14		5830	625	8	2350		5155	570	8	2350		4465	510	8	2350
16		6680	845	9	2550		5895	770	9	2550		5095	690	9	2550
18		7515	1105	10	2750		6630	1005	10	2750		5715	900	10	2750
20		8345	1405	11	2850		7350	1275	11	2850		6335	1140	11	2850
9 1/2	40-1.4	1785	120	6	1450	400-1.4	1585	110	6	1450	4000-1.4	1370	100	5	1450
11 7/8		2310	205	7	1625		2040	190	7	1625		1760	175	6	1600
14		2755	305	8	1825		2425	280	8	1825		2085	255	7	1750
9 1/2	45-1.4	2100	140	6	1475	450-1.4	1865	130	6	1475	4500-1.4	1620	120	5	1475
11 7/8		2715	235	7	1625		2400	220	7	1625		2075	200	6	1625
14		3235	350	8	1825		2855	325	8	1825		2455	290	8	1825
16		3710	480	9	1975		3260	440	9	1975		2805	400	9	1975
9 1/2	50-1.4	2410	160	6	1475	500-1.4	2145	145	6	1475	5000-1.4	1865	135	5	1475
11 7/8		3120	270	7	1625		2760	245	7	1625		2390	225	6	1625
14		3720	395	8	1825		3285	365	8	1825		2830	330	8	1825
16		4260	540	9	1975		3755	495	9	1975		3230	450	9	1975
9 1/2	60-1.4	2800	180	6	1575	600-1.4	2495	165	6	1575	6000-1.4	2170	150	5	1575
11 7/8		3625	310	7	1675		3215	285	7	1675		2780	255	6	1675
14		4325	455	8	1925		3820	415	8	1925		3300	375	8	1925
16		4955	620	9	2175		4365	565	9	2175		3765	510	9	2175
18		5575	810	10	2375		4910	740	10	2375		4220	665	10	2375
20		6190	1035	11	2450		5440	945	11	2450		4675	850	11	2450
9 1/2	65-1.4	3100	200	6	1575	650-1.4	2760	185	6	1575	6500-1.4	2405	165	5	1575
11 7/8		4010	340	7	1675		3555	310	7	1675		3080	280	7	1675
14		4785	495	8	1925		4230	455	8	1925		3655	410	8	1925
16		5480	675	9	2175		4835	615	9	2175		4170	555	9	2175
18		6170	885	10	2375		5430	810	10	2375		4675	725	10	2375
20		6850	1130	11	2450		6025	1030	11	2450		5180	925	11	2450
9 1/2	90-1.4	4285	270	6	1675	900-1.4	3825	250	6	1675	9000-1.4	3335	225	5	1675
11 7/8		5550	455	7	2150		4930	415	7	2150		4280	375	7	2150
14		6625	670	8	2350		5860	610	8	2350		5070	545	8	2350
16		7590	905	9	2550		6700	825	9	2550		5790	735	9	2550
18		8540	1185	10	2750		7530	1075	10	2750		6495	960	10	2750
20		9485	1505	11	2850		8355	1365	11	2850		7195	1220	11	2850

For **SI**: 1 inch = 25.4 mm; 1 ft-lb = 1.36 N-m; 1 in^2-lb = 179 mm^2-N; 1 in-lb/in = 4.4 N-mm/mm; 1 lb = 4.45 N; 1 lb/ft = 14.6 N/m.

[1] For joist descriptions see Table 1.

[2] Calculate bending and shear deflection as described in Section 4.11 "Deflection".

[3] Repetitive member use factors are limited to 1.0

[4] For reference design reaction values, see Table 3.

TABLE 2 (CONT.)—REFERENCE DESIGN VALUES FOR BCI JOISTS[1], [4]

DEPTH (in)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)
9 1/2	40-1.5	2000	130	6	1450	400-1.5	1775	120	6	1450	4000-1.5	1535	110	5	1450
11 7/8		2585	220	7	1625		2285	205	7	1625		1970	185	6	1600
14		3085	325	8	1825		2715	300	8	1825		2335	270	7	1750
9 1/2	45-1.5	2350	150	6	1475	450-1.5	2085	135	6	1475	4500-1.5	1810	125	5	1475
11 7/8		3040	255	7	1625		2690	235	7	1625		2320	210	6	1625
14		3625	375	8	1825		3195	345	8	1825		2750	310	8	1825
16		4150	510	9	1975		3655	470	9	1975		3140	425	9	1975
9 1/2	50-1.5	2700	170	6	1475	500-1.5	2400	155	6	1475	5000-1.5	2085	140	5	1475
11 7/8		3495	285	7	1625		3095	265	7	1625		2675	240	6	1625
14		4165	420	8	1825		3675	385	8	1825		3170	350	8	1825
16		4775	575	9	1975		4205	525	9	1975		3615	475	9	1975
9 1/2	60-1.5	3135	195	6	1575	600-1.5	2795	180	6	1575	6000-1.5	2430	160	5	1575
11 7/8		4060	330	7	1675		3600	300	7	1675		3115	270	6	1675
14		4845	485	8	1925		4280	440	8	1925		3695	395	8	1925
16		5550	660	9	2175		4890	600	9	2175		4215	540	9	2175
18		6245	865	10	2375		5495	790	10	2375		4730	710	10	2375
20		6935	1100	11	2450		6095	1005	11	2450		5240	900	11	2450
9 1/2	65-1.5	3470	210	6	1575	650-1.5	3090	195	6	1575	6500-1.5	2690	180	5	1575
11 7/8		4495	360	7	1675		3980	330	7	1675		3450	295	7	1675
14		5360	530	8	1925		4735	485	8	1925		4090	435	8	1925
16		6140	720	9	2175		5415	655	9	2175		4670	590	9	2175
18		6910	945	10	2375		6085	860	10	2375		5240	770	10	2375
20		7670	1200	11	2450		6745	1095	11	2450		5800	980	11	2450
9 1/2	90-1.5	4800	290	6	1675	900-1.5	4280	265	6	1675	9000-1.5	3735	240	5	1675
11 7/8		6220	490	7	2150		5520	445	7	2150		4790	400	7	2150
14		7415	715	8	2350		6565	650	8	2350		5680	580	8	2350
16		8500	970	9	2550		7505	880	9	2550		6485	785	9	2550
18		9565	1265	10	2750		8435	1145	10	2750		7275	1020	10	2750
20		10625	1605	11	2850		9355	1455	11	2850		8060	1295	11	2850
9 1/2	40-1.6	2140	135	6	1450	400-1.6	1900	125	6	1450	4000-1.6	1645	115	5	1450
11 7/8		2770	235	7	1625		2445	215	7	1625		2110	195	6	1600
14		3305	345	8	1825		2910	315	8	1825		2500	285	7	1750
9 1/2	45-1.6	2515	160	6	1475	450-1.6	2235	145	6	1475	4500-1.6	1940	135	5	1475
11 7/8		3260	270	7	1625		2880	245	7	1625		2485	225	6	1625
14		3885	395	8	1825		3425	365	8	1825		2950	330	8	1825
16		4450	540	9	1975		3915	495	9	1975		3365	450	9	1975
9 1/2	50-1.6	2890	180	6	1475	500-1.6	2570	165	6	1475	5000-1.6	2235	150	5	1475
11 7/8		3745	305	7	1625		3315	280	7	1625		2865	255	6	1625
14		4465	450	8	1825		3940	410	8	1825		3395	370	8	1825
16		5115	610	9	1975		4505	560	9	1975		3875	505	9	1975
9 1/2	60-1.6	3360	205	6	1575	600-1.6	2990	190	6	1575	6000-1.6	2605	170	5	1575
11 7/8		4350	350	7	1675		3855	320	7	1675		3335	290	6	1675
14		5190	515	8	1925		4585	470	8	1925		3955	420	8	1925
16		5945	700	9	2175		5240	635	9	2175		4515	570	9	2175
18		6690	915	10	2375		5890	835	10	2375		5065	750	10	2375
20		7430	1165	11	2450		6530	1060	11	2450		5610	955	11	2450
9 1/2	65-1.6	3715	225	6	1575	650-1.6	3310	210	6	1575	6500-1.6	2885	190	5	1575
11 7/8		4815	385	7	1675		4265	350	7	1675		3695	315	7	1675
14		5740	560	8	1925		5075	515	8	1925		4385	460	8	1925
16		6580	765	9	2175		5800	695	9	2175		5000	625	9	2175
18		7405	1000	10	2375		6520	910	10	2375		5610	815	10	2375
20		8220	1275	11	2450		7230	1160	11	2450		6215	1035	11	2450
9 1/2	90-1.6	5140	305	6	1675	900-1.6	4585	285	6	1675	9000-1.6	4000	255	5	1675
11 7/8		6660	520	7	2150		5915	475	7	2150		5135	425	7	2150
14		7945	760	8	2350		7030	690	8	2350		6085	615	8	2350
16		9105	1030	9	2550		8040	935	9	2550		6945	830	9	2550
18		10250	1345	10	2750		9035	1215	10	2750		7795	1085	10	2750
20		11380	1705	11	2850		10025	1540	11	2850		8635	1370	11	2850

For **SI**: 1 inch = 25.4 mm; 1 ft-lb = 1.36 N-m: 1 in^2-lb = 179 mm^2-N; 1 in-lb/in = 4.4 N-mm/mm; 1 lb = 4.45 N; 1 lb/ft = 14.6 N/m.

[1] For joist descriptions see Table 1.

[2] Calculate bending and shear deflection as described in Section 4.11 "Deflection".

[3] Repetitive member use factors are limited to 1.0

[4] For reference design reaction values, see Table 3.

TABLE 2 (CONT.)—REFERENCE DESIGN VALUES FOR BCI JOISTS[1], [4]

DEPTH (in)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)
9 1/2	40-1.7	2355	145	6	1450	400-1.7	2090	135	6	1450	4000-1.7	1810	120	5	1450
11 7/8		3050	245	7	1625		2690	225	7	1625		2320	205	6	1600
14		3635	365	8	1825		3200	335	8	1825		2750	305	7	1750
9 1/2	45-1.7	2770	165	6	1475	450-1.7	2460	155	6	1475	4500-1.7	2135	140	5	1475
11 7/8		3585	285	7	1625		3170	260	7	1625		2735	235	6	1625
14		4270	420	8	1825		3765	385	8	1825		3245	345	8	1825
16		4895	570	9	1975		4305	525	9	1975		3700	470	9	1975
9 1/2	50-1.7	3180	190	6	1475	500-1.7	2830	175	6	1475	5000-1.7	2460	160	5	1475
11 7/8		4120	320	7	1625		3645	295	7	1625		3150	265	6	1625
14		4910	475	8	1825		4335	435	8	1825		3735	390	8	1825
16		5625	645	9	1975		4955	560	9	1975		4260	530	9	1975
9 1/2	60-1.7	3695	220	6	1575	600-1.7	3290	200	6	1575	6000-1.7	2865	180	5	1575
11 7/8		4785	370	7	1675		4240	340	7	1675		3670	305	6	1675
14		5710	545	8	1925		5040	495	8	1925		4350	445	8	1925
16		6540	740	9	2175		5765	675	9	2175		4965	605	9	2175
18		7360	970	10	2375		6475	880	10	2375		5575	790	10	2375
20		8175	1230	11	2450		7185	1120	11	2450		6170	1005	11	2450
9 1/2	65-1.7	4090	240	6	1575	650-1.7	3640	220	6	1575	6500-1.7	3170	200	5	1575
11 7/8		5295	405	7	1675		4695	370	7	1675		4065	335	7	1675
14		6315	595	8	1925		5580	540	8	1925		4820	485	8	1925
16		7235	810	9	2175		6380	735	9	2175		5500	660	9	2175
18		8145	1060	10	2375		7170	960	10	2375		6175	860	10	2375
20		9040	1345	11	2450		7950	1220	11	2450		6840	1095	11	2450
9 1/2	90-1.7	5655	325	6	1675	900-1.7	5045	300	6	1675	9000-1.7	4400	270	5	1675
11 7/8		7330	550	7	2150		6505	500	7	2150		5645	450	7	2150
14		8740	805	8	2350		7735	730	8	2350		6695	650	8	2350
16		10015	1090	9	2550		8845	990	9	2550		7640	880	9	2550
18		11275	1425	10	2750		9940	1290	10	2750		8575	1145	10	2750
20		12520	1805	11	2850		11025	1630	11	2850		9500	1450	11	2850
9 1/2	40-1.8	2605	150	6	1450	400-1.8	2310	140	6	1450	4000-1.8	2000	130	5	1450
11 7/8		3370	260	7	1625		2975	240	7	1625		2565	215	6	1600
14		4020	385	8	1825		3540	350	8	1825		3040	320	7	1750
9 1/2	45-1.8	3060	175	6	1475	450-1.8	2720	165	6	1475	4500-1.8	2360	150	5	1475
11 7/8		3965	300	7	1625		3505	275	7	1625		3025	250	6	1625
14		4725	440	8	1825		4165	405	8	1825		3585	365	8	1825
16		5410	605	9	1975		4760	550	9	1975		4090	495	9	1975
9 1/2	50-1.8	3520	200	6	1475	500-1.8	3130	185	6	1475	5000-1.8	2725	170	5	1475
11 7/8		4555	340	7	1625		4030	310	7	1625		3485	280	6	1625
14		5430	500	8	1825		4790	455	8	1825		4130	410	8	1825
16		6220	680	9	1975		5480	620	9	1975		4715	560	9	1975
9 1/2	60-1.8	4090	230	6	1575	600-1.8	3640	210	6	1575	6000-1.8	3165	190	5	1575
11 7/8		5295	390	7	1675		4690	360	7	1675		4060	320	6	1675
14		6315	575	8	1925		5575	520	8	1925		4815	470	8	1925
16		7235	780	9	2175		6375	710	9	2175		5495	635	9	2175
18		8140	1020	10	2375		7165	925	10	2375		6165	830	10	2375
20		9040	1300	11	2450		7945	1180	11	2450		6825	1055	11	2450
9 1/2	65-1.8	4520	255	6	1575	650-1.8	4030	235	6	1575	6500-1.8	3505	210	5	1575
11 7/8		5855	430	7	1675		5190	390	7	1675		4495	350	7	1675
14		6985	630	8	1925		6170	570	8	1925		5330	515	8	1925
16		8000	855	9	2175		7055	775	9	2175		6085	695	9	2175
18		9005	1115	10	2375		7930	1015	10	2375		6825	905	10	2375
20		10000	1420	11	2450		8795	1285	11	2450		7565	1150	11	2450
9 1/2	90-1.8	6255	345	6	1675	900-1.8	5580	315	6	1675	9000-1.8	4870	285	5	1675
11 7/8		8105	580	7	2150		7195	530	7	2150		6245	475	7	2150
14		9670	850	8	2350		8555	770	8	2350		7405	690	8	2350
16		11080	1150	9	2550		9780	1045	9	2550		8450	930	9	2550
18		12470	1500	10	2750		10995	1360	10	2750		9485	1205	10	2750
20		13845	1900	11	2850		12195	1720	11	2850		10505	1525	11	2850

For **SI**: 1 inch = 25.4 mm; 1 ft-lb = 1.36 N-m: 1 in^2-lb = 179 mm^2-N; 1 in-lb/in = 4.4 N-mm/mm; 1 lb = 4.45 N; 1 lb/ft = 14.6 N/m.

[1] For joist descriptions see Table 1.

[2] Calculate bending and shear deflection as described in Section 4.11 "Deflection".

[3] Repetitive member use factors are limited to 1.0

[4] For reference design reaction values, see Table 3.

TABLE 2 (CONT.)—REFERENCE DESIGN VALUES FOR BCI JOISTS[1], [4]

DEPTH (in)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)
9 1/2	40-1.9	2785	160	6	1450	400-1.9	2470	150	6	1450	4000-1.9	2140	135	5	1450
11 7/8		3600	275	7	1625		3180	250	7	1625		2740	225	6	1600
14		4295	405	8	1825		3780	370	8	1825		3250	335	7	1750
9 1/2	45-1.9	3270	185	6	1475	450-1.9	2905	170	6	1475	4500-1.9	2520	155	5	1475
11 7/8		4235	315	7	1625		3745	290	7	1625		3235	260	6	1625
14		5050	465	8	1825		4450	425	8	1825		3830	380	8	1825
16		5785	635	9	1975		5085	580	9	1975		4370	520	9	1975
9 1/2	50-1.9	3760	210	6	1475	500-1.9	3345	195	6	1475	5000-1.9	2905	175	5	1475
11 7/8		4865	360	7	1625		4305	330	7	1625		3725	295	6	1625
14		5805	525	8	1825		5120	480	8	1825		4415	430	8	1825
16		6650	715	9	1975		5855	650	9	1975		5035	585	9	1975
9 1/2	60-1.9	4370	245	6	1575	600-1.9	3890	225	6	1575	6000-1.9	3385	205	5	1575
11 7/8		5655	410	7	1675		5010	375	7	1675		4340	340	6	1675
14		6745	605	8	1925		5960	550	8	1925		5145	490	8	1925
16		7730	820	9	2175		6810	745	9	2175		5870	665	9	2175
18		8700	1070	10	2375		7655	975	10	2375		6585	870	10	2375
20		9660	1365	11	2450		8490	1235	11	2450		7295	1105	11	2450
9 1/2	65-1.9	4830	265	6	1575	650-1.9	4305	245	6	1575	6500-1.9	3745	220	5	1575
11 7/8		6260	450	7	1675		5545	415	7	1675		4805	370	7	1675
14		7465	660	8	1925		6595	600	8	1925		5695	540	8	1925
16		8550	900	9	2175		7540	815	9	2175		6500	730	9	2175
18		9625	1175	10	2375		8475	1065	10	2375		7295	950	10	2375
20		10685	1490	11	2450		9395	1350	11	2450		8080	1205	11	2450
9 1/2	90-1.9	6685	365	6	1675	900-1.9	5965	335	6	1675	9000-1.9	5200	300	5	1675
11 7/8		8660	615	7	2150		7685	560	7	2150		6670	500	7	2150
14		10330	895	8	2350		9140	810	8	2350		7910	725	8	2350
16		11835	1210	9	2550		10450	1095	9	2550		9030	975	9	2550
18		13325	1580	10	2750		11750	1430	10	2750		10135	1270	10	2750
20		14795	2000	11	2850		13030	1805	11	2850		11225	1605	11	2850
9 1/2	40-2.0	3070	170	6	1450	400-2.0	2725	155	6	1450	4000-2.0	2360	140	5	1450
11 7/8		3970	285	7	1625		3505	265	7	1625		3020	240	6	1600
14		4735	420	8	1825		4170	385	8	1825		3580	350	7	1750
9 1/2	45-2.0	3605	195	6	1475	450-2.0	3205	180	6	1475	4500-2.0	2780	165	5	1475
11 7/8		4670	330	7	1625		4125	305	7	1625		3565	275	6	1625
14		5565	485	8	1825		4905	445	8	1825		4225	400	8	1825
16		6375	665	9	1975		5610	605	9	1975		4825	545	9	1975
9 1/2	50-2.0	4145	220	6	1475	500-2.0	3685	205	6	1475	5000-2.0	3205	185	5	1475
11 7/8		5365	375	7	1625		4750	345	7	1625		4105	310	6	1625
14		6400	550	8	1825		5645	505	8	1825		4865	450	8	1825
16		7330	750	9	1975		6455	685	9	1975		5555	615	9	1975
9 1/2	60-2.0	4815	255	6	1575	600-2.0	4290	235	6	1575	6000-2.0	3730	215	5	1575
11 7/8		6235	430	7	1675		5525	395	7	1675		4785	355	6	1675
14		7440	635	8	1925		6570	575	8	1925		5670	515	8	1925
16		8520	860	9	2175		7510	780	9	2175		6470	700	9	2175
18		9590	1125	10	2375		8440	1020	10	2375		7260	910	10	2375
20		10650	1430	11	2450		9360	1295	11	2450		8040	1155	11	2450
9 1/2	65-2.0	5325	280	6	1575	650-2.0	4745	260	6	1575	6500-2.0	4130	235	5	1575
11 7/8		6900	475	7	1675		6115	435	7	1675		5295	390	7	1675
14		8230	695	8	1925		7270	630	8	1925		6280	565	8	1925
16		9425	940	9	2175		8315	855	9	2175		7165	765	9	2175
18		10610	1230	10	2375		9340	1115	10	2375		8045	995	10	2375
20		11780	1565	11	2450		10360	1415	11	2450		8910	1260	11	2450
9 1/2	90-2.0	7370	380	6	1675	900-2.0	6575	350	6	1675	9000-2.0	5735	315	5	1675
11 7/8		9550	645	7	2150		8475	585	7	2150		7355	525	7	2150
14		11390	940	8	2350		10080	855	8	2350		8725	760	8	2350
16		13050	1275	9	2550		11525	1150	9	2550		9955	1025	9	2550
18		14690	1660	10	2750		12950	1500	10	2750		11170	1330	10	2750
20		16310	2100	11	2850		14365	1895	11	2850		12375	1680	11	2850

For **SI**: 1 inch = 25.4 mm; 1 ft-lb = 1.36 N-m: 1 in^2-lb = 179 mm^2-N; 1 in-lb/in = 4.4 N-mm/mm; 1 lb = 4.45 N; 1 lb/ft = 14.6 N/m.

[1] For joist descriptions see Table 1.

[2] Calculate bending and shear deflection as described in Section 4.11 "Deflection".

[3] Repetitive member use factors are limited to 1.0

[4] For reference design reaction values, see Table 3.

TABLE 2 (CONT.)—REFERENCE DESIGN VALUES FOR BCI JOISTS[1], [4]

DEPTH (in)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)
9 1/2	40-2.1	3210	175	6	1450	400-2.1	2850	165	6	1450	4000-2.1	2470	150	5	1450
11 7/8		4155	300	7	1625		3670	275	7	1625		3165	250	6	1600
14		4955	440	8	1825		4360	405	8	1825		3750	365	7	1750
9 1/2	45-2.1	3775	205	6	1475	450-2.1	3355	190	6	1475	4500-2.1	2910	170	5	1475
11 7/8		4885	345	7	1625		4320	320	7	1625		3730	285	6	1625
14		5825	510	8	1825		5135	465	8	1825		4420	420	8	1825
16		6670	695	9	1975		5870	635	9	1975		5045	570	9	1975
9 1/2	50-2.1	4335	230	6	1475	500-2.1	3855	215	6	1475	5000-2.1	3350	195	5	1475
11 7/8		5615	395	7	1625		4970	360	7	1625		4295	325	6	1625
14		6695	580	8	1825		5910	525	8	1825		5095	470	8	1825
16		7670	785	9	1975		6755	715	9	1975		5810	640	9	1975
9 1/2	60-2.1	5040	270	6	1575	600-2.1	4485	245	6	1575	6000-2.1	3905	225	5	1575
11 7/8		6525	455	7	1675		5780	415	7	1675		5005	370	6	1675
14		7785	665	8	1925		6875	605	8	1925		5935	540	8	1925
16		8915	890	9	2175		7860	815	9	2175		6770	730	9	2175
18		10035	1175	10	2375		8830	1065	10	2375		7600	950	10	2375
20		11145	1495	11	2450		9795	1355	11	2450		8415	1210	11	2450
9 1/2	65-2.1	5575	295	6	1575	650-2.1	4965	270	6	1575	6500-2.1	4325	245	5	1575
11 7/8		7220	495	7	1675		6400	455	7	1675		5545	405	7	1675
14		8610	725	8	1925		7610	660	8	1925		6575	590	8	1925
16		9865	985	9	2175		8700	895	9	2175		7500	800	9	2175
18		11105	1290	10	2375		9775	1170	10	2375		8415	1040	10	2375
20		12330	1635	11	2450		10840	1480	11	2450		9325	1320	11	2450
9 1/2	90-2.1	7710	400	6	1675	900-2.1	6880	370	6	1675	9000-2.1	6000	330	5	1675
11 7/8		9990	675	7	2150		8870	615	7	2150		7700	550	7	2150
14		11920	985	8	2350		10545	895	8	2350		9130	795	8	2350
16		13655	1335	9	2550		12060	1205	9	2550		10420	1070	9	2550
18		15375	1740	10	2750		13555	1570	10	2750		11690	1390	10	2750
20		17070	2200	11	2850		15035	1985	11	2850		12950	1760	11	2850
9 1/2	40-2.2	3460	185	6	1450	400-2.2	3070	170	6	1450	4000-2.2	2660	155	5	1450
11 7/8		4480	315	7	1625		3955	290	7	1625		3410	260	6	1600
14		5340	460	8	1825		4700	420	8	1825		4040	380	7	1750
9 1/2	45-2.2	4065	215	6	1475	450-2.2	3615	195	6	1475	4500-2.2	3135	180	5	1475
11 7/8		5265	365	7	1625		4655	330	7	1625		4020	300	6	1625
14		6280	530	8	1825		5535	485	8	1825		4765	435	8	1825
16		7190	725	9	1975		6325	660	9	1975		5435	590	9	1975
9 1/2	50-2.2	4675	245	6	1475	500-2.2	4155	225	6	1475	5000-2.2	3610	205	5	1475
11 7/8		6050	410	7	1625		5355	375	7	1625		4630	340	6	1625
14		7215	605	8	1825		6365	550	8	1825		5490	495	8	1825
16		8265	820	9	1975		7280	745	9	1975		6265	670	9	1975
9 1/2	60-2.2	5430	280	6	1575	600-2.2	4835	260	6	1575	6000-2.2	4205	235	5	1575
11 7/8		7035	475	7	1675		6230	430	7	1675		5395	390	6	1675
14		8390	690	8	1925		7410	630	8	1925		6395	565	8	1925
16		9610	940	9	2175		8470	855	9	2175		7300	760	9	2175
18		10815	1230	10	2375		9520	1115	10	2375		8190	995	10	2375
20		12010	1560	11	2450		10555	1410	11	2450		9070	1260	11	2450
9 1/2	65-2.2	6005	310	6	1575	650-2.2	5350	285	6	1575	6500-2.2	4660	255	5	1575
11 7/8		7780	520	7	1675		6895	475	7	1675		5975	425	7	1675
14		9280	760	8	1925		8200	690	8	1925		7090	615	8	1925
16		10630	1030	9	2175		9375	935	9	2175		8090	835	9	2175
18		11965	1345	10	2375		10535	1220	10	2375		9070	1085	10	2375
20		13290	1705	11	2450		11685	1545	11	2450		10050	1375	11	2450
9 1/2	90-2.2	8310	420	6	1675	900-2.2	7415	385	6	1675	9000-2.2	6470	345	5	1675
11 7/8		10770	705	7	2150		9560	645	7	2150		8295	575	7	2150
14		12845	1030	8	2350		11365	935	8	2350		9840	830	8	2350
16		14720	1395	9	2550		13000	1260	9	2550		11230	1120	9	2550
18		16570	1815	10	2750		14610	1640	10	2750		12600	1455	10	2750
20		18400	2300	11	2850		16200	2070	11	2850		13960	1835	11	2850

For **SI**: 1 inch = 25.4 mm; 1 ft-lb = 1.36 N-m: 1 in^2-lb = 179 mm^2-N; 1 in-lb/in = 4.4 N-mm/mm; 1 lb = 4.45 N; 1 lb/ft = 14.6 N/m.

[1] For joist descriptions see Table 1.

[2] Calculate bending and shear deflection as described in Section 4.11 "Deflection".

[3] Repetitive member use factors are limited to 1.0

[4] For reference design reaction values, see Table 3.

TABLE 2 (CONT.)—REFERENCE DESIGN VALUES FOR BCI JOISTS[1], [4]

DEPTH (in)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)
9 1/2	40S-1.3	1570	115	6	1450	400S-1.3	1440	110	6	1450	4000S-1.3	1210	100	5	1450
11 7/8		2035	200	7	1625		1855	190	7	1625		1545	170	6	1600
14		2425	300	8	1825		2210	280	8	1825		1835	250	7	1750
9 1/2	45S-1.3	1845	135	6	1475	450S-1.3	1695	130	6	1475	4500S-1.3	1425	115	5	1475
11 7/8		2390	230	7	1625		2185	220	7	1625		1825	195	6	1625
14		2850	340	8	1825		2600	320	8	1825		2160	285	8	1825
16		3265	470	9	1975		2970	440	9	1975		2465	390	9	1975
9 1/2	50S-1.3	2120	155	6	1475	500S-1.3	1945	145	6	1475	5000S-1.3	1640	130	5	1475
11 7/8		2745	260	7	1625		2510	245	7	1625		2100	220	6	1625
14		3275	385	8	1825		2990	360	8	1825		2490	320	8	1825
16		3750	530	9	1975		3420	495	9	1975		2840	435	9	1975
9 1/2	60S-1.3	2465	175	6	1575	600S-1.3	2265	165	6	1575	6000S-1.3	1910	150	5	1575
11 7/8		3190	300	7	1675		2920	280	7	1675		2450	250	6	1675
14		3805	440	8	1925		3475	415	8	1925		2900	365	8	1925
16		4360	600	9	2175		3975	565	9	2175		3310	495	9	2175
18		4910	790	10	2375		4470	740	10	2375		3715	650	10	2375
20		5450	1010	11	2450		4960	945	11	2450		4115	830	11	2450
9 1/2	65S-1.3	2725	195	6	1575	650S-1.3	2505	180	6	1575	6500S-1.3	2115	160	5	1575
11 7/8		3530	330	7	1675		3235	310	7	1675		2710	270	7	1675
14		4210	480	8	1925		3845	450	8	1925		3215	395	8	1925
16		4825	660	9	2175		4400	615	9	2175		3670	540	9	2175
18		5430	865	10	2375		4945	805	10	2375		4115	705	10	2375
20		6030	1100	11	2450		5485	1030	11	2450		4560	900	11	2450
9 1/2	90S-1.3	3770	260	6	1675	900S-1.3	3470	245	6	1675	9000S-1.3	2935	220	5	1675
11 7/8		4885	445	7	2150		4480	415	7	2150		3765	365	7	2150
14		5830	650	8	2350		5330	605	8	2350		4465	530	8	2350
16		6680	880	9	2550		6095	825	9	2550		5095	715	9	2550
18		7515	1155	10	2750		6855	1075	10	2750		5715	935	10	2750
20		8345	1465	11	2850		7605	1365	11	2850		6335	1185	11	2850
9 1/2	40S-1.4	1785	125	6	1450	400S-1.4	1635	120	6	1450	4000S-1.4	1370	105	5	1450
11 7/8		2310	215	7	1625		2110	205	7	1625		1760	180	6	1600
14		2755	320	8	1825		2510	300	8	1825		2085	265	7	1750
9 1/2	45S-1.4	2100	145	6	1475	450S-1.4	1925	135	6	1475	4500S-1.4	1620	125	5	1475
11 7/8		2715	245	7	1625		2480	235	7	1625		2075	205	6	1625
14		3235	365	8	1825		2950	345	8	1825		2455	305	8	1825
16		3710	500	9	1975		3375	470	9	1975		2805	415	9	1975
9 1/2	50S-1.4	2410	165	6	1475	500S-1.4	2215	155	6	1475	5000S-1.4	1865	140	5	1475
11 7/8		3120	280	7	1625		2855	265	7	1625		2390	235	6	1625
14		3720	415	8	1825		3395	385	8	1825		2830	340	8	1825
16		4260	565	9	1975		3885	530	9	1975		3230	465	9	1975
9 1/2	60S-1.4	2800	190	6	1575	600S-1.4	2575	180	6	1575	6000S-1.4	2170	160	5	1575
11 7/8		3625	320	7	1675		3320	300	7	1675		2780	265	6	1675
14		4325	470	8	1925		3950	440	8	1925		3300	390	8	1925
16		4955	645	9	2175		4520	600	9	2175		3765	530	9	2175
18		5575	845	10	2375		5080	790	10	2375		4220	695	10	2375
20		6190	1075	11	2450		5635	1005	11	2450		4675	885	11	2450
9 1/2	65S-1.4	3100	205	6	1575	650S-1.4	2845	195	6	1575	6500S-1.4	2405	175	5	1575
11 7/8		4010	350	7	1675		3675	330	7	1675		3080	290	7	1675
14		4785	515	8	1925		4370	485	8	1925		3655	425	8	1925
16		5480	705	9	2175		5000	660	9	2175		4170	575	9	2175
18		6170	925	10	2375		5620	860	10	2375		4675	755	10	2375
20		6850	1175	11	2450		6235	1095	11	2450		5180	960	11	2450
9 1/2	90S-1.4	4285	280	6	1675	900S-1.4	3940	265	6	1675	9000S-1.4	3335	235	5	1675
11 7/8		5550	475	7	2150		5090	445	7	2150		4280	390	7	2150
14		6625	695	8	2350		6055	650	8	2350		5070	565	8	2350
16		7590	945	9	2550		6930	880	9	2550		5790	765	9	2550
18		8540	1235	10	2750		7790	1150	10	2750		6495	1000	10	2750
20		9485	1570	11	2850		8640	1460	11	2850		7195	1265	11	2850

For **SI**: 1 inch = 25.4 mm; 1 ft-lb = 1.36 N-m: 1 in^2-lb = 179 mm^2-N; 1 in-lb/in = 4.4 N-mm/mm; 1 lb = 4.45 N; 1 lb/ft = 14.6 N/m.

[1] For joist descriptions see Table 1.

[2] Calculate bending and shear deflection as described in Section 4.11 "Deflection".

[3] Repetitive member use factors are limited to 1.0

[4] For reference design reaction values, see Table 3.

TABLE 2 (CONT.)—REFERENCE DESIGN VALUES FOR BCI JOISTS[1], [4]

DEPTH (in)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)
9 1/2	40S-1.5	2000	135	6	1450	400S-1.5	1830	125	6	1450	4000S-1.5	1535	115	5	1450
11 7/8		2585	230	7	1625		2360	215	7	1625		1970	190	6	1600
14		3085	340	8	1825		2810	320	8	1825		2335	280	7	1750
9 1/2	45S-1.5	2350	155	6	1475	450S-1.5	2155	145	6	1475	4500S-1.5	1810	130	5	1475
11 7/8		3040	265	7	1625		2780	250	7	1625		2320	220	6	1625
14		3625	390	8	1825		3305	365	8	1825		2750	325	8	1825
16		4150	530	9	1975		3780	500	9	1975		3140	440	9	1975
9 1/2	50S-1.5	2700	175	6	1475	500S-1.5	2480	165	6	1475	5000S-1.5	2085	150	5	1475
11 7/8		3495	300	7	1625		3195	280	7	1625		2675	250	6	1625
14		4165	440	8	1825		3800	410	8	1825		3170	365	8	1825
16		4775	600	9	1975		4350	560	9	1975		3615	495	9	1975
9 1/2	60S-1.5	3135	200	6	1575	600S-1.5	2880	190	6	1575	6000S-1.5	2430	170	5	1575
11 7/8		4060	345	7	1675		3715	320	7	1675		3115	285	6	1675
14		4845	505	8	1925		4425	470	8	1925		3695	415	8	1925
16		5550	685	9	2175		5060	640	9	2175		4215	560	9	2175
18		6245	900	10	2375		5690	840	10	2375		4730	735	10	2375
20		6935	1145	11	2450		6310	1070	11	2450		5240	935	11	2450
9 1/2	65S-1.5	3470	220	6	1575	650S-1.5	3190	210	6	1575	6500S-1.5	2690	185	5	1575
11 7/8		4495	375	7	1675		4115	355	7	1675		3450	310	7	1675
14		5360	550	8	1925		4895	515	8	1925		4090	450	8	1925
16		6140	750	9	2175		5600	700	9	2175		4670	615	9	2175
18		6910	985	10	2375		6295	915	10	2375		5240	800	10	2375
20		7670	1250	11	2450		6985	1165	11	2450		5800	1020	11	2450
9 1/2	90S-1.5	4800	300	6	1675	900S-1.5	4415	285	6	1675	9000S-1.5	3735	250	5	1675
11 7/8		6220	510	7	2150		5700	475	7	2150		4790	415	7	2150
14		7415	745	8	2350		6780	695	8	2350		5680	605	8	2350
16		8500	1010	9	2550		7760	940	9	2550		6485	815	9	2550
18		9565	1320	10	2750		8725	1225	10	2750		7275	1065	10	2750
20		10625	1675	11	2850		9680	1555	11	2850		8060	1345	11	2850
9 1/2	40S-1.6	2140	140	6	1450	400S-1.6	1965	135	6	1450	4000S-1.6	1645	120	5	1450
11 7/8		2770	245	7	1625		2530	230	7	1625		2110	205	6	1600
14		3305	360	8	1825		3010	335	8	1825		2500	300	7	1750
9 1/2	45S-1.6	2515	165	6	1475	450S-1.6	2310	155	6	1475	4500S-1.6	1940	140	5	1475
11 7/8		3260	280	7	1625		2975	265	7	1625		2485	235	6	1625
14		3885	415	8	1825		3540	385	8	1825		2950	340	8	1825
16		4450	565	9	1975		4050	530	9	1975		3365	465	9	1975
9 1/2	50S-1.6	2890	185	6	1475	500S-1.6	2655	175	6	1475	5000S-1.6	2235	155	5	1475
11 7/8		3745	315	7	1625		3425	300	7	1625		2865	265	6	1625
14		4465	465	8	1825		4075	435	8	1825		3395	385	8	1825
16		5115	635	9	1975		4660	595	9	1975		3875	525	9	1975
9 1/2	60S-1.6	3360	215	6	1575	600S-1.6	3085	205	6	1575	6000S-1.6	2605	180	5	1575
11 7/8		4350	365	7	1675		3985	340	7	1675		3335	300	6	1675
14		5190	535	8	1925		4740	500	8	1925		3955	440	8	1925
16		5945	730	9	2175		5420	680	9	2175		4515	595	9	2175
18		6690	955	10	2375		6095	890	10	2375		5065	780	10	2375
20		7430	1215	11	2450		6760	1135	11	2450		5610	990	11	2450
9 1/2	65S-1.6	3715	235	6	1575	650S-1.6	3415	220	6	1575	6500S-1.6	2885	195	5	1575
11 7/8		4815	400	7	1675		4405	375	7	1675		3695	330	7	1675
14		5740	585	8	1925		5245	550	8	1925		4385	480	8	1925
16		6580	795	9	2175		6000	745	9	2175		5000	650	9	2175
18		7405	1045	10	2375		6745	975	10	2375		5610	850	10	2375
20		8220	1325	11	2450		7480	1235	11	2450		6215	1075	11	2450
9 1/2	90S-1.6	5140	320	6	1675	900S-1.6	4730	300	6	1675	9000S-1.6	4000	265	5	1675
11 7/8		6660	540	7	2150		6105	505	7	2150		5135	445	7	2150
14		7945	790	8	2350		7265	740	8	2350		6085	645	8	2350
16		9105	1075	9	2550		8315	1000	9	2550		6945	865	9	2550
18		10250	1400	10	2750		9345	1305	10	2750		7795	1130	10	2750
20		11380	1775	11	2850		10370	1650	11	2850		8635	1430	11	2850

For **SI**: 1 inch = 25.4 mm; 1 ft-lb = 1.36 N-m: 1 in^2-lb = 179 mm^2-N; 1 in-lb/in = 4.4 N-mm/mm; 1 lb = 4.45 N; 1 lb/ft = 14.6 N/m.

[1] For joist descriptions see Table 1.

[2] Calculate bending and shear deflection as described in Section 4.11 "Deflection".

[3] Repetitive member use factors are limited to 1.0

[4] For reference design reaction values, see Table 3.

TABLE 2 (CONT.)—REFERENCE DESIGN VALUES FOR BCI JOISTS[1], [4]

DEPTH (in)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)
9 1/2	40S-1.7	2355	150	6	1450	400S-1.7	2160	140	6	1450	4000S-1.7	1810	125	5	1450
11 7/8		3050	255	7	1625		2785	240	7	1625		2320	215	6	1600
14		3635	380	8	1825		3310	355	8	1825		2750	315	7	1750
9 1/2	45S-1.7	2770	175	6	1475	450S-1.7	2540	165	6	1475	4500S-1.7	2135	145	5	1475
11 7/8		3585	295	7	1625		3275	280	7	1625		2735	245	6	1625
14		4270	435	8	1825		3895	410	8	1825		3245	360	8	1825
16		4895	595	9	1975		4455	560	9	1975		3700	490	9	1975
9 1/2	50S-1.7	3180	200	6	1475	500S-1.7	2920	185	6	1475	5000S-1.7	2460	165	5	1475
11 7/8		4120	335	7	1625		3765	315	7	1625		3150	280	6	1625
14		4910	495	8	1825		4480	460	8	1825		3735	405	8	1825
16		5625	675	9	1975		5125	630	9	1975		4260	550	9	1975
9 1/2	60S-1.7	3695	230	6	1575	600S-1.7	3395	215	6	1575	6000S-1.7	2865	190	5	1575
11 7/8		4785	385	7	1675		4380	360	7	1675		3670	320	6	1675
14		5710	565	8	1925		5215	530	8	1925		4350	465	8	1925
16		6540	770	9	2175		5965	720	9	2175		4965	630	9	2175
18		7360	1010	10	2375		6705	940	10	2375		5575	820	10	2375
20		8175	1285	11	2450		7435	1195	11	2450		6170	1045	11	2450
9 1/2	65S-1.7	4090	250	6	1575	650S-1.7	3755	235	6	1575	6500S-1.7	3170	210	5	1575
11 7/8		5295	425	7	1675		4850	395	7	1675		4065	350	7	1675
14		6315	620	8	1925		5770	580	8	1925		4820	505	8	1925
16		7235	845	9	2175		6600	785	9	2175		5500	685	9	2175
18		8145	1105	10	2375		7420	1030	10	2375		6175	895	10	2375
20		9040	1400	11	2450		8230	1305	11	2450		6840	1135	11	2450
9 1/2	90S-1.7	5655	340	6	1675	900S-1.7	5205	320	6	1675	9000S-1.7	4400	280	5	1675
11 7/8		7330	575	7	2150		6715	535	7	2150		5645	470	7	2150
14		8740	840	8	2350		7995	780	8	2350		6695	680	8	2350
16		10015	1135	9	2550		9145	1060	9	2550		7640	915	9	2550
18		11275	1485	10	2750		10280	1380	10	2750		8575	1195	10	2750
20		12520	1880	11	2850		11405	1745	11	2850		9500	1510	11	2850
9 1/2	40S-1.8	2605	160	6	1450	400S-1.8	2390	150	6	1450	4000S-1.8	2000	135	5	1450
11 7/8		3370	270	7	1625		3080	255	7	1625		2565	225	6	1600
14		4020	400	8	1825		3660	375	8	1825		3040	330	7	1750
9 1/2	45S-1.8	3060	185	6	1475	450S-1.8	2810	175	6	1475	4500S-1.8	2360	155	5	1475
11 7/8		3965	315	7	1625		3620	295	7	1625		3025	260	6	1625
14		4725	460	8	1825		4310	430	8	1825		3585	380	8	1825
16		5410	630	9	1975		4930	585	9	1975		4090	515	9	1975
9 1/2	50S-1.8	3520	210	6	1475	500S-1.8	3230	195	6	1475	5000S-1.8	2725	175	5	1475
11 7/8		4555	355	7	1625		4165	335	7	1625		3485	295	6	1625
14		5430	520	8	1825		4955	490	8	1825		4130	430	8	1825
16		6220	710	9	1975		5670	665	9	1975		4715	580	9	1975
9 1/2	60S-1.8	4090	240	6	1575	600S-1.8	3755	225	6	1575	6000S-1.8	3165	200	5	1575
11 7/8		5295	405	7	1675		4845	380	7	1675		4060	335	6	1675
14		6315	595	8	1925		5765	560	8	1925		4815	490	8	1925
16		7235	810	9	2175		6595	760	9	2175		5495	660	9	2175
18		8140	1065	10	2375		7415	990	10	2375		6165	865	10	2375
20		9040	1350	11	2450		8225	1260	11	2450		6825	1095	11	2450
9 1/2	65S-1.8	4520	265	6	1575	650S-1.8	4155	250	6	1575	6500S-1.8	3505	220	5	1575
11 7/8		5855	445	7	1675		5360	420	7	1675		4495	365	7	1675
14		6985	655	8	1925		6380	610	8	1925		5330	535	8	1925
16		8000	890	9	2175		7300	830	9	2175		6085	720	9	2175
18		9005	1165	10	2375		8205	1085	10	2375		6825	940	10	2375
20		10000	1480	11	2450		9105	1375	11	2450		7565	1195	11	2450
9 1/2	90S-1.8	6255	360	6	1675	900S-1.8	5755	340	6	1675	9000S-1.8	4870	300	5	1675
11 7/8		8105	605	7	2150		7430	570	7	2150		6245	495	7	2150
14		9670	885	8	2350		8840	825	8	2350		7405	720	8	2350
16		11080	1200	9	2550		10115	1115	9	2550		8450	970	9	2550
18		12470	1565	10	2750		11370	1455	10	2750		9485	1260	10	2750
20		13845	1985	11	2850		12615	1840	11	2850		10505	1590	11	2850

For **SI**: 1 inch = 25.4 mm; 1 ft-lb = 1.36 N-m: 1 in^2-lb = 179 mm^2-N; 1 in-lb/in = 4.4 N-mm/mm; 1 lb = 4.45 N; 1 lb/ft = 14.6 N/m.

[1] For joist descriptions see Table 1.

[2] Calculate bending and shear deflection as described in Section 4.11 "Deflection".

[3] Repetitive member use factors are limited to 1.0

[4] For reference design reaction values, see Table 3.

TABLE 2 (CONT.)—REFERENCE DESIGN VALUES FOR BCI JOISTS[1], [4]

DEPTH (in)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)
9 1/2	40S-1.9	2785	165	6	1450	400S-1.9	2550	160	6	1450	4000S-1.9	2140	140	5	1450
11 7/8		3600	285	7	1625		3290	270	7	1625		2740	235	6	1600
14		4295	420	8	1825		3910	395	8	1825		3250	345	7	1750
9 1/2	45S-1.9	3270	195	6	1475	450S-1.9	3000	185	6	1475	4500S-1.9	2520	160	5	1475
11 7/8		4235	330	7	1625		3870	310	7	1625		3235	270	6	1625
14		5050	485	8	1825		4605	455	8	1825		3830	400	8	1825
16		5785	660	9	1975		5265	615	9	1975		4370	540	9	1975
9 1/2	50S-1.9	3760	220	6	1475	500S-1.9	3450	210	6	1475	5000S-1.9	2905	185	5	1475
11 7/8		4865	375	7	1625		4450	350	7	1625		3725	310	6	1625
14		5805	550	8	1825		5295	515	8	1825		4415	450	8	1825
16		6650	745	9	1975		6055	695	9	1975		5035	610	9	1975
9 1/2	60S-1.9	4370	255	6	1575	600S-1.9	4015	240	6	1575	6000S-1.9	3385	210	5	1575
11 7/8		5655	430	7	1675		5175	400	7	1675		4340	355	6	1675
14		6745	630	8	1925		6160	585	8	1925		5145	515	8	1925
16		7730	855	9	2175		7045	795	9	2175		5870	695	9	2175
18		8700	1115	10	2375		7920	1040	10	2375		6585	905	10	2375
20		9660	1420	11	2450		8785	1320	11	2450		7295	1150	11	2450
9 1/2	65S-1.9	4830	280	6	1575	650S-1.9	4440	260	6	1575	6500S-1.9	3745	230	5	1575
11 7/8		6260	470	7	1675		5730	440	7	1675		4805	385	7	1675
14		7465	690	8	1925		6815	645	8	1925		5695	560	8	1925
16		8550	935	9	2175		7800	870	9	2175		6500	760	9	2175
18		9625	1225	10	2375		8765	1140	10	2375		7295	990	10	2375
20		10685	1555	11	2450		9725	1445	11	2450		8080	1255	11	2450
9 1/2	90S-1.9	6685	380	6	1675	900S-1.9	6150	355	6	1675	9000S-1.9	5200	315	5	1675
11 7/8		8660	640	7	2150		7935	600	7	2150		6670	520	7	2150
14		10330	935	8	2350		9445	870	8	2350		7910	755	8	2350
16		11835	1265	9	2550		10805	1175	9	2550		9030	1020	9	2550
18		13325	1650	10	2750		12150	1530	10	2750		10135	1320	10	2750
20		14795	2085	11	2850		13480	1935	11	2850		11225	1670	11	2850
9 1/2	40S-2.0	3070	175	6	1450	400S-2.0	2815	165	6	1450	4000S-2.0	2360	150	5	1450
11 7/8		3970	300	7	1625		3625	280	7	1625		3020	250	6	1600
14		4735	440	8	1825		4315	410	8	1825		3580	365	7	1750
9 1/2	45S-2.0	3605	205	6	1475	450S-2.0	3310	190	6	1475	4500S-2.0	2780	170	5	1475
11 7/8		4670	345	7	1625		4265	325	7	1625		3565	285	6	1625
14		5565	505	8	1825		5075	475	8	1825		4225	415	8	1825
16		6375	690	9	1975		5805	645	9	1975		4820	565	9	1975
9 1/2	50S-2.0	4145	230	6	1475	500S-2.0	3805	220	6	1475	5000S-2.0	3205	195	5	1475
11 7/8		5365	390	7	1625		4905	370	7	1625		4105	325	6	1625
14		6400	575	8	1825		5840	540	8	1825		4865	470	8	1825
16		7330	780	9	1975		6680	730	9	1975		5555	640	9	1975
9 1/2	60S-2.0	4815	265	6	1575	600S-2.0	4425	250	6	1575	6000S-2.0	3730	220	5	1575
11 7/8		6235	450	7	1675		5710	420	7	1675		4785	370	6	1675
14		7440	660	8	1925		6790	615	8	1925		5670	540	8	1925
16		8520	895	9	2175		7770	835	9	2175		6470	725	9	2175
18		9590	1170	10	2375		8735	1090	10	2375		7260	950	10	2375
20		10650	1490	11	2450		9690	1385	11	2450		8040	1205	11	2450
9 1/2	65S-2.0	5325	295	6	1575	650S-2.0	4895	275	6	1575	6500S-2.0	4130	245	5	1575
11 7/8		6900	495	7	1675		6315	465	7	1675		5295	405	7	1675
14		8230	725	8	1925		7515	675	8	1925		6280	590	8	1925
16		9425	985	9	2175		8600	915	9	2175		7165	795	9	2175
18		10610	1285	10	2375		9665	1195	10	2375		8045	1035	10	2375
20		11780	1630	11	2450		10725	1515	11	2450		8910	1315	11	2450
9 1/2	90S-2.0	7370	400	6	1675	900S-2.0	6780	375	6	1675	9000S-2.0	5735	330	5	1675
11 7/8		9550	675	7	2150		8750	630	7	2150		7355	550	7	2150
14		11390	980	8	2350		10415	915	8	2350		8725	795	8	2350
16		13050	1330	9	2550		11915	1235	9	2550		9955	1070	9	2550
18		14690	1730	10	2750		13395	1605	10	2750		11170	1385	10	2750
20		16310	2190	11	2850		14860	2030	11	2850		12375	1750	11	2850

For **SI**: 1 inch = 25.4 mm; 1 ft-lb = 1.36 N-m: 1 in^2-lb = 179 mm^2-N; 1 in-lb/in = 4.4 N-mm/mm; 1 lb = 4.45 N; 1 lb/ft = 14.6 N/m.

[1] For joist descriptions see Table 1.

[2] Calculate bending and shear deflection as described in Section 4.11 "Deflection".

[3] Repetitive member use factors are limited to 1.0

[4] For reference design reaction values, see Table 3.

TABLE 2 (CONT.)—REFERENCE DESIGN VALUES FOR BCI JOISTS[1], [4]

DEPTH (in)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)
9 1/2	40S-2.1	3210	185	6	1450	400S-2.1	2940	175	6	1450	4000S-2.1	2470	155	5	1450
11 7/8		4155	315	7	1625		3795	295	7	1625		3165	260	6	1600
14		4955	460	8	1825		4515	430	8	1825		3750	380	7	1750
9 1/2	45S-2.1	3775	215	6	1475	450S-2.1	3460	200	6	1475	4500S-2.1	2910	180	5	1475
11 7/8		4885	360	7	1625		4465	340	7	1625		3730	300	6	1625
14		5825	530	8	1825		5310	495	8	1825		4420	435	8	1825
16		6670	725	9	1975		6075	675	9	1975		5045	590	9	1975
9 1/2	50S-2.1	4335	245	6	1475	500S-2.1	3980	230	6	1475	5000S-2.1	3350	200	5	1475
11 7/8		5615	410	7	1625		5135	385	7	1625		4295	340	6	1625
14		6695	600	8	1825		6110	565	8	1825		5095	490	8	1825
16		7670	820	9	1975		6990	765	9	1975		5810	665	9	1975
9 1/2	60S-2.1	5040	280	6	1575	600S-2.1	4630	265	6	1575	6000S-2.1	3905	230	5	1575
11 7/8		6525	470	7	1675		5975	440	7	1675		5005	385	6	1675
14		7785	690	8	1925		7110	645	8	1925		5935	565	8	1925
16		8915	940	9	2175		8130	875	9	2175		6770	760	9	2175
18		10035	1225	10	2375		9140	1140	10	2375		7600	990	10	2375
20		11145	1555	11	2450		10140	1445	11	2450		8415	1255	11	2450
9 1/2	65S-2.1	5575	305	6	1575	650S-2.1	5125	290	6	1575	6500S-2.1	4325	255	5	1575
11 7/8		7220	520	7	1675		6610	485	7	1675		5545	425	7	1675
14		8610	760	8	1925		7865	710	8	1925		6575	615	8	1925
16		9865	1030	9	2175		9000	960	9	2175		7500	830	9	2175
18		11105	1345	10	2375		10115	1250	10	2375		8415	1085	10	2375
20		12330	1705	11	2450		11220	1585	11	2450		9325	1370	11	2450
9 1/2	90S-2.1	7710	420	6	1675	900S-2.1	7095	395	6	1675	9000S-2.1	6000	345	5	1675
11 7/8		9990	705	7	2150		9155	660	7	2150		7700	575	7	2150
14		11920	1030	8	2350		10900	960	8	2350		9130	830	8	2350
16		13655	1390	9	2550		12470	1295	9	2550		10420	1120	9	2550
18		15375	1815	10	2750		14020	1680	10	2750		11690	1450	10	2750
20		17070	2295	11	2850		15555	2125	11	2850		12950	1830	11	2850
9 1/2	40S-2.2	3460	190	6	1450	400S-2.2	3170	180	6	1450	4000S-2.2	2660	160	5	1450
11 7/8		4480	325	7	1625		4090	305	7	1625		3410	270	6	1600
14		5340	480	8	1825		4865	450	8	1825		4040	395	7	1750
9 1/2	45S-2.2	4065	225	6	1475	450S-2.2	3730	210	6	1475	4500S-2.2	3135	185	5	1475
11 7/8		5265	380	7	1625		4810	355	7	1625		4020	310	6	1625
14		6280	555	8	1825		5725	520	8	1825		4765	455	8	1825
16		7190	755	9	1975		6545	705	9	1975		5435	615	9	1975
9 1/2	50S-2.2	4675	255	6	1475	500S-2.2	4290	240	6	1475	5000S-2.2	3610	210	5	1475
11 7/8		6050	430	7	1625		5535	405	7	1625		4630	355	6	1625
14		7215	630	8	1825		6585	590	8	1825		5490	515	8	1825
16		8265	855	9	1975		7530	795	9	1975		6265	695	9	1975
9 1/2	60S-2.2	5430	290	6	1575	600S-2.2	4990	275	6	1575	6000S-2.2	4205	245	5	1575
11 7/8		7035	495	7	1675		6440	460	7	1675		5395	405	6	1675
14		8390	720	8	1925		7660	675	8	1925		6395	585	8	1925
16		9610	980	9	2175		8760	915	9	2175		7300	795	9	2175
18		10815	1280	10	2375		9850	1190	10	2375		8190	1035	10	2375
20		12010	1625	11	2450		10930	1510	11	2450		9070	1310	11	2450
9 1/2	65S-2.2	6005	320	6	1575	650S-2.2	5520	300	6	1575	6500S-2.2	4660	265	5	1575
11 7/8		7780	545	7	1675		7125	510	7	1675		5975	445	7	1675
14		9280	795	8	1925		8480	740	8	1925		7090	645	8	1925
16		10630	1075	9	2175		9700	1000	9	2175		8090	870	9	2175
18		11965	1405	10	2375		10905	1305	10	2375		9070	1130	10	2375
20		13290	1780	11	2450		12095	1655	11	2450		10050	1430	11	2450
9 1/2	90S-2.2	8310	440	6	1675	900S-2.2	7645	410	6	1675	9000S-2.2	6470	360	5	1675
11 7/8		10770	740	7	2150		9870	690	7	2150		8295	600	7	2150
14		12845	1075	8	2350		11745	1000	8	2350		9840	870	8	2350
16		14720	1455	9	2550		13440	1350	9	2550		11230	1170	9	2550
18		16570	1895	10	2750		15110	1760	10	2750		12600	1515	10	2750
20		18400	2400	11	2850		16765	2220	11	2850		13960	1915	11	2850

For **SI**: 1 inch = 25.4 mm; 1 ft-lb = 1.36 N-m: 1 in^2-lb = 179 mm^2-N; 1 in-lb/in = 4.4 N-mm/mm; 1 lb = 4.45 N; 1 lb/ft = 14.6 N/m.

[1] For joist descriptions see Table 1.

[2] Calculate bending and shear deflection as described in Section 4.11 "Deflection".

[3] Repetitive member use factors are limited to 1.0

[4] For reference design reaction values, see Table 3.

TABLE 2 (CONT.)—REFERENCE DESIGN VALUES FOR BCI JOISTS[1]

DEPTH (in)	SERIES	MOMENT[3] (ft-lbs)	EI[2] x 10^6 (in^2-lbs)	K[2] x 10^6 (in-lb/in)	VERT. SHEAR (lbs)										
9 1/2	90E-2.0	7280	368	6.5	1675										
11 7/8		9435	624	8.0	2175										
14		11360	913	9.4	2350										
16		13170	1240	10.7	2550										
18		14985	1620	12.0	2750										
20		16795	2056	13.3	2850										
22		18610	2548	14.6	3235										
24		20420	3099	15.9	3440										

For **SI**: 1 inch = 25.4 mm; 1 ft-lb = 1.36 N-m; 1 in^2-lb = 179 mm^2-N; 1 in-lb/in = 4.4 N-mm/mm; 1 lb = 4.45 N; 1 lb/ft = 14.6 N/m.

[1] For joist descriptions see Table 1.
[2] Calculate bending and shear deflection as described in Section 4.11 "Deflection".
[3] Repetitive member use factors are limited to 1.0
[4] For reference design reaction values, see Table 3.

TABLE 3—REFERENCE DESIGN REACTION VALUES FOR BCI JOISTS[1]

SERIES	DEPTH (in)	END REACTION (lbs)						INTERMEDIATE REACTION (lbs)					
		1 1/2"[2]		3 1/2"				3 1/2"[2]		5 1/4"			
		NO[3]	YES[4]	NO[3]	YES[4]			NO[3]	YES[4]	NO[3]	YES[4]		
90E	9 1/2	1215	1425	1375	1550			2775	3150	3045	3270		
	11 7/8	1215	1875	1660	1950			2855	3745	3150	3880		
	14	1215	1950	1680	2150			2930	3850	3245	4425		
	16	1215	2150	1700	2350			2995	4000	3335	4650		
	18	N/A	2240	N/A	2550			N/A	4150	N/A	4720		
	20	N/A	2500	N/A	2650			N/A	4300	N/A	4850		
	22	N/A	2935	N/A	3150			N/A	5230	N/A	5505		
	24	N/A	3110	N/A	3320			N/A	5345	N/A	5900		

For **SI**: 1 inch = 25.4 mm; 1 lb = 4.45 N

[1] For joist descriptions see Table 1.
[2] Minimum bearing length required.
[3] No web stiffener required.
[4] Web stiffener required see Figure 1.

TABLE 3 (CONT)—REFERENCE DESIGN REACTION VALUES FOR BCI JOISTS [1]

SERIES	DEPTH (in)	END REACTION (lbs)						INTERMEDIATE REACTION (lbs)					
		1 1/2" [2]		3 1/2"		5 1/4"		3 1/2" [2]		5 1/4"		7"	
		NO [3]	YES [4]	NO [3]	YES [4]	NO [3]	YES [4]	NO [3]	YES [4]	NO [3]	YES [4]	NO [3]	YES [4]
40, 400 40S, 400S	9 1/2	950	1125	1125	1275			2050	2350	2525	2750		
	11 7/8	950	1425	1400	1475			2200	2850	2650	3250		
	14	1025	1525	1425	1725			2200	3450	2700	3650		
45, 450 45S 450S	9 1/2	1025	1125	1125	1275			2200	2350	2575	2750		
	11 7/8	1025	1425	1425	1475			2325	2850	2650	3250		
	14	1025	1525	1450	1725			2350	3450	2700	3650		
	16	1025	1625	1475	1975			2400	3650	2750	3750		
50, 500 50S, 500S	9 1/2	1025	1125	1125	1275			2200	2350	2575	2750		
	11 7/8	1025	1425	1425	1475			2325	2850	2650	3250		
	14	1025	1525	1475	1725			2350	3450	2700	3650		
	16	1025	1625	1500	1975			2400	3650	2750	3750		
60, 600 60S, 600S	9 1/2	1175	1375	1375	1425			2400	2650	2700	2750		
	11 7/8	1175	1425	1425	1475			2750	2850	3200	3250		
	14	1175	1525	1525	1725			2750	3450	3200	3650		
	16	1175	1625	1550	1975			2750	3650	3200	3750		
	18	N/A	1750	N/A	2175			N/A	3950	N/A	4550		
	20	N/A	1900	N/A	2250			N/A	4200	N/A	4750		
65, 650 65S, 650S	9 1/2	1175	1375	1375	1425			2400	2650	2700	2750		
	11 7/8	1175	1425	1425	1475			2750	2850	3200	3250		
	14	1175	1525	1525	1725			2750	3450	3200	3650		
	16	1175	1625	1550	1975			2750	3650	3200	3750		
	18	N/A	1750	N/A	2175			N/A	3950	N/A	4550		
	20	N/A	1900	N/A	2250			N/A	4200	N/A	4750		
90, 900 90S, 900S	9 1/2	1175	1425	1375	1450			3000	3150	3000	3150		
	11 7/8	1425	1850	1800	1950			3375	3700	4000	4300		
	14	1450	1950	1850	2150			3400	3850	4100	4450		
	16	1475	2150	1900	2350			3425	4000	4200	4650		
	18	N/A	2300	N/A	2550			N/A	4150	N/A	4750		
	20	N/A	2500	N/A	2650			N/A	4300	N/A	4850		
4000 4000S	9 1/2	950	1125	1125	1275	1275	1325	2050	2350	2525	2750	2525	2900
	11 7/8	950	1250	1250	1475	1475	1525	2200	2850	2525	3000	2525	3225
	14	950	1350	1350	1725	1725	1725	2200	3050	2525	3200	2525	3500
4500 4500S	9 1/2	950	1125	1125	1275	1275	1325	2100	2350	2525	2750	2525	2950
	11 7/8	950	1425	1425	1475	1475	1525	2250	2850	2525	3000	2525	3250
	14	950	1525	1450	1725	1675	1775	2350	3050	2525	3200	2525	3650
	16	950	1625	1475	1975	1750	1975	2400	3200	2525	3350	2525	3750
5000 5000S	9 1/2	950	1125	1125	1275	1275	1325	2100	2350	2525	2750	2525	2950
	11 7/8	950	1425	1425	1475	1475	1525	2250	2850	2525	3000	2525	3250
	14	950	1525	1475	1725	1675	1775	2350	3050	2525	3200	2525	3650
	16	950	1625	1500	1975	1750	1975	2400	3200	2525	3350	2525	3750
6000 6000S	9 1/2	1175	1375	1375	1425	1425	1475	2400	2650	2700	2750	3000	3150
	11 7/8	1175	1425	1425	1475	1475	1675	2500	2850	2900	3000	3200	3250
	14	1175	1525	1525	1725	1725	1925	2600	3150	2925	3200	3400	3650
	16	1175	1625	1550	1975	1900	2175	2650	3350	2950	3350	3575	3750
	18	N/A	1750	N/A	2175	N/A	2375	N/A	3500	N/A	3550	N/A	4550
	20	N/A	1900	N/A	2250	N/A	2450	N/A	3650	N/A	3700	N/A	4750
6500 6500S	9 1/2	1175	1375	1375	1425	1425	1475	2400	2650	2700	2750	3000	3150
	11 7/8	1175	1425	1425	1475	1475	1675	2500	2850	2900	3000	3200	3250
	14	1175	1525	1525	1725	1725	1925	2600	3150	2925	3200	3400	3650
	16	1175	1625	1550	1975	1900	2175	2650	3350	2950	3350	3575	3750
	18	N/A	1750	N/A	2175	N/A	2375	N/A	3500	N/A	3550	N/A	4550
	20	N/A	1900	N/A	2250	N/A	2450	N/A	3650	N/A	3700	N/A	4750
9000 9000S	9 1/2	1175	1425	1375	1450	1450	1650	3000	3150	3000	3150	3100	3350
	11 7/8	1250	1850	1425	1950	1850	2150	3025	3700	3150	3800	3400	3800
	14	1250	1950	1625	2150	2050	2350	3050	3850	3250	4200	3700	4200
	16	1300	2150	1625	2350	2225	2550	3100	4000	3400	4600	3900	4600
	18	N/A	2300	N/A	2550	N/A	2750	N/A	4150	N/A	4750	N/A	4850
	20	N/A	2500	N/A	2650	N/A	2850	N/A	4300	N/A	4850	N/A	4950

For **SI**: 1 inch = 25.4 mm; 1 lb = 4.45 N

[1] For joist descriptions see Table 1.

[2] Minimum bearing length required.

[3] No web stiffener required.

[4] Web stiffener required see Figure 1.

TABLE 4—BLOCKING PANELS[1]

FLANGE DEPTH (in)	JOIST DEPTH (in)	VERT. CAP. (lbs/ft) STIFFENER NO	VERT. CAP. (lbs/ft) STIFFENER YES[2][3]	FLANGE DEPTH (in)	JOIST DEPTH (in)	VERT. CAP. (lbs/ft) STIFFENER NO	VERT. CAP. (lbs/ft) STIFFENER YES[2][3]	FLANGE DEPTH (in)	JOIST DEPTH (in)	VERT. CAP. (lbs/ft) STIFFENER NO	VERT. CAP. (lbs/ft) STIFFENER YES[2][3]
1.5	9 1/2	2650 (1,875)[4]	N/A	1.31	9 1/2	2400	N/A	1.125	9 1/2	2300	N/A
	11 7/8	2500 (1,680)[4]	N/A		11 7/8	2250	N/A		11 7/8	2150	N/A
	14	2400 (1,500)[4]	N/A		14	2100	N/A		14	2000	N/A
	16	2300 (1,340)[4]	2700		16	2000	2600		16	1900	2500
	18	N/A	2700		18	N/A	2600		18	N/A	2500
	20 - 24	N/A	2700		20	N/A	2600		20	N/A	2500

For **SI**: 1 inch = 25.4 mm; 1 lb/ft = 14.6 N/m

[1] Panel shall be continuously supported

[2] Web stiffener required at each end see FIGURE 1.

[3] 3 - 8d nails required in web stiffeners for blocking panels.

[4] Values in parentheses apply to BCI90e only

TABLE 5—EQUIVALENT SPECIFIC GRAVITIES FOR CONNECTORS [1]

FLANGE GRADING	LATERAL INSTALLED INTO WIDE FACE		LATERAL INSTALLED INTO NARROW FACE		WITHDRAWAL	
	Loaded parallel to length	Loaded perp. to length	Loaded parallel to length	Loaded perp. to length	Loaded parallel to length	Loaded perp. to length
1.3-2.2	0.50	0.50	0.50	0.46	0.50	0.50

[1]A specific gravity of 0.46 is equivalent to Douglas Fir-South
A specific gravity of 0.50 is equivalent to Douglas Fir-Larch

TABLE 6—ALLOWABLE CONNECTOR SPACINGS FOR BCI JOISTS

CONNECTOR SIZE	NAILS PERPENDICULAR TO THE GLUE LINE		NAILS PARALLEL TO THE GLUE LINE	
	O.C. SPACING (inches)	END OF JOIST (inches)	O.C. SPACING (inches)	END OF JOIST (inches)
8d BOX	2	1.5	4	1.5
8d COMMON	2	1.5	4	3
10d & 12d BOX	2	1.5	4	3
16d BOX	2	1.5	4	3
10d & 12d COMMON	3	2	6	4
16d SINKER	3	2	6	4
16d COMMON	3	2	6	4

For **SI**: 1 inch = 25.4 mm

TABLE 7—ALLOWABLE SHEAR (PLF) FOR HORIZONTAL WOOD STRUCTURAL PANEL DIAPHRAGMS FRAMED WITH BCI JOISTS FOR SEISMIC LOADING[1,10]

SHEATHING GRADE	COMMON NAIL SIZE	MINIMUM NOMINAL PANEL THICKNESS (IN)	MINIMUM NOMINAL WIDTH OF FRAMING MEMBERS AT ADJOINING EDGES AND BOUNDARIES (IN)[2,4,5]	BLOCKED DIAPHRAGMS			UNBLOCKED DIAPHRAGMS	
				NAIL SPACING (IN) AT DIAPHRAGHM BOUNDARIES (ALL CASES), AT CONTINUOUS PANEL EDGES PARALLEL TO LOAD (CASES 3 & 4), AND AT ALL PANEL EDGES (CASES 5 & 6)[6]			NAILS SPACED 6 IN MAX AT SUPPORTED EDGES	
				6	4[7]	2-1/2[7,8]	CASE 1 (NO UNBLOCKED EDGES OR CONTINUOUS JOINTS PARALLEL TO LOAD	ALL OTHER CONFIGURATIONS (CASES 2, 3, 4, 5 & 6)
				NAIL SPACING (IN) AT OTHER PANEL EDGES (CASES 1, 2, 3 & 4)				
				6	6	4[7]		
Structural 1	6d[9]	5/16	2	185	250	—	165	125
			3	210	280	400	185	140
	8d	3/8	2	270	360	—	240	180
			3	300	400	575	265	200
	10d	15/32	2	320	425	—	285	215
			3	360	480	690	320	240
Sheathing and Single Floor	6d[9]	5/16	2	170	225	—	150	110
			3	190	250	360	170	125
		3/8	2	185	250	—	165	125
			3	210	280	400	185	140
	8d	3/8	2	240	320	—	215	160
			3	270	360	515	240	180
		7/16	2	255	340	—	230	170
			3	285	380	545	255	190
		15/32	2	270	360	—	240	180
			3	300	400	575	265	200
	10d	15/32	2	290	385	—	255	190
			3	325	430	620	290	215
		19/32	2	320	425	—	285	215
			3	360	480	690	320	240

For **SI**: 1 inch = 25.4 mm; 1 plf = 14.59 N/m.

[1]For wind load applications, the values in the table above shall be permitted to be multiplied by 1.4.

[2]Minimum flange grade = 1.7E MOE.

[3]The tabulated allowable shear capacities are for I-joist series with flanges having a specific gravity (G) of 0.50 or higher (see Table 5). For G<0.50 the allowable shear capacities shall be reduced by multiplying the allowable shear shear capacities by the Specific Gravity Adjustment Factor = [1-(0.5-G)]. The Specific Gravity Adjustment Factor shall not be greater than 1.

[4]Nominal widths of framing members are as follows: 1-1/2 in, 1-3/4 in, and 2 in = 2 in (4000(s)-5000(s)); 2-5/16 in, 2-9/16 in, and 3-1/2 in = 3 in (6000(s)-9000(s), BCI '10' series).

[5]The minimum nominal width of framing members not located at boundaries or adjoining panel edges shall be 2 inches.

[6]Space nails maximum 12 inches o.c. along intermediate framing members (6 inches o.c. when supports are spaced 48 inches o.c. or greater). Fasteners shall be located 3/8 inch minimum from panel edges.

[7]When nail spacing is closer than 6 inches on center at diaphragm boundaries or any panel edge, adjacent nails within a row must be offset (staggered) 1/2 inch.

[8]Nail spacing closer than 4 inches on center requires BCI '10' series framing (2 5/16" min. flange width, 1 1/2" min. flange depth.)

[9]8d common nails minimum are recommended for roof panel attachments.

[10]See Table 4.2A of SDPWS for diaphragm Configurations.

Table 8 - Boise BCI Web Hole Charts: 40 psf Live Load, 15 psf Dead Load, up to 16" oc

Circular Holes

Distance from End Support

Joist Depth	Clear Span	Hole Diameter 2"	4"	6"	8"	10"	12"
9-1/2"	5'	1'-3"	1'-4"	1'-5"			
	6'	1'-3"	1'-4"	1'-5"			
	7'	1'-3"	1'-4"	1'-5"			
	8'	1'-3"	1'-4"	1'-5"			
	9'	1'-3"	1'-4"	1'-5"			
	10'	1'-3"	1'-4"	1'-5"			
	11'	1'-3"	1'-4"	1'-5"			
	12'	1'-3"	1'-4"	1'-7"			
	13'	1'-3"	1'-4"	2'-1"			
	14'	1'-3"	1'-4"	2'-8"			
	15'	1'-3"	1'-4"	3'-3"			
		2"	4"	6"	8"	10"	12"
11-7/8"	5'	1'-3"	1'-4"	1'-5"	1'-6"		
	6'	1'-3"	1'-4"	1'-5"	1'-6"		
	7'	1'-3"	1'-4"	1'-5"	1'-6"		
	8'	1'-3"	1'-4"	1'-5"	1'-6"		
	9'	1'-3"	1'-4"	1'-5"	1'-6"		
	10'	1'-3"	1'-4"	1'-5"	1'-6"		
	11'	1'-3"	1'-4"	1'-5"	1'-6"		
	12'	1'-3"	1'-4"	1'-5"	1'-6"		
	13'	1'-3"	1'-4"	1'-5"	1'-6"		
	14'	1'-3"	1'-4"	1'-5"	1'-6"		
	15'	1'-3"	1'-4"	1'-5"	1'-11"		
	16'	1'-3"	1'-4"	1'-5"	2'-6"		
	17'	1'-3"	1'-4"	1'-5"	3'-0"		
	18'	1'-3"	1'-4"	1'-5"	3'-7"		
		2"	4"	6"	8"	10"	12"
14"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	13'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	14'	1'-3"	1'-4"	1'-5"	1'-6"	1'-11"	
	15'	1'-3"	1'-4"	1'-5"	1'-6"	2'-6"	
	16'	1'-3"	1'-4"	1'-5"	1'-6"	3'-2"	
	17'	1'-3"	1'-4"	1'-5"	1'-6"	3'-9"	
	18'	1'-3"	1'-4"	1'-5"	1'-6"	4'-5"	
	19'	1'-3"	1'-4"	1'-5"	1'-6"	5'-0"	
		2"	4"	6"	8"	10"	12"
16"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-3"
	15'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-10"
	16'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-6"
	17'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	4'-1"
	18'	1'-3"	1'-4"	1'-5"	1'-6"	1'-11"	4'-9"
	19'	1'-3"	1'-4"	1'-5"	1'-6"	2'-6"	5'-4"
	20'	1'-3"	1'-4"	1'-5"	1'-6"	3'-2"	6'-0"
	21'	1'-3"	1'-4"	1'-5"	1'-6"	3'-9"	6'-7"
	22'	1'-3"	1'-4"	1'-5"	1'-6"	4'-5"	7'-3"
	23'	1'-3"	1'-4"	1'-5"	1'-6"	5'-0"	7'-10"
	24'	1'-3"	1'-4"	1'-5"	1'-6"	5'-6"	8'-6"

Distance from Interior Support

Joist Depth	Clear Span	Hole Diameter 2"	4"	6"	8"	10"	12"
9-1/2"	5'	1'-3"	1'-4"	1'-5"			
	6'	1'-3"	1'-4"	1'-5"			
	7'	1'-3"	1'-4"	1'-5"			
	8'	1'-3"	1'-4"	1'-5"			
	9'	1'-3"	1'-4"	1'-5"			
	10'	1'-3"	1'-4"	1'-9"			
	11'	1'-3"	1'-4"	2'-4"			
	12'	1'-3"	1'-4"	3'-0"			
	13'	1'-3"	1'-4"	3'-7"			
	14'	1'-3"	1'-4"	4'-3"			
	15'	1'-3"	1'-4"	4'-10"			
		2"	4"	6"	8"	10"	12"
11-7/8"	5'	1'-3"	1'-4"	1'-5"	1'-6"		
	6'	1'-3"	1'-4"	1'-5"	1'-6"		
	7'	1'-3"	1'-4"	1'-5"	1'-6"		
	8'	1'-3"	1'-4"	1'-5"	1'-6"		
	9'	1'-3"	1'-4"	1'-5"	1'-6"		
	10'	1'-3"	1'-4"	1'-5"	1'-6"		
	11'	1'-3"	1'-4"	1'-5"	1'-6"		
	12'	1'-3"	1'-4"	1'-5"	1'-10"		
	13'	1'-3"	1'-4"	1'-5"	2'-5"		
	14'	1'-3"	1'-4"	1'-5"	3'-1"		
	15'	1'-3"	1'-4"	1'-5"	3'-8"		
	16'	1'-3"	1'-4"	1'-5"	4'-4"		
	17'	1'-3"	1'-4"	1'-6"	4'-11"		
	18'	1'-3"	1'-4"	2'-2"	5'-7"		
		2"	4"	6"	8"	10"	12"
14"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	13'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	14'	1'-3"	1'-4"	1'-5"	1'-6"	1'-11"	
	15'	1'-3"	1'-4"	1'-5"	1'-6"	2'-6"	
	16'	1'-3"	1'-4"	1'-5"	1'-6"	3'-2"	
	17'	1'-3"	1'-4"	1'-5"	1'-6"	3'-9"	
	18'	1'-3"	1'-4"	1'-5"	1'-6"	4'-5"	
	19'	1'-3"	1'-4"	1'-5"	1'-6"	5'-0"	
		2"	4"	6"	8"	10"	12"
16"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-3"
	15'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-10"
	16'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-6"
	17'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	4'-1"
	18'	1'-3"	1'-4"	1'-5"	1'-6"	1'-11"	4'-9"
	19'	1'-3"	1'-4"	1'-5"	1'-6"	2'-6"	5'-4"
	20'	1'-3"	1'-4"	1'-5"	1'-6"	3'-2"	6'-0"
	21'	1'-3"	1'-4"	1'-5"	1'-6"	3'-9"	6'-7"
	22'	1'-3"	1'-4"	1'-5"	1'-6"	4'-5"	7'-3"
	23'	1'-3"	1'-4"	1'-5"	2'-3"	5'-6"	8'-0"
	24'	1'-3"	1'-4"	1'-5"	2'-9"	5'-8"	8'-6"

Rectangular Holes

Distance from End Support

Joist Depth	Clear Span	Maximum Hole Dimension: Depth or Width 2x2	4x4	6x6	6x8	6x10	6x12	6x14	6x16	6x18
9-1/2"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-5"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-10"	2'-3"	3'-1"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-1"	2'-10"	3'-8"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-11"	2'-8"	3'-5"	4'-4"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-9"	2'-6"	3'-3"	4'-1"	x
	11'	1'-3"	1'-4"	1'-6"	1'-8"	2'-4"	3'-1"	3'-10"	4'-8"	x
	12'	1'-3"	1'-4"	1'-6"	2'-2"	2'-11"	3'-8"	4'-6"	5'-4"	x
	13'	1'-3"	1'-4"	2'-1"	2'-9"	3'-6"	4'-3"	5'-1"	5'-11"	x
	14'	1'-3"	1'-4"	2'-8"	3'-4"	4'-1"	4'-10"	5'-8"	6'-7"	x
	15'	1'-3"	1'-4"	3'-2"	3'-11"	4'-8"	5'-6"	6'-4"	7'-3"	x
		2x2	4x4	6x6	8x8	8x10	8x12	8x14	8x16	8x18
11-7/8"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-0"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-7"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-3"	3'-3"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-0"	2'-11"	3'-10"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-9"	2'-7"	3'-6"	4'-6"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-4"	3'-2"	4'-1"	5'-1"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	2'-1"	2'-10"	3'-9"	4'-9"	5'-9"
	13'	1'-3"	1'-4"	1'-5"	1'-9"	2'-7"	3'-5"	4'-4"	5'-4"	6'-5"
	14'	1'-3"	1'-4"	1'-5"	2'-4"	3'-2"	4'-1"	5'-0"	6'-0"	7'-0"
	15'	1'-3"	1'-4"	1'-5"	2'-11"	3'-9"	4'-8"	5'-7"	6'-7"	x
	16'	1'-3"	1'-4"	1'-5"	3'-6"	4'-4"	5'-3"	6'-2"	7'-3"	x
	17'	1'-3"	1'-4"	1'-6"	4'-0"	4'-11"	5'-10"	6'-10"	7'-10"	x
	18'	1'-3"	1'-4"	2'-2"	4'-8"	5'-6"	6'-5"	7'-5"	8'-6"	x
		2x2	4x4	6x6	8x8	10x10	10x12	10x14	10x16	10x18
14"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-6"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-1"	3'-1"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-8"	3'-8"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-3"	3'-3"	4'-4"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-10"	2'-10"	3'-10"	5'-0"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-5"	3'-5"	4'-5"	5'-7"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	2'-1"	3'-0"	4'-0"	5'-1"	6'-3"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	2'-1"	3'-2"	4'-3"	5'-6"	6'-10"
	15'	1'-3"	1'-4"	1'-5"	1'-6"	2'-8"	3'-9"	4'-11"	6'-2"	7'-6"
	16'	1'-3"	1'-4"	1'-5"	1'-6"	3'-3"	4'-4"	5'-6"	6'-9"	x
	17'	1'-3"	1'-4"	1'-5"	1'-6"	3'-10"	4'-11"	6'-2"	7'-5"	x
	18'	1'-3"	1'-4"	1'-5"	1'-9"	4'-5"	5'-7"	6'-9"	8'-1"	x
	19'	1'-3"	1'-4"	1'-5"	2'-4"	5'-0"	6'-2"	7'-5"	8'-9"	x
		2x2	4x4	6x6	8x8	10x10	12x12	12x14	12x16	12x18
16"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-5"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-11"	3'-1"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-6"	3'-8"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-1"	3'-2"	4'-4"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-8"	3'-9"	4'-11"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-2"	3'-3"	4'-4"	5'-7"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-9"	3'-10"	5'-0"	6'-3"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-4"	4'-5"	5'-7"	6'-10"
	15'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-11"	5'-0"	6'-3"	x
	16'	1'-3"	1'-4"	1'-5"	1'-6"	2'-1"	4'-6"	5'-8"	6'-10"	x
	17'	1'-3"	1'-4"	1'-5"	1'-6"	2'-8"	5'-1"	6'-3"	7'-6"	x
	18'	1'-3"	1'-4"	1'-5"	1'-6"	3'-3"	5'-8"	6'-10"	8'-1"	x
	19'	1'-3"	1'-4"	1'-5"	1'-6"	3'-9"	6'-4"	7'-6"	8'-9"	x
	20'	1'-3"	1'-4"	1'-5"	1'-6"	4'-4"	6'-11"	8'-1"	9'-4"	x
	21'	1'-3"	1'-4"	1'-5"	1'-6"	4'-11"	7'-6"	8'-9"	10'-0"	x
	22'	1'-3"	1'-4"	1'-5"	1'-6"	5'-6"	8'-2"	9'-4"	10'-8"	x
	23'	1'-3"	1'-4"	1'-5"	1'-6"	6'-1"	8'-9"	10'-0"	11'-3"	x
	24'	1'-3"	1'-4"	1'-5"	1'-6"	6'-8"	9'-4"	10'-7"	11'-11"	x

Distance from Interior Support

Joist Depth	Clear Span	Maximum Hole Dimension: Depth or Width 2x2	4x4	6x6	6x8	6x10	6x12	6x14	6x16	6x18
9-1/2"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-3"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-11"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-3"	2'-10"	3'-7"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-8"	2'-3"	2'-10"	3'-6"	4'-4"
	9'	1'-3"	1'-4"	1'-5"	1'-8"	2'-3"	2'-11"	3'-6"	4'-2"	5'-0"
	10'	1'-3"	1'-4"	1'-8"	2'-4"	2'-11"	3'-6"	4'-1"	4'-10"	5'-9"
	11'	1'-3"	1'-4"	2'-4"	2'-11"	3'-6"	4'-2"	4'-9"	5'-7"	6'-6"
	12'	1'-3"	1'-4"	2'-11"	3'-7"	4'-2"	4'-10"	5'-5"	6'-3"	7'-2"
	13'	1'-3"	1'-4"	3'-7"	4'-2"	4'-9"	5'-5"	6'-2"	7'-0"	7'-11"
	14'	1'-3"	1'-4"	4'-2"	4'-10"	5'-5"	6'-0"	6'-10"	7'-9"	8'-8"
	15'	1'-3"	1'-4"	4'-10"	5'-5"	6'-0"	6'-8"	7'-6"	8'-5"	x
		2x2	4x4	6x6	8x8	8x10	8x12	8x14	8x16	8x18
11-7/8"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-6"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-5"	3'-2"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-3"	3'-0"	3'-11"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-11"	3'-10"	4'-7"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-9"	2'-7"	3'-6"	4'-4"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-4"	3'-2"	4'-1"	5'-1"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	2'-1"	2'-10"	3'-9"	4'-9"	5'-9"
	13'	1'-3"	1'-4"	1'-5"	1'-9"	2'-7"	3'-5"	4'-4"	5'-4"	6'-5"
	14'	1'-3"	1'-4"	1'-5"	2'-4"	3'-2"	4'-1"	5'-0"	6'-0"	7'-0"
	15'	1'-3"	1'-4"	1'-5"	2'-11"	3'-9"	4'-8"	5'-7"	6'-7"	x
	16'	1'-3"	1'-4"	1'-5"	3'-6"	4'-4"	5'-3"	6'-2"	7'-3"	x
	17'	1'-3"	1'-4"	1'-6"	4'-0"	4'-11"	5'-10"	6'-10"	7'-10"	x
	18'	1'-3"	1'-4"	2'-2"	4'-8"	5'-6"	6'-5"	7'-5"	8'-6"	x
		2x2	4x4	6x6	8x8	10x10	10x12	10x14	10x16	10x18
14"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-6"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-1"	3'-1"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-8"	3'-8"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-3"	3'-3"	4'-4"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-10"	2'-10"	3'-10"	5'-0"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-5"	3'-5"	4'-5"	5'-7"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	2'-1"	3'-0"	4'-0"	5'-1"	6'-3"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	2'-1"	3'-2"	4'-3"	5'-6"	6'-10"
	15'	1'-3"	1'-4"	1'-5"	1'-6"	2'-8"	3'-9"	4'-11"	6'-2"	7'-6"
	16'	1'-3"	1'-4"	1'-5"	1'-6"	3'-3"	4'-4"	5'-6"	6'-9"	x
	17'	1'-3"	1'-4"	1'-5"	1'-6"	3'-10"	4'-11"	6'-2"	7'-5"	x
	18'	1'-3"	1'-4"	1'-5"	1'-9"	4'-5"	5'-7"	6'-9"	8'-1"	x
	19'	1'-3"	1'-4"	1'-5"	2'-4"	5'-0"	6'-2"	7'-5"	8'-9"	x
		2x2	4x4	6x6	8x8	10x10	12x12	12x14	12x16	12x18
16"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-5"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-2"	3'-0"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-11"	2'-9"	3'-9"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-6"	3'-5"	4'-5"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-8"	3'-9"	4'-8"	5'-10"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-2"	3'-3"	4'-4"	5'-5"	6'-7"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-9"	3'-10"	5'-0"	6'-3"	7'-3"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-4"	4'-5"	5'-7"	6'-10"	8'-0"
	15'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-11"	5'-0"	6'-3"	x	8'-8"
	16'	1'-3"	1'-4"	1'-5"	1'-6"	2'-1"	4'-6"	5'-8"	6'-10"	x	9'-5"
	17'	1'-3"	1'-4"	1'-5"	1'-6"	2'-8"	5'-1"	6'-3"	7'-6"	x	10'-2"
	18'	1'-3"	1'-4"	1'-5"	1'-6"	3'-3"	5'-8"	6'-10"	8'-1"	x	10'-11"
	19'	1'-3"	1'-4"	1'-5"	1'-6"	3'-9"	6'-4"	7'-6"	8'-9"	x	11'-7"
	20'	1'-3"	1'-4"	1'-5"	1'-6"	4'-4"	6'-11"	8'-1"	9'-4"	x	12'-4"
	21'	1'-3"	1'-4"	1'-5"	1'-6"	4'-11"	7'-6"	8'-9"	10'-0"	x	x
	22'	1'-3"	1'-4"	1'-5"	1'-6"	5'-6"	8'-2"	9'-4"	10'-8"	x	x
	23'	1'-3"	1'-4"	1'-5"	1'-6"	6'-1"	8'-9"	10'-0"	11'-3"	x	x
	24'	1'-3"	1'-4"	1'-5"	1'-6"	6'-8"	9'-4"	10'-7"	11'-11"	x	x

NOTES:

1. **CUT HOLES CAREFULLY! DO NOT OVERCUT CORNERS OF RECTANGULAR HOLES! DO NOT CUT JOIST FLANGES!**
2. The hole locations listed above are valid for joists supporting only uniform loads, (40 psf Live Load and a 15 psf Dead Load, spaced up to 16" on center).
3. Hole location is measured from the center of bearing to the center of a circular or rectangular hole from the closest support.
4. Circular and rectangular holes may be placed anywhere within the depth of the joist web.
5. For a hole size that differs from those covered, use the next larger hole dimension.

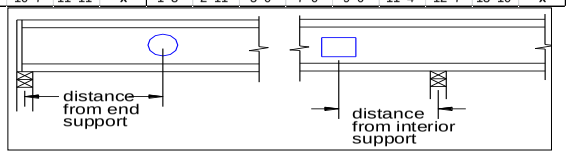


Table 9 - Boise BCI Web Hole Charts: 40 psf Live Load, 20 psf Dead Load, up to 16" oc

Circular Holes

Distance from End Support — Hole Diameter

Joist Depth	Clear Span	2"	4"	6"	8"	10"	12"
9-1/2"	5'	1'-3"	1'-4"	1'-5"			
	6'	1'-3"	1'-4"	1'-5"			
	7'	1'-3"	1'-4"	1'-5"			
	8'	1'-3"	1'-4"	1'-5"			
	9'	1'-3"	1'-4"	1'-5"			
	10'	1'-3"	1'-4"	1'-5"			
	11'	1'-3"	1'-4"	1'-5"			
	12'	1'-3"	1'-4"	2'-0"			
	13'	1'-3"	1'-4"	2'-6"			
	14'	1'-3"	1'-4"	3'-1"			
	15'	1'-3"	1'-4"	3'-8"			
		2"	4"	6"	8"	10"	12"
11-7/8"	5'	1'-3"	1'-4"	1'-5"	1'-6"		
	6'	1'-3"	1'-4"	1'-5"	1'-6"		
	7'	1'-3"	1'-4"	1'-5"	1'-6"		
	8'	1'-3"	1'-4"	1'-5"	1'-6"		
	9'	1'-3"	1'-4"	1'-5"	1'-6"		
	10'	1'-3"	1'-4"	1'-5"	1'-6"		
	11'	1'-3"	1'-4"	1'-5"	1'-8"		
	12'	1'-3"	1'-4"	1'-5"	2'-4"		
	13'	1'-3"	1'-4"	1'-5"	2'-11"		
	14'	1'-3"	1'-4"	1'-5"	3'-7"		
	15'	1'-3"	1'-4"	1'-5"	4'-2"		
	16'	1'-3"	1'-4"	1'-5"	4'-10"		
	17'	1'-3"	1'-4"	1'-5"	5'-5"		
		2"	4"	6"	8"	10"	12"
14"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-9"	
	13'	1'-3"	1'-4"	1'-5"	1'-6"	2'-5"	
	14'	1'-3"	1'-4"	1'-5"	1'-6"	3'-0"	
	15'	1'-3"	1'-4"	1'-5"	1'-6"	3'-8"	
	16'	1'-3"	1'-4"	1'-5"	1'-6"	4'-3"	
	17'	1'-3"	1'-4"	1'-5"	1'-6"	4'-11"	
	18'	1'-3"	1'-4"	1'-5"	2'-8"	5'-6"	
	19'	1'-3"	1'-4"	1'-5"	3'-3"	6'-2"	
		2"	4"	6"	8"	10"	12"
16"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-2"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-9"
	15'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-5"
	16'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	4'-0"
	17'	1'-3"	1'-4"	1'-5"	1'-6"	2'-1"	4'-8"
	18'	1'-3"	1'-4"	1'-5"	1'-6"	2'-8"	5'-3"
	19'	1'-3"	1'-4"	1'-5"	1'-6"	3'-4"	5'-11"
	20'	1'-3"	1'-4"	1'-5"	1'-6"	3'-11"	6'-6"
	21'	1'-3"	1'-4"	1'-5"	1'-6"	4'-7"	7'-2"
	22'	1'-3"	1'-4"	1'-5"	2'-7"	5'-2"	7'-9"
	23'	1'-3"	1'-4"	1'-5"	3'-1"	5'-10"	8'-5"

Distance from Interior Support — Hole Diameter

Joist Depth	Clear Span	2"	4"	6"	8"	10"	12"
9-1/2"	5'	1'-3"	1'-4"	1'-5"			
	6'	1'-3"	1'-4"	1'-5"			
	7'	1'-3"	1'-4"	1'-5"			
	8'	1'-3"	1'-4"	1'-5"			
	9'	1'-3"	1'-4"	1'-5"			
	10'	1'-3"	1'-4"	2'-1"			
	11'	1'-3"	1'-4"	2'-9"			
	12'	1'-3"	1'-4"	3'-4"			
	13'	1'-3"	1'-4"	4'-0"			
	14'	1'-3"	1'-4"	4'-7"			
	15'	1'-3"	1'-7"	5'-3"			
		2"	4"	6"	8"	10"	12"
11-7/8"	5'	1'-3"	1'-4"	1'-5"	1'-6"		
	6'	1'-3"	1'-4"	1'-5"	1'-6"		
	7'	1'-3"	1'-4"	1'-5"	1'-6"		
	8'	1'-3"	1'-4"	1'-5"	1'-6"		
	9'	1'-3"	1'-4"	1'-5"	1'-6"		
	10'	1'-3"	1'-4"	1'-5"	1'-6"		
	11'	1'-3"	1'-4"	1'-5"	1'-8"		
	12'	1'-3"	1'-4"	1'-5"	2'-4"		
	13'	1'-3"	1'-4"	1'-5"	2'-11"		
	14'	1'-3"	1'-4"	1'-5"	3'-7"		
	15'	1'-3"	1'-4"	1'-5"	4'-2"		
	16'	1'-3"	1'-4"	1'-8"	4'-10"		
	17'	1'-3"	1'-4"	2'-3"	5'-5"		
		2"	4"	6"	8"	10"	12"
14"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-9"	
	13'	1'-3"	1'-4"	1'-5"	1'-6"	2'-5"	
	14'	1'-3"	1'-4"	1'-5"	1'-6"	3'-0"	
	15'	1'-3"	1'-4"	1'-5"	1'-6"	3'-8"	
	16'	1'-3"	1'-4"	1'-5"	1'-6"	4'-3"	
	17'	1'-3"	1'-4"	1'-5"	1'-6"	4'-11"	
	18'	1'-3"	1'-4"	1'-5"	2'-8"	5'-6"	
	19'	1'-3"	1'-4"	1'-5"	3'-3"	6'-2"	
		2"	4"	6"	8"	10"	12"
16"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-2"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-9"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-5"
	15'	1'-3"	1'-4"	1'-5"	1'-6"	2'-1"	4'-0"
	16'	1'-3"	1'-4"	1'-5"	1'-6"	2'-8"	4'-8"
	17'	1'-3"	1'-4"	1'-5"	1'-6"	3'-3"	5'-6"
	18'	1'-3"	1'-4"	1'-5"	1'-6"	3'-9"	6'-1"
	19'	1'-3"	1'-4"	1'-5"	1'-6"	4'-4"	6'-8"
	20'	1'-3"	1'-4"	1'-5"	1'-6"	4'-11"	7'-3"
	21'	1'-3"	1'-4"	1'-5"	1'-6"	5'-5"	7'-10"
	22'	1'-3"	1'-4"	1'-5"	2'-1"	5'-10"	8'-5"
	23'	1'-3"	1'-4"	1'-5"	2'-8"	6'-4"	9'-0"

Rectangular Holes

Distance from End Support — Maximum Hole Dimension: Depth or Width

Joist Depth	Clear Span	2x2	4x4	6x6	6x8	6x10	6x12	6x14	6x16	6x18
9-1/2"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-6"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-4"	3'-1"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-3"	2'-11"	3'-9"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-2"	2'-10"	3'-7"	4'-4"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	2'-1"	2'-9"	3'-5"	4'-2"	x
	11'	1'-3"	1'-4"	1'-6"	2'-0"	2'-8"	3'-4"	4'-0"	4'-9"	x
	12'	1'-3"	1'-4"	1'-11"	2'-7"	3'-3"	3'-11"	4'-8"	5'-5"	x
	13'	1'-3"	1'-4"	3'-3"	3'-2"	3'-10"	4'-6"	5'-3"	6'-0"	x
	14'	1'-3"	1'-4"	3'-10"	3'-9"	4'-5"	5'-1"	5'-10"	6'-8"	x
	15'	1'-3"	1'-4"	4'-5"	4'-7"	5'-0"	5'-9"	6'-6"	7'-3"	x
		2x2	4x4	6x6	8x8	8x10	8x12	8x14	8x16	8x18
11-7/8"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-1"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-11"	2'-9"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-6"	3'-4"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-3"	3'-1"	3'-11"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-1"	2'-10"	3'-8"	4'-7"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-10"	2'-7"	3'-5"	4'-3"	5'-2"
	12'	1'-3"	1'-4"	1'-5"	1'-8"	2'-5"	3'-2"	4'-0"	4'-10"	5'-9"
	13'	1'-3"	1'-4"	1'-5"	2'-3"	3'-0"	3'-9"	4'-7"	5'-6"	6'-5"
	14'	1'-3"	1'-4"	1'-5"	2'-9"	3'-7"	4'-4"	5'-2"	6'-1"	x
	15'	1'-3"	1'-4"	1'-5"	3'-4"	4'-2"	4'-11"	5'-10"	6'-8"	x
	16'	1'-3"	1'-4"	1'-9"	3'-11"	4'-9"	5'-6"	6'-5"	7'-4"	x
	17'	1'-3"	1'-4"	2'-3"	4'-6"	5'-4"	6'-2"	7'-0"	7'-11"	x
		2x2	4x4	6x6	8x8	10x10	10x12	10x14	10x16	10x18
14"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-0"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-7"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-3"	3'-2"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-11"	2'-10"	3'-10"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-6"	3'-5"	4'-5"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-3"	3'-1"	4'-0"	5'-0"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-11"	2'-9"	3'-8"	4'-8"	5'-8"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	2'-6"	3'-4"	4'-3"	5'-3"	6'-3"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	3'-1"	3'-11"	4'-10"	5'-10"	6'-11"
	15'	1'-3"	1'-4"	1'-5"	1'-6"	3'-8"	4'-6"	5'-6"	6'-5"	7'-6"
	16'	1'-3"	1'-4"	1'-5"	2'-0"	4'-2"	5'-1"	6'-1"	7'-1"	x
	17'	1'-3"	1'-4"	1'-5"	2'-7"	4'-9"	5'-8"	6'-8"	7'-8"	x
	18'	1'-3"	1'-4"	1'-5"	3'-1"	5'-4"	6'-4"	7'-3"	8'-4"	x
	19'	1'-3"	1'-4"	1'-7"	3'-8"	5'-11"	6'-11"	7'-11"	8'-11"	x
		2x2	4x4	6x6	8x8	10x10	12x12	12x14	12x16	12x18
16"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-0"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-7"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-11"	3'-2"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-10"	2'-2"	3'-9"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-4"	2'-9"	4'-5"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-0"	2'-11"	3'-4"	5'-0"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-7"	3'-6"	3'-11"	5'-8"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-2"	4'-1"	4'-6"	6'-3"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-8"	4'-8"	5'-2"	6'-11"
	15'	1'-3"	1'-4"	1'-5"	1'-6"	2'-1"	4'-3"	5'-4"	5'-9"	x
	16'	1'-3"	1'-4"	1'-5"	1'-6"	2'-8"	4'-10"	5'-11"	6'-4"	x
	17'	1'-3"	1'-4"	1'-5"	1'-6"	3'-3"	5'-6"	6'-6"	7'-7"	x
	18'	1'-3"	1'-4"	1'-5"	1'-9"	3'-9"	6'-1"	7'-1"	8'-3"	x
	19'	1'-3"	1'-4"	1'-5"	2'-4"	4'-4"	6'-8"	7'-9"	8'-10"	x
	20'	1'-3"	1'-4"	1'-5"	2'-10"	4'-11"	7'-3"	8'-4"	9'-5"	x
	21'	1'-3"	1'-4"	1'-5"	3'-5"	5'-6"	7'-10"	8'-11"	10'-1"	x
	22'	1'-3"	1'-4"	1'-10"	3'-11"	6'-1"	8'-5"	9'-7"	10'-8"	x
	23'	1'-3"	1'-4"	2'-5"	4'-5"	6'-8"	9'-1"	10'-2"	11'-4"	x

Distance from Interior Support — Maximum Hole Dimension: Depth or Width

Joist Depth	Clear Span	2x2	4x4	6x6	6x8	6x10	6x12	6x14	6x16	6x18
9-1/2"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-3"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-4"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-4"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-10"	2'-5"	3'-0"	3'-8"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-11"	2'-6"	3'-1"	3'-8"	4'-5"
	10'	1'-3"	1'-4"	1'-5"	2'-0"	2'-7"	3'-1"	3'-8"	4'-4"	5'-1"
	11'	1'-3"	1'-4"	2'-1"	2'-8"	3'-2"	3'-9"	4'-4"	5'-0"	5'-10"
	12'	1'-3"	1'-4"	2'-8"	3'-3"	3'-10"	4'-4"	5'-0"	5'-9"	6'-6"
	13'	1'-3"	1'-4"	3'-4"	3'-11"	4'-5"	5'-0"	5'-8"	6'-5"	7'-3"
	14'	1'-3"	1'-11"	3'-11"	4'-6"	5'-1"	5'-8"	6'-4"	7'-2"	7'-11"
	15'	1'-3"	2'-7"	4'-8"	5'-2"	5'-8"	6'-4"	7'-1"	7'-10"	8'-8"
		2x2	4x4	6x6	8x8	8x10	8x12	8x14	8x16	8x18
11-7/8"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-0"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-0"	2'-8"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-11"	2'-7"	3'-4"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-11"	2'-7"	3'-3"	4'-0"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-3"	3'-1"	3'-10"	4'-8"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-6"	3'-2"	3'-10"	4'-6"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-10"	2'-6"	3'-2"	3'-9"	4'-5"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	2'-5"	3'-2"	3'-9"	4'-5"	5'-1"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	2'-11"	3'-9"	4'-5"	5'-0"	5'-10"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	3'-4"	4'-3"	5'-0"	5'-8"	6'-5"
	15'	1'-3"	1'-4"	1'-5"	1'-6"	3'-10"	4'-9"	5'-5"	6'-3"	7'-1"
	16'	1'-3"	1'-4"	1'-5"	1'-6"	4'-4"	5'-4"	6'-1"	6'-11"	7'-9"
	17'	1'-3"	1'-4"	1'-5"	1'-6"	4'-10"	5'-11"	6'-9"	7'-6"	8'-4"
	18'	1'-3"	1'-4"	1'-5"	1'-6"	5'-4"	6'-6"	7'-4"	8'-2"	9'-0"
	19'	1'-3"	1'-4"	1'-5"	1'-6"	5'-10"	7'-1"	8'-0"	8'-10"	9'-9"
	20'	1'-3"	1'-4"	1'-5"	1'-6"	6'-4"	7'-8"	8'-7"	9'-6"	10'-5"
	21'	1'-3"	1'-4"	1'-5"	1'-6"	6'-10"	8'-3"	9'-3"	10'-3"	11'-2"
	22'	1'-3"	1'-4"	1'-5"	1'-6"	7'-4"	8'-10"	9'-11"	10'-11"	11'-11"
	23'	1'-3"	1'-4"	1'-5"	1'-6"	7'-10"	9'-5"	10'-6"	11'-8"	12'-8"
		2x2	4x4	6x6	8x8	10x10	10x12	10x14	10x16	10x18
14"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-6"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-5"	3'-2"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-4"	3'-0"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-2"	2'-11"	3'-8"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-6"	3'-3"	4'-0"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-0"	2'-9"	3'-5"	4'-2"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-4"	3'-2"	4'-0"	4'-8"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-9"	3'-7"	4'-5"	5'-4"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-2"	4'-1"	5'-0"	5'-10"
	15'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-7"	4'-6"	5'-5"	6'-4"
	16'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	4'-0"	5'-0"	5'-11"	6'-9"
	17'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	4'-5"	5'-5"	6'-4"	7'-3"
	18'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	4'-10"	5'-11"	6'-10"	7'-8"
	19'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	5'-3"	6'-4"	7'-3"	8'-2"
	20'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	5'-8"	6'-10"	7'-9"	8'-8"
	21'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	6'-1"	7'-3"	8'-2"	9'-2"
	22'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	6'-6"	7'-8"	8'-8"	9'-8"
	23'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	6'-11"	8'-1"	9'-1"	10'-1"
		2x2	4x4	6x6	8x8	10x10	10x12	10x14	10x16	10x18
16"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-6"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-4"	3'-2"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-3"	3'-0"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-2"	3'-0"	3'-10"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-10"	3'-7"	4'-7"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-8"	3'-5"	4'-3"	5'-3"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-3"	4'-1"	4'-11"	6'-0"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	2'-0"	3'-11"	4'-8"	5'-7"	6'-8"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	2'-8"	4'-6"	5'-4"	6'-3"	7'-5"
	15'	1'-3"	1'-4"	1'-5"	1'-6"	3'-3"	5'-2"	6'-1"	7'-1"	8'-1"
	16'	1'-3"	1'-4"	1'-5"	1'-6"	3'-9"	5'-10"	6'-11"	8'-1"	9'-2"
	17'	1'-3"	1'-4"	1'-5"	1'-6"	4'-4"	6'-5"	7'-8"	8'-10"	10'-0"
	18'	1'-3"	1'-4"	1'-5"	1'-6"	4'-11"	7'-1"	8'-4"	9'-7"	10'-11"
	19'	1'-3"	1'-4"	1'-5"	1'-6"	5'-5"	7'-9"	9'-1"	10'-5"	11'-9"
	20'	1'-3"	1'-4"	1'-5"	1'-6"	5'-11"	8'-5"	9'-10"	11'-3"	12'-8"
	21'	1'-3"	1'-4"	1'-5"	1'-6"	6'-6"	9'-2"	10'-7"	12'-1"	13'-7"
	22'	1'-3"	1'-4"	1'-5"	1'-6"	7'-0"	9'-10"	11'-4"	12'-11"	14'-6"
	23'	1'-3"	1'-4"	1'-5"	1'-6"	7'-6"	10'-6"	12'-1"	13'-9"	15'-5"

NOTES:

1. **CUT HOLES CAREFULLY! DO NOT OVERCUT CORNERS OF RECTANGULAR HOLES! DO NOT CUT JOIST FLANGES!**
2. The hole locations listed above are valid for joists supporting only uniform loads, (40 psf Live Load and a 20 psf Dead Load, spaced up to 16" on center).
3. Hole location is measured from the center of bearing to the center of a circular or rectangular hole from the closest support.
4. Circular and rectangular holes may be placed anywhere within the depth of the joist web.
5. For a hole size that differs from those covered, use the next larger hole dimension.

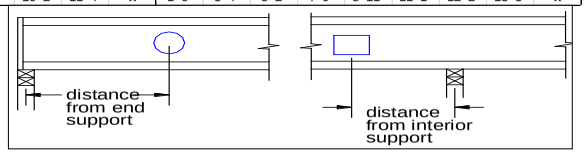


Table 10 - Boise BCI Web Hole Charts: 40 psf Live Load, 25 psf Dead Load, up to 16" oc

Circular Holes

Joist Depth	Clear Span	Distance from End Support – Hole Diameter						Distance from Interior Support – Hole Diameter					
		2"	4"	6"	8"	10"	12"	2"	4"	6"	8"	10"	12"
9-1/2"	5'	1'-3"	1'-4"	1'-5"				1'-3"	1'-4"	1'-5"			
	6'	1'-3"	1'-4"	1'-5"				1'-3"	1'-4"	1'-5"			
	7'	1'-3"	1'-4"	1'-5"				1'-3"	1'-4"	1'-5"			
	8'	1'-3"	1'-4"	1'-5"				1'-3"	1'-4"	1'-5"			
	9'	1'-3"	1'-4"	1'-5"				1'-3"	1'-4"	1'-10"			
	10'	1'-3"	1'-4"	1'-5"				1'-3"	1'-4"	2'-5"			
	11'	1'-3"	1'-4"	1'-9"				1'-3"	1'-4"	3'-1"			
	12'	1'-3"	1'-4"	2'-4"				1'-3"	1'-4"	3'-8"			
	13'	1'-3"	1'-4"	2'-11"				1'-3"	1'-4"	4'-4"			
	14'	1'-3"	1'-4"	3'-5"				1'-3"	1'-7"	4'-11"			
		2"	4"	6"	8"	10"	12"	2"	4"	6"	8"	10"	12"
11-7/8"	5'	1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	1'-6"		
	6'	1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	1'-6"		
	7'	1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	1'-6"		
	8'	1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	1'-6"		
	9'	1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	1'-6"		
	10'	1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	1'-6"		
	11'	1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	2'-1"		
	12'	1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	2'-8"		
	13'	1'-3"	1'-4"	1'-5"	1'-9"			1'-3"	1'-4"	1'-5"	3'-4"		
	14'	1'-3"	1'-4"	1'-5"	2'-4"			1'-3"	1'-4"	1'-5"	3'-11"		
	15'	1'-3"	1'-4"	1'-5"	2'-10"			1'-3"	1'-4"	1'-8"	4'-7"		
	16'	1'-3"	1'-4"	1'-5"	3'-5"			1'-3"	1'-4"	2'-3"	5'-2"		
		2"	4"	6"	8"	10"	12"	2"	4"	6"	8"	10"	12"
14"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	2'-3"	
	13'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	2'-10"	
	14'	1'-3"	1'-4"	1'-5"	1'-6"	1'-9"		1'-3"	1'-4"	1'-5"	1'-6"	3'-6"	
	15'	1'-3"	1'-4"	1'-5"	1'-6"	2'-4"		1'-3"	1'-4"	1'-5"	1'-6"	4'-1"	
	16'	1'-3"	1'-4"	1'-5"	1'-6"	2'-11"		1'-3"	1'-4"	1'-5"	2'-1"	4'-9"	
	17'	1'-3"	1'-4"	1'-5"	1'-6"	3'-5"		1'-3"	1'-4"	1'-5"	2'-8"	5'-4"	
	18'	1'-3"	1'-4"	1'-5"	1'-6"	4'-0"		1'-3"	1'-4"	1'-5"	3'-4"	6'-0"	
		2"	4"	6"	8"	10"	12"	2"	4"	6"	8"	10"	12"
16"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-0"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-8"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-3"
	15'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-1"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-11"
	16'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-8"	1'-3"	1'-4"	1'-5"	1'-6"	2'-1"	4'-6"
	17'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-2"	1'-3"	1'-4"	1'-5"	1'-6"	2'-8"	5'-2"
	18'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-9"	1'-3"	1'-4"	1'-5"	1'-6"	3'-4"	5'-9"
	19'	1'-3"	1'-4"	1'-5"	1'-6"	1'-8"	4'-4"	1'-3"	1'-4"	1'-5"	1'-6"	3'-11"	6'-5"
	20'	1'-3"	1'-4"	1'-5"	1'-6"	2'-2"	4'-10"	1'-3"	1'-4"	1'-5"	2'-2"	4'-7"	7'-0"
	21'	1'-3"	1'-4"	1'-5"	1'-6"	2'-8"	5'-5"	1'-3"	1'-4"	1'-5"	2'-9"	5'-2"	7'-8"
	22'	1'-3"	1'-4"	1'-5"	1'-6"	3'-3"	6'-0"	1'-3"	1'-4"	1'-5"	3'-5"	5'-10"	8'-3"
	23'	1'-3"	1'-4"	1'-5"	1'-6"	3'-9"	6'-7"						

Rectangular Holes

Joist Depth	Clear Span	Distance from End Support – Maximum Hole Dimension: Depth or Width									Distance from Interior Support – Maximum Hole Dimension: Depth or Width								
		2x2	4x4	6x6	6x8	6x10	6x12	6x14	6x16	6x18	2x2	4x4	6x6	6x8	6x10	6x12	6x14	6x16	6x18
9-1/2"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-5"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-11"	2'-7"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-11"	2'-6"	3'-1"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-10"	2'-6"	3'-2"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-1"	2'-7"	3'-1"	3'-9"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-10"	2'-5"	3'-1"	3'-9"	1'-3"	1'-4"	1'-5"	1'-8"	2'-2"	2'-8"	3'-2"	3'-9"	4'-6"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-9"	2'-5"	3'-0"	3'-8"	4'-4"	1'-3"	1'-4"	1'-5"	1'-9"	2'-4"	2'-10"	3'-4"	3'-10"	4'-6"	5'-2"
	10'	1'-3"	1'-4"	1'-5"	1'-9"	2'-4"	2'-11"	3'-7"	4'-3"	x	1'-3"	1'-4"	2'-5"	2'-11"	3'-5"	3'-11"	4'-6"	5'-2"	5'-10"
	11'	1'-3"	1'-4"	1'-9"	2'-4"	2'-11"	3'-6"	4'-2"	4'-10"	x	1'-3"	1'-4"	3'-0"	3'-7"	4'-1"	4'-7"	5'-2"	5'-10"	6'-7"
	12'	1'-3"	1'-4"	2'-3"	2'-11"	3'-6"	4'-1"	4'-9"	5'-6"	x	1'-3"	1'-9"	3'-8"	4'-2"	4'-8"	5'-2"	5'-10"	6'-7"	7'-3"
	13'	1'-3"	1'-4"	2'-10"	3'-5"	4'-1"	4'-8"	5'-5"	6'-1"	x	1'-3"	2'-5"	4'-4"	4'-10"	5'-4"	5'-11"	6'-7"	7'-3"	8'-0"
	14'	1'-3"	1'-4"	3'-5"	4'-0"	4'-8"	5'-4"	6'-0"	6'-8"	x	1'-3"	3'-0"	4'-11"	5'-5"	5'-11"	6'-7"	7'-3"	7'-11"	8'-8"
		2x2	4x4	6x6	8x8	8x10	8x12	8x14	8x16	8x18	2x2	4x4	6x6	8x8	8x10	8x12	8x14	8x16	8x18
11-7/8"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-1"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-2"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-1"	2'-9"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-0"	2'-10"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-2"	2'-9"	3'-5"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-11"	2'-7"	3'-5"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-2"	2'-9"	3'-4"	4'-1"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-9"	2'-5"	3'-2"	4'-0"	1'-3"	1'-4"	1'-5"	1'-7"	2'-2"	2'-9"	3'-5"	4'-0"	4'-10"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-7"	2'-4"	3'-0"	3'-9"	1'-3"	1'-4"	1'-5"	2'-2"	2'-10"	3'-5"	4'-0"	4'-8"	5'-6"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	2'-2"	2'-11"	3'-7"	4'-5"	5'-3"	1'-3"	1'-4"	1'-5"	2'-10"	3'-5"	4'-0"	4'-8"	5'-5"	6'-2"
	12'	1'-3"	1'-4"	1'-5"	2'-1"	2'-9"	3'-5"	4'-2"	5'-0"	5'-10"	1'-3"	1'-4"	1'-8"	3'-5"	4'-1"	4'-8"	5'-3"	6'-1"	6'-11"
	13'	1'-3"	1'-4"	1'-5"	2'-7"	3'-4"	4'-0"	4'-9"	5'-7"	6'-5"	1'-3"	1'-4"	2'-3"	4'-2"	4'-8"	5'-3"	6'-0"	6'-9"	7'-7"
	14'	1'-3"	1'-4"	1'-5"	3'-2"	3'-10"	4'-7"	5'-5"	6'-2"	7'-0"	1'-3"	1'-4"	2'-11"	4'-8"	5'-4"	5'-11"	6'-8"	7'-5"	8'-4"
	15'	1'-3"	1'-4"	1'-5"	3'-9"	4'-5"	5'-2"	6'-0"	6'-10"	x	1'-3"	1'-9"	3'-6"	5'-4"	5'-11"	6'-7"	7'-4"	8'-2"	9'-0"
	16'	1'-3"	1'-4"	2'-3"	4'-3"	5'-0"	5'-9"	6'-7"	7'-5"	x	1'-3"	2'-4"	4'-2"	5'-11"	6'-7"	7'-3"	8'-0"	8'-11"	9'-8"
		2x2	4x4	6x6	8x8	10x10	10x12	10x14	10x16	10x18	2x2	4x4	6x6	8x8	10x10	10x12	10x14	10x16	10x18
14"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-0"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-1"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-11"	2'-8"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-11"	2'-7"	3'-4"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-8"	3'-3"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-7"	1'-10"	2'-6"	3'-2"	4'-0"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-2"	3'-0"	3'-11"	1'-3"	1'-4"	1'-5"	1'-6"	1'-9"	2'-6"	3'-2"	3'-10"	4'-8"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-11"	2'-9"	3'-7"	4'-6"	1'-3"	1'-4"	1'-5"	1'-6"	2'-5"	3'-1"	3'-10"	4'-6"	5'-5"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-9"	2'-6"	3'-4"	4'-2"	5'-1"	1'-3"	1'-4"	1'-5"	1'-6"	3'-0"	3'-9"	4'-5"	5'-2"	6'-2"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	2'-3"	3'-1"	3'-11"	4'-9"	5'-8"	1'-3"	1'-4"	1'-5"	1'-11"	3'-8"	4'-4"	5'-0"	5'-10"	6'-9"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	2'-10"	3'-8"	4'-6"	5'-4"	6'-4"	1'-3"	1'-4"	1'-5"	2'-6"	4'-3"	5'-0"	5'-8"	6'-6"	7'-6"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	3'-5"	4'-3"	5'-1"	6'-0"	6'-11"	1'-3"	1'-4"	1'-5"	3'-2"	4'-11"	5'-7"	6'-4"	7'-3"	8'-2"
	15'	1'-3"	1'-4"	1'-5"	2'-0"	4'-0"	4'-10"	5'-8"	6'-7"	7'-6"	1'-3"	1'-4"	2'-0"	3'-9"	5'-6"	6'-3"	7'-0"	7'-11"	8'-10"
	16'	1'-3"	1'-4"	1'-5"	2'-6"	4'-7"	5'-5"	6'-3"	7'-2"	x	1'-3"	1'-4"	2'-8"	4'-5"	6'-2"	6'-10"	7'-8"	8'-7"	9'-7"
	17'	1'-3"	1'-4"	1'-5"	3'-1"	5'-2"	6'-0"	6'-10"	7'-9"	x	1'-3"	1'-6"	3'-3"	5'-5"	6'-9"	7'-6"	8'-5"	9'-4"	10'-3"
	18'	1'-3"	1'-4"	1'-9"	3'-8"	5'-9"	6'-7"	7'-6"	8'-5"	x	1'-3"	2'-2"	3'-11"	5'-8"	7'-5"	8'-2"	9'-1"	10'-0"	11'-0"
		2x2	4x4	6x6	8x8	10x10	12x12	12x14	12x16	12x18	2x2	4x4	6x6	8x8	10x10	12x12	12x14	12x16	12x18
16"	5'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-0"
	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-1"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-11"	2'-7"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-6"	3'-4"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-4"	3'-3"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-5"	3'-2"	4'-1"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-0"	2'-11"	3'-10"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-3"	3'-0"	3'-9"	4'-8"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-7"	3'-6"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-11"	3'-8"	4'-5"	5'-4"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-4"	3'-2"	4'-1"	1'-3"	1'-4"	1'-5"	1'-6"	1'-10"	3'-6"	4'-3"	5'-2"	6'-1"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-10"	3'-9"	4'-8"	1'-3"	1'-4"	1'-5"	1'-6"	2'-5"	4'-2"	4'-11"	5'-9"	6'-9"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	3'-5"	4'-4"	5'-3"	1'-3"	1'-4"	1'-5"	1'-6"	3'-1"	4'-9"	5'-6"	6'-5"	7'-6"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	4'-0"	4'-11"	5'-11"	1'-3"	1'-4"	1'-5"	2'-0"	4'-0"	4'-11"	5'-11"	6'-11"	**7'-6"**
	15'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-1"	4'-7"	5'-6"	6'-6"	1'-3"	1'-4"	1'-5"	1'-6"	2'-7"	4'-7"	5'-6"	6'-6"	7'-10"
	16'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-8"	5'-2"	6'-1"	7'-1"	1'-3"	1'-4"	1'-5"	1'-6"	3'-2"	5'-2"	6'-1"	7'-1"	x
	17'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-2"	5'-9"	6'-8"	7'-8"	1'-3"	1'-4"	1'-5"	1'-9"	3'-8"	5'-9"	6'-8"	7'-8"	x
	18'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-9"	6'-4"	7'-4"	8'-4"	1'-3"	1'-4"	1'-5"	2'-4"	4'-3"	6'-4"	7'-4"	8'-4"	x
	19'	1'-3"	1'-4"	1'-5"	1'-6"	1'-8"	4'-4"	7'-0"	8'-1"	9'-1"	1'-3"	1'-4"	1'-5"	2'-10"	4'-10"	6'-11"	7'-11"	8'-11"	x
	20'	1'-3"	1'-4"	1'-5"	1'-6"	2'-2"	4'-10"	7'-7"	8'-6"	9'-6"	1'-3"	1'-4"	1'-7"	3'-5"	5'-5"	7'-6"	8'-6"	9'-6"	x
	21'	1'-3"	1'-4"	1'-5"	1'-6"	2'-8"	5'-5"	8'-1"	9'-1"	10'-1"	1'-3"	1'-4"	2'-1"	4'-0"	6'-0"	8'-1"	9'-1"	10'-1"	x
	22'	1'-3"	1'-4"	1'-5"	1'-6"	3'-3"	6'-0"	8'-9"	9'-8"	10'-9"	1'-3"	1'-4"	2'-7"	4'-6"	6'-7"	8'-9"	9'-8"	10'-9"	x
	23'	1'-3"	1'-4"	1'-5"	1'-6"	3'-9"	6'-7"	9'-4"	10'-4"	11'-4"	1'-3"	1'-4"	3'-2"	5'-1"	7'-1"	9'-4"	10'-4"	11'-4"	x

NOTES:

1. **CUT HOLES CAREFULLY! DO NOT OVERCUT CORNERS OF RECTANGULAR HOLES! DO NOT CUT JOIST FLANGES!**
2. The hole locations listed above are valid for joists supporting only uniform loads, (40 psf Live Load and a 25 psf Dead Load, spaced up to 16" on center).
3. Hole location is measured from the center of bearing to the center of a circular or rectangular hole from the closest support.
4. Circular and rectangular holes may be placed anywhere within the depth of the joist web.
5. For a hole size that differs from those covered, use the next larger hole dimension.

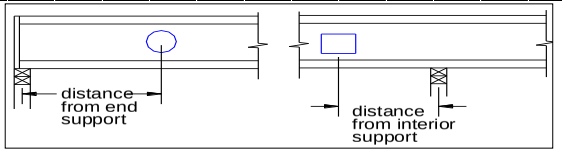


Table 11 - Boise BCI Web Hole Charts: 40 psf Live Load, 15 psf Dead Load, up to 24" oc

Circular Holes

Distance from End Support

Joist Depth	Clear Span	Hole Diameter 2"	4"	6"	8"	10"	12"
9-1/2"	6'	1'-3"	1'-4"	1'-5"			
	7'	1'-3"	1'-4"	1'-5"			
	8'	1'-3"	1'-4"	1'-5"			
	9'	1'-3"	1'-4"	1'-5"			
	10'	1'-3"	1'-4"	2'-2"			
	11'	1'-3"	1'-4"	2'-9"			
	12'	1'-3"	1'-4"	3'-4"			
11-7/8"	6'	1'-3"	1'-4"	1'-5"	1'-6"		
	7'	1'-3"	1'-4"	1'-5"	1'-6"		
	8'	1'-3"	1'-4"	1'-5"	1'-6"		
	9'	1'-3"	1'-4"	1'-5"	1'-6"		
	10'	1'-3"	1'-4"	1'-5"	1'-6"		
	11'	1'-3"	1'-4"	1'-5"	1'-10"		
	12'	1'-3"	1'-4"	1'-5"	2'-5"		
	13'	1'-3"	1'-4"	1'-5"	3'-0"		
	14'	1'-3"	1'-4"	1'-5"	3'-7"		
14"	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	12'	1'-3"	1'-4"	1'-5"	1'-6"	2'-0"	
	13'	1'-3"	1'-4"	1'-5"	1'-6"	2'-6"	
	14'	1'-3"	1'-4"	1'-5"	1'-6"	3'-8"	
	15'	1'-3"	1'-4"	1'-5"	1'-10"	4'-3"	
	16'	1'-3"	1'-4"	1'-5"	1'-10"	4'-3"	
16"	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-9"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-4"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-11"
	15'	1'-3"	1'-4"	1'-5"	1'-6"	2'-2"	3'-5"
	16'	1'-3"	1'-4"	1'-5"	1'-6"	2'-6"	4'-1"
	17'	1'-3"	1'-4"	1'-5"	1'-6"	2'-10"	4'-8"
	18'	1'-3"	1'-4"	1'-5"	1'-6"	3'-3"	5'-4"

Distance from Interior Support

Joist Depth	Clear Span	Hole Diameter 2"	4"	6"	8"	10"	12"
9-1/2"	6'	1'-3"	1'-4"	1'-5"			
	7'	1'-3"	1'-4"	1'-5"			
	8'	1'-3"	1'-4"	1'-5"			
	9'	1'-3"	1'-4"	2'-8"			
	10'	1'-3"	1'-4"	3'-3"			
	11'	1'-3"	1'-4"	3'-11"			
	12'	1'-3"	1'-10"	4'-6"			
11-7/8"	6'	1'-3"	1'-4"	1'-5"	1'-6"		
	7'	1'-3"	1'-4"	1'-5"	1'-6"		
	8'	1'-3"	1'-4"	1'-5"	1'-6"		
	9'	1'-3"	1'-4"	1'-5"	1'-10"		
	10'	1'-3"	1'-4"	1'-5"	2'-6"		
	11'	1'-3"	1'-4"	1'-5"	3'-2"		
	12'	1'-3"	1'-4"	1'-5"	3'-9"		
	13'	1'-3"	1'-4"	2'-1"	4'-4"		
	14'	1'-3"	1'-4"	2'-8"	5'-0"		
14"	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	
	10'	1'-3"	1'-4"	1'-5"	1'-6"	2'-1"	
	11'	1'-3"	1'-4"	1'-5"	1'-6"	2'-9"	
	12'	1'-3"	1'-4"	1'-5"	1'-6"	3'-4"	
	13'	1'-3"	1'-4"	1'-5"	1'-11"	4'-0"	
	14'	1'-3"	1'-4"	1'-5"	2'-6"	4'-7"	
	15'	1'-3"	1'-4"	1'-5"	3'-2"	5'-3"	
	16'						
16"	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-11"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-7"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-2"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	1'-11"	3'-10"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	2'-6"	4'-5"
	15'	1'-3"	1'-4"	1'-5"	1'-6"	3'-2"	5'-1"
	16'	1'-3"	1'-4"	1'-5"	1'-10"	3'-9"	5'-8"
	17'	1'-3"	1'-4"	1'-5"	2'-6"	4'-5"	6'-4"
	18'						

Rectangular Holes

Distance from End Support

Joist Depth	Clear Span	Maximum Hole Dimension: Depth or Width 2x2	4x4	6x6	6x8	6x10	6x12	6x14	6x16	6x18
9-1/2"	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-4"	2'-11"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-10"	2'-5"	2'-11"	x
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-11"	2'-5"	3'-0"	3'-7"	x
	9'	1'-3"	1'-4"	1'-7"	2'-1"	2'-6"	3'-1"	3'-7"	4'-2"	x
	10'	1'-3"	1'-4"	2'-2"	2'-8"	3'-2"	3'-8"	4'-3"	4'-10"	x
	11'	1'-3"	1'-4"	2'-9"	3'-3"	3'-9"	4'-3"	4'-10"	x	x
	12'	1'-3"	1'-4"	3'-4"	3'-10"	4'-4"	4'-11"	5'-6"	x	x
11-7/8"	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-11"	2'-7"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-11"	2'-6"	3'-3"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-11"	2'-6"	3'-2"	3'-10"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-11"	2'-6"	3'-1"	3'-9"	4'-6"
	10'	1'-3"	1'-4"	1'-5"	1'-11"	2'-6"	3'-2"	3'-9"	4'-5"	x
	11'	1'-3"	1'-4"	1'-5"	2'-6"	3'-1"	3'-8"	4'-4"	5'-1"	x
	12'	1'-3"	1'-4"	1'-6"	3'-1"	3'-8"	4'-4"	5'-0"	5'-8"	x
	13'	1'-3"	1'-4"	2'-0"	3'-8"	4'-4"	4'-11"	5'-7"	6'-4"	x
	14'	1'-3"	1'-4"	2'-7"	4'-3"	4'-11"	5'-7"	6'-3"	6'-11"	x
14"	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-6"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-4"	3'-1"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-3"	3'-0"	3'-9"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-3"	2'-11"	3'-7"	4'-5"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	2'-2"	2'-10"	3'-6"	4'-3"	5'-0"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	2'-9"	3'-5"	4'-1"	4'-10"	x
	12'	1'-3"	1'-4"	1'-5"	1'-8"	3'-4"	4'-0"	4'-9"	5'-6"	x
	13'	1'-3"	1'-4"	1'-5"	2'-3"	3'-11"	4'-7"	5'-4"	6'-1"	x
	14'	1'-3"	1'-4"	1'-5"	2'-10"	4'-6"	5'-3"	6'-0"	6'-9"	x
	15'	1'-3"	1'-4"	1-10"	3'-5"	5'-1"	5-10"	6'-7"	7'-5"	x
	16'	1'-3"	1'-4"	2'-4"	4'-0"	5'-9"	6'-5"	7'-3"	x	x
16"	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-6"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-4"	3'-1"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-3"	2'-11"	3'-9"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-1"	2'-9"	3'-6"	4'-5"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-8"	3'-4"	4'-2"	5'-0"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-8"	3'-3"	4'-0"	4'-9"	x
	12'	1'-3"	1'-4"	1'-5"	1'-6"	2'-2"	3'-10"	4'-7"	5'-5"	x
	13'	1'-3"	1'-4"	1'-5"	1'-6"	2'-9"	4'-5"	5'-2"	6'-1"	x
	14'	1'-3"	1'-4"	1'-5"	1'-6"	1'-9"	3'-4"	5'-0"	5'-10"	6'-8"	x
	15'	1'-3"	1'-4"	1'-5"	2'-4"	3'-11"	5'-8"	6'-6"	7'-4"	x
	16'	1'-3"	1'-4"	1'-5"	2'-10"	4'-6"	6'-3"	7'-1"	8'-0"	x
	17'	1'-3"	1'-4"	1'-11"	3'-5"	5'-1"	6'-11"	7'-9"	x	x
	18'	1'-3"	1'-4"	2'-5"	4'-0"	5'-8"	7'-6"	8'-4"	x	x

Distance from Interior Support

Joist Depth	Clear Span	Maximum Hole Dimension: Depth or Width 2x2	4x4	6x6	6x8	6x10	6x12	6x14	6x16	6x18
9-1/2"	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-11"	2'-7"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-11"	2'-6"	3'-3"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-11"	2'-6"	3'-2"	3'-10"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-11"	2'-6"	3'-1"	3'-9"	4'-6"
	10'	1'-3"	1'-4"	1'-5"	1'-11"	2'-6"	3'-2"	3'-9"	4'-5"	x
	11'	1'-3"	1'-4"	1'-5"	2'-6"	3'-1"	3'-8"	4'-4"	5'-1"	x
	12'	1'-3"	1'-4"	1'-6"	3'-1"	3'-8"	4'-4"	5'-0"	5'-8"	x
	13'	1'-3"	1'-4"	2'-0"	3'-8"	4'-4"	4'-11"	5'-7"	6'-4"	x
	14'	1'-3"	1'-4"	2'-7"	4'-3"	4'-11"	5'-7"	6'-3"	6'-11"	x
14"	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-6"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-4"	3'-1"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-3"	3'-0"	3'-9"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-3"	2'-11"	3'-7"	4'-5"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	2'-2"	2'-10"	3'-6"	4'-3"	5'-0"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	2'-9"	3'-5"	4'-1"	4'-10"	x
	12'	1'-3"	1'-4"	1'-5"	1'-8"	3'-4"	4'-0"	4'-9"	5'-6"	x
	13'	1'-3"	1'-4"	1'-5"	2'-3"	3'-11"	4'-7"	5'-4"	6'-1"	x
	14'	1'-3"	1'-4"	1'-5"	2'-10"	4'-6"	5'-3"	6'-0"	6'-9"	x
	15'	1'-3"	1'-4"	1-10"	3'-5"	5'-1"	5-10"	6'-7"	7'-5"	x
	16'									
16"	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	2'-6"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-4"	3'-1"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-3"	3'-0"	3'-9"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-1"	2'-9"	3'-6"	4'-5"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-8"	3'-4"	4'-2"	5'-0"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-8"	3'-3"	4'-0"	4'-9"	x
	12'	1'-3"	1'-4"	1'-5"	1'-6"	2'-2"	3'-10"	4'-7"	5'-5"	x
	13'	1'-3"	1'-4"	1'-5"	1'-6"	2'-9"	4'-5"	5'-2"	6'-1"	x
	14'	1'-3"	1'-4"	1'-5"	1'-6"	1'-9"	3'-4"	5'-0"	5'-10"	6'-8"	x
	15'	1'-3"	1'-4"	1'-5"	2'-4"	3'-11"	5'-8"	6'-6"	7'-4"	x
	16'	1'-3"	1'-4"	1'-5"	2'-10"	4'-6"	6'-3"	7'-1"	8'-0"	x
	17'	1'-3"	1'-4"	1'-5"	2'-6"	4'-5"	6'-4"	7'-2"	8'-1"	x
	18'	1'-3"	1'-4"	1'-5"	1'-6"	2'-11"	5'-3"	7'-1"	8'-2"	x

NOTES:

1. **CUT HOLES CAREFULLY! DO NOT OVERCUT CORNERS OF RECTANGULAR HOLES! DO NOT CUT JOIST FLANGES!**
2. The hole locations listed above are valid for joists supporting only uniform loads, (40 psf Live Load and a 15 psf Dead Load, spaced up to 24" on center).
3. Hole location is measured from the center of bearing to the center of a circular or rectangular hole from the closest support.
4. Circular and rectangular holes may be placed anywhere within the depth of the joist web.
5. For a hole size that differs from those covered, use the next larger hole dimension.

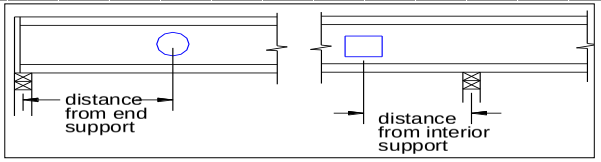


Table 12 - Boise BCI Web Hole Charts: 40 psf Live Load, 20 psf Dead Load, up to 24" oc

Joist Depth	Clear Span	Circular Holes												Rectangular Holes															
		Distance from End Support						Distance from Interior Support						Distance from End Support								Distance from Interior Support							
		Hole Diameter						Hole Diameter						Maximum Hole Dimension: Depth or Width								Maximum Hole Dimension: Depth or Width							
		2"	4"	6"	8"	10"	12"	2"	4"	6"	8"	10"	12"	2x2	4x4	6x6	6x8	6x10	6x12	6x14	6x16	6x18	2x2	4x4	6x6	6x8	6x10	6x12	6x14	6x16	6x18
9-1/2"	6'	1'-3"	1'-4"	1'-5"				1'-3"	1'-4"	1'-5"				1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-11"	2'-5"	2'-11"	1'-3"	1'-4"	1'-5"	1'-6"	1'-9"	2'-1"	2'-6"	3'-0"	3'-5"
	7'	1'-3"	1'-4"	1'-5"				1'-3"	1'-4"	1'-8"				1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-0"	2'-6"	3'-0"	3'-6"	1'-3"	1'-4"	1'-7"	2'-0"	2'-4"	2'-9"	3'-1"	3'-7"	4'-2"
	8'	1'-3"	1'-4"	1'-5"				1'-3"	1'-4"	2'-3"				1'-3"	1'-4"	1'-5"	1'-9"	2'-2"	2'-7"	3'-1"	3'-7"	x	1'-3"	1'-4"	2'-3"	2'-7"	3'-0"	3'-4"	3'-10"	4'-4"	4'-10"
	9'	1'-3"	1'-4"	1'-11"				1'-3"	1'-4"	2'-11"				1'-3"	1'-4"	1'-10"	2'-4"	2'-9"	3'-3"	3'-9"	4'-3"	x	1'-3"	1'-6"	2'-10"	3'-3"	3'-7"	4'-0"	4'-6"	5'-0"	x
	10'	1'-3"	1'-4"	2'-5"				1'-3"	1'-4"	3'-6"				1'-3"	1'-4"	2'-5"	2'-10"	3'-4"	3'-10"	4'-4"	4'-10"	x	1'-3"	2'-2"	3'-6"	3'-10"	4'-3"	4'-8"	5'-2"	5'-9"	x
	11'	1'-3"	1'-4"	3'-0"				1'-3"	1'-4"	4'-2"				1'-3"	1'-5"	3'-0"	3'-6"	3'-11"	4'-5"	4'-11"	x	x	1'-5"	2'-9"	4'-1"	4'-6"	4'-11"	5'-4"	5'-11"	6'-5"	x
	12'	1'-3"	1'-4"	3'-7"				1'-3"	2'-4"	4'-9"				1'-3"	2'-0"	3'-7"	4'-1"	4'-6"	5'-0"	5'-7"	x	x	2'-0"	3'-5"	4'-9"	5'-1"	5'-7"	6'-1"	6'-7"	7'-2"	x
		2"	4"	6"	8"	10"	12"	2"	4"	6"	8"	10"	12"	2x2	4x4	6x6	8x8	8x10	8x12	8x14	8x16	8x18	2x2	4x4	6x6	8x8	8x10	8x12	8x14	8x16	8x18
11-7/8"	6'	1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-1"	2'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-2"	2'-7"	3'-2"
	7'	1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-1"	2'-8"	3'-3"	1'-3"	1'-4"	1'-5"	1'-6"	1'-11"	2'-4"	2'-9"	3'-3"	3'-10"
	8'	1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	1'-7"			1'-3"	1'-4"	1'-5"	1'-6"	1'-8"	2'-2"	2'-8"	3'-3"	3'-10"	1'-3"	1'-4"	1'-5"	2'-1"	2'-6"	2'-11"	3'-5"	3'-11"	4'-7"
	9'	1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	2'-2"			1'-3"	1'-4"	1'-5"	1'-8"	2'-2"	2'-9"	3'-3"	3'-10"	4'-6"	1'-3"	1'-4"	1'-5"	2'-8"	3'-2"	3'-7"	4'-1"	4'-8"	5'-3"
	10'	1'-3"	1'-4"	1'-5"	1'-8"			1'-3"	1'-4"	1'-5"	2'-10"			1'-3"	1'-4"	1'-5"	2'-3"	2'-9"	3'-4"	3'-11"	4'-6"	x	1'-3"	1'-4"	2'-0"	3'-4"	3'-9"	4'-2"	4'-9"	5'-4"	6'-0"
	11'	1'-3"	1'-4"	1'-5"	2'-2"			1'-3"	1'-4"	1'-5"	3'-5"			1'-3"	1'-4"	1'-5"	2'-10"	3'-4"	3'-11"	4'-6"	5'-1"	x	1'-3"	1'-4"	2'-8"	3'-11"	4'-5"	4'-10"	5'-5"	6'-1"	6'-8"
	12'	1'-3"	1'-4"	1'-5"	2'-9"			1'-3"	1'-4"	1'-11"	4'-1"			1'-3"	1'-4"	1'-11"	3'-5"	3'-11"	4'-6"	5'-1"	5'-9"	x	1'-3"	2'-0"	3'-3"	4'-7"	5'-0"	5'-7"	6'-2"	6'-9"	x
	13'	1'-3"	1'-4"	1'-5"	3'-4"			1'-3"	1'-4"	2'-7"	4'-8"			1'-3"	1'-4"	2'-5"	4'-0"	4'-6"	5'-2"	5'-9"	6'-4"	x	1'-4"	2'-7"	3'-11"	5'-2"	5'-8"	6'-3"	6'-10"	7'-6"	x
	14'	1'-3"	1'-4"	1'-6"	3'-11"			1'-3"	1'-4"	3'-2"	5'-4"			1'-3"	1'-7"	3'-0"	4'-7"	5'-2"	5'-9"	6'-4"	7'-0"	x	1'-11"	3'-3"	4'-6"	5'-10"	6'-4"	6'-11"	7'-6"	8'-2"	x
		2"	4"	6"	8"	10"	12"	2"	4"	6"	8"	10"	12"	2x2	4x4	6x6	8x8	10x10	10x12	10x14	10x16	10x18	2x2	4x4	6x6	8x8	10x10	10x12	10x14	10x16	10x18
14"	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-11"	2'-7"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-0"	2'-5"	3'-1"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-11"	2'-6"	3'-2"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-1"	2'-7"	3'-1"	3'-10"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-10"	2'-6"	3'-2"	3'-9"	1'-3"	1'-4"	1'-5"	1'-6"	2'-3"	2'-9"	3'-3"	3'-9"	4'-6"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-10"		1'-3"	1'-4"	1'-5"	1'-6"	1'-10"	2'-5"	3'-1"	3'-8"	4'-5"	1'-3"	1'-4"	1'-5"	1'-7"	2'-10"	3'-4"	3'-10"	4'-6"	5'-2"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	2'-5"		1'-3"	1'-4"	1'-5"	1'-6"	2'-5"	3'-0"	3'-8"	4'-4"	5'-0"	1'-3"	1'-4"	1'-5"	2'-3"	3'-6"	4'-0"	4'-6"	5'-2"	5'-11"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-10"		1'-3"	1'-4"	1'-5"	1'-6"	3'-1"		1'-3"	1'-4"	1'-5"	1'-7"	3'-0"	3'-7"	4'-3"	4'-11"	x	1'-3"	1'-4"	1'-7"	2'-10"	4'-1"	4'-7"	5'-2"	5'-11"	6'-7"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	2'-4"		1'-3"	1'-4"	1'-5"	1'-6"	3'-7"		1'-3"	1'-4"	1'-5"	2'-1"	3'-7"	4'-3"	4'-10"	5'-7"	x	1'-3"	1'-4"	2'-3"	3'-6"	4'-9"	5'-3"	5'-11"	6'-7"	7'-4"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	2'-11"		1'-3"	1'-4"	1'-5"	2'-5"	4'-4"		1'-3"	1'-4"	1'-5"	2'-8"	4'-2"	4'-10"	5'-6"	6'-2"	x	1'-3"	1'-7"	2'-4"	4'-1"	5'-4"	5'-11"	6'-7"	7'-3"	8'-0"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	3'-6"		1'-3"	1'-4"	1'-5"	3'-0"	4'-11"		1'-3"	1'-4"	1'-9"	3'-3"	4'-9"	5'-5"	6'-1"	6'-10"	x	1'-3"	2'-2"	3'-6"	4'-9"	6'-0"	6'-7"	7'-4"	8'-0"	x
		2"	4"	6"	8"	10"	12"	2"	4"	6"	8"	10"	12"	2x2	4x4	6x6	8x8	10x10	12x12	12x14	12x16	12x18	2x2	4x4	6x6	8x8	10x10	12x12	12x14	12x16	12x18
16"	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-11"	2'-6"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-11"	2'-5"	3'-1"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-5"	3'-2"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-0"	2'-6"	3'-1"	3'-9"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-9"	2'-4"	3'-0"	3'-9"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-7"	3'-2"	3'-9"	4'-6"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-3"	2'-11"	3'-8"	4'-5"	1'-3"	1'-4"	1'-5"	1'-6"	2'-0"	3'-3"	3'-9"	4'-5"	5'-2"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-3"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-10"	3'-7"	4'-3"	5'-0"	1'-3"	1'-4"	1'-5"	1'-6"	2'-7"	3'-10"	4'-5"	5'-1"	5'-11"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-11"	1'-3"	1'-4"	1'-5"	1'-6"	2'-0"	3'-5"	4'-2"	4'-10"	x	1'-3"	1'-4"	1'-5"	2'-0"	3'-3"	4'-6"	5'-1"	5'-10"	6'-8"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-2"	1'-3"	1'-4"	1'-5"	1'-6"	1'-10"	3'-6"	1'-3"	1'-4"	1'-5"	1'-6"	2'-6"	4'-1"	4'-9"	5'-6"	x	1'-3"	1'-4"	1'-5"	2'-7"	3'-10"	5'-1"	5'-9"	6'-6"	7'-4"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-9"	1'-3"	1'-4"	1'-5"	1'-6"	2'-5"	4'-2"	1'-3"	1'-4"	1'-5"	1'-8"	3'-1"	4'-8"	5'-4"	6'-1"	x	1'-3"	1'-4"	2'-0"	3'-3"	4'-6"	5'-9"	6'-6"	7'-3"	8'-0"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-4"	1'-3"	1'-4"	1'-5"	1'-6"	3'-1"	4'-9"	1'-3"	1'-4"	1'-5"	2'-3"	3'-8"	5'-3"	6'-0"	6'-9"	x	1'-3"	1'-5"	2'-8"	3'-10"	5'-1"	6'-5"	7'-1"	7'-11"	x
	15'	1'-3"	1'-4"	1'-5"	1'-6"	1'-10"	3'-10"	1'-3"	1'-4"	1'-5"	1'-11"	3'-8"	5'-5"	1'-3"	1'-4"	1'-5"	2'-10"	4'-3"	5'-10"	6'-7"	7'-4"	x	1'-3"	2'-0"	3'-3"	4'-6"	5'-9"	7'-2"	7-10"	8'-8"	x
	16'	1'-3"	1'-4"	1'-5"	1'-6"	2'-5"	4'-5"							1'-3"	1'-4"	2'-0"	3'-4"	4'-11"	6'-6"	7'-2"	8'-0"	x									

NOTES:

1. **CUT HOLES CAREFULLY! DO NOT OVERCUT CORNERS OF RECTANGULAR HOLES! DO NOT CUT JOIST FLANGES!**
2. The hole locations listed above are valid for joists supporting only uniform loads, (40 psf Live Load and a 20 psf Dead Load, spaced up to 24" on center).
3. Hole location is measured from the center of bearing to the center of a circular or rectangular hole from the closest support.
4. Circular and rectangular holes may be placed anywhere within the depth of the joist web.
5. For a hole size that differs from those covered, use the next larger hole dimension.

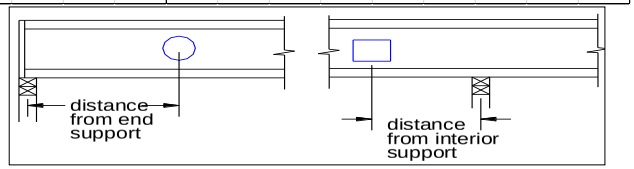


Table 13 - Boise BCI Web Hole Charts: 40 psf Live Load, 25 psf Dead Load, up to 24" oc

Joist Depth	Clear Span	Circular Holes												Rectangular Holes															
		Distance from End Support						Distance from Interior Support						Distance from End Support								Distance from Interior Support							
		Hole Diameter						Hole Diameter						Maximum Hole Dimension: Depth or Width								Maximum Hole Dimension: Depth or Width							
		2"	4"	6"	8"	10"	12"	2"	4"	6"	8"	10"	12"	2x2	4x4	6x6	6x8	6x10	6x12	6x14	6x16	6x18	2x2	4x4	6x6	6x8	6x10	6x12	6x14	6x16	6x18
9-1/2"	6'	1'-3"	1'-4"	1'-5"				1'-3"	1'-4"	1'-5"				1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-0"	2'-5"	2'-11"	1'-3"	1'-4"	1'-5"	1'-7"	1'-8"	2'-3"	2'-7"	3'-0"	3'-6"
	7'	1'-3"	1'-4"	1'-5"				1'-3"	1'-4"	1'-10"				1'-3"	1'-4"	1'-5"	1'-6"	1'-9"	2'-2"	2'-7"	3'-1"	x	1'-3"	1'-4"	1'-10"	2'-2"	2'-6"	2'-10"	3'-3"	3'-8"	4'-2"
	8'	1'-3"	1'-4"	1'-7"				1'-3"	1'-4"	2'-6"				1'-3"	1'-4"	1'-6"	1'-11"	2'-4"	2'-9"	3'-2"	3'-8"	x	1'-3"	1'-4"	2'-5"	2'-10"	3'-2"	3'-6"	3'-11"	4'-5"	4'-10"
	9'	1'-3"	1'-4"	2'-1"				1'-3"	1'-4"	3'-1"				1'-3"	1'-4"	2'-1"	2'-6"	2'-11"	3'-4"	3'10"	4'-3"	x	1'-3"	1'-10"	3'-1"	3'-5"	3'-9"	4'-2"	4'-7"	5'-1"	x
	10'	1'-3"	1'-4"	2'-8"				1'-3"	1'-6"	3'-9"				1'-3"	1'-4"	2'-8"	3'-1"	3'-6"	3'-11"	4'-5"	4'-10"	x	1'-3"	2'-5"	3'-8"	4'-1"	4'-5"	4'-10"	5'-4"	5'-9"	x
	11'	1'-3"	1'-4"	3'-5"				1'-3"	2'-1"	4'-4"				1'-3"	1'-9"	3'-3"	3'-8"	4'-1"	4'-6"	5'-0"	5'-6"	x	1'-10"	3'-1"	4'-4"	4'-8"	5'-1"	5'-6"	6'-0"	6'-6"	x
		2"	4"	6"	8"	10"	12"	2"	4"	6"	8"	10"	12"	2x2	4x4	6x6	8x8	8x10	8x12	8x14	8x16	8x18	2x2	4x4	6x6	8x8	8x10	8x12	8x14	8x16	8x18
11-7/8"	6'	1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-2"	2'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-10"	2'-3"	2'-8"	3'-3"
	7'	1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-9"	2'-3"	2'-9"	3'-3"	1'-3"	1'-4"	1'-5"	1'-8"	2'-1"	2'-6"	2'-11"	3'-4"	3'-11"
	8'	1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	2'-0"			1'-3"	1'-4"	1'-5"	1'-6"	1'-10"	2'-4"	2'-10"	3'-4"	3'-11"	1'-3"	1'-4"	1'-5"	2'-4"	2'-9"	3'-1"	3'-6"	4'-1"	4'-7"
	9'	1'-3"	1'-4"	1'-5"	1'-6"			1'-3"	1'-4"	1'-5"	2'-5"			1'-3"	1'-4"	1'-5"	1'-11"	2'-5"	2'-11"	3'-5"	3'-11"	4'-6"	1'-3"	1'-4"	1'-9"	2'-11"	3'-4"	3'-9"	4'-3"	4'-9"	5'-4"
	10'	1'-3"	1'-4"	1'-5"	1'-11"			1'-3"	1'-4"	1'-5"	3'-1"			1'-3"	1'-4"	1'-5"	2'-6"	3'-0"	3'-6"	4'-0"	4'-7"	x	1'-3"	1'-4"	2'-4"	3'-7"	4'-0"	4'-5"	4'-11"	5'-5"	6'-0"
	11'	1'-3"	1'-4"	1'-5"	2'-6"			1'-3"	1'-4"	1'-9"	3'-8"			1'-3"	1'-4"	1'-8"	3'-1"	3'-7"	4'-2"	4'-7"	5'-2"	x	1'-3"	1'-10"	2'-11"	4'-2"	4'-7"	5'-1"	5'-7"	6'-2"	6'-9"
	12'	1'-3"	1'-4"	1'-5"	3'-1"			1'-3"	1'-4"	2'-4"	4'-4"			1'-3"	1'-4"	2'-3"	3'-8"	4'-2"	4'-8"	5'-2"	5'-9"	x	1'-3"	2'-5"	3'-7"	4'-10"	5'-3"	5'-9"	6'-3"	6'-10"	x
	13'	1'-3"	1'-4"	1'-5"	3'-7"			1'-3"	1'-4"	3'-0"	4'-11"			1'-3"	1'-6"	2'-10"	4'-3"	4'-9"	5'-3"	5'-10"	6'-4"	x	1'-10"	3'-1"	4'-3"	5'-5"	5'-11"	6'-5"	7'-0"	7'-6"	x
		2"	4"	6"	8"	10"	12"	2"	4"	6"	8"	10"	12"	2x2	4x4	6x6	8x8	10x10	10x12	10x14	10x16	10x18	2x2	4x4	6x6	8x8	10x10	10x12	10x14	10x16	10x18
14"	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	2'-0"	2'-7"	1'-3"	1'-4"	1'-5"	1'-6"	1'-8"	2'-3"	2'-7"	3'-0"	3'-6"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-0"	2'-7"	3'-2"	1'-3"	1'-4"	1'-5"	1'-6"	1'-10"	2'-3"	2'-9"	3'-3"	3'-10"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-1"	2'-7"	3'-2"	3'-10"	1'-3"	1'-4"	1'-5"	1'-6"	2'-5"	2'-11"	3'-4"	3'-11"	4'-6"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	2'-1"		1'-3"	1'-4"	1'-5"	1'-6"	2'-1"	2'-8"	3'-2"	3'-10"	4'-6"	1'-3"	1'-4"	1'-5"	1'-11"	3'-1"	3'-6"	4'-0"	4'-7"	5'-3"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"		1'-3"	1'-4"	1'-5"	1'-6"	2'-9"		1'-3"	1'-4"	1'-5"	1'-6"	2'-8"	3'-3"	3'-10"	4'-5"	5'-0"	1'-3"	1'-4"	1'-5"	2'-6"	3'-8"	4'-2"	4'-8"	5'-4"	5-11"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	2'-1"		1'-3"	1'-4"	1'-5"	1'-7"	3'-4"		1'-3"	1'-4"	1'-5"	1'-11"	2'-11"	3'-10"	4'-5"	5'-0"	x	1'-3"	1'-4"	2'-0"	3'-2"	4'-4"	4'-10"	5'-5"	6'-0"	6'-8"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	2'-8"		1'-3"	1'-4"	1'-5"	2'-3"	4'-0"		1'-3"	1'-4"	1'-5"	2'-5"	3'-10"	4'-5"	5'-0"	5'-7"	x	1'-3"	1'-5"	2'-7"	3'-9"	4'-11"	5'-6"	6'-2"	6'-8"	7'-4"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	3'-3"		1'-3"	1'-4"	1'-5"	2"-10"	4'-7"		1'-3"	1'-4"	1'-8"	3'-0"	4'-5"	5'-0"	5'-7"	6'-3"	x	1'-3"	2'-1"	3'-3"	4'-5"	5'-7"	6'-2"	6'-9"	7'-5"	x
	14'	1'-3"	1'-4"	1'-5"	1'-10"	3'-10"								1'-3"	1'-4"	2'-3"	3'-7"	5'-0"	5'-7"	6'-2"	6'-10"	x									
		2"	4"	6"	8"	10"	12"	2"	4"	6"	8"	10"	12"	2x2	4x4	6x6	8x8	10x10	12x12	12x14	12x16	12x18	2x2	4x4	6x6	8x8	10x10	12x12	12x14	12x16	12x18
16"	6'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-9"	1'-11"	2'-7"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	2'-0"	2'-6"	3'-2"
	7'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-11"	2'-7"	3'-2"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-2"	2'-8"	3'-2"	3'-10"
	8'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-8"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-11"	2'-6"	3'-2"	3'-10"	1'-3"	1'-4"	1'-5"	1'-6"	1'-8"	2'-9"	3'-3"	3'-10"	4'-6"
	9'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-9"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-0"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-6"	3'-1"	3'-9"	4'-5"	1'-3"	1'-4"	1'-5"	1'-6"	2'-3"	3'-5"	3'-11"	4'-7"	5'-3"
	10'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-10"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-7"	1'-3"	1'-4"	1'-5"	1'-6"	1'-9"	3'-1"	3'-8"	4'-4"	5'-0"	1'-3"	1'-4"	1'-5"	1'-9"	2'-11"	4'-0"	4'-7"	5'-3"	5'-11"
	11'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	1'-11"	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-3"	1'-3"	1'-4"	1'-5"	1'-6"	2'-3"	3'-8"	4'-3"	4'-11"	x	1'-3"	1'-4"	1'-5"	2'-5"	3'-6"	4'-8"	5'-3"	5'-11"	6'-8"
	12'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	2'-6"	1'-3"	1'-4"	1'-5"	1'-6"	2'-3"	3'-10"	1'-3"	1'-4"	1'-5"	1'-7"	2'-10"	4'-3"	4'-11"	5'-7"	x	1'-3"	1'-4"	1'-10"	3'-0"	4'-2"	5'-4"	6'-0"	6'-8"	7'-4"
	13'	1'-3"	1'-4"	1'-5"	1'-6"	1'-7"	3'-1"	1'-3"	1'-4"	1'-5"	1'-6"	2'-10"	4'-6"	1'-3"	1'-4"	1'-5"	2'-1"	3'-5"	4'-10"	5'-6"	6'-2"	x	1'-3"	1'-4"	2'-6"	3'-8"	4'-9"	6'-0"	6'-8"	7'-4"	8'-0"
	14'	1'-3"	1'-4"	1'-5"	1'-6"	1'-10"	3'-8"	1'-3"	1'-4"	1'-5"	1'-10"	3'-6"	5'-1"	1'-3"	1'-4"	1'-5"	2'-8"	4'-0"	5'-5"	6'-1"	6'-9"	x	1'-3"	2'-0"	3'-1"	4'-3"	5'-7"	6'-8"	7'-4"	8'-0"	x

NOTES:

1. **CUT HOLES CAREFULLY! DO NOT OVERCUT CORNERS OF RECTANGULAR HOLES! DO NOT CUT JOIST FLANGES!**
2. The hole locations listed above are valid for joists supporting only uniform loads, (40 psf Live Load and a 25 psf Dead Load, spaced up to 24" on center).
3. Hole location is measured from the center of bearing to the center of a circular or rectangular hole from the closest support.
4. Circular and rectangular holes may be placed anywhere within the depth of the joist web.
5. For a hole size that differs from those covered, use the next larger hole dimension.

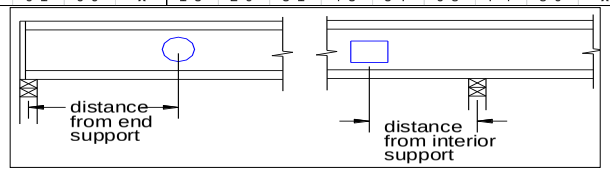


TABLE 14 — BCI ALLOWABLE FLOOR SPANS[1,2,3,4]
(Residential Living Areas, live load = 40 psf, L/360 for live loads, L/240 for total loads)

JOIST SPACING (inches)	SERIES AND GRADE		DEAD LOAD = 10 psf				DEAD LOAD = 20 psf			
			Joist Depth (inches)							
			9 1/2	11 7/8	14	16	9 1/2	11 7/8	14	16
			Maximum Floor Joist Spans							
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
12	BCI4500	1.7E	18 - 3	20 - 11	22 - 9	24 - 3	16 - 10	19 - 1	20 - 9	22 - 2
		1.8E	18 - 8	22 - 0	23 - 11	25 - 6	17 - 8	20 - 0	21-10	23 - 4
		1.9E	18 - 10	22 - 3	24 - 9	26 - 5	18 - 3	20 - 9	22 - 7	24 - 1
		2.0E	19 - 2	22 - 7	25 - 8	27 - 9	19 - 2	21-9	23 - 8	25 - 4
	BCI5000	1.7E	19 - 0	22 - 5	24 - 5	26 - 1	18 - 1	20 - 5	22 - 3	23 - 9
		1.8E	19 - 4	22 - 9	25 - 8	27 - 5	19 - 0	21-6	23 - 5	25 - 0
		1.9E	19 - 6	23 - 1	26 - 2	28 - 4	19 - 6	22 - 3	24 - 3	25 - 10
		2.0E	19 - 9	23 - 5	26 - 6	29 - 4	19 - 9	23 - 4	25 - 5	27 - 2
	BCI6000	1.7E	19 - 8	23 - 4	26 - 4	28 - 2	19 - 6	22 - 1	24 - 0	25 - 8
		1.8E	19 - 11	23 - 7	26 - 10	29 - 7	19 - 11	23 - 3	25 - 4	27 - 0
		1.9E	20 - 4	24 - 0	27 - 2	30 - 1	20 - 4	24 - 0	26 - 2	27 - 11
		2.0E	20 - 8	24 - 4	27 - 7	30 - 6	20 - 8	24 - 4	27 - 5	29 - 4
	BCI6500	1.7E	20 - 3	24 - 0	27 - 1	29 - 7	20 - 3	23 - 3	25 - 4	27 - 0
		1.8E	20 - 6	24 - 4	27 - 7	30 - 5	20 - 6	24 - 4	26 - 7	28 - 5
		1.9E	20 - 10	24 - 9	28 - 0	30 - 11	20 - 10	24 - 9	27 - 6	29 - 5
		2.0E	21-2	25 - 1	28 - 4	31-4	21-2	25 - 1	28 - 4	30 - 10
16	BCI4500	1.7E	16 - 0	18 - 1	19 - 8	21-0	14 - 7	16 - 6	18 - 0	19 - 2
		1.8E	16 - 9	19 - 0	20 - 8	22 - 1	15 - 4	17 - 4	18 - 11	20 - 2
		1.9E	17 - 3	19 - 8	21-5	22 - 10	15 - 10	17 - 11	19 - 6	20 - 10
		2.0E	17 - 7	20 - 8	22 - 6	24 - 0	16 - 8	18 - 10	20 - 6	21-11
	BCI5000	1.7E	17 - 2	19 - 5	21-2	22 - 7	15 - 8	17 - 8	19 - 3	20 - 7
		1.8E	17 - 8	20 - 5	22 - 3	23 - 9	16 - 6	18 - 8	20 - 3	21-8
		1.9E	17 - 10	21-1	23 - 0	24 - 6	17 - 0	19 - 3	21-0	22 - 5
		2.0E	18 - 1	21-5	24 - 1	25 - 9	17 - 10	20 - 3	22 - 0	23 - 6
	BCI6000	1.7E	18 - 0	20 - 11	22 - 10	24 - 4	16 - 11	19 - 1	20 - 10	22 - 3
		1.8E	18 - 3	21-7	24 - 0	25 - 8	17 - 9	20 - 1	21-11	23 - 5
		1.9E	18 - 8	22 - 0	24 - 10	26 - 6	18 - 4	20 - 9	22 - 8	24 - 2
		2.0E	18 - 11	22 - 3	25 - 3	27 - 10	18 - 11	21-10	23 - 9	25 - 5
	BCI6500	1.7E	18 - 6	22 - 0	24 - 0	25 - 8	17 - 9	20 - 1	21-11	23 - 5
		1.8E	18 - 9	22 - 3	25 - 3	27 - 0	18 - 8	21-2	23 - 1	24 - 8
		1.9E	19 - 0	22 - 7	25 - 7	27 - 11	19 - 0	21-11	23 - 10	25 - 5
		2.0E	19 - 5	22 - 11	25 - 11	28 - 7	19 - 5	22 - 11	25 - 0	26 - 9

For SI: 1 ft = 0.3048 m; 1 inch = 25.4 mm; 1 psf = 47.88 N/m2.

[1] Values represent simple spans.
[2] Spans are measured from middle of bearing length to middle of bearing length ($1^1/_2$-inch minimum bearing).
[3] Span table is based on 23/32", 24-inch oc-rated Sturd-I-Floor, glued and nailed to BCI Joists. The adhesive must comply with Specification AFG-01 of the APA—The Engineered Wood Association. The type and spacing of the fasteners must comply with the code.
[4] Span table based on 11/2-inch end reaction values with no web stiffeners.

TABLE 14 (CONTINUED)— BCI ALLOWABLE FLOOR SPANS[1,2,3,4]

(Residential Living Areas, live load = 40 psf, L/360 for live

JOIST SPACING (inches)	SERIES AND GRADE		DEAD LOAD = 10 psf				DEAD LOAD = 20 psf			
			Joist Depth (inches)							
			9 1/2	11 7/8	14	16	9 1/2	11 7/8	14	16
			Maximum Floor Joist Spans							
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
19.2	BCI 4500	1.7E	14 - 7	16 - 6	18 - 0	19 - 2	13 - 4	15 - 1	16 - 5	17 - 6
		1.8E	15 - 4	17 - 4	18 - 11	20 - 2	14 - 0	15 - 10	17 - 3	18 - 5
		1.9E	15 - 10	17 - 11	19 - 6	20 - 10	14 - 5	16 - 5	17 - 10	19 - 0
		2.0E	16 - 7	18 - 10	20 - 6	21 - 11	15 - 2	17 - 2	18 - 9	19 - 9
	BCI 5000	1.7E	15 - 8	17 - 8	19 - 3	20 - 7	14 - 3	16 - 2	17 - 7	18 - 10
		1.8E	16 - 6	18 - 8	20 - 3	21 - 8	15 - 0	17 - 0	18 - 6	19 - 9
		1.9E	16 - 10	19 - 3	21 - 0	22 - 5	15 - 6	17 - 7	19 - 2	19 - 9
		2.0E	17 - 2	20 - 3	22 - 0	23 - 6	16 - 4	18 - 5	19 - 9	19 - 9
	BCI 6000	1.7E	16 - 11	19 - 1	20 - 10	22 - 3	15 - 5	17 - 5	19 - 0	20 - 4
		1.8E	17 - 3	20 - 1	21 - 11	23 - 5	16 - 2	18 - 4	20 - 0	21 - 4
		1.9E	17 - 7	20 - 9	22 - 8	24 - 2	16 - 9	19 - 0	20 - 8	22 - 1
		2.0E	17 - 10	21 - 0	23 - 9	25 - 5	17 - 7	19 - 11	21 - 8	23 - 2
	BCI 6500	1.7E	17 - 6	20 - 1	21 - 11	23 - 5	16 - 3	18 - 4	20 - 0	21 - 4
		1.8E	17 - 9	21 - 0	23 - 1	24 - 8	17 - 1	19 - 4	21 - 0	22 - 6
		1.9E	18 - 0	21 - 4	23 - 10	25 - 5	17 - 7	20 - 0	21 - 9	23 - 3
		2.0E	18 - 4	21 - 8	24 - 6	26 - 9	18 - 4	21 - 0	22 - 10	24 - 5
24	BCI 4500	1.7E	13 - 0	14 - 9	16 - 1	17 - 2	11-Nov	13 - 6	14 - 8	15 - 8
		1.8E	13 - 8	15 - 6	16 - 11	18 - 1	6-Dec	14 - 2	15 - 5	15 - 10
		1.9E	14 - 2	16 - 1	17 - 6	18 - 8	11-Dec	14 - 8	15 - 10	15 - 10
		2.0E	14 - 10	16 - 10	18 - 4	19 - 0	13 - 7	15 - 4	15 - 10	15 - 10
	BCI 5000	1.7E	14 - 0	15 - 10	17 - 3	18 - 5	9-Dec	14 - 5	15 - 9	15 - 10
		1.8E	14 - 9	16 - 8	18 - 2	19 - 0	13 - 5	15 - 2	15 - 10	15 - 10
		1.9E	15 - 2	17 - 3	18 - 9	19 - 0	13 - 10	15 - 9	15 - 10	15 - 10
		2.0E	16 - 0	18 - 1	19 - 0	19 - 0	14 - 7	15 - 10	15 - 10	15 - 10
	BCI 6000	1.7E	15 - 1	17 - 1	18 - 7	19 - 11	13 - 9	15 - 7	17 - 0	18 - 2
		1.8E	15 - 10	18 - 0	19 - 7	20 - 11	14 - 6	16 - 5	17 - 10	19 - 1
		1.9E	16 - 5	18 - 7	20 - 3	21 - 8	15 - 0	17 - 0	18 - 6	19 - 6
		2.0E	16 - 8	19 - 6	21 - 3	22 - 9	15 - 9	17 - 10	19 - 5	19 - 6
	BCI 6500	1.7E	15 - 11	18 - 0	19 - 7	20 - 11	14 - 6	16 - 5	17 - 11	19 - 1
		1.8E	16 - 7	18 - 11	20 - 7	22 - 0	15 - 3	17 - 3	18 - 10	19 - 6
		1.9E	16 - 9	19 - 7	21 - 4	22 - 9	15 - 9	17 - 10	19 - 5	19 - 6
		2.0E	17 - 1	20 - 3	22 - 4	23 - 6	16 - 7	18 - 9	19 - 6	19 - 6

For SI: 1 ft = 0.3048 m; 1 inch = 25.4 mm; 1 psf = 47.88 N/m2.

[1] Values represent simple spans.

[2] Spans are measured from middle of bearing length to middle of bearing length ($1^1/_2$-inch minimum bearing).

[3] Span table is based on 23/32", 24-inch oc-rated Sturd-I-Floor, glued and nailed to BCI Joists. The adhesive must comply with Specification AFG-01 of the APA—The Engineered Wood Association. The type and spacing of the fasteners must comply with the code.

[4] Span table based on $1^1/_2$-inch end reaction values with no web stiffeners.

TABLE 14 (CONTINUED) — BCI ALLOWABLE FLOOR SPANS[1,2,3,4]
(Residential Living Areas, live load = 40 psf, L/360 for live loads, L/240 for total loads)

JOIST SPACING (inches)	SERIES AND GRADE		DEAD LOAD = 10 psf				DEAD LOAD = 20 psf			
			Joist Depth (inches)							
			9 1/2	11 7/8	14	16	9 1/2	11 7/8	14	16
			Maximum Floor Joist Spans							
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
12	BCI4500s	1.7E	18 - 5	20 - 11	22 - 9	24 - 3	16 - 10	19 - 1	20 - 9	22 - 2
		1.8E	18 - 10	22 - 0	23 - 11	25 - 6	17 - 8	20 - 0	21-10	23 - 4
		1.9E	19 - 0	22 - 6	24 - 9	26 - 5	18 - 3	20 - 9	22 - 7	24 - 1
		2.0E	19 - 4	22 - 10	25 - 11	27 - 9	19 - 3	21-9	23 - 8	25 - 4
	BCI5000s	1.7E	19 - 2	22 - 5	24 - 5	26 - 1	18 - 1	20 - 5	22 - 3	23 - 9
		1.8E	19 - 6	23 - 1	25 - 8	27 - 5	19 - 0	21-6	23 - 5	25 - 0
		1.9E	19 - 9	23 - 5	26 - 6	28 - 4	19 - 8	22 - 3	24 - 3	25 - 10
		2.0E	20 - 1	23 - 9	26 - 10	29 - 9	20 - 1	23 - 4	25 - 5	27 - 2
	BCI6000s	1.7E	19 - 11	23 - 7	26 - 4	28 - 2	19 - 6	22 - 1	24 - 0	25 - 8
		1.8E	20 - 3	23 - 11	27 - 2	29 - 7	20 - 3	23 - 3	25 - 4	27 - 0
		1.9E	20 - 6	24 - 4	27 - 7	30 - 5	20 - 6	24 - 0	26 - 2	27 - 11
		2.0E	20 - 10	24 - 8	28 - 0	30 - 10	20 - 10	24 - 8	27 - 5	29 - 4
	BCI6500s	1.7E	20 - 6	24 - 4	27 - 5	29 - 7	20 - 6	23 - 3	25 - 4	27 - 0
		1.8E	20 - 10	24 - 7	27 - 11	30 - 9	20 - 10	24 - 5	26 - 7	28 - 5
		1.9E	21-1	25 - 0	28 - 3	31-3	21-1	25 - 0	27 - 6	29 - 5
		2.0E	21-5	25 - 4	28 - 8	31-8	21-5	25 - 4	28 - 8	30 - 10
16	BCI4500s	1.7E	16 - 0	18 - 1	19 - 8	21-0	14 - 7	16 - 6	18 - 0	19 - 2
		1.8E	16 - 9	19 - 0	20 - 8	22 - 1	15 - 4	17 - 4	18 - 11	20 - 2
		1.9E	17 - 4	19 - 8	21-5	22 - 10	15 - 10	17 - 11	19 - 6	20 - 10
		2.0E	17 - 8	20 - 8	22 - 6	24 - 0	16 - 8	18 - 10	20 - 6	21-11
	BCI5000s	1.7E	17 - 2	19 - 5	21-2	22 - 7	15 - 8	17 - 8	19 - 3	20 - 7
		1.8E	17 - 10	20 - 5	22 - 3	23 - 9	16 - 6	18 - 8	20 - 3	21-8
		1.9E	18 - 1	21-1	23 - 0	24 - 6	17 - 0	19 - 3	21-0	22 - 5
		2.0E	18 - 5	21-8	24 - 1	25 - 9	17 - 10	20 - 3	22 - 0	23 - 6
	BCI6000s	1.7E	18 - 3	20 - 11	22 - 10	24 - 4	16 - 11	19 - 1	20 - 10	22 - 3
		1.8E	18 - 6	21-11	24 - 0	25 - 8	17 - 9	20 - 1	21-11	23 - 5
		1.9E	18 - 9	22 - 3	24 - 10	26 - 6	18 - 4	20 - 9	22 - 8	24 - 2
		2.0E	19 - 0	22 - 6	25 - 7	27 - 10	19 - 0	21-10	23 - 9	25 - 5
	BCI6500s	1.7E	18 - 9	22 - 1	24 - 0	25 - 8	17 - 9	20 - 1	21-11	23 - 5
		1.8E	19 - 0	22 - 6	25 - 3	27 - 0	18 - 8	21-2	23 - 1	24 - 8
		1.9E	19 - 3	22 - 10	25 - 10	27 - 11	19 - 3	21-11	23 - 10	25 - 5
		2.0E	19 - 7	23 - 2	26 - 3	28 - 11	19 - 7	23 - 0	25 - 0	26 - 9

For **SI:** 1 ft = 0.3048 m; 1 inch = 25.4 mm; 1 psf = 47.88 N/m^2.

[1] Values represent simple spans.
[2] Spans are measured from middle of bearing length to middle of bearing length ($1^1/_2$-inch minimum bearing).
[3] Span table is based on $^{23}/_{32}$", 24-inch oc rated Sturd-I-Floor, glued and nailed to BCI Joists. The adhesive must comply with Specification AFG-01 of the APA—The Engineered Wood Association. The type and spacing of the fasteners must comply with the code.
[4] Span table based on $1^1/_2$-inch end reaction values with no web stiffeners.

TABLE 14 (CONTINUED) — BCI ALLOWABLE FLOOR SPANS[1,2,3,4]
(Residential Living Areas, live load = 40 psf, L/360 for live

JOIST SPACING (inches)	SERIES AND GRADE		DEAD LOAD = 10 psf				DEAD LOAD = 20 psf			
			Joist Depth (inches)							
			9 1/2	11 7/8	14	16	9 1/2	11 7/8	14	16
			Maximum Floor Joist Spans							
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
19.2	BCI 4500s	1.7E	14 - 7	16 - 6	18 - 0	19 - 2	13 - 4	15 - 1	16 - 5	17 - 6
		1.8E	15 - 4	17 - 4	18 - 11	20 - 2	14 - 0	15 - 10	17 - 3	18 - 5
		1.9E	15 - 10	17 - 11	19 - 6	20 - 10	14 - 5	16 - 5	17 - 10	19 - 0
		2.0E	16 - 8	18 - 10	20 - 6	21 - 11	15 - 2	17 - 2	18 - 9	19 - 9
	BCI 5000s	1.7E	15 - 8	17 - 8	19 - 3	20 - 7	14 - 3	16 - 2	17 - 7	18 - 10
		1.8E	16 - 6	18 - 8	20 - 3	21 - 8	15 - 0	17 - 0	18 - 6	19 - 9
		1.9E	17 - 0	19 - 3	21 - 0	22 - 5	15 - 6	17 - 7	19 - 2	19 - 9
		2.0E	17 - 5	20 - 3	22 - 0	23 - 6	16 - 4	18 - 5	19 - 9	19 - 9
	BCI 6000s	1.7E	16 - 11	19 - 1	20 - 10	22 - 3	15 - 5	17 - 5	19 - 0	20 - 4
		1.8E	17 - 6	20 - 1	21 - 11	23 - 5	16 - 2	18 - 4	20 - 0	21 - 4
		1.9E	17 - 9	20 - 9	22 - 8	24 - 2	16 - 9	19 - 0	20 - 8	22 - 1
		2.0E	18 - 0	21 - 3	23 - 9	25 - 5	17 - 7	19 - 11	21 - 8	23 - 2
	BCI 6500s	1.7E	17 - 9	20 - 1	21 - 11	23 - 5	16 - 3	18 - 4	20 - 0	21 - 4
		1.8E	18 - 0	21 - 2	23 - 1	24 - 8	17 - 1	19 - 4	21 - 0	22 - 6
		1.9E	18 - 2	21 - 7	23 - 10	25 - 5	17 - 7	20 - 0	21 - 9	23 - 3
		2.0E	18 - 6	21 - 11	24 - 9	26 - 9	18 - 6	21 - 0	22 - 10	24 - 5
24	BCI 4500s	1.7E	13 - 0	14 - 9	16 - 1	17 - 2	11-Nov	13 - 6	14 - 8	15 - 8
		1.8E	13 - 8	15 - 6	16 - 11	18 - 1	6-Dec	14 - 2	15 - 5	15 - 10
		1.9E	14 - 2	16 - 1	17 - 6	18 - 8	11-Dec	14 - 8	15 - 10	15 - 10
		2.0E	14 - 10	16 - 10	18 - 4	19 - 0	13 - 7	15 - 4	15 - 10	15 - 10
	BCI 5000s	1.7E	14 - 0	15 - 10	17 - 3	18 - 5	9-Dec	14 - 5	15 - 9	15 - 10
		1.8E	14 - 9	16 - 8	18 - 2	19 - 0	13 - 5	15 - 2	15 - 10	15 - 10
		1.9E	15 - 2	17 - 3	18 - 9	19 - 0	13 - 10	15 - 9	15 - 10	15 - 10
		2.0E	16 - 0	18 - 1	19 - 0	19 - 0	14 - 7	15 - 10	15 - 10	15 - 10
	BCI 6000s	1.7E	15 - 1	17 - 1	18 - 7	19 - 11	13 - 9	15 - 7	17 - 0	18 - 2
		1.8E	15 - 10	18 - 0	19 - 7	20 - 11	14 - 6	16 - 5	17 - 10	19 - 1
		1.9E	16 - 5	18 - 7	20 - 3	21 - 8	15 - 0	17 - 0	18 - 6	19 - 6
		2.0E	16 - 9	19 - 6	21 - 3	22 - 9	15 - 9	17 - 10	19 - 5	19 - 6
	BCI 6500s	1.7E	15 - 11	18 - 0	19 - 7	20 - 11	14 - 6	16 - 5	17 - 11	19 - 1
		1.8E	16 - 8	18 - 11	20 - 7	22 - 0	15 - 3	17 - 3	18 - 10	19 - 6
		1.9E	17 - 0	19 - 7	21 - 4	22 - 9	15 - 9	17 - 10	19 - 5	19 - 6
		2.0E	17 - 3	20 - 5	22 - 4	23 - 6	16 - 7	18 - 9	19 - 6	19 - 6

For **SI:** 1 ft = 0.3048 m; 1 inch = 25.4 mm; 1 psf = 47.88 N/m^2.

[1] Values represent simple spans.
[2] Spans are measured from middle of bearing length to middle of bearing length ($1^1/_2$-inch minimum bearing).
[3] Span table is based on $^{23}/_{32}$", 24-inch oc rated Sturd-I-Floor, glued and nailed to BCI Joists. The adhesive must comply with Specification AFG-01 of the APA—The Engineered Wood Association. The type and spacing of the fasteners must comply with the code.
[4] Span table based on $1^1/_2$-inch end reaction values with no web stiffeners.

TABLE 14 (CONTINUED) — BCI ALLOWABLE FLOOR SPANS[1,2,3,4]
(Residential Living Areas, live load = 40 psf, L/360 for live loads, L/240 for total loads)

JOIST SPACING (inches)	SERIES AND GRADE		DEAD LOAD = 10 psf				DEAD LOAD = 20 psf			
			Joist Depth (inches)							
			9 1/2	11 7/8	14	16	9 1/2	11 7/8	14	16
			Maximum Floor Joist Spans							
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
12	BCI50	1.7E	20 - 0	23 - 9	26 - 11	29 - 10	20 - 0	23 - 5	25 - 7	27 - 4
		1.8E	20 - 4	24 - 1	27 - 4	30 - 3	20 - 4	24 - 1	26 - 10	28 - 9
		1.9E	20 - 7	24 - 6	27 - 9	30 - 8	20 - 7	24 - 6	27 - 9	29 - 9
		2.0E	20 - 11	24 - 10	28 - 2	31-2	20 - 11	24 - 10	28 - 2	31-2
	BCI60	1.7E	20 - 11	24 - 9	28 - 1	31-0	20 - 11	24 - 9	27 - 7	29 - 6
		1.8E	21-2	25 - 1	28 - 6	31-6	21-2	25 - 1	28 - 6	31-0
		1.9E	21-7	25 - 6	28 - 11	32 - 0	21-7	25 - 6	28 - 11	32 - 0
		2.0E	21-10	25 - 10	29 - 4	32 - 5	21-10	25 - 10	29 - 4	32 - 5
	BCI65	1.7E	21-5	25 - 5	28 - 9	31-10	21-5	25 - 5	28 - 9	31-0
		1.8E	21-10	25 - 10	29 - 3	32 - 4	21-10	25 - 10	29 - 3	32 - 4
		1.9E	22 - 1	26 - 2	29 - 8	32 - 10	22 - 1	26 - 2	29 - 8	32 - 10
		2.0E	22 - 5	26 - 7	30 - 2	33 - 3	22 - 5	26 - 7	30 - 2	33 - 3
	BCI90	1.7E	23 - 5	27 - 9	31-6	34 - 9	23 - 5	27 - 9	31-6	34 - 9
		1.8E	23 - 10	28 - 3	32 - 0	35 - 4	23 - 10	28 - 3	32 - 0	35 - 4
		1.9E	24 - 3	28 - 9	32 - 6	35 - 11	24 - 3	28 - 9	32 - 6	35 - 11
		2.0E	24 - 6	29 - 2	33 - 0	36 - 6	24 - 6	29 - 2	33 - 0	36 - 6
16	BCI50	1.7E	18 - 4	21-9	24 - 3	25 - 11	17 - 9	20 - 3	22 - 1	23 - 8
		1.8E	18 - 7	22 - 1	25 - 0	27 - 3	18 - 7	21-4	23 - 3	24 - 11
		1.9E	18 - 11	22 - 5	25 - 5	28 - 1	18 - 11	22 - 0	24 - 1	25 - 7
		2.0E	19 - 2	22 - 9	25 - 9	28 - 6	19 - 2	22 - 9	25 - 3	25 - 7
	BCI60	1.7E	19 - 1	22 - 7	25 - 8	28 - 0	19 - 1	21-10	23 - 10	25 - 6
		1.8E	19 - 4	23 - 0	26 - 1	28 - 10	19 - 4	23 - 0	25 - 1	26 - 10
		1.9E	19 - 9	23 - 4	26 - 5	29 - 3	19 - 9	23 - 4	25 - 11	27 - 9
		2.0E	19 - 11	23 - 7	26 - 10	29 - 7	19 - 11	23 - 7	26 - 10	29 - 2
	BCI65	1.7E	19 - 7	23 - 3	26 - 4	29 - 1	19 - 7	23 - 0	25 - 1	26 - 10
		1.8E	19 - 11	23 - 7	26 - 9	29 - 7	19 - 11	23 - 7	26 - 5	28 - 3
		1.9E	20 - 2	23 - 11	27 - 1	30 - 0	20 - 2	23 - 11	27 - 1	29 - 2
		2.0E	20 - 6	24 - 4	27 - 6	30 - 5	20 - 6	24 - 4	27 - 6	29 - 4
	BCI90	1.7E	21-5	25 - 4	28 - 9	31-9	21-5	25 - 4	28 - 9	31-7
		1.8E	21-9	25 - 9	29 - 2	32 - 3	21-9	25 - 9	29 - 2	32 - 3
		1.9E	22 - 1	26 - 2	29 - 8	32 - 9	22 - 1	26 - 2	29 - 8	32 - 9
		2.0E	22 - 4	26 - 7	30 - 1	33 - 3	22 - 4	26 - 7	30 - 1	33 - 3

For **SI:** 1 ft = 0.3048 m; 1 inch = 25.4 mm; 1 psf = 47.88 N/m^2.

[1] Values represent simple spans.
[2] Spans are measured from middle of bearing length to middle of bearing length ($1^1/_2$-inch minimum bearing).
[3] Span table is based on $^{23}/_{32}$", 24-inch oc rated Sturd-I-Floor, glued and nailed to BCI Joists. The adhesive must comply with Specification AFG-01 of the APA—The Engineered Wood Association. The type and spacing of the fasteners must comply with the code.
[4] Span table based on $1^1/_2$-inch end reaction values with no web stiffeners.

TABLE 14 (CONTINUED) — BCI ALLOWABLE FLOOR SPANS[1,2,3,4]

(Residential Living Areas, live load = 40 psf, L/360 for live

JOIST SPACING (inches)	SERIES AND GRADE		DEAD LOAD = 10 psf				DEAD LOAD = 20 psf			
			Joist Depth (inches)							
			9 1/2	11 7/8	14	16	9 1/2	11 7/8	14	16
			Maximum Floor Joist Spans							
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
19.2	BCI50	1.7E	17 -4	20 -3	22 -1	23 -8	16 -3	18 -6	20 -2	21-4
		1.8E	17 -7	20 -11	23 -3	24 -11	17 -1	19 -5	21-3	21-4
		1.9E	17 -10	21-3	24 -0	25 -7	17 -8	20 -1	21-4	21-4
		2.0E	18 -1	21-6	24 -4	25 -7	18 -1	21-1	21-4	21-4
	BCI60	1.7E	18 -1	21-5	23 -10	25 -6	17 -6	19 -11	21-9	23 -4
		1.8E	18 -4	21-8	24 -7	26 -10	18 -4	21-0	22 -11	24 -5
		1.9E	18 -8	22 -0	25 -0	27 -7	18 -8	21-8	23 -8	24 -5
		2.0E	18 -10	22 -4	25 -4	28 -0	18 -10	22 -4	24 -5	24 -5
	BCI65	1.7E	18 -6	21-11	24 -10	26 -10	18 -5	21-0	22 -11	24 -5
		1.8E	18 -10	22 -4	25 -3	27 -11	18 -10	22 -1	24 -1	24 -5
		1.9E	19 -1	22 -7	25 -7	28 -4	19 -1	22 -7	24 -5	24 -5
		2.0E	19 -4	22 -11	26 -0	28 -8	19 -4	22 -11	24 -5	24 -5
	BCI90	1.7E	20 -2	23 -11	27 -1	29 -11	20 -2	23 -11	26 -11	28 -10
		1.8E	20 -7	24 -4	27 -6	30 -5	20 -7	24 -4	27 -6	30 -4
		1.9E	20 -11	24 -9	27 -11	30 -11	20 -11	24 -9	27 -11	30 -8
		2.0E	21-1	25 -1	28 -4	31-4	21-1	25 -1	28 -4	30 -8
24	BCI50	1.7E	15 -11	18 -1	19 -9	20 -6	14 -6	16 -6	17 -0	17 -0
		1.8E	16 -6	19 -1	20 -6	20 -6	15 -3	17 -0	17 -0	17 -0
		1.9E	16 -8	19 -8	20 -6	20 -6	15 -9	17 -0	17 -0	17 -0
		2.0E	16 -11	20 -0	20 -6	20 -6	16 -7	17 -0	17 -0	17 -0
	BCI60	1.7E	16 -11	19 -6	21-4	22 -10	15 -8	17 -10	19 -6	19 -6
		1.8E	17 -1	20 -3	22 -5	23 -6	16 -6	18 -9	19 -6	19 -6
		1.9E	17 -5	20 -7	23 -2	23 -6	17 -0	19 -4	19 -6	19 -6
		2.0E	17 -7	20 -10	23 -6	23 -6	17 -7	19 -6	19 -6	19 -6
	BCI65	1.7E	17 -4	20 -6	22 -5	23 -6	16 -6	18 -9	19 -6	19 -6
		1.8E	17 -7	20 -10	23 -6	23 -6	17 -4	19 -6	19 -6	19 -6
		1.9E	17 -10	21-1	23 -6	23 -6	17 -10	19 -6	19 -6	19 -6
		2.0E	18 -1	21-5	23 -6	23 -6	18 -1	19 -6	19 -6	19 -6
	BCI90	1.7E	18 -10	22 -4	25 -3	27 -11	18 -10	22 -1	24 -1	24 -6
		1.8E	19 -2	22 -8	25 -8	28 -4	19 -2	22 -8	24 -2	24 -6
		1.9E	19 -5	23 -0	26 -0	28 -9	19 -5	23 -0	24 -2	24 -6
		2.0E	19 -8	23 -4	26 -5	29 -2	19 -6	23 -4	24 -2	24 -6

For **SI:** 1 ft = 0.3048 m; 1 inch = 25.4 mm; 1 psf = 47.88 N/m^2.

[1] Values represent simple spans.

[2] Spans are measured from middle of bearing length to middle of bearing length ($1^1/_2$-inch minimum bearing).

[3] Span table is based on $^{23}/_{32}$", 24-inch oc rated Sturd-I-Floor, glued and nailed to BCI Joists. The adhesive must comply with Specification AFG-01 of the APA—The Engineered Wood Association. The type and spacing of the fasteners must comply with the code.

[4] Span table based on $1^1/_2$-inch end reaction values with no web stiffeners.

TABLE 14 (CONTINUED) — BCI ALLOWABLE FLOOR SPANS[1,2,3,4]
(Residential Living Areas, live load = 40 psf, L/360 for live loads, L/240 for total loads)

JOIST SPACING (inches)	SERIES AND GRADE		DEAD LOAD = 10 psf				DEAD LOAD = 20 psf			
			Joist Depth (inches)							
			9 1/2	11 7/8	14	16	9 1/2	11 7/8	14	16
			Maximum Floor Joist Spans							
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
12	BCI50s	1.7E	20 - 4	24 - 0	27 - 3	30 - 0	20 - 4	23 - 5	25 - 7	27 - 4
		1.8E	20 - 7	24 - 5	27 - 8	30 - 8	20 - 7	24 - 5	26 - 10	28 - 9
		1.9E	20 - 11	24 - 10	28 - 2	31 - 1	20 - 11	24 - 10	27 - 9	29 - 9
		2.0E	21 - 2	25 - 1	28 - 6	31 - 6	21 - 2	25 - 1	28 - 6	31 - 3
	BCI60s	1.7E	21 - 2	25 - 0	28 - 4	31 - 5	21 - 2	25 - 0	27 - 7	29 - 6
		1.8E	21 - 5	25 - 5	28 - 9	31 - 10	21 - 5	25 - 5	28 - 9	31 - 0
		1.9E	21 - 10	25 - 10	29 - 3	32 - 4	21 - 10	25 - 10	29 - 3	32 - 1
		2.0E	22 - 1	26 - 2	29 - 8	32 - 10	22 - 1	26 - 2	29 - 8	32 - 10
	BCI65s	1.7E	21 - 8	25 - 9	29 - 2	32 - 3	21 - 8	25 - 9	29 - 0	31 - 0
		1.8E	22 - 1	26 - 1	29 - 7	32 - 9	22 - 1	26 - 1	29 - 7	32 - 7
		1.9E	22 - 5	26 - 6	30 - 1	33 - 3	22 - 5	26 - 6	30 - 1	33 - 3
		2.0E	22 - 9	26 - 11	30 - 6	33 - 9	22 - 9	26 - 11	30 - 6	33 - 9
	BCI90s	1.7E	23 - 9	28 - 2	31 - 11	35 - 3	23 - 9	28 - 2	31 - 11	35 - 3
		1.8E	24 - 1	28 - 7	32 - 5	35 - 10	24 - 1	28 - 7	32 - 5	35 - 10
		1.9E	24 - 6	29 - 1	32 - 11	36 - 5	24 - 6	29 - 1	32 - 11	36 - 5
		2.0E	24 - 11	29 - 6	33 - 5	36 - 11	24 - 11	29 - 6	33 - 5	36 - 11
16	BCI50s	1.7E	18 - 7	22 - 0	24 - 3	25 - 11	17 - 9	20 - 3	22 - 1	23 - 8
		1.8E	18 - 11	22 - 4	25 - 4	27 - 3	18 - 9	21 - 4	23 - 3	24 - 11
		1.9E	19 - 2	22 - 9	25 - 9	28 - 2	19 - 2	22 - 0	24 - 1	25 - 7
		2.0E	19 - 4	23 - 0	26 - 1	28 - 10	19 - 4	23 - 0	25 - 3	25 - 7
	BCI60s	1.7E	19 - 4	22 - 11	25 - 11	28 - 0	19 - 2	21 - 10	23 - 10	25 - 6
		1.8E	19 - 7	23 - 3	26 - 4	29 - 1	19 - 7	23 - 0	25 - 1	26 - 10
		1.9E	19 - 11	23 - 7	26 - 9	29 - 7	19 - 11	23 - 7	25 - 11	27 - 9
		2.0E	20 - 2	23 - 11	27 - 1	30 - 0	20 - 2	23 - 11	27 - 1	29 - 2
	BCI65s	1.7E	19 - 10	23 - 6	26 - 8	29 - 5	19 - 10	23 - 0	25 - 1	26 - 10
		1.8E	20 - 2	23 - 10	27 - 1	29 - 11	20 - 2	23 - 10	26 - 5	28 - 3
		1.9E	20 - 6	24 - 3	27 - 6	30 - 4	20 - 6	24 - 3	27 - 3	29 - 2
		2.0E	20 - 10	24 - 7	27 - 10	30 - 10	20 - 10	24 - 7	27 - 10	29 - 4
	BCI90s	1.7E	21 - 8	25 - 8	29 - 1	32 - 1	21 - 8	25 - 8	29 - 1	31 - 7
		1.8E	22 - 0	26 - 1	29 - 6	32 - 8	22 - 0	26 - 1	29 - 6	32 - 8
		1.9E	22 - 4	26 - 6	30 - 0	33 - 2	22 - 4	26 - 6	30 - 0	33 - 2
		2.0E	22 - 9	26 - 11	30 - 5	33 - 8	22 - 9	26 - 11	30 - 5	33 - 8

For **SI:** 1 ft = 0.3048 m; 1 inch = 25.4 mm; 1 psf = 47.88 N/m^2.

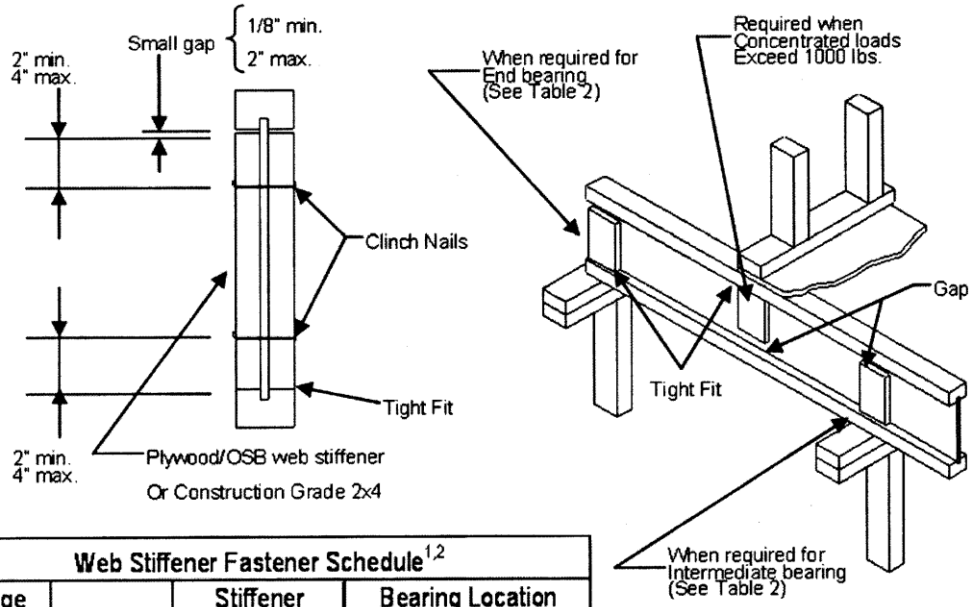
[1] Values represent simple spans.
[2] Spans are measured from middle of bearing length to middle of bearing length ($1^1/_2$-inch minimum bearing).
[3] Span table is based on $^{23}/_{32}$", 2-inch oc rated Sturd-I-Floor, glued and nailed to BCI Joists. The adhesive must comply with Specification AFG-01 of the APA—The Engineered Wood Association. The type and spacing of the fasteners must comply with the code.
[4] Span table based on $1^1/_2$-inch end reaction values with no web stiffeners.

TABLE 14 (CONTINUED) — BCI ALLOWABLE FLOOR SPANS[1,2,3,4]
(Residential Living Areas, live load = 40 psf, L/360 for live

JOIST SPACING (inches)	SERIES AND GRADE		DEAD LOAD = 10 psf				DEAD LOAD = 20 psf			
			Joist Depth (inches)							
			9 1/2	11 7/8	14	16	9 1/2	11 7/8	14	16
			Maximum Floor Joist Spans							
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
19.2	BCI 50s	1.7E	17 - 7	20 - 3	22 - 1	23 - 8	16 - 3	18 - 6	20 - 2	21 - 4
		1.8E	17 - 10	21 - 2	23 - 3	24 - 11	17 - 1	19 - 5	21 - 3	21 - 4
		1.9E	18 - 1	21 - 6	24 - 1	25 - 7	17 - 8	20 - 1	21 - 4	21 - 4
		2.0E	18 - 4	21 - 9	24 - 7	25 - 7	18 - 4	21 - 1	21 - 4	21 - 4
	BCI 60s	1.7E	18 - 4	21 - 8	23 - 10	25 - 6	17 - 6	19 - 11	21 - 9	23 - 4
		1.8E	18 - 6	21 - 11	24 - 10	26 - 10	18 - 5	21 - 0	22 - 11	24 - 5
		1.9E	18 - 10	22 - 4	25 - 3	27 - 9	18 - 10	21 - 8	23 - 8	24 - 5
		2.0E	19 - 1	22 - 7	25 - 7	28 - 4	19 - 1	22 - 7	24 - 5	24 - 5
	BCI 65s	1.7E	18 - 9	22 - 3	25 - 1	26 - 10	18 - 5	21 - 0	22 - 11	24 - 5
		1.8E	19 - 1	22 - 6	25 - 7	28 - 3	19 - 1	22 - 1	24 - 1	24 - 5
		1.9E	19 - 4	22 - 11	25 - 11	28 - 8	19 - 4	22 - 10	24 - 5	24 - 5
		2.0E	19 - 8	23 - 3	26 - 4	29 - 1	19 - 8	23 - 3	24 - 5	24 - 5
	BCI 90s	1.7E	20 - 5	24 - 3	27 - 5	30 - 4	20 - 5	24 - 3	26 - 11	28 - 10
		1.8E	20 - 10	24 - 7	27 - 10	30 - 10	20 - 10	24 - 7	27 - 10	30 - 4
		1.9E	21 - 1	25 - 0	28 - 4	31 - 3	21 - 1	25 - 0	28 - 4	30 - 8
		2.0E	21 - 5	25 - 5	28 - 8	31 - 9	21 - 5	25 - 5	28 - 8	30 - 8
24	BCI 50s	1.7E	15 - 11	18 - 1	19 - 9	20 - 6	14 - 6	16 - 6	17 - 0	17 - 0
		1.8E	16 - 8	19 - 1	20 - 6	20 - 6	15 - 3	17 - 0	17 - 0	17 - 0
		1.9E	16 - 11	19 - 8	20 - 6	20 - 6	15 - 9	17 - 0	17 - 0	17 - 0
		2.0E	17 - 1	20 - 3	20 - 6	20 - 6	16 - 7	17 - 0	17 - 0	17 - 0
	BCI 60s	1.7E	17 - 1	19 - 6	21 - 4	22 - 10	15 - 8	17 - 10	19 - 6	19 - 6
		1.8E	17 - 4	20 - 6	22 - 5	23 - 6	16 - 6	18 - 9	19 - 6	19 - 6
		1.9E	17 - 7	20 - 10	23 - 2	23 - 6	17 - 0	19 - 4	19 - 6	19 - 6
		2.0E	17 - 10	21 - 1	23 - 6	23 - 6	17 - 10	19 - 6	19 - 6	19 - 6
	BCI 65s	1.7E	17 - 6	20 - 6	22 - 5	23 - 6	16 - 6	18 - 9	19 - 6	19 - 6
		1.8E	17 - 9	21 - 0	23 - 6	23 - 6	17 - 4	19 - 6	19 - 6	19 - 6
		1.9E	18 - 1	21 - 4	23 - 6	23 - 6	17 - 11	19 - 6	19 - 6	19 - 6
		2.0E	18 - 4	21 - 8	23 - 6	23 - 6	18 - 4	19 - 6	19 - 6	19 - 6
	BCI 90s	1.7E	19 - 1	22 - 7	25 - 7	28 - 3	19 - 1	22 - 1	24 - 1	24 - 6
		1.8E	19 - 5	22 - 11	25 - 11	28 - 8	19 - 5	22 - 11	24 - 2	24 - 6
		1.9E	19 - 8	23 - 3	26 - 4	29 - 1	19 - 6	23 - 3	24 - 2	24 - 6
		2.0E	20 - 0	23 - 8	26 - 9	29 - 6	19 - 6	23 - 8	24 - 2	24 - 6

For **SI:** 1 ft = 0.3048 m; 1 inch = 25.4 mm; 1 psf = 47.88 N/m^2.

[1] Values represent simple spans.
[2] Spans are measured from middle of bearing length to middle of bearing length ($1^1/_2$-inch minimum bearing).
[3] Span table is based on $^{23}/_{32}$", 2-inch oc rated Sturd-I-Floor, glued and nailed to BCI Joists. The adhesive must comply with Specification AFG-01 of the APA—The Engineered Wood Association. The type and spacing of the fasteners must comply with the code.
[4] Span table based on $1^1/_2$-inch end reaction values with no web stiffeners.

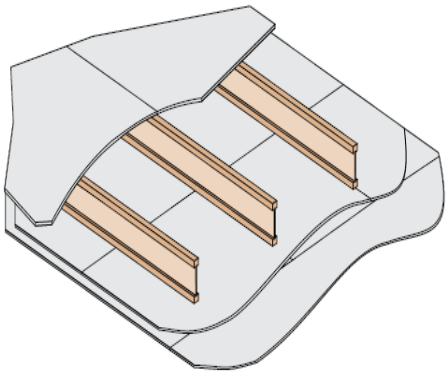


Web Stiffener Fastener Schedule[1,2]				
Flange Width	Depth	Stiffener Dimensions	Bearing Location	
			End	Interm.
1 1/2"	9 1/2"	1/2" x 2 5/16"	2-8d	2-8d
	11 7/8"		2-8d	3-8d
	14"		2-8d	5-8d
1 3/4" & 2"	9 1/2"	5/8" x 2 5/16"	2-8d	2-8d
	11 7/8"		2-8d	3-8d
	14"		2-8d	5-8d
	16"		2-8d	6-8d
2 5/16" & 2 9/16"	9 1/2"	3/4" x 2 5/16"	2-8d	2-8d
	11 7/8"		2-8d	3-8d
	14"		2-8d	5-8d
	16"		2-8d	6-8d
	18"		3-8d	7-8d
	20"		3-8d	8-8d
3 1/2"	9 1/2"	1 1/2" x 3 1/2"	2-16d	2-16d
	11 7/8"		3-16d	3-16d
	14"		5-16d	5-16d
	16"		6-16d	6-16d
	18"		7-16d	7-16d
	20"		8-16d	8-16d
	22"		8-16d	8-16d
	24"		8-16d	8-16d

[1]Nails shall be equally spaced vertically.

[2]Stiffeners are required on all joists supported by U-type hangers when the sides of the hanger do not extend up far enough to support the top flanges laterally.

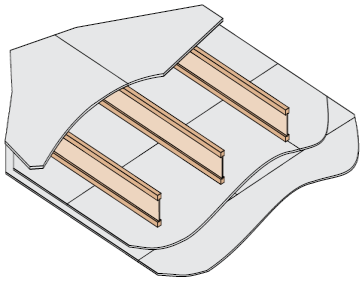
Figure 1 – Web Stiffener Detail



BASE ASSEMBLY	
Component	**Material Specification**
Floor Topping (Optional)	**Varies**
Reference sound ratings if applicable	
Floor Sheathing	**Min. $^{23}/_{32}$-inch (18 mm) T&G Wood Structural Panel**
A modified contact construction adhesive must be applied to the top surface of the I-joist top flanges prior to placing sheathing. The sheets shall be installed with their long edge perpendicular to the joists with end joists centered over the top flange of joists and staggered one joist spacing with adjacent sheets. Floor sheathing must be installed per code requirements.	
Insulation (Optional)	**Max $9^{1}/_{2}$-inch (241 mm) Glass Fiber Insulation**
Reference sound ratings if applicable	
Structural Members	**Min. $9^{1}/_{2}$-inch (241 mm) Deep Joists**
Maximum 24 inch (610 mm) on center spacing. Minimum flange dimensions of $1^{1}/_{8}$-inch (29 mm) thick by $1^{1}/_{2}$-inch (38 mm) wide.	
Resilient Channels (Optional)	**Min. 0.019-inch (0.5 mm) Galvanized Resilient Channels**
Attached perpendicular to the bottom flange of the joist with $1^{1}/_{4}$-inch (32 mm) Type S drywall screws. Channels are spaced a maximum of 16 inches (406 mm), 24 inches (610 mm) on center when I-joists are spaced a maximum of 16 inches on center.	
Ceiling	**(2) Layers of $^{5}/_{8}$-inch (16 mm) Type X Gypsum Wallboard**
Base Layer: Install with long dimension perpendicular to joist length. Attach to the bottom flange of the joists using $1^{1}/_{4}$-inch (32 mm) Type W drywall screws at 24 inches (610 mm) on center. The end joints of the wallboard must be centered on the bottom flange of the joist and must be staggered the equivalent of two joist spacings with those of adjacent sheets. Face Layer: Install with long dimension perpendicular to joist length. Attach to the bottom flange of the joists through the first layer using $1^{7}/_{8}$-inch (48 mm) Type W drywall screws spaced at 12 inches (305 mm) on center. The longitudinal joints of this layer must be offset 24 inches (610 mm) from those of the base layer. The end joints must be centered on the bottom flange of the joists and offset a minimum of one joist spacing from those of the base layer. Additionally, face layer end joints are attached to the base layer with $1^{1}/_{2}$-inch (38 mm) Type G drywall screws at 12 inches (305 mm) on center placed 2 inches (51 mm) either side of the joint. With Resilient Channels: attached as described above except use $1^{3}/_{8}$-inch (35 mm) and $1^{3}/_{4}$-inch (44 mm) Type S screws for the base and face layer, respectively. The end joints of the wallboard must be centered on a resilient channel and must be staggered the equivalent of two joist spacings with those of adjacent sheets. Finish: The face layer joints must be covered with tape and coated with joint compound. Screw heads must also be covered with joint compound.	

SOUND RATING (w/ Resilient Channels)		
Components	**STC**	**IIC**
Base Assembly with Carpet and Padding	54	68
Base Assembly with $3^{1}/_{2}$" (89 mm) Insulation	55	46
Base Assembly with additional layer of $^{5}/_{8}$" Sheathing and $9^{1}/_{2}$" Insulation	61	50
Base Assembly with Tarkett “Acoustiflor” vinyl and $3^{1}/_{2}$" Insulation	59	50
Base Assembly with cushioned vinyl, $^{3}/_{4}$" Gypsum Concrete and $3^{1}/_{2}$" Insulation	67	51

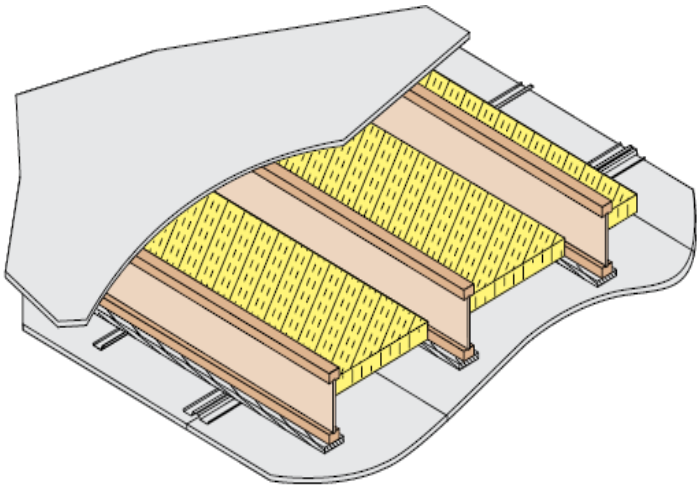
FIGURE 2—ONE-HOUR FIRE-RESISTANCE-RATED FLOOR AND ROOF ASSEMBLY
(Two Layers $^{5}/_{8}$" Type X Gypsum Wallboard)



BASE ASSEMBLY	
Component	**Material Specification**
Floor Topping (Optional)	**Varies**
Reference sound ratings if applicable.	
Floor Sheathing	**Min. $^{23}/_{32}$-inch (18 mm) T&G Wood Structural Panel**
A modified contact construction adhesive must be applied to the top surface of the I-joist top flanges prior to placing sheathing. The sheets shall be installed with their long edge perpendicular to the joists with end joists centered over the top flange of joists and staggered one joist spacing with adjacent sheets. Floor sheathing must be installed per code requirements.	
Insulation (Optional)	**Max $9^1/_2$-inch (241 mm) Glass Fiber Insulation**
Reference sound ratings if applicable.	
Structural Members	**Min. $9^1/_2$-inch (241 mm) Deep Joists**
Maximum 24 inch (610 mm) on center spacing. Minimum flange dimensions of $1^1/_8$-inch (29 mm) thick by $1^1/_2$-inch (38 mm) wide.	
Resilient Channels (Optional)	**Min. 0.019-inch (0.5 mm) Galvanized Resilient Channels**
Attached perpendicular to the bottom flange of the joist with $1^1/_4$-inch (32 mm) Type S drywall screws. Channels are spaced a maximum of 16 inches (406 mm), 24 inches (610 mm) on center when I-joists are spaced a maximum of 16 inches on center.	
Ceiling	**(2) Layers of ½-inch (13 mm) Gold Bond Brand Fire-Shield C Gypsum Wallboard**
Base Layer: Install with long dimension perpendicular to joist length. Attach to the bottom flange of the joists using $1^3/_4$-inch (44 mm) Type W or S drywall screws at 12 inches (305 mm) on center. The end joints of the wallboard must be centered on the bottom flange of the joist and must be staggered the equivalent of two joist spacings with those of adjacent sheets. Face Layer: Install with long dimension perpendicular to joist length. Attach to the bottom flange of the joists through the first layer using 2-inch (51 mm) Type W or S drywall screws spaced at 12 inches (305 mm) on center on intermediate joists and 6 inches (152 mm) on center at end joints. The longitudinal joints of this layer must be offset 24 inches (610 mm) from those of the base layer. The end joints must be centered on the bottom flange of the joists and offset a minimum of one joist spacing from those of the base layer. Additionally, face layer end joints are attached to the base layer with $1^1/_2$-inch (38 mm) Type G drywall screws at 8 inches (203 mm) on center placed 6 inches (152 mm) either side of the joint. With Resilient Channels: attached as described above except use $1^1/_4$-inch (32 mm) and $1^5/_8$-inch (41 mm) Type S screws for the base and face layer, respectively. The end joints of the wallboard must be centered on a resilient channel and must be staggered the equivalent of two joist spacings with those of adjacent sheets. Finish: The face layer joints must be covered with tape and coated with joint compound. Screw heads must also be covered with joint compound.	

SOUND RATING (w/ Resilient Channels)		
Components	**STC**	**IIC**
Base Assembly with Carpet and Padding	54	68
Base Assembly with $3^1/_2$" (89 mm) Insulation	55	46
Base Assembly with additional layer of $^5/_8$" Sheathing and $9^1/_2$" Insulation	61	50
Base Assembly with Tarkett “Acoustiflor” vinyl and $3^1/_2$" Insulation	59	50
Base Assembly with cushioned vinyl, $^3/_4$" Gypsum Concrete and $3^1/_2$" Insulation	67	51

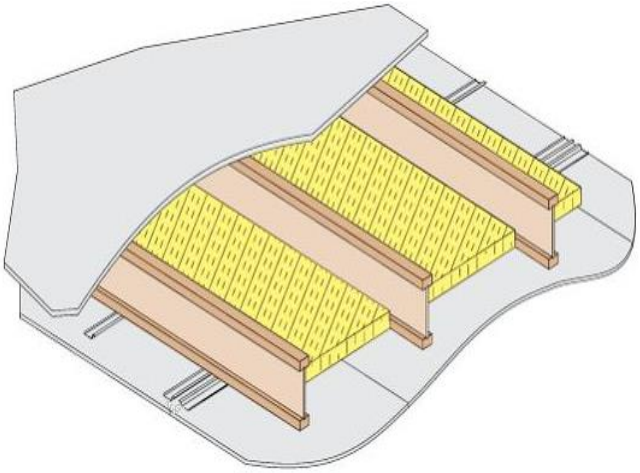
FIGURE 3—ONE-HOUR FIRE-RESISTANCE-RATED FLOOR AND ROOF ASSEMBLY
(Two Layers $^1/_2$" ‘Type C’ Gypsum Wallboard)



BASE ASSEMBLY	
Component	**Material Specification**
Floor Topping (Optional)	**Varies**
Reference sound ratings if applicable	
Floor Sheathing	**Min. $^{23}/_{32}$-inch (18 mm) T&G Wood Structural Panel**
A modified contact construction adhesive must be applied to the top surface of the I-joist top flanges prior to placing sheathing. The sheets shall be installed with their long edge perpendicular to the joists with end joists centered over the top flange of joists and staggered one joist spacing with adjacent sheets. Floor sheathing must be installed per code requirements.	
Insulation	**Min. 2-inch (51 mm) Mineral Fiber Insulation, Min. 3.5 pcf**
Installed adjacent to the bottom flange of the I-Joist and supported by the 1x4 furring strips. The ends of the batts must be centered over resilient channels.	
Structural Members	**Min. $9^{1}/_{2}$-inch (241 mm) Deep Joists**
Maximum 24 inch (610 mm) on center spacing. Minimum flange dimensions of $1^{5}/_{16}$-inch (33 mm) thick by $1^{3}/_{4}$-inch (44 mm) wide.	
Furring Strips	**1x4 (Nominal) Wood Furring Strips**
Centered on the bottom flange of the I-Joist and attached with $1^{1}/_{2}$-inch (38 mm) Type W screws at 24 inches (610 mm) on center	
Resilient Channels	**Min. 0.019-inch (0.5 mm) Galvanized Resilient Channels**
Attached perpendicular to the bottom flange of the I-Joist with $1^{7}/_{8}$-inch (48 mm) Type S drywall screws. Channels are spaced a maximum of 16 inches (406 mm) on center and doubled at each wallboard end joint extending to the next joist beyond each joint.	
Ceiling	**(1) Layer of $^{5}/_{8}$-inch (16 mm) Gold Bond Brand Fire-Shield C Gypsum Wallboard**
Installed with long dimension perpendicular to resilient channels and fastened with minimum $1^{1}/_{8}$-inch (29 mm) Type S drywall screws at 7 inches (178 mm) on center. The end joints of the wallboard must be staggered the equivalent of two joist spacings with those of adjacent sheets. Finish: The face layer joints must be covered with tape and coated with joint compound. Screw heads must also be covered with joint compound.	

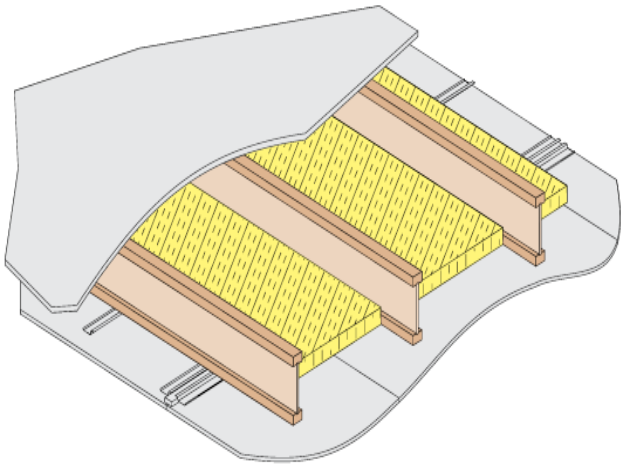
SOUND RATING		
Components	**STC**	**IIC**
Base Assembly with Carpet and Padding	52	66
Base Assembly with cushioned vinyl, $^{3}/_{4}$" Gypsum Concrete	55	49
Base Assembly With cushioned vinyl, 1" Gypsum Concrete, $^{1}/_{4}$" Acousti-Mat II	58	57

FIGURE 4—ONE-HOUR FIRE-RESISTANCE-RATED FLOOR AND ROOF ASSEMBLY
(One Layer $^{5}/_{8}$" 'Type C' Gypsum Wallboard and 1x4 Furring Strips)



BASE ASSEMBLY	
Component	**Material Specification**
Floor Topping (Optional)	**Varies**
Reference sound ratings if applicable	
Floor Sheathing	**Min. $^{23}/_{32}$-inch (18 mm) T&G Wood Structural Panel**
A modified contact construction adhesive must be applied to the top surface of the I-joist top flanges prior to placing sheathing. The sheets shall be installed with their long edge perpendicular to the joists with end joists centered over the top flange of joists and staggered one joist spacing with adjacent sheets. Floor sheathing must be installed per code requirements.	
Insulation	**Min. $1^{1}/_{2}$-inch (38 mm) Mineral Fiber Insulation, Min. 2.8 pcf**
Installed adjacent to the bottom flange of the I-Joist and supported by the furring channels. The ends of the batts shall be centered over resilient channels.	
Structural Members	**Min. $9^{1}/_{2}$-inch (241 mm) Deep Joists**
Maximum 24 inch (610 mm) on center spacing. Minimum flange dimensions of $1^{1}/_{2}$-inch (38 mm) thick by $3^{1}/_{2}$-inch (89 mm) wide.	
Resilient Channels	**Min. 0.019-inch (0.5 mm) Resilient Channels**
Attached perpendicular to the bottom flange of the I-Joist with $1^{5}/_{8}$-inch (41 mm) Type S drywall screws. Channels are spaced a maximum of 16 inches (406 mm) on center and doubled at each wallboard end joint extending to the next joist beyond each joint.	
Ceiling	**(1) Layer of $^{5}/_{8}$-inch (16 mm) Gold Bond Brand Fire-Shield C Gypsum Wallboard**
Installed with long dimension perpendicular to resilient channels and fastened with minimum $1^{1}/_{8}$-inch (29 mm) Type S drywall screws spaced at 8 inches (203 mm) on center. The end joints of the wallboard must be staggered the equivalent of two joist spacings with those of adjacent sheets. Finish: The face layer joints must be covered with tape and coated with joint compound. Screw heads must also be covered with joint compound.	

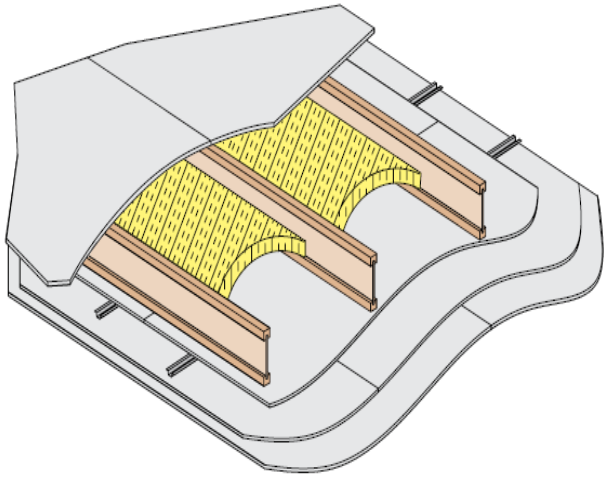
FIGURE 5—ONE-HOUR FIRE-RESISTANCE-RATED FLOOR AND ROOF ASSEMBLY
(One Layer $^{5}/_{8}$" 'Type C' Gypsum Wallboard)



BASE ASSEMBLY	
Component	**Material Specification**
Floor Topping (Optional)	**Varies**
Reference sound ratings if applicable	
Floor Sheathing	**Min. $^{23}/_{32}$-inch (18 mm) T&G Wood Structural Panel**
A modified contact construction adhesive must be applied to the top surface of the I-joist top flanges prior to placing sheathing. The sheets shall be installed with their long edge perpendicular to the joists with end joists centered over the top flange of joists and staggered one joist spacing with adjacent sheets. Floor sheathing must be installed per code requirements.	
Insulation	**Min. 2-inch (51 mm) Mineral Fiber Insulation, Min. 3.5 pcf**
Installed adjacent to the bottom flange of the I-Joist and supported by the furring channels. The ends of the batts shall be centered over resilient channels.	
Structural Members	**Min. $9^{1}/_{2}$-inch (241 mm) Deep Joists**
Maximum 24 inch (610 mm) on center spacing. Minimum flange dimensions of $1^{5}/_{16}$-inch (33 mm) thick by $3^{1}/_{2}$-inch (89 mm) wide.	
Resilient Channels	**Min. 0.019-inch (0.5 mm) Resilient Channels**
Attached perpendicular to the bottom flange of the I-Joist with $1^{1}/_{4}$-inch (32 mm) Type W drywall screws. Channels are spaced a maximum of 16 inches (406 mm) on center and doubled at each wallboard end joint extending to the next joist beyond each joint.	
Gypsum Strips	**2-inch (51 mm) wide by ½-inch (13 mm) Gold Bond Brand Fire-Shield C Gypsum Wallboard**
Installed perpendicular to the joists above each end joint of the $^{5}/_{8}$-inch (16 mm) gypsum wallboard. The strips are attached with one $1^{1}/_{4}$-inch (32 mm) Type W drywall screw at each joist.	
Ceiling	**(1) Layer of $^{5}/_{8}$-inch (16 mm) Gold Bond Brand Fire-Shield C Gypsum Wallboard**
Installed with long dimension perpendicular to resilient channels and fastened with minimum $1^{1}/_{8}$-inch (29 mm) Type S drywall screws spaced at 8 inches (203 mm) on center. The end joints of the wallboard must be staggered the equivalent of two joist spacings with those of adjacent sheets. Finish: The face layer joints must be covered with tape and coated with joint compound. Screw heads must also be covered with joint compound.	

SOUND RATING		
Components	**STC**	**IIC**
Base Assembly with Carpet and Padding	55	62
Base Assembly with cushioned vinyl, $^{3}/_{4}$" Gypsum Concrete	58	45
Base Assembly with cushioned vinyl, 1" Gypsum Concrete, $^{1}/_{4}$" Acousti-Mat II	61	53

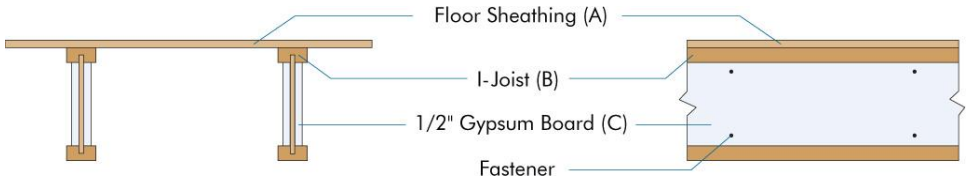
FIGURE 6—ONE-HOUR FIRE-RESISTANCE-RATED FLOOR AND ROOF ASSEMBLY
(One Layer $^{5}/_{8}$" 'Type C' Gypsum Wallboard and 2" Gypsum Strips)



BASE ASSEMBLY	
Component	**Material Specification**
Floor Topping (Optional)	**Varies**
Reference sound ratings if applicable	
Floor Sheathing	**Min. $^{23}/_{32}$-inch (18 mm) T&G Wood Structural Panel**
A modified contact construction adhesive must be applied to the top surface of the I-joist top flanges prior to placing sheathing. The sheets shall be installed with their long edge perpendicular to the joists with end joists centered over the top flange of joists and staggered one joist spacing with adjacent sheets. Floor sheathing must be installed per code requirements.	
Insulation	**Max $3^{1}/_{2}$-inch (89 mm) Unfaced Glass Fiber Insulation**
Friction fitted between I-Joists and supported by stay wires spaced 12 inches (305 mm) on center along the top of the joist bottom flange.	
Structural Members	**Min. $9^{1}/_{2}$-inch (241 mm) Deep Joists**
Maximum 24 inch (610 mm) on center spacing. Minimum flange dimensions of $1^{1}/_{8}$-inch (29 mm) thick by 2-inch (51 mm) wide.	
Furring Channels	**Min. 0.019 inch (0.5 mm) Hat Shaped Galv. Steel Channels**
Attached perpendicular to the bottom flange of the I-Joist with two (2) $1^{5}/_{8}$-inch (41 mm) Type S drywall screws penetrating through the wallboard base layer into each joist flange. Channels are spaced a maximum of 16 inches (406 mm) on center and doubled at each wallboard end joint extending to the next joist beyond each joint.	
Ceiling	**(3) Layers of $^{5}/_{8}$-inch (16 mm) Sheetrock Brand Firecode C Gypsum Wallboard**
Base Layer: Install with long dimension perpendicular to joist length. Attach to the bottom flange of the joists using $1^{5}/_{8}$-inch (41 mm) Type S drywall screws at 12 inches (305 mm) on center. The end joints of the wallboard must be centered on the bottom flange of the joist and must be staggered the equivalent of two joist spacings with those of adjacent sheets. Middle Layer: attached to furring channels using 1-inch (25 mm) Type S drywall screws at 12 inches (305 mm) on center with the long dimension perpendicular to furring channels. End joints must be staggered from end joints of adjacent sheets and end joints on the face layer. Face Layer: attached to furring channels through the middle layer using $1^{5}/_{8}$-inch (41 mm) Type S drywall screws spaced at 8 inches (203 mm) on center with long dimension perpendicular to furring channel. End joints must be staggered from end joints of adjacent sheets and staggered 32 inches (813 mm) end joints on the middle layer. Edge joints (long dimension) must be offset 24 inches (610 mm) from those of the middle layer. Finish: The face layer joints must be covered with tape and coated with joint compound. Screw heads must also be covered with joint compound.	

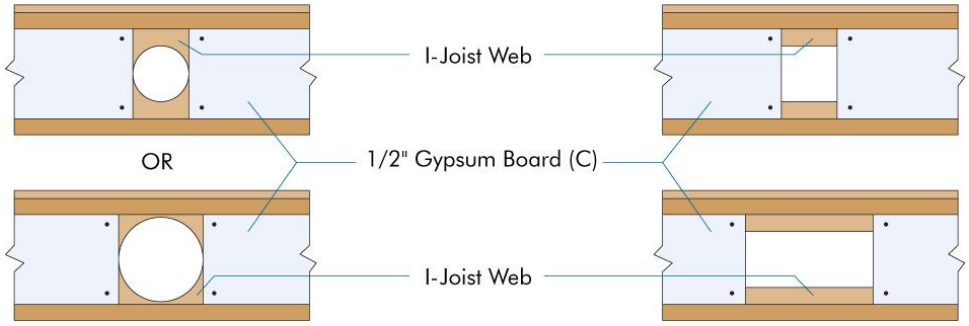
FIGURE 7—TWO-HOUR FIRE-RESISTANCE-RATED FLOOR AND ROOF ASSEMBLY
(Three Layers $^{5}/_{8}$" 'Type C' Gypsum Wallboard)

1/2-inch-thick Gypsum Board Attached to Web



(A) Floor Sheathing: Materials and installation must be per 2015 IRC or 2012 IRC Section R503
(B) I-Joist: Installation per Section 4.1 of this evaluation report. Minimum flange size of 1.5 inches x 2.0 inches. Minimum web thickness of 3/8 inch.
(C) 1/2-inch-thick Gypsum Board: Materials (entire length of I-joist) per 2015 IRC or 2012 IRC Section R702.3.1 (not required to be finished with tape and joint compound). Fasteners: Min. 1inch-long screws (Type W or Type S) or nails installed 1 inch from edges and 16 inches on center, top and bottom. Fasteners may be staggered from top to bottom.

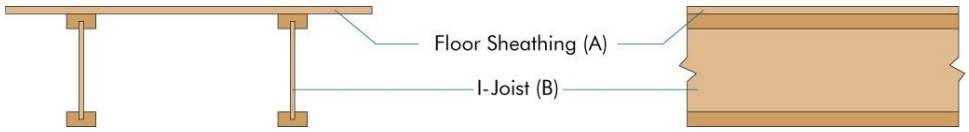
Installation Requirements at Web Holes



Note: At hole location, fasteners must be installed 1 inch from the edge of the gypsum board and horizontally spaced a distance equivalent to the hole width/diameter plus 2 inches.

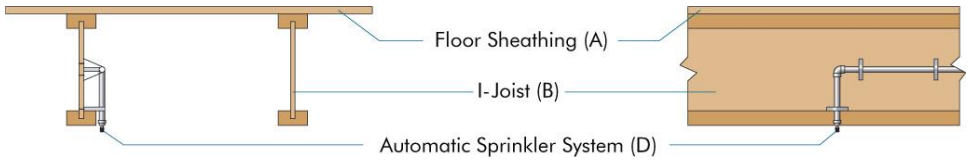
Crawl Space Exception

Per Exception 2 of 2015 IRC Section R302.13 or 2012 IRC Section R501.3, floor assemblies located directly over a crawl space not intended for storage or fuel-fired appliances do not require 1/2-inch-thick gypsum board attached to web.



Automatic Sprinkler System Exception

Per Exception 1 of 2015 IRC Section R302.13 or 2012 IRC Section R501.3, floor assemblies located directly over a space protected by an automatic sprinkler system do not require 1/2-inch-thick gypsum board attached to web.

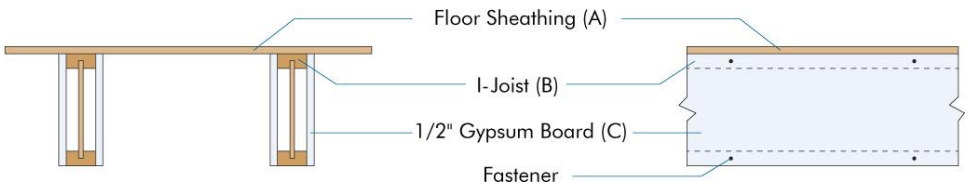


(D) Automatic Sprinkler System: System in accordance with Section P2904 of the 2015 IRC or 2012 IRC, NFPA 13D, or other equivalent sprinkler system. Note: Per 2015 IRC or 2012 IRC Section P2904, partial residential sprinkler systems are permitted to be installed only in buildings not required to be equipped with a residential sprinkler system. Check with the local building official for specific jurisdictional requirements.

For **SI**: 1 inch = 25.4 mm

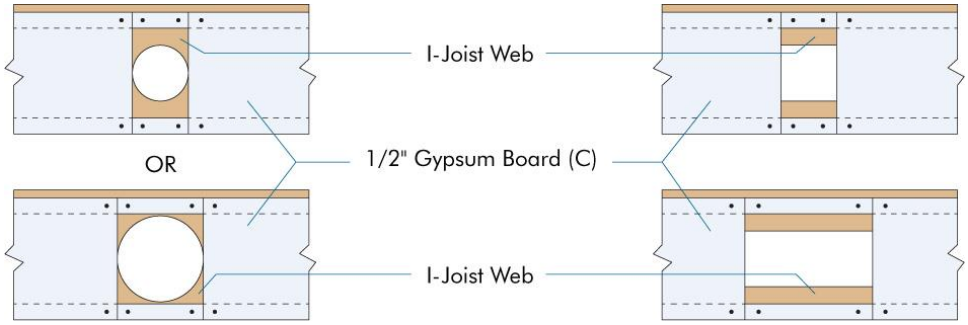
FIGURE 8—FIRE PROTECTION: 2015 IRC SECTION R302.13 OR 2012 IRC SECTION R501.3, EXCEPTIONS 1 AND 2, AND EXCEPTION 4; 1/2-INCH-THICK GYPSUM BOARD ATTACHED DIRECTLY TO WEB

1/2-inch-thick Gypsum Board Attached to Sides of Flange



(A) Floor Sheathing: Materials and installation must be per 2015 or 2012 IRC Section R503.
(B) I-Joist: Installation per Section 4.1 of this evaluation report. Minimum flange size of 1.125 inches x 1.75 inches. Minimum web thickness of 3/8 inch.
(C) 1/2-inch-thick Gypsum Board: Materials (entire length of I-joist) per 2015 or 2012 IRC Section R702.3.1 (not required to be finished with tape and joint compound). Fasteners: Min. 1-inch-long screws (Type W or Type S) or nails installed 1/2 inch from edges and 16 inches on center, top and bottom. Fasteners may be staggered from top to bottom.

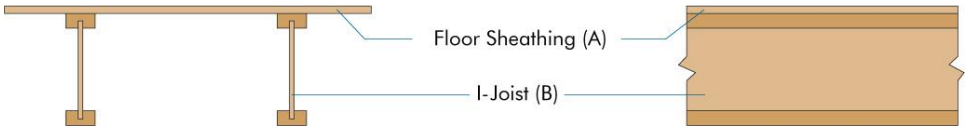
Installation Requirements at Web Holes



Note: At hole location, fasteners must be installed 1 inch from the edge of the gypsum board and horizontally spaced a distance equivalent to the hole width/diameter plus 2 inches. Maximum fastener spacing shall be no more than 8" on gypsum board above and below the hole.

Crawl Space Exception

Per Exception 2 of 2015 IRC Section R302.13 or 2012 IRC Section R501.3, floor assemblies located directly over a crawl space not intended for storage or fuel-fired appliances do not require 1/2-inch-thick gypsum board attached to sides of flange.



Automatic Sprinkler System Exception

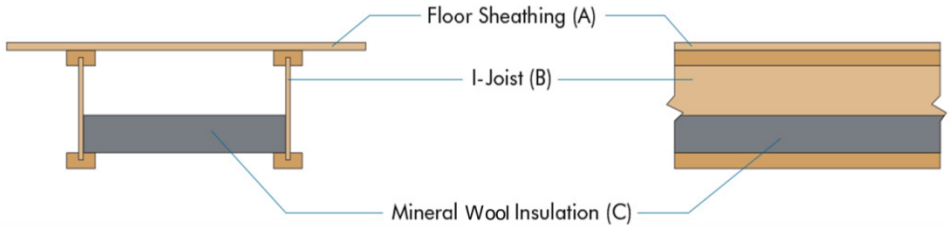
Per Exception 1 of 2015 IRC Section R302.13 or 2012 IRC Section R501.3, floor assemblies located directly over a space protected by an automatic sprinkler system do not require 1/2-inch-thick gypsum board attached to sides of flange.

(D) Automatic Sprinkler System: System in accordance with Section P2904 of the 2015 or 2012 IRC, NFPA 13D, or other equivalent sprinkler system. Note: Per 2015 IRC or 2012 IRC Section P2904, partial residential sprinkler systems are permitted to be installed only in buildings is not required to be equipped with a residential sprinkler system. Check with the local building official for specific jurisdictional requirements.

For **SI**: 1 inch = 25.4 mm

FIGURE 9—FIRE PROTECTION: 2015 IRC SECTION R302.13 OR 2012 IRC SECTION R501.3, EXCEPTIONS 1 AND 2, AND EXCEPTION 4; 1/2-INCH-THICK GYPSUM BOARD ATTACHED DIRECTLY TO SIDES OF FLANGE

Mineral Wool Insulation



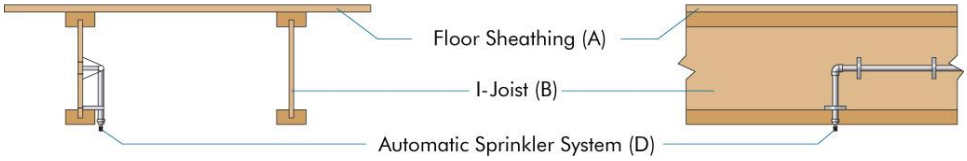
(A) Floor Sheathing: Materials and installation must be per 2015 IRC or 2012 IRC Section R503.
(B) I-Joist: Installation per Section 4.0 of this evaluation report. Minimum flange size of 1.125 inches x 2.0 inches. Minimum web thickness of $^3/_8$ inch. Maximum 24 inches on center I-joint spacing.
(C) Mineral Wool Batt Insulation: 3-inch-thick, minimum 2.5 lb per ft^3 mineral wool batt insulation made of rock or furnace slag (ASTM C665 Type 1 compliant) installed as shown with insulation stay wire supports spaced no more than 24 inches apart and no more than 6 inches from ends of batts. The insulation width must be a minimum of 15-$^1/_4$ inches when installed between joists that are 16 inches on center or 23 inches when installed between joists that are 24 inches on center. The insulation batts must be properly located on top of the I-joist bottom flange and installed without gaps between individual batts.

Crawl Space Exception

Per Exception 2 of 2015 IRC Section R302.13 or 2012 IRC Section R501.3, floor assemblies located directly over a crawl space not intended for storage or fuel-fired appliances do not require fire protection of floors using mineral wool batt insulation. Note: insulation may be required for energy code compliance purposes; check with the local building official for specific jurisdictional requirements.

Automatic Sprinkler System Exception

Per Exception 1 of 2015 IRC Section R302.13 or 2012 IRC Section R501.3, floor assemblies located directly over a space protected by an automatic sprinkler system do not require fire protection of floors using mineral wool batt insualtion. Note: insulation may be required for energy code compliance purposes; check with the local building official for specific jurisdictional requirements.

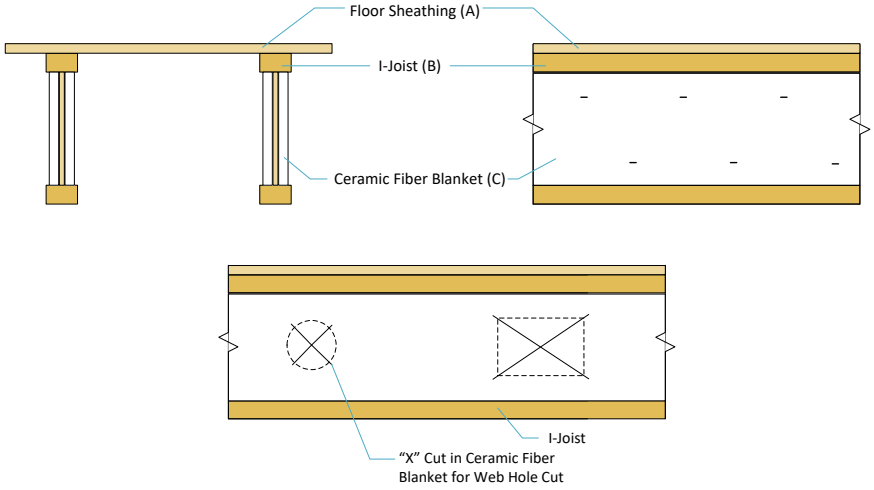


(D) Automatic Sprinkler System: System in accordance with Section P2904 of the 2015 IRC or 2012 IRC, NFPA 13D, or other equivalent sprinkler system. Note: Per 2015 IRC or 2012 IRC Section P2904, partial residential sprinkler systems are permitted to be installed only in buildings not required to be equipped with a residential sprinkler system. Check with the local building official for specific jurisdictional requirements.

For **SI**: 1 inch = 25.4 mm, 1 lb/ft^3 = 16 kg/m^3

FIGURE 10—FIRE PROTECTION: 2015 IRC SECTION R302.13 OR 2012 IRC SECTION R501.3, EXCEPTIONS 1 AND 2, AND EXCEPTION 4; MINERAL WOOL BATT INSULATION

Ceramic Fiber Blanket Attached on Web



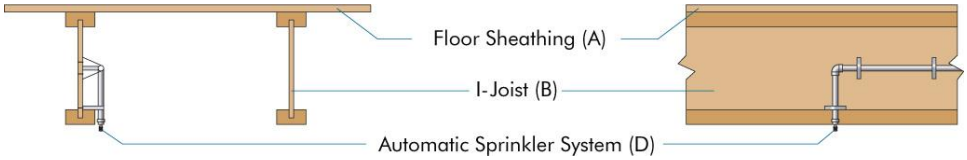
(A) Floor Sheathing: Materials and installation must be per 2015 IRC or 2012 IRC Section R503.
(B) I-Joist: Installation per Section 4.0 of this ESR report. Minimum flange size of 1½-inch-thick by $2^{5}/_{16}$-inch-wide. Minimum web thickness of $^{3}/_{8}$ inch.
(C) Ceramic Fiber Blanket: ¾-inch-thick, minimum 4 lb per ft^3, Mei Guo International, LLC (USA) FireBreak® proprietary ceramic fiber blanket made of aluminum oxide and silicon dioxide (ASTM C892 Type III compliant) is attached directly on web as shown with two rows of $^{7}/_{8}$-inch-long crown staples installed staggered at 8 inches on center horizontal spacing. The maximum vertical staple-to-staple distance between two row of staples must be 3 inches with additonal rows of staples added as necessary for i-joist depth greater then $9^{1}/_{2}$ inches. The ceramic blanket must fill the web space with no gaps, and contact both inside flange faces to protect the web. Joist spacing up to 24 inches on center is allowed. Holes should be 1 inch larger than service dimension, and an "X" cut in the ceramic fiber blanket on both sides to allow wire/pipe/duct to pass through.

Crawl Space Exception

Per Exception 2 of 2015 IRC Section R302.13 or 2012 IRC Section R501.3, floor assemblies located directly over a crawl space not intended for storage or fuel-fired appliances do not require for fire protection of floors using ceramic fiber blanket protection. Note: insulation may be required for energy code compliance purposes; check with the local building official for specific jurisdictional requirements.

Automatic Sprinkler System Exception

Per Exception 1 of 2015 IRC Section R302.13 or 2012 IRC Section R501.3, floor assemblies located directly over a space protected by an automatic sprinkler system do not require for fire protection of floors using ceramic fiber blanket protection. Note: insulation may be required for energy code compliance purposes; check with the local building official for specific jurisdictional requirements.

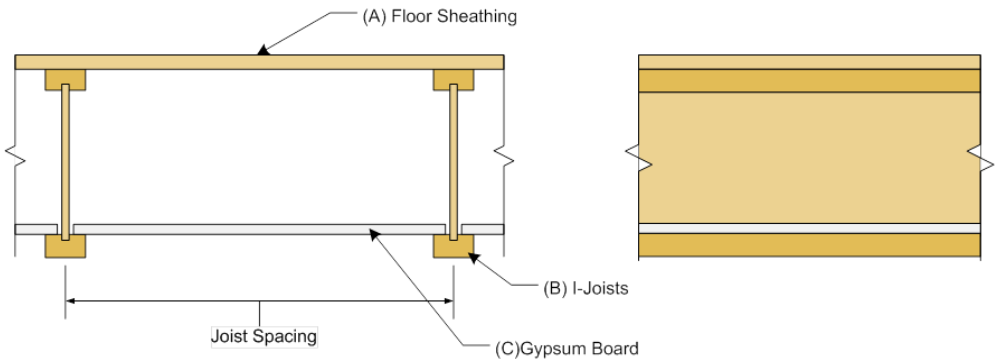


(D) Automatic Sprinkler System: System in accordance with Section P2904 of the 2015 IRC or 2012 IRC, NFPA 13D, or other equivalent sprinkler system. Note: Per 2015 IRC or 2012 IRC Section P2904, partial residential sprinkler systems are permitted to be installed only when the entire dwelling unit is not required to be equipped with a residential sprinkler system. Check with the local building official for specific jurisdictional requirements.

For **SI**: 1 inch = 25.4 mm, 1 lb/ft^3 = 16 kg/m^3

FIGURE 11—FIRE PROTECTION: 2015 IRC SECTION R302.13 OR 2012 IRC SECTION R501.3, EXCEPTIOS 1 AND 2, AND EXCEPTION 4; CERAMIC FIBER BLANKET ATTACHED DIRECTLY ON WEB

Drop-in Gypsum Board



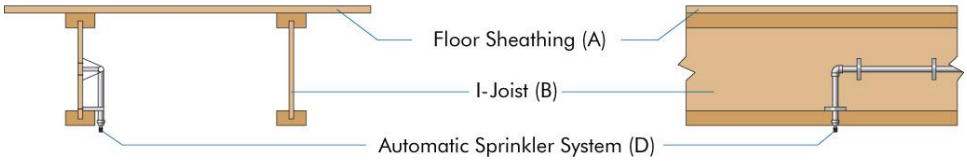
(A) Floor Sheathing: Materials and installation must be per 2015 IRC or 2012 IRC Section R503.
(B) I-Joist: Installation per Section 4.0 of this evaluation report. Minimum flange size of 1.125 inches x 2.0 inches. Minimum web thickness of $^{3}/_{8}$ inch. The maximum I-joist center-to-center spacing is either 19.2 inches or 24 inches.
(C) Gypsum Board Drop-In Panel: For 19.2-inch maximum I-joist spacing, one layer of minimum $^{1}/_{2}$-inch-thick gypsum wallboard must be used. For 24-inch maximum I-joist spacing, one layer of minimum $^{5}/_{8}$-inch-thick gypsum wall board must be used. Gypsum wallboard shall comply to ASTM C1396 for gypsum wallboards. The drop-in panel is installed on the top surface of the bottom flange. Mechanical fastener or adhesive attachment to the top surface of the bottom flange is not required. A maximum gap of $^{5}/_{16}$ inch between the edge of the gypsum and the I-joist web shall be permitted. Penetrations or openings for ducts, vents, electrical outlets, lighting, devices, luminaires, wires, speakers, drainage, piping and similar openings or penetrations on I-joist web shall be permitted.

Crawl Space Exception

Per Exception 2 of 2015 IRC Section R302.13 or 2012 IRC Section R501.3, floor assemblies located directly over a crawl space not intended for storage or fuel-fired appliances do not require fire protection of floors using mineral wool batt insulation. Note: insulation may be required for energy code compliance purposes; check with the local building official for specific jurisdictional requirements.

Automatic Sprinkler System Exception

Per Exception 1 of 2015 IRC R302.13 or 2012 IRC Section R501.3.13, floor assemblies located directly over a space protected by an automatic sprinkler system do not require fire protection of floors using mineral wool batt insualtion. Note: insulation may be required for energy code compliance purposes; check with the local building official for specific jurisdictional requirements.

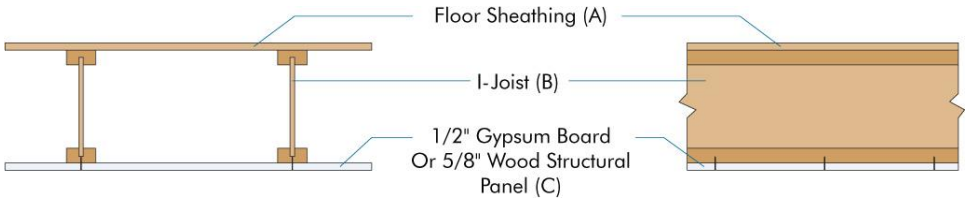


(D) Automatic Sprinkler System: System in accordance with Section P2904 of the 2015 or 2012 IRC, NFPA 13D, or other equivalent sprinkler system. Note: Per 2015 or 2012 IRC Section P2904, partial residential sprinkler systems are permitted to be installed only in buildings not required to be equipped with a residential sprinkler system. Check with the local building official for specific jurisdictional requirements.

For **SI**: 1 inch = 25.4 mm

FIGURE 12—FIRE PROTECTION: 2015 IRC SECTION R302.13 OR 2012 IRC SECTION R501.3, EXCEPTIONS 1 AND 2, AND EXCEPTION 4; DROP-IN GYPSUM BOARD

Gypsum Board or Wood Structural Panels Attached to Bottom of Flange



(A) Floor Sheathing: Materials and installation must be per 2015 IRC or 2012 IRC Section R503.
(B) I-Joist: Installation per Section 4.1 of this evaluation report. Applicable to all flange sizes. Minimum web thickness of $^{3}/_{8}$ inch.
(C) $^{1}/_{2}$-inch-thick Gypsum Board: Materials and installation per Section R702.3.1 of the 2015 IRC or 2012 IRC or equivalent. Gypsum Board not required to be finished with tape and joint compound; or $^{5}/_{8}$-inch-thick Wood Structural Panel: Materials and installation per Section R503.2 of the 2015 IRC or 2012 IRC, or equivalent. Wood Structural Panel not required to be finished with wood filler or sanded.
Note: Per Exception 3 of 2015 IRC Section R302.13 or 2012 IRC Section R501.3, portions of floor assembly can be unprotected when complying with the following:

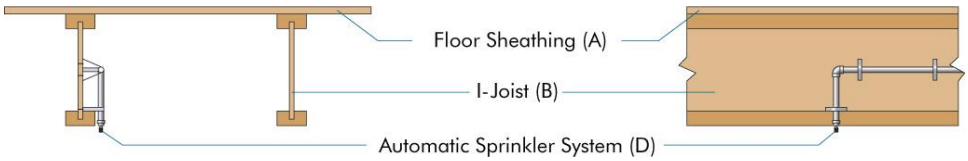
1) The aggregate area of the unprotected portions shall not exceed 80 square feet per story.
2) Fire blocking in accordance with Section R302.11.1 of the 2015 IRC or 2012 IRC must be installed along the perimeter of the unprotected portion to separate the unprotected portion from the remainder of the floor assembly.

Crawl Space Exception

Per Exception 2 of 2015 IRC Section R302.13 or 2012 IRC Section R501.3, floor assemblies located directly over a crawl space not intended for storage or fuel-fired appliances do not require fire protection of floors of gypsum board or wood structural panels attached to bottom of the flange.

Automatic Sprinkler System Exception

Per Exception 1 of 2015 IRC Section R302.13 or 2012 IRC Section R501.3, floor assemblies located directly over a space protected by an automatic sprinkler system do not require fire protection of floors using gypsum board or wood structural panels attached to the bottom of the flange.

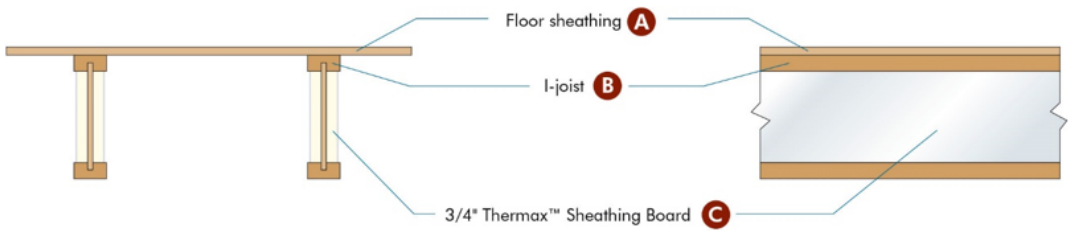


(D) Automatic Sprinkler System: System in accordance with Section P2904 of the 2015 IRC or 2012 IRC, NFPA 13D, or other equivalent sprinkler system. Note: Per 2015 IRC or 2012 IRC Section P2904, partial residential sprinkler systems are permitted to be installed only in buildings not required to be equipped with a residential sprinkler system. Check with the local building official for specific jurisdictional requirements.

For **SI**: 1 inch = 25.4 mm

FIGURE 13—2015 IRC SECTION R302.13 OR 2012 IRC, SECTION R501.3, FLOOR ASSEMBLY DETAIL

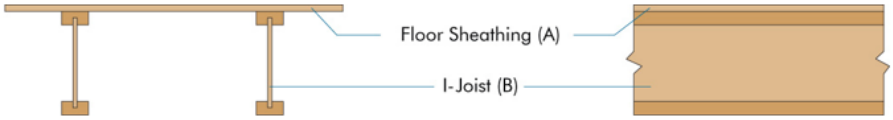
Fire Membrane Joist (FMJ™) Factory-Applied Thermax™ Sheathing Board



(A) Floor sheathing: Materials and installation must be per Section R503 of the 2018, 2015 or 2012 IRC.
(B) I-joist: Installation per Section 4.0 of this evaluation report. Maximum 24 inches on center spacing. Minimum flange size of 1.50 inches thick x 2.50 inches wide. Minimum web thickness of $^{3}/_{8}$ inch.
(C) Factory-applied proprietary Thermax™ Sheathing Board: One layer of $^{3}/_{4}$-inch thick Thermax™ Sheathing board conforming to ICC-ES ESR-1659 is adhered to each side of the I-joist web in accordance with the in-plant manufacturing standard.

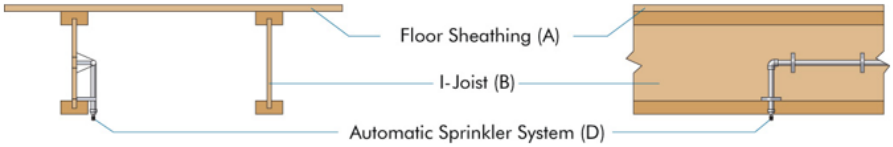
Crawl Space Exception

Per Exception 2 of 2018 or 2015 IRC Section R302.13 or 2012 IRC Section R501.3, floor assemblies located directly over a crawl space not intended for storage or fuel-fired appliances do not require additional fire protection. Note: insulation may be required for energy code compliance purposes; check with the local building official for specific jurisdictional requirements.



Automatic Sprinkler System Exception

Per Exception 1 of 2018 or 2015 IRC Section R302.13 or 2012 IRC Section R501.3, floor assemblies located directly over a space protected by an automatic sprinkler system do not require additional fire protection. Note: insulation may be required for energy code compliance purposes; check with the local building official for specific jurisdictional requirements.



(D) Automatic sprinkler system: System in accordance with Section P2904 of the 2018, 2015 and 2012 IRC, NFPA 13D, or other equivalent sprinkler systems. Note: Per 2018, 2015 or 2012 IRC Section P2904, partial residential sprinkler systems are permitted to be installed only in buildings not required to be equipped with a residential sprinkler system. Check with the local building official for specific jurisdictional requirements.

For SI: 1 inch = 25.4 mm, 1 lb/ft^3 = 16 kg/m^3

FIGURE 14—FIRE PROTECTION: 2018 AND 2015 IRC SECTION R302.13 OR 2012 IRC SECON R501.3, EXCEPTIONS 1 AND 2, AND EXCEPTION 4; THERMAX™ SHEATHING BOARD

QUALITY CONTROL:

The quality control program for the BCI joists shall conform to the requirements of the Manufacturing Standards/Quality Control Manual for Prefabricated Wood I-Joists on file with HUD.

CERTIFICATION AND IDENTIFICATION:

Boise Cascade Wood Products, LLC shall certify that each BCI joist conforms to the requirements of this Materials Release (MR). APA - The Engineered Wood Association shall validate the manufacturer's certification that the joists meet the requirements of this MR. Each certified joist shall be marked with the following information:

1. Boise Cascade
2. Identification of manufacturing plant
3. Product designation
4. Registered APA validation mark
5. HUD MR 1242*
6. Date of manufacture.

*HUD MR 1242 may be used instead of HUD MR 1242e if the joists are date stamped.

SAMPLE STAMP

BOISE CASCADE® BCI® 6000 1.8 Joist APA ICC ES ESR 1336 CCMC 13300-R HUD MR-1242 WHITE CITY, OR 00-00-00 00:00

WARRANTY:

Boise Cascade warrants its BCI® Joists, ALLJOIST®, and VERSA-LAM® 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.

The manufacturer's warranty does not, in any way, relieve the builder of responsibility under the terms of the Builder’s Warranty required by the National Housing Act, or under any provisions applicable to any other housing program. A copy of the manufacturer's warranty shall be furnished by the builder to the owner.

MANUFACTURER’S RESPONSIBILITIES:

Issuance of this Materials Release (MR) commits the manufacturer to fulfill, as a minimum, the following:

1. Produce, label, and certify the material, product or system in strict accordance with the terms of this MR.

2. Provide necessary corrective action in a timely manner for all cases of justified complaint, poor performance or failure reported by HUD.

3. When requested, provide the Office of Manufactured Housing Programs, HUD Headquarters, with a representative list of properties in which the material, product or system has been used, including complete addresses or descriptions of locations and dates of installation.

4. Inform HUD in advance of changes in production facilities, methods, design of the product, company name, ownership or mailing address.

5. If between the annual reviews of the QCM, significant changes are made to the product which would by definition revise the previously recognized facts, HUD will be informed within 30 days of formal implantations of these significant changes.

EVALUATION:

This Materials Release shall be valid for a period of three years from the date of initial issuance or most recent renewal or revision, whichever is later. The holder of this Materials Release shall apply for renewal or revision 90 days prior to the Review Date printed on this Materials Release. Submittals for renewal or revision shall be sent to:

U.S. Department of Housing and Urban Development
Office of Manufactured Housing Programs
451 Seventh Street, SW, Room 9170
Washington, DC 20410-8000

Appropriate user fee(s) for the TSP program can be submitted through the Pay.gov website at https://pay.gov/public/form/start/73881741.

The holder of this Materials Release may apply for revision at any time prior to the Review Date. Minor revisions may be in the form of a supplement to the Materials Release.

If the Department determines that a proposed renewal or supplement constitutes a revision, the appropriate user fee for a revision will need to be submitted in accordance with 24 CFR § 200.934 User fee system for the technical suitability of products program, and the current user fee schedule.

CANCELLATION:

Failure to apply for a renewal or revision shall constitute a basis for cancellation of the Materials Release. HUD will notify the manufacturer that the Materials Release may be canceled when:

1. Conditions under which the document was issued have changed so as to affect production of, or to compromise the integrity of the accepted material, product, or system;

2. The manufacturer has changed its organizational form without notifying HUD; or,

3. Manufacturer has not complied with responsibilities it assumed as a condition of HUD' s acceptance.

However, before cancellation, HUD will give the manufacturer a written notice, of the specific reasons for cancellation, and the opportunity to present views on why the Materials Release should not be canceled. No refund of fees will be made on a canceled document.

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This Materials Release is issued solely for the captioned firm and is not transferable to any person or successor entity.

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