



PINKWOOD Ltd.
5929 6th St. NE
Calgary, Alberta T2K 5R5
Canada
(403) 279-3700
www.pinkwood.ca

PINKWOOD® I-JOISTS AND WEBSHIELD® PANELS

CSI Section:

06 05 23 Wood, Plastic and Composite Fastenings
06 17 33 Wood I-Joists

1.0 RECOGNITION

Pinkwood® Ltd. prefabricated wood I-Joists recognized in this report have been evaluated for use as floor joists, rim joists, and rafters. WEBSHIELD® Panels recognized in this report have been evaluated for use as protective panels to enhance the fire performance of Pinkwood® prefabricated wood I-Joists in FRI Assemblies. The structural and fire resistance properties of the I-Joists and FRI Assemblies comply with the intent of the provisions of the following codes:

- 2021, 2018, 2015, and 2012 International Building Code® (IBC)
- 2021, 2018, 2015, and 2012 International Residential Code® (IRC)
- 2023 City of Los Angeles Building Code (LABC) – Supplement attached
- 2023 City of Los Angeles Residential Code (LARC) – Supplement attached

2.0 LIMITATIONS

Use of Pinkwood® I-Joists and WEBSHIELD® Panels recognized in this report is subject to the following limitations:

2.1 Cuts and notches in the flanges of the I-Joists are not permitted. Where such alterations occur, the cuts and notches shall be reviewed by a registered design professional, and repair action may be required and are subject to the approval of the building official.

2.2 The I-Joists shall be properly braced in accordance with the Pinkwood® installation instructions and the applicable building code.

2.3 Complete construction documents, including plans and calculations verifying compliance with this report, shall be submitted to the building official for approval. The construction documents shall be prepared and sealed by a

registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.

2.4 The in-service moisture content of the I-Joists and WEBSHIELD® Panels shall be 16 percent or less.

2.5 Repetitive member factor for use with allowable bending moment calculations shall be 1.0.

2.6 Except as prescribed in Section 3.5 of this report, cutting through, drilling, or otherwise altering the WEBSHIELD® Panels is outside the scope of recognition. Partial panels are permitted as described in this report.

2.7 The Pinkwood® I-Joists and WEBSHIELD® Panels recognized in this report are by Pinkwood® Ltd. in Calgary, Alberta, Canada.

3.0 PRODUCT USE

3.1 General

3.1.1 Pinkwood® I-Joists: Pinkwood® wood I-Joists are used as floor joists, rim joists, and rafters in lieu of sawn lumber joists in combustible construction. Pinkwood® I-Joists may be used in lieu of sawn lumber in diaphragms to resist lateral loads when installed as required by the manufacturer's published instructions.

3.1.2 WEBSHIELD® Panels: WEBSHIELD® Panels are used to protect the webs of Pinkwood® I-Joists to provide equivalent fire performance to 2-inch by 10-inch nominal dimension lumber (38.1 mm by 235 mm) in residential floor applications under the IRC. The patented FRI Assemblies (consisting of Pinkwood® I-Joists and WEBSHIELD® Panels) are recognized for installation without the prescribed minimum ½-inch-thick (12.7 mm) gypsum board or ⅝-inch-thick (15.9 mm) wood structural panel membranes in accordance with Exception 4 to 2012 IRC Section R501.3 or 2015, 2018, and 2021 IRC Section R302.13. Recognition for this application is limited to designs in accordance with Section 3.2.2 of this report and installation in accordance with Section 3.3.2 of this report.

3.2 Design

3.2.1 Pinkwood® I-Joist Design: The design of Pinkwood® I-Joists described in this report is governed by the applicable building code and the corresponding edition of ANSI/AWC National Design Specification for Wood Construction (NDS). The allowable design properties for Pinkwood® I-Joists are listed in [Table 2](#) and [Table 3](#) of this report. For wood diaphragm applications, the design shall be in accordance with the applicable code, using allowable shear capacities specified in [Table 8](#) of this report for wind or



seismic design of horizontal wood structural panel diaphragms framed with Pinkwood® I-Joists.

3.2.2 Fasteners: The design of fasteners driven into the flanges of Pinkwood® I-Joists shall comply with the applicable code and this section. [Table 5](#) of this report specifies the equivalent specific gravity of the flanges for fastener design. [Table 6](#) of this report specifies the requirements for the spacing of nails driven into the flange faces of the I-Joist.

3.2.3 FRI Design: FRI Assemblies shall be designed in accordance with [Figures 6, 7, and 8](#) of this report based on the I-Joist series and flange size used. WEBSHIELD® Panels installed using fasteners or adhesive in accordance with this report do not decrease the structural properties of the I-Joists. Any increase in sectional properties due to the addition of the WEBSHIELD® Panels shall not be considered in the design. FRI Assemblies are for use with Pinkwood I-Joists designed for applications having a maximum allowable uniform live load of 40 psf (1,915 N/m²) and a maximum allowable uniform dead load of 20 psf (958 N/m²). Loading conditions other than those described shall be analyzed by a registered design professional and approved by the building official.

3.3 Installation

3.3.1 Pinkwood® I-Joist: Installation of Pinkwood® I-Joists shall conform to the Pinkwood® I-Joist installation details, this evaluation report, and the applicable provisions of the IBC or IRC. Where there is a conflict between these documents, the more restrictive provisions shall govern. The manufacturer's installation instructions and this report are available for download at www.PinkWood.ca

3.3.1.1 Lateral Support: The compression flanges of I-Joists shall have continuous lateral support, and the joists shall be restrained at supports to prevent rollover. Methods specified in the applicable code for lateral support of sawn lumber are acceptable. Bridging and mid-span blocking are not required for floor and roof joist applications, unless specified by the designer. Blocking panel rollover restraint shall be as specified by the design professional.

3.3.1.2 Bearing Stiffeners: Field-installed bearing stiffeners for I-Joists shall be provided at end bearings when end reactions exceed those permitted by [Table 3](#) of this report for unstiffened webs. Bearing stiffeners shall be installed at interior supports when intermediate reactions exceed those permitted by [Table 3](#) of this report for unstiffened webs. The stiffeners shall be installed as shown in [Figure 1](#) and shall be the dimensions shown in [Table 4](#) of this report.

3.3.1.3 Web Stiffeners: Field-installed web stiffeners are required at points of concentrated loads exceeding 1,500 lbs. (6672 N) on a single joist and shall be installed in accordance with [Figure 1](#) of this report. Concentrated loads exceeding 1,500 lbs. (6672 N) applied to a single or to multiple joists are permitted provided the joists are laterally supported and

such support and conditions are analyzed by a registered design professional and approved by the building official.

3.3.1.4 Blocking Panels and Rim Joists: Pinkwood® I-Joists are permissible for use as boundary members in horizontal wood-framed diaphragms in accordance with Section 2308 of the IBC and Chapters 5 and 8 of the IRC.

3.3.1.5 Topical Treatments: Pinkwood® I-Joists are allowed for use with the application of topical treatments such as paints, stains, waxes, and penetrants to enhance certain properties such as appearance, mold resistance, insect resistance, flame spread resistance, or fire resistance. These treatments are permitted provided that such enhancements do not affect the design properties of the I-Joist and the topical treatment manufacturer has a current evaluation services report from an approved agency.

3.3.2 WEBSHIELD® Panels: WEBSHIELD® Panels shall be installed as outlined by Pinkwood's installation guidelines in accordance with the applicable code, the manufacturer's published installation instructions, and this report. Where there is a conflict, the more restrictive requirements shall govern. WEBSHIELD® Panels shall be installed under the supervision of installers certified by Pinkwood® Ltd. The certifications may be verified at www.PinkWood.ca. When WEBSHIELD® Panels are installed without the supervision of certified installers, special inspection in accordance with IBC Section 1705.1.1 may be required as determined by the building official.

3.3.2.1 Installation with Adhesives: The WEBSHIELD® Panels may be pre-installed by the manufacturer using wet-use adhesives complying with ASTM D2559 and ASTM D7247 as described and specified in the manufacturer's approved quality documentation.

3.3.2.2 Installation with Fasteners: The WEBSHIELD® Panels may be pre-installed by the manufacturer or installed on-site by certified installers using No. 16 gauge, minimum 7/16 inch crown staples in accordance with [Figure 7](#) and [Figure 8](#) of this report. Alternative fasteners may be used as described and installed in accordance with the manufacturer's published installation instructions.

3.4 Resistance to Fire

3.4.1 Fire-Resistance-Rated Floor-Ceiling Assemblies: Pinkwood® I-Joists are recognized for use in fire-resistance-rated floor-ceiling assemblies constructed in accordance with the prescriptive details in Item Numbers 21-1.1, 23-1.1, 24-1.1, 25-1.1, 26-1.1, 27-1.1, and 28-1.1 of IBC Table 721.1(3). Pinkwood® I-Joists are also permitted as components of one-hour roof-ceiling and floor-ceiling assemblies when constructed in accordance with [Figures 3 and 4](#) of this report. Two-hour roof-ceiling and floor-ceiling assemblies are permitted when constructed in accordance with [Figure 5](#) of this report. Where a floor-ceiling assembly is installed in accordance with [Figures 3 or 4](#) over an unusable



crawlspace, the ceiling membrane may be omitted. When used in connection with unusable attic space, the floor membrane may be omitted provided adequate lateral support is utilized in accordance with Section 3.3.1.2 of this report. Either Gypsum concrete or Lightweight concrete is permitted for use with the assemblies in [Figures 3, 4, and 5](#) of this report. Cavity recesses that penetrate the assemblies listed in Figures 3, 4, and 5 of this report are permitted provided that they are constructed to withstand the burn time listed for rated assembly. Allowance components, items, and listed time ratings are outlined in AWC DCA-4. Dropped and suspended ceilings are permitted as additional components to the assemblies in Figures 3, 4, and 5 of this report.

3.4.2 Fire Protection of Floors: Pinkwood® I-Joists offer equivalent fire performance to 2-inch by 10-inch nominal dimension lumber and are recognized for installation without the prescribed minimum ½-inch-thick (12.7 mm) gypsum wallboard or ⅝-inch-thick (15.9 mm) wood structural panel membrane in accordance with Exception 4 to 2021, 2018 and 2015 IRC Section R302.13 or 2012 IRC Section R501.3 when:

- a. Pinkwood® WEBSHIELD® Panels are installed as described in Figure 6 and attached as described in [Figures 7 or 8](#) of this report, as applicable, or
- b. When the I-Joists are protected with a fire protective coating approved for use as an equivalent to 2-inch by 10-inch nominal dimensional lumber in accordance with Exception 4 to 2021, 2018, and 2015 IRC Section R302.13 or 2012 IRC Section R501.3, reduce the design properties of the I-Joist.

3.5 Holes in the Web

3.5.1 I-Joists: Round, square, rectangular, and grouped smaller holes are permitted in the I-Joists in accordance with the limitations set forth in [Figure 2](#) of this report. Holes located within the web of the I-Joist as outlined in Figure 2 of this report are permitted to be used in the fire-resistance-rated assemblies as shown in Figures 3, 4, 5, and 6 of this report. [Table 9](#) of this report outlines the allowed holes and hole locations for uniformly loaded, Pinkwood® I-Joists. Live load and Dead load limitations are outlined in [Table 9](#) of this report.

3.5.2 Web holes in FRI Assemblies: Holes in the webs of wood I-Joists used in FRI Assemblies are subject to the maximum size and location requirements specified in this evaluation report for the wood I-Joist complying with Section 3.4.2.a of this report. Additionally, where the desired hole coincides with the location of a WEBSHIELD® Panel, the following rules apply:

- a. A hole not exceeding 1½ inches (38.1 mm) in diameter may be located anywhere within a WEBSHIELD® Panel. For adjacent 1½-inch-diameter (38.1 mm) holes, maximum, the spacing between holes shall be at least three times the largest hole diameter.
- b. When a 1½-inch-diameter (38.1 mm) hole is insufficient for the specific end-use application, a single maximum 6-inch-diameter (152 mm) hole may be cut in a WEBSHIELD® Panel section. When such a hole is cut, additional 6-inch-wide (152 mm) full-depth partial WEBSHIELD® Panels shall be installed back-to-back adjacent to the penetrated panels and fastened to the web as described in Figure 7 and Figure 8 of this report, using fasteners at the top and bottom of each panel in accordance with the installation instructions.
- c. When multiple 1½-inch-diameter (38.1 mm) holes, maximum, are in a closely grouped area, the inscribed area shall not exceed a 6-inch-diameter (152 mm) circle.

When hole dimensions, shapes, and sizes differ from those listed in this section, an analysis from a registered design professional is required, and is subject to the approval of the building official.

3.6 Sound Transmission: The airborne (STC) and structure-borne (IIC) sound-transmission ratings for floor-ceiling assemblies using Pinkwood® I-Joists are provided in [Table 10](#) of this report.

4.0 PRODUCT DESCRIPTION

4.1 Pinkwood® I-Joists and Rim Joists: Pinkwood® I-Joists are prefabricated wood I-Joists conforming to the requirements of IBC Section 2303.1.2, 2018 and 2015 IRC Section R502.1.2, and 2012 IRC Section R502.1.4. The flanges are made of proprietary finger-jointed sawn lumber with a minimum specific gravity of 0.42. The webs are made of nominally ⅜- or 7/16-inch-thick (9.53 mm or 11.1 mm) Exposure 1 OSB or ½-inch thick (12.7mm) Douglas-fir Exterior plywood, depending on the I-Joist series. The adhesives used to make the web-to-web, web-to-flange, and flange-to-flange connections comply with ASTM D2559 and ASTM D7247 for heat durability. Pinkwood® I-Joists are manufactured in seven I-Joist series: PKI10, PKI20, PKI23, PKI35Plus, PKI40, and PKI50. Pinkwood® Rim Joists are manufactured in four series based on the PKI 15 Series (EZ Rim, EZ Rim Pro, EZ Rim Plus, and EZ Rim Max). I-Joists and Rim Joists are available in various depths as described in [Table 1](#) of this report. The Pinkwood® PKI Series I-Joists (10, 20, 23, 35 Plus, 40, 50) are available in lengths up to 58 feet (17.7 m). The Pinkwood® PKI 15 Series I-Joists are available in lengths up to 24 feet (7.3 m).



TABLE 1 - PINKWOOD® I-JOIST SERIES AND SIZES

Series	I-Joist Depths, inches	Flange Size (w x h), inches	Nominal Flange Width ¹ , inches	Web Thickness, inches
PKI10	9½ to 14	2½ x 1½	3	¾ or 7/16 OSB
PKI20	9½ to 16	2½ x 1½	3	¾ or 7/16 OSB
PKI23	9½ to 16	2½ x 1½	3	¾ or 7/16 OSB
PKI35 Plus	9½ to 16	3½ x 1½	4	¾ or 7/16 OSB
PKI40	9½ to 16	3½ x 1½	4	¾ or 7/16 OSB
	18 to 24		4	7/16 OSB
PKI50	11½ to 24	3½ x 1½	4	7/16 OSB

For S.I.: 1 inch = 25.4 mm

¹ Applies to the Nominal Width of Framing Members column in Table 8. of this report.

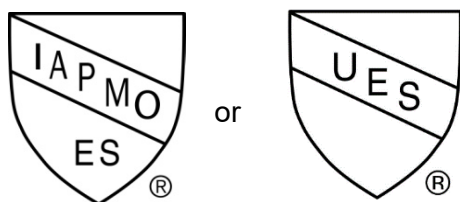
4.2 WEBSHIELD® Panels: WEBSHIELD® Panels are Exposure 1 OSB panels, nominally 15/32 inch (11.9 mm) thick, by 24 inches (610 mm) long, and manufactured to fit between the top and bottom flanges of eligible I-Joists to protect the webs in FRI Assemblies. The panels are designated as ws-10 for use with 9 ½-inch-deep (241 mm) I-Joists; ws-12 for use with 11 7/8-inch-deep (302 mm) I-Joists; ws-14 for use with 14-inch-deep (356 mm) I-Joists; and ws-16 for use with 16-inch-deep (406mm) I-Joists. Six-inch (152 mm) and 12-inch (305 mm) width, full-depth WEBSHIELD® partial panels may be cut from undamaged WEBSHIELD® Panels.

5.0 IDENTIFICATION

Pinkwood® I-Joists are identified with the manufacturer's name (Pinkwood Ltd.), the product name (PKI), the series name, the I-Joist depth, and the evaluation report number (ER-431). Bundles of I-Joists are identified with the series, depth, and length of the I-Joists.

Pinkwood® Rim Joists are identified with the manufacturer's name (Pinkwood Ltd.), the product name (EZ Rim, EZ Rim Pro, EZ Rim Plus, or EZ Rim Max), the rim joist depth, and the evaluation report number (ER-431). Bundles of I-Joists are identified with the name, depth, and length of the rim joists.

The identification may also include the IAPMO Uniform Evaluation Service Mark of Conformity as shown below:



IAPMO UES ER-431

6.0 SUBSTANTIATING DATA

6.1 Data and analysis in accordance with ICC-ES Acceptance Criteria for Prefabricated Wood I-Joists (AC14), approved June 2019, (Editorially Revised February 2021), and ASTM D5055, Standard Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists.

6.2 Reports of full-scale diaphragm testing in accordance with AC14, Section A2.3.2.

6.3 Documentation describing the manufacturer's quality management system in accordance with AC14 Appendix B.

6.4 Pinkwood® I-Joist Floor Installation Details and product descriptive literature.

6.5 Reports of fire-resistance testing demonstrating equivalent fire performance to 2-inch by 10-inch nominal dimension lumber in accordance with AC14, Section A4.4 – Fire Protection of Floors.

6.6 Data and analysis in accordance with ICC-ES Acceptance Criteria for Rim Board Products (AC-124), approved June 2019, (Editorially Revised February 2021).

6.7 Reports of fire-tested assemblies in accordance with ASTM E119 and UL-263.

6.8 Sound Transmission Class and Impact Insulation Class Ratings (STC/IIC) are described in [Table 10](#). Calculated STC/IIC ratings are as allowed in accordance with Sections 1206.2 and 1206.3 of the 2021 and 2018 IBC and AWC Technical Report 15.

6.9 Test reports are from laboratories in compliance with ISO/IEC 17025.

7.0 STATEMENT OF RECOGNITION

This report describes the results of research completed by the IAPMO Uniform Evaluation Service on Pinkwood® I-Joists, Pinkwood® Rim Joists, and WEBSHIELD® Panels to assess their conformance to the codes and standards listed in Section 1.0 and serves as documentation of the product certification. The products are manufactured at locations noted in Section 2.8 of this report under a quality control program with periodic inspection under the supervision of IAPMO UES.

For additional information about this evaluation report please visit www.uniform-es.org or email us at info@uniform-es.org



EVALUATION REPORT

Number: **431**

Originally Issued: 03/25/2016

Revised: 04/09/2024

Valid Through: 03/31/2025

TABLE 2 – DESIGN PROPERTIES FOR PINKWOOD® I-JOISTS (ALLOWABLE STRESS DESIGN)¹

Joist Series	Joist Type	Joist Depth (inches)	Bending Stiffness EI (x10 ⁶ lbf-in ²)	Allowable Moment, M ⁽²⁾ (lbf-ft)	Shear (lbf)	Shear Deflection Coefficient K ⁽³⁾ (x10 ⁶ lbf)
PKI10	PKI10-10	9 ½	168	2,365	1,260	4.94
	PKI10-12	11 ⅞	286	3,100	1,485	6.18
	PKI10-14	14	420	3,720	1,680	7.28
PKI20	PKI20-10	9 ½	193	2,810	1,260	4.94
	PKI20-12	11 ⅞	327	3,755	1,485	6.18
	PKI20-14	14	479	4,405	1,680	7.28
	PKI20-16	16	652	5,060	1,870	8.32
PKI23	PKI23-10	9 ½	226	3,330	1,260	4.94
	PKI23-12	11 ⅞	380	4,320	1,485	6.18
	PKI23-14	14	555	5,200	1,680	7.28
	PKI23-16	16	752	6,030	1,870	8.32
PKI35Plus	PKI35Plus-10	9 ½	234	3,395	1,260	4.94
	PKI35Plus-12	11 ⅞	396	4,395	1,485	6.18
	PKI35Plus-14	14	580	5,270	1,680	7.28
	PKI35Plus-16	16	787	5,990	1,870	8.32
PKI40	PKI40-10	9 ½	328	5,390	1,340	4.94
	PKI40-12	11 ⅞	553	6,970 ⁽²⁾	1,625	6.18
	PKI40-14	14	807	8,395	1,875	7.28
	PKI40-16	16	1,092	9,730	2,115	8.32
	PKI40-18	18	1,421	11,005	2,535	9.36
	PKI40-20	20	1,799	12,175	2,680	10.40
	PKI40-22	22	2,224	13,335	2,815	11.44
PKI50	PKI40-24	24	2,698	14,480	2,945	12.48
	PKI50-12	11 ⅞	608	7,955	2,135	6.18
	PKI50-14	14	879	9,200	2,280	7.28
	PKI50-16	16	1,182	10,655	2,415	8.32
	PKI50-18	18	1,539	12,770	2,535	9.36
	PKI50-20	20	1,839	14,175	2,680	10.40
	PKI50-22	22	2,273	14,590	2,815	11.44
	PKI50-24	24	2,757	15,845	2,945	12.48

For S.I.: 1 inch = 25.4 mm; 1 lbf = 4.4 N

Notes to Table 2:

1. The tabulated values are ASD design values for normal duration of load (C_D = 1.0). All values, except for EI, K, and VLC shall be permitted to be adjusted for other load durations as permitted by the ANSI/AWC National Design Specification (NDS) Section 2.3.2.
2. For calculating the maximum (center of span) uniform load and center point load deflections of an I-Joist in a simple-span application, Eq. 1 and Eq. 2 shall be used.

Uniform Load:
$$\delta = \frac{5w\ell^4}{384EI} + \frac{w\ell^2}{K} \quad [\text{Eq. 1}]$$

Center-Point Load:
$$\delta = \frac{P\ell^3}{48EI} + \frac{2P\ell}{K} \quad [\text{Eq. 2}]$$

Where:

δ	=	calculated deflection (in.)
w	=	uniform load (lbf/in.)
P	=	concentrated load (lbf)
ℓ	=	design span (in.)
EI	=	bending stiffness of the I-Joist (lbf-in. ²)
K	=	coefficient of shear deflection (lbf)



EVALUATION REPORT

Number: **431**

Originally Issued: 03/25/2016

Revised: 04/09/2024

Valid Through: 03/31/2025

TABLE 3 - REACTION CAPACITIES FOR PINKWOOD® I-JOISTS - (ALLOWABLE STRESS DESIGN)^{1,2,3}

Joist Series	Joist Type	Joist Depth (inches)	End Reaction (lbf)				Intermediate Reaction (lbf)				Flange Bearing Capacities (lbf/in)
			1 1/2" or 2 1/2" Bearing ⁽⁴⁾		4" Bearing ⁽⁵⁾		3 1/2" Bearing		5 1/2" Bearing		
			Web Stiff.		Web Stiff.		Web Stiff.		Web Stiff.		
			No	Yes	No	Yes	No	Yes	No	Yes	
PKI10	PKI10-10	9 ½	900	1,140	1,110	1,260	2,195	2,280	2,450	2,520	955
	PKI10-12	11 ⅞	900	1,275	1,160	1,485	2,195	2,485	2,525	2,810	955
	PKI10-14	14	900	1,395	1,200	1,680	2,195	2,665	2,585	2,960	955
PKI20	PKI20-10	9 ½	970	1,140	1,110	1,260	2,195	2,375	2,450	2,635	955
	PKI20-12	11 ⅞	970	1,275	1,160	1,485	2,330	2,525	2,595	2,830	955
	PKI20-14	14	970	1,395	1,200	1,680	2,455	2,665	2,725	3,005	955
	PKI20-16	16	970	1,510	1,240	1,870	2,570	2,795	2,850	3,175	955
PKI23	PKI23-10	9 ½	970	1,140	1,110	1,260	2,195	2,375	2,450	2,635	955
	PKI23-12	11 ⅞	970	1,275	1,160	1,485	2,330	2,525	2,595	2,830	955
	PKI23-14	14	970	1,395	1,200	1,680	2,455	2,665	2,725	3,005	955
	PKI23-16	16	970	1,510	1,240	1,870	2,570	2,795	2,850	3,175	955
PKI35Plus	PKI35Plus-10	9 ½	900	1,140	1,110	1,260	2,195	2,280	2,450	2,520	1,380
	PKI35Plus-12	11 ⅞	900	1,275	1,160	1,485	2,195	2,485	2,525	2,810	1,380
	PKI35Plus-14	14	900	1,395	1,200	1,680	2,195	2,665	2,585	2,960	1,380
	PKI35Plus-16	16	900	1,510	1,240	1,865	2,195	2,880	2,645	3,105	1,380
PKI40	PKI40-10	9 ½	1,185	1,340	1,305	1,340	2,900	3,095	2,940	3,195	1,705
	PKI40-12	11 ⅞	1,245	1,510	1,595	1,625	3,025	3,340	3,120	3,515	1,705
	PKI40-14	14	1,280	1,660	1,595	1,875	3,085	3,565	3,280	3,805	1,705
	PKI40-16	16	1,295	1,800	1,595	2,115	3,145	3,775	3,435	4,080	1,705
	PKI40-18	18	1,310	2,060	1,680	2,550	2,850	4,285	3,435	4,970	1,705
	PKI40-20	20	1,310	2,185	1,680	2,640	2,850	4,410	3,435	4,970	1,705
	PKI40-22	22	1,310	2,310	1,680	2,735	2,850	4,530	3,435	4,970	1,705
	PKI40-24	24	1,310	2,440	1,680	2,830	2,850	4,640	3,435	4,970	1,705
PKI50	PKI50-12	11 ⅞	1,245	1,510	1,595	1,625	3,025	3,340	3,120	3,515	1,995
	PKI50-14	14	1,280	1,660	1,595	1,875	3,085	3,565	3,280	3,805	1,995
	PKI50-16	16	1,295	1,800	1,595	2,115	3,145	3,775	3,435	4,080	1,995
	PKI50-18	18	1,310	2,060	1,680	2,550	2,850	4,285	3,435	4,970	1,995
	PKI50-20	20	1,310	2,185	1,680	2,640	2,850	4,410	3,435	4,970	1,995
	PKI50-22	22	1,310	2,310	1,680	2,735	2,850	4,530	3,435	4,970	1,995
	PKI50-24	24	1,310	2,440	1,680	2,830	2,850	4,640	3,435	4,970	1,995

For S.I.: 1 inch = 25.4 mm; 1 lbf = 4.4 N

Notes to Table 3:

1. Reaction capacity shall be limited by the flange bearing capacity or the bearing capacity of the support material, whichever is less. The flange bearing capacity, per inch of bearing length, is based on the allowable compression perpendicular-to-grain of the I-Joist flange, accounting for eased edges.
2. Reaction capacity is for a normal duration of load and shall be permitted to be adjusted for other load durations provided that the adjusted reaction capacity is not greater than the flange bearing capacity or the bearing capacity of the support material, which shall not be increased for any load durations.
3. Reaction capacity shall be permitted to be increased over that tabulated for the minimum bearing length by linear interpolation of the reaction capacity between the minimum and maximum bearing lengths. Extrapolation beyond the minimum and maximum bearing lengths is beyond the scope of this table.
4. For the I-Joists with a depth equal to or less than 16 inches, the minimum bearing length of the end reaction is 1½ inches; For the I-Joist with a depth equal to or larger than 18 inches, the minimum bearing length of the end reaction is 2½ inches.
5. Footnote 5 Deleted (Admin please remove this line).



TABLE 4 - WEB AND BEARING STIFFENER SIZE REQUIREMENTS

Minimum Web Stiffener Width	2-1/2" Wide Flange			3-1/2" Wide Flange	
	3/8" Thick Web	7/16" Thick Web	1/2" Thick Web	3/8" Thick Web	7/16" Thick Web
	Minimum Web Stiffener Thickness				
	1"			1-1/2"	
	Minimum Nail Size				
	8d Box (2-1/2" x 0.113")			10d Box (3" x 0.128")	
	Total Nails Required				
	2-5/16"	4			4

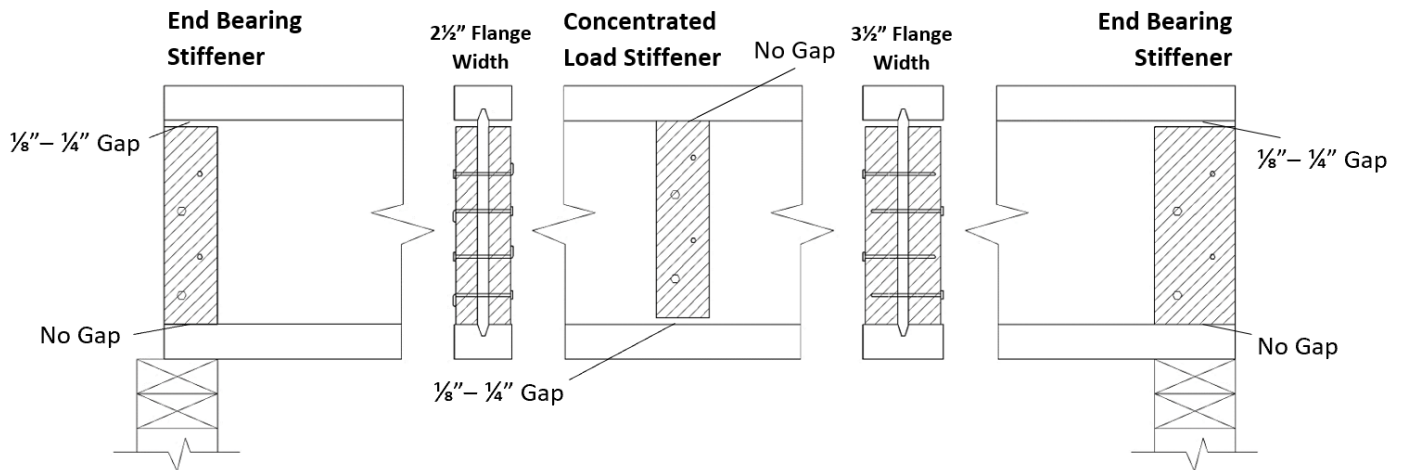


FIGURE 1 – WEB AND BEARING STIFFENER DETAILS

TABLE 5 - MINIMUM EQUIVALENT SPECIFIC GRAVITY FOR DESIGN OF NAIL CONNECTIONS

Joist Series	Minimum Equivalent Specific Gravity for Design of Nail Connections ^{1,2}
PKI10	0.42
PKI20	0.42
PKI23	0.46
PKI35Plus ³	0.42
PKI40	0.46
PKI50	0.50

Footnotes to Table 5:

1. Equivalent specific gravity of Pinkwood® I-Joists is for uses in accordance with ANSI/AWC NDS.
2. The Specific Gravities listed are minimum values. Increased values may be available upon request.
3. For the PKI35Plus series, the specific gravity of 0.50 is available for its flange material if required.



EVALUATION REPORT

Number: **431**

Originally Issued: 03/25/2016

Revised: 04/09/2024

Valid Through: 03/31/2025

TABLE 6 – FLANGE FACE NAILING^{1,2}

Joist Series	Nail Type	Nail Size		Minimum Distance from Joist End (in)	Closest O/C Nail Spacing (in)
		Length (in)	Diameter (in)		
PKI10 PKI20 PKI35Plus PKI40 PKI50	8d box	2 1/2	0.113	1	2
	8d common	2 1/2	0.131	1	2
	8d sinker	2 3/8	0.113	1	2
	10d sinker	2 7/8	0.120	1	2
	10d box	3	0.128	1	2
	12d box	3 1/4	0.128	1	2
	12d common	3 1/4	0.148	1.5	3
	12d sinker	3 1/8	0.135	1.5	3
	16d sinker	3 1/4	0.148	1.5	3
	16d box	3 1/2	0.135	1.5	4
	16d common	3 1/2	0.162	1.5	4

For SI: 1 inch = 25.4 mm

Notes to Table 6:

1. If more than one row of nails is required, the rows must be offset a minimum of 1/2" and staggered.
2. Nails into the edges of Pinkwood I-Joist flanges may be spaced in accordance with the applicable provisions in the ANSI/AWC NDS.

TABLE 7 – I-JOIST RIM JOIST AND BLOCKING PANEL CAPACITIES^{1,2}

Joist Depth (inches)	Uniform Vertical Load Capacity (lbf/ft)					
	PKI10	PKI20	PKI23	PKI35Plus	PKI40	PKI50
9-1/2	2000	2000	2000	2000	2000	2000
11-7/8	2000	2000	2000	2000	2000	2000
14	2000	2000	2000	2000	2000	2000
16	-	2000	2000	2000	2000	2000
18	-	-	-	-	1800	1800
20	-	-	-	-	1600	1600
22	-	-	-	-	1300	1300
24	-	-	-	-	1100	1100

For SI: 1 inch = 25.4mm; 1lbf/ft = 14.5939N/m

Footnotes to Table 7:

1. Table 7 provides the allowable uniform vertical load capacities of Pinkwood I-joists when used for blocking panels.
2. The allowable shear capacities of horizontal wood structural panel diaphragms framed with Pinkwood I-joists for wind and seismic design are provided in Table 8 of this report.
3. PKI joists used as rim joists shall be limited to a maximum shear load of 230 lbf/ft for I-Joists with sawn lumber flanges. These limits are permitted to be multiplied by 1.4 for wind load applications and shall be multiplied by 0.63 and 0.56 for shear loads of normal and permanent load durations, respectively. The minimum nail spacing, and end distances shall not be less than as given in Table 8.



TABLE 8 - ALLOWABLE SHEAR (POUNDS PER FOOT) FOR HORIZONTAL WOOD STRUCTURAL PANEL DIAPHRAGMS FRAMED WITH PINKWOOD® I-JOISTS FOR WIND OR SEISMIC LOADING^{2,3}

Panel Grade	Common Nail Size	Minimum Nominal Panel Thickness ⁴ (inch)	Minimum Nominal Width of Framing Members at Adjoining Panel Edges and Boundaries ^{5,6} (inches)	Blocked Diaphragms			Unblocked Diaphragms			
				Nail spacing (inches) at diaphragm boundaries (all cases) at continuous panel edges parallel to load (Cases 3, 4), and at all panel edges (Cases 5, 6) ^{7,8}			Nails spaced 6" max. at supported edges ⁷			
				6	4	2.5	Case 1 (No unblocked edges or continuous joints parallel to load)	All other configurations (Cases 2, 3, 4, 5, and 6)		
				Nail spacing (inches) at other panel edges (Cases 1, 2, 3, and 4) ⁷						
				6	6	4				
Structural I Grades	6d ⁹	5/16	2	185	250	375	165	125		
			3	210	280	420	185	140		
	8d	3/8	2	270	360	530	240	180		
			3	300	400	600	265	200		
	10d	15/32	2	320	425	640	285	215		
			3	360	480	720	320	240		
Sheathing, single floor, and other grades covered in DOC PS 1 and PS 2	6d ⁹	5/16	2	170	225	335	150	110		
			3	190	250	380	170	125		
		3/8	2	185	250	375	165	125		
			3	210	280	420	185	140		
			8d	3/8	2	240	320	480	215	160
					3	270	360	540	240	180
	8d	7/16	2	255	340	505	230	170		
			3	285	380	570	255	190		
		15/32	2	270	360	530	240	180		
			3	300	400	600	265	200		
		10d	15/32	2	290	385	575	255	190	
				3	325	430	650	290	215	
	19/32		2	320	425	640	285	215		
			3	360	480	720	320	240		

For SI: 1 inch = 25.4, 1 pound foot = 14.5939 N/m

Notes to Table 8

1. Data excerpted from SDPWS Tables 4.2A & 4.2C for ASD design. For wind design, the allowable shear capacity in the table above may be increased by 40%.
2. For shear loads of normal or permanent load duration as defined by the ANSI/AWC NDS, the values in the table above shall be multiplied by 0.63 or 0.56, respectively.
3. The tabulated allowable shear capacities are for the I-Joist series with flanges having a specific gravity (G) of 0.50 or higher. For G<0.50, the allowable shear capacities shall be reduced by multiplying the allowable shear capacities by the Specific Gravity Adjustment Factor = [1-(0.5-G)], where the specific gravities are in Table 5 of this report. The Specific Gravity Adjustment Factor shall not exceed 1.0.
4. The panel shall not be less than 4 feet x 8 feet except at boundaries and changes in framing where the minimum panel dimension shall be 24 inches unless all edges of the undersized panel are supported by and fastened to framing members or blocking members.
5. The nominal widths of framing members for Pinkwood® I-Joists are in Table 1 of this report.
6. The minimum nominal width of framing members not located at boundaries or adjoining panel edges shall be 2 inches.
7. Space nails maximum 12 inches o.c. along intermediate framing members (6 inches o.c. where supports are spaced 48 inches o.c. or greater). Nails shall be located at least 3/8 inch from the edge of the panels.
8. When nail spacing is less than 6 inches on center at diaphragm boundaries, adjacent nails within a row shall be offset (staggered) ½ inch.
9. 8d nails are recommended minimum for roofs due to the negative pressures of high wind speeds.
10. The width of the nailed face of the framing member shall comply with ANSI/AWC SDPWS Section 4.2.7.1.1.3.

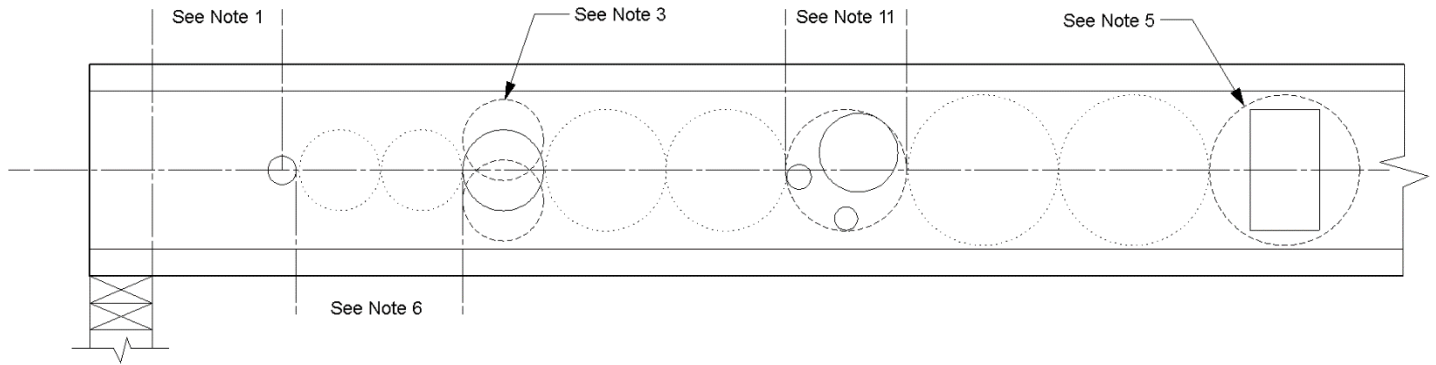


FIGURE 2 – ALLOWABLE HOLES IN WEBS

Rules for cutting holes in PKI Joists

1. The distance between the inside edge of the support and the centerline of any hole shall comply with the requirements of Table 9 of this report.
2. I-Joist top and bottom flanges shall NEVER be cut, notched, or otherwise modified.
3. Holes may be located anywhere in the web provided they maintain a minimum ¼ inch edge distance from the flange.
4. The maximum size hole that may be cut into an I-Joist web shall equal the clear distance between the flanges of the I-Joist minus ¼ inch. A minimum of ¼ inch shall always be maintained between the top or bottom of the hole and the adjacent I-Joist flange.
5. The sides of square holes or longest sides of rectangular holes shall not exceed three-fourths of the diameter of the maximum round hole permitted at that location.
6. Where more than one hole is necessary, the distance between adjacent hole edges shall equal or exceed twice the diameter of the largest round hole or twice the size of the largest square hole *(or twice the length of the longest side of the longest rectangular hole)* and each hole shall be sized and located in compliance with the requirements of Table 9 of this report.
7. Holes measuring 1½ inches diameter or smaller shall be permitted anywhere in a cantilevered section of a PKI Joist. Holes of greater size may be permitted subject to verification.
8. A 1½-inch-diameter or smaller hole may be placed anywhere in the web provided the position complies with the requirements of rule No.6.
9. All holes shall be cut in a workmanlike manner in accordance with the restrictions listed above and as illustrated in Figure 2 of this report.
10. Up to three maximum-size holes are permitted per span.
11. A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them

HOLE SHEAR EQUATIONS

The reduced shear capacity at the location of a hole in an I-Joist is calculated as follows:

Round Holes, Other Hole Shapes, and Clustered Small Holes that may be circumscribed by a round hole:

$$V_{\text{hole}} = V_r (D - \phi) / D$$

Where: V_r = I-Joist shear capacity (with and without web stiffeners, same value)

D = Depth of I-Joist (inches)

ϕ = Hole Diameter (inches)

$$\text{And } \phi_{\text{max}} = D - 2(t_{\text{flange}}) - 0.25$$

Where:

t_{flange} = I-Joist flange thickness (inches)

Square, Rectangular, Oblong, and Clustered Small Holes that may not be circumscribed by a round hole:

$$V_{\text{hole}} = V_r (D - \frac{4}{3}(h_{\text{hole,max}})) / D$$

Where: V_r = I-Joist shear capacity (with and without web stiffeners, same value)

$$h_{\text{hole,max}} = \text{max hole height} = 0.75(D - 2(t_{\text{flange}}) - 0.25)$$

And $w_{\text{hole,max}}$ = max hole width with

- 24" max for PKI 35Plus, PKI40 and PKI50
- 20" max for PKI10, PKI20 and PKI23

t_{flange} = I-Joist flange thickness (inches)



EVALUATION REPORT

Number: 431

Originally Issued: 03/25/2016

Revised: 04/09/2024

Valid Through: 03/31/2025

TABLE 9 - ALLOWABLE LOCATION OF HOLES IN PKI JOIST WEBS

Simple Span for Live Loads up to 40 psf and Dead Loads up to 25 psf

Series	Depth	Clear Span	O.C. Spacing	Minimum Distance from Inside Face of Bearing to Center of Hole									
				Round and Clustered Round Hole Size (inches)					Square or Rectangular Hole Size (inches)				
				4	6%	8%	10%	12%	4	6%	8%	10%	12%
PKI-10	9-1/2"	8'	24"	1'-0"	1'-0"				1'-0"	1'-4"			
		10'		1'-0"	1'-6"				1'-0"	2'-5"			
		12'		1'-0"	2'-7"				1'-9"	3'-7"			
		13'		1'-0"	2'-3"				1'-2"	3'-4"			
		15'		1'-0"	2'-5"				1'-1"	3'-7"			
		17'		1'-0"	1'-8"				1'-0"	3'-2"			
	11-7/8"	8'	24"	1'-0"	1'-0"	1'-0"			1'-0"	1'-0"	1'-8"		
		10'		1'-0"	1'-0"	1'-9"			1'-0"	1'-8"	3'-9"		
		12'		1'-0"	1'-0"	2'-10"			1'-0"	2'-9"	3'-11"		
		14'		1'-0"	1'-5"	4'-0"			1'-0"	3'-11"	5'-1"		
		15'		1'-0"	1'-0"	3'-7"			1'-0"	3'-6"	4'-10"		
		17'		1'-0"	1'-0"	3'-10"			1'-0"	3'-7"	5'-3"		
	14"	19'	12"	1'-0"	1'-0"	3'-2"			1'-0"	2'-10"	4'-10"		
		8'		1'-0"	1'-0"	1'-0"	1'-0"		1'-0"	1'-0"	1'-8"	1'-11"	
		10'		1'-0"	1'-0"	1'-0"	1'-10"		1'-0"	1'-0"	2'-9"	3'-1"	
		12'		1'-0"	1'-0"	1'-0"	3'-0"		1'-0"	1'-0"	3'-11"	4'-3"	
		14'		1'-0"	1'-0"	1'-10"	4'-2"		1'-0"	1'-10"	5'-1"	5'-5"	
		15'		1'-0"	1'-0"	2'-5"	4'-9"		1'-0"	2'-5"	5'-8"	6'-0"	
PKI-10P	11-7/8"	17'	24"	1'-0"	1'-0"	2'-2"	5'-0"		1'-0"	2'-0"	6'-0"	6'-5"	
		18'		1'-0"	1'-0"	1'-4"	4'-8"		1'-0"	1'-2"	5'-10"	6'-3"	
		19'		1'-0"	1'-0"	1'-0"	3'-5"		1'-0"	1'-0"	4'-10"	5'-5"	
		21'		1'-0"	1'-0"	1'-0"	4'-7"		1'-0"	1'-0"	6'-0"	6'-7"	
		8'		1'-0"	1'-0"	1'-0"			1'-0"	1'-0"	1'-2"		
		10'		1'-0"	1'-0"	2'-1"			1'-0"	1'-10"	2'-3"		
		12'		1'-0"	1'-0"	3'-3"			1'-0"	3'-0"	3'-5"		
		14'		1'-0"	1'-8"	4'-6"			1'-0"	4'-2"	4'-8"		
		15'		1'-0"	2'-3"	5'-1"			1'-5"	4'-10"	5'-3"		
		17'		1'-0"	1'-9"	5'-3"			1'-0"	4'-10"	5'-5"		
		19'		1'-0"	1'-5"	5'-5"			1'-0"	4'-11"	5'-6"		
		21'		1'-0"	1'-0"	4'-8"			1'-0"	3'-11"	4'-8"		
PKI-15	9-1/2"	6'	24"	1'-0"					1'-0"				
		8'		1'-0"					2'-0"				
		10'		1'-0"					3'-2"				
		12'		1'-6"					4'-4"				
		13'		1'-0"					4'-3"				
		15'		1'-0"					4'-10"				
	11-7/8"	17'	24"	1'-0"					4'-9"				
		8'		1'-0"	1'-0"				1'-0"	2'-3"			
		10'		1'-0"	1'-0"				1'-0"	3'-5"			
		12'		1'-0"	1'-11"				1'-5"	4'-7"			
		14'		1'-4"	3'-1"				2'-6"	5'-10"			
		15'		1'-0"	2'-6"				1'-10"	5'-9"			
	14"	17'	24"	1'-0"	2'-6"				1'-8"	6'-4"			
		19'		1'-0"	1'-6"				1'-0"	6'-4"			
		8'		1'-0"	1'-0"	1'-0"			1'-0"	1'-0"	2'-7"		
		10'		1'-0"	1'-0"	1'-4"			1'-0"	1'-5"	3'-9"		
		12'		1'-0"	1'-0"	2'-5"			1'-0"	2'-6"	4'-11"		
		14'		1'-0"	1'-10"	3'-7"			1'-4"	3'-7"	6'-2"		
PKI-20	9-1/2"	15'	24"	1'-0"	2'-4"	4'-2"			1'-10"	4'-2"	6'-9"		
		17'		1'-0"	2'-1"	4'-3"			1'-5"	4'-3"	7'-4"		
		18'		1'-0"	1'-3"	3'-9"			1'-0"	3'-9"	7'-4"		
		19'		1'-0"	1'-9"	4'-4"			1'-0"	4'-3"	7'-11"		
		21'		1'-0"	1'-0"	3'-6"			1'-0"	3'-4"	8'-0"		
		22'		1'-0"	1'-0"	4'-0"			1'-0"	3'-10"	8'-7"		
	11-7/8"	8'	24"	1'-0"	1'-0"				1'-0"	1'-4"			
		10'		1'-0"	1'-6"				1'-0"	2'-5"			
		12'		1'-0"	2'-7"				1'-9"	3'-7"			
		13'		1'-0"	3'-2"				2'-3"	4'-2"			
		15'		1'-0"	3'-4"				2'-2"	4'-5"			
		16'		1'-0"	2'-11"				1'-7"	4'-2"			
	14"	18'	24"	1'-0"	2'-2"				1'-0"	3'-9"			
		8'		1'-0"	1'-0"	1'-0"			1'-0"	1'-0"	1'-8"	1'-11"	
		10'		1'-0"	1'-0"	1'-9"			1'-0"	1'-8"	2'-9"	3'-1"	
		12'		1'-0"	1'-0"	2'-10"			1'-0"	2'-9"	3'-11"	4'-3"	
		14'		1'-0"	1'-5"	4'-0"			1'-0"	3'-11"	5'-1"	5'-5"	
		15'		1'-0"	1'-11"	4'-7"			1'-2"	4'-6"	5'-8"	8'-10"	
PKI-20	16"	17'	24"	1'-0"	1'-6"	4'-9"			1'-0"	4'-7"	6'-0"		
		19'		1'-0"	1'-2"	3'-11"			1'-0"	4'-9"	6'-5"		
		21'		1'-0"	1'-0"	4'-3"			1'-0"	3'-11"	6'-0"		
		8'		1'-0"	1'-0"	1'-0"	1'-0"		1'-0"	1'-0"	1'-8"	1'-11"	
		10'		1'-0"	1'-0"	1'-0"	1'-10"		1'-0"	1'-0"	2'-9"	3'-1"	
		12'		1'-0"	1'-0"	1'-0"	3'-0"		1'-0"	1'-0"	3'-11"	4'-3"	
	11-7/8"	14'	24"	1'-0"	1'-0"	1'-10"	4'-2"		1'-0"	1'-10"	5'-1"	5'-5"	
		16'		1'-0"	1'-0"	3'-0"	5'-4"		1'-0"	2'-11"	6'-3"	6'-7"	
		18'		1'-0"	1'-0"	2'-8"	5'-7"		1'-0"	2'-7"	6'-7"	7'-0"	
		20'		1'-0"	1'-0"	2'-5"	5'-9"		1'-0"	2'-3"	7'-0"	7'-5"	
		22'		1'-0"	1'-0"	1'-0"	5'-2"		1'-0"	1'-0"	6'-7"	7'-2"	
		23'		1'-0"	1'-0"	1'-4"	5'-8"		1'-0"	1'-1"	7'-2"	7'-8"	
	9-1/2"	10'	24"	1'-0"	1'-0"	1'-0"	1'-0"	1'-11"	1'-0"	1'-0"	1'-1"	3'-1"	3'-4"
		12'		1'-0"	1'-0"	1'-0"	1'-1"	3'-1"	1'-0"	1'-0"	2'-2"	4'-3"	4'-6"
		14'		1'-0"	1'-0"	1'-0"	2'-2"	4'-3"	1'-0"	1'-0"	3'-3"	5'-5"	5'-9"
		16'		1'-0"	1'-0"	1'-2"	3'-3"	5'-5"	1'-0"	1'-2"	4'-5"	6'-7"	6'-11"
		18'		1'-0"	1'-0"	2'-2"	4'-4"	6'-7"	1'-0"	2'-2"	5'-6"	7'-10"	8'-1"
		20'		1'-0"	1'-0"	1'-6"	4'-1"	6'-10"	1'-0"	1'-5"	5'-6"	8'-2"	8'-7"
	11-7/8"	22'	12"	1'-0"	1'-0"	1'-0"	3'-11"	7'-1"	1'-0"	1'-0"	5'-5"	8'-7"	9'-1"
		24'		1'-0"	1'-0"	1'-0"	2'-5"	6'-5"	1'-0"	1'-0"	4'-3"	8'-4"	8'-10"
		25'		1'-0"	1'-0"	1'-0"	2'-11"	7'-0"	1'-0"	1'-0"	4'-9"	8'-11"	9'-5"



EVALUATION REPORT

Number: 431

Originally Issued: 03/25/2016

Revised: 04/09/2024

Valid Through: 03/31/2025

TABLE 9 (continued) - ALLOWABLE LOCATION OF HOLES IN PKI JOIST WEBS

Simple Span for Live Loads up to 40 psf and Dead Loads up to 25 psf

Series	Depth	Clear Span	O.C. Spacing	Minimum Distance from Inside Face of Bearing to Center of Hole									
				Round and Clustered Round Hole Size (inches)					Square or Rectangular Hole Size (inches)				
				4	6%	8%	10%	12%	4	6%	8%	10%	12%
PKI-23	9-1/2"	8'	24"	1'-0"	1'-0"				1'-0"	1'-4"			
		10'		1'-0"	1'-6"				1'-0"	2'-5"			
		12'		1'-0"	2'-7"				1'-9"	3'-7"			
		13'		1'-0"	3'-2"				2'-3"	4'-2"			
		15'		19.2"	1'-0"	3'-4"			2'-2"	4'-5"			
		16'		16"	1'-0"	2'-11"			1'-7"	4'-2"			
	11-7/8"	18'		12"	1'-0"	2'-2"			1'-0"	3'-9"			
		8'	24"	1'-0"	1'-0"	1'-0"			1'-0"	1'-0"	1'-8"		
		10'		1'-0"	1'-0"	1'-9"			1'-0"	1'-8"	2'-9"		
		12'		1'-0"	1'-0"	2'-10"			1'-0"	2'-9"	3'-11"		
		14'		1'-0"	1'-5"	4'-0"			1'-0"	3'-11"	5'-1"		
		15'		1'-0"	1'-11"	4'-7"			1'-2"	4'-6"	5'-8"		
	14"	17'		19.2"	1'-0"	1'-6"	4'-9"		1'-0"	4'-7"	6'-0"		
		19'	24"	16"	1'-0"	1'-2"	3'-11"		1'-0"	4'-9"	6'-5"		
		21'		12"	1'-0"	1'-0"	4'-3"		1'-0"	3'-11"	6'-0"		
		8'		1'-0"	1'-0"	1'-0"	1'-0"		1'-0"	1'-0"	1'-8"	1'-11"	
		10'		1'-0"	1'-0"	1'-0"	1'-10"		1'-0"	1'-0"	2'-9"	3'-1"	
		12'		1'-0"	1'-0"	1'-0"	3'-0"		1'-0"	1'-0"	3'-11"	4'-3"	
	16"	14'		1'-0"	1'-0"	1'-10"	4'-2"		1'-0"	1'-10"	5'-1"	5'-5"	
		16'		1'-0"	1'-0"	3'-0"	5'-4"		1'-0"	2'-11"	6'-3"	6'-7"	
		18'		19.2"	1'-0"	1'-0"	2'-8"	5'-7"	1'-0"	2'-7"	6'-7"	7'-0"	
		20'		16"	1'-0"	1'-0"	2'-5"	5'-9"	1'-0"	2'-3"	7'-0"	7'-5"	
		22'		12"	1'-0"	1'-0"	1'-0"	5'-2"	1'-0"	1'-0"	6'-7"	7'-2"	
		23'		1'-0"	1'-0"	1'-4"	5'-8"		1'-0"	1'-1"	7'-2"	7'-8"	
	16"	10'	24"	1'-0"	1'-0"	1'-0"	1'-0"	1'-11"	1'-0"	1'-0"	1'-1"	3'-1"	3'-4"
		12'		1'-0"	1'-0"	1'-0"	1'-1"	3'-1"	1'-0"	1'-0"	2'-2"	4'-3"	4'-6"
		14'		1'-0"	1'-0"	1'-0"	2'-2"	4'-3"	1'-0"	1'-0"	3'-3"	5'-5"	5'-9"
		16'		1'-0"	1'-0"	1'-2"	3'-3"	5'-5"	1'-0"	1'-2"	4'-5"	6'-7"	6'-11"
		18'		1'-0"	1'-0"	2'-2"	4'-4"	6'-7"	1'-0"	2'-2"	5'-6"	7'-10"	8'-1"
		20'		19.2"	1'-0"	1'-0"	1'-6"	4'-1"	6'-10"	1'-0"	1'-5"	5'-6"	8'-7"
PKI-35Plus	9-1/2"	22'	24"	16"	1'-0"	1'-0"	1'-0"	3'-11"	7'-1"	1'-0"	1'-0"	5'-5"	8'-7"
		24'		12"	1'-0"	1'-0"	1'-0"	2'-5"	6'-5"	1'-0"	1'-0"	4'-3"	8'-10"
		25'		1'-0"	1'-0"	1'-0"	2'-11"	7'-0"	1'-0"	1'-0"	4'-9"	8'-11"	9'-5"
	11-7/8"	8'	24"	1'-0"	1'-0"	1'-0"			1'-0"	1'-0"			
		10'		1'-0"	1'-6"				1'-0"	1'-8"			
		12'		1'-0"	2'-7"				1'-9"	2'-10"			
		14'		1'-2"	3'-9"				2'-10"	3'-11"			
		16'		19.2"	1'-0"	3'-11"			2'-9"	4'-1"			
		17'		16"	1'-0"	3'-6"			2'-1"	3'-8"			
	14"	19'		12"	1'-0"	2'-9"			1'-0"	2'-10"			
		8'	24"	1'-0"	1'-0"	1'-0"			1'-0"	1'-0"	1'-0"		
		10'		1'-0"	1'-0"	1'-9"			1'-0"	1'-0"	2'-0"		
		12'		1'-0"	1'-0"	2'-10"			1'-0"	2'-9"	3'-2"		
		14'		1'-0"	1'-5"	4'-0"			1'-0"	3'-11"	4'-4"		
		16'		1'-0"	2'-6"	5'-2"			1'-8"	5'-1"	5'-6"		
	16"	18'		19.2"	1'-0"	2'-1"	5'-4"		1'-1"	5'-2"	5'-8"		
		20'	24"	16"	1'-0"	1'-8"	5'-7"		1'-0"	5'-4"	5'-10"		
		22'		12"	1'-0"	1'-0"	4'-10"		1'-0"	4'-5"	5'-1"		
		23'		1'-0"	1'-0"	5'-5"			1'-0"	5'-0"	5'-8"		
		8'		1'-0"	1'-0"	1'-0"	1'-0"		1'-0"	1'-0"	1'-0"	1'-3"	
		10'		1'-0"	1'-0"	1'-0"	1'-10"		1'-0"	1'-0"	2'-0"	2'-4"	
	16"	12'		1'-0"	1'-0"	1'-0"	3'-0"		1'-0"	1'-0"	3'-2"	3'-6"	
		14'		1'-0"	1'-0"	1'-10"	4'-2"		1'-0"	1'-10"	4'-4"	4'-8"	
		16'		1'-0"	1'-0"	3'-0"	5'-4"		1'-0"	2'-11"	5'-6"	5'-10"	
		18'		1'-0"	1'-0"	4'-1"	6'-6"		1'-0"	4'-0"	6'-8"	7'-0"	
		20'		19.2"	1'-0"	1'-0"	3'-9"	6'-9"	1'-0"	3'-8"	6'-10"	7'-3"	
		22'		16"	1'-0"	1'-0"	3'-6"	6'-11"	1'-0"	3'-4"	7'-0"	7'-5"	
	16"	24'	24"	12"	1'-0"	1'-0"	1'-10"	6'-3"	1'-0"	1'-7"	6'-3"	6'-9"	
		25'		1'-0"	1'-0"	2'-5"	6'-10"		1'-0"	2'-1"	6'-10"	7'-4"	
		10'		1'-0"	1'-0"	1'-0"	1'-0"	1'-11"	1'-0"	1'-0"	1'-1"	2'-4"	2'-8"
		12'		1'-0"	1'-0"	1'-0"	1'-1"	3'-1"	1'-0"	1'-0"	2'-2"	3'-6"	3'-9"
		14'		1'-0"	1'-0"	1'-0"	2'-2"	4'-3"	1'-0"	1'-0"	3'-3"	4'-8"	4'-11"
		16'		1'-0"	1'-0"	1'-2"	3'-3"	5'-5"	1'-0"	1'-2"	4'-5"	5'-10"	6'-1"
	16"	18'	24"	1'-0"	1'-0"	2'-2"	4'-4"	6'-7"	1'-0"	2'-2"	5'-6"	7'-0"	7'-4"
		19'		1'-0"	1'-0"	2'-9"	4'-11"	7'-2"	1'-0"	2'-9"	6'-1"	7'-7"	7'-11"
		21'		19.2"	1'-0"	1'-0"	2'-0"	4'-8"	7'-5"	1'-11"	6'-0"	7'-10"	8'-2"
		23'		16"	1'-0"	1'-0"	1'-4"	4'-5"	7'-8"	1'-0"	1'-2"	6'-0"	8'-6"
		25'		12"	1'-0"	1'-0"	1'-0"	2'-11"	7'-0"	1'-0"	1'-0"	4'-9"	7'-11"
		27'		1'-0"	1'-0"	1'-0"	4'-0"	8'-2"	1'-0"	1'-0"	5'-10"	8'-6"	9'-1"



EVALUATION REPORT

Number: 431

Originally Issued: 03/25/2016

Revised: 04/09/2024

Valid Through: 03/31/2025

TABLE 9 ((continued)) – ALLOWABLE LOCATION OF HOLES IN PKI JOIST WEBS

Simple Span for Live Loads up to 40 psf and Dead Loads up to 25 psf													
Series	Depth	Clear Span	O.C. Spacing	Minimum Distance from Inside Face of Bearing to Center of Hole									
				Round and Clustered Round Hole Size (inches)					Square or Rectangular Hole Size (inches)				
				4	6%	8%	10%	12%	4	6%	8%	10%	12%
PKI-40	9-1/2"	8'	24"	1'-0"	1'-0"				1'-0"	1'-0"			
		10'		1'-0"	1'-3"				1'-0"	1'-8"			
		12'		1'-0"	2'-5"				1'-5"	2'-10"			
		14'		1'-0"	3'-6"				2'-6"	3'-11"			
		16'		1'-10"	4'-8"				3'-8"	5'-1"			
		17'		2'-5"	5'-3"				4'-2"	5'-8"			
		18'		19.2"	1'-4"	4'-9"			3'-5"	5'-3"			
		19'		16"	1'-0"	4'-3"			2'-9"	4'-9"			
		21'		12"	1'-0"	3'-4"			1'-5"	3'-11"			
	11-7/8"	8'	24"	1'-0"	1'-0"	1'-0"			1'-0"	1'-0"	1'-0"		
		10'		1'-0"	1'-0"	1'-5"			1'-0"	1'-4"	2'-0"		
		12'		1'-0"	1'-0"	2'-6"			1'-0"	2'-5"	3'-2"		
		14'		1'-0"	1'-0"	3'-8"			1'-0"	3'-6"	4'-4"		
		16'		1'-0"	1'-11"	4'-9"			1'-1"	4'-8"	5'-6"		
		18'		1'-0"	3'-0"	5'-11"			2'-1"	5'-10"	6'-8"		
		20'		1'-6"	4'-1"	7'-2"			3'-2"	7'-0"	7'-10"		
		22'		19.2"	1'-0"	3'-6"	7'-3"		2'-5"	7'-0"			
		23'		16"	1'-0"	2'-5"	6'-9"		1'-1"	6'-5"	7'-7"		
	25'	12"	1'-0"	1'-0"	5'-10"		1'-0"	5'-5"	6'-10"				
	14"	8'	24"	1'-0"	1'-0"	1'-0"	1'-0"		1'-0"	1'-0"	1'-0"	1'-3"	
		10'		1'-0"	1'-0"	1'-0"	1'-6"		1'-0"	1'-0"	2'-0"	2'-4"	
		12'		1'-0"	1'-0"	1'-0"	2'-7"		1'-0"	1'-0"	3'-2"	3'-6"	
		14'		1'-0"	1'-0"	1'-3"	3'-9"		1'-0"	1'-2"	4'-4"	4'-8"	
		16'		1'-0"	1'-0"	2'-4"	4'-11"		1'-0"	2'-3"	5'-6"	5'-10"	
		18'		1'-0"	1'-0"	3'-5"	6'-1"		1'-0"	3'-4"	6'-8"	7'-0"	
		20'		1'-0"	1'-10"	4'-6"	7'-3"		1'-0"	4'-5"	7'-10"	8'-2"	
		22'		1'-0"	2'-11"	5'-8"	8'-5"		2'-0"	5'-7"	9'-0"	9'-4"	
		23'		1'-0"	3'-5"	6'-3"	9'-0"		2'-7"	6'-2"	9'-7"	10'-0"	
	24'	19.2"	1'-0"	1'-10"	5'-2"	8'-6"	1'-0"	5'-0"	9'-2"	9'-7"			
	26'	16"	1'-0"	1'-0"	4'-9"	8'-8"	1'-0"	4'-6"	9'-4"	9'-10"			
	28'	12"	1'-0"	1'-0"	2'-9"	7'-9"	1'-0"	2'-5"	8'-6"	9'-1"			
	16"	10'	24"	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	1'-0"	1'-0"	1'-0"	2'-4"	2'-8"
		12'		1'-0"	1'-0"	1'-0"	1'-0"	2'-8"	1'-0"	1'-0"	1'-7"	3'-6"	3'-9"
		14'		1'-0"	1'-0"	1'-0"	1'-6"	3'-9"	1'-0"	1'-0"	2'-8"	4'-8"	4'-11"
		16'		1'-0"	1'-0"	1'-0"	2'-7"	4'-11"	1'-0"	1'-0"	3'-9"	5'-10"	6'-1"
		18'		1'-0"	1'-0"	1'-3"	3'-8"	6'-1"	1'-0"	1'-3"	4'-11"	7'-0"	7'-4"
		20'		1'-0"	1'-0"	2'-4"	4'-9"	7'-3"	1'-0"	2'-3"	6'-1"	8'-2"	8'-6"
		22'		1'-0"	1'-0"	3'-5"	5'-11"	8'-6"	1'-0"	3'-4"	7'-3"	9'-4"	9'-8"
		24'		1'-0"	1'-11"	4'-6"	7'-1"	9'-8"	1'-1"	4'-5"	8'-5"	10'-7"	10'-11"
26'		19.2"		1'-0"	1'-0"	3'-6"	6'-7"	9'-9"	1'-0"	3'-5"	8'-1"	10'-9"	11'-2"
27'	1'-0"	1'-0"	4'-1"	7'-2"	10'-4"	1'-0"	3'-11"	8'-8"	11'-0"	11'-9"			
29'	16"	1'-0"	1'-0"	3'-1"	6'-9"	10'-6"	1'-0"	2'-11"	8'-5"	11'-7"	12'-0"		
31'	12"	1'-0"	1'-0"	1'-0"	4'-10"	9'-7"	1'-0"	1'-0"	6'-11"	10'-10"	11'-5"		
PKI-50	11-7/8"	8'	24"	1'-0"	1'-0"	1'-0"			1'-0"	1'-0"	1'-0"		
		10'		1'-0"	1'-0"	1'-0"			1'-0"	1'-0"	2'-0"		
		12'		1'-0"	1'-0"	1'-4"			1'-0"	1'-2"	3'-2"		
		14'		1'-0"	1'-0"	2'-5"			1'-0"	2'-2"	4'-4"		
		16'		1'-0"	1'-0"	3'-6"			1'-0"	3'-4"	5'-6"		
		18'		1'-0"	1'-0"	4'-8"			1'-0"	4'-5"	6'-8"		
		20'		1'-0"	2'-0"	5'-9"			1'-0"	5'-7"	7'-10"		
		22'		19.2"	1'-0"	1'-1"	5'-7"		1'-0"	5'-3"	8'-0"		
		23'		16"	1'-0"	1'-0"	4'-10"		1'-0"	4'-5"	7'-7"		
	25'	12"	1'-0"	1'-0"	3'-5"		1'-0"	2'-10"	6'-10"				
	14"	8'	24"	1'-0"	1'-0"	1'-0"	1'-0"		1'-0"	1'-0"	1'-0"	1'-3"	
		10'		1'-0"	1'-0"	1'-0"	1'-0"		1'-0"	1'-0"	2'-0"	2'-4"	
		12'		1'-0"	1'-0"	1'-0"	1'-9"		1'-0"	1'-0"	3'-2"	3'-6"	
		14'		1'-0"	1'-0"	1'-0"	2'-10"		1'-0"	1'-0"	4'-4"	4'-8"	
		16'		1'-0"	1'-0"	1'-0"	4'-0"		1'-0"	1'-0"	5'-6"	5'-10"	
		18'		1'-0"	1'-0"	2'-1"	5'-2"		1'-0"	2'-0"	6'-8"	7'-0"	
		20'		1'-0"	1'-0"	3'-2"	6'-4"		1'-0"	3'-0"	7'-10"	8'-2"	
		22'		1'-0"	1'-1"	4'-3"	7'-6"		1'-0"	4'-2"	9'-0"	9'-4"	
		23'		1'-0"	1'-7"	4'-10"	8'-1"		1'-0"	4'-8"	9'-7"	10'-0"	
	24'	19.2"	1'-0"	1'-0"	3'-6"	7'-5"	1'-0"	3'-3"	9'-2"	9'-7"			
	26'	16"	1'-0"	1'-0"	2'-9"	7'-3"	1'-0"	2'-5"	9'-4"	9'-10"			
	28'	12"	1'-0"	1'-0"	1'-0"	6'-0"	1'-0"	1'-0"	8'-6"	9'-1"			
	16"	10'	24"	1'-0"	1'-0"	1'-0"	1'-0"	1'-1"	1'-0"	1'-0"	1'-0"	2'-4"	2'-8"
		12'		1'-0"	1'-0"	1'-0"	1'-0"	2'-1"	1'-0"	1'-0"	1'-0"	3'-6"	3'-9"
		14'		1'-0"	1'-0"	1'-0"	1'-0"	3'-3"	1'-0"	1'-0"	1'-11"	4'-8"	4'-11"
		16'		1'-0"	1'-0"	1'-0"	1'-9"	4'-4"	1'-0"	1'-0"	3'-0"	5'-10"	6'-1"
		18'		1'-0"	1'-0"	1'-0"	2'-10"	5'-6"	1'-0"	1'-0"	4'-2"	7'-0"	7'-4"
		20'		1'-0"	1'-0"	1'-3"	3'-11"	6'-8"	1'-0"	1'-1"	5'-3"	8'-2"	8'-6"
		22'		1'-0"	1'-0"	2'-3"	5'-0"	7'-10"	1'-0"	2'-2"	6'-5"	9'-4"	9'-8"
		24'		1'-0"	1'-0"	3'-4"	6'-2"	9'-1"	1'-0"	3'-6"	7'-7"	10'-7"	10'-11"
		26'		19.2"	1'-0"	1'-0"	2'-1"	5'-6"	9'-0"	1'-0"	1'-11"	7'-2"	10'-9"
	27'	1'-0"	1'-0"	2'-8"	6'-1"	9'-7"	1'-0"	1'-0"	6'-9"	11'-5"	11'-9"		
	29'	16"	1'-0"	1'-0"	1'-5"	5'-5"	9'-7"	1'-0"	1'-2"	7'-4"	11'-7"	12'-0"	
	31'	12"	1'-0"	1'-0"	1'-0"	3'-2"	8'-5"	1'-0"	5'-5"	10'-10"	11'-5"		



EVALUATION REPORT

Number: 431

Originally Issued: 03/25/2016

Revised: 04/09/2024

Valid Through: 03/31/2025

TABLE 9 ((continued)) – ALLOWABLE LOCATION OF HOLES IN PKI JOIST WEBS

Simple Span for Live Loads up to 40 psf and Dead Loads up to 25 psf													
Series	Depth	Clear Span	O.C. Spacing	Minimum Distance from Inside Face of Bearing to Center of Hole									
				Round and Clustered Round Hole Size (inches)					Square or Rectangular Hole Size (inches)				
				8%	14%	16%	18%	20%	8%	14%	16%	18%	20%
PKI-40	18"	12'	24"	1'-0"	2'-5"				1'-0"	4'-1"			
		14'		1'-0"	3'-6"				1'-0"	5'-3"			
		16'		1'-0"	4'-8"				1'-3"	6'-5"			
		18'		1'-0"	5'-10"				2'-4"	7'-8"			
		20'		1'-0"	7'-0"				3'-5"	8'-10"			
		22'		1'-0"	8'-2"				4'-6"	10'-0"			
		24'		1'-9"	9'-5"				5'-7"	11'-3"			
		26'	19.2"	2'-10"	10'-7"				6'-9"	12'-6"			
		28'		1'-3"	10'-7"				5'-11"	12'-9"			
		29'		1'-9"	11'-3"				6'-5"	13'-5"			
		31'	16"	1'-0"	11'-3"				5'-7"	13'-8"			
		33'	12"	1'-0"	10'-2"				2'-11"	13'-2"			
		34'		1'-0"	10'-9"				3'-6"	13'-9"			
	20"	14'	24"	1'-0"	1'-5"	3'-9"			1'-0"	5'-3"	5'-7"		
		16'		1'-0"	2'-6"	4'-11"			1'-0"	6'-5"	6'-9"		
		18'		1'-0"	3'-7"	6'-1"			1'-0"	7'-8"	8'-0"		
		20'		1'-0"	4'-8"	7'-3"			1'-7"	8'-10"	10'-2"		
		22'		1'-0"	5'-10"	8'-5"			2'-7"	10'-0"	10'-4"		
		24'		1'-0"	7'-0"	9'-7"			3'-8"	11'-3"	11'-7"		
		26'		1'-2"	8'-2"	10'-10"			4'-9"	12'-6"			
		27'	19.2"	1'-8"	8'-9"	11'-5"			5'-4"	13'-1"			
		29'		1'-0"	8'-3"	11'-6"			4'-0"	13'-5"	13'-9"		
		31'		1'-0"	9'-5"	12'-7"			5'-1"	14'-7"	15'-0"		
		33'	16"	1'-0"	8'-11"	12'-9"			3'-10"	14'-11"	15'-4"		
		35'	12"	1'-0"	6'-10"	11'-10"			1'-0"	14'-4"	14'-11"		
		37'		1'-0"	8'-0"	13'-0"			1'-5"	15'-7"	16'-2"		
	22"	16'	24"	1'-0"	1'-2"	2'-9"	5'-1"		1'-0"	6'-5"	6'-9"	7'-1"	
		18'		1'-0"	1'-8"	3'-10"	6'-3"		1'-0"	7'-8"	8'-0"	8'-4"	
		20'		1'-0"	2'-9"	5'-0"	7'-5"		1'-0"	8'-10"	9'-2"	9'-6"	
		22'		1'-0"	3'-10"	6'-1"	8'-7"		1'-0"	10'-0"	10'-5"	11'-0"	
		24'		1'-0"	4'-11"	7'-3"	9'-10"		2'-0"	11'-3"	11'-7"		
		26'		1'-0"	6'-1"	8'-5"	11'-0"		3'-0"	12'-6"			
		28'		1'-0"	7'-2"	9'-7"	12'-3"		4'-1"	13'-8"			
		29'	19.2"	1'-0"	7'-9"	10'-3"	12'-10"		4'-8"				
		31'		1'-0"	6'-10"	9'-9"	12'-11"		3'-0"	14'-7"	15'-0"		
		32'		1'-0"	7'-4"	10'-4"	13'-7"		3'-6"	15'-2"	15'-7"		
		33'	16"	1'-0"	5'-11"	9'-4"	13'-1"		1'-4"	14'-11"	15'-4"	15'-10"	
		35'		1'-0"	7'-0"	10'-6"	14'-3"		2'-5"	16'-1"	16'-7"	17'-1"	
		37'	12"	1'-0"	4'-1"	8'-6"	13'-4"		1'-0"	15'-7"	16'-2"	16'-9"	
		39'		1'-0"	5'-2"	9'-8"	14'-7"		1'-0"	16'-9"	17'-4"	17'-11"	
		40'		1'-0"	5'-9"	10'-3"	15'-2"		1'-0"	17'-4"	17'-11"	18'-6"	
	24"	16'	24"	1'-0"	1'-2"	1'-3"	3'-0"	5'-3"	1'-0"	4'-7"	6'-9"	7'-1"	7'-5"
		18'		1'-0"	1'-2"	2'-0"	4'-1"	6'-5"	1'-0"	5'-9"	8'-0"	8'-4"	8'-8"
		20'		1'-0"	1'-2"	3'-1"	5'-3"	7'-7"	1'-0"	6'-11"	9'-2"	9'-6"	
		22'		1'-0"	2'-1"	4'-2"	6'-5"	8'-10"	1'-0"	8'-1"	10'-5"	10'-9"	
		24'		1'-0"	3'-2"	5'-3"	7'-7"	10'-0"	1'-0"	9'-3"	11'-7"		
		26'		1'-0"	4'-3"	6'-5"	8'-9"	11'-2"	1'-6"	10'-5"			
		28'		1'-0"	5'-4"	7'-7"	9'-11"	12'-5"	2'-6"	11'-8"			
		30'	19.2"	1'-0"	6'-5"	8'-8"	11'-1"	13'-7"	3'-7"	12'-10"			
		32'		1'-0"	5'-1"	7'-10"	10'-8"	13'-9"	1'-7"	12'-8"	15'-7"		
		33'		1'-0"	5'-8"	8'-4"	11'-3"	14'-5"	2'-1"	13'-3"	16'-3"		
		35'	16"	1'-0"	4'-4"	7'-6"	10'-11"	14'-6"	1'-0"	13'-2"	16'-7"	17'-1"	
		36'		1'-0"	4'-10"	8'-1"	11'-6"	15'-2"	1'-0"	13'-9"	17'-2"	17'-8"	
		38'	12"	1'-0"	1'-4"	5'-4"	9'-7"	14'-4"	1'-0"	12'-4"	16'-9"	17'-4"	17'-11"
		40'		1'-0"	2'-4"	6'-5"	10'-9"	15'-6"	1'-0"	13'-6"	17'-11"	18'-6"	19'-1"
	42'			1'-0"	3'-4"	7'-6"	11'-11"	16'-8"	1'-0"	14'-8"	19'-2"	19'-9"	20'-4"



EVALUATION REPORT

Number: **431**

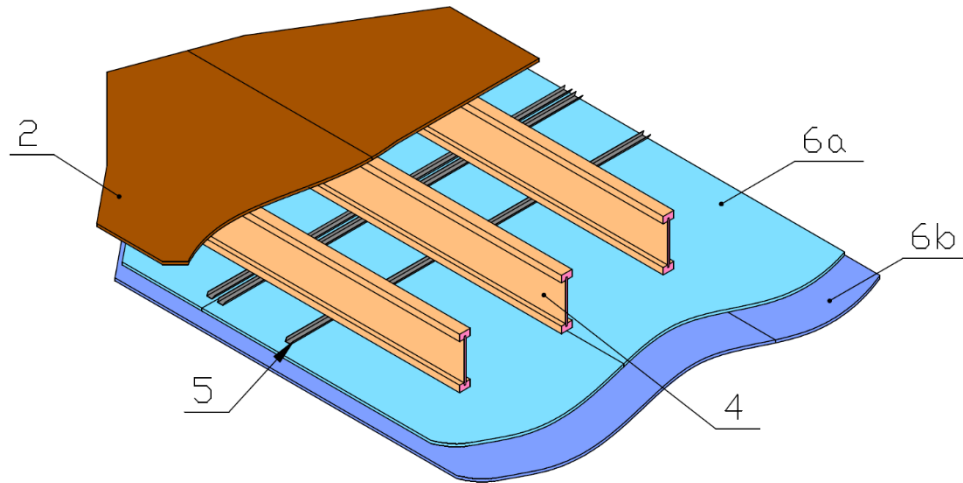
Originally Issued: 03/25/2016

Revised: 04/09/2024

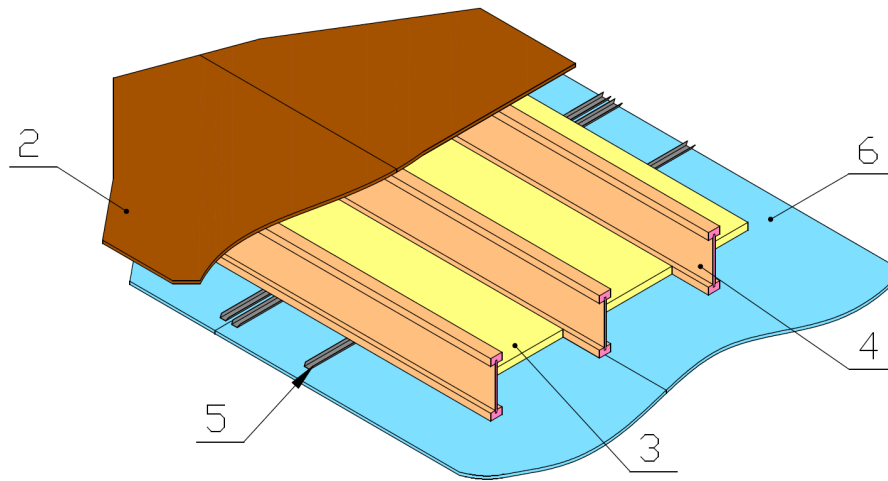
Valid Through: 03/31/2025

TABLE 9 ((continued)) – ALLOWABLE LOCATION OF HOLES IN PKI JOIST WEBS

Simple Span for Live Loads up to 40 psf and Dead Loads up to 25 psf													
Series	Depth	Clear Span	O.C. Spacing	Minimum Distance from Inside Face of Bearing to Center of Hole									
				Round and Clustered Round Hole Size (inches)					Square or Rectangular Hole Size (inches)				
				8%	14%	16%	18%	20%	8%	14%	16%	18%	20%
PKI-50	18"	12'	24"	1'-0"	2'-5"				1'-0"	4'-1"			
		14'		1'-0"	3'-6"				1'-0"	5'-3"			
		16'		1'-0"	4'-8"				1'-3"	6'-5"			
		18'		1'-0"	5'-10"				2'-4"	7'-8"			
		20'		1'-0"	7'-0"				3'-5"	8'-10"			
		22'		1'-0"	8'-2"				4'-6"	10'-0"			
		24'		1'-9"	9'-5"				5'-7"	11'-3"			
		26'		2'-10"	10'-7"				6'-9"	12'-6"			
		28'		3'-11"	11'-9"				6'-11"				
		29'	19.2"	1'-9"	11'-3"				6'-5"	13'-5"			
		31'	16"	1'-0"	11'-3"				5'-7"	13'-8"			
		33'	12"	1'-0"	10'-2"				2'-11"	13'-2"			
		35'		1'-0"	11'-4"				4'-0"				
	20"	14'	24"	1'-0"	1'-5"	3'-9"			1'-0"	5'-3"	5'-7"		
		16'		1'-0"	2'-6"	4'-11"			1'-0"	6'-5"	6'-9"		
		18'		1'-0"	3'-7"	6'-1"			1'-0"	7'-8"	8'-0"		
		20'		1'-0"	4'-8"	7'-3"			1'-7"	8'-10"	9'-2"		
		22'		1'-0"	5'-10"	8'-5"			2'-7"	10'-0"	10'-5"		
		24'		1'-0"	7'-0"	9'-7"			3'-8"	11'-3"	11'-7"		
		26'		1'-2"	8'-2"	10'-10"			4'-9"	12'-6"			
		28'		2'-3"	9'-4"	12'-0"			5'-10"	13'-8"			
		29'		2'-9"	9'-11"	12'-8"			6'-5"				
		31'	19.2"	1'-0"	9'-5"	12'-8"			5'-1"	14'-7"	15'-0"		
		32'	16"	1'-3"	10'-0"	13'-4"			5'-8"	15'-2"	15'-7"		
		34'		1'-0"	9'-6"	13'-4"			4'-5"	15'-6"	16'-0"		
		36'		1'-0"	7'-5"	12'-5"			1'-0"	14'-11"	15'-6"		
	37'	1'-0"		8'-0"	13'-0"			1'-5"	15'-7"	16'-2"			
	22"	16'	24"	1'-0"	1'-2"	2'-9"	5'-1"		1'-0"	6'-5"	6'-9"	7'-1"	
		18'		1'-0"	1'-8"	3'-10"	6'-3"		1'-0"	7'-8"	8'-0"	8'-4"	
		20'		1'-0"	2'-9"	5'-0"	7'-5"		1'-0"	8'-10"	9'-2"	9'-6"	
		22'		1'-0"	3'-10"	6'-1"	8'-7"		1'-0"	10'-0"	10'-5"	10'-9"	
		24'		1'-0"	4'-11"	7'-3"	9'-10"		2'-0"	11'-3"	11'-7"		
		26'		1'-0"	6'-1"	8'-5"	11'-0"		3'-0"	12'-6"			
		28'		1'-0"	7'-2"	9'-7"	12'-3"		4'-1"	13'-8"			
		30'		1'-9"	8'-4"	10'-10"	13'-5"		5'-2"				
		32'	19.2"	1'-0"	7'-4"	10'-4"	13'-7"		3'-6"	15'-2"	15'-7"		
		33'	16"	1'-0"	7'-11"	10'-11"	14'-2"		4'-0"	15'-10"	16'-3"		
		35'		1'-0"	7'-0"	10'-6"	14'-3"		2'-5"	16'-1"	16'-7"	17'-1"	
		36'		1'-0"	7'-7"	11'-1"	14'-10"		2'-11"	16'-9"	17'-2"	17'-8"	
		38'		1'-0"	4'-8"	9'-1"	13'-11"		1'-0"	16'-2"	16'-9"	17'-4"	
	40'	12"	1'-0"	5'-9"	10'-3"	15'-2"		1'-0"	17'-4"	17'-11"	18'-6"		
	24"	16'	24"	1'-0"	1'-2"	1'-3"	3'-0"	5'-3"	1'-0"	4'-7"	6'-9"	7'-1"	7'-5"
		18'		1'-0"	1'-2"	2'-0"	4'-1"	6'-5"	1'-0"	5'-9"	8'-0"	8'-4"	8'-8"
		20'		1'-0"	1'-2"	3'-1"	5'-3"	7'-7"	1'-0"	6'-11"	9'-2"	9'-6"	
		22'		1'-0"	2'-1"	4'-2"	6'-5"	8'-10"	1'-0"	8'-1"	10'-5"	10'-9"	
		24'		1'-0"	3'-2"	5'-3"	7'-7"	10'-0"	1'-0"	9'-3"	11'-7"		
		26'		1'-0"	4'-3"	6'-5"	8'-9"	11'-2"	1'-6"	10'-5"			
		28'		1'-0"	5'-4"	7'-7"	9'-11"	12'-5"	2'-6"	11'-8"			
		30'		1'-0"	6'-5"	8'-8"	11'-1"	13'-7"	3'-7"	12'-10"			
		31'		1'-0"	7'-0"	9'-3"	11'-8"	14'-3"	4'-1"	13'-5"			
		33'	19.2"	1'-0"	5'-8"	8'-4"	11'-3"	14'-5"	2'-1"	13'-3"	16'-3"		
		35'	16"	1'-0"	6'-9"	9'-6"	12'-5"	15'-7"	3'-2"	14'-6"			
		37'		1'-0"	5'-5"	8'-7"	12'-1"	15'-9"	1'-2"	14'-4"	17'-10"		
		38'		1'-0"	5'-11"	9'-2"	12'-8"	16'-4"	1'-8"	14'-11"	18'-5"		
		40'		1'-0"	2'-4"	6'-5"	10'-9"	15'-6"	1'-0"	13'-6"	17'-11"	18'-6"	19'-1"
		42'		12"	1'-0"	3'-4"	7'-6"	11'-11"	16'-8"	1'-0"	14'-8"	19'-2"	19'-9"
	43'	1'-0"		3'-11"	8'-0"	12'-6"	17'-3"	1'-0"	15'-3"	19'-9"	20'-4"	21'-3"	

**FIGURE 3 – 1-Hour Fire-Rated Floor-Ceiling or Roof-Ceiling Assembly****PWL/SFSW 60-01 - 1 Hour Fire Resistance-Rated Floor and Roof Assembly**

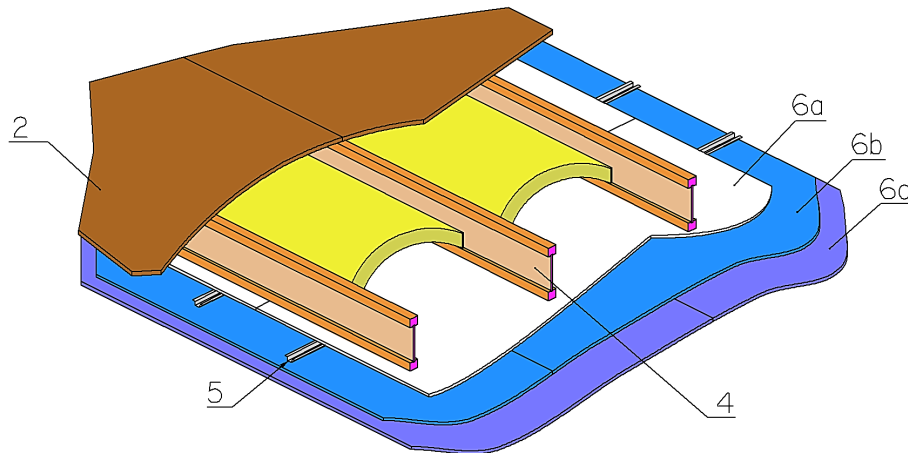
Material	Specification
(1) Floor Topping (Optional)	Varies (Not Shown) Gypsum concrete, lightweight or normalweight concrete topping. When used as a roof assembly, materials for a built-up roof covering that are described in an assembly that provides a Class A, B, or C rating on combustible wood decks may be used. Reference sound rating if applicable.
(2) Floor Sheathing	Min. ¾ in. Thick Wood Sheathing, Designed and Installed Per IBC or IRC When used as a roof assembly, min ½-inch-thick wood sheathing may be used when designed and installed per IBC or IRC requirements.
(3) Insulation	Optional (not shown) When installed, insulation shall be installed above the joist flanges and supported by stay wires spaced 12 in. on center (o.c.).
(4) Structural Member	Pinkwood® Ltd. Wood I-Joists Certified Models: PKI10, PKI20, PKI23, PKI35Plus, PKI40, and PKI50 I-Joists Series. 9½ in. min. deep joists spaced a max. of 24 in. o.c. Installed in accordance with the Code. The max spacing may be increased to 48 in. o.c., when the ceiling is applied to stripping spaced a max of 24 in. o.c., The stripping shall be a nominal 2x4 construction-grade lumber attached to the joist's bottom flange using two 10d nails.
(5) Resilient Channels	(Optional) Min. 0.019 in thick galvanized steel resilient channels Channel attached perpendicular to the bottom flange of the joists with one 1¼ in. drywall screws. Channels spaced a max. of 16 in. o.c. The max channel spacing may be increased to 24 in. o.c. when joists are spaced a max. of 16 in. o.c.
(6) Gypsum Wallboard	Two layers of min ½ in. type X gypsum wallboard Attached with the long dimension perpendicular to the resilient channels (or joists) as follows: 6a. WALLBOARD BASE LAYER - The base layer of the wallboard is attached to resilient channels (or joists) using 1¼ in. Type S drywall screws at 12 in. o.c. When resilient channels are installed, edge joints shall be centered on joists. End joints of wallboard staggered a min. of one channel (or joist) spacing. 6b. WALLBOARD FACE LAYER - The face layer of the wallboard is attached to resilient channels (or joists) through the base layer using 1¼ in. Type S drywall screws spaced 12 in. o.c. Edge joints shall be offset from base layer joints by a min of one channel (or joist) spacing. Additionally, the wallboard face layer is attached to the base layer with 1½ in. Type G drywall screws spaced 8 in. o.c., placed 1½ in. from face layer end joints.
(7) Finish System	(Not Shown) Face layer joints shall be covered with tape and coated with joint compound. Screw heads shall be covered with joint compound.

**FIGURE 4 – 1-Hour Fire-Rated Floor-Ceiling or Roof-Ceiling Assembly**

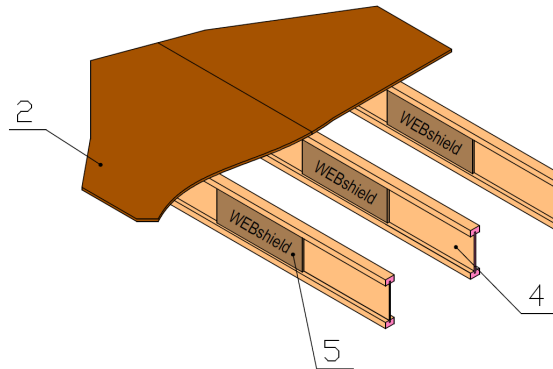
PWL/SFSW 60-02 - 1 Hour Fire Resistance-Rated Floor and Roof Assembly	
Material	Specification
(1) Floor Topping (Optional)	Varies (Not Shown)
Gypsum concrete, lightweight or normal concrete topping. When used as a roof assembly, materials for a built-up roof covering that are described in an assembly that provides a Class A, B, or C rating on combustible wood decks may be used. Reference sound rating if applicable.	
(2) Floor Sheathing	Min ¾ in. Thick Wood Sheathing, Designed and Installed Per Code
When used as a roof assembly, min 1/2-inch-thick wood sheathing may be used when designed and installed per Code requirements.	
(3) Insulation	Min. 1½ in thick mineral wool batts – 2.5 pcf (min.)
When installed, insulation shall be friction fitted between the bottom flanges and supported by resilient channels. The ends of batts shall be centered over resilient channels and tightly butted.	
(4) Structural Member	Pinkwood® Ltd. Wood I-Joists
Certified Models: PKI35Plus, PKI40, and PKI50 I-Joists Series. 9½ in. min. deep joists spaced a max. of 24 in. o.c. installed in accordance with the Code. The max spacing may be increased to 48 in. o.c., when the ceiling is applied to stripping spaced a max of 24 in. o.c. The stripping shall be a nominal 2x4 construction-grade lumber attached to the joist's bottom flange using two 10d nails.	
(5) Resilient Channels	Min. 0.019 in. thick galvanized steel resilient channels
Channels attached perpendicular to the bottom flange of the joists using 1¾ in. long drywall screws. Channels spaced a max. of 16 in. o.c. Additional channels are required at gypsum board end joints so that each board is attached to a separate channel. These additional channels shall extend to the next joist on each side of the board end joint.	
(6) Gypsum Wallboard	Min. ¾ in. Thick type C gypsum wallboard
Installed with long dimension perpendicular to resilient channels and fastened to each channel with min. 1 in. long Type S drywall screws. Fasteners spaced 12 in. o.c. in the field of the wallboard, 8 in. o.c. at wallboard end joints, and 1-1/2 in. from panel edges and ends. Edge joints shall be centered between joists. End joints shall be staggered one channel spacing.	
(7) Finish System	(Not Shown)
Face layer joints shall be covered with tape and coated with joint compound. Screw heads shall be covered with joint compound.	



FIGURE 5 – 2 -Hour Fire-Rated Floor-Ceiling Assembly



PWL/SFSW 120-01 – 2 Hour Fire Resistance-Rated Floor and Roof Assembly	
Material	Specification
(1) Floor Topping (Optional)	Varies (Not Shown)
Gypsum concrete, lightweight or normal concrete topping. When used as a roof assembly, materials for a built-up roof covering that are described in an assembly that provides a Class A, B, or C rating on combustible wood decks may be used. Reference sound rating if applicable.	
(2) Floor Sheathing	Min ½ in. Thick Wood Sheathing, Designed and Installed Per Code
When used as a roof assembly, min ½-inch-thick wood sheathing may be used when designed and installed per Code requirements.	
(3) Insulation	Optional for sound (shown)
Minimum 3½ in. thick unfaced fiberglass insulation fitted between I-Joists supported by stay wires spaced 12 in. on center (o.c.).	
(4) Structural Member	Pinkwood® Ltd. Wood I-Joists
Certified Models: PKI10, PKI20, PKI23, PKI35Plus, PKI40, and PKI50 I-Joists Series. 9½ in. min. deep joists spaced a max. of 24 in. o.c. installed in accordance with the Code.	
(5) Resilient Channels	Min. 0.019 in thick galvanized steel resilient channels
Channels attached perpendicular to the bottom flange of the joists using 1½ in. long drywall screws. Channels spaced a max. of 16 in. o.c. Additional channels are required at gypsum board end joints so that each board is attached to a separate channel. These additional channels shall extend to the next joist on each side of the board end joint.	
(6) Gypsum Wallboard	Min. ½ in. Thick type C gypsum wallboard
<p>6a. WALLBOARD BASE LAYER – The base layer of the wallboard is installed perpendicular to the joists and directly attached to the bottom flange using 1½ in. Type S drywall screws at 12 in. o.c. End joints of the wallboard are centered on the bottom flange and staggered a min. of one joist spacing.</p> <p>6b. WALLBOARD MIDDLE LAYER – Middle layer of wallboard attached to resilient channels using 1 in. Type S drywall screw spaced 12 in. o.c., with the long dimension of wallboard perpendicular to resilient channels. Edge joints shall be centered on joists and offset a min. of one joist space from base layer end joints. End joints staggered a min. of one channel spacing and offset from the edge joints in the base layer a min. of one channel spacing.</p> <p>6c. WALLBOARD FACE LAYER – The face layer of the wallboard is attached to channels through the middle layer using 1½ in. Type S drywall screws spaced 8 in. o.c. Edge joints of the face layer of the wallboard shall be centered on the joists and offset a min. distance equal to the joist spacing from those of the middle layer. End joints of the face layer of the wallboard staggered a min. of one channel spacing with respect to the middle layer end joint and base layer edge joint.</p>	
(7) Finish System	(Not Shown)
Face layer joints covered with tape and coated with joint compound. Screw heads covered with joint compound.	

**FIGURE 6 – IRC Compliant Fire-Rated Floor-Ceiling Assemblies****Figure b: PKI10-50**

PWL 15-01 – IRC Compliant Fire Protected Floor Assembly	
Material	Specification
(1) Floor Topping (Optional)	Varies (Not Shown) Gypsum concrete, lightweight or normalweight concrete topping. When used as a roof assembly, materials for a built-up roof covering that are described in an assembly that provides a Class A, B, or C rating on combustible wood decks may be used. Reference sound rating if applicable.
(2) Floor Sheathing	Min ½ in. Thick Wood Sheathing, Designed and Installed Per IBC or IRC When used as a roof assembly, min ½ in. thick wood sheathing may be used when designed and installed per IBC or IRC requirements.
(3) Insulation	Optional (not shown) When installed, insulation shall be installed above the joist flanges and supported by stay wires spaced 12 in. on center (o.c.).
(4) Structural Member	Pinkwood® Ltd. Wood I-Joists Certified Models: Figure b. PKI10, PKI20, PKI23, PKI35Plus, PKI40, and PKI50 series I-Joists 9½ in. to 16 in. depths spaced a max of 24 in. o.c. installed in accordance with the IBC or IRC with WEBSHIELD® Panels.
(5) Fire Protection Member	Pinkwood® Ltd. WEBSHIELD® Panels Certified Panels: WEBSHIELD® Panels applied to PKI10, PKI20, PKI23, PKI35Plus, PKI40, and PKI50 I-Joists. WEBSHIELD® Panels consist of 15/32 in. thick Certified OSB panels with No. 16 gage min. 7/16 inch crown staples attached at min 4 corners of panel at max. spacing 48 in. o.c. down the length of the joist span. Panels shall be on both sides of I-Joists.



EVALUATION REPORT

Number: **431**

Originally Issued: 03/25/2016

Revised: 04/09/2024

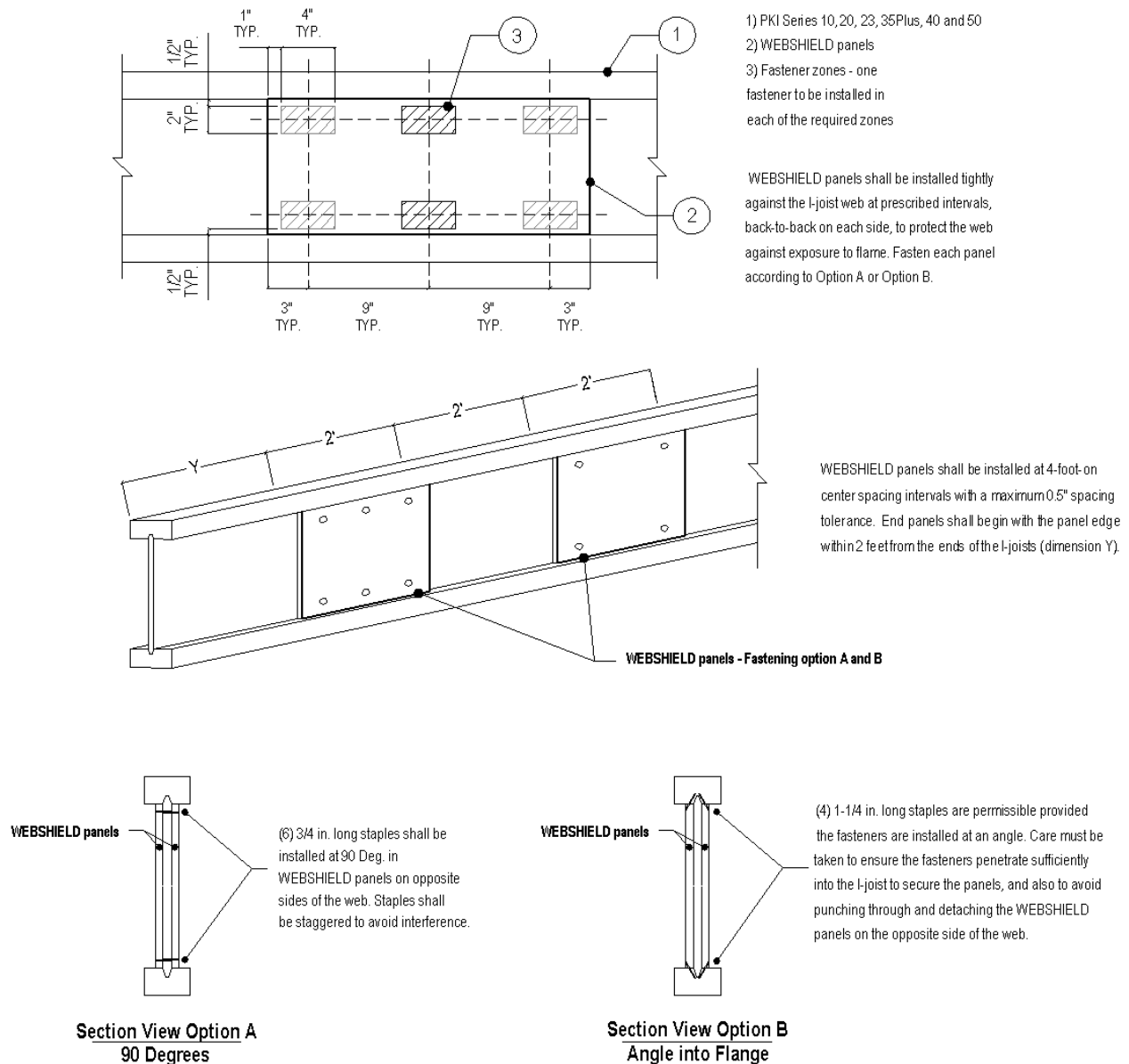
Valid Through: 03/31/2025

TABLE 10– STC AND IIC - FLOOR-CEILING ASSEMBLY SOUND RATINGS ^(1,2,3)

Components	Acoustic Mat	Floor Topping	Insulation Thickness	60-01		60-02		120-01	
				STC ¹	IIC ¹	STC ¹	IIC ¹	STC ¹	IIC ¹
Ceramic tile bonded with thinset adhesive	5 mm Recycled Rubber Underlayment	1 in. thick Gypsum Concrete	3½ in. thick fiberglass or 1-1/2 in. thick mineral wool insulation	65	53	62	50	-	-
Ceramic tile bonded with thinset adhesive	5 mm Recycled Rubber Underlayment	1½ in. thick lightweight Concrete	3½ in. thick fiberglass or 1-1/2 in. thick mineral wool insulation	66	54	63	52	-	-
Ceramic tile bonded with thinset adhesive	5 mm Recycled Rubber Underlayment	None	3½ in. thick fiberglass or 1-1/2 in. thick mineral wool insulation	55	49	51	47	-	-
Hardwood	2 mm Foam Underlayment	1 in. thick Gypsum Concrete	3½ in. thick fiberglass or 1-1/2 in. thick mineral wool insulation	65	55	62	53	-	-
Hardwood	2 mm Foam Underlayment	1½ in. thick lightweight Concrete	3½ in. thick fiberglass or 1-1/2 in. thick mineral wool insulation	66	56	64	54	-	-
Hardwood	2 mm Foam Underlayment	None	3½ in. thick fiberglass or 1-1/2 in. thick mineral wool insulation	55	47	51	45	-	-
Cushioned Vinyl	None	1 in. thick Gypsum Concrete	3½ in. thick fiberglass or 1-1/2 in. thick mineral wool insulation	65	55	62	52	58	45
Cushioned Vinyl	None	1½ in. thick lightweight Concrete	3½ in. thick fiberglass or 1-1/2 in. thick mineral wool insulation	66	56	63	55	-	-
Cushioned Vinyl	None	None	3½ in. thick fiberglass or 1½ in. thick mineral wool insulation	55	46	51	44	-	-
Carpet with Pad	None	1 in. thick Gypsum Concrete	3½ in. thick fiberglass or 1½ in. thick mineral wool insulation	65	59	62	57	58	64
Carpet with Pad	None	1½ in. thick lightweight Concrete	3½ in. thick fiberglass or 1-1/2 in. thick mineral wool insulation	66	62	63	60	-	-
Carpet with Pad	None	None	3½ in. thick fiberglass or 1½ in. thick mineral wool insulation	55	48	51	46	49	54

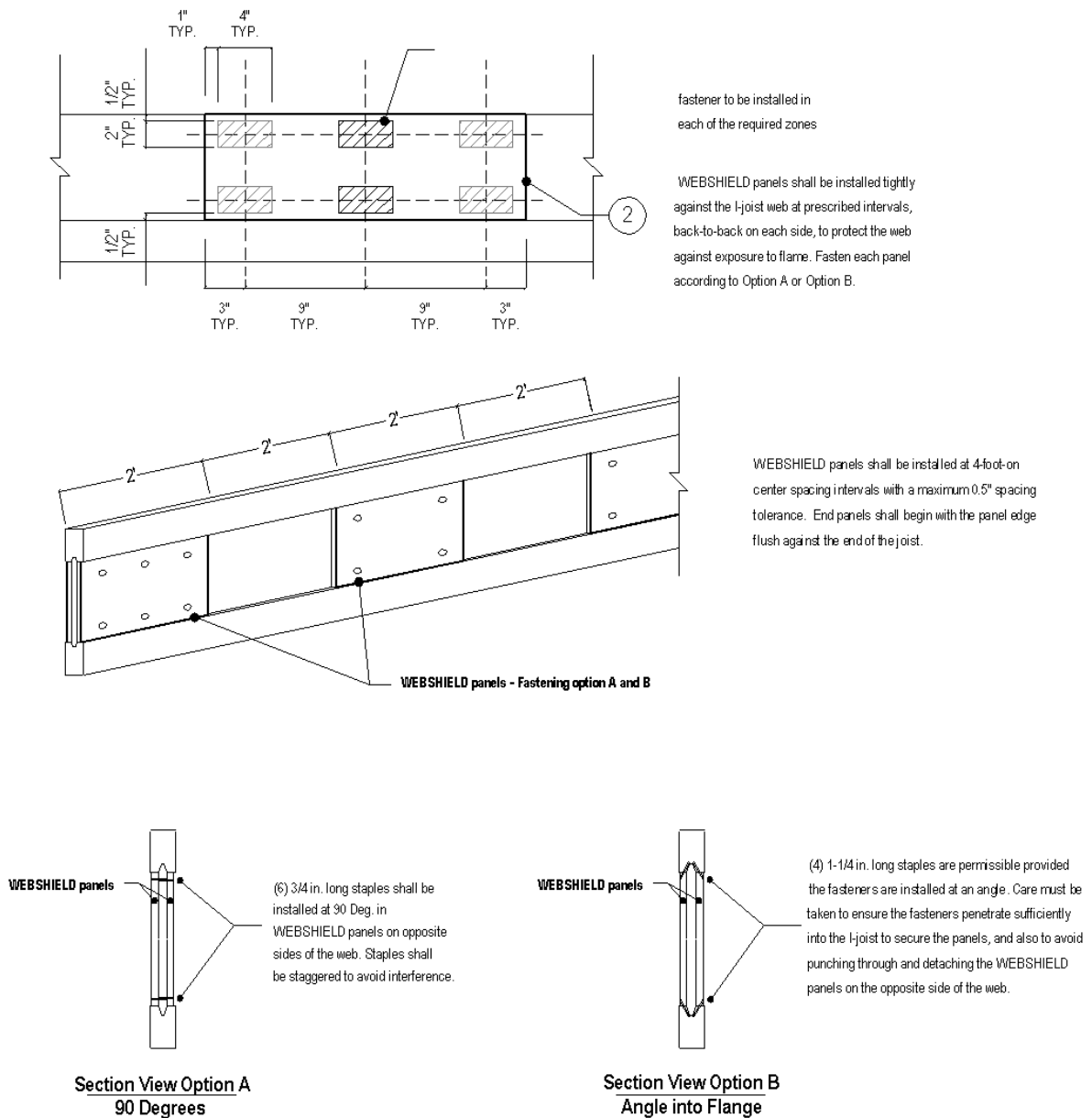
Notes to Table 10:

1. Sound (STC) and Impact (IIC) class ratings listed in the table are per IBC Sections 1206.2 and 1206.3 and from tested assemblies in accordance with ASTM E90 – “Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements” and ASTM E492 – “Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine”.
2. Analysis to determine the STC or IIC rating is permitted per IBC Sections 1206.2 and 1206.3 in accordance with ASTM E413 – “Classification for Rating Sound Insulation” and ASTM E989 – “Standard Classification Determination of Impact Insulation Class”.
3. Modeled STC and IIC ratings are permitted per AWC Technical Report 15 – “Calculation of Sound Transmission Parameters for Wood-Frame Assemblies”.



For St: 1 inch = 25.4 mm

FIGURE 7 – WEBSHIELD® INSTALLATION DETAILS (2x3 and 2x4 Flange)



For SI: 1 inch = 25.4 mm

FIGURE 8 – WEBSHIELD® INSTALLATION DETAILS (3x2 Flange)



CITY OF LOS ANGELES SUPPLEMENT

PINKWOOD Ltd.
5929 6th St. NE
Calgary, Alberta T2K 5R5
Canada
(403) 279-3700
www.pinkwood.ca

PINKWOOD® I-JOISTS AND WEBSHIELD® PANELS

CSI Sections:

06 05 23 Wood, Plastic and Composite Fastenings
06 17 33 Wood I-Joists

1.0 RECOGNITION

The Pinkwood I-Joists and Webshield Panels as evaluated and represented in IAPMO UES Evaluation Report ER-431 and with changes as noted in this supplement are a satisfactory alternative for use in buildings built under the following codes (and regulations):

- 2023 City of Los Angeles Building Code (LABC)
- 2023 City of Los Angeles Residential Code (LARC)

2.0 LIMITATIONS

Use of the Pinkwood I-Joists and Webshield Panels recognized in ER-431 and this supplement is subject to the requirements of ER-431 and the following limitations:

2.1 The design, installation, conditions of use, and identification of the Pinkwood I-Joists and Webshield Panels shall be in accordance with the 2021 International Building Code or the 2021 International Residential Code, as applicable, as noted in ER-431.

2.2 Prior to installation, calculations and details demonstrating compliance with this approval report and the 2023 Los Angeles Building Code or 2023 Los Angeles Residential Code shall be submitted to the structural plan check section for review and approval. The calculations and details shall be prepared, stamped, and signed by a California registered design professional.

2.3 The design, installation, and inspection of the Pinkwood I-Joists and Webshield Panels shall be in accordance with LABC Chapters 16 and 17, as applicable, due to local amendments to these chapters.

2.4 Under the LARC, a design in accordance with Section R301.1.3 shall be submitted.

2.5 Fabrication of PKI joists shall be in a shop of a fabricator licensed by the City of Los Angeles Building Department, in accordance with the Manufacturing Standards submitted to the Department.

2.6 PKI joists shall be installed and properly braced in accordance with the Pinkwood published installation instructions and the 2023 Los Angeles Building Code.

2.7 Flanges shall not be subjected to dynamic or static outward forces that may tend to separate the flange from the web.

2.8 This supplement expires concurrently with ER-431.

For additional information about this evaluation report please visit www.uniform-es.org or email us at info@uniform-es.org