P3 JOIST

USER GUIDE

US

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INTERFOR®

THE PERFECT PRODUCT FOR EVERY PROJECT

Our P3 Joists™ conform to the APA's performance standards. We rigorously verify and test our products to ensure that they perform predictably and safely. Simple to specify. Easy to install. Less confusion.

P3 JOIST

Interfor has made it easy to make the right choice for residential and non-residential floor and roof joist products. P3 Joist are produced in accordance with Interfor's report ICC ESR – 1262, APA's Product Report L261 and APA's ICC ESR – 1405. P3 Joist are in compliance with the International Building Code (IBC) and the International Residential Code (IRC) edition 2006, 2009, 2012, 2015, 2018 and 2021. All code reports can be downloaded from our website www.interfor.com

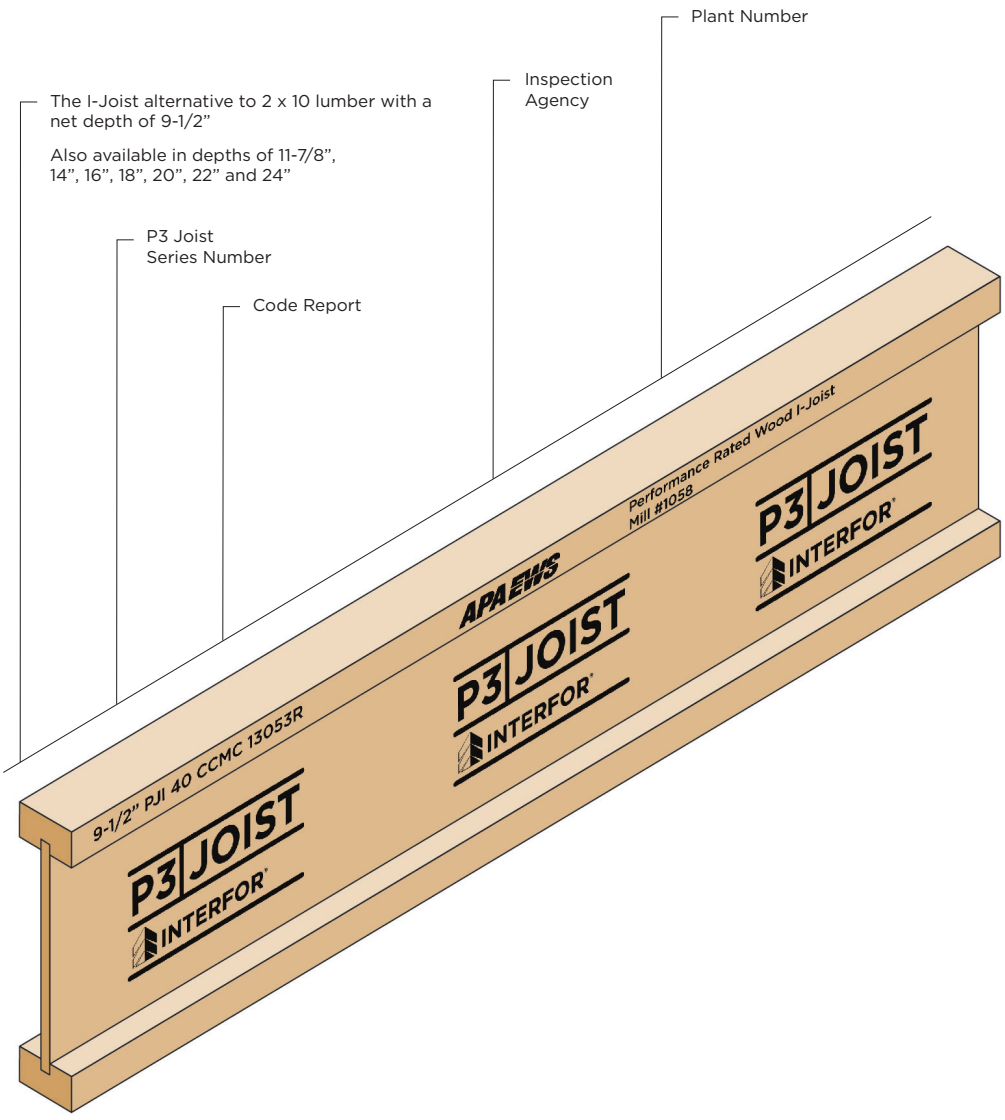
P3 Joist provide a high performance alternative to dimension lumber joists for floor and roof applications. This guide will help you efficiently use P3 Joist by leading you through the simple steps of product selection, specification, and installation.

The APA trademark signifies that the I-Joist manufacturer is committed to the strict quality standards of Engineered Wood Systems (EWS) – a related corporation of APA – and that P3 Joist are manufactured in conformance with ASTM D5055. APA's rigorous program of quality verification and testing is designed to assure predictable product performance.

This guide explains floor and roof systems. Review by a design professional is required for applications beyond the scope of this document.

Simple to specify. Easy to install. Less confusion. P3 Joist are the right choice for residential and non-residential floor and roof construction.

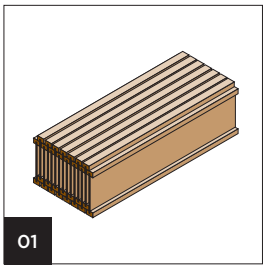
P3 Joist Labeling Example

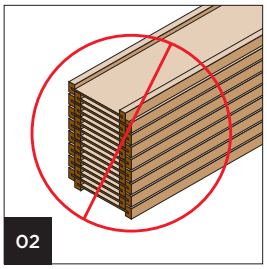


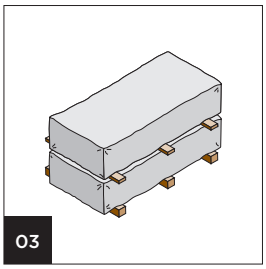
P3 JOIST (continued)

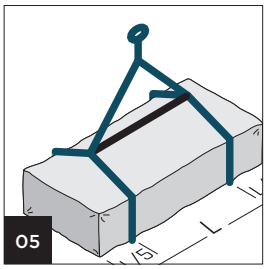
Storage and Handling Guidelines

1. Store, stack, and handle P3 Joists in a vertical and level position only.
2. Do not store P3 Joists in direct contact with the ground; do not store P3 Joist flatwise.
3. Protect P3 Joists from weather, and use stickers to separate bundles.
4. To protect P3 Joists further from dirt and weather, do not open bundles until time of installation.
5. When lifting P3 Joists with a crane on the job site, take a few simple precautions to prevent damage to the P3 Joists and to prevent injury to your work crew.
   - Lift P3 Joists in bundles as shipped by the supplier.
   - Orient the bundles so that the webs of the P3 Joists are vertical.
   - Lift the bundles at the 5th points, using a spreader bar if necessary.
6. Do not twist or apply loads to the P3 Joists when horizontal.
7. Never use or try to repair a damaged P3 Joists.









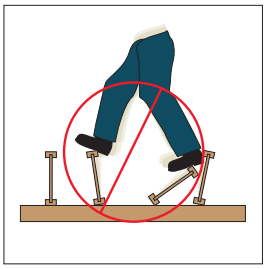
Safety Precautions

WARNING P3 Joists are not stable until completely installed and will not carry any load until fully braced and sheathed.

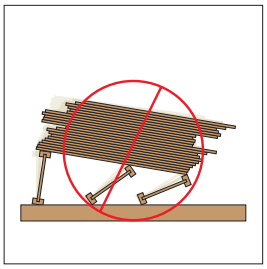
Avoid Accidents by Following These Important Guidelines.

1. Brace and nail each P3 Joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When P3 Joists are applied continuously over interior supports and a load-bearing wall is planned at the location, blocking will be required at the interior supports.
2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the P3 Joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent P3 Joist rollover or buckling.
   - Temporary bracing or struts must be 1 x 4" minimum, at least 8' long, spaced no more than 8' on center, and secured with a minimum of two 8d nails fastened to the top surface of each P3 Joist. Nail bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two P3 Joists.
   - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4' of the P3 Joist at the end of the bay.
3. For cantilevered P3 Joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
4. Install and nail permanent sheathing to each P3 Joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
5. For temporary construction loads such as dry wall stacking, see APA Publication J735 (Temporary Construction Loads Over I-Joist Roofs).

Failure to follow applicable building codes and span ratings, failure to use allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.



Do not allow workers to walk on P3 Joists until joists are fully installed and braced, or serious injuries can result.



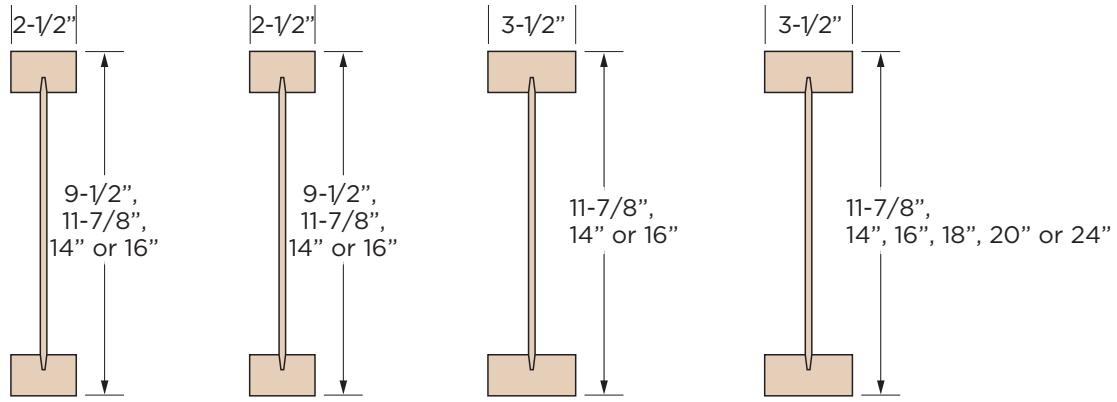
Never stack building materials over unsheathed P3 Joists. Stack only over beams or walls.

Selecting a P3 JOIST

Product Description

The P3 Joist is an "I"-shaped engineered wood structural member designed for use in residential and non-residential floor and roof construction. P3 Joist are prefabricated using SPF MSR lumber flanges and OSB web, which are bonded together with exterior-type adhesives. P3 Joist are limited to a L/480 maximum live load deflection for residential and non-residential floor applications. P3 Joist are identified by their depth followed by their series name PJI, and by a designation such as 40 which relates to the joist strength and stiffness. P3 Joist are manufactured to strict tolerances with the following characteristics.

- **Flanges** are MSR 2x3's and 2x4's.



PJI 40 PJI 60 PJI 65 PJI 80 & 90

- **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".
- 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.

Fire-Resistance-Rated Construction

The APA System Report SR-405, "Fire Protection of Floors Constructed with Prefabricated Wood I-Joists for Compliance with the International Residential Codes," provides seven fire protective membrane alternatives. These assemblies in SR-405 meet the exemption in R501.3 stating, "or other approved floor assemblies demonstrating equivalent fire performance." The purpose of this document is for fire protection of floors constructed with prefabricated I-Joists when the 2012 IRC Section R501.3 or 2015 & 2018 IRC Section R302.13 requirements are adopted by the local code jurisdictions.

For Fire-Resistance ratings, typical Sound Transmission Class (STC), and typical Impact Insulation Class (IIC) refer to ICC ESR 1405 Section 4.2.2 or DCA 3 – Fire Rated Wood Floor and Wall Assemblies at www.awc.org.

Allowable Floor Spans

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 Tables 20 and 21.

TABLE 1 - LDF = 1.0

Allowable Spans for P3 Floor Joist

Load		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"

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 Eacom.
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.

*ws = with stiffeners

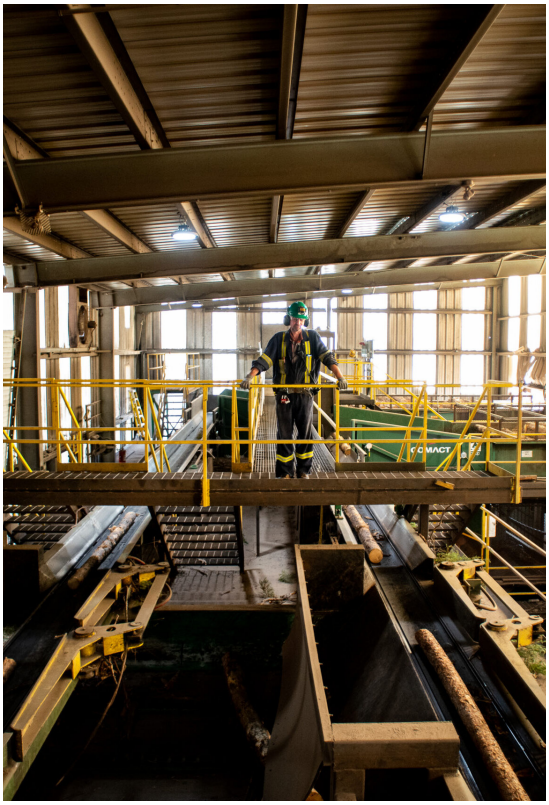
For other type floor assemblies, please contact us at interfor.com
SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 psf = 47.88 Pa

Allowable Floor Spans

TABLE 1A - LDF = 1.0

Allowable 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″



*ws = with stiffeners

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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"**.

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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.

Allowable Floor Uniform Load Capacities

TABLE 2 - LDF = 1.0

P3 Floor Joist - PJI 40

Allowable Uniform Loads (PLF)

Clear Joist Span (ft)	9-1/2"		11-7/8"		14"		16"	
	Live load Defl. L/480	Total load Defl. L/240	Live load Defl. L/480	Total load Defl. L/240	Live load Defl. L/480	Total load Defl. L/240	Live load Defl. L/480	Total load Defl. L/240
6		354		354		354		354
7		305		305		305		305
8		268		268		268		268
9	219	239		239		239		239
10	167	209		215		215		215
11	130	173		196		196		196
12	103	146	168	180		180		180
13	82	125	136	162		166		166
14	67	108	111	140		155		155
15	55	94	92	122	131	144		144
16	46	83	77	107	110	129		135
17	39	73	65	95	93	115	125	128
18	33	65	55	85	80	102	107	119
19	28	57	47	76	68	92	92	107
20	24	49	41	69	59	83	80	96
21	21	42	36	62	51	75	69	87
22	18	37	31	57	45	69	61	80
23	16	32	27	52	40	63	54	73
24	14	29	24	48	35	58	47	67
25	12	25	21	43	31	53	42	62
26			19	39	28	49	38	57
27			17	35	25	46	34	53
28			15	31	22	42	30	49
29			14	28	20	40	27	46
30			12	25	18	37	25	43
31					16	33	22	40

TABLE 3 - LDF = 1.0

P3 Floor Joist - PJI 60

Allowable Uniform Loads (PLF)

Clear Joist Span (ft.)	9-1/2"		11-7/8"		14"		16"	
	Live load Defl. L/480	Total load Defl. L/240	Live load Defl. L/480	Total load Defl. L/240	Live load Defl. L/480	Total load Defl. L/240	Live load Defl. L/480	Total load Defl. L/240
6	-	354	-	354	-	354	-	354
7	-	305	-	305	-	305	-	305
8	-	268	-	268	-	268	-	268
9	-	239	-	239	-	239	-	239
10	194	215	-	215	-	215	-	215
11	151	196	-	196	-	196	-	196
12	120	180	-	180	-	180	-	180
13	97	166	159	166	-	166	-	166
14	79	149	130	155	-	155	-	155
15	65	130	108	144	-	144	-	144
16	54	109	91	135	130	135	-	135
17	46	92	77	128	111	128	-	128
18	39	78	65	118	95	120	-	120
19	33	67	56	106	81	114	109	114
20	29	58	49	95	71	109	95	109
21	25	50	42	85	62	103	83	103
22	22	44	37	75	54	95	73	99
23	19	39	33	66	48	87	64	94
24	17	34	29	58	42	80	57	91
25	15	30	26	52	37	74	51	85
26	13	27	23	46	33	67	45	79
27	12	24	20	41	30	60	41	73
28			18	37	27	54	37	68
29			16	33	24	49	33	64
30			15	30	22	44	30	59
31			13	27	20	40	27	55

Allowable Floor Uniform Load Capacities (continued)

TABLE 4 - LDF = 1.0

P3 Floor Joist - PJI 65

Allowable Uniform Loads (PLF)

Clear Joist Span (ft.)	11-7/8"		14"		16"	
	Live load Defl. L/480	Total load Defl. L/240	Live load Defl. L/480	Total load Defl. L/240	Live load Defl. L/480	Total load Defl. L/240
6		361		385		385
7		311		332		332
8		273		292		292
9		243		260		680
10		219		234		234
11		200		213		213
12		183		198		196
13		170		181		181
14	147	158		168		168
15	122	147		157		157
16	102	138	145	147		147
17	87	130	124	139		139
18	74	122	106	131		131
19	64	110	91	124	121	124
20	55	99	79	118	106	118
21	48	90	69	108	92	113
22	42	82	61	99	81	108
23	37	75	54	90	72	103
24	33	66	47	83	64	96
25	29	59	42	77	57	89
26	26	52	38	71	51	82
27	23	47	34	66	46	76
28	21	42	30	61	41	71
29	19	38	27	55	37	66
30	17	35	25	50	34	62
31	15	31	23	46	31	58
32	14	29	21	42	28	54
33	13	26	19	38	25	51
34			17	35	23	47
35			16	32	21	43
36			14	29	20	40
37			13	27	18	37
38			12	25	17	34

TABLE 4A - LDF = 1.0

P3 Floor Joist - PJI 65 with Web Stiffeners

Allowable Uniform Loads (PLF)

Clear Joist Span (ft.)	11-7/8"		14"		16"	
	Live load Defl. L/480	Total load Defl. L/240	Live load Defl. L/480	Total load Defl. L/240	Live load Defl. L/480	Total load Defl. L/240
6	-	416	-	444	-	463
7	-	359	-	382	-	398
8	-	315	-	336	-	350
9	-	281	-	299	-	312
10	-	253	-	270	-	281
11	-	231	-	246	-	256
12	-	212	-	226	-	235
13	178	196	-	209	-	217
14	147	182	-	194	-	202
15	122	170	172	181	-	189
16	102	154	145	170		177
17	87	137	124	160	164	167
18	74	122	106	147	141	158
19	64	110	91	132	121	149
20	55	99	79	119	106	139
21	48	90	69	108	92	126
22	42	82	61	99	81	115
23	37	75	54	90	72	105
24	33	66	47	83	64	96
25	29	59	42	77	57	89
26	26	52	38	71	51	82
27	23	47	34	66	46	76
28	21	42	30	61	41	71
29	19	38	27	55	37	66
30	17	35	25	50	34	62
31	15	31	23	46	31	58
32	14	29	21	42	28	54
33	13	26	19	38	25	51
34			17	35	23	47
35			16	32	21	43
36			14	29	20	40
37			13	27	18	37
38			12	25	17	34

NOTES

1. Live Load column limits deflection to L/480; Total Load column limits deflection to L/240.
2. Values represent the most restrictive of simple span or multiple span conditions.
3. Values are for I-Joists spaced at a maximum of 24" on center.
4. Tables assume a minimum end bearing length of 1-3/4" and a minimum interior bearing length of 3-1/2".
5. Web stiffeners are required for depths > 16".

JOIST SIZING

1. Select desired joist depth (column).
2. Select desired span (row).
3. Check BOTH Live Load and Total Load columns.
4. If Live Load column is blank, Total Load capacity governs.

Allowable Floor Uniform Load Capacities (continued)

TABLE 5 - LDF = 1.0

P3 Floor Joist - PJI 80

Allowable Uniform Loads (PLF)

Clear Joist Span (ft.)	9-1/2"		11-7/8"		14"		16"	
	Live load Defl. L/480	Total load Defl. L/240	Live load Defl. L/480	Total load Defl. L/240	Live load Defl. L/480	Total load Defl. L/240	Live load Defl. L/480	Total load Defl. L/240
6		355		361		388		420
7		305		311		334		361
8		268		273		293		317
9		239		243		262		283
10		216		219		236		255
11		196		200		215		232
12	158	180		183		197		213
13	128	167		170		182		197
14	105	155		158		169		183
15	88	145	143	147		158		171
16	73	136	120	138		148		161
17	62	125	102	130		140		151
18	53	106	87	123	125	132		143
19	45	91	75	116	108	125		135
20	39	79	65	111	94	119	125	129
21	34	69	57	105	82	113	109	123
22	30	60	50	101	72	108	96	117
23	26	53	44	89	64	104	85	112
24	23	47	39	79	57	99	76	107
25	21	42	35	70	50	95	68	103
26	18	37	31	63	45	91	61	99
27	16	33	28	56	40	81	54	95
28	15	30	25	51	36	73	49	92
29	13	27	23	46	33	66	44	89
30	12	24	20	41	30	60	40	81
31	11	22	19	38	27	55	37	74
32			17	34	25	50	33	67
33			15	31	23	46	31	62
34			14	29	21	42	28	57

TABLE 5A - LDF = 1.0

P3 Floor Joist - PJI 80 with Web Stiffeners

Allowable Uniform Loads (PLF)

Clear Joist Span (ft.)	18"		20"		22"		24"	
	Live load Defl. L/480	Total load Defl. L/240	Live load Defl. L/480	Total load Defl. L/240	Live load Defl. L/480	Total load Defl. L/240	Live load Defl. L/480	Total load Defl. L/240
12	-	258	-	258	-	258	-	258
13	-	239	-	239	-	239	-	239
14	-	222	-	222	-	222	-	222
15	-	207	-	207	-	207	-	207
16	-	194	-	194	-	194	-	194
17	-	183	-	183	-	183	-	183
18	-	173	-	173	-	173	-	173
19	-	164	-	164	-	164	-	164
20	-	156	-	156	-	156	-	156
21	139	148	-	148	-	148	-	148
22	123	142	-	142	-	142	-	142
23	109	136	135	136	-	136	-	136
24	97	130	121	130	-	130	-	130
25	86	125	108	125	-	125	-	125
26	77	120	97	120	118	120	-	120
27	70	116	87	116	107	116	-	116
28	63	110	79	111	96	111	-	111
29	57	103	71	108	87	108	105	108
30	52	96	65	104	80	104	96	104
31	47	90	59	99	73	101	87	101
32	43	84	54	93	66	98	80	98
33	39	79	50	88	61	95	73	95
34	36	73	46	83	56	91	67	92
35	33	67	42	78	51	86	62	89
36	31	62	39	74	47	81	57	87
37	28	57	36	70	44	77	53	83
38	26	53	33	66	41	73	49	79

Allowable Floor Uniform Load Capacities (continued)

TABLE 6 - LDF = 1.0

P3 Floor Joist - PJI 90

Allowable Uniform Loads (PLF)

Clear Joist Span (ft.)	11-7/8"		14"		16"	
	Live load	Total load	Live load	Total load	Live load	Total load
	Defl. L/480	Defl. L/240	Defl. L/480	Defl. L/240	Defl. L/480	Defl. L/240
12	-	183	-	197	-	213
13	-	170	-	182	-	197
14	-	158	-	169	-	183
15	-	147	-	158	-	171
16	130	138	-	148	-	161
17	111	130	-	140	-	151
18	95	123	-	132	-	143
19	82	116	116	125	-	135
20	71	111	101	119	-	129
21	62	105	89	113	118	123
22	55	101	78	108	104	117
23	48	96	69	104	92	112
24	43	86	61	99	82	107
25	38	76	55	95	73	103
26	34	68	49	92	65	99
27	30	61	44	88	59	95
28	27	55	40	80	53	92
29	25	50	36	72	48	89
30	22	45	32	65	44	86
31	20	41	30	60	40	80
32	19	38	27	54	36	73
33	17	34	25	50	33	67
34	15	31	23	46	30	61
35	14	29	21	42	28	56
36	13	27	19	39	26	52
37	12	24	18	36	24	48
38	11	23	16	33	22	44

TABLE 6A - LDF = 1.0

P3 Floor Joist - PJI 90 with Web Stiffeners

Allowable Uniform Loads (PLF)

Clear Joist Span (ft.)	18"		20"		24"	
	Live load	Total load	Live load	Total load	Live load	Total load
	Defl. L/480	Defl. L/240	Defl. L/480	Defl. L/240	Defl. L/480	Defl. L/240
12	-	258	-	258	-	258
13	-	239	-	239	-	239
14	-	222	-	222	-	222
15	-	207	-	207	-	207
16	-	194	-	194	-	194
17	-	183	-	183	-	183
18	-	173	-	173	-	173
19	-	164	-	164	-	164
20	-	156	-	156	-	156
21	-	148	-	148	-	148
23	117	136	-	136	-	136
24	105	130	-	130	-	130
25	94	125	117	125	-	125
26	84	120	105	120	-	120
27	76	116	94	116	-	116
28	68	111	85	111	-	111
29	62	108	78	108	-	108
30	56	104	70	104	103	104
31	51	101	64	101	94	101
32	47	94	59	98	86	98
33	43	86	54	95	79	95
34	39	79	49	92	73	92
35	36	73	46	89	67	89
36	33	67	42	85	62	87
37	31	62	39	78	57	84
38	29	58	36	72	53	82

NOTES FOR TABLES 2, 3, 4, 4A, 5, 5A, 6, 6A

1. Live Load column limits deflection to L/480; Total Load column limits deflection to L/240.
2. Values represent the most restrictive of simple span or multiple span conditions.
3. Values are for I-Joists spaced at a maximum of 24" on center.
4. Tables assume a minimum end bearing length of 1-3/4" and a minimum interior bearing length of 3-1/2".
5. Web stiffeners are not required for the joists in tables 2, 3, 4, 5 and 6. Web stiffeners are required for all joists at each support in Table 4A, 5A, and 6A.

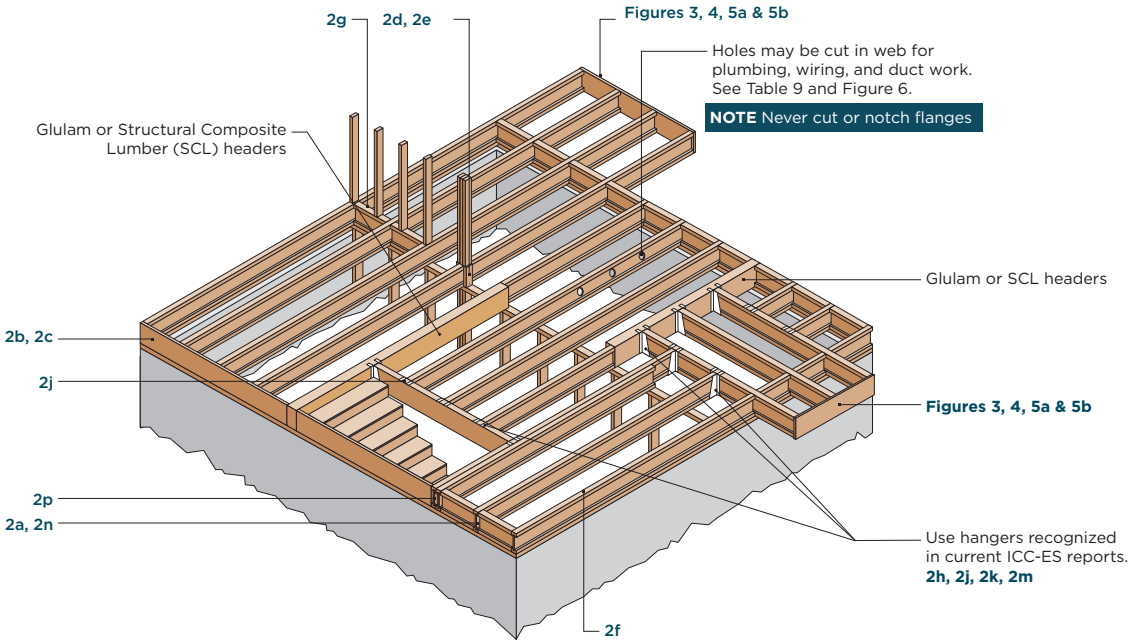
JOIST SIZING

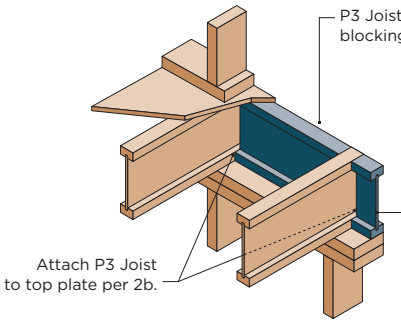
1. Select desired joist depth (column).
2. Select desired span (row).
3. Check BOTH Live Load and Total Load columns.
4. If Live Load column is blank, Total Load capacity governs.

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.

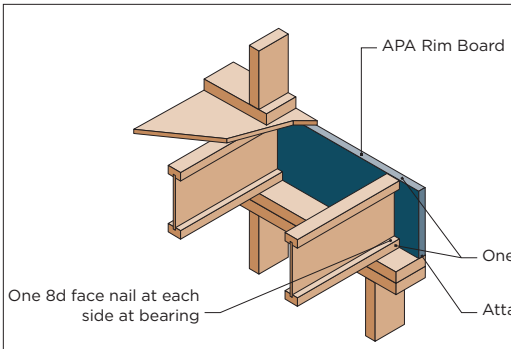




Blocking Panel or Rim Joist	Uniform Vertical Load Transfer Capacity* (plf)
P3 Joist (9-1/2 - 18")	2000

*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.

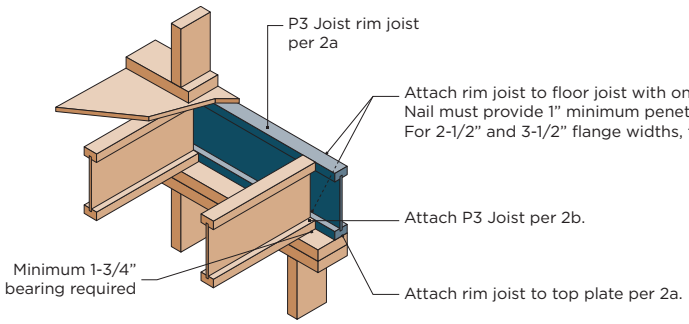
To avoid splitting flange, start nails at least 1-1/2" from end of P3 Joist. Nails may be driven at an angle to avoid splitting of bearing plate.

2b RIM BOARD DETAIL

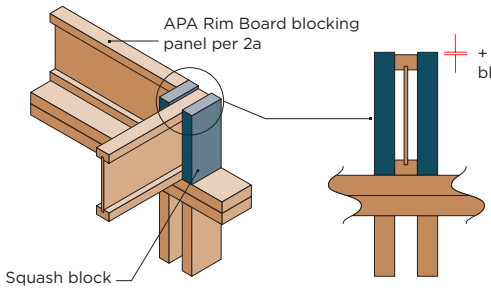
FIGURE 1 (CONTINUED)

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.



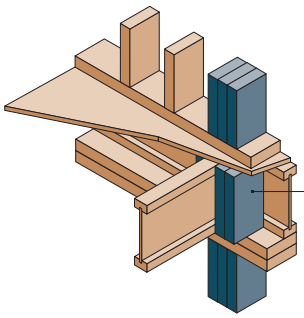
2c P3 JOIST AS RIM JOIST DETAIL



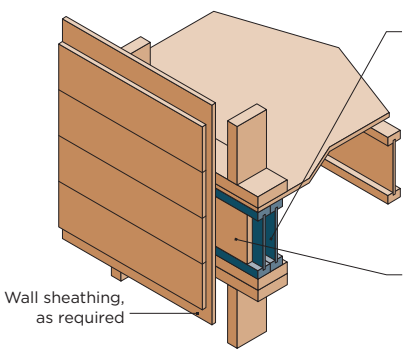
Pair of Squash Blocks	Vertical load transfer capacity per pair of squash blocks (lb)	
	3-1/2" wide	5-1/2" wide
2x lumber	3800	5900
1-1/8" APA Rim Board, Rim Board Plus, or Rated Sturd-I-Floor 48 oc	2600	4000
1" APA Rim Board or Rated Sturd-I-Floor 32 oc	1900	3000

Provide lateral bracing per 2a, 2b, or 2c.

2d SQUASH BLOCK DETAIL



2e LOAD TRANSFER WITH PASS THRU BLOCKING DETAIL



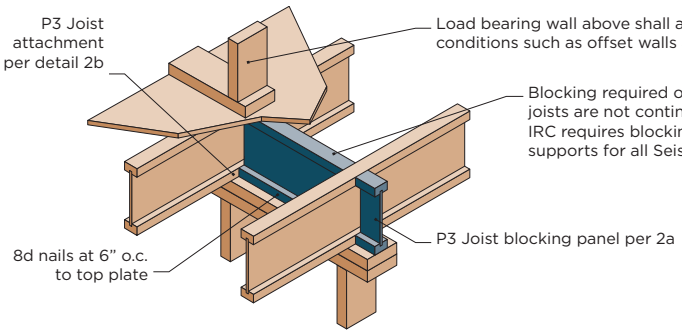
APA Rim Board may be used in lieu of P3 Joist. Backer is not required when APA Rim Board is used.

2f PARALLEL END P3 JOIST DETAIL

FIGURE 1 (CONTINUED)

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.



2g BLOCKING PANEL AT INTERIOR SUPPORT DETAIL

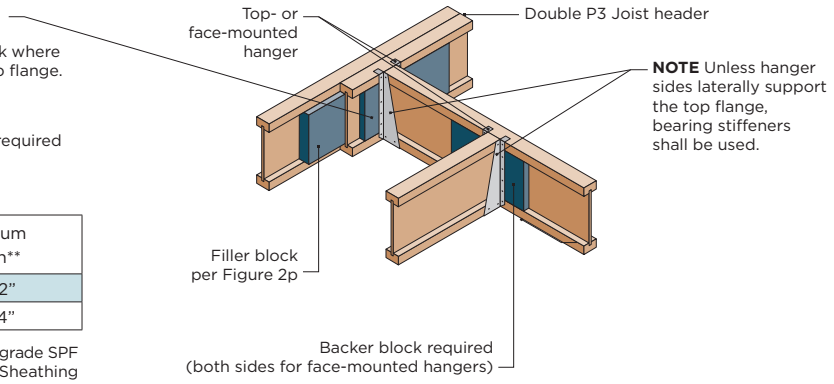
BACKER BLOCK Use if hanger load exceeds 250 lbs. Before installing a backer block to a double P3 Joist, drive 3 additional 10d nails through the webs and filler block where the backer block will fit. Clinch. Install backer tightly to top flange. Use twelve 10d nails, clinched when possible. Maximum capacity for hanger for this detail is 1280 lbs.

BACKER BLOCKS Blocks must be long enough to permit required nailing without splitting.

Flange Width	Material Thickness Required*	Minimum Depth**
2-1/2"	1"	5-1/2"
3-1/2"	1-1/2"	7-1/4"

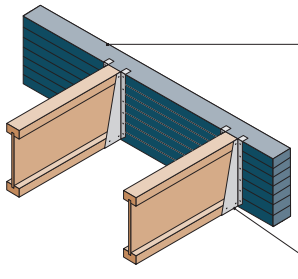
* Minimum grade for backer block material shall be Utility grade SPF (south) or better for solid sawn lumber and shall be Rated Sheathing grade for wood structural panels.

** For face-mount hangers, use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges.



2h P3 JOIST WITH BACKER BLOCKS FOR HANGER DETAIL

For hanger capacity see hanger manufacturer's recommendations. Verify double P3 Joist capacity to support concentrated loads.



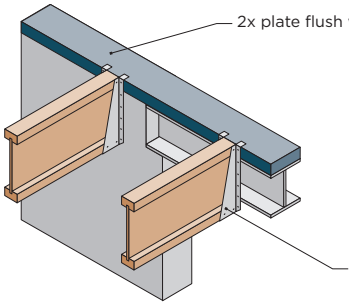
2j P3 JOIST TO FLUSH BEAM DETAIL

NOTE Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

FIGURE 1 (CONTINUED)

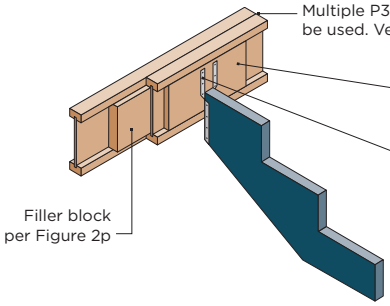
Typical P3 Floor Joist Framing and Construction Details

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.

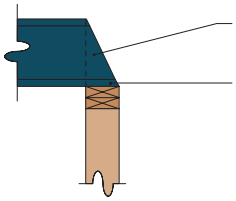


NOTE Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

2k P3 JOIST WITH TOP MOUNT HANGER DETAIL



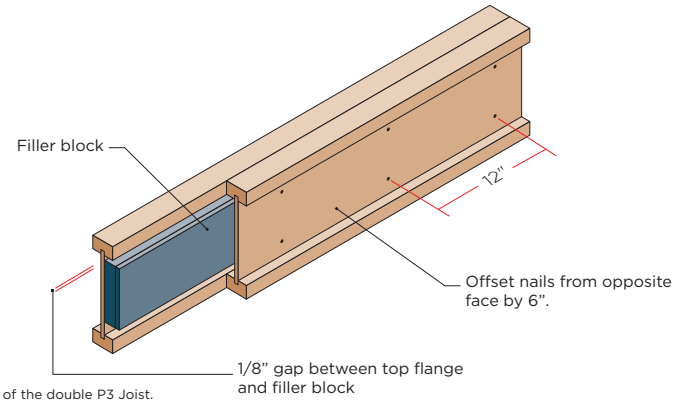
2m STAIR STRINGER TO P3 JOIST DETAIL



2n BEVEL-CUT P3 JOIST DETAIL

NOTE Blocking is required at bearing for lateral support. Not shown for clarity

Flange Width	Net Depth	Filler Block Size
2-1/2"	9-1/2"	2-1/8" x 6"
	11-7/8"	2-1/8" x 8"
	14"	2-1/8" x 10"
	16"	2-1/8" x 12"
3-1/2"	11-7/8"	3" x 8"
	14"	3" x 10"
	16"	3" x 12"
3-1/2"	18"	3" x 14"
	20"	3" x 16"
	24"	3" x 20"



NOTES

1. Support back of I-Joist web during nailing to prevent damage to web/flange connection.
2. Leave a 1/8" gap between top of filler block and bottom of top I-Joist flange.
3. Filler block is required between joists for full length of span.
4. Nail joists together with two rows of 10d nails at 12" o.c. (clinched when possible) on each side of the double P3 Joist. Total of 4 nails per foot required. If nails can be clinched, only 2 nails per foot are required.
5. The maximum load that may be applied to one side of the double joist using this detail is 620 lbs./ft.

2p DOUBLE P3 JOIST CONSTRUCTION DETAIL

Minimum Nailing Requirements for Web Stiffeners

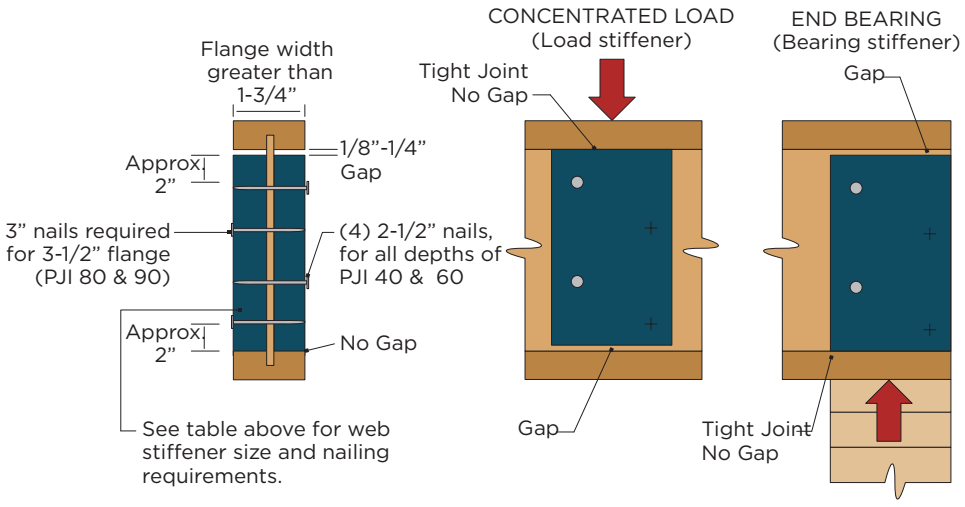
Stiffener Size and Nailing Requirement

Joist Depth	2-1/2" Wide Flange 8d (2-1/2") nails	3-1/2" Wide Flange 10d (3") nails
9-1/2"	4	-
11-7/8"	4	4
14"	4	4
16"	4	4
18"	-	6
20"	-	6
24"	-	8
Minimum Stiffener	1" x 2-5/16" (width)	1-1/2" x 2-5/16" (width)

1. Web stiffeners are required:
   - When sides of the hangers do not laterally brace the top flange of each P3 Joist;
   - When P3 Joists are designed to support concentrated loads greater than 1580 lbs. that are applied to the P3 Joists top flange between supports. In these applications only, the gap between the web stiffener and the flange shall be at the bottom flange;
   - For all engineered applications with end-reactions greater than 1580 lbs. **A design analysis must be performed for all engineered applications with end-reactions greater than 1580 lbs.**
2. When used at end bearings, install web stiffeners tightly against the bottom flange of the P3 Joist. Leave a minimum 1/8" gap between the top of the stiffener and the bottom of the top flange. See Figure 2.
3. Web stiffeners may be supplied by the distributor for field installation or may be cut in the field as required.

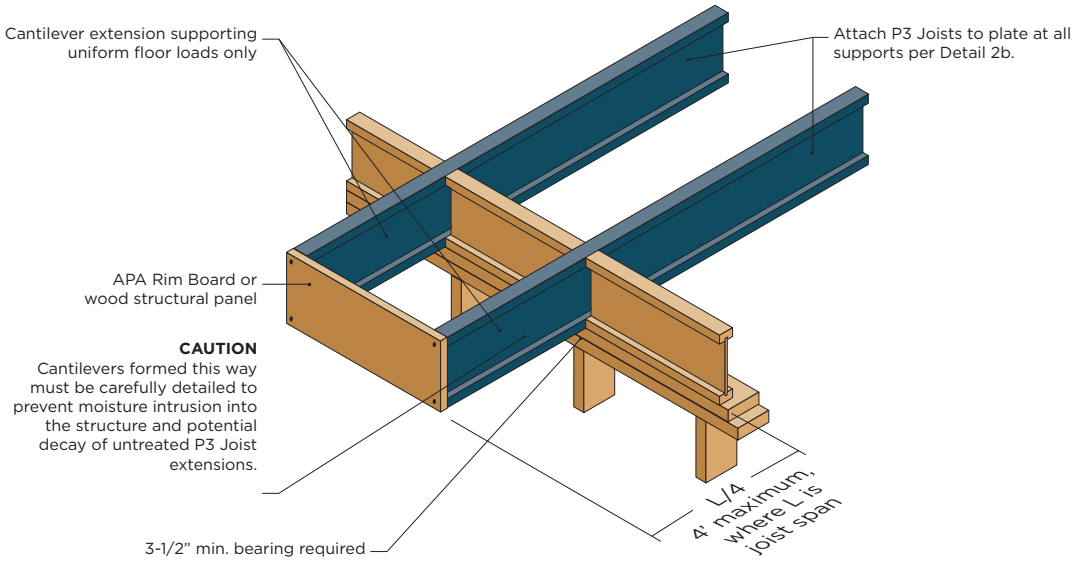
Web Stiffener Installation Details

FIGURE 2



Cantilever Details for Interior Balconies (No Wall Load)

FIGURE 3



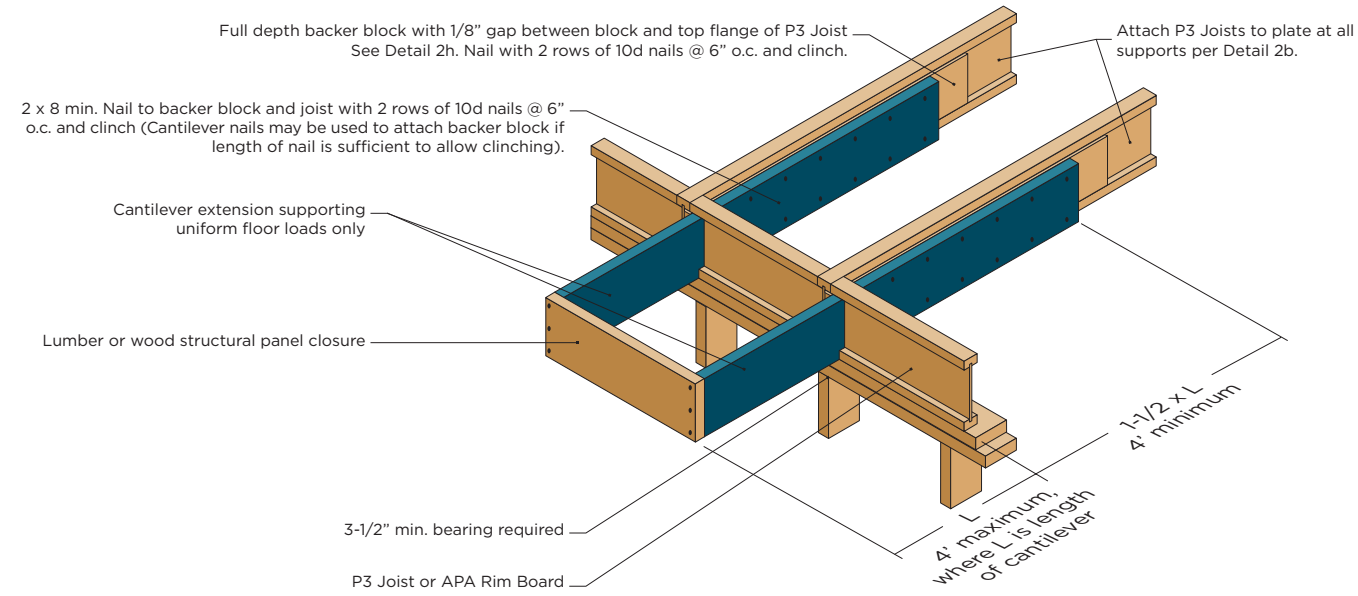
Balconies may be constructed by using either continuous P3 Joists (Figure 3) or by adding lumber extensions (Figure 4) to the P3 Joist. Continuous P3 Joist cantilevers are limited to one-fourth the adjacent span when supporting uniform loads only. For applications supporting concentrated loads at the end of the cantilever such as a wall, see Figures 5a and 5b.

Unless otherwise engineered, cantilevers are limited to a maximum of 4' when supporting uniform loads only. Blocking is required at the cantilever support as shown.

Uniform floor load shall not exceed 40 psf live load and 10 psf dead load. The balcony load shall not exceed 60 psf live load and 10 psf dead load.

Lumber Cantilever Details For Balconies (No Wall Load)

FIGURE 4

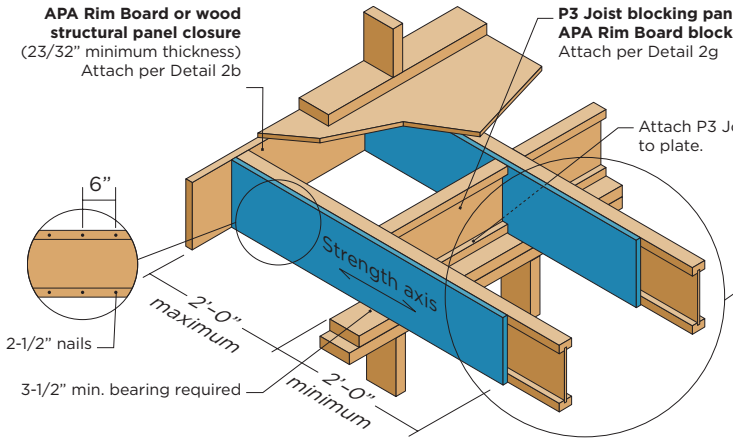


NOTES All nails shown in the details above are assumed to be common nails unless otherwise noted. Individual components are not shown to scale for clarity.

Cantilever Detail for Vertical Building Offset (Concentrated Wall Load)

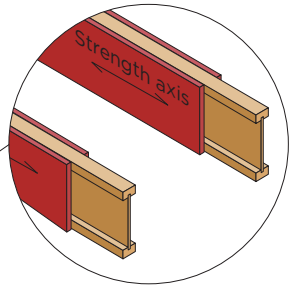
FIGURE 5A

Method 1
Sheathing Reinforcement One Side



Method 2
Sheathing Reinforcement Two Sides

Use same installation as Method 1, but reinforce both sides of the P3 Joist with sheathing or APA Rim Board.

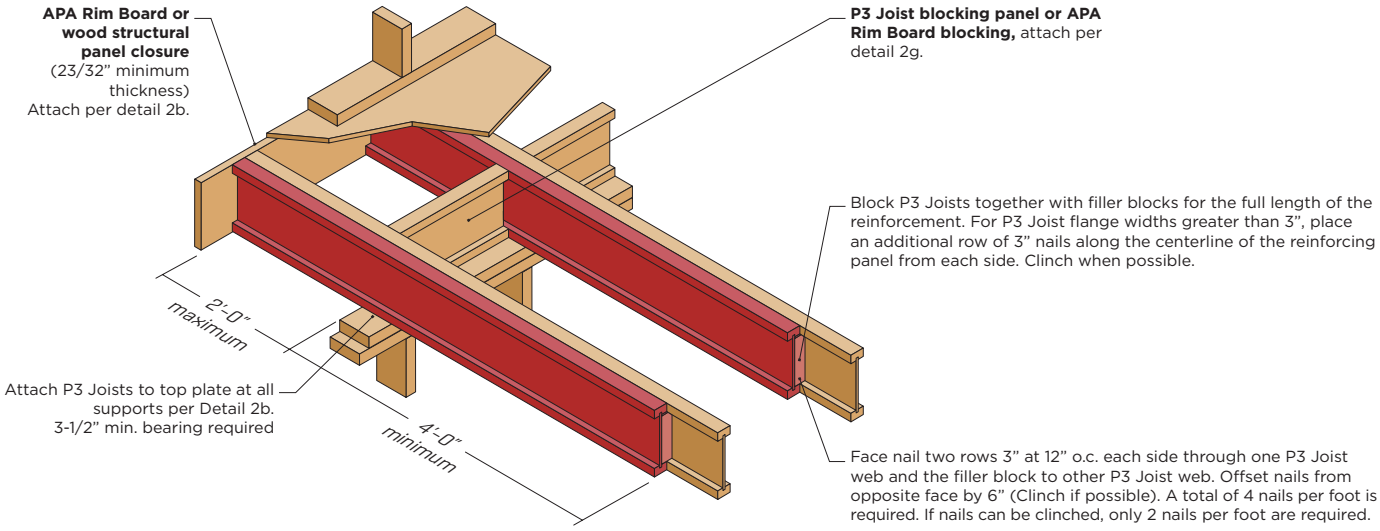


Use nailing pattern shown for Method 1 with opposite face nailing offset by 3".

NOTE APA RATED SHEATHING 48/24 (minimum thickness 23/32") required on sides of joist. Depth shall match the full height of the joist. Nail top and bottom flange with 2-1/2" nails at 6" o.c. Install with face grain running horizontally. Attach P3 Joist to plate at all supports per Detail 2b.

P3 Joists may also be used in cantilever applications, supporting a concentrated load applied to the end of the cantilever such as with a vertical building offset. For cantilever-end concentrated load applications that require reinforcing based on Table 8, the cantilever is limited to 2' maximum. In addition, blocking is required along the cantilever support and is required for 4' on each side of the cantilever area. Subject to the roof loads and layout (see Table 8), three methods of reinforcing are allowed in load bearing cantilever applications: reinforcing sheathing applied to one side of the P3 Joist (Method 1), reinforcing sheathing applied to both sides of the P3 Joist (Method 2), or double P3 Joist (Figure 5b).

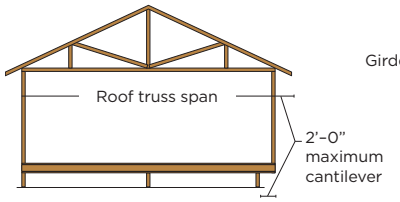
FIGURE 5B
Double P3 Joist

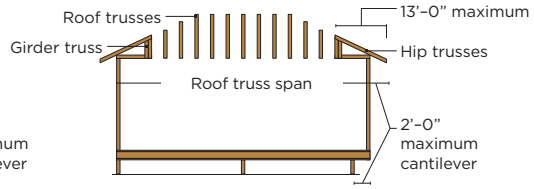


NOTES All nails shown in the details above are assumed to be common nails unless otherwise noted. Individual components are not shown to scale for clarity.

Cantilever Details for Vertical Building Offset (Concentrated Wall Load)

FIGURE 5C





See Table below for P3 Joist reinforcement requirements at cantilever.

For hip roofs with the hip trusses running parallel to the cantilevered floor joists, the P3 Joist reinforcement requirements for a span of 26 ft. shall be permitted to be used.

Source: APA

Cantilever Reinforcement Methods

TABLE 8

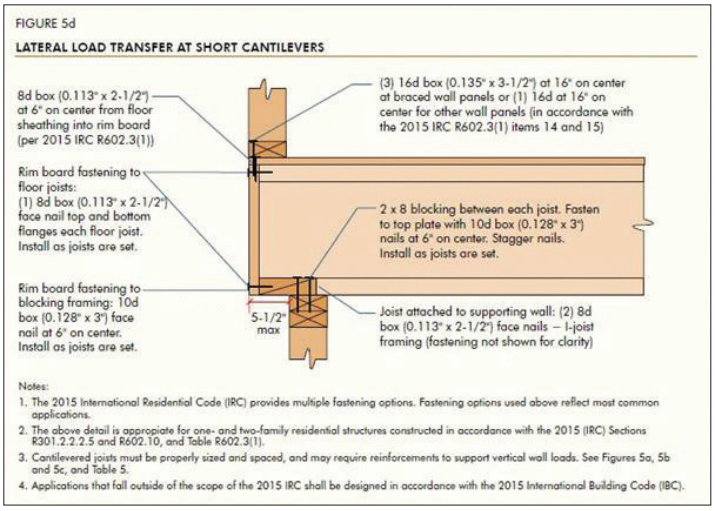
P3 Joist Cantilever Reinforcement Methods Allowed

Joist Depth (in.)	Roof Truss Span (ft)	ROOF LOADINGS											
		TL = 35 psf LL not to exceed 20 psf Joist Spacing (in.)				TL = 45 psf LL not to exceed 30 psf Joist Spacing (in.)				TL = 55 psf LL not to exceed 40 psf Joist Spacing (in.)			
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
9-1/2	26	N	N	N	1	N	N	1	2	N	1	2	X
	28	N	N	N	1	N	N	1	2	N	1	2	X
	30	N	N	1	1	N	N	1	2	N	1	2	X
	32	N	N	1	2	N	1	1	X	N	1	2	X
	34	N	N	1	2	N	1	2	X	N	2	X	X
	36	N	N	1	2	N	1	2	X	N	2	X	X
11-7/8	26	N	N	N	1	N	N	1	1	N	1	1	2
	28	N	N	1	1	N	1	1	1	N	1	1	2
	30	N	N	1	1	N	1	1	2	N	1	1	2
	32	N	N	1	1	N	1	1	2	N	1	1	2
	34	N	N	1	1	N	1	1	2	N	1	2	2
	36	N	N	1	1	N	1	1	2	N	1	2	2
	38	N	1	1	2	N	1	1	2	1	1	2	X
14	26	N	N	N	1	N	N	N	1	N	N	1	1
	28	N	N	N	1	N	N	1	1	N	N	1	2
	30	N	N	N	1	N	N	1	1	N	1	1	2
	32	N	N	N	1	N	N	1	1	N	1	1	2
	34	N	N	N	1	N	N	1	2	N	1	1	2
	36	N	N	1	1	N	1	1	2	N	1	1	2
	38	N	N	1	1	N	1	1	2	N	1	1	2
	40	N	N	1	1	N	1	1	2	N	1	2	2
16	26	N	N	N	1	N	N	1	1	N	N	1	1
	28	N	N	N	1	N	N	1	1	N	N	1	2
	30	N	N	N	1	N	N	1	1	N	1	1	2
	32	N	N	N	1	N	N	1	1	N	1	1	2
	34	N	N	1	1	N	N	1	2	N	1	1	2
	36	N	N	1	1	N	1	1	2	N	1	1	2
	38	N	N	1	1	N	1	1	2	N	1	1	2
	40	N	N	1	1	N	1	1	2	N	1	2	2
	42	N	N	1	1	N	1	1	2	N	1	2	X

NOTES

1. N = No reinforcement required
   1 = PJIs reinforced with 23/32" wood structural panel on one side only
   2 = PJIs reinforced with 23/32" wood structural panel on both sides or double P3 Joist
   X = Try a deeper joist or closer spacing.
2. Color coding in table is matched to details in Figures 5a and 5b.
3. Maximum load shall be 15 psf roof dead load, 50 psf floor total load, and 80 plf wall load. Wall load is based on 3'–0" maximum width window or door openings. For larger openings or multiple 3'–0" width openings spaced less than 6'–0" o.c., additional joists beneath the opening's cripple studs may be required.
4. Table applies to joists 12" to 24" o.c. Use 12" o.c. requirements for lesser spacings.
5. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.

P3 Joist CANTILEVER DETAIL – NOTES



Typical Floor Framing Installation Notes

1. Installation of P3 Joist shall be in accordance with Figure 1.
2. Except for cutting joist to length, P3 Joist flanges should **NEVER** be cut, drilled, or notched.
3. Concentrated loads should be applied only to the top surface of the top flange. At no time should concentrated loads be suspended from the bottom flange with the exception of light loads such as ceiling fans, light fixtures, etc.
4. P3 Joist must be protected from the weather prior to installation.
5. P3 Joist must not be used in applications where they will be permanently exposed to weather or will reach a moisture content greater than 16% such as in swimming pool or hot tub areas. They must not be installed where they will remain in direct contact with concrete or masonry.
6. End-bearing length must be at least 1-3/4". For multiple span joists, intermediate bearing length must be at least 3-1/2".
7. Ends of floor joists shall be restrained to prevent rollover. Use Certified Rim Board or P3 Joist blocking panels.
8. P3 Joist installed beneath bearing walls perpendicular to the joists require full depth blocking panels, Certified Rim Board, or squash blocks (cripple blocks) in order to transfer gravity loads from above the floor system to the wall or foundation below. See note 2g page 11.
9. For P3 Joist up to 18" deep installed as rim board directly beneath bearing walls parallel to the joists, the maximum vertical load using a single P3 Joist is 2000 plf and using double P3 Joist is 4000 plf. Full bearing is required under P3 Joist used as rim board.
10. Continuous lateral support of the P3 Joist's compression flange is required to prevent rotation and buckling. In simple span uses, lateral support of the top flange is normally supplied by the floor sheathing. In multiple span or cantilever applications, bracing of the P3 Joist's bottom flange is also required at interior supports of multiple-span joists and at the end support next to the cantilever extension. The ends of all cantilever extensions must be laterally braced as shown in Figure 3 or 4.
11. Nails installed perpendicular to the wide face of the flange shall be spaced in accordance with the applicable building code requirements or approved building plans but should not be closer than 2" o.c. per row.
12. Figure 1 details show only P3 Joist-specific fastener requirements. For other fastener requirements, see the applicable building code.
13. For Fire-Resistance ratings, typical Sound Transmission Class (STC), and typical Impact Insulation Class (IIC) refer to ICC ESR 1405 Section 4.2.2 or DCA 3 – Fire Rated Wood Floor and Wall Assemblies at **www.awc.org**.

Web Hole Rules and Specifications

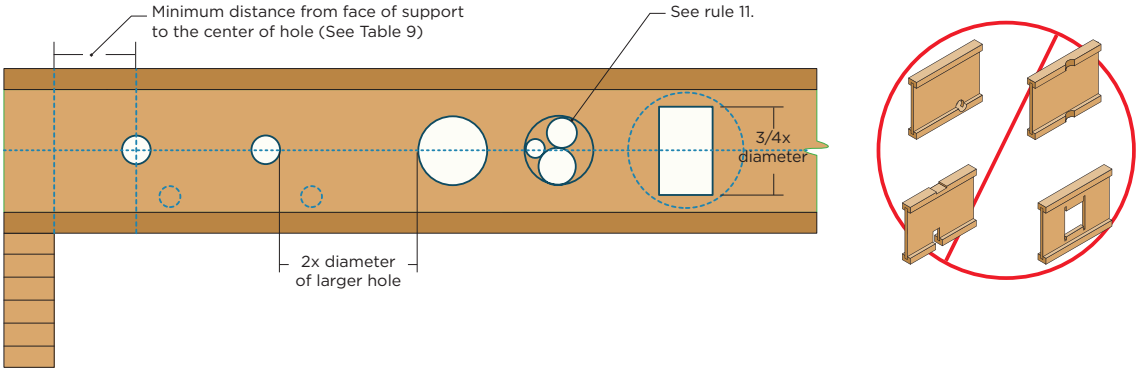
One of the benefits of using P3 Joists in residential floor construction is that holes may be cut in the joist webs to accommodate electrical wiring, plumbing lines, and other mechanical systems, thereby minimizing the depth of the floor system.

Rules for Cutting Holes in P3 Joists

1. The distance between the inside edge of the support and the center line of any hole shall be in compliance with the requirements of Table 9.
2. P3 Joist top and bottom flanges must **NEVER** be cut, notched, or otherwise modified.
3. Whenever possible field-cut holes should be centered on the middle of the web.
4. The maximum size hole that can be cut into a P3 Joist web shall equal the clear distance between the flanges of the P3 Joist minus 1/4". A minimum of 1/8" should always be maintained between the top or bottom of the hole and the adjacent P3 Joist flange.
5. The sides of square holes or longest sides of rectangular holes should 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 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 must be sized and located in compliance with the requirements of Table 9.
7. Holes measuring 1-1/2" shall be permitted anywhere in a cantilevered section of a P3 Joist. Holes of greater size may be permitted subject to verification.
8. A 1-1/2" hole can be placed anywhere in the web provided that it meets the requirements of rule 6 above.
9. All holes shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 6.
10. Limit of 3 maximum size holes 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.

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 Load up to 10 psf and Live Load 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.

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

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)

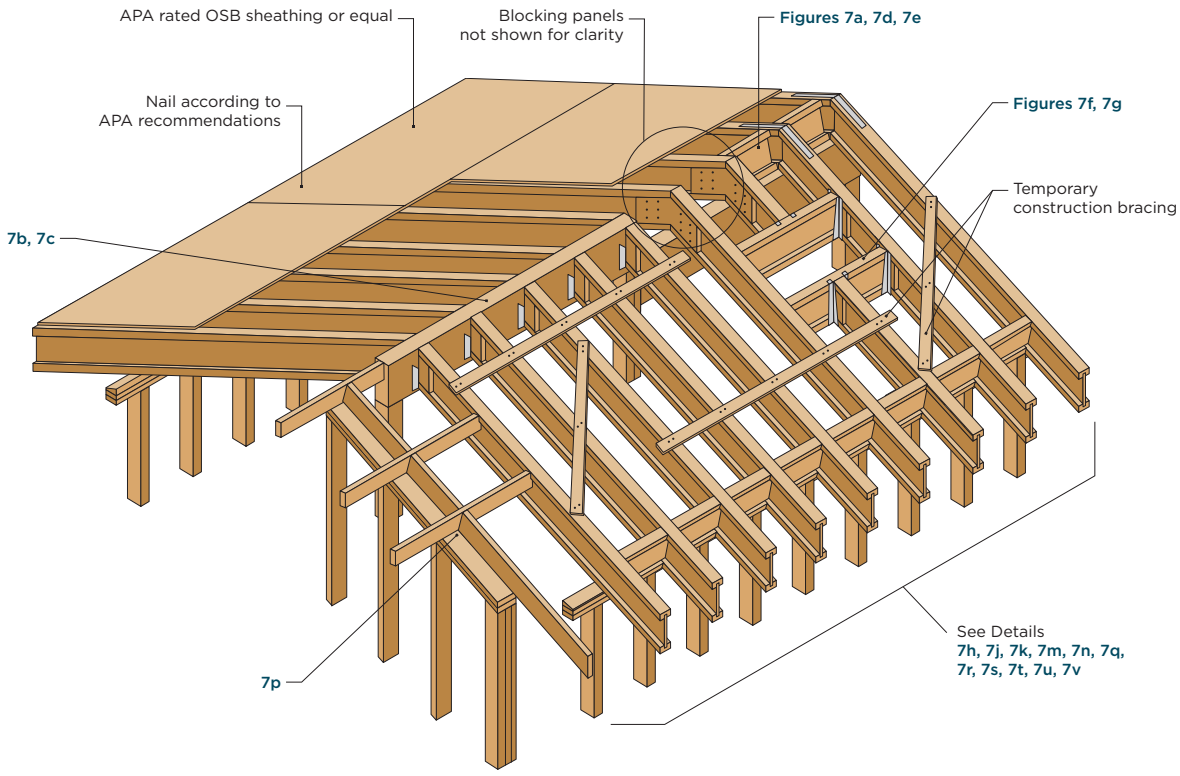
SAF = Span Adjustment Factor is given in the table above.

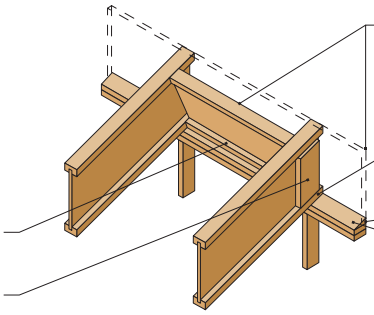
D = The minimum distance from the inside face of any support to center of hole from Table 9 above

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

Typical P3 Joist Roof Framing and Construction Details

FIGURE 7
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.





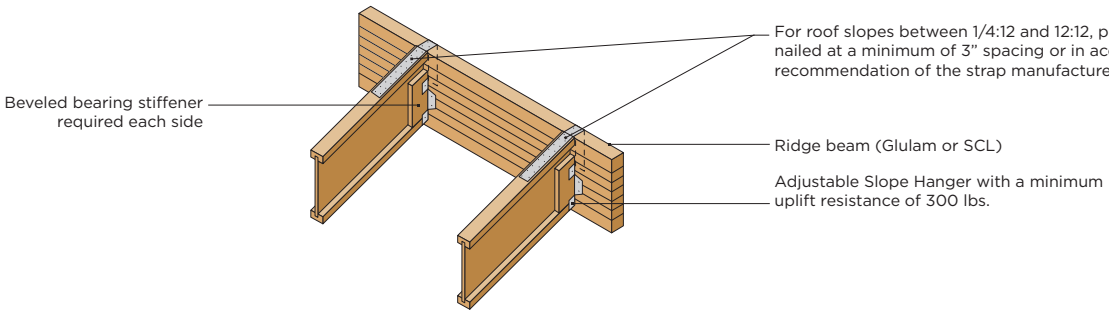
7a **UPPER END, BEARING ON WALL**

NOTE Additional connection may be required for wind uplift.

FIGURE 7 (CONTINUED)

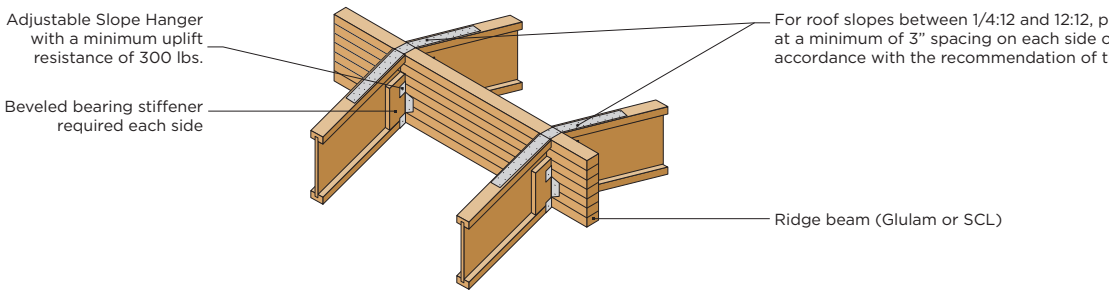
Typical P3 Joist Roof Framing and Construction Details

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.



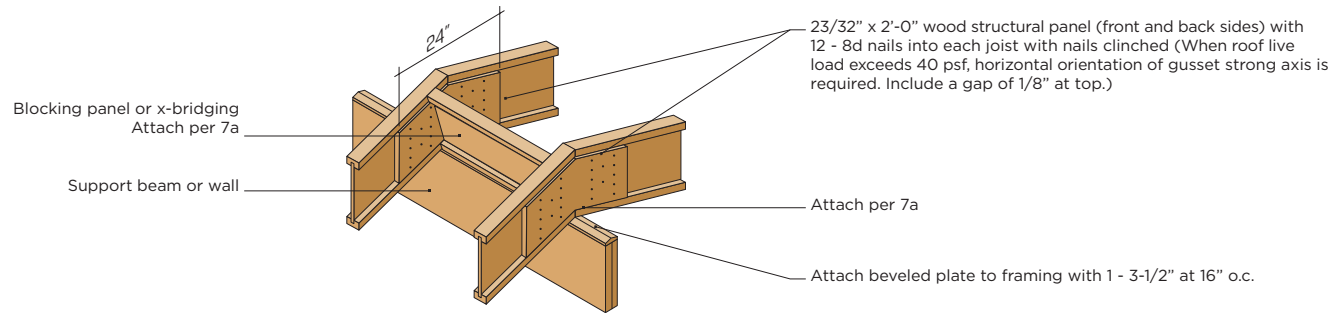
7b PEAK CONNECTION

NOTE Additional connection may be required for wind uplift.



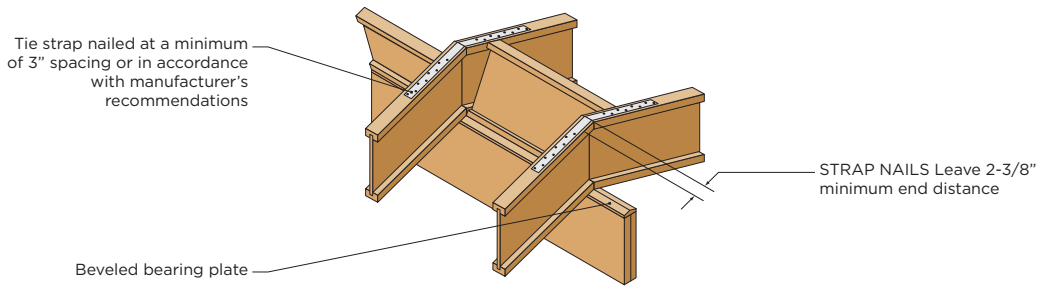
7c P3 JOIST TO RIDGE BEAM CONNECTION

NOTE Additional connection may be required for wind uplift.



7d P3 JOIST CONNECTION WITH WOOD STRUCTURAL PANEL GUSSETS

NOTE Additional connection may be required for wind uplift.



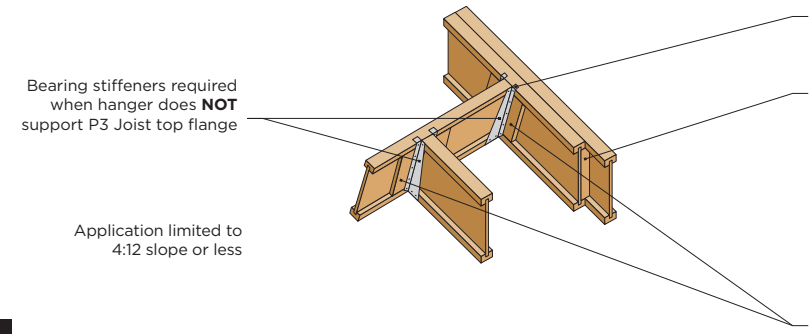
7e P3 JOIST CONNECTION WITH TIE STRAP

NOTE Additional connection may be required for wind uplift.

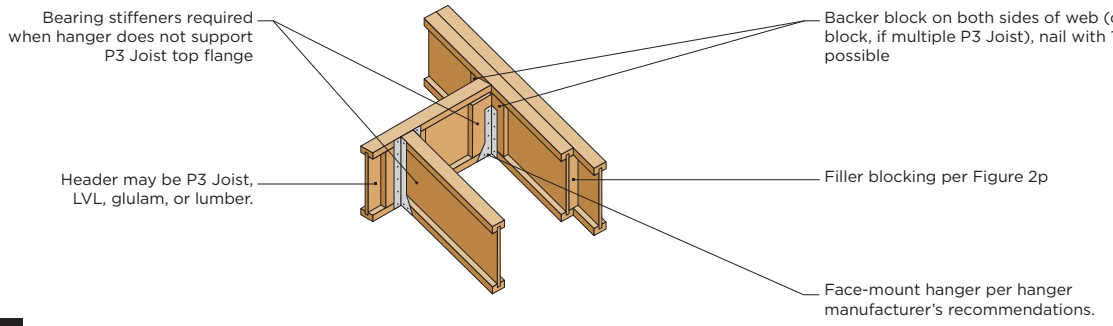
FIGURE 7 (CONTINUED)

Typical P3 Joist Roof Framing and Construction Details

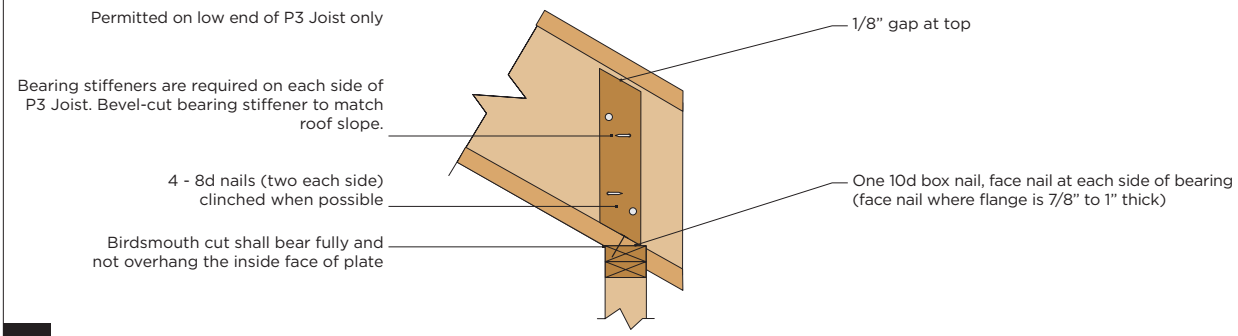
All nails shown in the details below are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3") may be substituted for 8d common (0.131 x 2-1/2") as shown in details. Individual components are not shown to scale for clarity.



7f ROOF OPENING TOP MOUNTED HANGERS

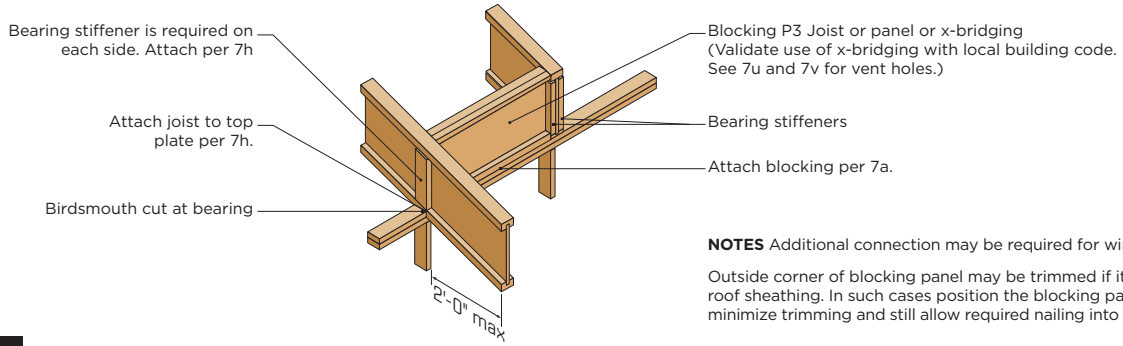


7g ROOF OPENING, FACE-MOUNTED HANGERS



7h BIRDSMOUTH CUT & BEVEL CUT BEARING STIFFENER

NOTE Additional connection may be required for wind uplift.



NOTES Additional connection may be required for wind uplift.

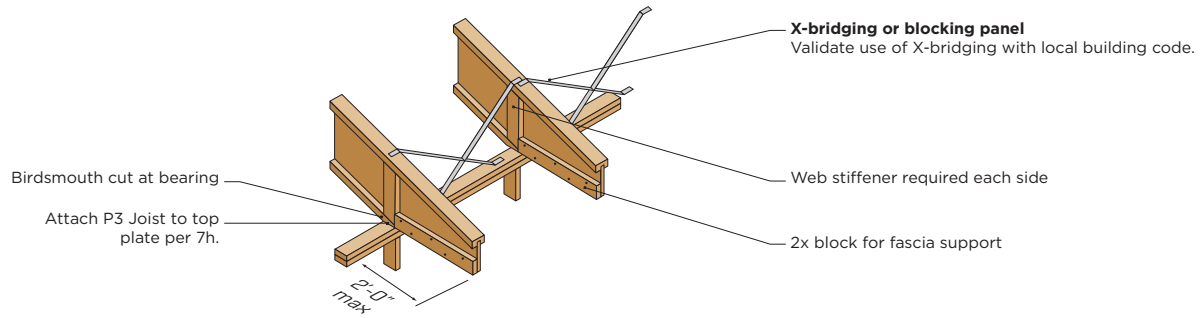
Outside corner of blocking panel may be trimmed if it interferes with roof sheathing. In such cases position the blocking panel on top plate in order to minimize trimming and still allow required nailing into top plate.

7j BIRDSMOUTH CUT WITH OVERHANG 1/8" GAP AT TOP (PERMITTED ON LOW END OF P3 JOIST ONLY)

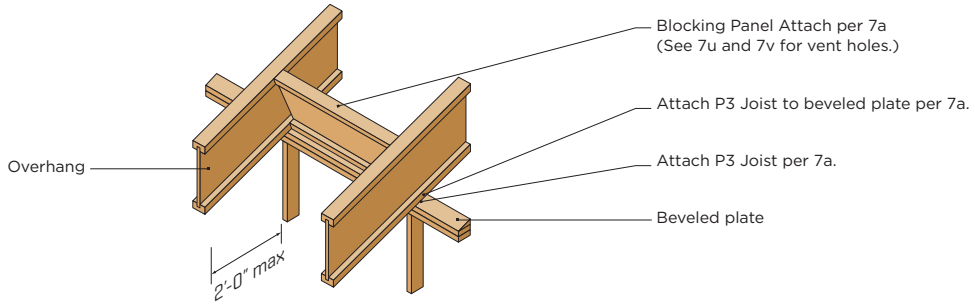
FIGURE 7 (CONTINUED)

Typical P3 Joist Roof 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.

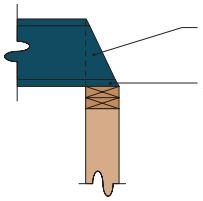


7k P3 JOIST OVERHANG FOR FASCIA SUPPORT WITH BIRDSMOUTH CUT



7m BLOCKING PANEL AT BEVELED PLATE

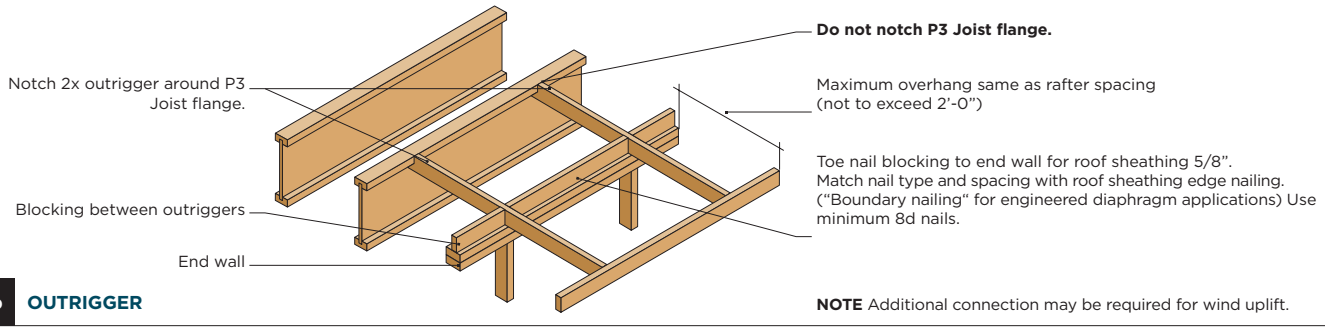
NOTE Additional connection may be required for wind uplift.



7n P3 JOIST WITH BEVEL-CUT END

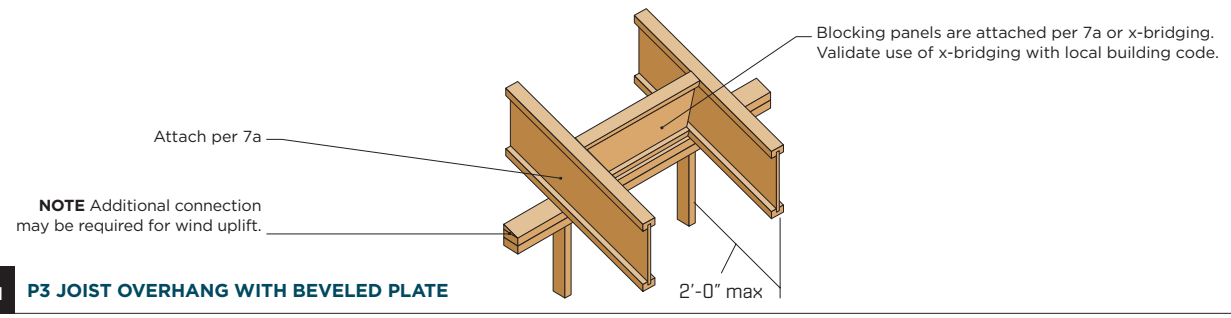
NOTE Blocking or x-bridging is required at bearing for lateral support. Not shown for clarity.

Additional connection may be required for wind uplift.



7p OUTRIGGER

NOTE Additional connection may be required for wind uplift.

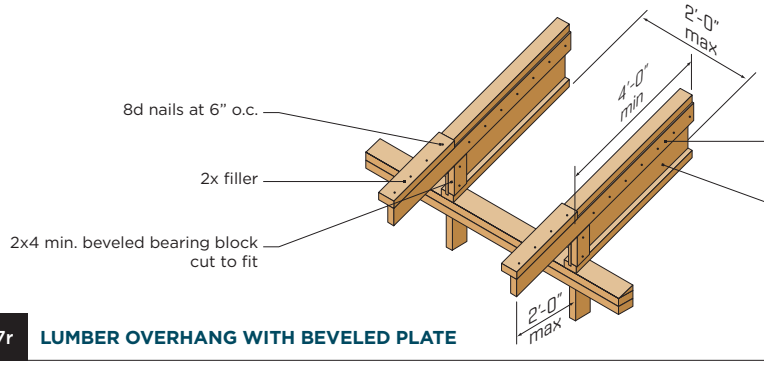


7q P3 JOIST OVERHANG WITH BEVELED PLATE

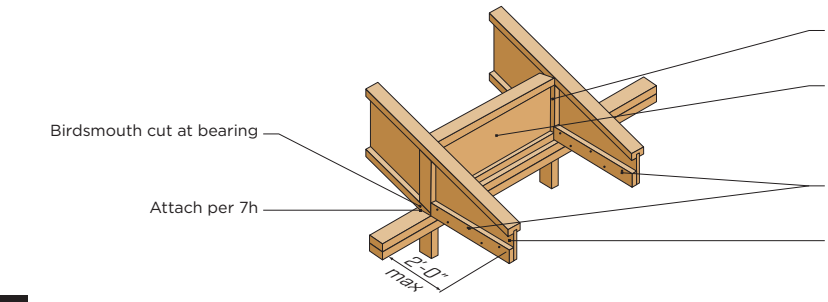
FIGURE 7 (CONTINUED)

Typical P3 Joist Roof 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.

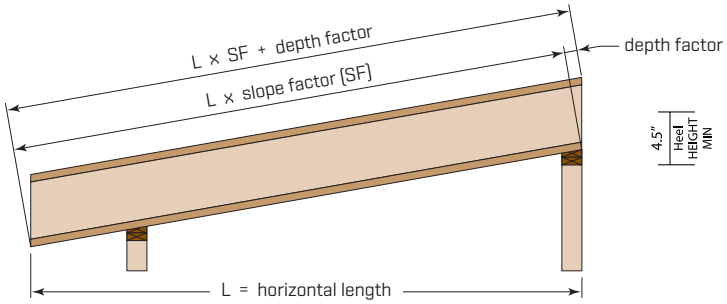


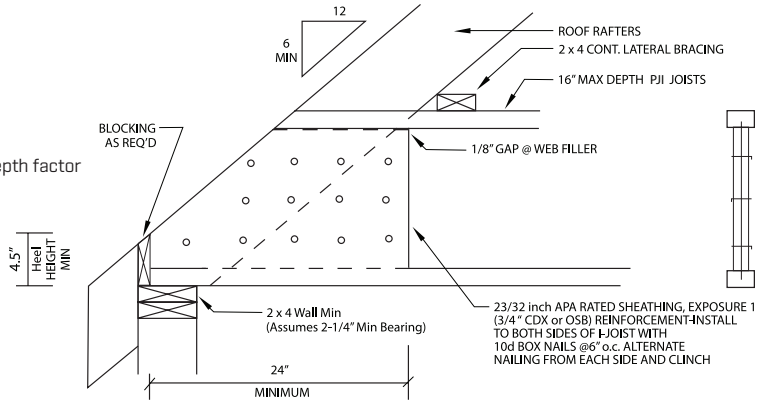
7r **LUMBER OVERHANG WITH BEVELED PLATE**



7s **P3 JOIST OVERHANG FOR FASCIA SUPPORT WITH BIRDSMOUTH CUT**

Slope Spans for Roofs





TAPER CUT JOIST REINFORCEMENT DETAIL

1-1/2" = 1'-0"

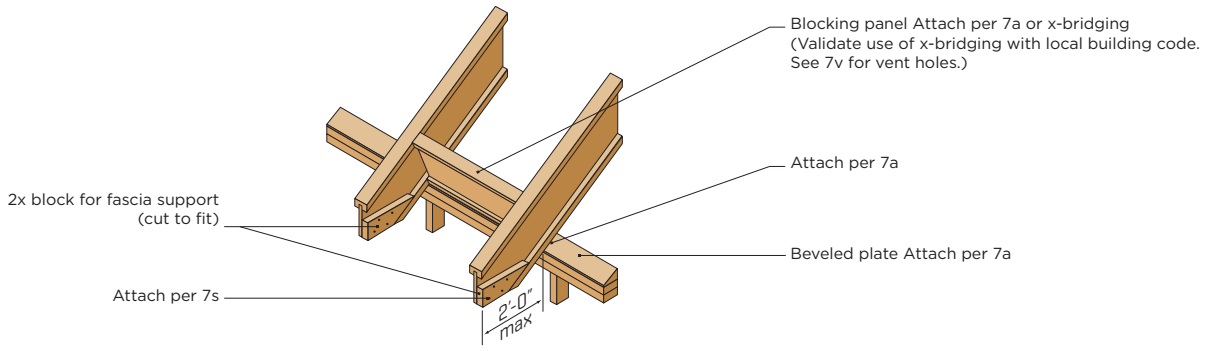
Slope Factor and Depth Factor Table

Slope		2.5:12	3:12	3.5:12	4:12	4.5:12	5:12	6:12	7:12	8:12	9:12	10:12	11:12	12:12
Slope Factor		1.021	1.031	1.042	1.054	1.068	1.083	1.118	1.158	1.202	1.250	1.302	1.357	1.414
Depth Factor	9-1/2"	2"	2-3/8"	2-7/8"	3-1/4"	3-5/8"	4"	4-3/4"	5-5/8"	6-3/8"	7-1/4"	8"	8-3/4"	9-1/2"
	11-7/8"	2-1/2"	3"	3-1/2"	4"	4-1/2"	5"	6"	7"	8"	9"	10"	11"	11-7/8"
	14"	3"	3-1/2"	4-1/8"	4-3/4"	5-1/4"	5-7/8"	7"	8-1/4"	9-3/8"	10-1/2"	11-3/4"	12-7/8"	14"
	16"	3-3/8"	4"	4-3/4"	5-3/8"	6"	6-3/4"	8"	9-3/8"	10-3/4"	12"	13-3/8"	14-3/4"	16"
	18"	3-3/4"	4-1/2"	5-1/4"	6"	6-3/4"	7-1/2"	9"	10-1/2"	12"	13-1/2"	15"	16-1/2"	18"
	20"	4-1/4"	5"	5-7/8"	6-3/4"	7-1/2"	8-3/8"	10"	11-3/4"	13-3/8"	15"	16-3/4"	18-3/8"	20"
	24"	5"	6"	7"	8"	9"	10"	12"	14"	16"	18"	20"	22"	24"

FIGURE 7 (CONTINUED)

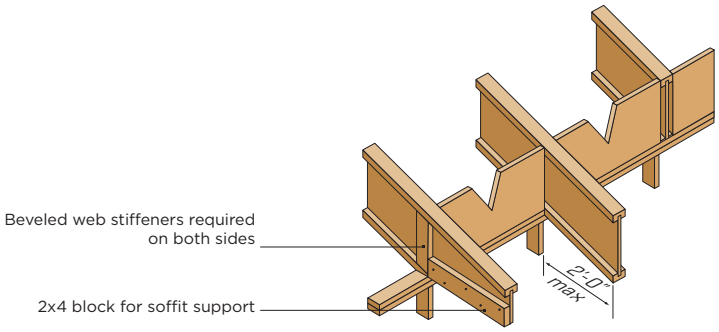
Typical P3 Joist Roof Framing and Construction Details

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.



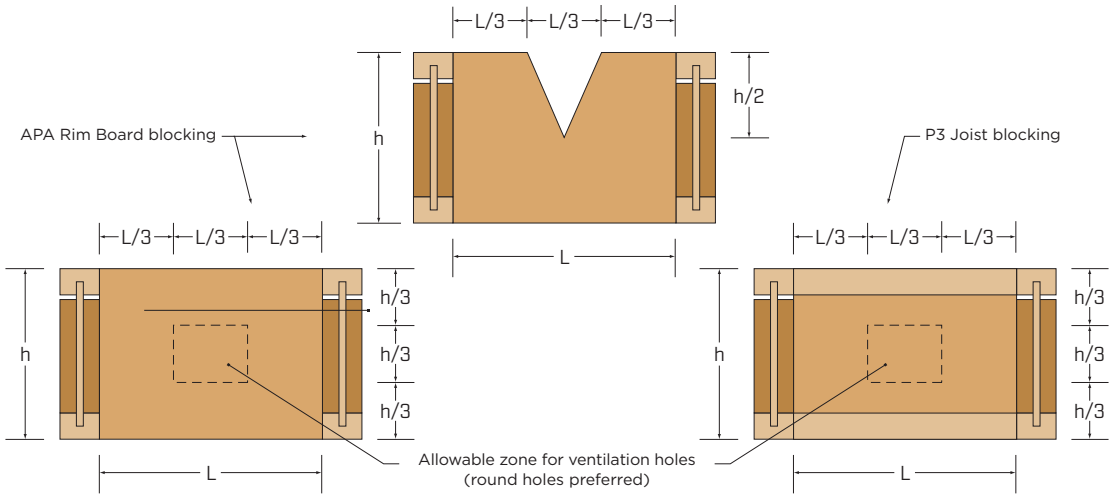
7t **P3 JOIST OVERHANG FOR FASCIA SUPPORT WITH BEVELED PLATE**

NOTE Additional connection may be required for wind uplift.



7u **BIRDSMOUTH CUT ALLOWED AT LOW END OF P3 JOIST ONLY**

NOTE Corrosion-resistant wire cloth screening, hardware cloth, perforated vinyl, or similar material shall cover the ventilation holes per code.



7v **VENTILATION HOLES**

NOTE Corrosion-resistant wire cloth screening, hardware cloth, perforated vinyl, or similar material shall cover the ventilation holes per code.

Allowable Roof Spans – Simple Span

TABLE 10 – LDF = 1.15

Simple Span Live Load = 20 psf Dead Load = 15 psf Snow Load = 1.15

Series	Depth (in)	Slope of 1/4:12 to 4:12			Slope of 4:12 to 8:12			Slope of 8:12 to 12:12		
		16" oc	19.2" oc	24" oc	16" oc	19.2" oc	24" oc	16" oc	19.2" oc	24" oc
PJI 40	9-1/2	21'-11"	20'-7"	18'-6"	20'-7"	19'-4"	17'-11"	19'-0"	17'-10"	16'-6"
	11-7/8	25'-10"	23'-7"	21'-1"	24'-8"	22'-11"	20'-5"	22'-10"	21'-5"	19'-8"
	14	28'-5"	25'-11"	23'-2"	27'-7"	25'-2"	22'-6"	25'-11"	24'-2"	21'-7"
	16	30'-7"	27'-11"	24'-11"	29'-9"	27'-1"	24'-3"	28'-6"	26'-0"	23'-3"
PJI 60	9-1/2	23'-4"	21'-10"	20'-3"	21'-11"	20'-6"	19'-0"	20'-2"	19'-0"	17'-7"
	11-7/8	27'-11"	26'-3"	24'-3"	26'-3"	24'-8"	22'-10"	24'-3"	22'-9"	21'-1"
	14	31'-10"	29'-11"	27'-3"	29'-11"	28'-1"	26'-0"	27'-7"	25'-11"	24'-0"
	16	35'-5"	32'-10"	29'-4"	33'-3"	31'-3"	28'-6"	30'-8"	28'-10"	26'-9"
PJI-65	11-7/8	29'-3"	27'-5"	25'-4"	27'-6"	25'-10"	23'-11"	25'-4"	23'-10"	22'-1"
	14	33'-3"	31'-1"	27'-9"	31'-3"	29'-4"	27'-0"	28'-10"	27'-1"	25'-1"
	16	36'-9"	33'-6"	29'-11"	34'-7"	32'-6"	29'-1"	31'-11"	30'-0"	27'-10"
PJI-80	9-1/2	26'-0"	24'-5"	22'-7"	24'-5"	22'-11"	21'-2"	22'-6"	21'-2"	19'-7"
	11-7/8	31'-1"	29'-2"	27'-0"	29'-3"	27'-5"	25'-5"	27'-0"	25'-4"	23'-6"
	14	35'-5"	33'-3"	30'-9"	33'-3"	31'-3"	28'-11"	30'-8"	28'-10"	26'-8"
	16	39'-3"	36'-11"	34'-2"	36'-11"	34'-8"	32'-1"	34'-1"	32'-0"	29'-8"
PJI-80ws*	18	42'-10"	40'-3"	37'-3"	40'-3"	37'-10"	35'-0"	37'-2"	34'-11"	32'-4"
	20	46'-5"	43'-7"	39'-4"	43'-7"	40'-11"	37'-11"	40'-3"	37'-10"	35'-0"
	22	49'-10"	46'-0"	41'-2"	46'-10"	44'-0"	39'-11"	43'-3"	40'-7"	37'-7"
	24	52'-7"	48'-0"	42'-11"	50'-0"	46'-7"	41'-7"	46'-1"	43'-4"	39'-11"
PJI 90	11-7/8	32'-1"	30'-2"	27'-11"	30'-2"	28'-4"	26'-2"	27'-10"	26'-2"	24'-2"
	14	36'-5"	34'-3"	31'-8"	34'-3"	32'-2"	29'-9"	31'-7"	29'-8"	27'-6"
	16	40'-4"	37'-11"	35'-1"	37'-11"	35'-7"	33'-0"	35'-0"	32'-11"	30'-6"
PJI-90ws*	18	44'-2"	41'-5"	38'-4"	41'-6"	38'-11"	36'-1"	38'-3"	36'-0"	33'-4"
	20	47'-9"	44'-10"	41'-6"	44'-11"	42'-2"	39'-0"	41'-5"	38'-11"	36'-1"
	22	51'-4"	48'-2"	44'-7"	48'-2"	45'-3"	41'-11"	44'-6"	41'-10"	38'-9"
	24	54'-9"	51'-5"	47'-5"	51'-5"	48'-4"	44'-9"	47'-6"	44'-7"	41'-4"

*ws = with stiffeners

TABLE 11 – LDF = 1.15

Simple Span Live Load = 25 psf Dead Load = 15 psf Snow Load = 1.15

Series	Depth (in)	Slope of 1/4:12 to 4:12			Slope of 4:12 to 8:12			Slope of 8:12 to 12:12		
		16" oc	19.2" oc	24" oc	16" oc	19.2" oc	24" oc	16" oc	19.2" oc	24" oc
PJI 40	9-1/2	21'-0"	19'-4"	17'-4"	19'-9"	18'-6"	16'-10"	18'-3"	17'-2"	15'-11"
	11-7/8	24'-3"	22'-1"	19'-9"	23'-7"	21'-6"	19'-2"	21'-11"	20'-7"	18'-6"
	14	26'-7"	24'-3"	21'-8"	25'-11"	23'-8"	21'-1"	24'-11"	22'-9"	20'-4"
	16	28'-8"	26'-2"	23'-4"	27'-11"	25'-6"	22'-9"	26'-11"	24'-7"	21'-11"
PJI 60	9-1/2	22'-3"	20'-11"	19'-4"	21'-0"	19'-8"	18'-2"	19'-5"	18'-3"	16'-10"
	11-7/8	26'-9"	25'-1"	23'-2"	25'-2"	23'-7"	21'-10"	23'-3"	21'-10"	20'-3"
	14	30'-5"	28'-7"	25'-6"	28'-8"	26'-11"	24'-10"	26'-7"	24'-11"	23'-1"
	16	33'-9"	30'-9"	27'-6"	31'-11"	29'-11"	26'-9"	29'-6"	27'-9"	25'-8"
PJI-65	11.875	27'-11"	26'-3"	23'-8"	26'-4"	24'-9"	22'-10"	24'-5"	22'-11"	21'-2"
	14	31'-9"	29'-1"	26'-0"	29'-11"	28'-1"	25'-4"	27'-9"	26'-0"	24'-1"
	16	34'-5"	31'-5"	28'-0"	33'-2"	30'-7"	27'-4"	30'-9"	28'-10"	26'-4"
PJI-80	9-1/2	24'-10"	23'-4"	21'-7"	23'-5"	21'-11"	20'-4"	21'-8"	20'-4"	18'-10"
	11-7/8	29'-9"	27'-11"	25'-10"	28'-0"	26'-4"	24'-4"	25'-11"	24'-4"	22'-7"
	14	33'-10"	31'-9"	29'-5"	31'-10"	29'-11"	27'-8"	29'-6"	27'-9"	25'-8"
	16	37'-7"	35'-3"	32'-7"	35'-4"	33'-2"	30'-9"	32'-9"	30'-9"	28'-6"
PJI-80ws*	18	40'-11"	38'-5"	34'-11"	38'-7"	36'-3"	33'-6"	35'-9"	33'-7"	31'-1"
	20	44'-4"	41'-2"	36'-10"	41'-9"	39'-3"	35'-10"	38'-8"	36'-4"	33'-8"
	22	47'-3"	43'-1"	38'-6"	44'-10"	42'-0"	37'-6"	41'-7"	39'-0"	36'-2"
	24	49'-3"	44'-11"	40'-2"	47'-11"	43'-9"	39'-1"	44'-4"	41'-8"	37'-9"
PJI 90	11-7/8	30'-8"	28'-9"	26'-8"	28'-11"	27'-2"	25'-1"	26'-9"	25'-2"	23'-3"
	14	34'-10"	32'-9"	30'-3"	32'-10"	30'-10"	28'-6"	30'-5"	28'-7"	26'-5"
	16	38'-7"	36'-3"	33'-6"	36'-4"	34'-2"	31'-7"	33'-8"	31'-7"	29'-3"
PJI-90ws*	18	42'-2"	39'-7"	36'-8"	39'-9"	37'-4"	34'-7"	36'-10"	34'-7"	32'-0"
	20	45'-8"	42'-11"	39'-8"	43'-0"	40'-5"	37'-5"	39'-10"	37'-5"	34'-8"
	22	49'-1"	46'-1"	42'-7"	46'-2"	43'-5"	40'-2"	42'-10"	40'-2"	37'-3"
	24	52'-4"	49'-2"	44'-5"	49'-4"	46'-4"	42'-11"	45'-8"	42'-11"	39'-9"

*ws = with stiffeners

NOTES

1. The maximum tabulated span is based on the **horizontal clear distance**, and applicable to simple-span roof construction with 2' overhang.

The live load deflection is limited to L/240, and total load deflection is limited to L/180.

2. Spans are based on a load duration factor (LDF) of 1.15.

3. Minimum bearing lengths must be 1-3/4" for the end bearings and must be 3-1/2" on end for the bearing adjacent to cantilever.

4. Web stiffeners are required for all PJI Joists in the span tables if the joist is over 16" deep or as indicated by the "ws" designation.

5. Web stiffeners are required for I-Joists seated in hangers where the top flange is not laterally supported.

6. Lateral support must be provided at all bearing locations to prevent lateral displacement and rotation.

7. 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.

8. I-Joists shall be used in a dry, well ventilated environment where the average moisture content will not exceed 16%.

9. Point loads from above over bearing supports shall be properly transferred by squash blocks or pass-thru framing.

Allowable Roof Spans – Simple Span

TABLE 12 – LDF = 1.15

Simple Span Live Load = 30 psf Dead Load = 15 psf Snow Load = 1.15

Series	Depth (in)	Slope of 1/4:12 to 4:12			Slope of 4:12 to 8:12			Slope of 8:12 to 12:12		
		16" oc	19.2" oc	24" oc	16" oc	19.2" oc	24" oc	16" oc	19.2" oc	24" oc
PJI 40	9-1/2	20'-0"	18'-3"	16'-4"	19'-0"	17'-10"	15'-11"	17'-8"	16'-7"	15'-4"
	11-7/8	22'-10"	20'-10"	18'-7"	22'-4"	20'-4"	18'-2"	21'-2"	19'-8"	17'-7"
	14	25'-1"	22'-11"	20'-5"	24'-6"	22'-4"	20'-0"	23'-9"	21'-8"	19'-4"
	16	27'-1"	24'-8"	22'-0"	26'-5"	24'-1"	21'-6"	25'-7"	23'-4"	20'-10"
PJI 60	9-1/2	21'-5"	20'-1"	18'-7"	20'-2"	18'-11"	17'-6"	18'-9"	17'-7"	16'-3"
	11-7/8	25'-8"	24'-1"	21'-11"	24'-3"	22'-9"	21'-0"	22'-6"	21'-1"	19'-6"
	14	29'-3"	26'-11"	24'-1"	27'-7"	25'-11"	23'-6"	25'-8"	24'-1"	22'-3"
	16	31'-10"	29'-0"	25'-11"	30'-8"	28'-4"	25'-4"	28'-6"	26'-9"	24'-6"
PJI-65	11-7/8	26'-10"	25'-0"	22'-4"	25'-4"	23'-9"	21'-10"	23'-6"	22'-1"	20'-5"
	14	30'-1"	27'-6"	24'-6"	28'-10"	26'-10"	24'-0"	26'-9"	25'-2"	23'-2"
	16	32'-5"	29'-7"	26'-5"	31'-8"	28'-11"	25'-10"	29'-8"	27'-10"	25'-0"
PJI-80	9-1/2	23'-10"	22'-5"	20'-8"	22'-6"	21'-2"	19'-6"	20'-11"	19'-7"	18'-2"
	11-7/8	28'-7"	26'-10"	24'-9"	27'-0"	25'-4"	23'-5"	25'-0"	23'-6"	21'-9"
	14	32'-6"	30'-6"	28'-3"	30'-8"	28'-10"	26'-8"	28'-6"	26'-9"	24'-9"
	16	36'-1"	33'-10"	31'-0"	34'-1"	32'-0"	29'-7"	31'-7"	29'-8"	27'-6"
PJI-80ws*	18	39'-4"	36'-11"	33'-0"	37'-2"	34'-10"	32'-2"	34'-6"	32'-5"	30'-0"
	20	42'-7"	38'-10"	34'-9"	40'-3"	37'-9"	33'-11"	37'-4"	35'-1"	32'-6"
	22	44'-7"	40'-8"	36'-4"	43'-2"	39'-8"	35'-6"	40'-1"	37'-8"	34'-4"
	24	46'-5"	42'-5"	37'-11"	45'-4"	41'-5"	37'-0"	42'-10"	40'-1"	35'-10"
PJI 90	11-7/8	29'-6"	27'-8"	25'-7"	27'-10"	26'-1"	24'-2"	25'-10"	24'-3"	22'-5"
	14	33'-6"	31'-5"	29'-1"	31'-7"	29'-8"	27'-5"	29'-4"	27'-7"	25'-6"
	16	37'-1"	34'-10"	32'-2"	35'-0"	32'-10"	30'-5"	32'-6"	30'-6"	28'-3"
PJI-90ws*	18	40'-6"	38'-1"	35'-2"	38'-3"	35'-11"	33'-3"	35'-6"	33'-4"	30'-11"
	20	43'-11"	41'-2"	38'-2"	41'-5"	38'-11"	36'-0"	38'-6"	36'-2"	33'-6"
	22	47'-2"	44'-3"	40'-2"	44'-6"	41'-9"	38'-8"	41'-4"	38'-10"	35'-11"
	24	50'-4"	46'-11"	41'-11"	47'-6"	44'-7"	40'-11"	44'-1"	41'-5"	38'-4"

*ws = with stiffeners

TABLE 13 – LDF = 1.15

Simple Span Live Load = 40 psf Dead Load = 15 psf Snow Load = 1.15

Series	Depth (in)	Slope of 1/4:12 to 4:12			Slope of 4:12 to 8:12			Slope of 8:12 to 12:12		
		16" oc	19.2" oc	24" oc	16" oc	19.2" oc	24" oc	16" oc	19.2" oc	24" oc
PJI 40	9-1/2	18'-2"	16'-6"	14'-9"	17'-9"	16'-2"	14'-6"	16'-7"	15'-7"	14'-1"
	11-7/8	20'-8"	18'-10"	16'-10"	20'-3"	18'-6"	16'-6"	19'-9"	18'-0"	16'-1"
	14	22'-9"	20'-9"	18'-6"	22'-3"	20'-4"	18'-2"	21'-8"	19'-9"	17'-8"
	16	24'-6"	22'-4"	19'-11"	24'-0"	21'-11"	19'-7"	23'-4"	21'-4"	19'-0"
PJI 60	9-1/2	20'-0"	18'-9"	17'-4"	18'-11"	17'-9"	16'-5"	17'-7"	16'-6"	15'-3"
	11-7/8	24'-0"	22'-2"	19'-10"	22'-8"	21'-3"	19'-5"	21'-2"	19'-10"	18'-4"
	14	26'-9"	24'-5"	21'-9"	25'-10"	23'-11"	21'-4"	24'-1"	22'-8"	20'-9"
	16	28'-10"	26'-3"	23'-6"	28'-3"	25'-9"	23'-0"	26'-10"	25'-1"	22'-5"
PJI-65	11-7/8	24'-10"	22'-8"	20'-3"	23'-9"	22'-2"	19'-10"	22'-1"	20'-9"	19'-3"
	14	27'-3"	24'-10"	22'-2"	26'-9"	24'-5"	21'-9"	25'-2"	23'-7"	21'-2"
	16	29'-5"	26'-10"	23'-11"	28'-10"	26'-3"	23'-6"	27'-11"	25'-7"	22'-10"
PJI-80	9-1/2	22'-3"	20'-11"	19'-3"	21'-1"	19'-9"	18'-3"	19'-8"	18'-5"	17'-1"
	11-7/8	26'-8"	25'-0"	23'-1"	25'-3"	23'-8"	21'-11"	23'-6"	22'-1"	20'-5"
	14	30'-4"	28'-6"	26'-0"	28'-9"	27'-0"	24'-11"	26'-9"	25'-2"	23'-3"
	16	33'-8"	31'-5"	28'-1"	31'-11"	29'-11"	27'-6"	29'-9"	27'-11"	25'-10"
PJI-80ws*	18	36'-7"	33'-5"	29'-10"	34'-10"	32'-8"	29'-3"	32'-5"	30'-6"	28'-2"
	20	38'-7"	35'-2"	31'-5"	37'-8"	34'-6"	30'-10"	35'-2"	33'-0"	30'-0"
	22	40'-4"	36'-10"	32'-11"	39'-7"	36'-1"	32'-3"	37'-9"	35'-2"	31'-5"
	24	42'-1"	38'-5"	34'-4"	41'-3"	37'-8"	33'-8"	40'-2"	36'-8"	32'-9"
PJI 90	11-7/8	27'-6"	25'-10"	23'-10"	26'-1"	24'-5"	22'-7"	24'-3"	22'-10"	21'-1"
	14	31'-3"	29'-4"	27'-1"	29'-7"	27'-9"	25'-8"	27'-7"	25'-11"	24'-0"
	16	34'-7"	32'-6"	28'-8"	32'-9"	30'-9"	28'-5"	30'-7"	28'-8"	26'-7"
PJI-90ws*	18	37'-10"	35'-6"	32'-10"	35'-10"	33'-8"	31'-2"	33'-5"	31'-5"	29'-1"
	20	41'-0"	38'-6"	34'-9"	38'-10"	36'-5"	33'-9"	36'-2"	34'-0"	31'-5"
	22	44'-0"	40'-9"	36'-5"	41'-8"	39'-2"	35'-8"	38'-10"	36'-6"	33'-9"
	24	46'-6"	42'-5"	37'-11"	44'-6"	41'-8"	37'-3"	41'-6"	38'-11"	36'-1"

*ws = with stiffeners

NOTES

1. The maximum tabulated span is based on the **horizontal clear distance**, and applicable to simple-span roof construction with 2' overhang.

The live load deflection is limited to L/240, and total load deflection is limited to L/180.

2. Spans are based on a load duration factor (LDF) of 1.15.

3. Minimum bearing lengths must be 1-3/4" for the end bearings and must be 3-1/2" on end for the bearing adjacent to cantilever.

4. Web stiffeners are required for all PJI Joists in the span tables if the joist is over 16" deep or as indicated by the "ws" designation.

5. Web stiffeners are required for I-Joists seated in hangers where the top flange is not laterally supported.

6. Lateral support must be provided at all bearing locations to prevent lateral displacement and rotation.

7. 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.

8. I-Joist shall be used in a dry, well ventilated environment where the average moisture content will not exceed 16%.

9. Point loads from above over bearing supports shall be properly transferred by squash blocks or pass-thru framing.

Allowable Roof Spans—Simple Span

TABLE 14 – LDF = 1.15

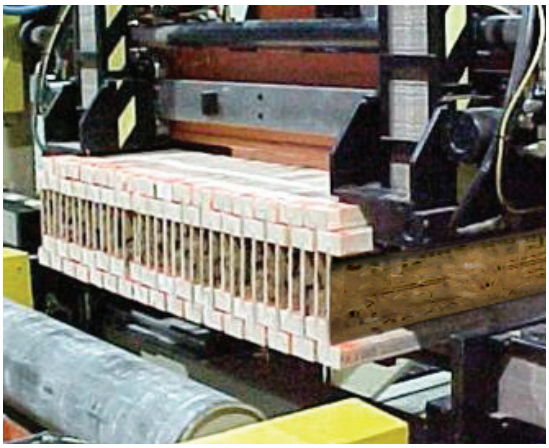
Simple Span Live Load = 50 psf Dead Load = 15 psf Snow Load = 1.15

Series	Depth (in)	Slope of 1/4:12 to 4:12			Slope of 4:12 to 8:12			Slope of 8:12 to 12:12		
		16" oc	19.2" oc	24" oc	16" oc	19.2" oc	24" oc	16" oc	19.2" oc	24" oc
PJI 40	9-1/2	16'-8"	15'-2"	13'-7"	16'-5"	14'-11"	13'-4"	15'-9"	14'-7"	13'-0"
	11-7/8	19'-0"	17'-4"	15'-6"	18'-8"	17'-1"	15'-3"	18'-3"	16'-8"	14'-10"
	14	20'-11"	19'-1"	17'-0"	20'-7"	18'-9"	16'-9"	20'-1"	18'-4"	16'-4"
	16	22'-6"	20'-6"	18'-4"	22'-2"	20'-2"	18'-0"	21'-8"	19'-9"	17'-7"
PJI 60	9-1/2	18'-9"	17'-7"	16'-0"	17'-11"	16'-9"	15'-6"	16'-8"	15'-8"	14'-6"
	11-7/8	22'-5"	20'-5"	18'-3"	21'-6"	20'-1"	17'-11"	20'-1"	18'-10"	17'-5"
	14	24'-7"	22'-5"	20'-0"	24'-2"	22'-1"	19'-8"	22'-11"	21'-6"	19'-3"
	16	26'-6"	24'-2"	21'-7"	26'-1"	23'-9"	21'-3"	25'-5"	23'-3"	20'-9"
PJI-65	11-7/8	22'-10"	20'-10"	18'-7"	22'-5"	20'-6"	18'-3"	21'-0"	19'-8"	17'-10"
	14	25'-1"	22'-10"	20'-5"	24'-8"	22'-6"	20'-1"	23'-11"	22'-0"	19'-8"
	16	27'-0"	24'-8"	21'-10"	26'-7"	24'-3"	21'-8"	26'-0"	23'-8"	21'-2"
PJI-80	9-1/2	20'-11"	19'-7"	18'-1"	19'-11"	18'-8"	17'-3"	18'-8"	17'-6"	16'-2"
	11-7/8	25'-1"	23'-6"	21'-8"	23'-11"	22'-5"	20'-9"	22'-4"	21'-0"	19'-5"
	14	28'-6"	26'-9"	23'-11"	27'-2"	25'-6"	23'-7"	25'-5"	23'-10"	22'-1"
	16	31'-8"	28'-11"	24'-3"	30'-2"	28'-4"	25'-5"	28'-3"	26'-6"	24'-6"
PJI-80ws*	18	33'-8"	30'-9"	27'-6"	32'-11"	30'-3"	27'-0"	30'-9"	28'-11"	26'-5"
	20	35'-6"	32'-4"	28'-11"	34'-11"	31'-10"	28'-5"	33'-4"	31'-1"	27'-9"
	22	37'-2"	33'-11"	30'-3"	36'-6"	33'-4"	29'-9"	35'-8"	32'-7"	29'-1"
	24	38'-9"	35'-4"	31'-7"	38'-1"	34'-9"	31'-0"	37'-3"	33'-11"	30'-4"
PJI 90	11-7/8	25'-10"	24'-3"	22'-5"	24'-8"	23'-1"	21'-4"	23'-1"	21'-8"	20'-0"
	14	29'-4"	27'-7"	24'-2"	28'-0"	26'-3"	24'-3"	26'-2"	24'-7"	22'-9"
	16	32'-6"	30'-4"	24'-3"	31'-0"	29'-1"	26'-9"	29'-0"	27'-3"	25'-2"
PJI-90ws*	18	35'-7"	33'-5"	30'-5"	33'-11"	31'-10"	29'-5"	31'-9"	29'-9"	27'-7"
	20	38'-6"	35'-10"	32'-0"	36'-9"	34'-6"	31'-6"	34'-4"	32'-3"	29'-10"
	22	41'-1"	37'-6"	33'-6"	39'-5"	36'-10"	32'-11"	36'-11"	34'-8"	32'-1"
	24	42'-10"	39'-1"	34'-11"	42'-1"	38'-5"	34'-4"	39'-4"	37'-0"	33'-7"

*ws = with stiffeners

NOTES

1. The maximum tabulated span is based on the **horizontal clear distance**, and applicable to simple-span roof construction with 2' overhang.
The live load deflection is limited to L/240, and total load deflection is limited to L/180.
2. Spans are based on a load duration factor (LDF) of 1.15.
3. Minimum bearing lengths must be 1-3/4" for the end bearings and must be 3-1/2" on end for the bearing adjacent to cantilever.
4. Web stiffeners are required for all PJI Joists in the span tables if the joist is over 16" deep or as indicated by the "ws" designation.
5. Web stiffeners are required for I-Joists seated in hangers where the top flange is not laterally supported.
6. Lateral support must be provided at all bearing locations to prevent lateral displacement and rotation.
7. 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.
8. I-Joists shall be used in a dry, well ventilated environment where the average moisture content will not exceed 16%.
9. Point loads from above over bearing supports shall be properly transferred by squash blocks or pass-thru framing.



Allowable Roof Uniform Load Capacities

TABLE 15 – LDF = 1.15

P3 Joist — PJI 40

Allowable Uniform Loads (PLF) Roof

Clear Sloped Span (ft)	PJI-40											
	9-1/2"			11-7/8"			14"			16"		
	Live Load	Total Load		Live Load	Total Load		Live Load	Total Load		Live Load	Total Load	
	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%
6	-	407	430	-	407	430	-	407	430	-	407	430
7	-	351	370	-	351	370	-	351	370	-	351	370
8	-	308	325	-	308	325	-	308	325	-	308	325
9	-	274	290	-	274	290	-	274	290	-	274	290
10	-	240	261	-	248	261	-	248	261	-	248	261
11	-	199	217	-	225	238	-	225	238	-	225	238
12	-	168	183	-	207	219	-	207	219	-	207	219
13	-	144	156	-	186	202	-	191	202	-	191	202
14	-	124	135	-	161	175	-	178	188	-	178	188
15	-	108	118	-	140	153	-	166	175	-	166	175
16	93	95	103	-	123	134	-	149	162	-	156	164
17	78	84	92	-	110	119	-	132	144	-	147	155
18	66	75	82	-	98	106	-	118	128	-	137	146
19	57	68	74	-	88	95	-	106	115	-	123	134
20	49	61	65	-	79	86	-	96	104	-	111	121
21	42	55	57	72	72	78	-	87	94	-	101	109
22	37	50	50	63	66	71	-	79	86	-	92	100
23	32	43	43	55	60	65	-	72	79	-	84	91
24	29	38	38	49	55	60	-	66	72	-	77	84
25	25	34	34	43	51	55	-	61	67	-	71	77
26	23	30	30	39	47	51	56	57	62	-	66	72
27	20	27	27	35	44	46	50	53	57	-	61	66
28	18	24	24	31	40	42	45	49	53	-	57	62
29				28	37	37	41	46	50	-	53	57
30				25	34	34	37	43	46	-	49	54
31				23	31	31	33	40	43	45	46	50
32				21	28	28	30	37	41	41	43	47
33				19	26	26	28	35	37	38	41	44
34							25	33	34	35	38	42

NOTES

1. Roof joists or rafters must be sloped a minimum of 1/4" in 12".
2. Live Load column limits deflection to L/240; Total Load column limits deflection to L/180. Cathedral ceilings or sheet rocked rafters may require stiffer performance or additional design.
3. Values represent the most restrictive of simple span or multiple span conditions.
4. Values are for P3 Joist spaced at a maximum of 24" on center.
5. Table assumes a minimum end bearing length of 1-3/4" and a minimum interior bearing length of 3-1/2".
6. Web stiffeners are not required except when the joist hangers do not provide lateral support for the top flange of the P3 Joist. Web stiffeners are required at birdsmouth cuts and when required by hanger manufacturers for proper connections.

JOIST SIZING

1. Select desired joist depth (column).
2. Select desired span (row).
3. Check BOTH Live Load and Total Load columns.
4. If Live Load column is blank, Total Load capacity governs.

Allowable Roof Uniform Load Capacities (continued)

TABLE 16 – LDF = 1.15

P3 Joist — PJI 60

Allowable Uniform Loads (PLF) Roof

Clear Sloped Span (ft)	9-1/2"			11-7/8"			14"			16"		
	Live Load	Total Load		Live Load	Total Load		Live Load	Total Load		Live Load	Total Load	
	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%
6	-	407	443	-	407	443	-	407	443	-	407	443
7	-	351	381	-	351	381	-	351	381	-	351	381
8	-	308	335	-	308	335	-	308	335	-	308	335
9	-	274	298	-	274	298	-	274	298	-	274	298
10	-	248	269	-	248	269	-	248	269	-	248	269
11	-	225	245	-	225	245	-	225	245	-	225	245
12	-	207	225	-	207	225	-	207	225	-	207	225
13	-	191	208	-	191	208	-	191	208	-	191	208
14	158	172	186	-	178	193	-	178	193	-	178	193
15	131	150	163	-	166	181	-	166	181	-	166	181
16	109	132	143	-	156	169	-	156	169	-	156	169
17	92	117	123	-	147	160	-	147	160	-	147	160
18	78	104	105	131	135	147	-	139	151	-	139	151
19	67	90	90	113	122	132	-	131	143	-	131	143
20	58	78	78	98	110	119	-	125	136	-	125	136
21	50	67	67	85	100	108	-	119	129	-	119	129
22	44	59	59	75	91	99	108	109	119	-	114	123
23	39	52	52	66	83	88	96	100	109	-	109	118
24	34	46	46	58	76	78	85	92	100	-	104	113
25	30	41	41	52	69	69	75	85	92	-	98	107
26	27	36	36	46	62	62	67	78	85	-	91	99
27	24	32	32	41	55	55	60	73	79	82	84	92
28	22	29	29	37	50	50	54	68	73	74	78	85
29	19	26	26	33	45	45	49	63	66	67	73	80
30				30	40	40	44	59	59	60	68	74
31				27	37	37	40	54	54	55	64	70
32				25	33	33	37	49	49	50	60	65
33				23	31	31	34	45	45	46	56	61
34				21	28	28	31	41	41	42	53	56

NOTES

1. Roof joists or rafters must be sloped a minimum of 1/4" in 12".
2. Live Load column limits deflection to L/240; Total Load column limits deflection to L/180. Cathedral ceilings or sheet rocked rafters may require stiffer performance or additional design.
3. Values represent the most restrictive of simple span or multiple span conditions.
4. Values are for P3 Joist spaced at a maximum of 24" on center.
5. Table assumes a minimum end bearing length of 1-3/4" and a minimum interior bearing length of 3-1/2".
6. Web stiffeners are not required except when the joist hangers do not provide lateral support for the top flange of the P3 Joist. Web stiffeners are required at birdsmouth cuts and when required by hanger manufacturers for proper connections.

JOIST SIZING

1. Select desired joist depth (column).
2. Select desired span (row).
3. Check BOTH Live Load and Total Load columns.
4. If Live Load column is blank, Total Load capacity governs.

Allowable Roof Uniform Load Capacities (continued)

TABLE 17

P3 Joist — PJI 65 without Web Stiffeners

Allowable Uniform Load (PLF) Roof

Clear Sloped Span (ft)	11-7/8"			14"			16"		
	Live Load	Total Load		Live Load	Total Load		Live Load	Total Load	
	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%
6		415	451		443	482		443	482
7		358	389		382	415		382	415
8		314	341		335	365		335	365
9		280	304		299	325		299	325
10		253	275		270	293		270	293
11		230	250		246	267		246	267
12		211	230		225	245		225	245
13		195	212		208	226		208	226
14		181	197		194	210		194	210
15		169	184		181	197		181	197
16		159	173		170	184		170	184
17		150	163		160	174		160	174
18		140	153		151	164		151	164
19		126	137		143	156		143	156
20	111	114	124		136	148		136	148
21	97	103	112		125	136		130	141
22	85	94	103		114	124		124	135
23	75	86	94		104	113		118	129
24	66	79	86	95	96	104		111	121
25	59	73	79	85	88	96		102	111
26	52	68	70	76	81	89		95	103
27	47	63	63	68	76	82		88	95
28	42	57	57	61	70	76		82	89
29	38	51	51	55	66	71	75	76	83
30	35	46	46	50	61	67	68	71	77
31	31	42	42	46	57	61	62	67	72
32	29	38	38	42	54	56	56	62	68
33	26	35	35	38	51	51	51	59	64
34	24	32	32	35	47	47	47	55	60

TABLE 17A

P3 Joist — PJI 65 with Web Stiffeners

Allowable Uniform Load (PLF) Roof

Clear Sloped Span (ft)	11-7/8"			14"			16"		
	Live Load	Total Load		Live Load	Total Load		Live Load	Total Load	
	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%
6		479	521		511	555		532	578
7		412	448		440	478		458	498
8		362	394		386	420		402	438
9		323	351		344	374		359	390
10		291	317		311	338		324	352
11		265	288		283	307		295	320
12		243	265		260	282		271	294
13		225	245		240	261		250	272
14		209	227		223	243		232	253
15		195	212		208	227		217	236
16		177	193		195	213		204	221
17		157	171		184	200		192	209
18		140	153		169	184		181	197
19		126	137		152	165		172	187
20	111	114	124		137	149		159	173
21	97	103	112		125	136		145	157
22	85	94	103		114	124		132	143
23	75	86	94		104	113		121	131
24	66	79	86	95	96	104		111	121
25	59	73	79	85	88	96		102	111
26	52	68	70	76	81	89		95	103
27	47	63	63	68	76	82		88	95
28	42	57	57	61	70	76		82	89
29	38	51	51	55	66	71	75	76	83
30	35	46	46	50	61	67	68	71	77
31	31	42	42	46	57	61	62	67	72
32	29	38	38	42	54	56	56	62	68
33	26	35	35	38	51	51	51	59	64
34	24	32	32	35	47	47	47	55	60

NOTES:

1. Roof joists or rafters must be sloped a minimum of 1/4" in 12".
2. Live Load column limits deflection to L/240; Total Load column limits deflection to L/180. Cathedral ceilings or sheet rocked rafters may require stiffe performance or additional design.
3. Values represent the most restrictive of simple span or multiple span conditions.
4. Values are for P3 Joist spaced at a maximum of 24" on center.
5. Table assumes a minimum end bearing length of 1-3/4" and a minimum interior bearing length of 3-1/2".
6. Web stiffeners are not required for depths <= 16". except when the joist hangers do not provide lateral support for the top flange of the P3 Joist. Web stiffeners are required at birdsmouth cuts and when required by hanger manufacturers for proper connections and for depths > 16".
7. Tabulated values are clear sloped spans as measured between the face of the supports.

JOIST SIZING

1. Select desired joist depth (column).
2. Select desired sloped clear span (row).
3. Check BOTH Live Load and Total Load columns.
4. If Live Load column is blank, Total Load capacity governs.

Allowable Roof Uniform Load Capacities (continued)

TABLE 18 – LDF = 1.15

P3 Joist — PJI 80

Allowable uniform loads (PLF) Roof

Clear Sloped Span (ft)	9-1/2"			11-7/8"			14"			16"		
	Live Load	Total Load		Live Load	Total Load		Live Load	Total Load		Live Load	Total Load	
	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%
6	-	408	443	-	415	451	-	446	485	-	483	525
7	-	351	382	-	358	389	-	384	418	-	416	452
8	-	308	335	-	314	341	-	338	367	-	365	397
9	-	275	299	-	280	304	-	301	327	-	325	354
10	-	248	270	-	252	274	-	271	295	-	293	319
11	-	226	246	-	230	250	-	247	269	-	267	291
12	-	207	225	-	211	229	-	227	247	-	245	267
13	-	192	208	-	195	212	-	210	228	-	227	246
14	-	178	194	-	181	197	-	195	212	-	211	229
15	-	166	181	-	169	184	-	182	198	-	197	214
16	147	156	170	-	159	173	-	171	186	-	185	201
17	125	147	160	-	150	163	-	161	175	-	174	189
18	106	139	142	-	141	154	-	152	165	-	164	179
19	91	122	122	-	134	146	-	144	157	-	156	169
20	79	106	106	-	127	138	-	137	149	-	148	161
21	69	92	92	115	121	132	-	130	142	-	141	153
23	53	71	71	89	111	119	-	119	130	-	129	140
24	47	63	63	79	105	105	114	114	124	-	124	134
25	42	56	56	70	94	94	101	110	119	-	119	129
26	37	50	50	63	84	84	91	105	115	-	114	124
27	33	45	45	56	75	75	81	102	109	109	110	119
28	30	40	40	51	68	68	73	96	98	99	106	115
29	27	36	36	46	61	61	66	89	89	89	102	111
30	24	33	33	41	55	55	60	80	80	81	98	106
31	22	30	30	38	50	50	55	73	73	74	91	99
32	20	27	27	34	46	46	50	67	67	67	86	90
33	18	25	25	31	42	42	46	61	61	62	81	83
34	17	23	23	29	38	38	42	56	56	57	76	76

NOTES

1. Roof joists or rafters must be sloped a minimum of 1/4" in 12".
2. Live Load column limits deflection to L/240; Total Load column limits deflection to L/180. Cathedral ceilings or sheet rocked rafters may require stiffer performance or additional design.
3. Values represent the most restrictive of simple span or multiple span conditions.
4. Values are for P3 Joist spaced at a maximum of 24" on center.
5. Table assumes a minimum end bearing length of 1-3/4" and a minimum interior bearing length of 3-1/2".
6. Web stiffeners are not required except when the joist hangers do not provide lateral support for the top flange of the P3 Joist. Web stiffeners are required at birdsmouth cuts and when required by hanger manufacturers for proper connections.

JOIST SIZING

1. Select desired joist depth (column).
2. Select desired span (row).
3. Check BOTH Live Load and Total Load columns.
4. If Live Load column is blank, Total Load capacity governs.

Allowable Roof Uniform Load Capacities (continued)

TABLE 18B – LDF = 1.15

P3 Joist — PJI 80 with Web Stiffeners

Allowable uniform loads (PLF) Roof

Clear Sloped Span (ft)	18"			20"			22"			24"		
	Live Load	Total Load		Live Load	Total Load		Live Load	Total Load		Live Load	Total Load	
	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%
12	-	297	323	-	297	323	-	297	323	-	297	323
13	-	274	298	-	274	298	-	274	298	-	274	298
14	-	255	277	-	255	277	-	255	277	-	255	277
15	-	238	259	-	238	259	-	238	259	-	238	259
16	-	224	243	-	224	243	-	224	243	-	224	243
17	-	211	229	-	211	229	-	211	229	-	211	229
18	-	199	216	-	199	216	-	199	216	-	199	216
19	-	189	205	-	189	205	-	189	205	-	189	205
20	-	179	195	-	179	195	-	179	195	-	179	195
21	-	171	186	-	171	186	-	171	186	-	171	186
23	-	156	170	-	156	170	-	156	170	-	156	170
24	-	150	163	-	150	163	-	150	163	-	150	163
25	-	144	156	-	144	156	-	144	156	-	144	156
26	-	138	150	-	138	150	-	138	150	-	138	150
27	-	133	145	-	133	145	-	133	145	-	133	145
28	126	127	138	-	128	139	-	128	139	-	128	139
29	115	118	128	-	124	135	-	124	135	-	124	135
30	104	110	120	-	120	130	-	120	130	-	120	130
31	95	103	112	-	114	124	-	116	126	-	116	126
32	87	97	105	-	107	117	-	112	122	-	112	122
33	79	91	99	100	101	110	-	109	118	-	109	118
34	73	86	93	92	95	104	-	104	113	-	106	115
35	67	81	88	84	90	98	-	98	107	-	103	112
36	62	77	83	78	85	92	-	93	101	-	100	109
37	57	73	76	72	80	87	-	88	96	-	96	104
38	53	69	71	67	76	83	82	84	91	-	91	99
39	49	65	65	62	72	79	76	79	86	-	86	94
40	45	61	61	57	69	75	71	75	82	-	82	89
41	42	57	57	53	65	71	66	72	78	-	78	85
42	39	53	53	50	62	67	61	68	74	74	74	81
43	37	49	49	46	59	62	57	65	71	69	71	77
44	34	46	46	43	57	58	54	62	68	65	68	74
45	32	43	43	41	54	54	50	60	65	61	65	70
46	30	40	40	38	51	51	47	57	62	57	62	67
47	28	38	38	36	48	48	44	55	59	53	59	64
48	27	36	36	34	45	45	42	52	56	50	57	62
49	25	33	33	32	42	42	39	50	52	47	55	59
50	24	32	32	30	40	40	37	48	49	45	52	57

NOTES

1. Roof joists or rafters must be sloped a minimum of 1/4" in 12".
2. Live Load column limits deflection to L/240. Total Load column limits deflection to L/180. Cathedral ceilings or sheetrocked rafters may require stiffer performance or additional design.
3. Values represent the most restrictive of simple span or multiple span conditions.
4. Values are for P3 Joist spaced a maximum of 24" on center.
5. Table assumes a minimum end bearing length of 1-3/4" and a minimum interior bearing length of 3-1/2".
6. **Web stiffeners are required at each support.**
7. Tabulated values are clear sloped span as measured between the face of the supports.

JOIST SIZING

1. Select Joist depth (column) to satisfy both Live Load and Dead Load capacity.
2. Select desired span (row).
3. If Live Load column is blank, Total Load capacity controls.
4. If Live Load column is blank, Total Load capacity governs.

Allowable Roof Uniform Load Capacities (continued)

TABLE 19 – LDF = 1.15

P3 Joist — PJI 90 without Web Stiffeners

Allowable uniform loads (PLF) Roof

Clear Sloped Span (ft)	11-7/8"			14"			16"		
	Live Load	Total Load		Live Load	Total Load		Live Load	Total Load	
	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%
14	-	181	197	-	195	212	-	211	229
15	-	169	184	-	182	198	-	197	214
16	-	159	173	-	171	186	-	185	201
17	-	150	163	-	161	175	-	174	189
18	-	141	154	-	152	165	-	164	179
19	-	134	146	-	144	157	-	156	169
20	-	127	138	-	137	149	-	148	161
21	-	121	132	-	130	142	-	141	153
23	97	111	121	-	119	130	-	129	140
24	86	106	115	-	114	124	-	124	134
25	76	102	102	-	110	119	-	119	129
26	68	91	91	98	105	115	-	114	124
27	61	82	82	88	102	110	-	110	119
28	55	74	74	80	98	107	-	106	115
29	50	67	67	72	95	96	97	102	111
30	45	61	61	65	87	87	88	99	108
31	41	55	55	60	80	80	80	96	104
32	38	50	50	54	73	73	73	93	97
33	34	46	46	50	66	66	67	89	89
34	31	42	42	46	61	61	61	82	82
35	29	39	39	42	56	56	56	75	75
36	27	36	36	39	52	52	52	69	69
37	24	33	33	36	48	48	48	64	64
38	23	30	30	33	44	44	44	59	59
39	21	28	28	31	41	41	41	55	55
40	19	26	26	28	38	38	38	51	51

NOTES

1. Roof joists or rafters must be sloped a minimum of 1/4" in 12".
2. Live Load column limits deflection to L/240; Total Load column limits deflection to L/180. Cathedral ceilings or sheet rocked rafters may require stiffer performance or additional design.
3. Values represent the most restrictive of simple span or multiple span conditions.
4. Values are for P3 Joist spaced at a maximum of 24" on center.
5. Table assumes a minimum end bearing length of 1-3/4" and a minimum interior bearing length of 3-1/2".
6. Web stiffeners are not required except when the joist hangers do not provide lateral support for the top flange of the P3 Joist. Web stiffeners are required at birdsmouth cuts and when required by hanger manufacturers for proper connections.

JOIST SIZING

1. Select desired joist depth (column).
2. Select desired span (row).
3. Check BOTH Live Load and Total Load columns.
4. If Live Load column is blank, Total Load capacity governs.

Allowable Roof Uniform Load Capacities (continued)

TABLE 19B – LDF = 1.15

P3 Joist — PJI 90 with Web Stiffeners

Allowable uniform loads (PLF) Roof

Clear Sloped Span (ft)	18"			20"			22"			24"		
	Live Load	Total Load		Live Load	Total Load		Live Load	Total Load		Live Load	Total Load	
	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%	Defl. L/240	Snow 115%	Non-Snow 125%
20	-	179	195	-	179	195	-	179	195	-	179	195
21	-	171	186	-	171	186	-	171	186	-	171	186
23	-	156	170	-	156	170	-	156	170	-	156	170
24	-	150	163	-	150	163	-	150	163	-	150	163
25	-	144	156	-	144	156	-	144	156	-	144	156
26	-	138	150	-	138	150	-	138	150	-	138	150
27	-	133	145	-	133	145	-	133	145	-	133	145
28	-	128	139	-	128	139	-	128	139	-	128	139
29	-	124	135	-	124	135	-	124	135	-	124	135
30	113	120	130	-	120	130	-	120	130	-	120	130
31	103	116	126	-	116	126	-	116	126	-	116	126
32	94	112	122	-	112	122	-	112	122	-	112	122
33	86	109	115	108	109	118	-	109	118	-	109	118
34	79	105	106	99	106	115	-	106	115	-	106	115
35	73	97	97	92	103	112	-	103	112	-	103	112
36	67	90	90	85	100	109	-	100	109	-	100	109
37	62	83	83	78	97	104	96	97	106	-	97	106
38	58	77	77	72	93	97	89	95	103	-	95	103
39	53	71	71	67	89	90	83	92	100	-	92	100
40	50	66	66	62	83	83	77	90	98	-	90	98
41	46	62	62	58	78	78	71	88	95	86	88	95
42	43	58	58	54	72	72	67	84	89	80	86	93
43	40	54	54	51	68	68	62	80	83	75	84	91
44	38	50	50	47	63	63	58	76	78	70	82	89
45	35	47	47	44	59	59	55	73	73	66	79	86
46	33	44	44	42	56	56	51	68	68	62	76	82
47	31	41	41	39	52	52	48	64	64	58	73	78
48	29	39	39	37	49	49	45	60	60	55	70	73
49	27	37	37	35	46	46	43	57	57	51	67	69
50	26	34	34	33	44	44	40	54	54	49	64	65

NOTES

1. Roof joists or rafters must be sloped a minimum of 1/4" in 12".
2. Live Load column limits deflection to L/240. Total Load column limits deflection to L/180. Cathedral ceilings or sheetrocked rafters may require stiffer performance or additional design.
3. Values represent the most restrictive of simple span or multiple span conditions.
4. Values are for P3 Joist spaced a maximum of 24" on center.
5. Table assumes a minimum end bearing length of 1-3/4" and a minimum interior bearing length of 3-1/2".
6. **Web stiffeners are required at each support.**
7. Tabulated values are clear span as measured between the face of the supports.

JOIST SIZING

1. Select Joist depth (column) to satisfy both Live Load and Dead Load capacity.
2. Select desired span (row).
3. If Live Load column is blank, Total Load capacity controls.
4. If Live Load column is blank, Total Load capacity governs.

P3 Joist Design Properties

TABLE 20

P3 Joist Section Properties and Allowable Capacities

Series	Depth (in)	EI[2] (10^6 lbf-in.^{2})	Mr[3] (lbf-ft)	Vr[4] (lbf)	K[5] (10^6 lbf)	Self Weight (plf)	Allowable Vertical Load (lbf/ft)
PJI 40	9-1/2	193	2,735	1,400	4.94	2.6	2,000
	11-7/8	330	3,545	1,620	6.18	2.9	2,000
	14	482	4,270	1,815	7.28	3.1	2,000
	16	657	4,950	2,000	8.32	3.4	2,000
PJI 60	9-1/2	231	3,780	1,400	4.94	2.6	2,000
	11-7/8	396	4,900	1,620	6.18	2.9	2,000
	14	584	5,895	1,815	7.28	3.1	2,000
	16	799	6,835	2,000	8.32	3.4	2,000
PJI 65	11-7/8	454	5,085	1,620	6.18	3.3	2,000
	14	664	6,125	1,815	7.28	3.6	2,000
	16	901	7,105	2,000	8.32	3.8	2,000
PJI 80	9-1/2	321	5,375	1,405	4.94	3.4	2,000
	11-7/8	547	6,970	1,650	6.18	3.6	2,000
	14	802	8,390	1,865	7.28	3.8	2,000
	16	1,092	9,730	2,070	8.32	4.0	2,000
	18	1,413	11,000	2,450	9.36	4.3	2,000
	20	1,790	12,180	2,550	10.4	4.5	1,720
	24	2,687	14,490	2,750	12.48	4.9	1,390
PJI 90	11-7/8	601	8,515	1,650	6.18	3.6	2,000
	14	877	10,255	1,865	7.28	3.8	2,000
	16	1,187	11,895	2,070	8.22	4.0	2,000
	18	1,546	13,445	2,450	9.36	4.3	2,000
	20	1,957	14,885	2,550	10.4	4.5	1,720
	24	2,934	17,710	2,750	12.48	4.9	1,390

NOTES

1. The tabulated values are design values for standard duration of load. All values, except EI and K, shall be permitted to be adjusted for other load durations as permitted by the code.
2. Bending stiffness (EI) of the P3 Joist
3. Moment capacity of the P3 Joist which shall not be increased by any code-allowed repetitive member use factor.
4. Shear capacity (V) of the P3 Joist
5. Coefficient of shear deflection (K) of the P3 Joist (For calculating uniform load and center-point load deflections of the P3 Joist in a simple-span application, use Equations 1 and 2).

1- Uniform Load:

$$\delta = \frac{5\omega,^4}{384EI} + \frac{\omega,^2}{K}$$

2- Center-Point Load:

$$\delta = \frac{P,^3}{48EI} + \frac{2P,}{K}$$

Where: δ = calculated deflection (in)
ω = uniform load (lbf/in)
, = design span (in)
P = concentrated load (lbf)
EI = bending stiffness of the P3 Joist (lbf-in^2)
K = coefficient of shear deflection (lbf)

Reaction Capacities for P3 Joist

TABLE 21

P3 Joist Reaction Capacities (a)

Series	Depth	End Reaction (d) (lbf)				Intermediate Reaction (c) (lbf)			
		1.75" Bearing		4" Bearing		3.5" Bearing		5.5" Bearing	
		Web Stiffeners		Web Stiffeners		Web Stiffeners		Web Stiffeners	
		No	Yes	No	Yes	No	Yes	No	Yes
PJI 40	9-1/2	1,195	1,275	1,260	1,400	2,755	2,900	3,245	3,245
	11-7/8	1,200	1,460	1,430	1,620	2,755	3,045	3,245	3,375
	14	1,200	1,620	1,580	1,815	2,755	3,175	3,245	3,485
	16	1,200	1,750	1,720	2,000	2,755	3,300	3,245	3,595
PJI 60	9-1/2	1,195	1,275	1,260	1,400	2,755	2,900	3,245	3,245
	11-7/8	1,200	1,460	1,430	1,620	2,755	3,045	3,245	3,375
	14	1,200	1,620	1,580	1,815	2,755	3,175	3,245	3,485
	16	1,200	1,750	1,720	2,000	2,755	3,300	3,245	3,595
PJI 65	11-7/8	1,200	1,460	1,430	1,620	2,810	3,300	3,255	3,585
	14	1,200	1,620	1,580	1,815	3,020	3,455	3,435	3,745
	16	1,200	1,750	1,720	2,000	3,265	3,600	3,600	3,900
PJI 80	9-1/2	1,305	1,405	1,405	1,405	2,760	3,125	3,245	3,400
	11-7/8	1,315	1,590	1,590	1,650	2,810	3300	3,255	3,585
	14	1,325	1,760	1,615	1,865	3,020	3,455	3,435	3,745
	16	1,330	1,915	1,630	2,070	3,265	3,600	3,600	3,900
	18	1,340	1,925	1,650	2,450	3,200	3,950	3,650	4,350
	20	1,350	2,170	1,665	2,550	3,200	3,950	3,650	4,350
	24	1,365	2,660	1,700	2,750	3,200	3,950	3,650	4,350
PJI 90	11-7/8	1,315	1,590	1,590	1,650	2,810	3,300	3,255	3,585
	14	1,325	1,760	1,615	1,865	3,020	3,455	3,435	3,745
	16	1,330	1,915	1,630	2,070	3,265	3,600	3,600	3,900
	18	1,340	1,925	1,650	2,450	3,200	3,950	3,650	4,350
	20	1,350	2,170	1,665	2,550	3,200	3,950	3,650	4,350
	24	1,365	2,660	1,700	2,750	3,200	3,950	3,650	4,350

Depth	Series	Maximum adjusted reaction capacity (b) (lbf)							
		1.75" Bearing		4" Bearing		3.5" Bearing		5.5" Bearing	
		Web Stiffeners		Web Stiffeners		Web Stiffeners		Web Stiffeners	
		No	Yes	No	Yes	No	Yes	No	Yes
All	PJI-40	1,675		3,825		3,345		5,260	
	PJI-60	2,065		4,725		4,135		6,495	
	PJI-65	2,415		5,525		4,835		7,595	
	PJI-80	2,985		6,825		5,970		9,385	
	PJI-90	3,500		7,995		6,995		10,995	

(a) The tabulated values are design values for normal duration of load. All values shall be permitted to be adjusted for other load durations provided that the adjusted reaction design value is not greater than the value specified below. Bearing stiffeners shall be installed in accordance with the recommendations provided by the manufacturer and APA D710.

(b) The allowable reaction design capacity interpolated in accordance with footnotes (c) and (d) as necessary and multiplied by an applicable load duration factor.

(c) Interpolation of the intermediate reaction between 3.5" and 5.5" bearing lengths is permitted.

(d) Interpolation of the end reaction between 1.75" and 4" bearing lengths is permitted.

USP Hangers for PJI 40, 60, 65, 80, and 90 Series

TABLE 22

Single P3 Joist

USP Structural Connectors

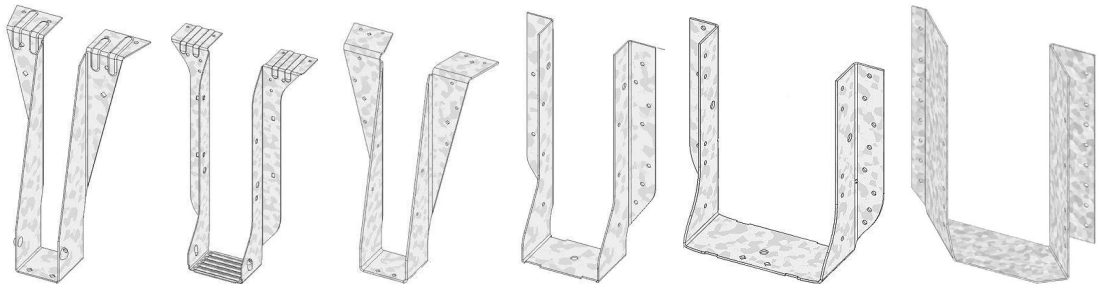
Width	Depth	Top Mount	Uplift 160%	Download		Face Mount	Uplift 160%	Download		Skewed	Uplift 160%	Download	
				DF/SP	SPF			DF/SP	SPF			DF/SP	SPF
2-1/2	9-1/2	TFL2595	140	1600	1230	THF25925	175	1370	1175	SKH2520L/R	1565	1625	1400
	11-7/8	TFL25118	140	1600	1230	THF25112	360	1595	1370	SKH2520L/R	1565	1625	1400
	14	TFL2514	140	1600	1230	THF25140	360	2090	1800	SKH2524L/R	1565	1855	1600
	16	TFL2516	140	1600	1230	THF25160	360	2550	2200	SKH2524L/R	1565	1855	1600
3-1/2	11-7/8	THO35118	265	2050	1720	THF35112	245	1825	1570	SKH410L/R	1565	2255	1935
	14	THO35140	265	2715	2280	THF35140	245	2320	2000	SKH410L/R	1565	2255	1935
	16	THO35160	265	2715	2280	THF35157	245	2550	2200	SKH414L/R	1565	3100	2660
	18	TFI418	360	2560	1660	THF35157	245	2550	2200	SKH414L/R	1565	3100	2660
	20	TFI420	360	2560	1660	THF35157	245	2550	2200	SKH414L/R	1565	3100	2660
	24	TFI424	360	3245	2345	THF35157	245	2550	2200	-	-	-	-

TABLE 23

Double P3 Joist

USP Structural Connectors

Width	Depth	Top Mount	Uplift 160%	Download		Face Mount	Uplift 160%	Download		Skewed	Uplift 160%	Download	
				DF/SP	SPF			DF/SP	SPF			DF/SP	SPF
5	9-1/2	THO25950-2	1175	3665	2710	THF25925-2	1115	1390	1200	SKH2520L/R-2	1905	1665	1440
	11-7/8	THO25118-2	1175	3665	3005	THF25112-2	1115	1855	1600	SKH2520L/R-2	1905	1665	1440
	14	THO25140-2	1175	4450	3265	THF25140-2	1220	2540	2200	SKH2524L/R-2	1905	1905	1650
	16	THO25160-2	1175	4450	3265	THF25160-2	1220	3050	2640	SKH2524L/R-2	1905	1905	1650
7	11-7/8	BPH71118	1220	3455	3280	HD7120	1140	2255	1935	HD7120-SK45L/R[3]	855	2255	1935
	14	BPH7114	1220	3455	3280	HD7140	1525	2820	2420	HD7140-SK45L/R[3]	1145	2820	2420
	16	BPH7116	1220	3455	3280	HD7160	1525	3385	2905	HD7160-SK45L/R[3]	1145	3385	2905
	18	BPH7118	1220	3455	3280	HD7160	1525	3385	2905	HD7160-SK45L/R[3]	1145	3385	2905
	20	BPH7120	1220	3455	3280	HD7160	1525	3385	2905	HD7160-SK45L/R[3]	1145	3385	2905
	24	BPH7124	1220	3455	3280	HD7160	1525	3385	2905	HD7160-SK45L/R[3]	1145	3385	2905



THO TFI BPH THF HD SKH

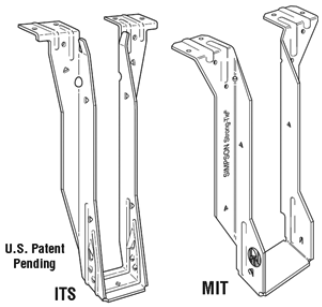
NOTES

1. Hangers that are marked by shading in tables require web stiffeners. P3 Joist may require web stiffeners for hangers that are not marked by shading.
2. This table is for quick specification for P3 Joist hangers. Refer to hanger manufacturer for additional design information.
3. Hangers for Double Joist are special order. Consult USP for pricing and lead times.

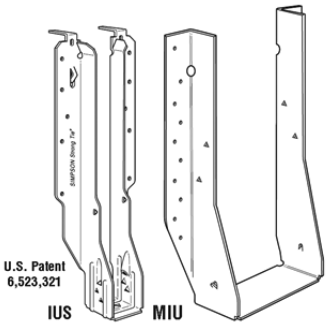
TABLE 24

P3 Joist Strong-Tie Hangers

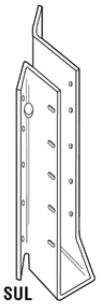
P3 Joist		Top Mount				Face Mount				Skewed 45			
		Load				Load				Load			
Width	Depth	Top Mount	Uplift (160)	Download		Face Mount	Uplift (160)	Download		Skewed 45	Uplift (160)	Download	
				DF/SP	SPF			DF/SP	SPF			DF/SP	SPF
2-1/2	9-1/2	ITS2.56/9.5	105	1520	1150	IUS2.56/9.5	75	950	815	SUR/L2.56/9	195	2015	1735
	11-7/8	ITS2.56/11.88	105	1520	1150	IUS2.56/11.88	75	1185	1020	SUR/L2.56/11	195	2305	1980
	14	ITS2.56/14	105	1520	1150	IUS2.56/14	75	1420	1220	SUR/L2.56/14	195	2590	2225
	16	ITS2.56/16	105	1520	1150	IUS2.56/16	75	1660	1425	SUR/L2.56/14	195	2590	2225
3-1/2	9-1/2	ITS 3.56/9.5	105	1520	1150	IUS3.56/9.5	75	1185	1020	SUR/L410	1120	2015	1735
	11-7/8	ITS3.56/11.88	105	1520	1150	IUS3.56/11.88	75	1420	1220	SUR/L410	1120	2015	1735
	14	ITS3.56/14	105	1520	1150	IUS3.56/14	75	1420	1220	SUR/L414	1520	2500	2150
	16	ITS3.56/16	105	1520	1150	IUS3.56/16	75	1660	1425	SUR/L414	1520	2500	2150
	18	MIT418	185	2305	1665	MIU3.56/18	180	3745	3220	SUR/L414	1520	2500	2150
	20	MIT420	185	2305	1665	MIU3.56/20	180	4030	3465	SUR/L414	1520	2500	2150
	24	HIT424	270	2875	1950	MIU3.56/20	180	4030	3445	---------- not available ----------			



Top Flange



Face Mount



Skewed

NOTES

1. Hangers that are marked by green shading in tables require web stiffeners. EACOM may require web stiffeners for hangers that are not marked by shading.
2. This table is for quick specification for P3 Joist hangers. Refer to hanger manufacturer for additional design information.
3. MIT without web stiffeners on 3-1/2" wide joists is limited to 1675 lbs. Alternatively, install web stiffeners for an allowable load of 2305 lbs.

P3 Products Warranty

Interfor Corporation warrants that the P3 Products manufactured by us or any of our affiliates comply with our specifications, are free from manufacturing defects in materials and workmanship, and will meet or exceed our performance specifications when correctly stored, handled, installed, used and maintained in accordance with our instructions, including the instructions in our P3 Joist User Guides for Canada and the United States, which are available at www.interfor.com/products. Checks, cracks or splits of any P3 Product resulting from the natural physical properties of wood, or any minor edge separation, are not covered by this Warranty unless the condition results in the P3 Product not complying with its specifications.

Please protect your investment! P3 Products must be protected from exposure to moisture Exposure to moisture beyond incidental exposure during normal construction periods may cause P3 Product failure and will void this limited warranty.

Any Warranty claim must be made in writing to the address below, within thirty (30) days of discovery of the facts substantiating the claim. In support of such Warranty claim, the claimant must provide us with reasonable proof of P3 Product identification in the form of a sample, a photograph of the identifying stamp, or dated receipt. We must be given a reasonable opportunity to inspect the P3 Product. After inspection and verification, if we determine that there is a valid Warranty claim, we will pay to the owner of the structure an amount equal to the reasonable value of the defective P3 Product, or, at our option, we will replace the defective P3 Product. This Warranty does not cover any costs related to installing or removing any P3 Products or replacement products.

INTERFOR CORPORATION AND ITS AFFILIATES DISCLAIM ALL OTHER WARRANTIES AND GUARANTEES, EXPRESS OR IMPLIED, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NONE OF INTERFOR CORPORATION, ITS AFFILIATES, OR ANY SELLER OF P3 PRODUCTS SHALL BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL LOSS OR DAMAGE RELATED TO THE PURCHASE, SALE, OR USE OF ANY P3 PRODUCT.

For additional information on our P3 Products or this Warranty, please contact us at:

Interfor Corporation
Attention: Sales & Marketing – P3 Product Warranty Claims
Address: 1600 – 4720 Kingsway, Metrotower II, Burnaby, BC V5H 4N2, Canada
www.interfor.com/products

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