

Residential Floor Span Tables

About Floor Performance

Homeowner's expectations and opinions vary greatly due to the subjective nature of rating a new floor. Communication with the ultimate end user to determine their expectation is critical. **Vibration** is usually the cause of most complaints. Installing lateral bridging may help; however, squeaks may occur if not installed properly. Spacing the joists closer together does little to affect the perception of the floor's performance. The most common methods used to increase the performance and reduce vibration of wood floor systems is to

increase the joist depth, limit joist deflections, glue and screw a thicker, tongue-and-groove subfloor, install the joists vertically plumb with level-bearing supports, and install a direct-attached ceiling to the bottom flanges of the joists.

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

| Joist Depth | BCI® Joist Series | ★★★ THREE STAR ★★★ | | | | | ★★★★ FOUR STAR ★★★★★ | | | | | CAUTION | ★ MINIMUM STIFFNESS ALLOWED BY CODE ★ | | | CAUTION |
|-------------|-------------------|---|----------|------------|----------|----------|----------------------|----------|------------|----------|----------|----------|---------------------------------------|------------|----------|----------|
| | | <p>Live Load deflection limited to L/480: The common industry and design community standard for residential floor joists, 33% stiffer than L/360 code minimum. However, floor performance may still be an issue in certain applications, especially with 9 1/2" and 11 7/8" deep joists without a direct-attached ceiling.</p> <p>Live Load deflection limited to L/960+: In addition to providing a floor that is 100% stiffer than the three star floor, field experience has been incorporated into the values to provide a floor with a premium performance level for the more discriminating homeowner.</p> <p>Live Load deflection limited to L/360: Floors that meet the minimum building code L/360 criteria are structurally sound to carry the specified loads; however, there is a much higher risk of floor performance issues. This table should only be used for applications where floor performance is not a concern.</p> | | | | | | | | | | | | | | |
| | | 12" o.c. | 16" o.c. | 19.2" o.c. | 24" o.c. | 32" o.c. | 12" o.c. | 16" o.c. | 19.2" o.c. | 24" o.c. | 32" o.c. | 12" o.c. | 16" o.c. | 19.2" o.c. | 24" o.c. | 32" o.c. |
| 9 1/2" | 5000 1.7 | 17'-1" | 15'-7" | 14'-9" | 13'-9" | 12'-0" | 11'-6" | 11'-6" | 10'-0" | 10'-0" | 9'-6" | 18'-11" | 17'-0" | 15'-6" | 13'-11" | 12'-0" |
| | 6000 1.7 | 17'-8" | 16'-2" | 15'-3" | 14'-3" | 12'-11" | 11'-6" | 11'-6" | 10'-0" | 10'-0" | 9'-10" | 19'-6" | 17'-11" | 16'-9" | 15'-0" | 13'-0" |
| | 6500 1.8 | 18'-5" | 16'-10" | 15'-11" | 14'-10" | 13'-6" | 11'-6" | 11'-6" | 10'-0" | 10'-0" | 10'-0" | 20'-5" | 18'-8" | 17'-8" | 16'-5" | 14'-3" |
| 11 7/8" | 5000 1.7 | 20'-2" | 18'-5" | 17'-5" | 15'-9" | 13'-4" | 15'-6" | 14'-4" | 13'-6" | 12'-7" | 11'-5" | 22'-3" | 19'-4" | 17'-7" | 15'-9" | 13'-4" |
| | 6000 1.7 | 21'-0" | 19'-2" | 18'-1" | 16'-10" | 14'-8" | 15'-6" | 14'-11" | 14'-1" | 13'-1" | 11'-10" | 23'-2" | 20'-10" | 19'-0" | 17'-0" | 14'-8" |
| | 6500 1.8 | 21'-11" | 20'-0" | 18'-11" | 17'-7" | 14'-10" | 16'-0" | 15'-7" | 14'-9" | 13'-8" | 12'-5" | 24'-3" | 22'-2" | 20'-11" | 18'-10" | 14'-10" |
| | 60 2.0 | 23'-3" | 21'-3" | 20'-1" | 18'-8" | 16'-4" | 18'-0" | 16'-7" | 15'-7" | 14'-6" | 13'-2" | 25'-9" | 23'-6" | 22'-3" | 20'-9" | 16'-4" |
| | 90 2.0 | 26'-3" | 23'-11" | 22'-6" | 20'-11" | 19'-1" | 19'-0" | 18'-7" | 17'-6" | 16'-2" | 14'-8" | 29'-0" | 26'-6" | 25'-0" | 23'-3" | 19'-4" |
| 14" | 5000 1.7 | 22'-11" | 21'-0" | 19'-2" | 17'-2" | 13'-11" | 18'-0" | 16'-5" | 15'-6" | 14'-5" | 13'-1" | 24'-4" | 21'-0" | 19'-2" | 17'-2" | 13'-11" |
| | 6000 1.7 | 23'-10" | 21'-9" | 20'-7" | 18'-6" | 15'-5" | 18'-8" | 17'-0" | 16'-0" | 14'-11" | 13'-6" | 26'-3" | 22'-8" | 20'-9" | 18'-6" | 15'-5" |
| | 6500 1.8 | 24'-10" | 22'-9" | 21'-5" | 20'-0" | 15'-5" | 19'-5" | 17'-9" | 16'-8" | 15'-6" | 14'-1" | 27'-6" | 25'-1" | 22'-11" | 20'-6" | 15'-5" |
| | 60 2.0 | 26'-5" | 24'-2" | 22'-9" | 21'-3" | 16'-4" | 20'-8" | 18'-10" | 17'-9" | 16'-5" | 14'-11" | 29'-3" | 26'-8" | 25'-3" | 21'-10" | 16'-4" |
| 90 2.0 | 29'-9" | 27'-1" | 25'-6" | 23'-8" | 19'-6" | 23'-3" | 21'-1" | 19'-9" | 18'-4" | 16'-7" | 32'-10" | 30'-0" | 28'-3" | 26'-0" | 19'-6" | |
| 16" | 6000 1.7 | 26'-4" | 24'-1" | 22'-2" | 19'-9" | 15'-9" | 20'-8" | 18'-10" | 17'-9" | 16'-6" | 15'-0" | 28'-0" | 24'-3" | 22'-2" | 19'-9" | 15'-9" |
| | 6500 1.8 | 27'-5" | 25'-1" | 23'-8" | 21'-1" | 15'-9" | 21'-6" | 19'-7" | 18'-5" | 17'-2" | 15'-7" | 30'-4" | 26'-11" | 24'-6" | 21'-1" | 15'-9" |
| | 60 2.0 | 29'-3" | 26'-8" | 25'-2" | 21'-10" | 16'-4" | 22'-10" | 20'-10" | 19'-7" | 18'-2" | 16'-4" | 32'-4" | 29'-6" | 27'-4" | 21'-10" | 16'-4" |
| | 90 2.0 | 32'-11" | 29'-11" | 28'-2" | 26'-2" | 19'-7" | 25'-8" | 23'-4" | 21'-11" | 20'-3" | 18'-4" | 36'-4" | 33'-2" | 31'-3" | 26'-2" | 19'-7" |
| 18" | 90 2.0 | 35'-11" | 32'-8" | 30'-9" | 28'-7" | 23'-10" | 28'-1" | 25'-5" | 23'-11" | 22'-2" | 20'-0" | 39'-8" | 36'-2" | 34'-1" | 31'-9" | 23'-10" |
| 20" | 90 2.0 | 38'-10" | 35'-4" | 33'-4" | 30'-11" | 24'-8" | 30'-4" | 27'-6" | 25'-11" | 24'-0" | 21'-8" | 42'-11" | 39'-1" | 36'-10" | 32'-11" | 24'-8" |

- Table values based on residential floor loads of 40 psf live load and 10 psf dead load (12 psf dead load for BCI® 90 2.0 joists).
- Span values assume 23/32" min plywood/OSB rated sheathing is glued and nailed to joists for composite action (joists spaced at 32" o.c. require sheathing rated for such spacing - 7/8" plywood/OSB).
- Table values represent the most restrictive of simple or multiple span applications.
- Table values are the maximum allowable clear distance between supports.
- Table values assume minimum bearing lengths without web stiffeners for joist depths of 16" inches and less (18" & 20" joists require web stiffeners at all bearing locations).
- This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® sizing software.

One-Hour Floor/Ceiling Assembly

ICC ESR 1336

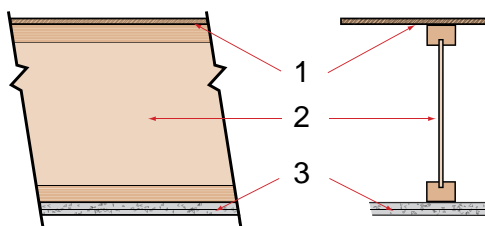
FIRE ASSEMBLY COMPONENTS

1. Min. 3/4" tongue-and-groove plywood or 23/32" APA Rated Sheathing (Exposure 1 or exterior glue)
2. BCI® Joists at 24" o.c. or less.
3. Two layers 1/2" Type C or two layers 5/8" Type X gypsum board

SOUND ASSEMBLY COMPONENTS When constructed with resilient channels

- Add carpet & pad to fire assembly;
- Add 3 1/2" glass fiber insulation to fire assembly;
- Add an additional layer of minimum 5/8" sheathing and 9 1/2" glass fiber insulation to fire assembly;

| | | |
|--------|--------|----|
| STC=54 | IIC=68 | or |
| STC=55 | IIC=46 | |
| STC=61 | IIC=50 | or |



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

BCI® Joists

NOTE

The illustration below is showing several suggested applications for the Boise EWP products. It is not intended to show an actual house under construction.

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

NO MIDSPAN BRIDGING IS REQUIRED FOR BCI® JOISTS

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

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

BCI® rim joist. See page 6.

Boise Rimboard. See pages 6 and 25.

For load bearing cantilever details, see page 8.

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

VERSA-LAM® header or a BCI® Joist header.

1 1/2" knockout holes at approximately 12" o.c. are pre-punched.

See page 7 for allowable hole sizes and location.

VERSA-LAM® LVL beam.

Endwall blocking as required per governing building code.

BCI® Joist Blocking is required when BCI® Joists are cantilevered.

BCI® Joists, VERSA-LAM® and ALLJOIST® must be stored, installed and used in accordance with the Boise EWP Installation Guide, building codes, and to the extent not inconsistent with the Boise EWP Installation Guide, usual and customary building practices and standards. VERSA-LAM®, ALLJOIST®, and BCI® Joists must be wrapped, covered, and stored off of the ground on stickers at all times prior to installation. VERSA-LAM®, ALLJOIST® and BCI® Joists are intended only for

applications that assure no exposure to weather or the elements and an environment that is free from moisture from any source, or any pest, organism or substance which degrades or damages wood or glue bonds. Failure to correctly store, use or install VERSA-LAM®, ALLJOIST®, and BCI® Joist in accordance with the Boise EWP Installation Guide will void the limited warranty.

SAFETY WARNING

DO NOT ALLOW WORKERS ON BCI® JOISTS UNTIL ALL HANGERS, BCI® RIM JOISTS, RIM BOARDS, BCI® BLOCKING PANELS, X-BRACING AND TEMPORARY 1x4 STRUT LINES ARE INSTALLED AS SPECIFIED BELOW. SERIOUS ACCIDENTS CAN RESULT FROM INSUFFICIENT ATTENTION TO PROPER BRACING DURING CONSTRUCTION. ACCIDENTS CAN BE AVOIDED UNDER NORMAL CONDITIONS BY FOLLOWING THESE GUIDELINES:

- Build a braced end wall at the end of the bay, or permanently install the first eight feet of BCI® Joists and the first course of sheathing. As an alternate, temporary sheathing may be nailed to the first four feet of BCI® Joists at the end of the bay.
- All hangers, BCI® rim joists, rim boards, BCI® blocking panels, and x-bracing must be completely installed and properly nailed as each BCI® Joist is set.
- Install temporary 1x4 strut lines at no more than eight feet on center as additional BCI® Joists are set. Nail the strut lines to the sheathed area, or braced end wall, and to each BCI® Joist with two 8d nails.
- The ends of cantilevers must be temporarily secured by strut lines on both the top and bottom flanges.
- Straighten the BCI® Joists to within 1/2 inch of true alignment before attaching strut lines and sheathing.
- Remove the temporary strut lines only as required to install the permanent sheathing.
- Failure to install temporary bracing may result in sideways buckling or roll-over under light construction loads.
- Do not stack construction materials (sheathing, drywall, etc) in the middle of BCI Joist spans, contact Boise EWP Engineering for proper storage and shoring information.



Floor Framing Details

Additional floor framing details available with BC FRAMER® software (see page 33)

END BEARING DETAILS

INTERMEDIATE BEARING DETAILS

LATERAL SUPPORT

- BCI® Joists must be laterally supported at the ends with hangers, BCI® rim joists, rim boards, BCI® blocking panels or x-bracing. BCI® blocking panels or x-bracing are required at cantilever supports.

MINIMUM BEARING LENGTH FOR BCI® JOISTS

- 1 3/4 inches is required at end supports. 3 1/2 inches is required at cantilever and intermediate supports.
- Longer bearing lengths allow higher reaction values. Refer to the building code evaluation report or the BC CALC® software.

NAILING REQUIREMENTS

- BCI® rim joist, rim board or closure panel to BCI® joist:
 - Rims or closure panel 1 3/4 inches thick and less: 2-8d nails, one each in the top and bottom flange.
 - BCI® 5000 rim joist: 2-10d box nails, one each in the top and bottom flange.
 - BCI® 6000, 60 rim joist: 2-16d box nails, one each in the top and bottom flange.
 - BCI® 6500, 90 rim joist: Toe-nail top flange to rim joist with 2-10d box nails, one each side of flange.
- BCI® rim joist, rim board or BCI® blocking panel to support:
 - 8d nails at 6 inches on center.
 - When used for shear transfer, follow the building designer's specification.
- BCI® joist to support:
 - 2-8d nails, one on each side of the web, placed 1 1/2 inches minimum from the end of the BCI® Joist to limit splitting.

- Sheathing to BCI® joist:
 - See *Closest Allowable Nail Spacing* on page 24.
 - BCI® 5000 joist: Maximum nail spacing is 18 inches on center.
 - BCI® 6000, 6500, 60, 90 joist: Maximum nail spacing is 24 inches on center.
 - 14 gauge staples may be substituted for 8d nails if the staples penetrate at least 1 inch into the joist.
 - Wood screws may be acceptable, contact local building official and/or Boise EWPP Engineering for further information.

BACKER AND FILLER BLOCK DIMENSIONS

| Series | Backer Block Thickness | Filler Block Thickness |
|----------|--------------------------------|---------------------------------|
| 5000 1.7 | 3/4" or 7/8" wood panels | Two 3/4" wood panels or 2 x _ |
| 6000 1.7 | 1 1/8" or two 1/2" wood panels | 2 x _ + 5/8" or 3/4" wood panel |
| 6500 1.8 | 1 1/8" or two 1/2" wood panels | 2 x _ + 5/8" or 3/4" wood panel |
| 60 2.0 | 1 1/8" or two 1/2" wood panels | 2 x _ + 5/8" or 3/4" wood panel |
| 90 2.0 | 2 x lumber | Double 2 x _ lumber |

- Cut backer and filler blocks to a maximum depth equal to the web depth minus 1/4" to avoid a forced fit.

WEB STIFFENER REQUIREMENTS

- See *Web Stiffener Requirements* on page 9.

PROTECT BCI® JOISTS FROM THE WEATHER

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

| End Wall Bearing | Minimum Heel Depth | | | | | |
|------------------|--------------------|---------|---------|--------|---------|--------|
| | Roof Pitch | | | | | |
| | 6/12 | 7/12 | 8/12 | 9/12 | 10/12 | 12/12 |
| 2 x 4 | 4 3/8" | 4 9/16" | 4 1/4" | 4 1/4" | 4 1/4" | 4 1/4" |
| 2 x 6 | 3 3/8" | 3 3/16" | 2 9/16" | 2 3/4" | 2 9/16" | 2 1/4" |

BCI® RIM JOISTS AND BCI® BLOCKING

| Depth [in] | Series | Vertical Load Capacity | |
|------------|------------------------------|------------------------|----------|
| | | No W.S. (1) | W.S. (2) |
| 9 1/2" | 5000 1.7, 6000 1.7, 6500 1.8 | 2300 | N/A |
| | 60 2.0, 90 2.0 | 2150 | N/A |
| 11 1/8" | 5000 1.7, 6000 1.7, 6500 1.8 | 2500 | N/A |
| | 60 2.0, 90 2.0 | 2000 | N/A |
| 14" | 5000 1.7, 6000 1.7, 6500 1.8 | 2400 | N/A |
| | 60 2.0, 90 2.0 | 1900 | 2500 |
| 16" | 6000 1.7, 6500 1.8 | 2300 | 2700 |
| | 60 2.0, 90 2.0 | N/A | 2700 |
| 18" | 60 2.0, 90 2.0 | N/A | 2700 |
| | 60 2.0, 90 2.0 | N/A | 2700 |

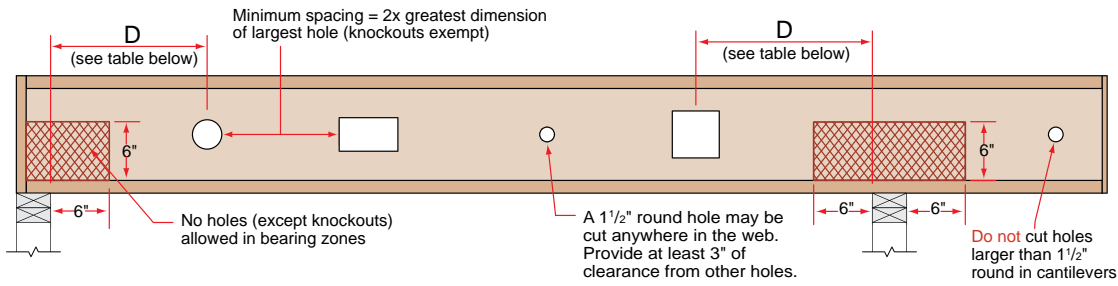
(1) No web stiffeners required

(2) Web stiffeners required at each end of blocking, values not applicable for rim joists

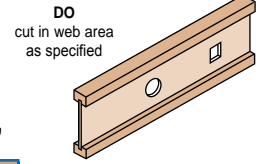
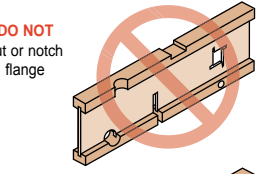
N/A: Not applicable

BCI® Joist Hole Location & Sizing

BCI® Joists are manufactured with 1/2" round perforated knockouts in the web at approximately 12" on center



DO NOT
cut or notch
flange



DO
cut in web area
as specified

Do not cut holes larger than 1/2" round in cantilevers.

Minimum distance from support, listed in table below, is required for all holes greater than 1/2"

| MINIMUM DISTANCE (D) FROM ANY SUPPORT TO THE CENTERLINE OF THE HOLE | | | | | | | | | | | | | | | | |
|---|--------------|----|-------|-------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Round Hole Diameter [in] | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 8 7/8 | 10 | 11 | 12 | 13 | 14 | 15 | |
| Rectangular Hole Side [in] | | - | - | - | 3 | 5 | 7 | - | - | - | - | - | - | - | - | |
| Any 9 1/2" Joist | Span [ft] | 8 | 1'-0" | 1'-1" | 1'-8" | 2'-4" | 2'-11" | 3'-7" | | | | | | | | |
| | | 12 | 1'-0" | 1'-7" | 2'-7" | 3'-6" | 4'-5" | 5'-4" | | | | | | | | |
| | | 16 | 1'-0" | 2'-2" | 3'-5" | 4'-8" | 5'-11" | 7'-2" | | | | | | | | |
| Round Hole Diameter [in] | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 8 7/8 | 10 | 11 | 12 | 13 | 14 | 15 | |
| Rectangular Hole Side [in] | | - | - | - | 2 | 3 | 5 | 7 | 8 | - | - | - | - | - | - | |
| Any 11 7/8" Joist | Span [ft] | 8 | 1'-0" | 1'-1" | 1'-6" | 2'-0" | 2'-5" | 2'-11" | 3'-5" | 3'-10" | | | | | | |
| | | 12 | 1'-0" | 1'-7" | 2'-3" | 3'-0" | 3'-8" | 4'-5" | 5'-1" | 5'-9" | | | | | | |
| | | 16 | 1'-2" | 2'-1" | 3'-0" | 4'-0" | 4'-11" | 5'-10" | 6'-10" | 7'-8" | | | | | | |
| | | 20 | 1'-5" | 2'-7" | 3'-10" | 5'-0" | 6'-2" | 7'-4" | 8'-6" | 9'-7" | | | | | | |
| Round Hole Diameter [in] | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 8 7/8 | 10 | 11 | 12 | 13 | 14 | 15 | |
| Rectangular Hole Side [in] | | - | - | - | - | 2 | 3 | 5 | 6 | 8 | 9 | - | - | - | - | |
| Any 14" Joist | Span [ft] | 8 | 1'-0" | 1'-1" | 1'-2" | 1'-2" | 1'-6" | 1'-11" | 2'-4" | 2'-9" | 3'-3" | 3'-8" | | | | |
| | | 12 | 1'-0" | 1'-1" | 1'-2" | 1'-7" | 2'-3" | 2'-11" | 3'-6" | 4'-1" | 4'-10" | 5'-6" | | | | |
| | | 16 | 1'-0" | 1'-1" | 1'-3" | 2'-2" | 3'-0" | 3'-10" | 4'-9" | 5'-6" | 6'-6" | 7'-4" | | | | |
| | | 20 | 1'-0" | 1'-1" | 1'-7" | 2'-8" | 3'-9" | 4'-10" | 5'-11" | 6'-10" | 8'-1" | 9'-2" | | | | |
| | | 24 | 1'-0" | 1'-1" | 1'-11" | 3'-3" | 4'-6" | 5'-10" | 7'-1" | 8'-3" | 9'-9" | 11'-0" | | | | |
| Round Hole Diameter [in] | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 8 7/8 | 10 | 11 | 12 | 13 | 14 | 15 | |
| Rectangular Hole Side [in] | | - | - | - | - | - | 2 | 3 | 5 | 6 | 8 | 9 | 10 | - | - | |
| Any 16" Joist | Span [ft] | 8 | 1'-0" | 1'-1" | 1'-2" | 1'-2" | 1'-3" | 1'-3" | 1'-7" | 1'-11" | 2'-4" | 2'-9" | 3'-2" | 3'-7" | | |
| | | 12 | 1'-0" | 1'-1" | 1'-2" | 1'-2" | 1'-3" | 1'-9" | 2'-4" | 2'-11" | 3'-7" | 4'-2" | 4'-9" | 5'-4" | | |
| | | 16 | 1'-0" | 1'-1" | 1'-2" | 1'-2" | 1'-7" | 2'-5" | 3'-2" | 3'-10" | 4'-9" | 5'-7" | 6'-4" | 7'-2" | | |
| | | 20 | 1'-0" | 1'-1" | 1'-2" | 1'-2" | 2'-0" | 3'-0" | 4'-0" | 4'-10" | 5'-11" | 6'-11" | 7'-11" | 8'-11" | | |
| | | 24 | 1'-0" | 1'-1" | 1'-2" | 1'-3" | 2'-5" | 3'-7" | 4'-9" | 5'-10" | 7'-2" | 8'-4" | 9'-6" | 10'-9" | | |
| Round Hole Diameter [in] | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 8 7/8 | 10 | 11 | 12 | 13 | 14 | 15 | |
| Rectangular Hole Side [in] | | - | - | - | - | - | - | 2 | 3 | 5 | 6 | 7 | 9 | 10 | 11 | |
| 18" BCI® 90 2.0 Joist | Span [ft] | 12 | 1'-0" | 1'-1" | 1'-2" | 1'-2" | 1'-5" | 1'-11" | 2'-4" | 2'-9" | 3'-3" | 3'-9" | 4'-2" | 4'-8" | 5'-1" | 5'-7" |
| | | 16 | 1'-0" | 1'-1" | 1'-2" | 1'-4" | 1'-11" | 2'-7" | 3'-2" | 3'-8" | 4'-5" | 5'-0" | 5'-7" | 6'-3" | 6'-10" | 7'-5" |
| | | 20 | 1'-0" | 1'-1" | 1'-2" | 1'-8" | 2'-5" | 3'-3" | 4'-0" | 4'-8" | 5'-6" | 6'-3" | 7'-0" | 7'-9" | 8'-7" | 9'-4" |
| | | 24 | 1'-0" | 1'-1" | 1'-2" | 2'-0" | 2'-11" | 3'-10" | 4'-9" | 5'-7" | 6'-7" | 7'-6" | 8'-5" | 9'-4" | 10'-3" | 11'-2" |
| 20" BCI® 90 2.0 Joist | Span [ft] | 12 | 1'-0" | 1'-1" | 1'-2" | 1'-2" | 1'-3" | 1'-6" | 1'-11" | 2'-3" | 2'-9" | 3'-2" | 3'-7" | 3'-11" | 4'-4" | 4'-9" |
| | | 16 | 1'-0" | 1'-1" | 1'-2" | 1'-2" | 1'-6" | 2'-1" | 2'-7" | 3'-1" | 3'-8" | 4'-3" | 4'-9" | 5'-3" | 5'-10" | 6'-4" |
| | | 20 | 1'-0" | 1'-1" | 1'-2" | 1'-3" | 1'-11" | 2'-7" | 3'-3" | 3'-10" | 4'-7" | 5'-3" | 5'-11" | 6'-7" | 7'-4" | 8'-0" |
| | | 24 | 1'-0" | 1'-1" | 1'-2" | 1'-6" | 2'-4" | 3'-1" | 3'-11" | 4'-7" | 5'-6" | 6'-4" | 7'-2" | 7'-11" | 8'-9" | 9'-7" |
| 20" BCI® 90 2.0 Joist | Span [ft] | 28 | 1'-0" | 1'-1" | 1'-2" | 1'-9" | 2'-8" | 3'-8" | 4'-7" | 5'-5" | 6'-6" | 7'-5" | 8'-4" | 9'-3" | 10'-3" | 11'-2" |

- Select a table row based on joist depth and the actual joist span rounded up to the nearest table span. Scan across the row to the column headed by the appropriate round hole diameter or rectangular hole side. Use the longest side of a rectangular hole. The table value is the closest that the centerline of the hole may be to the centerline of the nearest support.
- The entire web may be cut out. **DO NOT** cut the flanges. Holes apply to either single or multiple joists in repetitive member conditions.
- For multiple holes, the amount of uncut web between holes must equal at least twice the diameter (or longest side) of the largest hole.
- 1/2" round knockouts in the web may be removed by using a short piece of metal pipe and hammer.
- Holes may be positioned vertically anywhere in the web. The joist may be set with the 1/2" knockout holes turned either up or down.
- This table was designed to apply to the design conditions covered by tables elsewhere in this publication. Use the BC CALC® software to check other hole sizes or holes under other design conditions. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® software.

Reinforced Load Bearing Cantilever Table

KEY TO TABLE

0 No Reinforcement Required
 WS Web Stiffeners at Support

BCI® Joists

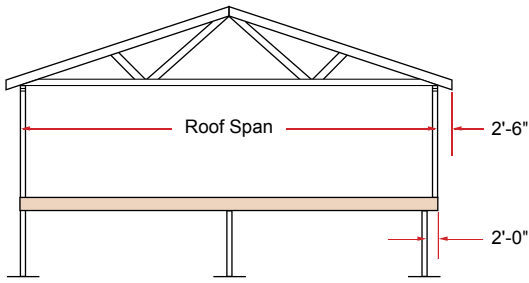
1 Web Stiffeners Plus One Reinforcer
 2 Web Stiffeners Plus Two Reinforcers
 X Use Deeper Joists or Closer Spacing

| Joist Depth [in] | Joist Series | Roof Truss Span [ft] | Roof Total Load [psf] | | | | | | | | | |
|------------------|--------------|----------------------|-----------------------|------|----|----|------|----|----|------|----|---|
| | | | 35 | | | 45 | | | 55 | | | |
| | | | Joist Spacing [in] | | | | | | | | | |
| | | | 16 | 19.2 | 24 | 16 | 19.2 | 24 | 16 | 19.2 | 24 | |
| 9 1/2" | 5000 | 1.7 | 24 | 0 | 0 | 0 | 0 | 0 | X | 0 | X | X |
| | | | 26 | 0 | 0 | 0 | 0 | 0 | X | 0 | X | X |
| | | | 28 | 0 | 0 | X | 0 | 0 | X | 0 | X | X |
| | | | 30 | 0 | 0 | X | 0 | X | X | X | X | X |
| | | | 32 | 0 | 0 | X | 0 | X | X | X | X | X |
| | | | 34 | 0 | 0 | X | 0 | X | X | X | X | X |
| | 36 | 0 | 0 | X | 0 | X | X | X | X | X | | |
| | 38 | 0 | X | X | X | X | X | X | X | X | | |
| | 40 | 0 | X | X | X | X | X | X | X | X | | |
| | 6000 | 1.7 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | X |
| | | | 26 | 0 | 0 | 0 | 0 | 0 | X | 0 | 0 | X |
| | | | 28 | 0 | 0 | 0 | 0 | 0 | X | 0 | X | X |
| 30 | | | 0 | 0 | 0 | 0 | 0 | X | 0 | X | X | |
| 32 | | | 0 | 0 | 0 | 0 | 0 | X | 0 | X | X | |
| 34 | | | 0 | 0 | 0 | 0 | 0 | X | 0 | X | X | |
| 36 | 0 | 0 | X | 0 | X | X | X | X | X | | | |
| 38 | 0 | 0 | X | 0 | X | X | X | X | X | | | |
| 40 | 0 | 0 | X | 0 | X | X | X | X | X | | | |
| 6500 | 1.8 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | | 26 | 0 | 0 | 0 | 0 | 0 | WS | 0 | 0 | X | |
| | | 28 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | X | |
| | | 30 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | X | |
| | | 32 | 0 | 0 | 0 | 0 | 0 | X | 0 | 1 | X | |
| | | 34 | 0 | 0 | 0 | 0 | 0 | X | 0 | 1 | X | |
| 36 | 0 | 0 | WS | 0 | 0 | X | 0 | 1 | X | | | |
| 38 | 0 | 0 | 1 | 0 | 1 | X | 0 | X | X | | | |
| 40 | 0 | 0 | 1 | 0 | 1 | X | 1 | X | X | | | |
| 11 7/8" | 5000 | 1.7 | 24 | 0 | 0 | 0 | 0 | 0 | WS | 0 | 0 | X |
| | | | 26 | 0 | 0 | 0 | 0 | 0 | WS | 0 | 0 | X |
| | | | 28 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS | X |
| | | | 30 | 0 | 0 | 0 | 0 | 0 | X | 0 | WS | X |
| | | | 32 | 0 | 0 | WS | 0 | 0 | X | 0 | X | X |
| | | | 34 | 0 | 0 | WS | 0 | 0 | X | 0 | X | X |
| | 36 | 0 | 0 | WS | 0 | WS | X | 0 | X | X | | |
| | 38 | 0 | 0 | 1 | 0 | WS | X | WS | X | X | | |
| | 40 | 0 | 0 | X | 0 | X | X | X | X | X | | |
| | 6000 | 1.7 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | | | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | | | 28 | 0 | 0 | 0 | 0 | 0 | WS | 0 | 0 | 1 |
| 30 | | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | X | |
| 32 | | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | X | |
| 34 | | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | X | |
| 36 | 0 | 0 | 0 | 0 | 0 | X | 0 | 1 | X | | | |
| 38 | 0 | 0 | WS | 0 | 0 | X | 0 | 1 | X | | | |
| 40 | 0 | 0 | 1 | 0 | 0 | X | 0 | X | X | | | |
| 6500 | 1.8 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | | 28 | 0 | 0 | 0 | 0 | 0 | WS | 0 | 0 | X | |
| | | 30 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | X | |
| | | 32 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | WS | X | |
| | | 34 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | X | |
| 36 | 0 | 0 | WS | 0 | 0 | X | 0 | 1 | X | | | |
| 38 | 0 | 0 | WS | 0 | 0 | X | 0 | 1 | X | | | |
| 40 | 0 | 0 | 1 | 0 | WS | X | 0 | X | X | | | |
| 60 | 2.0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | X | |
| | | 30 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | X | |
| | | 32 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | X | |
| | | 34 | 0 | 0 | 0 | 0 | 0 | X | 0 | 1 | X | |
| 36 | 0 | 0 | 0 | 0 | 0 | X | 0 | 1 | X | | | |
| 38 | 0 | 0 | 0 | 0 | 0 | X | 0 | 1 | X | | | |
| 40 | 0 | 0 | 1 | 0 | 0 | X | 0 | X | X | | | |
| 90 | 2.0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | | |
| 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | | |
| 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | | | |

- Cut 48" long reinforcers to match the joist depth. Use min. 2 3/32" plywood/OSB-rated sheathing, Exposure 1, 48/24 Span Rating panels. The face grain must be horizontal (measure the 48" dimension along the long edge of the panel).
- Fasten the reinforcer to the joist flanges with 8d nails at 6" o.c. When reinforcing both sides, stagger the nails to avoid splitting the joist flanges.
- Attach web stiffeners per intermediate *Web Stiffener Nailing Schedule* on page 9.
- Use the BC CALC® software to analyze conditions that are not covered by this table. It may be possible to exceed the limitations of this table by analyzing a specific application with BC CALC® software.

| Joist Depth [in] | Joist Series | Roof Truss Span [ft] | Roof Total Load [psf] | | | | | | | | | | |
|------------------|--------------|----------------------|-----------------------|------|----|----|------|----|----|------|----|----|----|
| | | | 35 | | | 45 | | | 55 | | | | |
| | | | Joist Spacing [in] | | | | | | | | | | |
| | | | 16 | 19.2 | 24 | 16 | 19.2 | 24 | 16 | 19.2 | 24 | | |
| 14" | 5000 | 1.7 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | |
| | | | 26 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | 0 | WS |
| | | | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | 1 |
| | | | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS |
| | | | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS |
| | | | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS |
| | 36 | 0 | 0 | WS | 0 | 0 | 1 | 0 | WS | X | | | |
| | 38 | 0 | 0 | WS | 0 | 0 | WS | X | 0 | 1 | X | | |
| | 40 | 0 | 0 | WS | 0 | WS | X | WS | X | WS | X | | |
| | 6000 | 1.7 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | |
| | | | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | |
| | | | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS |
| 30 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | 1 | |
| 32 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | 0 | |
| 34 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS | |
| 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS | | | |
| 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | WS | | | |
| 40 | 0 | 0 | WS | 0 | 0 | 1 | 0 | 1 | 0 | 1 | X | | |
| 6500 | 1.8 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | | |
| | | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | |
| | | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | 0 | |
| | | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | 0 | |
| | | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | X | |
| | | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS | |
| 36 | 0 | 0 | WS | 0 | 0 | WS | 0 | WS | 0 | WS | | | |
| 38 | 0 | 0 | WS | 0 | 0 | 1 | 0 | WS | 0 | WS | | | |
| 40 | 0 | 0 | WS | 0 | 0 | X | 0 | 1 | 0 | 1 | X | | |
| 60 | 2.0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | |
| | | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | |
| | | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | |
| | | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | 0 | |
| | | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | 0 | |
| | | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | 0 | |
| 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS | | | |
| 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | WS | | | |
| 40 | 0 | 0 | WS | 0 | 0 | 1 | 0 | 1 | 0 | 1 | X | | |
| 90 | 2.0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | |
| 16" | 6000 | 1.7 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | |
| | | | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS |
| | | | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS |
| | | | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS |
| | | | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS |
| | | | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS |
| | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS | | |
| | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS | | |
| | 40 | 0 | 0 | WS | 0 | 0 | WS | 0 | WS | 0 | WS | | |
| | 6500 | 1.8 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS |
| | | | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS |
| | | | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS |
| 30 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS | |
| 32 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS | |
| 34 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS | |
| 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS | | | |
| 38 | 0 | 0 | WS | 0 | 0 | WS | 0 | WS | 0 | WS | | | |
| 40 | 0 | 0 | WS | 0 | 0 | WS | 0 | WS | 0 | WS | | | |
| 60 | 2.0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | |
| | | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | |
| | | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | |
| | | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS | |
| | | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS | |
| | | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS | |
| 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS | | | |
| 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | 0 | WS | | | |
| 40 | 0 | 0 | WS | 0 | 0 | WS | 0 | WS | 0 | WS | | | |
| 90 | 2.0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | WS | | |

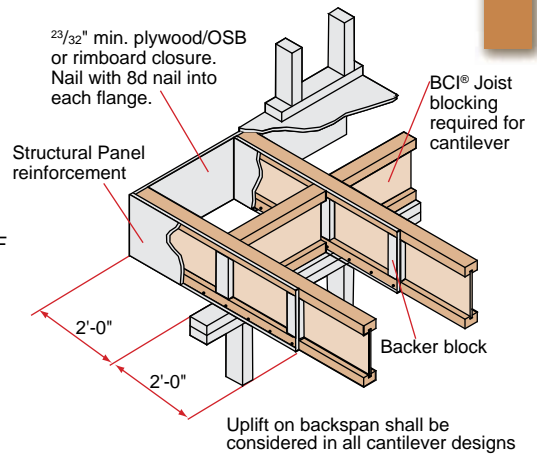
Reinforced Load Bearing Cantilever Detail



The tables and details on pages 8 and 9 indicate the type of reinforcements, if any, that are required for load-bearing cantilevers up to a maximum length of 2'-0". Cantilevers longer than 2'-0" cannot be reinforced. However, longer cantilevers with lower loads may be allowable without reinforcement. Analyze specific applications with the BC CALC® software.

PLYWOOD / OSB REINFORCEMENT (If Required per Table on page 8)

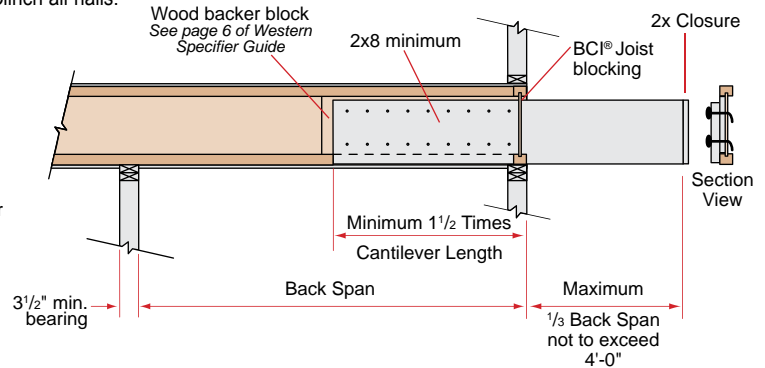
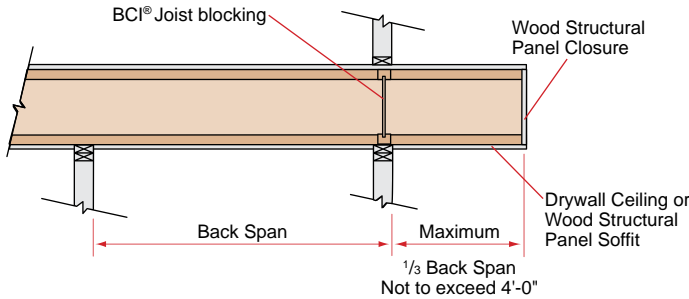
- 23/32" Min. x 48" long plywood / OSB rated sheathing must match the full depth of the BCI® Joist. Nail to the BCI® Joist with 8d nails at 6" o.c. and nail with 4-8d nails into backer block. When reinforcing both sides, stagger nails to limit splitting. Install with horizontal face grain.
- These requirements assume a 100 PLF wall load and apply to BCI® 5000 1.7, 6000 1.7, 6500 1.8, 60 2.0 and 90 2.0 series joists. Additional support may be required for other loadings. See BC CALC® software.
- Contact Boise EWP Engineering for reinforcement requirements on BCI® Joist depths greater than 16".



Non-Load Bearing Wall Cantilever Details

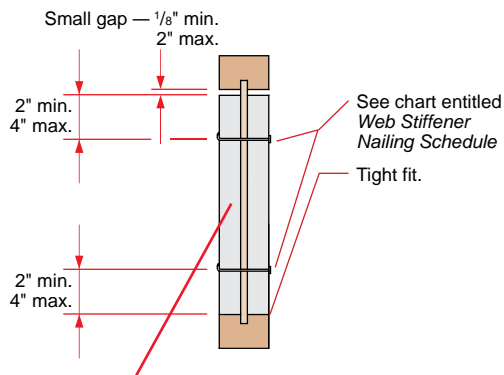
BCI® Joists are intended only for applications that provide permanent protection from the weather.

Fasten the 2x8 minimum to the BCI® Joist by nailing through the backer block and joist web with 2 rows of 10d nails at 6" on center. Use 16d nails with BCI® 90 2.0 joists. Clinch all nails.



- These details apply to cantilevers with uniform loads only.
- It may be possible to exceed the limitations of these details by analyzing a specific application with the BC CALC® software.

Web Stiffener Requirements



| Structural Panel Web Stiffener | | | |
|--------------------------------|-----------------------|-----------|---------------|
| Series | Minimum Thickness | | Minimum Width |
| | In Hanger | No Hanger | |
| 5000 1.7 | 3/4" | 5/8" | 2 5/16" |
| 6000 1.7 | 7/8" | 3/4" | 2 5/16" |
| 6500 1.8 | 1" | 3/4" | 2 5/16" |
| 60 2.0 | 7/8" | 3/4" | 2 5/16" |
| 90 2.0 | 2x4 lumber (vertical) | | |

NOTES

- Web stiffeners are optional except as noted below.
- Web stiffeners are always required for all 18" and 20" BCI Joists at all bearing locations.
- Web stiffeners are always required in hangers that do not extend up to support the top flange of the BCI® Joist. Web stiffeners may be required with certain sloped or skewed hangers or to achieve uplift values. Refer to the hanger manufacturer's installation requirements.
- Web stiffeners are always required in certain roof applications. See *Roof Framing Details* on page 14.
- Web stiffeners are always required under concentrated loads that exceed 1000 pounds. Install the web stiffeners snug to the top flange in this situation. Follow the nailing schedule for intermediate bearings.
- Web stiffeners may be used to increase allowable reaction values. See *BCI® Design Properties* on page 24 or the BC CALC® software.

| Web Stiffener Nailing Schedule | | | |
|--------------------------------|-------------|------------------|--------------|
| BCI® Joist Series | Joist Depth | Bearing Location | |
| | | End | Intermediate |
| 5000 1.7 | 9 1/2" | 2-8d | 2-8d |
| | 11 7/8" | 2-8d | 3-8d |
| | 14" | 2-8d | 5-8d |
| 6000 1.7 | 9 1/2" | 2-8d | 2-8d |
| | 11 7/8" | 2-8d | 3-8d |
| | 14" | 2-8d | 5-8d |
| 6500 1.8 | 9 1/2" | 2-8d | 2-8d |
| | 11 7/8" | 2-8d | 3-8d |
| | 14" | 2-8d | 5-8d |
| 60 2.0 | 11 7/8" | 2-8d | 3-8d |
| | 14" | 2-8d | 5-8d |
| | 16" | 2-8d | 6-8d |
| 90 2.0 | 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 |

Floor Load Tables

Allowable Uniform Floor Load (in pounds per lineal foot [PLF])

100% Load Duration

| Span Length | BCI® 5000 1.7 Series 2" Flange Width | | | | | | BCI® 6000 1.7 Series 2 ⁵ / ₁₆ " Flange Width | | | | | | | |
|-------------|---|------------|--|------------|-------------------------|------------|---|------------|--|------------|-------------------------|------------|-------------------------|------------|
| | 9 ¹ / ₂ " BCI® 5000 1.7 | | 11 ⁷ / ₈ " BCI® 5000 1.7 | | 14" BCI® 5000 1.7 | | 9 ¹ / ₂ " BCI® 6000 1.7 | | 11 ⁷ / ₈ " BCI® 6000 1.7 | | 14" BCI® 6000 1.7 | | 16" BCI® 6000 1.7 | |
| | Live Load | Total Load | Live Load | Total Load | Live Load | Total Load | Live Load | Total Load | Live Load | Total Load | Live Load | Total Load | Live Load | Total Load |
| 6 | - | 280 | - | 300 | - | 313 | - | 320 | - | 333 | - | 346 | - | 353 |
| 7 | - | 240 | - | 257 | - | 268 | - | 274 | - | 285 | - | 297 | - | 302 |
| 8 | - | 210 | - | 225 | - | 235 | - | 240 | - | 250 | - | 260 | - | 265 |
| 9 | - | 186 | - | 200 | - | 208 | - | 213 | - | 222 | - | 231 | - | 235 |
| 10 | 151 | 168 | - | 180 | - | 188 | 167 | 192 | - | 200 | - | 208 | - | 212 |
| 11 | 117 | 152 | - | 163 | - | 170 | 129 | 174 | - | 181 | - | 189 | - | 192 |
| 12 | 91 | 136 | 146 | 150 | - | 156 | 102 | 159 | 165 | 166 | - | 173 | - | 176 |
| 13 | 73 | 116 | 117 | 138 | - | 144 | 81 | 135 | 132 | 153 | - | 160 | - | 163 |
| 14 | 59 | 100 | 95 | 128 | - | 134 | 66 | 116 | 108 | 142 | - | 148 | - | 151 |
| 15 | 48 | 87 | 78 | 112 | 115 | 125 | 54 | 101 | 89 | 130 | 129 | 138 | - | 141 |
| 16 | 40 | 76 | 65 | 98 | 96 | 116 | 45 | 89 | 74 | 114 | 108 | 130 | - | 132 |
| 17 | | | 55 | 87 | 80 | 103 | | | 63 | 101 | 91 | 120 | 121 | 124 |
| 18 | | | 47 | 77 | 68 | 92 | | | 53 | 90 | 77 | 107 | 103 | 117 |
| 19 | | | 40 | 69 | 58 | 82 | | | 45 | 81 | 66 | 96 | 89 | 110 |
| 20 | | | | | 50 | 74 | | | | | 57 | 87 | 77 | 99 |
| 21 | | | | | 44 | 67 | | | | | 50 | 78 | 67 | 90 |
| 22 | | | | | | | | | | | 43 | 71 | 58 | 82 |

- Total Load values are limited by shear, moment, or deflection equal to L/240.
- Live Load values are limited by deflection equal to L/480. For deflection limits of L/360 and L/960, multiply the Live Load values by 1.33 and 0.50 respectively.
- Both the Total Load and Live Load columns must be checked. Where a Live Load value is not shown, the Total Load value will control.
- Table values apply to either simple or multiple span joists. Span is measured center to center of the minimum required bearing length. Analyze multiple span joists with the BC CALC® software if the length of any span is less than half the length of an adjacent span.
- Table values do not consider composite action from gluing and nailing floor sheathing (composite action is considered in floor span tables on page 4).
- Total Load values assume minimum bearing lengths without web stiffeners for joist depths of 16 inches and less. 18 and 20 inch joists require web stiffeners.
- For assistance with floor design, consult the section *About Floor Performance* on page 4.
- This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® software.

Allowable Uniform Floor Load (in pounds per lineal foot [PLF])

100% Load Duration

| Span Length | BCI® 6500 1.8 Series 2 ⁹ / ₁₆ " Flange Width | | | | | | | | BCI® 60 2.0 Series 2 ⁵ / ₁₆ " Flange Width | | | | | |
|-------------|---|------------|--|------------|-------------------------|------------|-------------------------|------------|---|------------|-----------------------|------------|-----------------------|------------|
| | 9 ¹ / ₂ " BCI® 6500 1.8 | | 11 ⁷ / ₈ " BCI® 6500 1.8 | | 14" BCI® 6500 1.8 | | 16" BCI® 6500 1.8 | | 11 ⁷ / ₈ " BCI® 60 2.0 | | 14" BCI® 60 2.0 | | 16" BCI® 60 2.0 | |
| | Live Load | Total Load | Live Load | Total Load | Live Load | Total Load | Live Load | Total Load | Live Load | Total Load | Live Load | Total Load | Live Load | Total Load |
| 6 | - | 320 | - | 333 | - | 346 | - | 353 | - | 366 | - | 366 | - | 366 |
| 7 | - | 274 | - | 285 | - | 297 | - | 302 | - | 314 | - | 314 | - | 314 |
| 8 | - | 240 | - | 250 | - | 260 | - | 265 | - | 275 | - | 275 | - | 275 |
| 9 | - | 213 | - | 222 | - | 231 | - | 235 | - | 244 | - | 244 | - | 244 |
| 10 | 190 | 192 | - | 200 | - | 208 | - | 212 | - | 220 | - | 220 | - | 220 |
| 11 | 147 | 174 | - | 181 | - | 189 | - | 192 | - | 200 | - | 200 | - | 200 |
| 12 | 116 | 160 | - | 166 | - | 173 | - | 176 | - | 183 | - | 183 | - | 183 |
| 13 | 93 | 147 | 152 | 153 | - | 160 | - | 163 | - | 169 | - | 169 | - | 169 |
| 14 | 76 | 137 | 124 | 142 | - | 148 | - | 151 | 149 | 157 | - | 157 | - | 157 |
| 15 | 62 | 124 | 103 | 133 | - | 138 | - | 141 | 123 | 146 | - | 146 | - | 146 |
| 16 | 52 | 104 | 85 | 125 | 123 | 130 | - | 132 | 103 | 137 | - | 137 | - | 137 |
| 17 | 44 | 88 | 72 | 117 | 104 | 122 | - | 124 | 87 | 129 | 125 | 129 | - | 129 |
| 18 | | | 61 | 110 | 88 | 115 | 117 | 117 | 74 | 122 | 106 | 122 | - | 122 |
| 19 | | | 52 | 99 | 76 | 109 | 101 | 111 | 63 | 115 | 92 | 115 | - | 115 |
| 20 | | | 45 | 89 | 65 | 104 | 87 | 106 | 55 | 110 | 79 | 110 | 105 | 110 |
| 21 | | | | | 57 | 96 | 76 | 100 | 48 | 96 | 69 | 104 | 92 | 104 |
| 22 | | | | | 50 | 88 | 66 | 96 | 42 | 84 | 60 | 100 | 81 | 100 |
| 23 | | | | | 44 | 80 | 58 | 92 | | | 53 | 95 | 71 | 95 |
| 24 | | | | | | | 52 | 84 | | | 47 | 91 | 63 | 91 |
| 25 | | | | | | | 46 | 77 | | | 42 | 84 | 56 | 88 |
| 26 | | | | | | | 41 | 72 | | | | | 50 | 84 |
| 27 | | | | | | | | | | | | | 45 | 81 |
| 28 | | | | | | | | | | | | | 40 | 78 |
| 29 | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | |



Floor Load Tables

Allowable Uniform Floor Load (in pounds per lineal foot [PLF])

100% Load Duration

| Span Length | BCI® 90 2.0 Series 3 1/2" Flange Width | | | | | | | | | |
|-------------|---|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|
| | 11 7/8" BCI® 90 2.0 | | 14" BCI® 90 2.0 | | 16" BCI® 90 2.0 | | 18" BCI® 90 2.0 | | 20" BCI® 90 2.0 | |
| | Live Load | Total Load | Live Load | Total Load | Live Load | Total Load | Live Load | Total Load | Live Load | Total Load |
| 6 | - | 450 | - | 453 | - | 456 | - | 553 | - | 573 |
| 7 | - | 385 | - | 388 | - | 391 | - | 474 | - | 491 |
| 8 | - | 337 | - | 340 | - | 342 | - | 415 | - | 430 |
| 9 | - | 300 | - | 302 | - | 304 | - | 368 | - | 382 |
| 10 | - | 270 | - | 272 | - | 274 | - | 332 | - | 344 |
| 11 | - | 245 | - | 247 | - | 249 | - | 301 | - | 312 |
| 12 | - | 225 | - | 226 | - | 228 | - | 276 | - | 286 |
| 13 | - | 207 | - | 209 | - | 210 | - | 255 | - | 264 |
| 14 | - | 192 | - | 194 | - | 195 | - | 237 | - | 245 |
| 15 | 174 | 180 | - | 181 | - | 182 | - | 221 | - | 229 |
| 16 | 146 | 168 | - | 170 | - | 171 | - | 207 | - | 215 |
| 17 | 124 | 158 | - | 160 | - | 161 | - | 195 | - | 202 |
| 18 | 106 | 150 | 150 | 151 | - | 152 | - | 184 | - | 191 |
| 19 | 91 | 142 | 129 | 143 | - | 144 | - | 174 | - | 181 |
| 20 | 79 | 135 | 112 | 136 | - | 137 | - | 166 | - | 172 |
| 21 | 69 | 128 | 98 | 129 | - | 130 | - | 158 | - | 163 |
| 22 | 61 | 122 | 86 | 123 | 115 | 124 | 146 | 150 | - | 156 |
| 23 | 53 | 107 | 76 | 118 | 101 | 119 | 129 | 144 | - | 149 |
| 24 | 47 | 95 | 68 | 113 | 90 | 114 | 115 | 138 | - | 143 |
| 25 | 42 | 85 | 60 | 108 | 80 | 109 | 103 | 132 | 128 | 137 |
| 26 | | | 54 | 104 | 72 | 105 | 92 | 127 | 115 | 132 |
| 27 | | | 48 | 97 | 65 | 101 | 83 | 122 | 104 | 127 |
| 28 | | | 44 | 88 | 58 | 97 | 75 | 118 | 94 | 122 |
| 29 | | | | | 53 | 94 | 68 | 114 | 85 | 118 |
| 30 | | | | | 48 | 91 | 62 | 110 | 77 | 114 |

- Total Load values are limited by shear, moment, or deflection equal to L/240.
- Live Load values are limited by deflection equal to L/480. For deflection limits of L/360 and L/960, multiply the Live Load values by 1.33 and 0.50 respectively.
- Both the Total Load and Live Load columns must be checked. Where a Live Load value is not shown, the Total Load value will control.
- Table values apply to either simple or multiple span joists. Span is measured center to center of the minimum required bearing length. Analyze multiple span joists with the BC CALC® software if the length of any span is less than half the length of an adjacent span.
- Table values do not consider composite action from gluing and nailing floor sheathing (composite action is considered in floor span tables on page 4).
- Total Load values assume minimum bearing lengths without web stiffeners for joist depths of 16 inches and less. 18 and 20 inch joists require web stiffeners.
- For assistance with floor design, consult the section *About Floor Performance* on page 4.
- This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® software.