



by Weyerhaeuser

MAXIMUM ALLOWABLE TJI® JOIST SPANS WITH TOP FLANGE NOTCHES

iLevel recommends avoiding cutting or notching TJI® joist flanges whenever possible to ensure optimum performance. However, the tables located on pages 2 and 3 show the maximum allowable notched TJI® joist span based on: notch depth, distance from support to the notch, TJI® joist series and on-center spacing. The tables assume typical residential floor framing situations and 40 PSF LL & 10 PSF DL. The notch must be in the **side of the top flange** with the location measured from the end of the joist to the center of the notch. The tables **do not apply** to notches cut across the top flange, notches within 3' of an intermediate support (multi-span joist), bottom flange notches or multiple notches in a single joist span.

For many of the joist/notch conditions, two spans are listed in the tables. Spans shown without shading are the maximum allowable spans for the joist/notch condition being checked, with no repair required. Any **SPANS THAT ARE SHADED INDICATE THAT A REPAIR IS REQUIRED**: to achieve the shaded span listed, the TJI® joist repair must follow one of the two repair options shown below. The tables on page 2 and 3, as well as the repair options shown below, have been evaluated and designed specifically for use with TJI® joists.

A reference diagram for allowable notch location is show below in Figure A. Allowable notch dimensions are shown in Figure B. If all of the criteria described on these pages are met, the tables on pages 2 and 3 may be used to determine the maximum allowable span for notched TJI® joists.

X: DISTANCE FROM END OF JOIST TO CENTER OF NOTCH

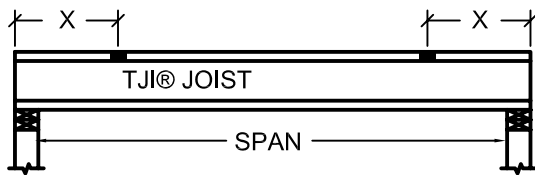


FIGURE A: ALLOWABLE NOTCH LOCATION

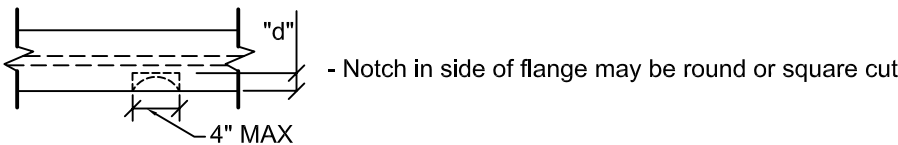
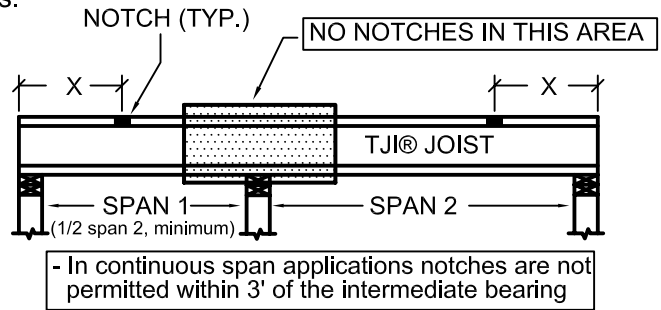
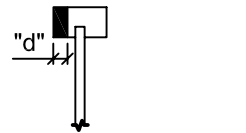


FIGURE B: ALLOWABLE NOTCH DIMENSIONS (top view of joist flange)

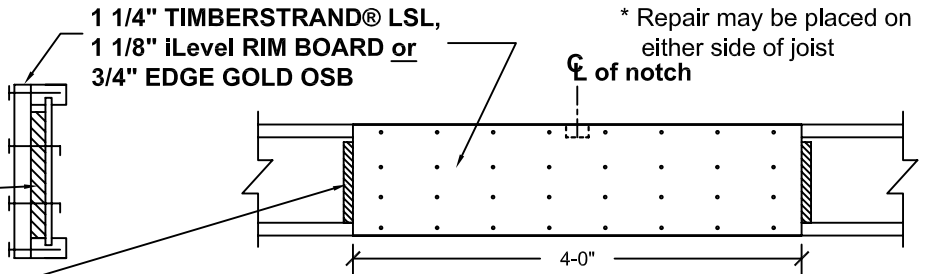


(section view of joist flange)

REPAIR OPTION 1:

FASTENING SCHEDULE:
4 rows of 10d nails @ 4" o.c.
(8d nails with OSB)
Maintain 4" minimum edge distance
Clinch as necessary

CONTINUOUS WEB BACKER:
5/8" thick for TJI® 110
7/8" thick for TJI® 210
1" thick for TJI® 230, 360
1 1/2" thick for TJI® 560

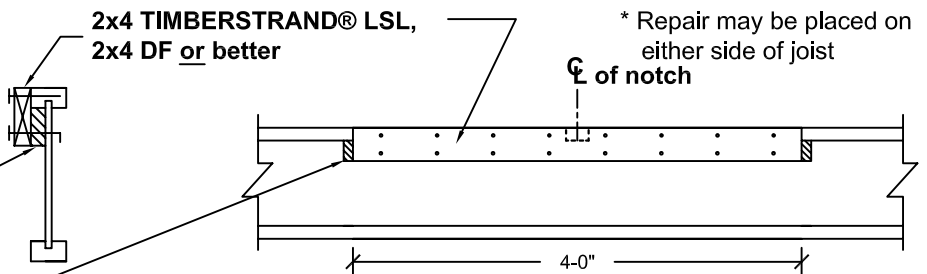


**CENTER REPAIR AT FLANGE NOTCH LOCATION
USE CONSTRUCTION ADHESIVE ON ALL CONTACT SURFACES**

REPAIR OPTION 2:

FASTENING SCHEDULE:
2 rows of 8d nails @ 4" o.c.
Maintain 4" minimum edge distance
Clinch as necessary

CONTINUOUS WEB BACKER:
5/8" thick for TJI® 110
7/8" thick for TJI® 210
1" thick for TJI® 230, 360
1 1/2" thick for TJI® 560



**CENTER REPAIR AT FLANGE NOTCH LOCATION
USE CONSTRUCTION ADHESIVE ON ALL CONTACT SURFACES**

Joist Series	Joist Depth	Notch Depth "d"	o.c. Spacing	Distance "x" to Notch From End of Joist									
				x ≤ 3'		3' < x ≤ 4'		4' < x ≤ 5'		5' < x ≤ 6'		6' < x ≤ 7'	
TJI® 110	9½"	d ≤ ¼"	16" max 24" max	16'-6" (shaded) 13'-6" (shaded)	16'-0" (shaded) 11'-9" (shaded)	13'-3" (shaded)	11'-3" (shaded) 13'-0" (shaded)	14'-6" (shaded) 13'-0" (shaded)	16'-0" (shaded) 12'-9" (shaded)	13'-9" (shaded) 12'-9" (shaded)	16'-0" (shaded) 12'-9" (shaded)	- (shaded) -	15'-9" (shaded) -
		¼" < d ≤ ⅝"	16" max 24" max	15'-3" (shaded) 11'-0" (shaded)	16'-0" (shaded) 13'-3" (shaded)	13'-3" (shaded) 10'-0" (shaded)	16'-0" (shaded) 13'-3" (shaded)	12'-3" (shaded) -	16'-0" (shaded) 12'-3" (shaded)	12'-0" (shaded) -	15'-3" (shaded) 12'-0" (shaded)	- (shaded) -	14'-9" (shaded) -
	11⅞"	d ≤ ¼"	16" max 24" max	18'-6" (shaded) 15'-0" (shaded)	18'-6" (shaded) 14'-0" (shaded)	15'-0" (shaded)	13'-0" (shaded) 15'-0" (shaded)	17'-3" (shaded) 13'-0" (shaded)	18'-6" (shaded) 15'-0" (shaded)	16'-0" (shaded) 12'-6" (shaded)	18'-6" (shaded) 14'-6" (shaded)	15'-6" (shaded) -	18'-0" (shaded) 14'-3" (shaded)
		¼" < d ≤ ⅝"	16" max 24" max	18'-6" (shaded) 13'-6" (shaded)	15'-9" (shaded) 11'-9" (shaded)	18'-6" (shaded) 15'-0" (shaded)	14'-3" (shaded) 11'-0" (shaded)	18'-6" (shaded) 14'-3" (shaded)	13'-9" (shaded) -	17'-9" (shaded) 13'-9" (shaded)	- (shaded) -	17'-0" (shaded) -	17'-0" (shaded) -
	14"	d ≤ ¼"	16" max 24" max	20'-3" (shaded) 16'-6" (shaded)	20'-3" (shaded) 16'-0" (shaded)	16'-6" (shaded)	14'-6" (shaded) 16'-6" (shaded)	19'-6" (shaded) 14'-6" (shaded)	20'-3" (shaded) 16'-6" (shaded)	18'-0" (shaded) 13'-9" (shaded)	20'-3" (shaded) 16'-3" (shaded)	17'-3" (shaded) -	20'-3" (shaded) 15'-9" (shaded)
		¼" < d ≤ ⅝"	16" max 24" max	20'-3" (shaded) 15'-3" (shaded)	18'-0" (shaded) 16'-6" (shaded)	20'-3" (shaded) 16'-6" (shaded)	16'-0" (shaded) 12'-3" (shaded)	20'-3" (shaded) 16'-0" (shaded)	15'-0" (shaded) 12'-0" (shaded)	20'-0" (shaded) 15'-3" (shaded)	14'-9" (shaded) -	19'-0" (shaded) -	19'-0" (shaded) 14'-9" (shaded)

SHADED SPANS: iLevel specified joist repair is required for all spans that are shaded. See page 1 of 3 for specific details.

Joist Series	Joist Depth	Notch Depth "d"	o.c. Spacing	Distance "x" to Notch From End of Joist									
				x ≤ 4'		4' < x ≤ 5'		5' < x ≤ 6'		6' < x ≤ 7'		7' < x ≤ 8'	
TJI® 210	9½"	d ≤ ½"	16" max 24" max	17'-0" (shaded) 12'-6" (shaded)	14'-9" (shaded)	15'-6" (shaded) 11'-9" (shaded)	17'-0" (shaded) 14'-6" (shaded)	14'-6" (shaded) -	17'-0" (shaded) 13'-9" (shaded)	14'-3" (shaded) -	17'-0" (shaded) -	- (shaded) -	16'-9" (shaded) -
		½" < d ≤ ¾"	16" max 24" max	15'-0" (shaded) 11'-3" (shaded)	17'-0" (shaded) 14'-9" (shaded)	13'-9" (shaded) 10'-6" (shaded)	17'-0" (shaded) 13'-9" (shaded)	13'-3" (shaded) -	17'-0" (shaded) 13'-3" (shaded)	- (shaded) -	16'-6" (shaded) -	- (shaded) -	16'-3" (shaded) -
	11⅞"	d ≤ ½"	16" max 24" max	20'-3" (shaded) 15'-0" (shaded)	16'-3" (shaded)	18'-3" (shaded) 13'-9" (shaded)	20'-3" (shaded) 16'-3" (shaded)	17'-0" (shaded) 13'-3" (shaded)	20'-3" (shaded) 16'-0" (shaded)	16'-6" (shaded) -	20'-0" (shaded) 15'-6" (shaded)	16'-3" (shaded) -	19'-3" (shaded) -
		½" < d ≤ ¾"	16" max 24" max	18'-0" (shaded) 13'-3" (shaded)	20'-3" (shaded) 16'-3" (shaded)	16'-0" (shaded) 12'-3" (shaded)	20'-3" (shaded) 16'-3" (shaded)	15'-3" (shaded) 12'-0" (shaded)	20'-3" (shaded) 15'-3" (shaded)	14'-9" (shaded) -	19'-0" (shaded) 14'-9" (shaded)	- (shaded) -	18'-6" (shaded) -
	14"	d ≤ ½"	16" max 24" max	22'-3" (shaded) 17'-3" (shaded)	17'-9" (shaded)	21'-0" (shaded) 15'-6" (shaded)	22'-3" (shaded) 17'-9" (shaded)	19'-3" (shaded) 14'-6" (shaded)	22'-3" (shaded) 17'-9" (shaded)	18'-3" (shaded) 14'-3" (shaded)	22'-3" (shaded) 17'-0" (shaded)	17'-9" (shaded) -	21'-6" (shaded) 16'-9" (shaded)
		½" < d ≤ ¾"	16" max 24" max	20'-9" (shaded) 15'-0" (shaded)	22'-3" (shaded) 17'-9" (shaded)	18'-3" (shaded) 13'-9" (shaded)	22'-3" (shaded) 17'-9" (shaded)	17'-0" (shaded) 13'-3" (shaded)	22'-3" (shaded) 17'-0" (shaded)	16'-3" (shaded) -	21'-3" (shaded) 16'-6" (shaded)	16'-0" (shaded) -	20'-6" (shaded) 16'-3" (shaded)
16"	d ≤ ½"	16" max 24" max	23'-6" (shaded) 19'-0" (shaded)	23'-3" (shaded) 17'-0" (shaded)	23'-6" (shaded) 19'-0" (shaded)	21'-0" (shaded) 16'-0" (shaded)	23'-6" (shaded) 19'-0" (shaded)	19'-9" (shaded) 15'-6" (shaded)	23'-6" (shaded) 18'-6" (shaded)	19'-3" (shaded) -	23'-6" (shaded) 18'-0" (shaded)	19'-3" (shaded) -	23'-6" (shaded) 18'-0" (shaded)
	½" < d ≤ ¾"	16" max 24" max	23'-3" (shaded) 16'-6" (shaded)	23'-6" (shaded) 19'-0" (shaded)	20'-3" (shaded) 15'-0" (shaded)	23'-6" (shaded) 19'-0" (shaded)	18'-6" (shaded) 14'-3" (shaded)	23'-6" (shaded) 18'-9" (shaded)	17'-9" (shaded) 14'-0" (shaded)	23'-6" (shaded) 17'-9" (shaded)	17'-3" (shaded) -	22'-6" (shaded) 17'-6" (shaded)	

SHADED SPANS: iLevel specified joist repair is required for all spans that are shaded. See page 1 of 3 for specific details.

Joist Series	Joist Depth	Notch Depth "d"	o.c. Spacing	Distance "x" to Notch From End of Joist										
				x ≤ 4'		4' < x ≤ 5'		5' < x ≤ 6'		6' < x ≤ 7'		7' < x ≤ 8'		
TJI® 230	9½"	d ≤ ½"	16" max 24" max	17'-6" (shaded) 14'-0" (shaded)	15'-6" (shaded)	17'-0" (shaded) 12'-9" (shaded)	17'-6" (shaded) 15'-6" (shaded)	16'-0" (shaded) 12'-6" (shaded)	17'-6" (shaded) 14'-9" (shaded)	15'-6" (shaded) -	17'-6" (shaded) 14'-6" (shaded)	- (shaded) -	17'-6" (shaded) -	
		½" < d ≤ ⅞"	16" max 24" max	16'-0" (shaded) 11'-9" (shaded)	17'-6" (shaded) 15'-6" (shaded)	14'-6" (shaded) 11'-3" (shaded)	17'-6" (shaded) 14'-9" (shaded)	13'-9" (shaded) -	17'-6" (shaded) 14'-0" (shaded)	- (shaded) -	17'-6" (shaded) -	- (shaded) -	17'-0" (shaded) -	
	11⅞"	d ≤ ½"	16" max 24" max	21'-0" (shaded) 16'-9" (shaded)	17'-6" (shaded)	20'-6" (shaded) 15'-0" (shaded)	21'-0" (shaded) 17'-6" (shaded)	18'-9" (shaded) 14'-3" (shaded)	21'-0" (shaded) 17'-3" (shaded)	17'-9" (shaded) 14'-0" (shaded)	21'-0" (shaded) 16'-6" (shaded)	17'-6" (shaded) -	20'-9" (shaded) 16'-3" (shaded)	
		½" < d ≤ ⅞"	16" max 24" max	19'-3" (shaded) 14'-0" (shaded)	21'-0" (shaded) 17'-6" (shaded)	17'-0" (shaded) 13'-0" (shaded)	21'-0" (shaded) 17'-6" (shaded)	16'-0" (shaded) 12'-6" (shaded)	21'-0" (shaded) 16'-3" (shaded)	15'-6" (shaded) -	20'-3" (shaded) 15'-9" (shaded)	- (shaded) -	19'-6" (shaded) -	
	14"	d ≤ ½"	16" max 24" max	23'-6" (shaded) 18'-9" (shaded)	23'-3" (shaded) 17'-0" (shaded)	23'-6" (shaded) 18'-9" (shaded)	21'-3" (shaded) 16'-0" (shaded)	23'-6" (shaded) 18'-9" (shaded)	20'-0" (shaded) 15'-6" (shaded)	23'-6" (shaded) 18'-6" (shaded)	19'-3" (shaded) -	23'-3" (shaded) 18'-0" (shaded)	19'-3" (shaded) -	23'-3" (shaded) 18'-0" (shaded)
		½" < d ≤ ⅞"	16" max 24" max	22'-0" (shaded) 16'-0" (shaded)	23'-6" (shaded) 18'-9" (shaded)	19'-6" (shaded) 14'-6" (shaded)	23'-6" (shaded) 18'-9" (shaded)	18'-0" (shaded) 13'-9" (shaded)	23'-6" (shaded) 18'-3" (shaded)	17'-3" (shaded) -	22'-9" (shaded) 17'-6" (shaded)	16'-9" (shaded) -	21'-9" (shaded) 17'-0" (shaded)	
16"	d ≤ ½"	16" max 24" max	25'-0" (shaded) 20'-0" (shaded)	25'-0" (shaded) 18'-9" (shaded)	25'-0" (shaded) 20'-0" (shaded)	23'-6" (shaded) 17'-6" (shaded)	25'-0" (shaded) 20'-0" (shaded)	22'-0" (shaded) 16'-9" (shaded)	25'-0" (shaded) 20'-0" (shaded)	21'-0" (shaded) 16'-6" (shaded)	25'-0" (shaded) 19'-6" (shaded)	21'-0" (shaded) 16'-6" (shaded)	25'-0" (shaded) 19'-6" (shaded)	
	½" < d ≤ ⅞"	16" max 24" max	24'-9" (shaded) 17'-9" (shaded)	25'-0" (shaded) 20'-0" (shaded)	21'-6" (shaded) 15'-9" (shaded)	25'-0" (shaded) 20'-0" (shaded)	19'-9" (shaded) 15'-0" (shaded)	25'-0" (shaded) 20'-0" (shaded)	18'-9" (shaded) 14'-6" (shaded)	25'-0" (shaded) 19'-0" (shaded)	18'-3" (shaded) -	24'-0" (shaded) 18'-6" (shaded)		

SHADED SPANS: iLevel specified joist repair is required for all spans that are shaded. See page 1 of 3 for specific details.

- Spans shown without shading are the maximum allowable spans for the joist/notch condition with no repair required.
- Information on this page only to be used with repairs and methodology shown on page 1 of 3.
- See Page 3 of 3 for notches falling outside the scope of this document.
- Do not use these tables to size joists or verify joist spans.

Joist Series	Joist Depth	Notch Depth "d"	o.c. Spacing	Distance "x" to Notch From End of Joist													
				x ≤ 6'		6' < x ≤ 7'		7' < x ≤ 8'		8' < x ≤ 9'		9' < x ≤ 10'					
TJI® 360	11 7/8"	d ≤ 1/2"	16" max 24" max	22'-9"	19'-0"	19'-9"	22'-9"	18'-3"	19'-9"	22'-9"	17'-9"	19'-9"	22'-0"	22'-9"	21'-9"	22'-9"	
		1/2" < d ≤ 7/8"	16" max 24" max	21'-9"	22'-9"	20'-3"	22'-9"	19'-6"	22'-9"	19'-3"	22'-9"	19'-3"	22'-9"	19'-6"	19'-9"	-	-
	14"	d ≤ 1/2"	16" max 24" max	26'-0"	21'-0"	26'-0"	20'-3"	21'-0"	25'-9"	26'-0"	24'-9"	26'-0"	24'-9"	26'-0"	24'-0"	26'-0"	26'-0"
		1/2" < d ≤ 7/8"	16" max 24" max	24'-9"	26'-0"	23'-0"	26'-0"	21'-9"	26'-0"	21'-3"	26'-0"	21'-3"	26'-0"	21'-0"	26'-0"	21'-0"	26'-0"
	16"	d ≤ 1/2"	16" max 24" max	28'-9"	21'-0"	28'-9"	21'-0"	28'-3"	28'-9"	27'-0"	28'-9"	27'-0"	28'-9"	26'-3"	28'-9"	26'-3"	28'-9"
		1/2" < d ≤ 7/8"	16" max 24" max	27'-6"	28'-9"	25'-3"	28'-9"	24'-0"	28'-9"	23'-3"	28'-9"	23'-3"	28'-9"	22'-9"	28'-9"	22'-9"	28'-9"

SHADED SPANS: iLevel specified joist repair is required for all spans that are shaded. See page 1 of 3 for specific details.

Joist Series	Joist Depth	Notch Depth "d"	o.c. Spacing	Distance "x" to Notch From End of Joist													
				x ≤ 8'		8' < x ≤ 9'		9' < x ≤ 10'		10' < x ≤ 11'		11' < x ≤ 12'					
TJI® 560	11 7/8"	d ≤ 3/4"	16" max 24" max	26'-0"	22'-9"	26'-0"	22'-6"	22'-9"	22'-0"	22'-9"	22'-0"	22'-9"	26'-0"	-	-		
		3/4" < d ≤ 1 3/8"	16" max 24" max	25'-9"	26'-0"	19'-9"	22'-9"	24'-9"	26'-0"	19'-3"	22'-9"	24'-0"	26'-0"	23'-9"	26'-0"	-	26'-0"
	14"	d ≤ 3/4"	16" max 24" max	29'-6"	24'-9"	29'-6"	24'-9"	29'-6"	24'-9"	29'-6"	24'-9"	29'-6"	24'-9"	29'-6"	24'-0"	24'-9"	24'-9"
		3/4" < d ≤ 1 3/8"	16" max 24" max	29'-0"	24'-9"	29'-0"	24'-9"	27'-9"	29'-6"	21'-3"	24'-9"	26'-9"	29'-6"	26'-3"	29'-6"	26'-0"	29'-6"
	16"	d ≤ 3/4"	16" max 24" max	32'-6"	24'-9"	32'-6"	24'-9"	32'-6"	24'-9"	32'-6"	24'-9"	32'-6"	24'-9"	32'-6"	24'-9"	32'-6"	24'-9"
		3/4" < d ≤ 1 3/8"	16" max 24" max	32'-3"	24'-9"	32'-3"	24'-9"	30'-6"	32'-6"	23'-3"	24'-9"	29'-3"	32'-6"	28'-6"	32'-6"	28'-0"	32'-6"

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- Spans shown without shading are the maximum allowable spans for the joist/notch condition with no repair required.
- Information on this page only to be used with repairs and methodology shown on page 1 of 3.
- Do not use these tables to size joists or verify joist spans.

For notches falling outside the scope of this document, three options exist.

- **Header the TJI® joist off around the notch.**
 - * Use the TJI® Headered Off Joist Tables for maximum allowable spans
 - * For special conditions falling outside the Headered Off Joist Tables, contact iLevel Technical Support
- **Replace the joist (or add a new joist within 3" of the damaged joist).**
 - * For joists 24" o.c., a joist may be required on each side of the damaged joist due to sheathing span limits
 - * Use iLevel literature to verify allowable joist span when adding a new simple span joist beside damaged, continuous span joist
- **Contact iLevel Technical Support Office for notch analysis**
 - * Completely fill out TJI® Field Damage Report and e-mail to northeasthelp@weyerhaeuser.com
 - * Completed forms can also be faxed to 253-928-2445
 - * Once all information is received, standard repairs are typically handled within 24 hours

iLevel Technical Support Offices

<p>BEDFORD 360 RT. 101 SUITE 2 BEDFORD, NH 03110 (866) 295-2170 FAX: (253) 928-2445</p>	<p>COLUMBUS 1900 Polaris Parkway SUITE 300 COLUMBUS, OH 43240 (800) 456-4787 FAX: (253) 928-2445</p>	<p>MARLTON 1000 Lincoln Drive East SUITE 3B MARLTON, NJ 08053 (800) 678-8787 FAX: (253) 928-2445</p>
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