Trus Joist® TJI® Joist Repair Details for Holes Located Within 12″ of End Bearing

To ensure optimal performance of TJI® joists, web holes in TJI® joists should be positioned away from support locations in accordance with Weyerhaeuser literature. The table and detail below show how to repair a TJI® joist with a hole located within 12″ of an end bearing and the maximum hole diameter allowed in these cases. This repair option assumes typical residential floor framing situations and is allowed **ONLY if the joist is repaired as shown and does not exceed the maximum span, o.c. spacing, and loads given by Table 1.**

TABLE 1: MAXIMUM JOIST SPANS[1][2][3]

Joist Depth	Max Hole Diameter	TJI® Joist Series	Max o.c. Spacing	Max Joist Span (40 PSF Live)	
				10 PSF (Dead)	20 PSF (Dead)
9½″	3⅜″	110, 210, 230	16″	17′-2″	15′-8″
			24″	14′-0″	12′-8″
11⅞″	4⅜″	110, 210, 230, 360	16″	19′-4″	17′-8″
			24″	15′-9″	14′-4″
		560	16″	26′-3″	26′-3″
			24″	21′-11″	18′-4″
14″	5½″	110, 210, 230, 360	16″	21′-0″	19′-2″
			24″	17′-2″	15′-0″
		560	16″	29′-9″	29′-9″
			24″	24′-4″	20′-4″
16″	6½″	110, 210, 230, 360	16″	22′-6″	20′-7″
			24″	18′-1″	15′-0″
		560	16″	32′-11″	31′-6″
			24″	25′-2″	20′-11″

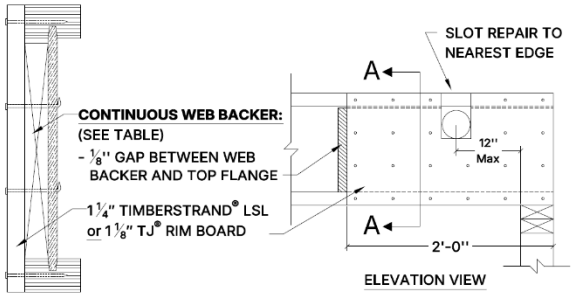
[1] Span table and Figure 1 apply only to holes located within the first 12″ of the joist end bearing. They DO NOT apply to holes located closer to intermediate bearings than allowed in Table B of *TJI® Joist Specifier's Guide* (TJ-4000).
[2] Hole shall NOT overlap inside face of bearing, and no other holes shall be cut inside or within 6″ of the repaired area. See DO NOT details below.
[3] For 12″ o.c. spacing, use 16″ maximum; for 19.2″ o.c., use 24″ maximum.

General Notes:

- Table is based on:
  - Uniform Loads
  - More restrictive of simple or continuous span
  - Clear distance between supports
  - Deflection criteria of L/360

The repair option in Figure 1 is not valid for any of the following conditions.





NOTES:
- REPAIR MAY BE INSTALLED ON EITHER SIDE OF TJI® JOIST
- APPLY CONSTRUCTION ADHESIV TO ALL CONTACT SURFACES
- MINIMUM BEARING LENGTH OF 2.25"

PRODUCT	WEB BACKER THICKNESS	FLANGE NAIL[1]	WEB NAIL[2]
TJI® 110	⅝″ (net)	10d (0.128″ x 3″) @ 4″ o.c.	
TJI® 210	⅞″ (net)		
TJI® 230	1″ (net)		
TJI® 360	1″(net)		
TJI® 560	1½″ (net)	16d (0.162″ x 3 ½″) @ 4″ o.c.	

[1] Locate Flange nail at center of flange.
[2] Locate web nail evenly spaced between flanges; clinch when possible.

Figure 1: Repair detail for holes located within 12″ of end bearing.

Alternative Solutions Beyond the Scope of TB-817

For joists with holes within 12″ of end bearing that fall outside of the conditions shown, consider these four options:

- **Install headers on either side of the TJI® joist.** Reference Engineered Wood Products Header-off Span Tables in technical bulletin TB-319 for maximum allowable spans.
- **Replace the joist or add a new joist beside it.**
  - TJI® joists spaced at 24″ o.c. may require an additional TJI® joist on each side of the damaged joist to ensure sheathing span limit requirements are met.
  - Use Weyerhaeuser literature to verify the allowable joist span when adding a new simple span beside a damaged, continuous span joist.
- **Analyze joist with Weyerhaeuser design software.** Web hole may be permitted based on hole provisions specific to ForteWEB®.
- **Contact your Weyerhaeuser representative to request a detailed hole analysis.**

Joists with holes that fall within the scope of Table 1 do not require a repair provided the holes;
- ***are located more than 12″ from an end support, and***
- ***maintain the required minimum distance from an intermediate or cantilever support per Table B in TJ-4000 or TJ-9015.***

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