

Roseburg RFPI[®] Series I-Joists
Roseburg Forest Products Company

PR-L259

Revised May 15, 2023

Products: Roseburg RFPI Series I-Joists

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1. Basis of the product report:
 - 2021, 2018, 2015, and 2012 International Building Code (IBC): Sections 104.11 Alternative materials and 2303.1.2 Prefabricated wood I-joists
 - 2021, 2018, and 2015 International Residential Code (IRC): Sections 104.11 Alternative materials, and R502.1.2 and R802.1.8 (2018 IRC only) Prefabricated wood I-joists
 - 2012 IRC: Sections R104.11 Alternative materials and R502.1.4 Prefabricated wood I-joists
 - ASTM D5055-16, D5055-13e1, D5055-13, and D5055-09 recognized in the 2021 IBC and IRC, 2018 IBC and IRC, 2015 IBC and IRC, and 2012 IBC and IRC, respectively
 - APA PRI-400, Performance Standard for Residential I-Joists
 - 2021, 2015, and 2008 ANSI/AWC Special Design Provisions for Wind and Seismic (SDPWS) recognized in the 2021, 2018 and 2015, and 2012 IBC, respectively
 - APA Reports T2000P-14, T2001P-64, T2002P-57, T2002P-62A, T2003P-15, T2003P-20, T2003P-67, T2005P-101C, T2006P-04, T2006P-76A, T2008P-11, T2008P-75, T2009P-33, T2009P-42, T2009P-48, T2009P-50, T2010P-35, T2010P-57, T2011P-51, T2011P-52, T2012P-31, T2013P-22, T2013P-24A, T2015L-05B, T2015P-06, T2017L-25, T2018P-30, and T2023P-23, and other qualification data
2. Product description:

All RFPI series I-joists, as described in Table 1, are made with laminated veneer lumber (LVL) flanges with the exception of RFPI-40S, RFPI-60S, and RFPI-80S, which are made of lumber flanges, and OSB webs in accordance with the in-plant manufacturing standard approved by APA.
3. Design properties:

Tables 2, 3a, and 3b list the design properties for RFPI series I-joists. Table 4 shows the allowable lateral shear capacities of RFPI series I-joists in diaphragm applications. Table 5 shows web stiffener information. Allowable span information for RFPI series I-joists shall be in accordance with the recommendations provided by the manufacturer (www.roseburg.com).
4. Product installation:

Installation of RFPI series I-joists shall be in accordance with the recommendations provided by the manufacturer (see link above). Permissible web holes and cantilever reinforcements shall be in accordance with the recommendations provided by the manufacturer.
5. Fire-rated assemblies:

Fire-rated assemblies shall be constructed in accordance with the recommendations provided by the manufacturer, APA Product Report PR-S259, or APA Design/Construction Guide: *Fire-Rated Systems*, Form W305 (www.apawood.org/resource-library).
6. Limitations:
 - a) RFPI series I-joists shall be designed in accordance with the code using the design properties specified in this report.

- b) RFPI series I-joists are limited to dry service conditions where the average equilibrium moisture content of sawn lumber is less than 16%.
- c) RFPI series I-joists, except for RFPI-40S, RFPI-60S, and RFPI-80S, are produced at the Roseburg Forest Products Company facility in Riddle, Oregon under a quality assurance program audited by APA.
- d) RFPI-40S, RFPI-60S, and RFPI-80S are produced at the EACOM Timber Corporation facility in Sault Ste. Marie, Ontario under a quality assurance program audited by APA.
- e) RFPI-40S and RFPI-60S are also produced at the IB EWP Inc.'s facility in Pohénégamook, Quebec under a quality assurance program audited by APA.
- f) This report is subject to re-examination in one year.

7. Identification:

The RFPI series I-joists described in this report are identified by a label bearing the manufacturer's name (Roseburg Forest Products Company) and/or trademark, the APA assigned plant number (1053 for Roseburg Forest Products, Riddle, Oregon, 1058 for EACOM, Sault Ste. Marie, Ontario, and 1135 for IB EWP Inc., Pohénégamook, Quebec), the I-joist series and depth, the APA logo, the report number PR-L259, and a means of identifying the date of manufacture. RFPI-40, RFPI-70, and RFPI-90 are permitted to be labelled as onCENTER® BLI 400, BLI 700, and BLI 900, respectively.

Table 1. Description of Roseburg Forest Products RFPI Series I-Joists^(a)

Joist Series	Joist Depths (in.)	Flanges				Web	
		Material	G ^(b)	Dimension		Material	Thickness (in.)
				Depth (in.)	Width (in.)		
RFPI-20	9-1/2 - 14	LVL	0.50	1-3/8	1-3/4	OSB	3/8
RFPI-40S	9-1/2 - 16	Proprietary SPF/DFL (MSR)	0.42 ^(c)	1-1/2	2-1/2	OSB	3/8
RFPI-400	9-1/2 - 16	LVL	0.50	1-3/8	2-1/16	OSB	3/8
RFPI-40	9-1/2 - 16	LVL	0.50	1-3/8	2-5/16	OSB	3/8
RFPI-60S	9-1/2 - 16	Proprietary SPF/DFL (MSR)	0.46 ^(c)	1-1/2	2-1/2	OSB	3/8
RFPI-70	9-1/2 - 16	LVL	0.50	1-1/2	2-5/16	OSB	3/8
RFPI-80S	11-7/8 - 16	MSR SPF/DFL	0.46 ^(c)	1-1/2	3-1/2	OSB	3/8
RFPI-90	9-1/2 - 16	LVL	0.50	1-1/2	3-1/2	OSB	7/16
RFPI-700	18 - 24	LVL	0.50	1-1/2	2-5/16	OSB	7/16
RFPI-900	18 - 24	LVL	0.50	1-1/2	3-1/2	OSB	7/16

For SI: 1 inch = 25.4 mm.

- ^(a) Referenced dimensions are nominal. Tolerances are as specified in the plant quality manual.
- ^(b) Specific gravity of flanges for use in diaphragm design (see Table 4) based on oven-dry weight and oven-dry volume for lumber flanges or equivalent specific gravity for LVL flanges.
- ^(c) The specific gravity value is permitted to be increased to 0.50 if the flange species is Douglas fir-Larch.

Table 2. Design Properties for Roseburg Forest Products RFPI Series I-Joists^(a)

Depth (in.)	Joist Designation	Permitted to Be Labelled as	EI ^(b) (10 ⁶ lbf-in. ²)	M ^(c) (lbf-ft)	V ^(d) (lbf)	VLC ^(e) (lbf/ft)	K ^(f) (10 ⁶ lbf)
9-1/2	RFPI-20	BLI 400	165	2,820	1,220	2,000	4.94
	RFPI-40S		193	2,735	1,120	2,000	4.94
	RFPI-400		193	3,345	1,220	2,000	4.94
	RFPI-40	BLI 700	215	3,760	1,330	2,000	4.94
	RFPI-60S		231	3,780	1,120	2,000	4.94
	RFPI-70		266	5,130	1,330	2,000	4.94
	RFPI-90		398	7,830	1,890	2,000	4.94
11-7/8	RFPI-20	BLI 400	283	3,640	1,420	2,000	6.18
	RFPI-40S		330	3,545	1,420	2,000	6.18
	RFPI-400		330	4,315	1,480	2,000	6.18
	RFPI-40	BLI 700	366	4,855	1,550	2,000	6.18
	RFPI-60S		396	4,900	1,420	2,000	6.18
	RFPI-70		455	6,645	1,550	2,000	6.18
	RFPI-80S		547	6,970	1,590	2,000	6.18
RFPI-90	676	10,145	2,050	2,000	6.18		
14	RFPI-20	BLI 400	420	4,330	1,610	2,000	7.28
	RFPI-40S		482	4,270	1,710	2,000	7.28
	RFPI-400		486	5,140	1,710	2,000	7.28
	RFPI-40	BLI 700	540	5,785	1,770	2,000	7.28
	RFPI-60S		584	5,895	1,710	2,000	7.28
	RFPI-70		672	7,925	1,770	2,000	7.28
	RFPI-80S		802	8,390	1,835	2,000	7.28
RFPI-90	992	12,100	2,195	2,000	7.28		
16	RFPI-40S	BLI 400	657	4,950	1,970	2,000	8.32
	RFPI-400		665	5,880	1,970	2,000	8.32
	RFPI-40		737	6,615	1,970	2,000	8.32
	RFPI-60S	BLI 700	799	6,835	1,970	2,000	8.32
	RFPI-70		918	9,080	1,970	2,000	8.32
	RFPI-80S		1,092	9,730	2,070	2,000	8.32
	RFPI-90		1,350	13,865	2,330	2,000	8.32
18	RFPI-700		1,245	10,450	2,575	2,200	11.34
	RFPI-900		1,849	16,080	2,885	2,200	11.34
20	RFPI-700		1,579	11,600	2,740	2,200	12.60
	RFPI-900		2,337	17,855	2,945	2,200	12.60
22	RFPI-700		1,955	12,740	2,935	1,800	13.86
	RFPI-900		2,886	19,615	3,010	1,800	13.86
24	RFPI-700		2,375	13,870	3,060	1,750	15.12
	RFPI-900		3,496	21,355	3,060	1,750	15.12

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 lbf = 4.448 N.

- (a) The tabulated values are allowable stress design (ASD) values for normal duration of load. All values, except for EI and K, shall be permitted to be adjusted for other load durations as permitted by the code.
 (b) Bending stiffness (EI) of the I-joist.
 (c) Moment capacity (M) of the I-joist, which shall not be increased by any repetitive member use factor.
 (d) Shear capacity of the I-joist.
 (e) Vertical load capacity when continuously supported.
 (f) Coefficient of shear deflection (K). For calculating uniform load and center point load deflections of an I-joist in a simple-span application, use Equations 1 and 2.

$$\text{Uniform Load: } \delta = \frac{5 \omega L^4}{384 EI} + \frac{\omega L^2}{K} \quad [1]$$

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

where δ = calculated deflection (in.), ω = uniform load (lbf/in.),
 P = concentrated load (lbf), L = design span (in.),
 EI = bending stiffness of the I-joist (lbf-in.²), and K = coefficient of shear deflection (lbf).

Table 3a. Reaction Capacities for Roseburg Forest Products RFPI Series I-Joists^(a)

Depth (in.)	Joist Designation	Permitted to Be Labelled as	End Reaction (lbf)						Intermediate Reaction (lbf)						Web Stiff. Nails ^(b)	
			1-3/4 in. Brg. Length		3-1/2 in. Brg. Length		4 in. Brg. Length		3-1/2 in. Brg. Length		5-1/4 in. Brg. Length					
			Web Stiffeners	Yes	No	Web Stiffeners	Yes	No	Web Stiffeners	Yes	No	Web Stiffeners	Yes	No		
9-1/2	RFPI-20		910	1,150	1,150	1,200	1,220	1,220	1,220	1,220	1,220	1,775	1,875	2,000	2,300	4-8d
	RFPPI-40S		1,080	1,120	1,110	1,120	1,120	1,120	1,120	1,120	1,120	2,160	2,240	2,240	2,240	4-8d
	RFPPI-400		1,025	1,220	1,175	1,220	1,220	1,220	1,220	1,220	1,220	2,150	2,250	2,300	2,440	4-8d
	RFPI-40	BLI 400	1,080	1,220	1,270	1,305	1,330	1,330	1,330	1,330	1,330	2,250	2,500	2,550	2,650	4-8d
	RFPPI-60S		1,080	1,120	1,110	1,120	1,120	1,120	1,120	1,120	1,120	2,160	2,240	2,240	2,240	4-8d
	RFPI-70	BLI 700	1,120	1,330	1,280	1,330	1,330	1,330	1,330	1,330	1,330	2,335	2,500	2,550	2,650	4-8d
	RFPPI-90		1,330	1,585	1,615	1,820	1,700	1,890	1,890	1,890	1,890	3,020	3,445	3,445	3,475	4-10d
	RFPI-20		950	1,225	1,315	1,375	1,420	1,420	1,420	1,420	1,420	1,935	2,035	2,135	2,435	4-8d
	RFPPI-40S		1,200	1,340	1,370	1,400	1,420	1,420	1,420	1,420	1,420	2,500	2,625	2,660	2,840	4-8d
RFPPI-400		1,050	1,265	1,380	1,430	1,480	1,480	1,480	1,480	1,480	2,250	2,350	2,350	2,650	4-8d	
RFPI-40	BLI 400	1,200	1,400	1,470	1,515	1,550	1,550	1,550	1,550	1,550	2,500	2,625	2,660	2,870	4-8d	
RFPPI-60S		1,200	1,340	1,370	1,400	1,420	1,420	1,420	1,420	1,420	2,500	2,625	2,660	2,840	4-8d	
RFPI-70	BLI 700	1,200	1,470	1,470	1,530	1,550	1,550	1,550	1,550	1,550	2,625	2,660	2,660	2,870	4-8d	
RFPPI-80S		1,280	1,590	1,490	1,590	1,550	1,590	1,590	1,590	1,590	2,810	3,180	3,100	3,180	4-10d	
RFPPI-90	BLI 900	1,400	1,745	1,775	1,980	1,885	2,050	2,050	1,885	2,050	3,355	3,475	3,475	3,675	4-10d	
RFPI-20		950	1,290	1,415	1,535	1,550	1,610	1,550	1,550	1,610	1,935	2,035	2,135	2,435	4-8d	
RFPPI-40S		1,200	1,530	1,470	1,670	1,550	1,710	1,550	1,550	1,710	2,500	2,740	2,755	3,050	4-8d	
RFPPI-400		1,050	1,305	1,435	1,620	1,550	1,710	1,550	1,550	1,710	2,250	2,350	2,350	2,650	4-8d	
RFPI-40	BLI 400	1,200	1,560	1,470	1,720	1,550	1,770	1,550	1,550	1,770	2,500	2,740	2,755	3,065	4-8d	
RFPPI-60S		1,200	1,530	1,470	1,670	1,550	1,710	1,550	1,550	1,710	2,500	2,740	2,755	3,050	4-8d	
RFPI-70	BLI 700	1,200	1,590	1,470	1,730	1,550	1,770	1,550	1,550	1,770	2,500	2,740	2,755	3,065	4-8d	
RFPPI-80S		1,280	1,750	1,490	1,815	1,550	1,835	1,550	1,550	1,835	3,020	3,360	3,210	3,600	4-10d	
RFPPI-90	BLI 900	1,400	1,885	1,775	2,125	1,885	2,195	1,885	1,885	2,195	3,355	3,500	3,500	3,850	4-10d	
RFPI-40S		1,200	1,710	1,470	1,910	1,550	1,970	1,550	1,550	1,970	2,500	2,850	2,850	3,250	4-8d	
RFPPI-400		1,050	1,340	1,435	1,830	1,550	1,970	1,550	1,550	1,970	2,250	2,350	2,350	2,650	4-8d	
RFPI-40	BLI 400	1,200	1,710	1,470	1,910	1,550	1,970	1,550	1,550	1,970	2,500	2,850	2,850	3,250	4-8d	
RFPPI-60S		1,200	1,710	1,470	1,910	1,550	1,970	1,550	1,550	1,970	2,500	2,850	2,850	3,250	4-8d	
RFPI-70	BLI 700	1,200	1,710	1,470	1,910	1,550	1,970	1,550	1,550	1,970	2,500	2,850	2,850	3,250	4-8d	
RFPPI-80S		1,280	1,900	1,490	2,030	1,550	2,070	1,550	1,550	2,070	3,020	3,525	3,310	4,000	4-10d	
RFPPI-90	BLI 900	1,400	2,025	1,775	2,260	1,885	2,330	1,885	1,885	2,330	3,355	3,525	3,525	4,025	4-10d	
RFPI-700		1,125	2,200	1,650	2,575	1,800	2,575	1,800	1,800	2,575	2,745	4,050	3,025	4,475	8-8d	
RFPPI-900		1,475	2,570	1,765	2,885	1,850	2,885	1,850	1,850	2,885	3,000	5,110	3,475	5,710	8-16d	
RFPI-700		1,090	2,300	1,585	2,740	1,725	2,740	1,725	1,725	2,740	2,745	4,050	3,025	4,475	8-8d	
RFPPI-900		1,350	2,665	1,700	2,945	1,800	2,945	1,800	1,800	2,945	3,000	5,110	3,475	5,710	8-16d	

Table 3a. Reaction Capacities for Roseburg Forest Products RFPI Series I-Joists^(a) (Continued)

Depth (in.)	Joist Designation	Permitted to Be Labelled as	End Reaction (lbf)				Intermediate Reaction (lbf)				Web Stiff. Nails ^(b)		
			1-3/4 in. Brg. Length		3-1/2 in. Brg. Length		4 in. Brg. Length		3-1/2 in. Brg. Length			5-1/4 in. Brg. Length	
			Web Stiffeners	No	Yes	Web Stiffeners	No	Yes	Web Stiffeners	No		Yes	Web Stiffeners
22	RFPI-700		N.A.	2,400	N.A.	2,935	N.A.	2,935	N.A.	4,150	N.A.	4,605	10-8d
	RFPI-900		N.A.	2,755	N.A.	3,010	N.A.	3,010	N.A.	5,405	N.A.	6,020	10-16d
24	RFPI-700		N.A.	2,500	N.A.	3,060	N.A.	3,060	N.A.	4,150	N.A.	4,605	10-8d
	RFPI-900		N.A.	2,850	N.A.	3,060	N.A.	3,060	N.A.	5,405	N.A.	6,020	10-16d

For Sl: 1 inch = 25.4 mm, 1 lbf = 4.448 N.

General Note: Determine the allowable reaction value using appropriate adjustments for Tables 3a and 3b and use the lesser of the two values (refer to the notes for each table)

- (a) The tabulated design values in Table 3a above are for normal duration of load. Interpolation between tabulated values is permitted. All values in Table 3a shall be permitted to be adjusted for other load durations.
- (b) Number and size of nails required for web stiffeners. Refer to Table 5 for web stiffener and nail dimensions. Web stiffeners shall be installed in accordance with the recommendations provided by the manufacturer.

Table 3b. Reaction Capacity for Roseburg Forest Products RFPI Series I-Joists Based on the Compressive Stress Perpendicular to the Grain of Flanges Only^(a,b)

Depth	Joist Designation	Permitted to Be Labelled as	End Reaction (lbf)						Intermediate Reaction ^(c) (lbf)				
			1-3/4 in. Brg. Length		3-1/2 in. Brg. Length		4 in. Brg. Length		3-1/2 in. Brg. Length		5-1/4 in. Brg. Length		
			Web Stiffeners	No	Yes	Web Stiffeners	No	Yes	Web Stiffeners	No	Yes	Web Stiffeners	No
All Depths in each Series	RFPI-20		1,835		3,675		4,205		4,070		5,910		
	RFPI-40S		1,760		3,520		4,020		3,895		5,655		
	RFPI-400		2,195		4,390		5,015		4,860		7,055		
	RFPI-40	BLI 400	2,475		4,955		5,665		5,490		7,970		
	RFPI-60S		2,175		4,350		4,970		4,815		6,990		
	RFPI-70	BLI 700	2,475		4,955		5,665		5,490		7,970		
	RFPI-80S		3,090		6,185		7,070		6,850		9,940		
	RFPI-90	BLI 900	3,830		7,660		8,755		8,480		12,310		
	RFPI-700		2,475		4,955		5,665		5,490		7,970		
	RFPI-900		3,830		7,660		8,755		8,480		12,310		

For Sl: 1 inch = 25.4 mm, 1 lbf = 4.448 N.

General Note: Determine the allowable reaction value using appropriate adjustments for Tables 3a and 3b and use the lesser of the two values (refer to the notes for each table)

- (a) Maximum allowable reaction capacity based on flange $F_{c,1}$. Interpolation between tabulated values in Table 3b is permitted.
- (b) The tabulated values are for normal duration of load and shall not be adjusted for other durations of load.
- (c) The tabulated intermediate reaction values include the bearing area factor $C_b = (\ell_b + 0.375) / \ell_b$, where ℓ_b is the bearing length in inches.

Table 4. Allowable Shear (Pounds Per Foot) for Horizontal Wood Structural Panel Diaphragms Framed With Roseburg RFPI Series I-Joists for Wind^(a) or Seismic Loading^(b,c)

Panel Grade	Common Nail Size	Minimum Nominal Panel Thickness (in.)	Minimum Nominal Width of Framing Members at Adjoining Panel Edges and Boundaries ^(e) (in.)	RFPI-Joist series approved for diaphragm construction as indicated.	Blocked Diaphragms				Unblocked Diaphragms		
					Nail spacing (in.) at diaphragm boundaries (all cases), at continuous panel edges parallel to load (Cases 3 & 4), and at all panel edges (Cases 5 & 6) ^(f,g)				Case 1 (No unblocked edges or continuous joints parallel to load)	All other configurations (Cases 2, 3, 4, 5 & 6)	
					6	4	2-1/2	2			
Structural I Grades	6d ^(d)	5/16	2	RFPI 20 & 400	185	250	NP ^(k)	NP ^(k)	165	125	
				RFPI 40, 70, 90, 700 & 900	210	280	420 ^(l)	475 ^(l)	185	140	
	8d	3/8	2	RFPI 40S, 60S, 80S	270	360	NP ^(k)	NP ^(k)	185	140	
				RFPI 20 & 400	300	400	600 ^(l)	675 ^(l)	240	180	
				RFPI 40, 70, 90, 700 & 900	300	400 ^(h)	600 ^(l)	NP ^(k)	265	200	
	10d	15/32	3	RFPI 20 & 400	320	425	NP ^(k)	NP ^(k)	285	215	
				RFPI 40, 70, 90, 700 & 900	360	480	720 ^(l)	820 ^(l)	320	240	
				RFPI 40S, 60S, 80S	360	480 ^(h)	720 ^(l)	NP ^(k)	320	240	
	Sheathing, single floor, and other grades covered in DOC PS 1 and PS 2	6d ^(d)	5/16	2	RFPI 20 & 400	170	225	NP ^(k)	NP ^(k)	150	110
					RFPI 40, 70, 90, 700 & 900	190	250	380 ^(l)	430 ^(l)	170	125
3/8		2	RFPI 40S, 60S, 80S	190	250 ^(h)	380 ^(l)	NP ^(k)	170	125		
			RFPI 20 & 400	185	250	NP ^(k)	NP ^(k)	165	125		
			RFPI 40, 70, 90, 700 & 900	210	280	420 ^(l)	475 ^(l)	185	140		
3/8		3	RFPI 40S, 60S, 80S	210	280 ^(h)	420 ^(l)	NP ^(k)	185	140		
			RFPI 20 & 400	240	320	NP ^(k)	NP ^(k)	215	160		
			RFPI 40, 70, 90, 700 & 900	270	360	540 ^(l)	610 ^(l)	240	180		
7/16		2	RFPI 40S, 60S, 80S	270	360 ^(h)	540 ^(l)	NP ^(k)	240	180		
			RFPI 20 & 400	255	340	NP ^(k)	NP ^(k)	230	170		
	RFPI 40, 70, 90, 700 & 900		285	380	570 ^(l)	645 ^(l)	255	190			
15/32	3	RFPI 40S, 60S, 80S	285	380 ^(h)	570 ^(l)	NP ^(k)	255	190			
		RFPI 20 & 400	270	360	NP ^(k)	NP ^(k)	240	180			
		RFPI 40, 70, 90, 700 & 900	300	400	600 ^(l)	675 ^(l)	265	200			
15/32	2	RFPI 40S, 60S, 80S	300	400 ^(h)	600 ^(l)	NP ^(k)	265	200			
		RFPI 20 & 400	290	385	NP ^(k)	NP ^(k)	255	190			
		RFPI 40, 70, 90, 700 & 900	325	430	650 ^(l)	735 ^(l)	290	215			
19/32	3	RFPI 40S, 60S, 80S	325	430 ^(h)	650 ^(l)	NP ^(k)	290	215			
		RFPI 20 & 400	320	425	NP ^(k)	NP ^(k)	285	215			
		RFPI 40, 70, 90, 700 & 900	360	480	720 ^(l)	820 ^(l)	320	240			
				RFPI 40S, 60S, 80S	360	480 ^(h)	720 ^(l)	NP ^(k)	320	240	

For Sl: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 lbf = 4.448 N, 1 lbf/ft = 0.0146 N/mm.
(Footnotes on following pages)

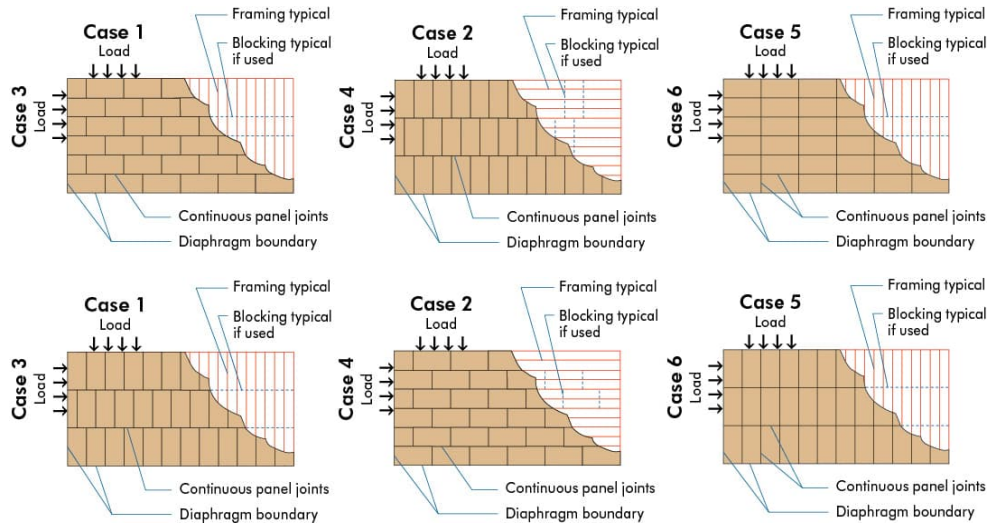


Figure 1. Diaphragm configurations

- (a) For wind load applications, the values in the table above shall be permitted to be multiplied by 1.4.
- (b) For shear loads of normal or permanent load duration as defined by the NDS, the values in the table above shall be multiplied by 0.63 or 0.56, respectively.
- (c) The tabulated allowable shear capacities are for I-joist series with flanges having a specific gravity (G) of 0.50 or higher (see Table 1). For $G < 0.50$ the allowable shear capacities shall be reduced by multiplying the allowable shear capacities by the Specific Gravity Adjustment Factor = $[1 - (0.5 - G)]$. The Specific Gravity Adjustment Factor shall not be greater than 1.
- (d) 8d common nails minimum are recommended for roofs due to negative pressures of high winds.
- (e) The minimum nominal width of framing members not located at boundaries or adjoining panel edges shall be 2 inches.
- (f) Space nails maximum 12 inches o.c. along intermediate framing members (6 inches o.c. when supports are spaced 48 inches o.c. or greater).
- (g) Fasteners shall be located 3/8 inch minimum from panel edges (see Figures 2, 3, and 4).
- (h) Adjacent nails within a row must be staggered 1/2 inch at diaphragm boundaries only (see Figure 3).
- (i) Adjacent nails within a row must be staggered 1/2 inch at both diaphragm boundaries (see Figure 3) and adjoining panel edges (see Figure 4).
- (j) Nail spacing of 2 inches at diaphragm boundaries is permitted only for 1-1/2 inches thick by 2-5/16 inches or wider LVL flange I-joists (RFPI-70, RFPI-90, RFPI-700, and RFPI-900).
- (k) Not permitted.

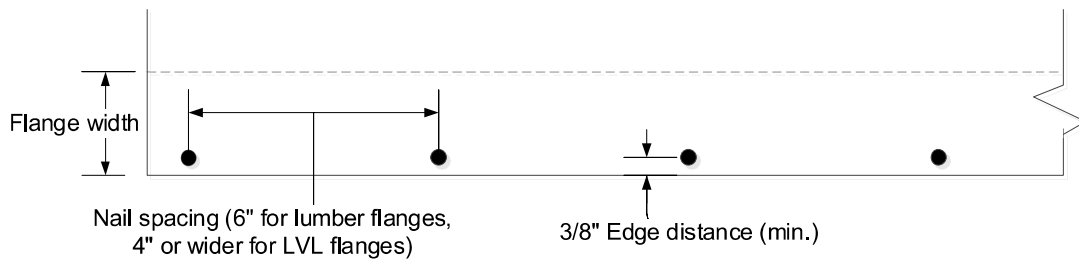


Figure 2. Non-staggered nails at diaphragm boundaries (see Footnote g), not to scale.

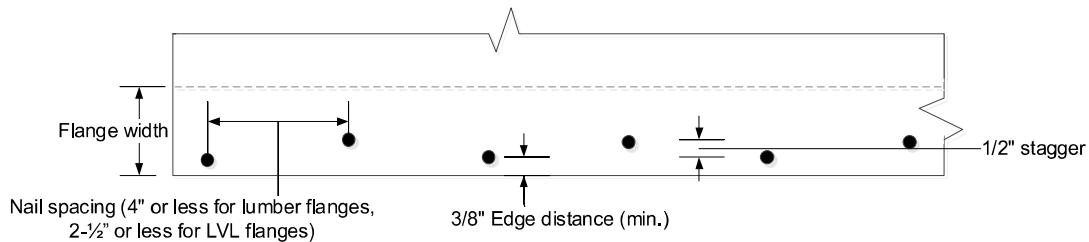


Figure 3. Staggered nails at diaphragm boundaries (see Footnotes h & i), not to scale.

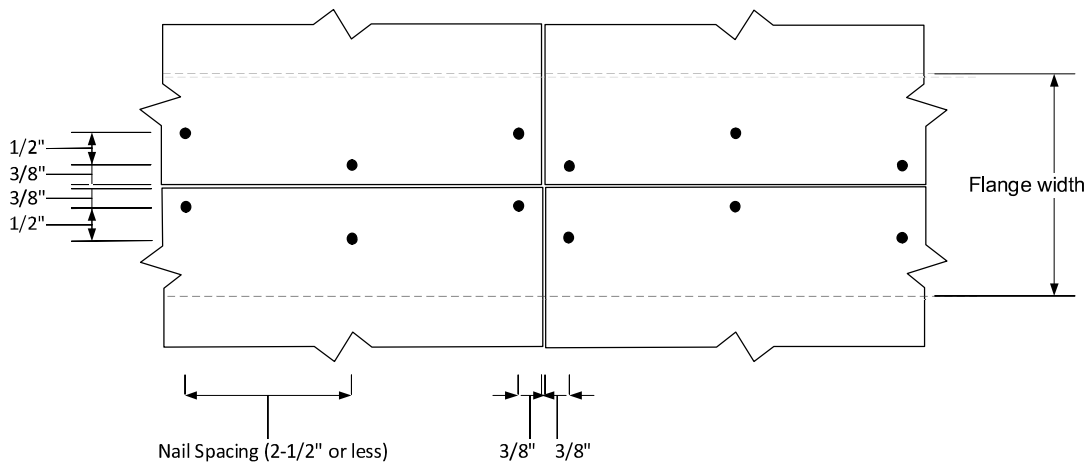


Figure 4. Staggered nails at adjoining panel edges (see Footnote i), not to scale.

Table 5. Minimum Dimensions for Web Stiffeners and Accompanying Nails

Joist Designation	Minimum Dimensions		
	Web Stiffeners		Nails
	Thickness (in.)	Width (in.)	
RFPI-20	19/32	2-5/16	8d box - 2-1/2 in. x 0.113 in.
RFPI-40S	1	2-5/16	8d box - 2-1/2 in. x 0.113 in.
RFPI-400	3/4	2-5/16	8d box - 2-1/2 in. x 0.113 in.
RFPI-40	1	2-5/16	8d box - 2-1/2 in. x 0.113 in.
RFPI-60S	1	2-5/16	8d box - 2-1/2 in. x 0.113 in.
RFPI-70	1	2-5/16	8d box - 2-1/2 in. x 0.113 in.
RFPI-80S	1-1/2	2-5/16	10d box - 3 in. x 0.128 in.
RFPI-90	1-1/2	2-5/16	10d box - 3 in. x 0.128 in.
RFPI-700	7/8	3-1/2	8d box - 2-1/2 in. x 0.113 in.
RFPI-900	1-1/2	3-1/2	16d box - 3-1/2 in. x 0.135 in.

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**APA – THE ENGINEERED WOOD ASSOCIATION
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PRODUCT SUPPORT HELP DESK

(253) 620-7400 ▪ E-mail Address: help@apawood.org

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Joint Evaluation Report



ESR-1251

Reissued April 2023

This report is subject to renewal April 2025.

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A Subsidiary of the International Code Council®

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES

Section: 06 17 33—Wood I-joists

REPORT HOLDER:

ROSEBURG FOREST PRODUCTS CO.

EVALUATION SUBJECT:

RFPI® PREFABRICATED WOOD I-JOISTS: RFPI® 20 SERIES, RFPI® 40 SERIES, RFPI® 400 SERIES, RFPI® 70 SERIES, RFPI® 90 SERIES, RFPI® 40S SERIES, RFPI® 60S SERIES, RFPI® 80S SERIES, RFPI® 700 SERIES AND RFPI® 900 SERIES

ADDITIONAL LISTEE:

BLUELINX CORPORATION

1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2021, 2018, 2015, 2012, 2009 and 2006 *International Building Code*® (IBC)
- 2021, 2018, 2015, 2012, 2009 and 2006 *International Residential Code*® (IRC)

For evaluation for compliance with codes adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of the State Architect (DSA), see [ESR-1251 CBC and CRC Supplement](#).

For evaluation for compliance with codes adopted by the Los Angeles Department of Building and Safety (LADBS), see [ESR-1251 LABC and LARC Supplement](#).

Property evaluated:

Structural

1.2 Evaluation to the following green code(s) and/or standards:

- 2022 and 2019 California Green Building Standards Code (CALGreen), Title 24, Part 11
- 2020, 2015, 2012 and 2008 ICC 700 *National Green Building Standard*™ (ICC 700-2020, ICC 700-2015, ICC 700-2012 and ICC 700-2008)

Attributes verified:

See Section 3.1

2.0 USES

RFPI® Prefabricated Wood I-Joists are used as floor joists, roof rafters, rim joists and blocking panels to support code-required loads.

3.0 DESCRIPTION

3.1 General:

The pre-fabricated wood I-joists described in this report comply with the requirements of the codes specifically referenced in Section 1.0 of this report, and are manufactured in accordance with the requirements of ASTM D5055.

RFPI® Prefabricated Wood I-Joists consist of laminated veneer lumber (LVL) flanges or solid sawn lumber flanges and oriented strand board (OSB) webs fabricated to form an I-shaped cross section. Top and bottom flanges are placed to create a constant-depth joist. For all RFPI®-joists, the web sections are installed with the face grain (strong axis) perpendicular to the long axis of the I-joist. The web-to-flange joint is made by inserting the web into a groove in the center of the face of the flange member.

The attributes of the wood joists have been verified as conforming to the provisions of (i) 2022 and 2019 CALGreen Sections A4.404.3 for efficient framing techniques; (ii) ICC 700-2020 Sections 608.1(2), 11.608.1(2) and 13.104.1(4); (iii) ICC 700-2015 and ICC 700-2012 Sections 608.1(2), 11.608.1(2) and 12(A).608.1 for resource-efficient materials; and (iv) ICC 700-2008 Section 607.1(2) for resource-efficient materials. Note that decisions on compliance for those areas rest with the user of this report. The user is advised of the project-specific provisions that may be contingent upon meeting specific conditions, and the verification of those conditions is outside the scope of this report. These codes or standards often provide supplemental information as guidance.

3.2 Material:

3.2.1 LVL Flanges: Laminated veneer lumber (LVL) flange material is manufactured by Roseburg Forest Products in accordance with the Roseburg Forest Products I-Joist Quality Control Manual. Flange dimensions are as shown in Table 3.

3.2.2 Solid Sawn Lumber Flanges: Solid sawn lumber flange material for the RFPI® 40S, RFPI® 60S, and RFPI® 80S is manufactured from lumber that meets the requirements noted in the Roseburg Forest Products quality control manual. The lumber is finger jointed and re-graded to the required specifications documented in the quality control manual. Flange dimensions are as shown in Table 3.

3.2.3 Webs: Webs are $3/8$ - or $7/16$ -inch-thick (9.5 or 11.1 mm) OSB Exposure 1 with a span rating of 24/0, conforming to U.S. Product Standard PS 2.

3.2.4 Adhesives: Adhesives used in the I-joist manufacturing process conform to the requirements of ASTM D2559, are tested in accordance with ASTM D7247 and meet the heat durability requirements of ASTM D5055.

4.0 DESIGN AND INSTALLATION

Installation of RFPI® Prefabricated Wood I-Joists must comply with this report and the manufacturer's published installation instructions. The manufacturer's published installation instructions must be available at the jobsite at all times during installation.

4.1 General:

Reference design values are as indicated in Tables 1 and 2 of this report. Available joist dimensions are as indicated in Table 3 of this report. Allowable floor spans are as indicated in Table 4 of this report. Joist webs contain prefabricated $1\frac{1}{2}$ -inch-diameter (38 mm) knockouts, 16 inches (406 mm) on center, located approximately 2 inches (51 mm) from one flange. Round holes are permitted in the webs of the I-joist in accordance with Table 5 of this report. When web stiffeners are required, installation details must comply with Table 6 and Figure 1 of this report. Minimum bearing length for simple spans of joists must be $1\frac{3}{4}$ inches (44mm). Minimum bearing length at intermediate support points for multiple-span I-joists must be $3\frac{1}{2}$ inches (89 mm) When I-joists are used as simple-span members, the design shear must be equal to the end reaction.

4.2 Repetitive Member Factor:

Moment capacity of the I-joist must not be increased by any repetitive member factor ($C_r = 1.0$).

4.3 Lateral Support:

The compression flange of the I-joist must be laterally supported throughout its length to prevent lateral displacement (e.g. through attachment to wood structural panel sheathing, gypsum board sheathing, wood structural panel soffit). Joist ends must be restrained to prevent rollover, as by diaphragm sheathing attached to the top flange and to an end wall or shear transfer panel, or blocking or cross-bracing capable of transferring the larger of 50 pounds per foot (730 N/m) or the required shear force due to wind, seismic or soil conditions. Code-recognized methods specified for solid-sawn lumber are acceptable. Bridging is not required in RFPI® floor and roof joist applications.

4.4 Duration of Load:

Adjustments for duration of load provided for wood members and their connections must be in accordance with the applicable code.

4.5 In-service Moisture Conditions:

RFPI® I-joist properties and allowable loads in this report are limited to covered installations with dry conditions of use. Dry conditions of use are those environmental conditions represented by sawn lumber in which the moisture content is less than 16 percent.

4.6 Deflection:

Deflection of the joists under design load based on deflection due to bending and shear stresses related to strength-of-material principles must be calculated using the following formulas:

For simple span with concentrated load at mid-span:

$$D = PL^3/48EI + 2PL/K$$

For simple span with uniformly distributed load:

$$D = 5WL^4/384EI + WL^2/K$$

where:

D = Deflection (inch) at mid-span

W = Uniform load (lbf/inch)

L = On-center span (inch)

K = Shear deflection coefficient from Table 1 of this report (inch-lbf/inch)

EI = Value from Table 1 of this report (lbf-in.²)

P = Concentrated load (lbf)

4.7 Fasteners:

The allowable withdrawal and lateral loads for nails installed perpendicular or parallel to the wide face of the LVL flange are the same as those provided in the applicable code for sawn lumber having a minimum specific gravity of 0.50, such as Douglas fir-larch.

The allowable withdrawal and lateral loads for nails installed perpendicular or parallel to the wide face of the solid sawn flange are to be based on values provided in the applicable code for lumber with a minimum specific gravity of 0.42 for the RFPI® 40S series and 0.46 for RFPI® 60S and 80S series. See Table 7 for adjustments to and limitations on the allowable lateral design values of RFPI®-Joists when used as framing members in horizontal wood diaphragms.

When used in the horizontal wood diaphragm design, fasteners shall be spaced in accordance with Table 7 for each joist series.

4.8 Diaphragms: Roseburg RFPI® Prefabricated Wood I-Joists may be used in the construction of horizontal wood diaphragms to resist wind and seismic loads in accordance with the allowable shear loads of Table 7 and applicable footnotes.

4.9 Rim Joists and Blocking Panels: Roseburg RFPI®-Joists may be used as the boundary members (rim joists) for diaphragm applications provided in Table 7 and as rim joists to transfer the uniform vertical and lateral loads provided in Table 7 for each joist series. The vertical load capacity values for each series are applicable to Roseburg RFPI®-Joists used as blocking panels.

4.10 One-hour Fire-resistance-rated Floor-ceiling Assemblies:

4.10.1 Assembly 1: The I-joists described in this report, with minimum flange size of $1\frac{1}{2}$ by $2\frac{1}{2}$ inches (38 by 64 mm), may be used in the assembly as described in Section 4.2.2.1 of [ESR-1405](#).

4.10.2 Assembly 2: The I-joists described in this report may be used in the appropriate assembly as described in Section 4.2.2.3 of [ESR-1405](#).

4.10.3 Assembly 3: The I-joists described in this report may be used in the appropriate assembly as described in Section 4.2.2.4 of [ESR-1405](#).

4.10.4 Other Assemblies: The I-joists described in this report may be used in the assemblies described in 2021, 2018, 2015 and 2012 IBC Table 721.1(3) and 2009 IBC Table 720.1(3), Item Numbers 21-1.1, 23-1.1 through 28-1.1 and Item Number 30-1.1 (2021, 2018 and 2015 IBC only); and in 2006 IBC Table 720.1(3), Item Numbers 21-1.1, 23-1.1 and 25-1.1 through 29-1.1; provided the I-joists used meet the required criteria as described in the tabulated "Floor or Roof Construction" column. For the

purposes of the minimum flange area requirement of 2.3 square inches (1480 mm²) in Item Number 23-1.1, a 1¹/₂-by-1¹/₂ flange having a cross sectional area of 2.25 square inches (1450 mm²) may be considered sufficient.

4.11 Fire Protection of Floors:

Roseburg RFPI®-Joists may be used in the fire protection assemblies described in Section 4.3 of ICC-ES evaluation report [ESR-1405](#), to meet the provisions of 2021, 2018 and 2015 IRC Section R302.13, and 2012 IRC Section R501.3.

5.0 CONDITIONS OF USE

The RFPI® Prefabricated Wood I-Joists described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 Installation must comply with this report, the manufacturer's published installation instructions and the applicable code. Allowable design properties, loads and spans for the I-joists must not exceed the values shown in Tables 1, 2 and 4 of this report.
- 5.2 Design calculations and details for specific applications, demonstrating that RFPI® Prefabricated Wood I-Joists comply with this report, must be submitted to the code official. The design calculations and details for specific applications must be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed. Where applicable, Table 4 of this report is intended to provide alternatives to the design calculations for member size, span, spacing and deflection.
- 5.3 Flanges must not be cut and round holes in the webs must conform to the requirements as stated in this report. (See Table 5 of this report.)
- 5.4 RFPI® Prefabricated Wood I-Joists are produced in Riddle, Oregon, under a quality-control program with inspections by ICC-ES and APA—The Engineered Wood Association (AA-649).

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Prefabricated Wood I-Joists (AC14), dated June 2019 (editorially revised February 2021).

Data in accordance with ICC-ES Acceptance Criteria for Rim Board Products (AC124), dated June 2019 (editorially revised February 2021).

7.0 IDENTIFICATION

7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-1251) along with the name, registered trademark, or registered logo of the report holder and/or listee must be included in the product label.

7.2 In addition, the RFPI® Prefabricated Wood I-Joists described in this report are identified by a label bearing the plant location, the product type and the name of the inspection agency (APA—The Engineered Wood Association).

7.3 The report holder's contact information is the following:

ROSEBURG FOREST PRODUCTS CO.
3660 GATEWAY STREET
SPRINGFIELD, OREGON 97477
(800) 245-1115
www.roseburg.com

7.4 The Additional Listee's contact information is the following:

BLUELINX CORPORATION
1950 SPECTRUM CIRCLE
MARIETTA, GEORGIA 30067

TABLE 1—REFERENCE DESIGN VALUES FOR RFPI JOISTS^{1,2}

LVL FLANGE JOIST SERIES [depth (in.) - series]	I-JOIST WEIGHT (plf)	STIFFNESS, EI (10 ⁶ lbf-in. ²)	MOMENT, M _r ³ (lbf-ft)	SHEAR, V _r (lbf)	SHEAR DEFL. COEFF., K (10 ⁶ lbf)	VERTICAL LOAD CAPACITY ^{4,5} (plf)
9½ RFPI® - 20	2.0	165	2820	1220	4.94	2000
9½ RFPI® - 400	2.3	193	3345	1220	4.94	2000
9½ RFPI® - 40	2.4	215	3760	1330	4.94	2000
9½ RFPI® - 70	2.6	266	5130	1330	4.94	2000
9½ RFPI® - 90	3.7	398	7830	1890	4.94	2000
11⅞ RFPI® - 20	2.3	283	3640	1420	6.18	2000
11⅞ RFPI® - 400	2.6	330	4315	1480	6.18	2000
11⅞ RFPI® - 40	2.7	366	4855	1550	6.18	2000
11⅞ RFPI® - 70	2.9	455	6645	1550	6.18	2000
11⅞ RFPI® - 90	3.8	676	10145	2050	6.18	2000
14 RFPI® - 20	2.5	420	4330	1610	7.28	2000
14 RFPI® - 400	2.8	486	5140	1710	7.28	2000
14 RFPI® - 40	3.0	540	5785	1770	7.28	2000
14 RFPI® - 70	3.1	672	7925	1770	7.28	2000
14 RFPI® - 90	4.2	992	12100	2195	7.28	2000
16 RFP® - 400	3.0	665	5880	1970	8.32	2000
16 RFP® - 40	3.1	737	6615	1970	8.32	2000
16 RFP® - 70	3.4	918	9080	1970	8.32	2000
16 RFP® - 90	4.4	1350	13865	2330	8.32	2000
18 RFP®-700	3.9	1245	10450	2575	11.34	2200
18 RFP®-900	4.8	1849	16080	2885	11.34	2200
20 RFP®-700	4.1	1579	11600	2740	12.60	2200
20 RFP®-900	5.2	2337	17855	2945	12.60	2200
22 RFP®-700	4.4	1955	12740	2935	13.86	1800
22 RFP®-900	5.5	2886	19615	3010	13.86	1800
24 RFP®-700	4.6	2375	13870	3060	15.12	1750
24 RFP®-900	5.7	3496	21355	3060	15.12	1750
SOLID SAWN FLANGE JOIST SERIES [depth (in.) - series]	I-JOIST WEIGHT (plf)	STIFFNESS, EI (10 ⁶ lbf-in. ²)	MOMENT, M_r³ (lbf-ft)	SHEAR, V_r (lbf)	SHEAR DEFL. COEFF., K (10 ⁶ lbf)	VERTICAL LOAD CAPACITY⁴ (plf)
9½ RFPI® - 40S	2.6	193	2735	1120	4.94	2000
9½ RFPI® - 60S	2.6	231	3780	1120	4.94	2000
11⅞ RFPI® - 40S	2.8	330	3545	1420	6.18	2000
11⅞ RFPI® - 60S	2.8	396	4900	1420	6.18	2000
11⅞ RFPI® - 80S	3.8	547	6970	1590	6.18	2000
14 RFP® - 40S	3.1	482	4270	1710	7.28	2000
14 RFP® - 60S	3.1	584	5895	1710	7.28	2000
14 RFP® - 80S	4.0	802	8390	1835	7.28	2000
16 RFP® - 40S	3.3	657	4950	1970	8.32	2000
16 RFP® - 60S	3.3	799	6835	1970	8.32	2000
16 RFP® - 80S	4.3	1092	9730	2070	8.32	2000

For **SI**: 1 in. = 25.4 mm; 1 ft = 304.8 mm; 1 lbf = 4.4 N.

¹ Reference design values must be adjusted in accordance with Section 7.3 of the NDS.

² Refer to Table 2a for reference design reactions and required use of web stiffeners. Adjusted design reactions must not exceed the flange bearing capacities given in Table 2b.

³ Moment capacity of the I-joist must not be increased by any repetitive member use factor.

⁴ Vertical load capacity of I-joist rim joist or I-joist blocking panel when continuously supported.

⁵ Use of RFPI I-Joists for which vertical load capacity is less than 2000 plf is limited to engineered construction.

TABLE 2A—REFERENCE DESIGN REACTION VALUES, R_r, FOR RFPI JOISTS^{1,2}

LVL FLANGE JOIST SERIES [depth (in.) – series]	END REACTION (lbf)						INTERMEDIATE REACTION (lbf)				Web Stiff. Nails ⁴
	1 ³ / ₄ in. Brg. Length		3 ¹ / ₂ in. Brg. Length		4 in. Brg. Length ³		3 ¹ / ₂ in. Brg. Length		5 ¹ / ₄ in. Brg. Length		
	Web Stiffeners		Web Stiffeners		Web Stiffeners		Web Stiffeners		Web Stiffeners		
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	
9 ¹ / ₂ RFPI®-20	910	1150	1150	1200	1220	1220	1775	1875	2000	2300	4-8d
9 ¹ / ₂ RFPI®-400	1025	1220	1175	1220	1220	1220	2150	2250	2300	2440	4-8d
9 ¹ / ₂ RFPI®-40	1080	1220	1270	1305	1330	1330	2250	2500	2550	2650	4-8d
9 ¹ / ₂ RFPI®-70	1120	1330	1280	1330	1330	1330	2335	2500	2550	2650	4-8d
9 ¹ / ₂ RFPI®-90	1330	1585	1615	1820	1700	1890	3020	3445	3445	3475	4-10d
11 ⁷ / ₈ RFPI®-20	950	1225	1315	1375	1420	1420	1935	2035	2135	2435	4-8d
11 ⁷ / ₈ RFPI®-400	1050	1265	1380	1430	1480	1480	2250	2350	2350	2650	4-8d
11 ⁷ / ₈ RFPI®-40	1200	1400	1470	1515	1550	1550	2500	2625	2660	2870	4-8d
11 ⁷ / ₈ RFPI®-70	1200	1470	1470	1530	1550	1550	2500	2625	2660	2870	4-8d
11 ⁷ / ₈ RFPI®-90	1400	1745	1775	1980	1885	2050	3355	3475	3475	3675	4-10d
14 RFPI®-20	950	1290	1415	1535	1550	1610	1935	2035	2135	2435	4-8d
14 RFPI®-400	1050	1305	1435	1620	1550	1710	2250	2350	2350	2650	4-8d
14 RFPI®-40	1200	1560	1470	1720	1550	1770	2500	2740	2755	3065	4-8d
14 RFPI®-70	1200	1590	1470	1730	1550	1770	2500	2740	2755	3065	4-8d
14 RFPI®-90	1400	1885	1775	2125	1885	2195	3355	3500	3500	3850	4-10d
16 RFPI®-400	1050	1340	1435	1830	1550	1970	2250	2350	2350	2650	4-8d
16 RFPI®-40	1200	1710	1470	1910	1550	1970	2500	2850	2850	3250	4-8d
16 RFPI®-70	1200	1710	1470	1910	1550	1970	2500	2850	2850	3250	4-8d
16 RFPI®-90	1400	2025	1775	2260	1885	2330	3355	3525	3525	4025	4-10d
18 RFPI®-700	1125	2200	1650	2575	1800	2575	2745	4050	3025	4475	8-8d
18 RFPI®-900	1475	2570	1765	2885	1850	2885	3000	5110	3475	5710	8-16d
20 RFPI®-700	1090	2300	1585	2740	1725	2740	2745	4050	3025	4475	8-8d
20 RFPI®-900	1350	2665	1700	2945	1800	2945	3000	5110	3475	5710	8-16d
22 RFPI®-700	N.A.	2400	N.A.	2935	N.A.	2935	N.A.	4150	N.A.	4605	10-8d
22 RFPI®-900	N.A.	2755	N.A.	3010	N.A.	3010	N.A.	5405	N.A.	6020	10-16d
24 RFPI®-700	N.A.	2500	N.A.	3060	N.A.	3060	N.A.	4150	N.A.	4605	10-8d
24 RFPI®-900	N.A.	2850	N.A.	3060	N.A.	3060	N.A.	5405	N.A.	6020	10-16d

SOLID SAWN FLANGE JOIST SERIES [depth (in.) – series]	END REACTION (lbf)						INTERMEDIATE REACTION (lbf)				Web Stiff. Nails ⁴
	1 ³ / ₄ in. Brg. Length		3 ¹ / ₂ in. Brg. Length		4 in. Brg. Length		3 ¹ / ₂ in. Brg. Length		5 ¹ / ₄ in. Brg. Length		
	Web Stiffeners		Web Stiffeners		Web Stiffeners		Web Stiffeners		Web Stiffeners		
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	
9 ¹ / ₂ RFPI®-40S	1080	1120	1110	1120	1120	1120	2160	2240	2240	2240	4-8d
9 ¹ / ₂ RFPI®-60S	1080	1120	1110	1120	1120	1120	2160	2240	2240	2240	4-8d
11 ⁷ / ₈ RFPI®-40S	1200	1340	1370	1400	1420	1420	2500	2625	2660	2840	4-8d
11 ⁷ / ₈ RFPI®-60S	1200	1340	1370	1400	1420	1420	2500	2625	2660	2840	4-8d
11 ⁷ / ₈ RFPI®-80S	1280	1590	1490	1590	1550	1590	2810	3180	3100	3180	4-10d
14 RFPI®-40S	1200	1530	1470	1670	1550	1710	2500	2740	2755	3050	4-8d
14 RFPI®-60S	1200	1530	1470	1670	1550	1710	2500	2740	2755	3050	4-8d
14 RFPI®-80S	1280	1750	1490	1815	1550	1835	3020	3360	3210	3600	4-10d
16 RFPI®-40S	1200	1710	1470	1910	1550	1970	2500	2850	2850	3250	4-8d
16 RFPI®-60S	1200	1710	1470	1910	1550	1970	2500	2850	2850	3250	4-8d
16 RFPI®-80S	1280	1900	1490	2030	1550	2070	3020	3525	3310	4000	4-10d

For SI: 1 in. = 25.4 mm; 1 lbf = 4.4 N.

¹Reference design reaction values must be adjusted in accordance with Section 7.3 of the NDS; however, adjusted design values must not exceed the allowable flange bearing capacities based on compression perpendicular-to-grain, as given in Table 2b.

²Tabulated values may be interpolated for bearing lengths between those given.

³The values in these columns require a minimum bearing length of 5 inches for the 14- and 16-inch-deep RFPI® 50.

⁴Number of nails required for web stiffeners (where web stiffeners are required). Web stiffeners must be installed in accordance with Table 6, Figure 1, and the recommendations provided by the manufacturer.

TABLE 2B—ALLOWABLE FLANGE BEARING CAPACITIES BASED ON COMPRESSION PERPENDICULAR-TO-GRAIN^{1,2,3}

Depth	Joist Designation	END REACTION (lbf)			INTERMEDIATE REACTION (lbf)	
		1 ³ / ₄ in. Brg. Length	3 ¹ / ₂ in. Brg. Length	4 in. Brg. Length	3 ¹ / ₂ in. Brg. Length	5 ¹ / ₄ in. Brg. Length
All Depths in each Series	RFPI®-20	1,835	3,675	4,205	4,070	5,910
	RFPI®-400	2,195	4,390	5,665	4,860	7,055
	RFPI®-40	2,475	4,955	5,665	5,490	7,970
	RFPI®-70	2,475	4,955	5,665	5,490	7,970
	RFPI®-90	3,830	7,660	8,755	8,480	12,310
	RFPI®-40S	1,760	3,520	4,020	3,895	5,655
	RFPI®-60S	2,175	4,350	4,970	4,815	6,990
	RFPI®-80S	3,090	6,185	7,070	6,850	9,940
	RFPI®-700	2,475	4,955	5,665	5,490	7,970
	RFPI®-900	3,830	7,660	8,755	8,480	12,310

For SI: 1 in. = 25.4 mm; 1 lbf = 4.4 N.

¹Adjusted design reaction values for RFPI I-joists must be determined in accordance with Table 2a (previous page), but must not exceed the allowable flange bearing capacities given in Table 2b (above).

²Allowable flange bearing capacities given in Table 2b must not be adjusted by any load duration factor.

³Tabulated values may be interpolated for bearing lengths between those given.

TABLE 3—JOIST DIMENSIONS

JOIST SERIES	JOIST DEPTHS (IN)		FLANGE			WEB	
	MINIMUM	MAXIMUM	MATERIAL	WIDTH (in)	Thick. (in)	MATERIAL	THICK. (in)
RFPI-20	9 ¹ / ₂	14	LVL	1 ³ / ₄	1 ³ / ₈	OSB	3 ³ / ₈
RFPI-400	9 ¹ / ₂	16	LVL	2 ¹ / ₁₆	1 ³ / ₈	OSB	3 ³ / ₈
RFPI-40	9 ¹ / ₂	16	LVL	2 ⁵ / ₁₆	1 ³ / ₈	OSB	3 ³ / ₈
RFPI-70	9 ¹ / ₂	16	LVL	2 ⁵ / ₁₆	1 ¹ / ₂	OSB	3 ³ / ₈
RFPI-90	9 ¹ / ₂	16	LVL	3 ¹ / ₂	1 ¹ / ₂	OSB	7 ¹ / ₁₆
RFPI-700	18	24	LVL	2 ⁵ / ₁₆	1 ¹ / ₂	OSB	7 ¹ / ₁₆
RFPI-900	18	24	LVL	3 ¹ / ₂	1 ¹ / ₂	OSB	7 ¹ / ₁₆
RFPI-40S	9 ¹ / ₂	16	Solid sawn	2 ¹ / ₂	1 ¹ / ₂	OSB	3 ³ / ₈
RFPI-60S	9 ¹ / ₂	16	Solid sawn	2 ¹ / ₂	1 ¹ / ₂	OSB	3 ³ / ₈
RFPI-80S	11 ⁷ / ₈	16	Solid sawn	3 ¹ / ₂	1 ¹ / ₂	OSB	3 ³ / ₈

For SI: 1 in. = 25.4 mm.

TABLE 4—ALLOWABLE SPAN LENGTH—SIMPLE AND MULTIPLE SPANS^{1,2,3,4,5,6}

LVL FLANGE JOIST SERIES [depth (in.) - series]	SIMPLE SPAN ON-CENTER SPACING (in.)				MULTIPLE SPAN ON-CENTER SPACING (in.)			
	12	16	19.2	24	12	16	19.2	24
9 1/2 RFPI® - 20	17'-2"	15'-9"	14'-10"	13'-10"	18'-9"	17'-1"	16'-2"	14'-0"
9 1/2 RFPI® - 400	18'-0"	16'-5"	15'-6"	14'-6"	19'-7"	17'-10"	16'-10"	15'-9"
9 1/2 RFPI® - 40	18'-7"	16'-11"	16'-0"	14'-11"	20'-2"	18'-5"	17'-5"	16'-2"
9 1/2 RFPI® - 70	19'-9"	18'-0"	17'-0"	15'-10"	21'-6"	19'-7"	18'-5"	17'-2"
9 1/2 RFPI® - 90	22'-3"	20'-3"	19'-0"	17'-9"	24'-2"	22'-0"	20'-8"	19'-3"
11 7/8 RFPI® - 20	20'-6"	18'-9"	17'-9"	16'-6"	22'-4"	20'-5"	18'-10"	15'-3"
11 7/8 RFPI® - 400	21'-5"	19'-7"	18'-6"	17'-3"	23'-4"	21'-4"	20'-1"	17'-9"
11 7/8 RFPI® - 40	22'-1"	20'-2"	19'-0"	17'-9"	24'-1"	22'-0"	20'-8"	19'-3"
11 7/8 RFPI® - 70	23'-7"	21'-6"	20'-3"	18'-10"	25'-8"	23'-5"	22'-0"	19'-9"
11 7/8 RFPI® - 90	26'-6"	24'-1"	22'-8"	21'-1"	28'-10"	26'-3"	24'-8"	22'-11"
14 RFPI® - 20	23'-4"	21'-4"	20'-2"	18'-6"	25'-5"	22'-7"	19'-2"	15'-3"
14 RFPI® - 400	24'-4"	22'-3"	21'-0"	19'-7"	26'-7"	24'-3"	22'-3"	17'-9"
14 RFPI® - 40	25'-2"	22'-11"	21'-8"	20'-2"	27'-5"	25'-0"	23'-7"	19'-9"
14 RFPI® - 70	26'-10"	24'-5"	23'-0"	21'-5"	29'-3"	26'-7"	24'-9"	19'-9"
14 RFPI® - 90	30'-1"	27'-5"	25'-9"	23'-11"	32'-10"	29'-10"	28'-1"	26'-0"
16 RFPI® - 400	27'-0"	24'-8"	23'-4"	20'-10"	29'-6"	26'-4"	22'-3"	17'-9"
16 RFPI® - 40	27'-10"	25'-5"	24'-0"	22'-4"	30'-4"	27'-8"	24'-9"	19'-9"
16 RFPI® - 70	29'-9"	27'-1"	25'-6"	23'-9"	32'-5"	29'-6"	24'-9"	19'-9"
16 RFPI® - 90	33'-4"	30'-4"	28'-7"	26'-7"	36'-5"	33'-1"	31'-1"	26'-7"
SOLID SAWN FLANGE JOIST SERIES [depth (in.) - series]	SIMPLE SPAN ON-CENTER SPACING (in.)				MULTIPLE SPAN ON-CENTER SPACING (in.)			
	12	16	19.2	24	12	16	19.2	24
9 1/2 RFPI® - 40S	18'-0"	16'-5"	15'-6"	14'-6"	19'-7"	17'-11"	16'-4"	14'-7"
9 1/2 RFPI® - 60S	18'-11"	17'-4"	16'-4"	15'-3"	20'-8"	18'-10"	17'-9"	16'-6"
11 7/8 RFPI® - 40S	21'-5"	19'-7"	18'-6"	16'-8"	23'-5"	20'-5"	18'-7"	16'-7"
11 7/8 RFPI® - 60S	22'-7"	20'-8"	19'-6"	18'-2"	24'-8"	22'-6"	21'-2"	19'-7"
11 7/8 RFPI® - 80S	24'-11"	22'-8"	21'-4"	19'-11"	27'-1"	24'-8"	23'-3"	21'-7"
14 RFPI® - 40S	24'-4"	22'-3"	20'-6"	18'-4"	25'-11"	22'-5"	20'-5"	18'-3"
14 RFPI® - 60S	25'-9"	23'-6"	22'-2"	20'-8"	28'-0"	25'-7"	24'-1"	19'-9"
14 RFPI® - 80S	28'-3"	25'-9"	24'-3"	22'-7"	30'-9"	28'-0"	26'-4"	23'-11"
16 RFPI® - 40S	26'-11"	24'-3"	22'-1"	19'-9"	27'-11"	24'-2"	22'-0"	19'-8"
16 RFPI® - 60S	28'-6"	26'-0"	24'-7"	22'-11"	31'-1"	28'-4"	24'-9"	19'-9"
16 RFPI® - 80S	31'-4"	28'-6"	26'-10"	25'-0"	34'-2"	31'-1"	29'-3"	23'-11"

For SI: 1 in. = 25.4 mm; 1 ft = 304.8 mm; 1 lbf = 4.4 N.

¹Allowable clear span applicable to simple-span residential floor construction with a design dead load of 10 psf and a live load of 40 psf. The live load deflection is limited to L/480.

²Spans are based on a composite floor with glue-nailed sheathing meeting the requirements for APA Rated Sheathing or APA Rated STURD-I-FLOOR conforming to PS 1 or PS 2, with a minimum thickness of 1 9/32 inch for a joist spacing of 19.2 inches or less, or 2 3/32 inch for a joist spacing of 24 inches. Spans must be reduced 12 inches when the floor sheathing is nailed only.

³Minimum bearing length must be 1 3/4 inches for the end bearings.

⁴Span lengths are based on uniform loads.

⁵Web stiffeners are not required for the spans shown.

⁶Allowable spans for the RFPI® 700 and RFPI® 900 series I-joists are outside the scope of this evaluation report. Contact the report holder (Roseburg Forest Products Company) regarding allowable spans for these two series.

TABLE 5—CIRCULAR HOLE PLACEMENT^{1,2,3,4,5,6}

JOIST SERIES [depth (in.) – series]	MINIMUM DISTANCE FROM INSIDE FACE OF ANY SUPPORT TO CENTER OF HOLE (feet - inches)															
	Round Hole Diameter (in.)															
	2	3	4	5	6	6 ¹ / ₄	7	8	8 ⁵ / ₈	9	10	10 ³ / ₄	11	12	12 ³ / ₄	
9 ¹ / ₂ RFPI-20	0-7	0-8	1-11	3-4	5-1	5-7										
9 ¹ / ₂ RFPI-400	0-7	1-9	3-1	4-7	6-2	6-7										
9 ¹ / ₂ RFPI-40	0-7	1-3	2-8	4-3	6-0	6-5										
9 ¹ / ₂ RFPI-40S	0-7	1-8	3-0	4-4	5-9	6-3										
9 ¹ / ₂ RFPI-60S	1-8	3-0	4-4	5-8	7-3	7-8										
9 ¹ / ₂ RFPI-70	0-7	1-10	3-5	5-0	6-9	7-2										
9 ¹ / ₂ RFPI-90	1-9	3-3	4-10	6-6	8-3	8-9										
11 ⁷ / ₈ RFPI-20	0-7	0-8	0-8	1-9	3-4	3-9	5-0	6-10	8-0							
11 ⁷ / ₈ RFPI-400	0-7	0-8	1-6	2-10	4-2	4-7	5-8	7-5	8-8							
11 ⁷ / ₈ RFPI-40	0-7	0-8	2-0	3-5	4-10	5-3	6-5	8-1	9-2							
11 ⁷ / ₈ RFPI-40S	0-7	0-8	1-2	2-5	3-9	4-1	5-1	6-8	7-11							
11 ⁷ / ₈ RFPI-60S	0-8	1-10	3-2	4-5	5-10	6-2	7-4	8-11	10-0							
11 ⁷ / ₈ RFPI-70	0-7	1-0	2-4	3-9	5-2	5-7	6-9	8-6	9-10							
11 ⁷ / ₈ RFPI-80S	0-7	1-10	3-3	4-9	6-3	6-8	7-11	9-8	10-11							
11 ⁷ / ₈ RFPI-90	0-7	0-8	0-11	2-9	4-7	5-1	6-7	8-8	10-2							
14 RFPI-20	0-7	0-8	0-8	0-9	0-9	1-1	2-3	4-2	5-4	6-1	8-2	9-11				
14 RFPI-400	0-7	0-8	0-8	0-9	1-11	2-4	3-7	5-3	6-4	7-0	8-11	10-8				
14 RFPI-40	0-7	0-8	0-8	1-2	2-6	2-10	4-0	5-10	6-11	7-8	9-8	11-4				
14 RFPI-40S	0-7	0-8	0-8	0-9	1-10	2-2	3-2	4-7	5-5	6-0	7-7	9-4				
14 RFPI-60S	0-7	0-8	0-8	1-7	3-2	3-6	4-9	6-6	7-8	8-4	10-4	11-11				
14 RFPI-70	0-7	0-8	0-8	1-6	3-1	3-6	4-10	6-7	7-9	8-6	10-7	12-3				
14 RFPI-80S	0-7	0-9	2-1	3-6	4-11	5-3	6-5	7-11	9-0	9-7	11-5	13-2				
14 RFPI-90	0-7	0-8	0-9	2-4	4-1	4-6	5-9	7-7	8-9	9-6	11-7	13-3				
16 RFPI-400	0-7	0-8	0-8	0-9	0-9	0-10	0-10	1-11	3-1	3-10	5-11	7-6	8-0	10-4	12-3	
16 RFPI-40	0-7	0-8	0-8	0-9	0-9	0-10	1-10	3-6	4-6	5-2	6-11	8-5	9-0	11-4	13-3	
16 RFPI-40S	0-7	0-8	0-8	0-9	0-9	0-10	1-5	2-9	3-7	4-1	5-6	6-7	7-0	8-9	10-9	
16 RFPI-60S	0-7	0-8	0-8	0-9	0-9	0-10	1-10	3-6	4-6	5-2	7-3	8-11	9-6	11-10	13-9	
16 RFPI-70	0-7	0-8	0-8	0-9	0-9	0-10	2-1	4-0	5-3	6-0	8-1	9-9	10-4	12-9	14-8	
16 RFPI-80S	0-7	0-8	0-8	0-11	2-4	2-9	4-1	5-10	6-11	7-8	9-7	11-1	11-7	13-10	15-7	
16 RFPI-90	0-7	0-8	0-8	0-10	2-3	2-8	3-10	5-5	6-6	7-4	9-5	11-1	11-8	14-1	16-1	

For SI: 1 inch = 25.4 mm, 1 foot = 304.8mm.

¹Tabulated values are for simple or multiple spans, based on 40 psf live load and 10 psf dead load, and I-joist spacing of 24 inches on center or less with the full shear design values given in Table 1 of this report.

²The top and bottom of each hole must be at least 1/8 inch away from the top and bottom flanges, respectively; and wherever practical, the web hole should be approximately centered vertically on the depth of the web.

³Distances are based on uniformly loaded joists that meet the span requirements in Table 4 of this report.

⁴Some of the minimum distances given in Table 5 are not achievable for certain maximum spans given in Table 4. For such cases, a smaller hole size or tighter joist spacing should be used in order to satisfy both the minimum hole distance and the maximum span requirements.

⁵For webs with multiple holes, the minimum allowable center-to-center hole spacing is 3D, where D is the diameter of the larger hole.

⁶The allowable location of round holes for the RFPI® 700 and RFPI® 900 series of I-joists may be determined by utilizing the following equation to calculate the allowable shear capacity of the I-joist with a given hole size: $V_{hole} = V_r \times \{ (joist\ depth - hole\ diameter) / joist\ depth \}$

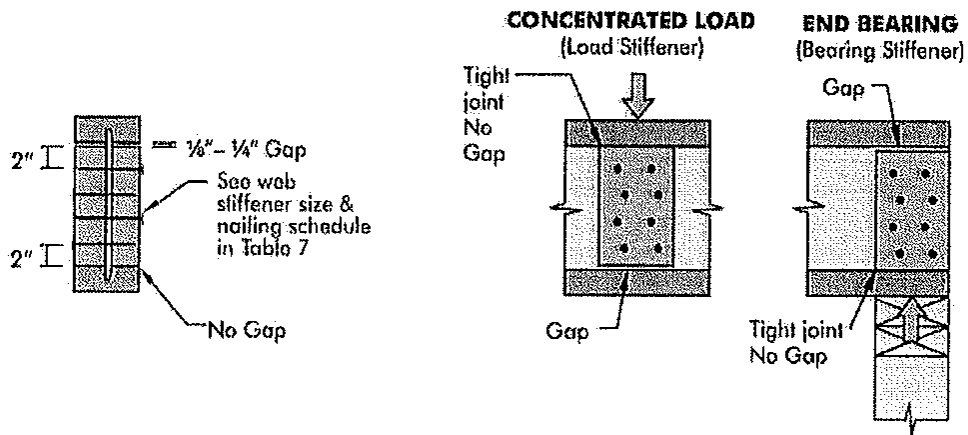
Where: V_{hole} is the allowable shear at the centerline of the hole (lbf)
 V_r is the allowable shear value for the I-joist as given in Table 1 (lbf)
 Joist depth is the out-to-out depth of the I-joist (in)
 Hole diameter is in inches.

TABLE 6—MINIMUM WEB STIFFENER DIMENSIONS AND NAILING REQUIREMENTS

LVL FLANGE JOIST SERIES	FLANGE WIDTH (in.)	MINIMUM DIMENSIONS AND NAILING REQUIREMENTS		
		Web Stiffener Dimensions (in.)		Nails
		Thickness	Width	
RFPI® - 20	1 ³ / ₄	¹⁹ / ₃₂	2 ⁵ / ₁₆	8d box – 2 ¹ / ₂ x 0.113 inch
RFPI® - 400	2 ¹ / ₁₆	⁷ / ₈	2 ⁵ / ₁₆	8d box – 2 ¹ / ₂ x 0.113 inch
RFPI® - 40	2 ⁵ / ₁₆	1	2 ⁵ / ₁₆	8d box – 2 ¹ / ₂ x 0.113 inch
RFPI® - 70	2 ⁵ / ₁₆	1	2 ⁵ / ₁₆	8d box – 2 ¹ / ₂ x 0.113 inch
RFPI® - 90	3 ¹ / ₂	1 ¹ / ₂	2 ⁵ / ₁₆	10d box – 3 x 0.128 inch
RFPI® - 700	2 ⁵ / ₁₆	⁷ / ₈	3 ¹ / ₂	8d box – 2 ¹ / ₂ x 0.113 inch
RFPI® - 900	3 ¹ / ₂	1 ¹ / ₂	3 ¹ / ₂	16d box – 3 ¹ / ₂ x 0.135 inch

SOLID SAWN FLANGE JOIST SERIES	FLANGE WIDTH (in.)	MINIMUM DIMENSIONS AND NAILING REQUIREMENTS		
		Web Stiffener Dimensions (in.)		Nails
		Thickness (in)	Width (in)	
RFPI® - 40S	2 ¹ / ₂	1	2 ⁵ / ₁₆	8d box – 2 ¹ / ₂ x 0.113 inch
RFPI® - 60S	2 ¹ / ₂	1	2 ⁵ / ₁₆	8d box – 2 ¹ / ₂ x 0.113 inch
RFPI® - 80S	3 ¹ / ₂	1 ¹ / ₂	2 ⁵ / ₁₆	10d box – 3 x 0.128 inch

For SI: 1 in. = 25.4 mm.



For SI: 1 in. = 25.4 mm.

FIGURE 1—WEB STIFFENER DIAGRAM
(See Table 6 for stiffener size and nailing requirements.)

TABLE 7—ALLOWABLE SHEAR (POUNDS PER FOOT) FOR HORIZONTAL WOOD STRUCTURAL PANEL DIAPHRAGMS FRAMED WITH ROSEBURG RFPI-JOISTS FOR WIND¹ OR SEISMIC LOADING^{2,3}

Panel Grade	Common Nail Size	Minimum Nominal Panel Thickness (in.)	Minimum Nominal Width of Framing Members at Adjoining Panel Edges and Boundaries ⁴ (in.)	RFPI-Joist series approved for diaphragm construction as indicated.	Blocked Diaphragms			Unblocked Diaphragms		
					Nail spacing (in.) at diaphragm boundaries (all cases), at continuous panel edges parallel to load (Cases 3 & 4), and at all panel edges (Cases 5 & 6) ^{5,6}			Nails Spaced 6 in. max. at supported edges ⁵		
					6	4	2-1/2 ⁸	Case 1 (No unblocked edges or continuous joints parallel to load)	All other configurations (Cases 2, 3, 4, 5 & 6)	
					Nail spacing (in.) at other panel edges (Cases 1, 2, 3, & 4) ⁵					
6	6	4	6	6	4	6	6	4		
Structural 1 Grades	6d ⁷	5/16	2	RFPI 20 & 400	185	250	—	165	125	
			3	RFPI 40, 40S, 60S, 70, 80S, 90, 700 & 900	210	280	420 ⁹	185	140	
	8d	3/8	2	RFPI 20 & 400	270	360	—	240	180	
			3	RFPI 40, 40S, 60S, 70, 80S, 90, 700 & 900	300	400	600 ⁹	265	200	
	10d	15/32	2	RFPI 20 & 400	320	425	—	285	215	
			3	RFPI 40, 40S, 60S, 70, 80S, 90, 700 & 900	360	480	720 ⁹	320	240	
Sheathing, single floor and other grades covered in DOC PS 1 and PS 2	6d ⁷	5/16	2	RFPI 20 & 400	170	225	—	150	110	
			3	RFPI 40, 40S, 60S, 70, 80S, 90, 700 & 900	190	250	380 ⁹	170	125	
		3/8	2	RFPI 20 & 400	185	250	—	165	125	
			3	RFPI 40, 40S, 60S, 70, 80S, 90, 700 & 900	210	280	420 ⁹	185	140	
		8d	3/8	2	RFPI 20 & 400	240	320	—	215	160
				3	RFPI 40, 40S, 60S, 70, 80S, 90, 700 & 900	270	360	540 ⁹	240	180
	7/16		2	RFPI 20 & 400	255	340	—	230	170	
			3	RFPI 40, 40S, 60S, 70, 80S, 90, 700 & 900	285	380	570 ⁹	255	190	
	15/32		2	RFPI 20 & 400	270	360	—	240	180	
			3	RFPI 40, 40S, 60S, 70, 80S, 90, 700 & 900	300	400	600 ⁹	265	200	
	10d	15/32	2	RFPI 20 & 400	290	385	—	255	190	
			3	RFPI 40, 40S, 60S, 70, 80S, 90, 700 & 900	325	430	650 ⁹	290	215	
		19/32	2	RFPI 20 & 400	320	425	—	285	215	
			3	RFPI 40, 40S, 60S, 70, 80S, 90, 700 & 900	360	480	720 ⁹	320	240	

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 lbf = 4.448 N, 1 lbf/ft = 0.0146 N/mm.

- For wind load applications, the values in the table above shall be permitted to be multiplied by 1.4.
- For shear loads of normal or permanent load duration as defined by the NDS, the values in the table above shall be multiplied by 0.63 or 0.56, respectively.
- The tabulated allowable shear capacities are for 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)]. The Specific Gravity Adjustment Factor shall not be greater than 1. See Section 4.7 for flange specific gravity information.
- The minimum nominal width of framing members not located at boundaries or adjoining panel edges shall be 2 inches.
- Space nails maximum 12 inches o.c. along intermediate framing members (6 inches o.c. when supports are spaced 48 inches o.c. or greater). Fasteners shall be located 3/8 inch minimum from panel edges.
- When nail spacing is 4 inches on center at diaphragm boundaries, adjacent nails within a row must be offset (staggered) 1/2 inch for RFPI-40S, 60S and 80S series I-joists.
- 8d common nails minimum are recommended for roofs due to negative pressures of high winds.
- Adjacent nails within a row must be staggered 1/2 inch at adjoining panel edges when nail spacing is 2-1/2 inches o.c.
- Nail spacing of 2-1/2 inches at diaphragm boundaries is permitted only for lumber flange I-joists (RFPI-40S, RFPI- 60S, and RFPI-80S).



FIGURE 2—PRODUCT LOGO

DISCLAIMER

APA Product Report® is a trademark of APA – The Engineered Wood Association, Tacoma, Washington. ICC-ES Evaluation Report is a trademark of ICC Evaluation Service, LLC (ICC-ES). The information contained herein is based on the product evaluation in accordance with the references noted in this report. Neither ICC-ES, nor APA or its members make any warranty, expressed or implied, or assume any legal liability or responsibility for the use, application of, and/or reference to opinions, findings, conclusions, or recommendations included in this report. The joint ICC-ES/APA Evaluation Reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. Consult the local jurisdiction or design professional to assure compliance with code, construction, and performance requirements. Because neither APA, nor ICC-ES, has any control over quality of workmanship or the conditions under which engineered wood products are used, it cannot accept responsibility for product performance or designs as actually constructed.

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 17 33—Wood I-joists

REPORT HOLDER:

ROSEBURG FOREST PRODUCTS CO.

EVALUATION SUBJECT:

RFPI® PREFABRICATED WOOD I-JOISTS: RFPI® 20 SERIES, RFPI® 40 SERIES, RFPI® 400 SERIES, RFPI® 70 SERIES, RFPI® 90 SERIES, RFPI® 40S SERIES, RFPI® 60S SERIES, RFPI® 80S SERIES, RFPI® 700 SERIES AND RFPI® 900 SERIES

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the RFPI® Prefabricated Wood I-Joists: RFPI® 20 Series, RFPI® 40 Series, RFPI® 400 Series, RFPI® 70 Series, RFPI® 90 Series, RFPI® 40S Series, RFPI® 60S Series, RFPI® 80S Series, RFPI® 700 Series and RFPI® 900 Series, described in the ICC-ES evaluation report [ESR-1251](#), have also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code editions:

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

2.0 CONCLUSIONS

The RFPI® Prefabricated Wood I-Joists: RFPI® 20 Series, RFPI® 40 Series, RFPI® 400 Series, RFPI® 70 Series, RFPI® 90 Series, RFPI® 40S Series, RFPI® 60S Series, RFPI® 80S Series, RFPI® 700 Series and RFPI® 900 Series, described in Sections 2.0 through 7.0 of the ICC-ES evaluation report [ESR-1251](#), comply with LABC Chapter 23, and LARC, and are subjected to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The RFPI® Prefabricated Wood I-Joists: RFPI® 20 Series, RFPI® 40 Series, RFPI® 400 Series, RFPI® 70 Series, RFPI® 90 Series, RFPI® 40S Series, RFPI® 60S Series, RFPI® 80S Series, RFPI® 700 Series and RFPI® 900 Series, described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the ICC-ES evaluation report [ESR-1251](#).
- The design, installation, conditions of use and identification are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the ICC-ES evaluation report [ESR-1251](#).
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16, 17 and 23, as applicable.
- Flanges must not be subjected to dynamic or static outward forces which may tend to separate the flanges from the web. Bottom flanges must not support load exceeding 250 pounds on each side of flange at 5 feet on center or 100 pounds per linear foot.

This supplement expires concurrently with the evaluation report ESR-1251, reissued April 2023.

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES

Section: 06 17 33—Wood I-joists

REPORT HOLDER:

ROSEBURG FOREST PRODUCTS CO.

EVALUATION SUBJECT:

RFPI® PREFABRICATED WOOD I-JOISTS: RFPI® 20 SERIES, RFPI® 40 SERIES, RFPI® 400 SERIES, RFPI® 70 SERIES, RFPI® 90 SERIES, RFPI® 40S SERIES, RFPI® 60S SERIES, RFPI® 80S SERIES, RFPI® 700 SERIES AND RFPI® 900 SERIES

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that RFPI® Prefabricated Wood I-Joists, evaluated in ICC-ES evaluation report ESR-1251, have also been evaluated for compliance with the code(s) noted below.

Applicable code edition(s):

- 2022 California Building Code (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2022 California Residential Code (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The RFPI® Prefabricated Wood I-Joists, described in Sections 2.0 through 7.0 of the evaluation report ESR-1251, comply with CBC Chapter 23, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report ESR-1251, and the additional requirements of CBC Chapters 16 and 17, as applicable.

2.1.1 OSHPD: The RFPI® Prefabricated Wood I-Joists, described in Sections 2.0 through 7.0 of the evaluation report ESR-1251, comply with CBC amended Chapters 16, 17 and 23, and Chapters 16A and 17A provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report, and the additional requirements in Section 2.1.1.1 and 2.1.1.2 of this supplement:

2.1.1.1 Conditions of Use:

1. All loads applied shall be determined by the registered design professional and shall comply with applicable loads and load combinations from CBC Chapter 16 and amendments [OSHPD 1R, 2, 3 and 5] and 16A [OSHPD 1 and 4].
2. Seismic Design Category shall be in accordance with CBC amended Section 1613.1 Exception 6 [OSHPD 1R, 2 & 5].
3. Construction documents shall include detailing and limitations for notches and bored holes in accordance with CBC amended Section 2304.4.1 [OSHPD 1, 1R, 2, 4 and 5].
4. Conventional light-frame construction under Section 2308 is permitted in accordance with CBC Section 2308.2.7 [OSHPD 1R, 2 & 5].

2.1.1.2 Special Inspection Requirement: Special inspection of wood structural elements are required in accordance with CBC amended Section 1705A.5.4 [OSHPD 1 & 4].

2.1.2 DSA: The RFPI® Prefabricated Wood I-Joists, described in Sections 2.0 through 7.0 of the evaluation report ESR-1251, comply with CBC amended Chapters 16 and 23, and Chapters 16A and 17A provided the design and installation are in

accordance with the 2021 *International Building Code*[®] (IBC) provisions noted in the evaluation report, and the additional requirements in Section 2.1.2.1 and 2.1.2.2 of this supplement:

2.1.2.1 Conditions of Use:

1. All loads applied shall be determined by the registered design professional and shall comply with applicable loads and load combinations from CBC amended sections in Chapter 16 [DSA-SS/CC] and 16A [DSA/SS].
2. Construction documents shall include detailing and limitations for notches and bored holes in accordance with CBC amended Section 2304.4.1 [DSA-SS and DSA-SS/CC].
3. Conventional light-frame construction under Section 2308, if applicable, shall comply with CBC Section 2308.2.7 [DSA-SS and DSA-SS/CC].

2.1.2.2 Special Inspection Requirement: Special inspection of wood structural elements are required in accordance with CBC amended Section 1705A.5.4 [DSA-SS and DSA-SS/CC].

2.2 CRC:

The RFPI[®] Prefabricated Wood I-Joists, described in Sections 2.0 through 7.0 of the evaluation report ESR-1251, comply with CRC Chapters 5 and 8, provided the design and installation are in accordance with the 2021 *International Residential Code*[®] (IRC) provisions noted in the evaluation report ESR-1251.

This supplement expires concurrently with the evaluation report ESR-1251, reissued April 2023.

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 17 33—Wood I-joists

REPORT HOLDER:

ROSEBURG FOREST PRODUCTS CO.

EVALUATION SUBJECT:

RFPI® PREFABRICATED WOOD I-JOISTS: RFPI® 20 SERIES, RFPI® 40 SERIES, RFPI® 400 SERIES, RFPI® 70 SERIES, RFPI® 90 SERIES, RFPI® 40S SERIES, RFPI® 60S SERIES, RFPI® 80S SERIES, RFPI® 700 SERIES AND RFPI® 900 SERIES

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that RFPI® Prefabricated Wood I-Joists, described in ICC-ES evaluation report ESR-1251, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2020 *Florida Building Code—Building*
- 2020 *Florida Building Code—Residential*

2.0 CONCLUSIONS

The RFPI® Prefabricated Wood I-Joists, described in Sections 2.0 through 7.0 of the evaluation report ESR-1251, comply with the *Florida Building Code—Building* and the *Florida Building Code—Residential*, provided the design requirements are determined in accordance with the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable. The installation requirements noted in the evaluation report ESR-1251 for the 2018 *International Building Code*® (IBC) meet the requirements of the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable.

Use of the RFPI® Prefabricated Wood I-Joists for compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* and the *Florida Building Code—Residential* has not been evaluated and is outside the scope of this evaluation report.

For products falling under Florida Rule 61G20-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official, when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the evaluation report ESR-1251, reissued April 2023.