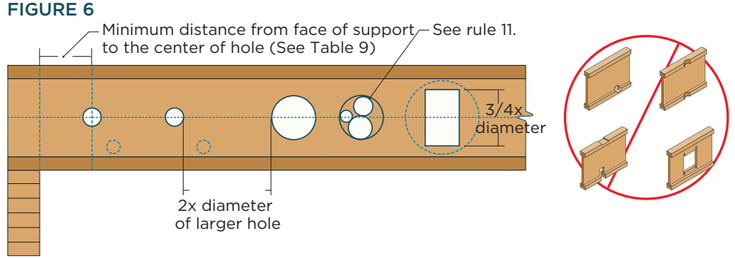
P3 Joist Typical Holes

FIGURE 6



Cutting the Holes

- Never drill, cut, or notch the flange. **Never** over-cut the web.
- Holes in webs should be cut with a sharp saw.
- For rectangular holes avoid over cutting the corners as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1" diameter hole in each of the 4 corners and then making the cuts between the holes is another good method to minimize damage to I-Joist

TABLE 9

Location Of Circular Holes In P3 Joist Webs

Simple or Multiple Span for Dead Loads up to 10 psf and Live Loads up to 40 psf [1,2,3,4]

Depth (in)	Joist Series	Minimum distance from inside face of any support to center of hole [ft-in]															
		Round Hole Diameter (in)															
		SAF [5]	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"	PJI-40	14-6"	0'-7"	0'-8"	1'-2"	2'-9"	4'-5"	4'-11"									
	PJI-60	15-2"	0'-7"	1'-1"	2'-7"	4'-3"	6'-0"	6'-6"									
	PJI-80	16-6"	0'-7"	2'-0"	3'-7"	5'-3"	7'-1"	7'-7"									
11-7/8"	PJI-40	16-6"	0'-7"	0'-8"	0'-8"	1'-2"	2'-8"	3'-0"	4'-2"	5'-9"	6'-11"						
	PJI-60	18-1"	0'-7"	0'-8"	1'-8"	3'-1"	4'-8"	5'-0"	6'-3"	8'-0"	9'-2"						
	PJI-65	18-9"	0'-7"	0'-8"	1'-11"	3'-4"	4'-10"	5'-3"	6'-6"	8'-3"	9'-5"						
	PJI-80	19-8"	0'-7"	1'-4"	2'-10"	4'-4"	5'-11"	6'-4"	7'-7"	9'-5"	10'-8"						
	PJI-90	20-1"	0'-7"	1'-9"	3'-3"	4'-9"	6'-4"	6'-9"	8'-0"	9'-10"	11'-1"						
14"	PJI-40	18-2"	0'-7"	0'-8"	0'-8"	0'-9"	1'-2"	1'-6"	2'-7"	4'-0"	4'-11"	5'-6"	7'-1"	8'-5"			
	PJI-60	20-6"	0'-7"	0'-8"	0'-8"	1'-11"	3'-4"	3'-8"	4'-9"	6'-3"	7'-3"	7'-10"	9'-7"				
	PJI-65	21-3"	0'-7"	0'-8"	0'-11"	2'-3"	3'-7"	3'-11"	5'-1"	6'-7"	7'-7"	8'-2"	9'-11"				
	PJI-80	22-4"	0'-7"	0'-8"	1'-10"	3'-2"	4'-8"	5'-0"	6'-2"	7'-9"	8'-9"	9'-5"	11'-3"				
	PJI-90	22-11"	0'-7"	0'-8"	1'-10"	3'-2"	4'-8"	5'-0"	6'-2"	7'-9"	8'-9"	9'-5"	11'-3"				
16"	PJI-40	19-7"	0'-7"	0'-8"	0'-8"	0'-9"	0'-9"	0'-10"	1'-2"	2'-6"	3'-4"	3'-10"	5'-3"	6'-5"	6'-9"	8'-5"	9'-9"
	PJI-60	21-9"	0'-7"	0'-8"	0'-8"	0'-9"	1'-4"	1'-8"	2'-7"	3'-11"	4'-10"	5'-4"	6'-10"	8'-0"	8'-5"	10'-1"	
	PJI-65	23-6"	0'-7"	0'-8"	0'-8"	1'-2"	2'-6"	2'-10"	3'-10"	5'-2"	6'-1"	6'-8"	8'-2"	9'-4"	9'-9"	11'-6"	
	PJI-80	24-9"	0'-7"	0'-8"	0'-10"	2'-2"	3'-6"	3'-10"	4'-11"	6'-4"	7'-4"	7'-11"	9'-6"	10'-9"	11'-2"	13'-0"	
	PJI-90	25-4"	0'-7"	0'-8"	0'-10"	2'-2"	3'-6"	3'-10"	4'-11"	6'-4"	7'-4"	7'-11"	9'-6"	10'-9"	11'-2"	13'-0"	
18"	PJI-80	27-0"	0'-7"	0'-8"	0'-8"	0'-10"	2'-3"	2'-7"	3'-8"	5'-1"	6'-1"	6'-8"	8'-2"	9'-5"	9'-10"	11'-7"	12'-11"
	PJI-90	27-8"	0'-7"	0'-8"	0'-8"	1'-6"	2'-11"	3'-3"	4'-4"	5'-10"	6'-10"	7'-5"	9'-0"	10'-3"	10'-8"	12'-5"	13'-9"
20"	PJI-80	29-3"	0'-7"	0'-8"	0'-8"	0'-9"	1'-8"	2'-0"	3'-0"	4'-4"	5'-3"	5'-9"	7'-2"	8'-3"	8'-8"	10'-2"	11'-4"
	PJI-90	30-0"	0'-7"	0'-8"	0'-8"	0'-9"	1'-11"	2'-3"	3'-3"	4'-8"	5'-6"	6'-0"	7'-5"	8'-7"	8'-11"	10'-6"	11'-8"
24"	PJI-80	31-3"	0'-7"	0'-8"	0'-8"	0'-9"	0'-9"	0'-10"	0'-10"	1'-6"	2'-2"	2'-8"	3'-10"	4'-9"	5'-1"	6'-4"	7'-4"
	PJI-90	31-3"	0'-7"	0'-8"	0'-8"	0'-9"	0'-9"	0'-10"	0'-10"	1'-6"	2'-2"	2'-8"	3'-10"	4'-9"	5'-1"	6'-4"	7'-4"

NOTES

1. Above tables may be used for P3 Joist spacing of 24" on center or less.
2. Hole location distance is measured from inside face of supports to center of hole.
3. Distances in this chart are based on uniformly loaded joists.
4. Hole sizes and/or locations that fall outside of the scope of this table may be acceptable based on analysis of actual hole size, span, spacing, and loading conditions.
5. SAF stands for Span Adjustment Factor. SAF is used as defined below.

OPTIONAL

Table 9 is based on the P3 Joists being used at their maximum span. If the P3 Joists are placed at less than their full allowable span, the maximum distance from the centerline of the hole to the face of any support (D) as given above may be reduced as follows.

$$D_{reduced} = L \frac{actual}{SAF} \times D$$

Where: $D_{reduced}$ = Distance from the inside face of any support to center of hole is reduced for less-than-maximum span applications (ft). The reduced distance shall not be less than 6" from the face of support to edge of the hole.

L_{actual} = The actual measured span distance between the inside faces of supports (ft)

SAF = Span Adjustment Factor is given in the table above.

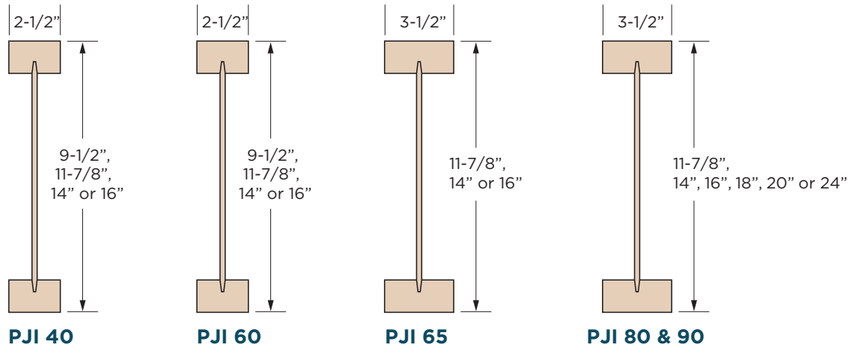
D = The minimum distance from the inside face of any support to center of hole from Table 9 above

If $L \frac{actual}{SAF}$ is greater than 1, use 1 in the above calculation for L

Installation guide, safety data sheet, references and more available online at www.interfor.com

P3 JOIST RESIDENTIAL PRODUCT LINE

Product Description



- **Flanges** are MSR 2x3's and 2x4's.
- **Webs** are OSB, and all are classified as Exposure 1 or Exterior and are 3/8" in thickness or greater.
- All P3 Joist are assembled using exterior-type adhesives that meet ASTM D 2559 and ASTM D 7247.
- P3 Joist are available in seven depths: 9-1/2", 11-7/8", 14", 16", 18", 20" and 24" Deep Depth not shown for clairity.
- P3 Joist of the same depth are manufactured with various flange widths; flange width is an important design consideration when specifying hangers.
- P3 Joist are manufactured up to 64' in length. These lengths are cut to commonly used lengths such as 16' to 36' in 2' increments for jobsite delivery. Check local supplier for availability.

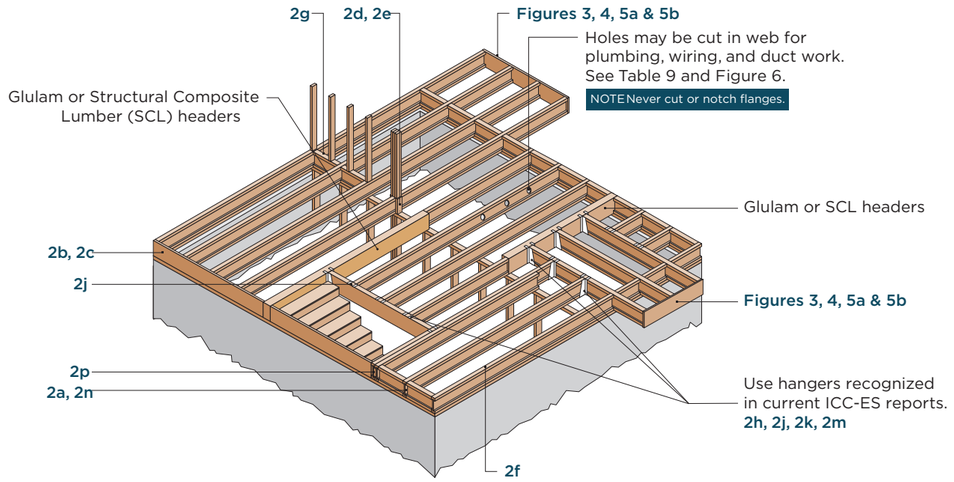
*For other type floor assemblies, please visit interfor.com
See our complete install or User Guide at www.interfor.com for detail and information not shown

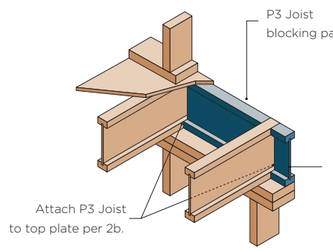
Floor Framing and Construction Details

FIGURE 1

Typical P3 Floor Joist Framing and Construction Details

All nails shown in the details below are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3") may be substituted for 8d common (0.131 x 2-1/2") as shown in details. Individual components are not shown to scale for clarity.

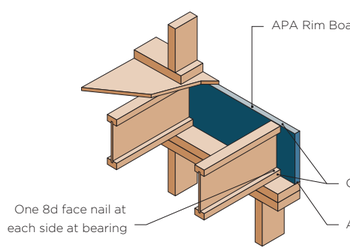




Blocking Panel or Rim Joist	Uniform Vertical Load Transfer Capacity* (plf)
P3 Joist (9-1/2 - 18")	2000

*The uniform vertical load capacity is limited to a joist depth of 18" or less and is based on the normal (10-yr) load duration. It shall not be used in the design of a bending member such as joist, header, or rafter. For concentrated vertical load transfer capacity, see 2d.

2a BLOCKING PANEL AT END SUPPORT DETAIL



Blocking Panel or Rim Joist	Uniform Vertical Load Transfer Capacity* (plf)
1-1/8" APA Rim Board Plus	4850
1-1/8" APA Rim Board	4400
1" APA Rim Board	3300

*The uniform vertical load capacity is limited to Rim Board depth of 18" or less and is based on the normal (10-yr) load duration. It shall not be used in the design of a bending member such as joist, header, or rafter. For concentrated vertical load transfer capacity, see 2d.

To avoid splitting flange, start nails at least 1-1/2" from end of P3 Joist. Nails may be driven at an angle to avoid splitting of bearing plate.

2b RIM BOARD DETAIL

P3 JOIST RESIDENTIAL PRODUCT LINE

Maximum Allowable Spans

The specific PJI designation needed for your application is easily determined by selecting the span needed and then by choosing the PJI that meets your span, spacing, and uniform loading criteria.

Tables 1 and 1a are for simple or multiple span applications respectively. The use of these tables will provide maximum spans for the indicated spacing and span conditions.

To illustrate the selection of a P3 Joist product, assume a simple clear span of 19'8". For architectural reasons limit the joist depth to 11-7/8" and joist spacing to 19.2"on center. From the 9-1/2" and 11-7/8" entries in Table 1, look down the 19.2" o.c. spacing column. For depths of 9-1/2" there are no options that work and from the 11-7/8"depths, notice that joist designations PJI-65, PJI-80 and PJI-90 will all work.

The allowable spans in the tables in this user guide indicate the allowable clear span for various joist spacings under typical residential uniform floor loads (40 psf live load and 10 psf dead load) for glued-nailed systems.

In addition, **floor sheathing must be field glued** to the P3 Joist flanges using approved construction adhesives in order to achieve the P3 Joist allowable spans.

Use of these span tables is limited to uniform load conditions, and P3 floor Joist spans shall not exceed these allowable spans. P3 Joist can be used for other applications such as roofs and ceilings to support line loads or concentrated loads, etc., when properly engineered, using the appropriate design properties in Tables20 and 21 of the current user guide.

NOTES

1. Tabulated spans have been designed to meet the IBC/IRC and the NDS requirements.
2. Tabulated spans are the **clear spans** for the single or multiple residential foor spans. The shortest span shall not be less than 40% the longest span. For two spans with a span ratio in between 0.4 and 0.7, the uplift (lbs) at the end of the short span is equal to -10*Longer Span (feet)*Spacing(inches)/12. Install metal hangers or equivalent to withstand the uplift force at the end of the short span. For all other applications, consult Interfor.
3. Tabulated spans are based on partial composite action using **Glued & Nailed OSB APA Rated Sheathing or STURD-I-FLOOR**® conforming to PRP-108, PS 1, & PS 2 with a min. thickness of **19/23" for joists spacings of 19.2" or less**, and a min. thickness of **23/32" for joists spacings of 24".** See APA Engineering Wood Construction Guide, Form E30, for fastener size. Construction adhesive shall meet the requirements given in ASTM D3498 or APA Specification AFG-01.
4. Min. end bearing length shall be 1-3/4", and 3-1/2" for the interior bearing supports. I-Joists shall be supported on the full flange width for the required minimum length of bearing.
5. **Live load deflection** is limited to **L/480.**
6. **Total load deflection** is limited to **L/240.**
7. **Web stiffeners are required for all PJI joists with depths exceeding 16 inches**, or where indicated by the "ws" designation.
8. Web filler are required for I-Joists seated in hangers where the top flange is not laterally supported.
9. Continuous lateral support must be provided for the top and bottom flanges on the compression edge. Continuous lateral support is considered to be a maximum unbraced length of 24". This is normally provided by sheathing and/or framing members, which must be adequately anchored to the member and supporting structure.
10. Lateral support must be provided at all bearing locations to prevent lateral displacement and rotation.
11. I-Joists shall be used in a dry, well ventilated environment where the average moisture content will not exceed 16% over a year period.
12. Point loads from above over bearing supports shall be properly transferred by squash blocks or pass-thru framing.

TABLE 1 - LDF = 1.0

Allowable Single Spans for P3 Floor Joist

Uniform Load (psf)		Series	Depth (in)	Single Floor Span			
				Glued & Nailed Subfloor			
				On center joist spacing (in)			
Live	Dead			12	16	19.2	24
40	10	PJI-40	9.5	18'-0"	16'-5"	15'-7"	14'-6"
			11.875	21'-5"	19'-7"	18'-6"	16'-8"
			14	24'-4"	22'-2"	20'-6"	18'-4"
			16	26'-11"	24'-2"	22'-1"	19'-9"
		PJI-60	9.5	18'-11"	17'-3"	16'-3"	15'-2"
			11.875	22'-7"	20'-7"	19'-5"	18'-1"
			14	25'-8"	23'-5"	22'-1"	20'-7"
			16	28'-6"	25'-11"	24'-6"	22'-9"
		PJI-65	11.875	23'-6"	21'-5"	20'-2"	18'-9"
			14	26'-8"	24'-3"	22'-10"	21'-3"
			16	29'-6"	26'-10"	25'-4"	23'-6"
		PJI-80	9.5	20'-9"	18'-11"	17'-9"	16'-6"
			11.875	24'-9"	22'-6"	21'-3"	19'-9"
			14	28'-2"	25'-7"	24'-1"	22'-5"
			16	31'-2"	28'-4"	26'-8"	24'-10"
		PJI-80ws*	18	34'-0"	30'-11"	29'-1"	27'-0"
			20	36'-10"	33'-6"	31'-6"	29'-3"
			24	42'-2"	38'-4"	36'-1"	33'-6"
		PJI 90	11.875	25'-6"	23'-2"	21'-9"	20'-3"
			14	28'-11"	26'-3"	24'-9"	22'-11"
			16	32'-0"	29'-1"	27'-4"	25'-4"
		PJI-90ws*	18	34'-11"	31'-9"	29'-10"	27'-9"
			20	37'-10"	34'-4"	32'-4"	30'-0"
			24	43'-3"	39'-4"	37'-0"	34'-4"

*ws = with stiffeners

For other type floor assemblies, please visit www.interfor.com
SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 psf = 47.88 Pa

TABLE 1A - LDF = 1.0

Allowable Multiple Spans for P3 Floor Joist

Uniform Load (psf)		Series	Depth (in)	Multiple Floor Span			
				Glued & Nailed Subfloor			
				On center joist spacing (in)			
Live	Dead			12	16	19.2	24
40	10	PJI-40	9.5	19'-6"	17'-9"	16'-2"	14'-6"
			11.875	23'-4"	20'-4"	18'-6"	16'-6"
			14	25'-10"	22'-4"	20'-4"	18'-2"
			16	27'-10"	24'-0"	21'-11"	19'-7"
		PJI-60	9.5	20'-6"	18'-8"	17'-8"	16'-5"
			11.875	24'-6"	22'-4"	21'-1"	19'-6"
			14	27'-11"	25'-5"	23'-11"	21'-5"
			16	31'-0"	28'-2"	25'-10"	21'-8"
		PJI-65	11.875	25'-6"	23'-2"	21'-10"	19'-10"
			14	28'-11"	26'-4"	24'-5"	21'-10"
			16	32'-1"	28'-10"	26'-4"	23'-6"
		PJI-80	9.5	22'-7"	20'-6"	19'-3"	17'-11"
			11.875	26'-11"	24'-6"	23'-0"	21'-4"
			14	30'-7"	27'-10"	26'-2"	23'-10"
			16	33'-11"	30'-10"	29'-0"	25'-9"
		PJI-80ws*	18	37'-0"	33'-7"	31'-8"	29'-4"
			20	40'-1"	36'-5"	34'-3"	30'-11"
			24	45'-11"	41'-4"	37'-9"	31'-3"
		PJI 90	11.875	27'-8"	25'-2"	23'-7"	21'-11"
			14	31'-5"	28'-6"	26'-10"	23'-10"
			16	34'-9"	31'-7"	29'-8"	25'-9"
		PJI-90ws*	18	38'-0"	34'-6"	32'-5"	30'-1"
			20	41'-2"	37'-4"	35'-2"	31'-3"
			24	47'-2"	42'-10"	39'-2"	31'-3"