
P3 JOIST

USER GUIDE

CANADA

BY  **EACOM**
TIMBER CORPORATION

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EACOM

SAULT STE. MARIE

EACOM Timber Corporation is a major Eastern Canadian wood products company formed in 2008. Its head office is located in Montreal, Quebec, with regional offices located in Timmins, Ontario and Val-d'Or, Quebec. In 2010, EACOM acquired Domtar Forest Products Division. As a result, its operations include the manufacturing, marketing and distribution of lumber and wood based value-added products, and the management of forest resources.

EACOM currently owns seven sawmills (5 in Ontario, 2 in Quebec), a remanufacturing facility (Quebec) and an engineered I-Joist plant (Ontario) for a total of 1100 employees. Many of these mills have a long, rich history having been part of their communities for over 100 years.

EACOM has a production capacity of approximately 900 million board feet of lumber and holds Crown logging rights of approximately 3.5 million cubic meters annually.

The Company is committed to investing in strong assets, including healthy forests, advanced technology and talented people.

For more information visit www.eacom.ca.

P3 JOIST

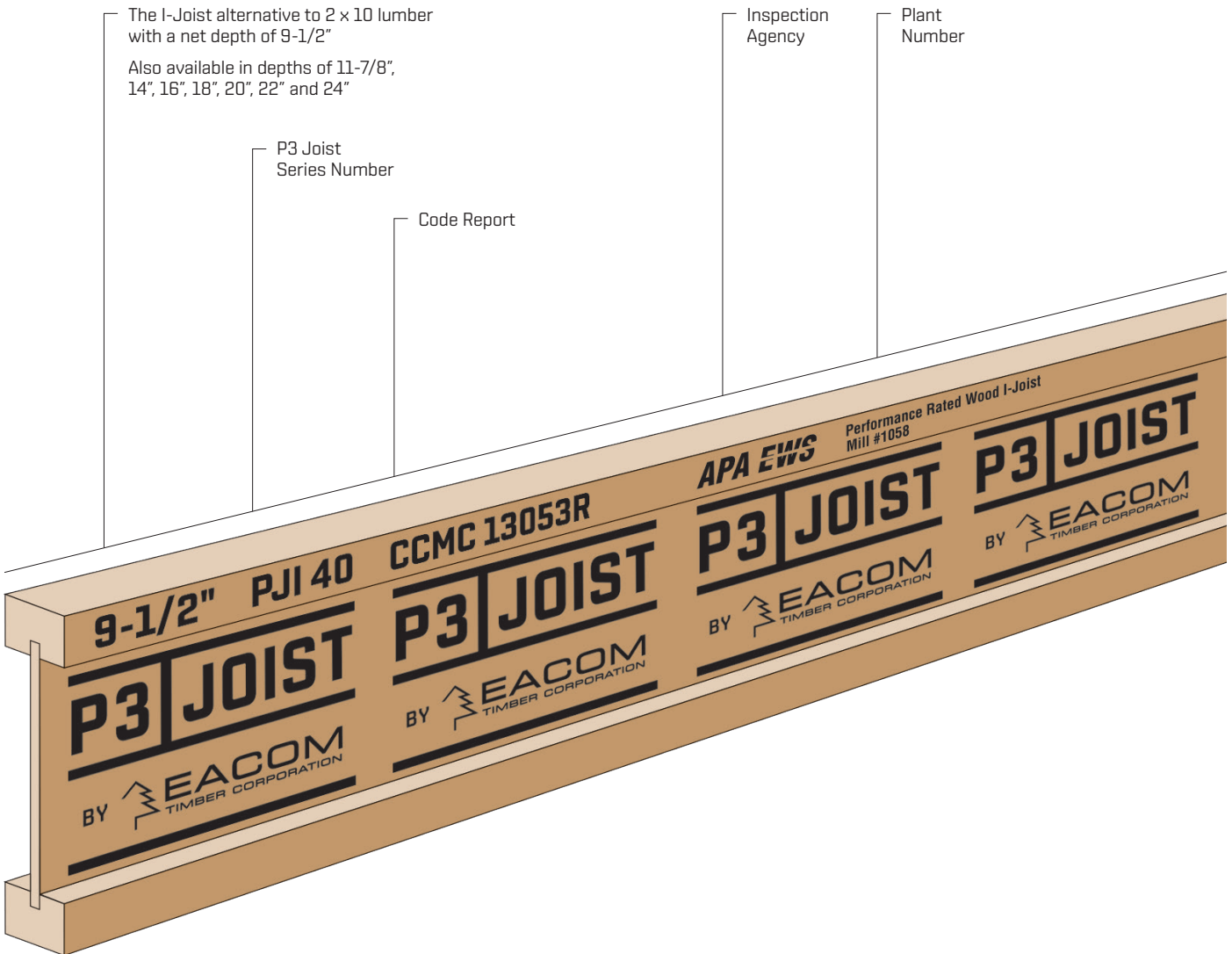
EACOM Timber Corporation has made it easy to make the right choice for residential and non-residential floor and roof joist products. P3 Joist are produced in accordance with EACOM's report ASTM D 5055 and ASTM D 7247. All code reports can be downloaded from our website www.eacom.ca.

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.

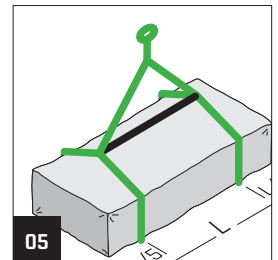
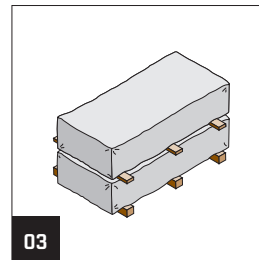
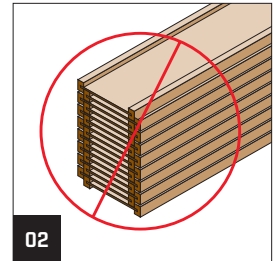
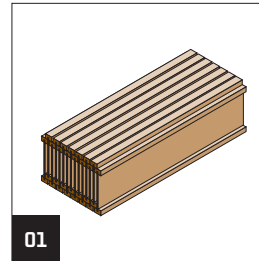
P3 Joist Labeling Example



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 Joists 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 Joist when horizontal.
7. Never use or try to repair a damaged P3 Joist.



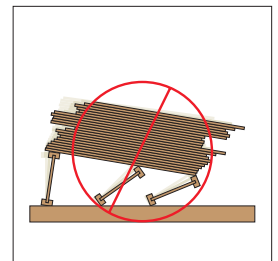
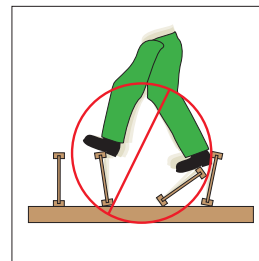
Safety Precautions

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 Joists 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 J735A [Temporary Construction Loads Over I-Joist Roofs].

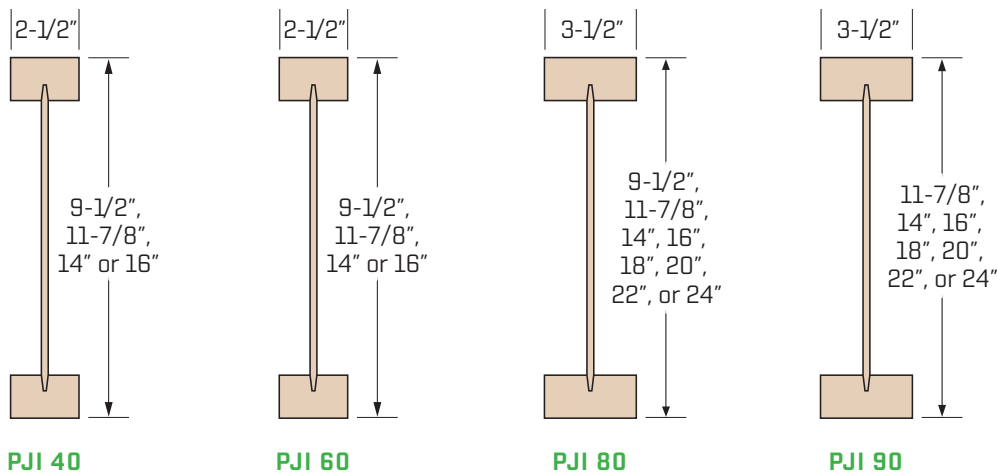
Failure to follow applicable building codes and span ratings, failure to use allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.



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 Joists are prefabricated using SPF MSR lumber flanges and OSB web, which are bonded together with exterior-type adhesives. It is recommended that P3 Joists be designed in accordance with the CCMC vibration procedure for residential floor applications, a criteria which provides superior floor performance. P3 Joists are limited to a L/480 maximum live load deflection for residential and non-residential floor applications. P3 Joists are identified by their depth followed by a designation such as PJI 40 which relates to the joist strength and stiffness. P3 Joists are manufactured to strict tolerances with the following characteristics.



- **Flanges** are MSR 2x3's and 2x4's.
- **Webs** are OSB, and all are classified as Exposure 1 or Exterior and are 3/8" in thickness or greater.
- All P3 Joists are assembled using exterior-type adhesives that meet ASTM D 2559 and ASTM D 7247.
- P3 Joists are available in eight depths: 9-1/2", 11-7/8", 14", 16", 18", 20", 22" and 24".
- P3 Joists of the same depth are manufactured with various flange widths; flange width is an important design consideration when specifying hangers.
- P3 Joists are manufactured up to 64' in length. These lengths are cut to used lengths such as 16' to 36' in 2' increments for jobsite delivery. Check local supplier for availability.
- P3 Joists are listed and approved in Canada under CCMC 13053R and Ontario Minister's Ruling #07-16-174.

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 design simple span of 15'-10" for 40/15 loading. For architectural reasons limit the P3 Joist depth to 11-7/8" and P3 Joist spacing to 19.2" on center with 5/8" OSB subfloor. From the 11-7/8" entry in Table 1, look down the 19.2" o.c. spacing column. Select PJI 40 11-7/8" P3 Joist.

While any of the P3 Joists shown in Tables 1 and 1a may be available in a specific market area, availability of any P3 Joist product should be verified prior to final product selection.

The allowable spans in the tables in this user guide indicate the allowable clear and multiple spans for various joist spacings under typical residential uniform floor loads (40 psf live load and 15 psf dead load) for glued-nailed systems.

Floor sheathing must be field glued to the P3 Joist flanges using approved construction adhesives to achieve the P3 Joist allowable spans.

Use of these span tables is limited to uniform load conditions and P3 Joist floor 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.

NOTES

1. Design is to CSA 086-14 and CCMC vibration concluding report dated September 4, 1997.
2. Web stiffeners are not required for P3 Joists up to 16" deep. Joists 18" and deeper require stiffeners at each support.
3. Use in dry service conditions only.
4. Provide lateral support at points of bearing to prevent twisting of joists.
5. Uniform load deflection criteria is L/480 on live load and L/240 on total load calculated.
6. Elastomeric adhesives for gluing of the subfloor shall conform to CGSB Standard CAN-CGSB-71.26-M88
7. Minimum end bearing length to be 1-3/4" and 3-1/2" for intermediate bearing supports.
8. Vibration spans are based on 19/32" OSB or 5/8" Canadian Softwood Plywood for joist spacing of 12" to 19.2" and on 23/32" OSB or 3/4" Canadian Softwood Plywood for joists spaced at 24" o/c. No ceiling, concrete topping, or bridging elements.
9. Spans listed are clear distances between supports.

TABLE 1
Allowable Spans for P3 Floor Joist

Simple span only - Glued subfloor* - On center spacing

Maximum floor span (ft)		Glued subfloor					
Load		Series	Depth (in)	On center joist spacing (in)			
Live	Dead			12	16	19.2	24
40	15	PJI 40	9 1/2	15'-10"	14'-11"	14'-6"	14'-3"
			11 7/8	17'-9"	16'-9"	16'-2"	16'-4"
			14	19'-6"	18'-2"	17'-7"	17'-8"
		16	21'-3"	19'-9"	18'-11"	19'-1"	
		PJI 60	9 1/2	16'-3"	15'-4"	14'-10"	15'-0"
			11 7/8	18'-3"	17'-2"	16'-8"	16'-9"
			14	20'-4"	18'-10"	18'-1"	18'-2"
		16	22'-2"	20'-6"	19'-8"	19'-9"	
		PJI 80	9 1/2	17'-2"	16'-2"	15'-7"	15'-8"
			11 7/8	19'-7"	18'-1"	17'-6"	17'-7"
			14	21'-9"	20'-1"	19'-2"	19'-4"
			16	23'-8"	21'-10"	20'-11"	21'-0"
			18	25'-5"	23'-6"	22'-5"	22'-6"
			20	27'-2"	25'-1"	23'-11"	24'-0"
			22	28'-10"	26'-7"	25'-5"	25'-6"
		24	30'-5"	28'-1"	26'-9"	26'-10"	
		PJI 90	11 7/8	20'-0"	18'-5"	17'-9"	17'-10"
			14	22'-2"	20'-6"	19'-7"	19'-8"
			16	24'-1"	22'-3"	21'-3"	21'-4"
			18	26'-0"	23'-11"	22'-10"	22'-11"
			20	27'-9"	25'-7"	24'-5"	24'-5"
			22	29'-5"	27'-1"	25'-10"	25'-11"
		24	31'-1"	28'-7"	27'-3"	27'-4"	

TABLE 1 A
Allowable Spans for P3 Floor Joist

Multiple span only - Glued subfloor* - On center spacing

Maximum floor span (ft)		Glued subfloor					
Load		Series	Depth (in)	On center joist spacing (in)			
Live	Dead			12	16	19.2	24
40	15	PJI 40	9 1/2	17'-1"	16'-2"	15'-8"	14'-10"
			11 7/8	19'-6"	18'-1"	17'-6"	17'-0"
			14	21'-7"	20'-1"	19'-3"	18'-8"
		16	23'-6"	21'-10"	20'-11"	20'-1"	
		PJI 60	9 1/2	17'-7"	16'-7"	16'-1"	16'-3"
			11 7/8	20'-3"	18'-9"	18'-0"	18'-2"
			14	22'-6"	20'-10"	19'-11"	20'-1"
		16	24'-6"	22'-8"	21'-8"	21'-10"	
		PJI 80	9 1/2	18'-9"	17'-6"	16'-11"	17'-0"
			11 7/8	21'-8"	20'-0"	19'-2"	19'-3"
			14	24'-1"	22'-3"	21'-3"	21'-4"
			16	26'-3"	24'-3"	23'-2"	23'-3"
			18	28'-2"	26'-0"	24'-10"	24'-11"
			20	30'-1"	27'-9"	26'-6"	26'-7"
			22	31'-11"	29'-6"	28'-1"	28'-3"
		24	34'-2"	31'-1"	29'-8"	29'-9"	
		PJI 90	11 7/8	22'-1"	20'-5"	19'-6"	19'-8"
			14	24'-7"	22'-8"	21'-8"	21'-9"
			16	26'-9"	24'-8"	23'-6"	23'-7"
			18	28'-9"	26'-6"	25'-4"	25'-5"
			20	30'-9"	28'-4"	27'-0"	27'-1"
			22	32'-7"	30'-1"	28'-8"	28'-9"
		24	35'-1"	31'-9"	30'-3"	30'-4"	

*For other type floor assemblies, please contact EACOM at www.eacom.ca.

Allowable Floor Uniform Load Capacities

TABLE 2
P3 Floor Joist — PJI 40
 Allowable Uniform Loads (PLF)

Clear Span (ft)	9-1/2"				11-7/8"				14"				16"			
	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load
	Live		Total		Live		Total		Live		Total		Live		Total	
	L/480	L/360	L/240	L/480	L/360	L/240	L/480	L/360	L/240	L/480	L/360	L/240	L/480	L/360	L/240	
8	295	393	-	423	-	-	-	423	-	-	-	423	-	-	-	423
9	219	293	-	377	350	-	-	377	-	-	-	377	-	-	-	377
10	167	223	335	340	269	-	-	340	-	-	-	340	-	-	-	340
11	130	173	260	289	211	282	-	310	296	-	-	310	-	-	-	310
12	103	137	206	243	168	225	-	284	237	-	-	284	-	-	-	284
13	82	110	165	208	136	181	-	263	192	257	-	263	254	-	-	263
14	67	90	135	180	111	149	223	233	158	211	-	244	210	-	-	244
15	55	74	111	157	92	123	185	203	131	175	-	228	175	-	-	228
16	46	62	93	138	77	103	155	179	110	147	-	214	147	196	-	214
17	39	52	78	122	65	87	131	159	93	124	187	191	125	166	-	202
18	33	44	66	109	55	74	111	142	80	106	160	171	107	142	-	190
19	28	38	57	98	47	63	95	127	68	91	137	153	92	123	-	178
20	24	32	49	89	41	55	82	115	59	79	119	138	80	106	160	161
21	21	28	42	80	36	48	72	104	51	69	103	126	69	93	139	146
22	18	25	37	73	31	42	63	95	45	60	91	115	61	81	122	133
23	16	21	32	67	27	37	55	87	40	53	80	105	54	72	108	122
24	14	19	29	62	24	32	49	80	35	47	71	96	47	63	95	112
25	12	17	25	57	21	29	43	74	31	42	63	89	42	56	85	103
26	11	15	23	52	19	26	39	68	28	37	56	82	38	50	76	95
27	10	13	20	49	17	23	35	63	25	33	50	76	34	45	68	88
28	9	12	18	45	15	21	31	59	22	30	45	71	30	41	61	82
29	8	11	16	42	14	18	28	55	20	27	41	66	27	37	55	77
30	7	10	15	39	12	17	25	51	18	24	37	62	25	33	50	72
31	6	9	13	37	11	15	23	48	16	22	33	58	22	30	45	67

TABLE 3
P3 Floor Joist — PJI 60
 Allowable Uniform Loads (PLF)

Clear Span (ft)	9-1/2"				11-7/8"				14"				16"			
	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load
	Live		Total		Live		Total		Live		Total		Live		Total	
	L/480	L/360	L/240	L/480	L/360	L/240	L/480	L/360	L/240	L/480	L/360	L/240	L/480	L/360	L/240	
8	337	-	-	423	-	-	-	423	-	-	-	423	-	-	-	423
9	253	337	-	377	-	-	-	377	-	-	-	377	-	-	-	377
10	194	258	-	340	310	-	-	340	-	-	-	340	-	-	-	340
11	151	202	303	310	245	-	-	310	-	-	-	310	-	-	-	310
12	120	160	241	284	196	261	-	284	276	-	-	284	-	-	-	284
13	97	129	194	263	159	212	-	263	225	-	-	263	-	-	-	263
14	79	105	158	244	130	174	-	244	186	-	-	244	-	-	-	244
15	65	87	131	217	108	145	217	228	155	207	-	228	206	-	-	228
16	54	73	109	191	91	121	182	214	130	174	-	214	174	-	-	214
17	46	61	92	169	77	103	154	202	111	148	-	202	148	197	-	202
18	39	52	78	151	65	87	131	190	95	126	190	190	127	169	-	190
19	33	45	67	136	56	75	113	176	81	109	163	181	109	146	-	181
20	29	39	58	123	49	65	98	159	71	94	142	172	95	127	-	172
21	25	33	50	111	42	57	85	144	62	82	124	163	83	111	-	163
22	22	29	44	101	37	50	75	132	54	72	108	156	73	97	146	156
23	19	26	39	93	33	44	66	120	48	64	96	145	64	86	129	149
24	17	23	34	85	29	39	58	111	42	56	85	133	57	76	114	143
25	15	20	30	79	26	34	52	102	37	50	75	123	51	68	102	137
26	13	18	27	73	23	31	46	94	33	45	67	114	45	61	91	132
27	12	16	24	67	20	27	41	88	30	40	60	105	41	54	82	122
28	11	14	22	63	18	25	37	81	27	36	54	98	37	49	74	114
29	9	13	19	58	16	22	33	76	24	33	49	91	33	44	67	106
30	9	12	18	55	15	20	30	71	22	29	44	85	30	40	60	99
31	8	10	16	51	13	18	27	66	20	27	40	80	27	36	55	93

Allowable Floor Uniform Load Capacities (continued)

TABLE 4
P3 Floor Joist — PJI 80
 Allowable Uniform Loads (PLF)

Clear Span (ft)	9-1/2"				11-7/8"				14"				16"			
	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load
	Live		Total L/240		Live		Total L/240		Live		Total L/240		Live		Total L/240	
	L/480	L/360			L/480	L/360			L/480	L/360			L/480	L/360		
8	-	-	-	424	-	-	-	431	-	-	-	464	-	-	-	501
9	323	-	-	378	-	-	-	384	-	-	-	413	-	-	-	447
10	250	334	-	341	-	-	-	347	-	-	-	373	-	-	-	403
11	198	264	-	310	313	-	-	316	-	-	-	339	-	-	-	367
12	158	211	-	285	253	-	-	290	-	-	-	312	-	-	-	337
13	128	171	257	263	207	-	-	268	-	-	-	288	-	-	-	311
14	105	141	211	245	171	228	-	249	240	-	-	268	-	-	-	289
15	88	117	176	228	143	190	-	233	201	-	-	250	264	-	-	270
16	73	98	147	214	120	161	-	218	170	227	-	235	224	-	-	254
17	62	83	125	202	102	136	205	206	145	194	-	221	192	-	-	239
18	53	71	106	191	87	117	175	194	125	166	-	209	165	220	-	226
19	45	61	91	181	75	101	151	184	108	144	-	198	143	191	-	214
20	39	53	79	172	65	87	131	175	94	125	188	188	125	167	-	203
21	34	46	69	158	57	76	115	167	82	110	165	179	109	146	-	194
22					50	67	101	159	72	96	145	171	96	129	-	185
23					44	59	89	152	64	85	128	164	85	114	171	177
24					39	52	79	146	57	76	114	157	76	101	152	170
25					35	47	70	140	50	67	101	151	68	90	136	163
26					31	42	63	134	45	60	91	145	61	81	122	157
27									40	54	81	140	54	73	109	151
28									36	49	73	135	49	66	99	146
29									33	44	66	130	44	59	89	141
30									30	40	60	121	40	54	81	136
31									27	36	55	114	37	49	74	132

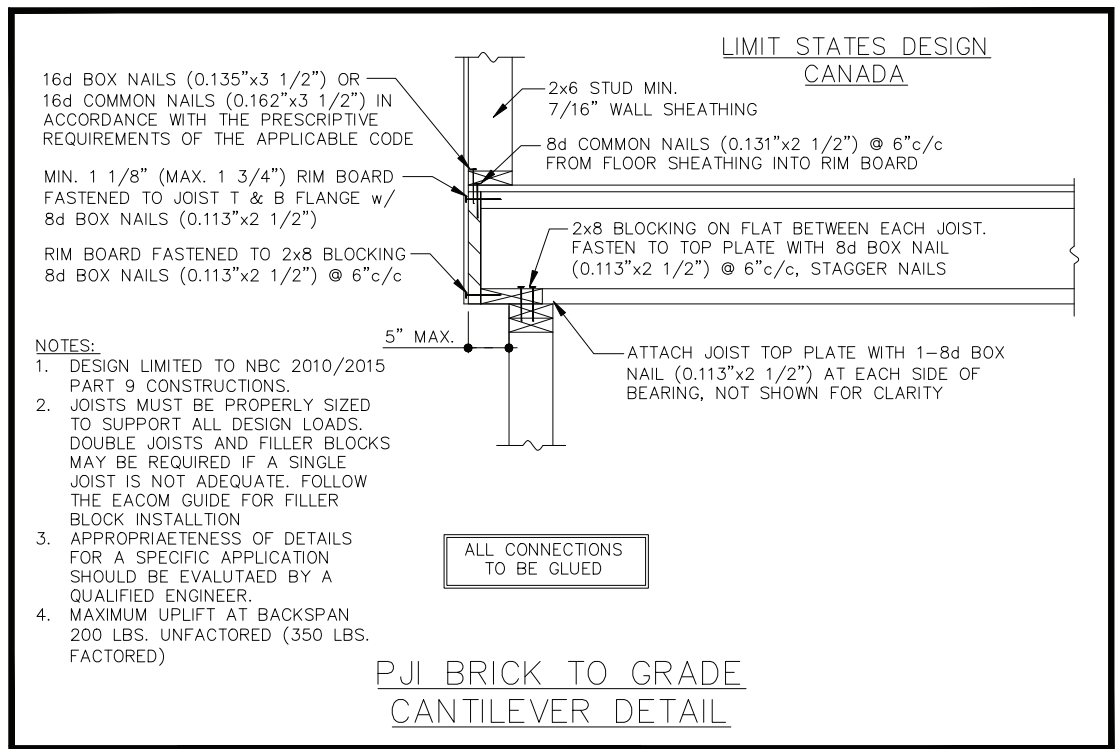
TABLE 5
P3 Floor Joist — PJI 80 with Web Stiffeners
 Allowable Uniform Loads (PLF)

Clear Span (ft)	18"				20"				22"				24"			
	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load
	Live		Total L/240		Live		Total L/240		Live		Total L/240		Live		Total L/240	
	L/480	L/360			L/480	L/360			L/480	L/360			L/480	L/360		
8	-	-	-	606	-	-	-	606	-	-	-	606	-	-	-	606
9	-	-	-	541	-	-	-	541	-	-	-	541	-	-	-	541
10	-	-	-	488	-	-	-	488	-	-	-	488	-	-	-	488
11	-	-	-	444	-	-	-	444	-	-	-	444	-	-	-	444
12	-	-	-	408	-	-	-	408	-	-	-	408	-	-	-	408
13	-	-	-	377	-	-	-	377	-	-	-	377	-	-	-	377
14	-	-	-	350	-	-	-	350	-	-	-	350	-	-	-	350
15	-	-	-	327	-	-	-	327	-	-	-	327	-	-	-	327
16	281	-	-	307	-	-	-	307	-	-	-	307	-	-	-	307
17	241	-	-	289	-	-	-	289	-	-	-	289	-	-	-	289
18	208	-	-	273	257	-	-	273	-	-	-	273	-	-	-	273
19	181	242	-	259	224	-	-	259	-	-	-	259	-	-	-	259
20	158	211	-	246	196	-	-	246	237	-	-	246	-	-	-	246
21	139	185	-	235	172	230	-	235	209	-	-	235	-	-	-	235
22	123	164	-	224	152	203	-	224	185	-	-	224	220	-	-	224
23	109	145	-	214	135	181	-	214	164	-	-	214	196	-	-	214
24	97	129	194	205	121	161	-	205	147	196	-	205	175	-	-	205
25	86	115	173	197	108	144	-	197	131	175	-	197	157	-	-	197
26	77	103	155	190	97	129	-	190	118	158	-	190	141	189	-	190
27	70	93	140	183	87	117	175	183	107	142	-	183	128	170	-	183
28	63	84	126	176	79	105	158	176	96	129	-	176	116	154	-	176
29	57	76	115	170	71	95	143	170	87	117	-	170	105	140	-	170
30	52	69	104	160	65	87	130	165	80	106	160	165	96	128	-	165
31	47	63	95	150	59	79	119	159	73	97	146	159	87	117	-	159

Allowable Floor Uniform Load Capacities (continued)

TABLE 6
P3 Floor Joist — PJI 90
 Allowable Uniform Loads (PLF)

Clear Span (ft)	11-7/8"				14"				16"			
	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load
	Live		Total L/240		Live		Total L/240		Live		Total L/240	
	L/480	L/360		L/480	L/360	L/480		L/360				
8	-	-	-	431	-	-	-	464	-	-	-	501
9	-	-	-	384	-	-	-	413	-	-	-	447
10	-	-	-	347	-	-	-	373	-	-	-	403
11	-	-	-	316	-	-	-	339	-	-	-	367
12	271	-	-	290	-	-	-	312	-	-	-	337
13	222	-	-	268	-	-	-	288	-	-	-	311
14	184	246	-	249	257	-	-	268	-	-	-	289
15	154	206	-	233	216	-	-	250	-	-	-	270
16	130	174	-	218	183	-	-	235	239	-	-	254
17	111	148	-	206	156	209	-	221	205	-	-	239
18	95	127	191	194	135	180	-	209	177	-	-	226
19	82	109	164	184	116	155	-	198	154	205	-	214
20	71	95	143	175	101	135	-	188	134	179	-	203
21	62	83	125	167	89	119	178	179	118	157	-	194
22	55	73	110	159	78	104	157	171	104	138	-	185
23	48	64	97	152	69	92	139	164	92	123	-	177
24	43	57	86	146	61	82	123	157	82	109	164	170
25	38	51	76	140	55	73	110	151	73	97	146	163
26	34	45	68	135	49	65	98	145	65	87	131	157
27					44	59	88	140	59	79	118	151
28					40	53	80	135	53	71	107	146
29					36	48	72	130	48	64	97	141
30					32	43	65	126	44	58	88	136
31					30	40	60	122	40	53	80	132



Allowable Floor Uniform Load Capacities (continued)

TABLE 7
P3 Floor Joist — PJI 90 With Web Stiffeners
 Allowable Uniform Loads (PLF)

Clear Span (ft)	18"				20"				22"				24"			
	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load
	Live		Total L/240		Live		Total L/240		Live		Total L/240		Live		Total L/240	
	L/480	L/360			L/480	L/360			L/480	L/360			L/480	L/360		
8	-	-	-	606	-	-	-	606	-	-	-	606	-	-	-	606
9	-	-	-	541	-	-	-	541	-	-	-	541	-	-	-	541
10	-	-	-	488	-	-	-	488	-	-	-	488	-	-	-	488
11	-	-	-	444	-	-	-	444	-	-	-	444	-	-	-	444
12	-	-	-	408	-	-	-	408	-	-	-	408	-	-	-	408
13	-	-	-	377	-	-	-	377	-	-	-	377	-	-	-	377
14	-	-	-	350	-	-	-	350	-	-	-	350	-	-	-	350
15	-	-	-	327	-	-	-	327	-	-	-	327	-	-	-	327
16	301	-	-	307	-	-	-	307	-	-	-	307	-	-	-	307
17	259	-	-	289	-	-	-	289	-	-	-	289	-	-	-	289
18	224	-	-	273	-	-	-	273	-	-	-	273	-	-	-	273
19	195	-	-	259	240	-	-	259	-	-	-	259	-	-	-	259
20	170	227	-	246	211	-	-	246	-	-	-	246	-	-	-	246
21	150	200	-	235	186	-	-	235	224	-	-	235	-	-	-	235
22	132	177	-	224	164	219	-	224	199	-	-	224	-	-	-	224
23	117	157	-	214	146	195	-	214	177	-	-	214	211	-	-	214
24	105	140	-	205	130	174	-	205	158	-	-	205	189	-	-	205
25	94	125	188	197	117	156	-	197	142	189	-	197	169	-	-	197
26	84	112	168	190	105	140	-	190	128	170	-	190	152	-	-	190
27	76	101	152	183	94	126	-	183	115	154	-	183	138	-	-	183
28	68	91	137	176	85	114	171	176	104	139	-	176	125	167	-	176
29	62	83	124	170	78	104	156	170	95	126	-	170	113	151	-	170
30	56	75	113	165	70	94	141	165	86	115	-	165	103	138	-	165
31	51	69	103	159	64	86	129	159	79	105	158	159	94	126	-	159

NOTES for Tables 2, 3, 4, 5, 6 and 7

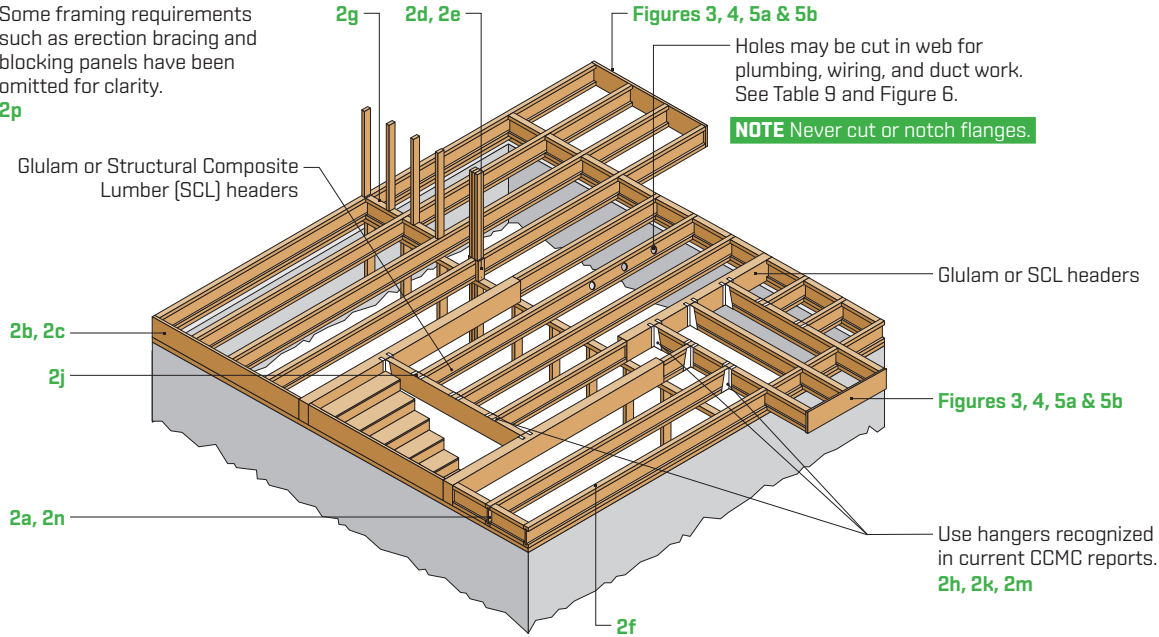
1. Clear span is the distance between the face of the supports.
2. The load values are for standard term load duration and dry service conditions only. The dead load must not exceed the live load.
3. The load values represent the worst case of simple span or multiple span single member applications.
4. Design of continuous spans is based on the longest span. The shortest span must not be less than 50% of the longest span.
5. Provide continuous lateral support for top & bottom flanges. Provide lateral support at points of bearing to prevent twisting of joist.
6. The unfactored load columns are based on deflection only. The factored load column is based on strength only. Unfactored live load (either L/480 or L/360), unfactored total load and factored load must be checked. Where the unfactored load column is blank, the factored load column governs.
7. Provide 1-3/4" bearing at end supports and 3-1/2" bearing at interior support minimum.
8. Web stiffeners are not required for the joists in tables 2, 3, 4 and 6.
9. Web stiffeners are required for all joists at each support in Table 5 and Table 7.
10. The loads have been calculated in accordance with CSA O86.
11. Vibration is not included in the design criteria for this table.

Floor Framing and Construction Details

FIGURE 1
Typical P3 Floor Joist Framing and Construction Details

All nails shown in the details below are assumed to be common nails unless otherwise noted. Framing lumber is assumed to be Spruce-Pine-Fir. Individual components are not shown to scale for clarity.

Some framing requirements such as erection bracing and blocking panels have been omitted for clarity.
2p



Labels: P3 PJI Joist blocking panel, Attach P3 Joist to top plate per 2b.

Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
P3 PJI Joist (9-1/2" - 18")	3300

*The uniform vertical load capacity is limited to a joist depth of 18" or less and is based on the standard term 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.

2-1/2" nails @ 6" o.c. to top plate (When used for lateral shear transfer, nail to bearing plate with same nailing as required for decking.)

2a **BLOCKING PANEL AT END SUPPORT DETAIL**

Labels: APA Rim Board, One 2-1/2" face nail at each side at bearing, One 2-1/2" nail at top and bottom flange, Attach APA Rim Board to top plate using 2-1/2" common or box toenails @ 6" o.c.

Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" APA Rim Board Plus	8090
1-1/8" APA Rim Board	7340
1" APA Rim Board	5500

*The uniform vertical load capacity is limited to a rim board depth of 16" or less and is based on standard term 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. Framing lumber is assumed to be Spruce-Pine-Fir. Individual components are not shown to scale for clarity.

2c P3 JOIST AS RIM JOIST DETAIL

Pair of Squash Blocks	Maximum Factored Vertical Load per Pair of Squash Blocks (lb)	
	3-1/2" wide	5-1/2" wide
2x lumber	5800	9500
1-1/8" APA Rim Board, Rim Board Plus, or Rated Sturd-I-Floor 48 oc	4500	5800
1" APA Rim Board or Rated Sturd-I-Floor 32 oc	4000	5800

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

2d SQUASH BLOCK DETAIL

2e LOAD TRANSFER WITH PASS THRU BLOCKING DETAIL

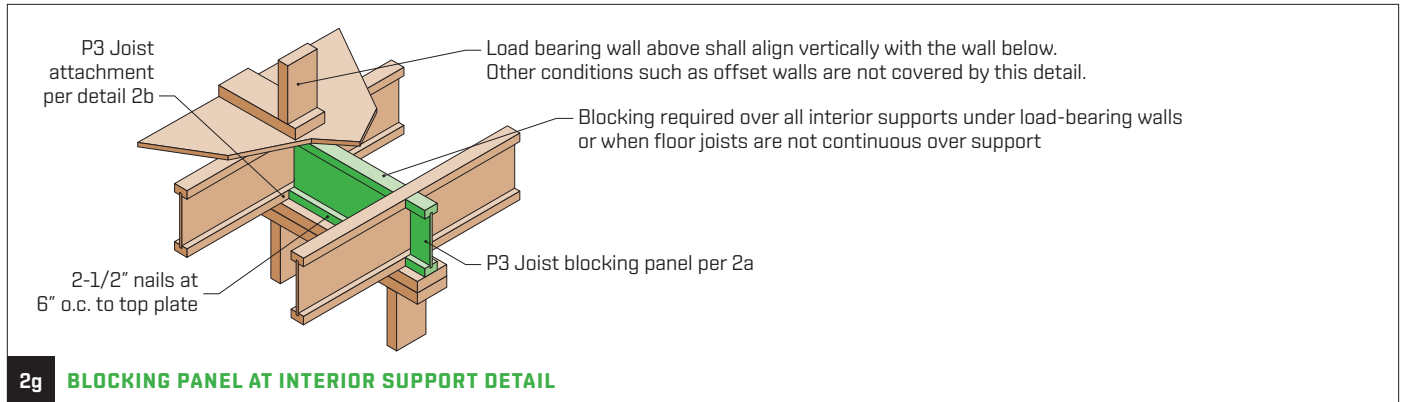
APA Rim Board may be used in lieu of P3 Joist. Backer is not required when APA Rim Board is used.

2f PARALLEL END P3 JOIST DETAIL

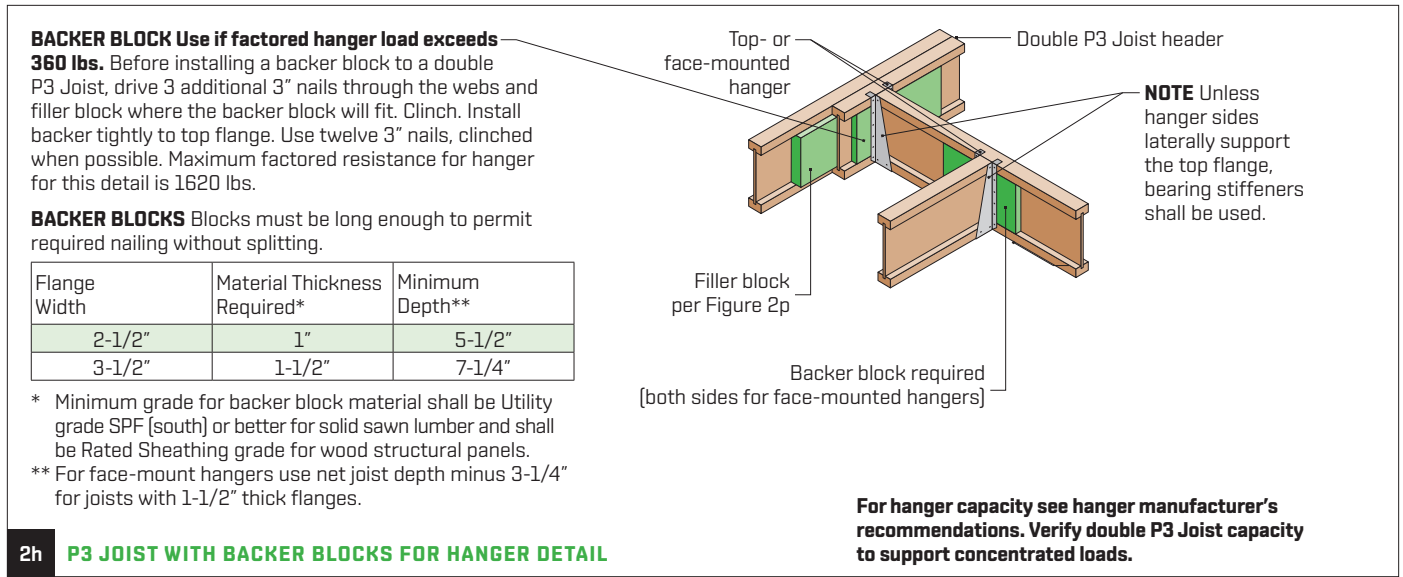
FIGURE 1 (CONTINUED)

Typical P3 Floor Joist Framing and Construction Details

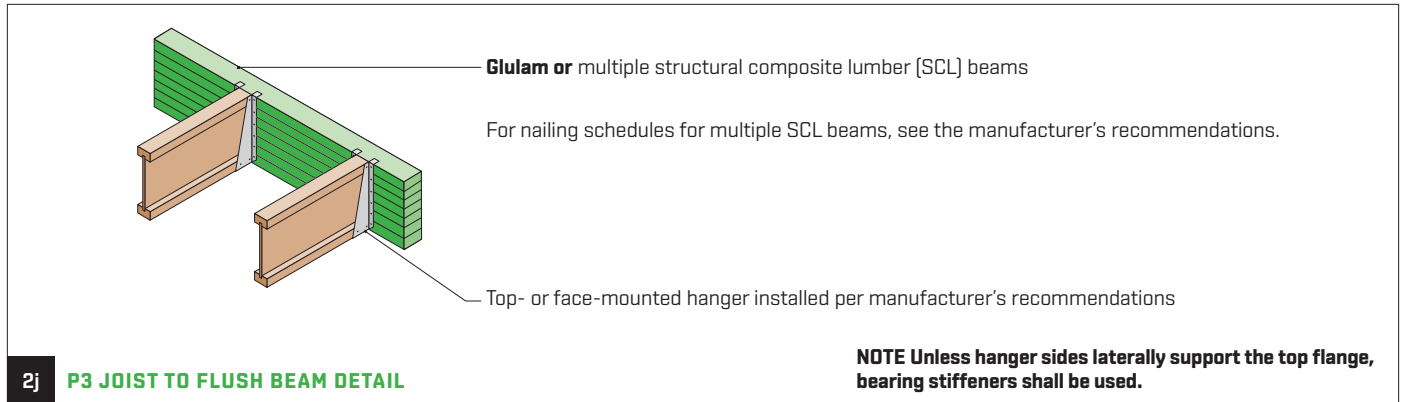
All nails shown in the details below are assumed to be common nails unless otherwise noted. Framing lumber is assumed to be Spruce-Pine-Fir. Individual components are not shown to scale for clarity.



2g BLOCKING PANEL AT INTERIOR SUPPORT DETAIL



2h P3 JOIST WITH BACKER BLOCKS FOR HANGER DETAIL

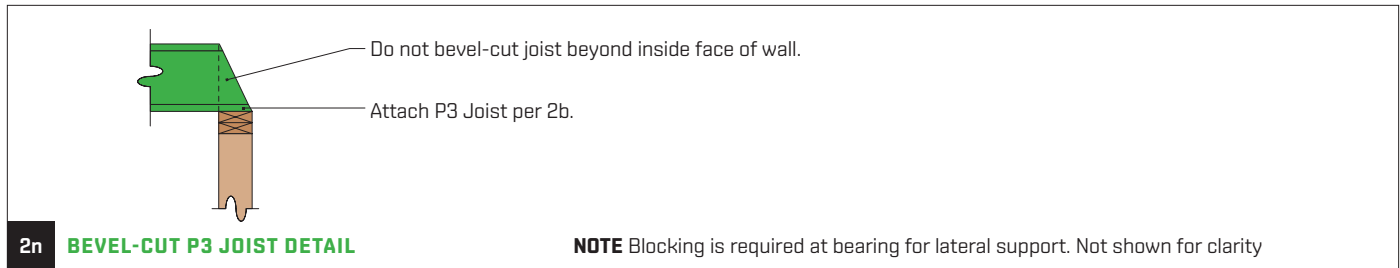
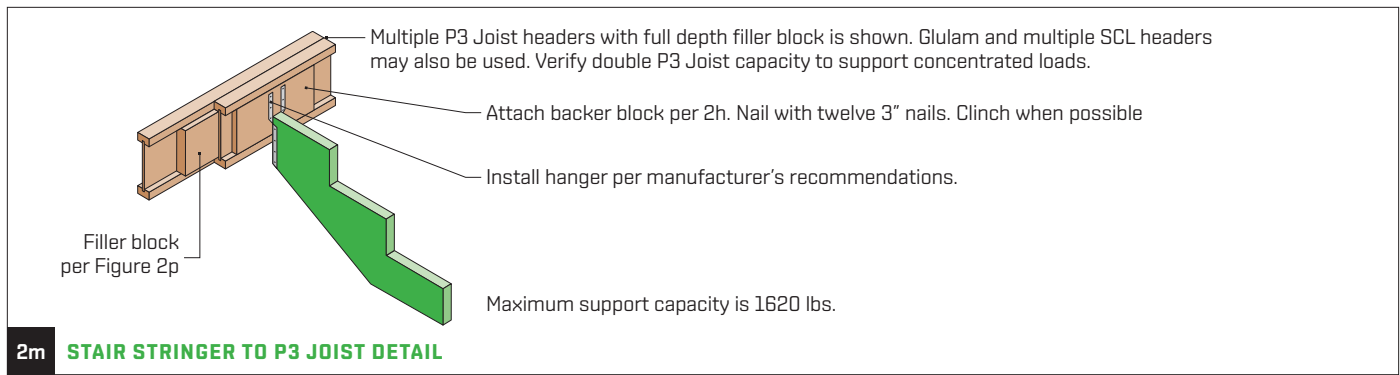
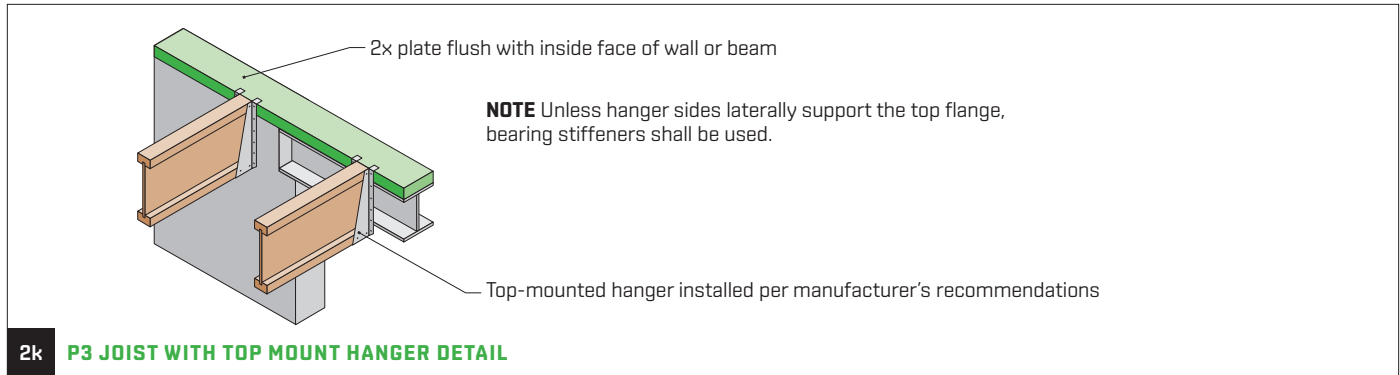


2j P3 JOIST TO FLUSH BEAM DETAIL

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. Framing lumber is assumed to be Spruce-Pine-Fir. Individual components are not shown to scale 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"
	22"	3" x 18"
	24"	3" x 20"

Filler block

Offset nails from opposite face by 6"

1/8" gap between top flange and filler block

NOTES

- Support back of I-Joist web during nailing to prevent damage to web/flange connection.
- Leave a 1/8" gap between top of filler block and bottom of top P3 Joist flange.
- Filler block is required between joists for full length of span.
- Nail joists together with two rows of 3" 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.
- The maximum load that may be applied to one side of the double joist using this detail is 860 lbs./ft.

2p DOUBLE P3 JOIST CONSTRUCTION DETAIL

Minimum Nailing Requirements for Web Stiffeners

Stiffener Size and Nailing Requirement

Joist Dept	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
22"	-	8
24"	-	8
Minimum Stiffener	1" x 2-5/16" (width)	1-1/2" x 2-5/16" (width)

1. Web stiffeners are required:

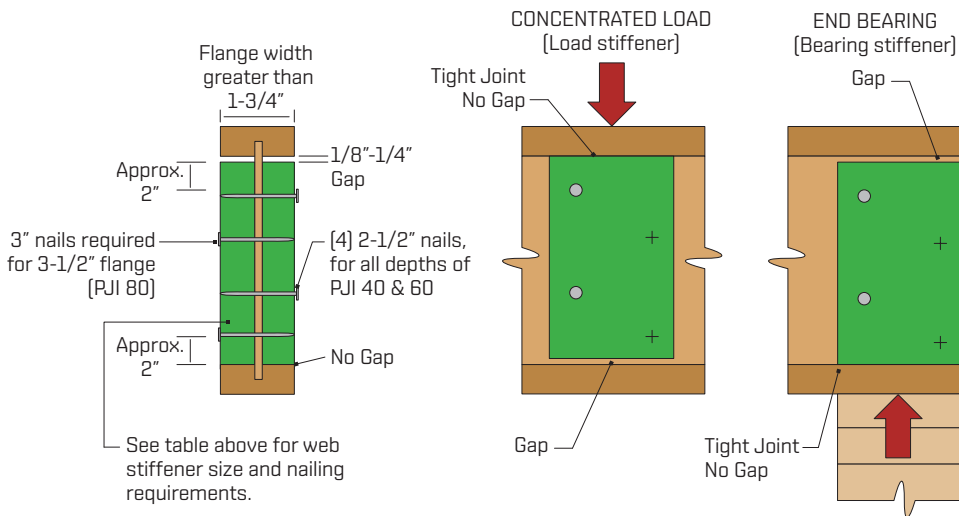
- When sides of the hangers do not laterally brace the top flange of each P3 Joist;
- When P3 Joists are designed to support concentrated loads greater than 1500 lbs. that are applied to the P3 Joist's top flange between supports. In these applications only, the gap between the web stiffener and the flange shall be at the bottom flange;
- For all engineered applications with end-reactions greater than 1500 lbs.
A design analysis must be performed for all engineered applications with end-reactions greater than 1500 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.

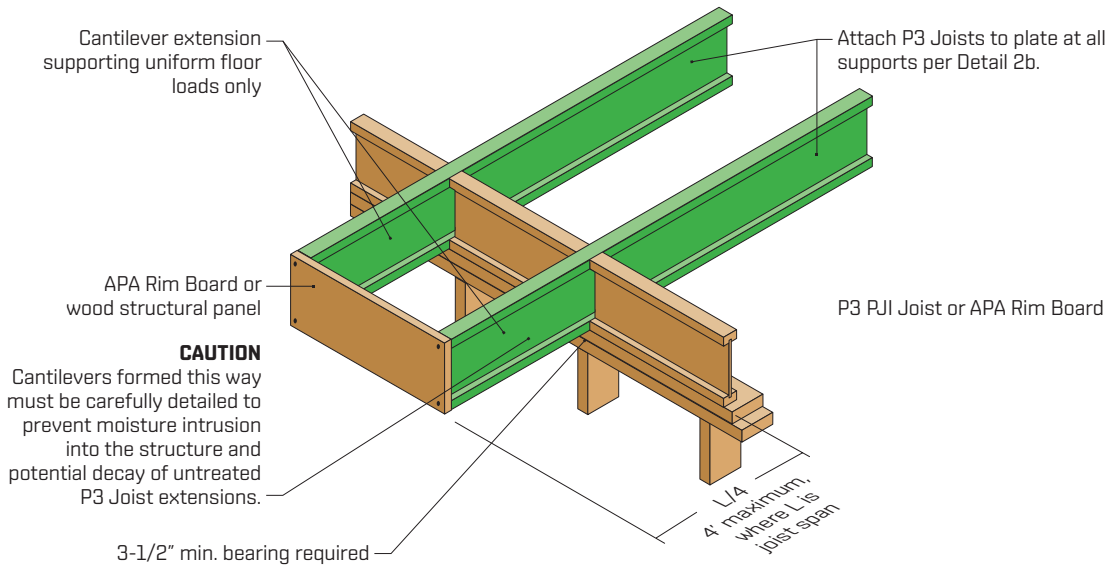
Web Stiffener Installation Details

FIGURE 2



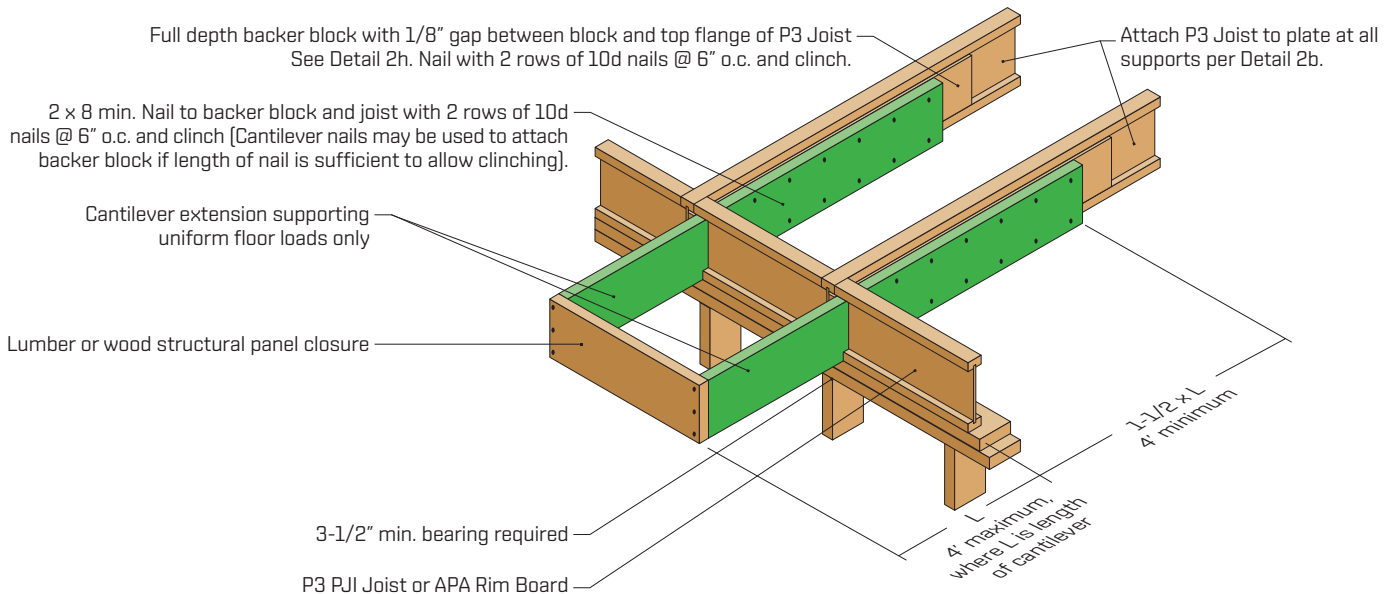
Cantilever Details for Interior Balconies (No Wall Load)

FIGURE 3



Lumber Cantilever Details For Balconies (No Wall Load)

FIGURE 4



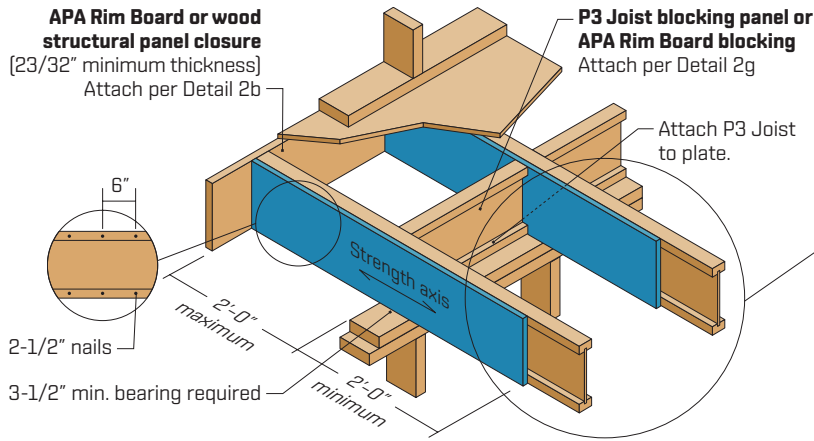
NOTES All nails shown in the details above are assumed to be common nails unless otherwise noted. Individual components are not shown to scale for clarity.

Cantilever Detail for Vertical Building Offset (Concentrated Wall Load)

FIGURE 5A

Method 1

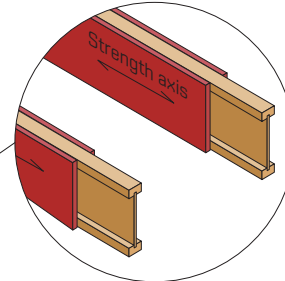
Sheathing Reinforcement One Side



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.

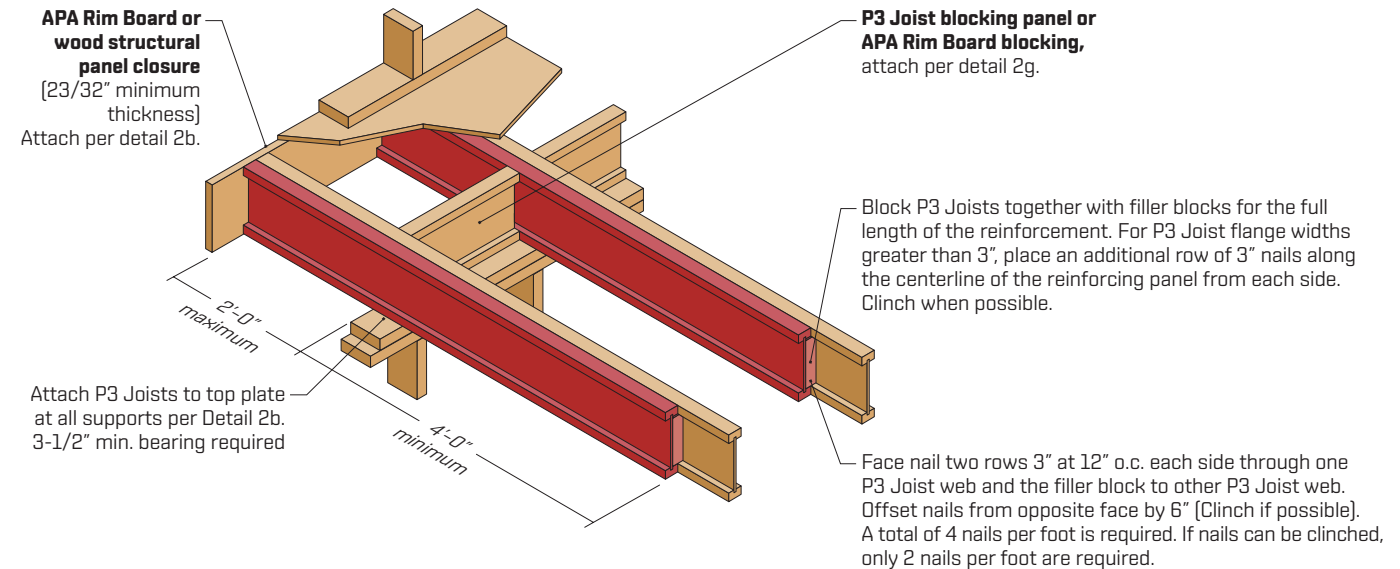


Use nailing pattern shown for Method 1 with opposite face nailing offset by 3".

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.

FIGURE 5B

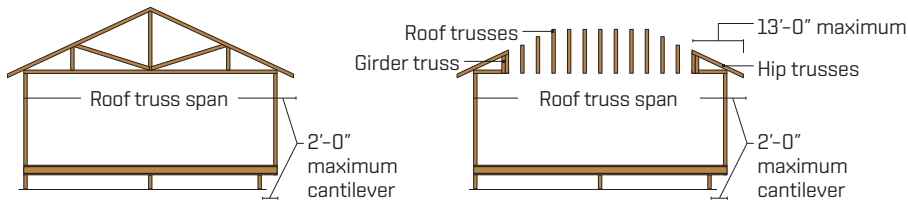
Double P3 Joists



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 APA PRI reinforcement requirements at cantilever.

For hip roofs with the hip trusses running parallel to the cantilevered floor joists, the P3 Joists 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, 2	N	N	1, 2	2	N	1, 2	2	X
	28	N	N	1, 2	1, 2	N	N	1, 2	2	N	1, 2	2	X
	30	N	N	2	1, 2	N	1, 2	1, 2	2	N	1, 2	2	X
	32	N	N	1, 2	2	N	1, 2	1, 2	X	N	1, 2	2	X
	34	N	N	1, 2	2	N	1, 2	2	X	N	2	X	X
36	N	N	1, 2	2	N	1, 2	2	X	N	2	X	X	
11-7/8	26	N	N	N	1, 2	N	N	1, 2	1, 2	N	1, 2	1, 2	2
	28	N	N	1, 2	1, 2	N	1, 2	1, 2	1, 2	N	1, 2	1, 2	2
	30	N	N	1, 2	1, 2	N	1, 2	1, 2	2	N	1, 2	1, 2	2
	32	N	N	1, 2	1, 2	N	1, 2	1, 2	2	N	1, 2	1, 2	2
	34	N	N	1, 2	1, 2	N	1, 2	1, 2	2	N	1, 2	2	2
	36	N	N	1, 2	1, 2	N	1, 2	1, 2	2	N	1, 2	2	2
38	N	1, 2	1, 2	1, 2	N	1, 2	1, 2	2	1, 2	1, 2	2	X	
14	26	N	N	N	1, 2	N	N	N	1, 2	N	N	1, 2	1, 2
	28	N	N	N	1, 2	N	N	1, 2	1, 2	N	N	1, 2	2
	30	N	N	N	1, 2	N	N	1, 2	1, 2	N	1, 2	1, 2	2
	32	N	N	N	1, 2	N	N	1, 2	1, 2	N	1, 2	1, 2	2
	34	N	N	N	1, 2	N	N	1, 2	2	N	1, 2	1, 2	2
	36	N	N	1, 2	1, 2	N	1, 2	1, 2	2	N	1, 2	1, 2	2
	38	N	N	1, 2	1, 2	N	1, 2	1, 2	2	N	1, 2	1, 2	2
40	N	N	1, 2	1, 2	N	1, 2	1, 2	2	N	1, 2	2	2	
16	26	N	N	N	1, 2	N	N	1, 2	1, 2	N	N	1, 2	1, 2
	28	N	N	N	1, 2	N	N	1, 2	1, 2	N	1, 2	1, 2	2
	30	N	N	N	1, 2	N	N	1, 2	1, 2	N	1, 2	1, 2	2
	32	N	N	N	1, 2	N	N	1, 2	1, 2	N	1, 2	1, 2	2
	34	N	N	1, 2	1, 2	N	N	1, 2	2	N	1, 2	1, 2	2
	36	N	N	1, 2	1, 2	N	1, 2	1, 2	2	N	1, 2	1, 2	2
	38	N	N	1, 2	1, 2	N	1, 2	1, 2	2	N	1, 2	2	2
	40	N	N	1, 2	1, 2	N	1, 2	1, 2	2	N	1, 2	2	2
42	N	N	1, 2	1, 2	N	1, 2	1, 2	2	N	1, 2	2	X	

NOTES

- N = No reinforcement required
- 1 = P3 Joists reinforced with 23/32" wood structural panel on one side only
- 2 = P3 Joists 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 pif 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.
6. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

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 Joists must be protected from the weather prior to installation.
5. P3 Joists 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 Joists 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 10.
9. For P3 Joists up to 18" deep installed as rim board directly beneath bearing walls parallel to the joists, the maximum factored vertical load using a single P3 Joist is 3300 plf and is 6600 plf if double P3 Joists are used. 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 National Building Code of Canada 2015 Table A-9.10.3.1.B. assembly numbers F3 to F21.

Web Hole Rules and Specifications

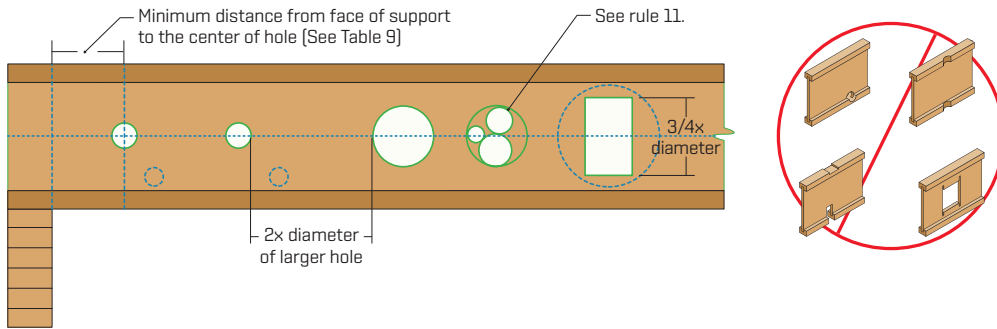
One of the benefits of using P3 Joists in residential floor construction is that holes may be cut in the joist webs to accommodate electrical wiring, plumbing lines, and other mechanical systems, thereby minimizing the depth of the floor system.

Rules for Cutting Holes in P3 Joist

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 Loads up to 15 psf and Live Loads up to 40 psf^{L2,3,4}

Joist Depth	Joist	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'-3"	0'-7"	0'-8"	1'-2"	2'-9"	4'-6"	4'-11"									
	PJI-60	15'-0"	0'-7"	0'-8"	2'-0"	3'-8"	5'-4"	5'-10"									
	PJI-80	15'-9"	0'-7"	1'-0"	2'-7"	4'-2"	5'-11"	6'-5"									
11-7/8"	PJI-40	16'-3"	0'-7"	0'-8"	0'-9"	1'-3"	2'-9"	3'-1"	4'-3"	5'-10"	6'-11"						
	PJI-60	16'-9"	0'-7"	0'-8"	0'-9"	1'-11"	3'-5"	3'-9"	4'-11"	6'-7"	7'-8"						
	PJI-80	17'-6"	0'-7"	0'-8"	1'-1"	2'-6"	4'-0"	4'-5"	5'-8"	7'-4"	8'-6"						
	PJI-90	17'-9"	0'-7"	0'-8"	1'-3"	2'-9"	4'-3"	4'-8"	5'-10"	7'-7"	8'-9"						
14"	PJI-40	17'-7"	0'-7"	0'-8"	0'-9"	0'-9"	1'-4"	1'-8"	2'-8"	4'-1"	5'-1"	5'-7"	7'-3"	8'-6"			
	PJI-60	18'-1"	0'-7"	0'-8"	0'-9"	0'-10"	2'-2"	2'-6"	3'-6"	5'-0"	5'-11"	6'-6"	8'-2"	9'-6"			
	PJI-80	19'-3"	0'-7"	0'-8"	0'-9"	1'-4"	2'-9"	3'-1"	4'-2"	5'-8"	6'-8"	7'-3"	9'-0"	10'-4"			
	PJI-90	19'-7"	0'-7"	0'-8"	0'-9"	1'-7"	3'-0"	3'-4"	4'-5"	6'-0"	6'-11"	7'-7"	9'-3"	10'-8"			
16"	PJI-40	19'-0"	0'-7"	0'-8"	0'-9"	0'-9"	0'-9"	0'-10"	1'-4"	2'-8"	3'-6"	4'-0"	5'-5"	6'-6"	6'-11"	8'-6"	9'-10"
	PJI-60	19'-9"	0'-7"	0'-8"	0'-9"	0'-9"	1'-1"	1'-5"	2'-4"	3'-8"	4'-7"	5'-1"	6'-6"	7'-8"	8'-1"	9'-9"	6'-8"
	PJI-80	21'-0"	0'-7"	0'-8"	0'-9"	0'-9"	1'-7"	1'-11"	2'-11"	4'-4"	5'-3"	5'-9"	7'-4"	8'-6"	8'-11"	10'-8"	7'-3"
	PJI-90	21'-3"	0'-7"	0'-8"	0'-9"	0'-9"	1'-9"	2'-2"	3'-2"	4'-7"	5'-5"	6'-0"	7'-6"	8'-9"	9'-2"	10'-11"	
18"	PJI-80	22'-6"	0'-7"	0'-8"	0'-9"	0'-9"	0'-9"	0'-10"	0'-10"	1'-11"	2'-10"	3'-5"	4'-10"	6'-0"	6'-5"	8'-0"	9'-3"
	PJI-90	22'-10"	0'-7"	0'-8"	0'-9"	0'-9"	0'-9"	0'-10"	0'-11"	2'-3"	3'-2"	3'-9"	5'-2"	6'-4"	6'-9"	8'-4"	9'-8"
20"	PJI-80	24'-0"	0'-7"	0'-8"	0'-9"	0'-9"	0'-9"	0'-10"	0'-10"	1'-3"	2'-1"	2'-7"	3'-11"	5'-0"	5'-4"	6'-9"	7'-11"
	PJI-90	24'-6"	0'-7"	0'-8"	0'-9"	0'-9"	0'-9"	0'-10"	0'-10"	1'-7"	2'-5"	2'-11"	4'-3"	5'-4"	5'-8"	7'-2"	8'-3"
22"	PJI-80	25'-6"	0'-7"	0'-8"	0'-9"	0'-9"	0'-9"	0'-10"	0'-10"	0'-10"	1'-6"	1'-11"	3'-2"	4'-2"	4'-6"	5'-9"	6'-10"
	PJI-90	25'-10"	0'-7"	0'-8"	0'-9"	0'-9"	0'-9"	0'-10"	0'-10"	1'-1"	1'-10"	2'-4"	3'-7"	4'-6"	4'-10"	6'-2"	7'-3"
24"	PJI-80	26'-9"	0'-7"	0'-8"	0'-9"	0'-9"	0'-9"	0'-10"	0'-10"	0'-10"	0'-11"	1'-4"	2'-7"	3'-5"	3'-9"	5'-0"	5'-11"
	PJI-90	27'-3"	0'-7"	0'-8"	0'-9"	0'-9"	0'-9"	0'-10"	0'-10"	0'-10"	1'-4"	1'-9"	2'-11"	3'-10"	4'-2"	5'-5"	6'-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 Joist being used at their maximum span. If the P3 Joist 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.

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

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.

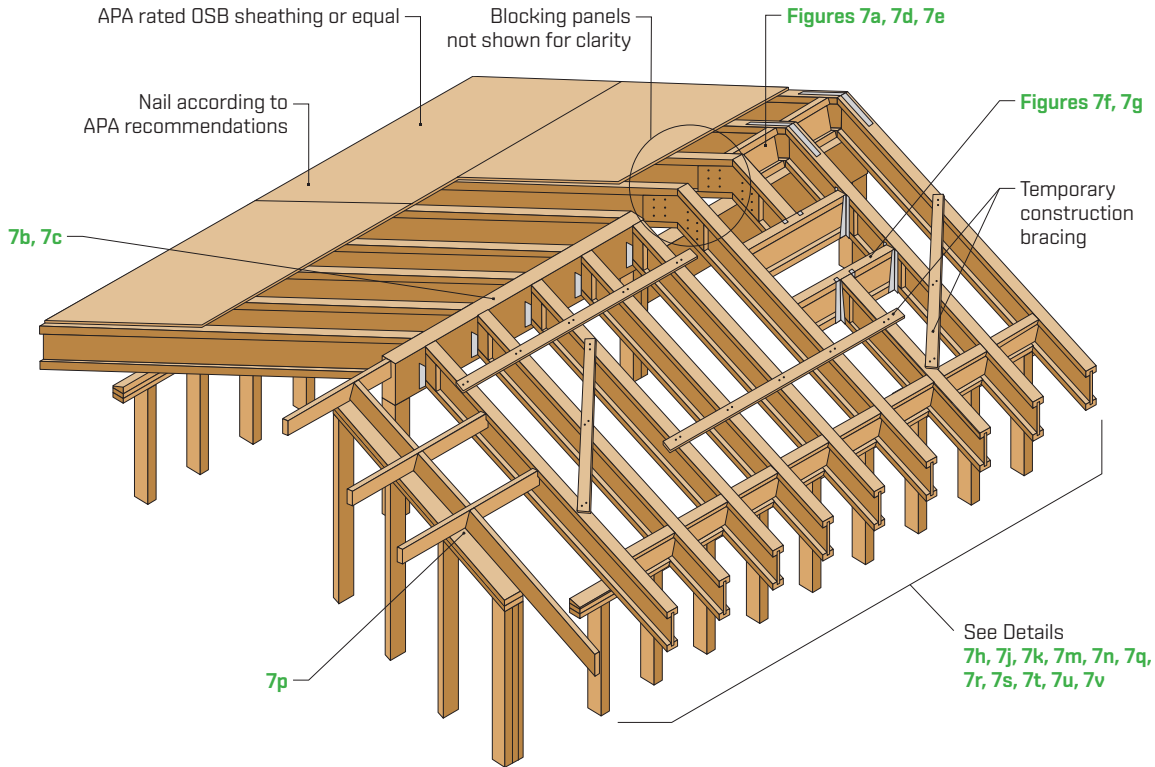
D = The minimum distance from the inside face of any support to center of hole from Table 9 above

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

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. Framing lumber is assumed to be Spruce-Pine-Fir. Individual components are not shown to scale for clarity.



2-1/2" nails at 6" o.c. - minimum
3 - 2-1/2" nails per blocking panel [When used for lateral shear transfer, match nail type and sheathing edge nailing. Use "boundary nailing" for engineered diaphragm applications. Use at minimum 2-1/2" nails.]

Bearing stiffener is required when end reaction exceeds 2440 lbs.

Blocking panel, x-bridging, or 23/32" APA Rated Sheathing 48/24 as continuous closure [Validate use of x-bridging with local building code.]

MINIMUM ATTACHMENT For slope 1/4:12, use one 3" box nail and face nail at each side of bearing. For slope > 1/4:12, design joist attachment to beveled plate to transfer lateral thrust.

Attach beveled plate to framing with 1 - 3-1/2" at 16" o.c.

Use beveled plate for slopes greater than 1/4:12. Code-recognized connectors may be substituted. For slopes greater than 4:12, connectors are required in order to resist lateral thrust.

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. Framing lumber is assumed to be Spruce-Pine-Fir. Individual components are not shown to scale for clarity.

Beveled bearing stiffener required each side

For roof slopes between 1/4:12 and 12:12, provide a strap tie nailed at a minimum of 3" spacing or in accordance with the recommendation of the strap manufacturer.

Ridge beam (Glulam or LVL)

Adjustable Slope Hanger with a minimum factored uplift resistance of 450 lbs.

7b PEAK CONNECTION

NOTE Additional connection may be required for wind uplift.

Adjustable Slope Hanger with a minimum uplift resistance of 450 lbs.

Beveled bearing stiffener required each side

For roof slopes between 1/4:12 and 12:12, provide a strap nailed at a minimum of 3" spacing on each side of roof slope or in accordance with the recommendation of the strap manufacturer.

Ridge beam (Glulam or LVL)

7c P3 JOIST TO RIDGE BEAM CONNECTION

NOTE Additional connection may be required for wind uplift.

24"

Blocking panel or x-bridging Attach per 7a

Support beam or wall

23/32" x 2'-0" wood structural panel (front and back sides) with 12 - 2-1/2" nails into each joist with nails clinched (When roof live load exceeds 40 psf, horizontal orientation of gusset strong axis is required. Include a gap of 1/8" at top.)

Attach per 7a

Attach beveled plate to framing with 1 - 3-1/2" at 16" o.c.

7d P3 JOIST CONNECTION WITH WOOD STRUCTURAL PANEL GUSSETS

NOTE Additional connection may be required for wind uplift.

Tie strap nailed at a minimum of 3" spacing or in accordance with manufacturer's recommendations

Beveled bearing plate

STRAP NAILS Leave 2-3/8" minimum end distance

7e P3 JOIST CONNECTION WITH TIE STRAP

NOTE Additional connection may be required for wind uplift.

Source: APA

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. Framing lumber is assumed to be Spruce-Pine-Fir. 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

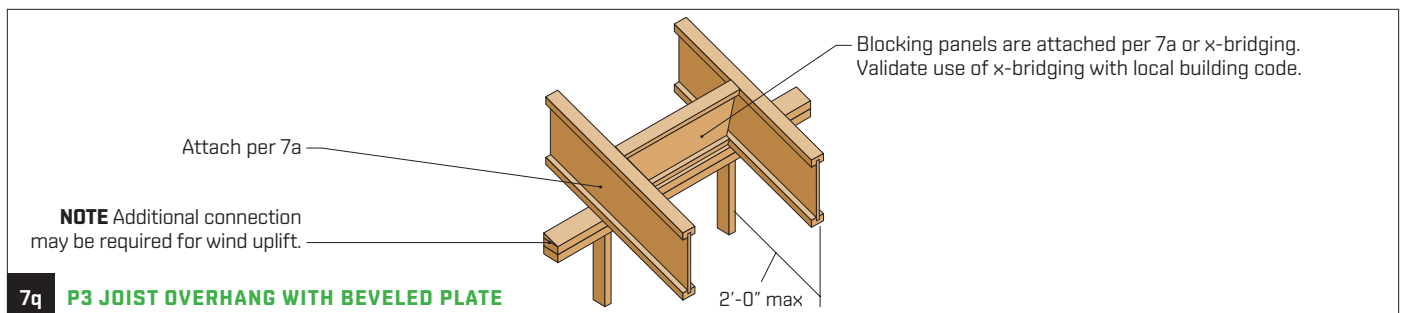
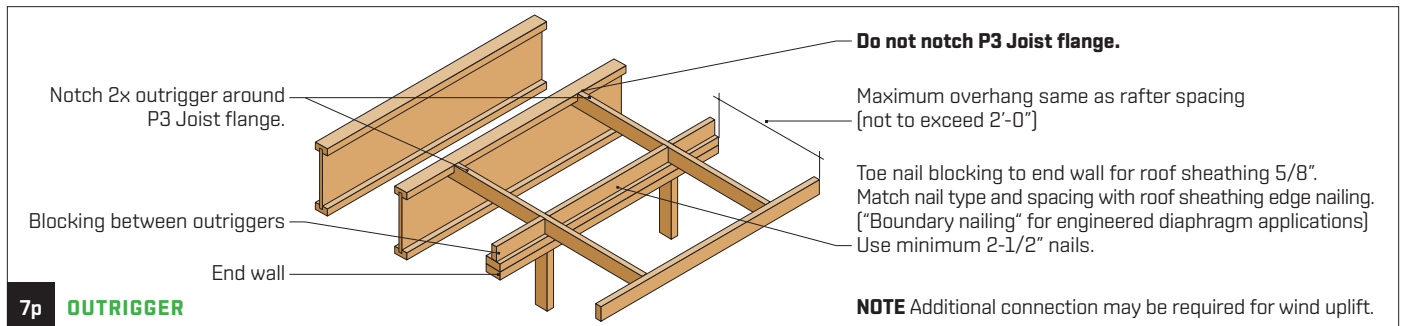
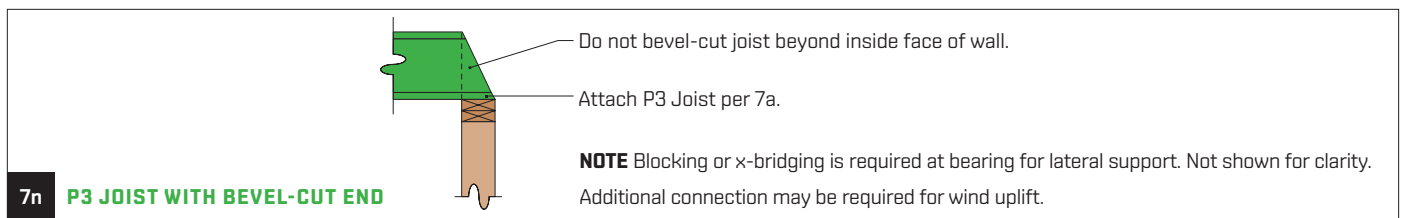
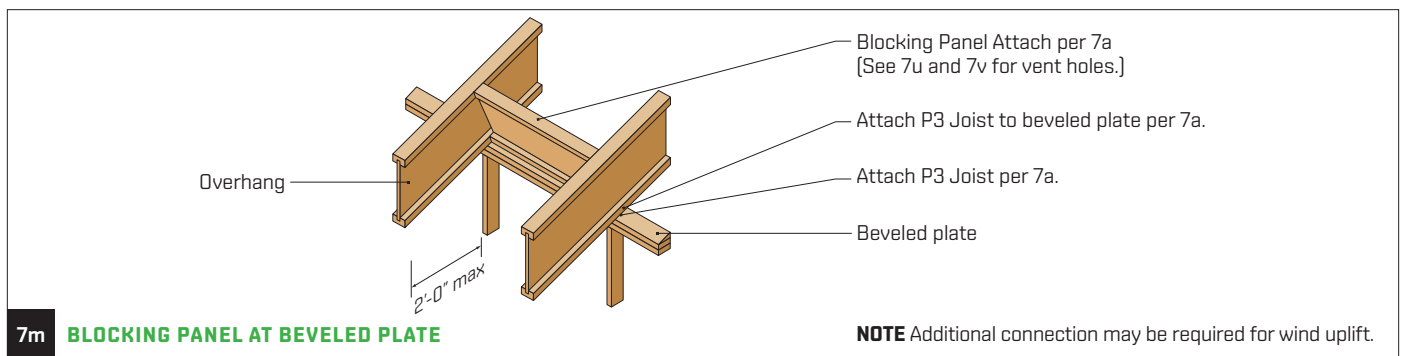
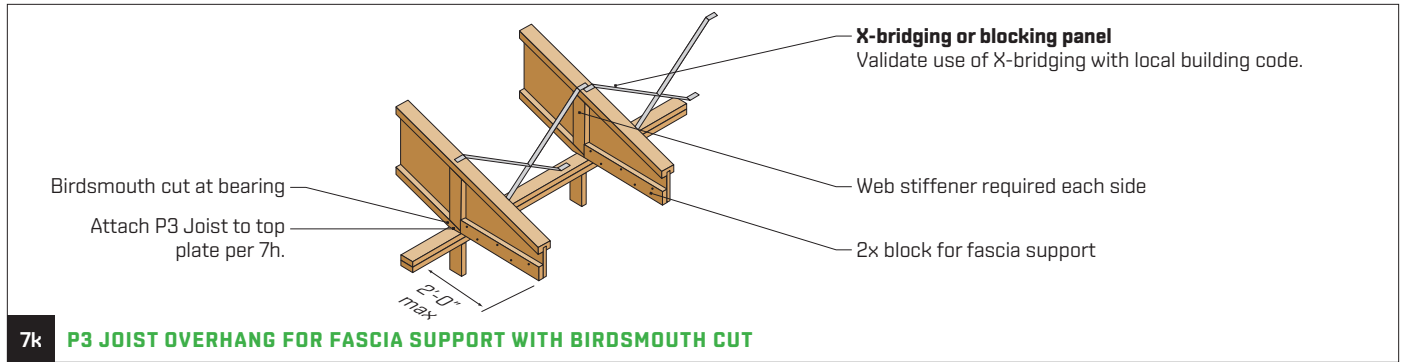
7j BIRDSMOUTH CUT WITH OVERHANG (PERMITTED ON LOW END OF P3 JOIST ONLY)

Source: APA

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. Framing lumber is assumed to be Spruce-Pine-Fir. Individual components are not shown to scale for clarity.

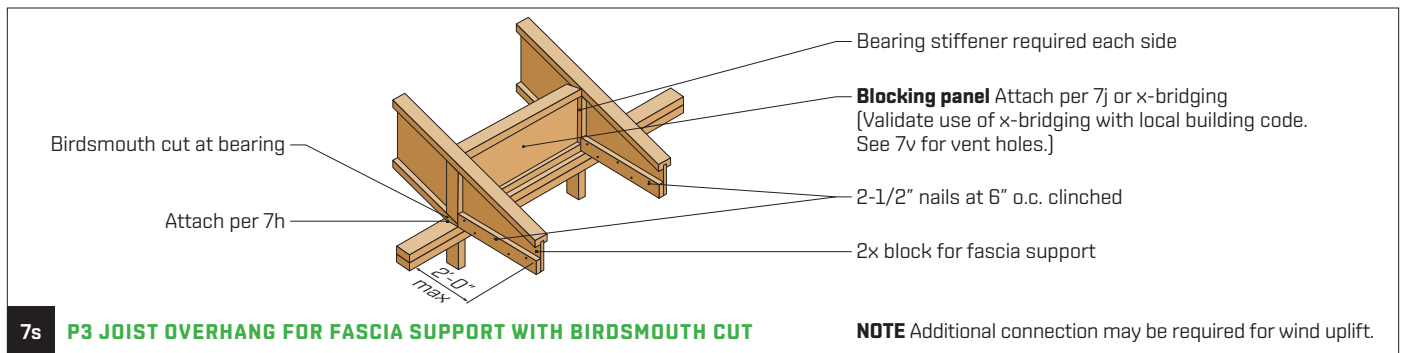
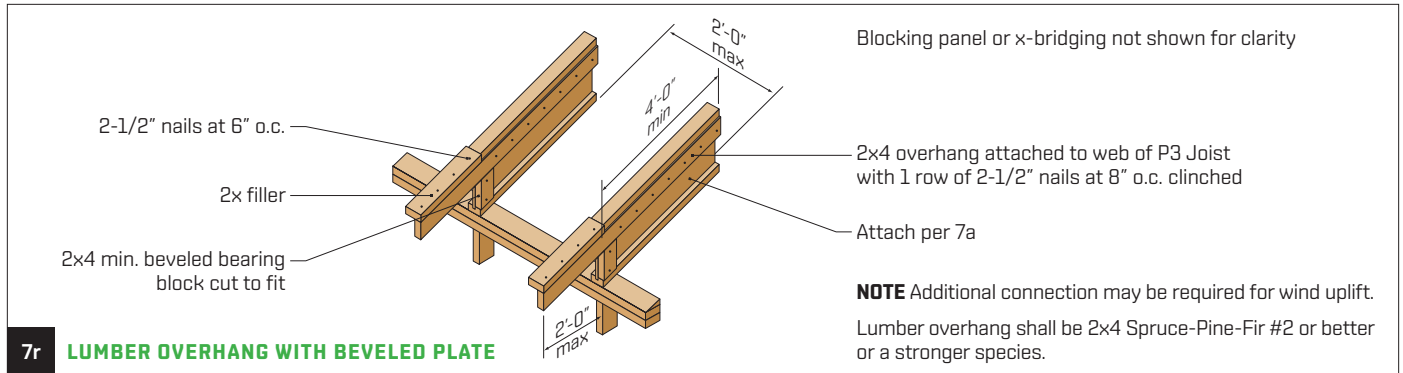


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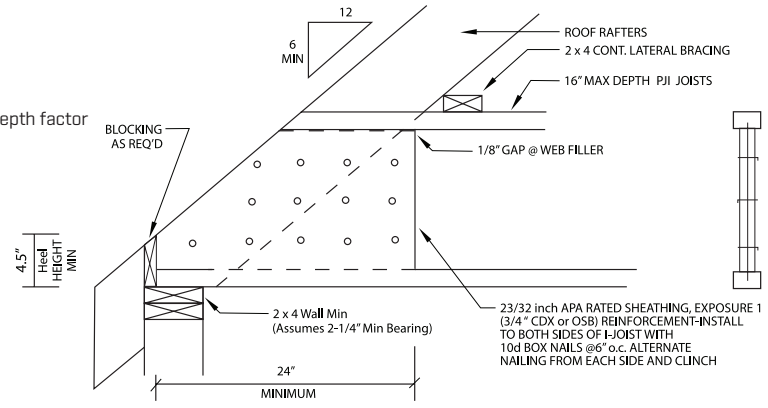
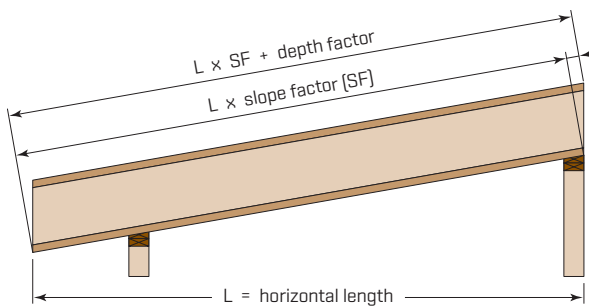
FIGURE 7 (CONTINUED)

Typical P3 Joist Roof Framing and Construction Details

All nails shown in the details below are assumed to be common nails unless otherwise noted. Framing lumber is assumed to be Spruce-Pine-Fir. Individual components are not shown to scale for clarity.



Slope Spans for Roofs



TAPER CUT JOIST REINFORCEMENT DETAIL

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

Slope Factor and Depth Factor Table

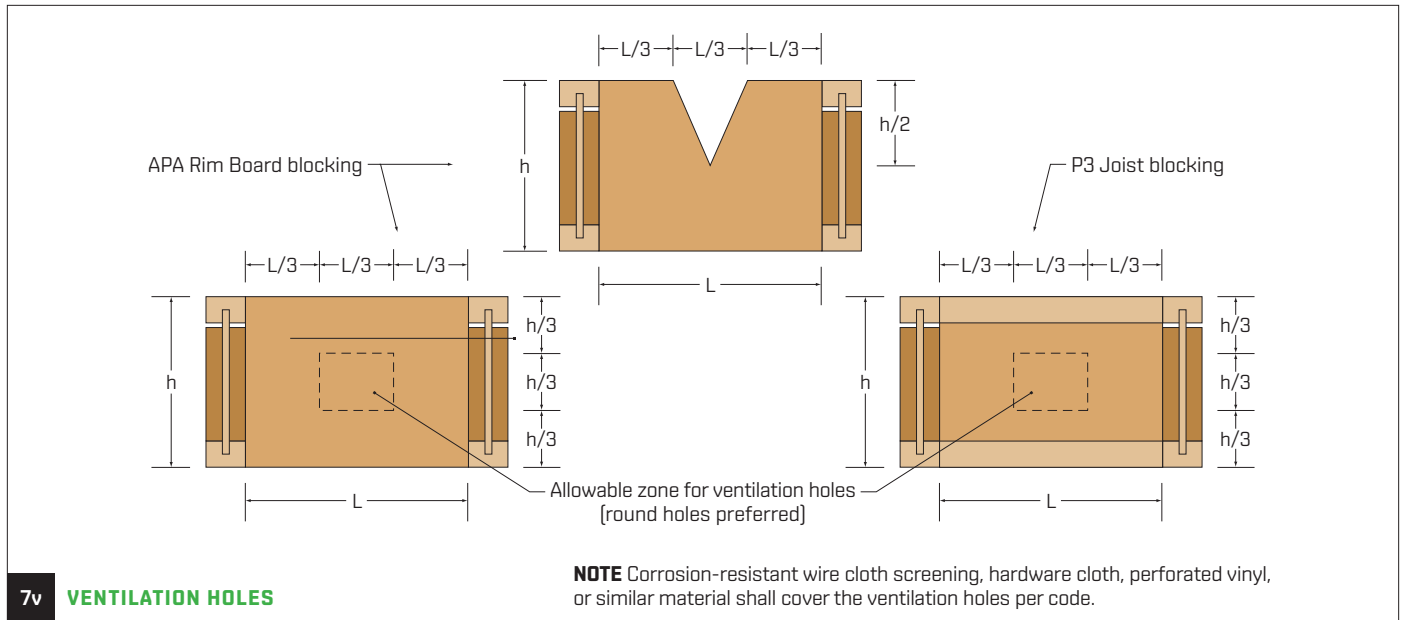
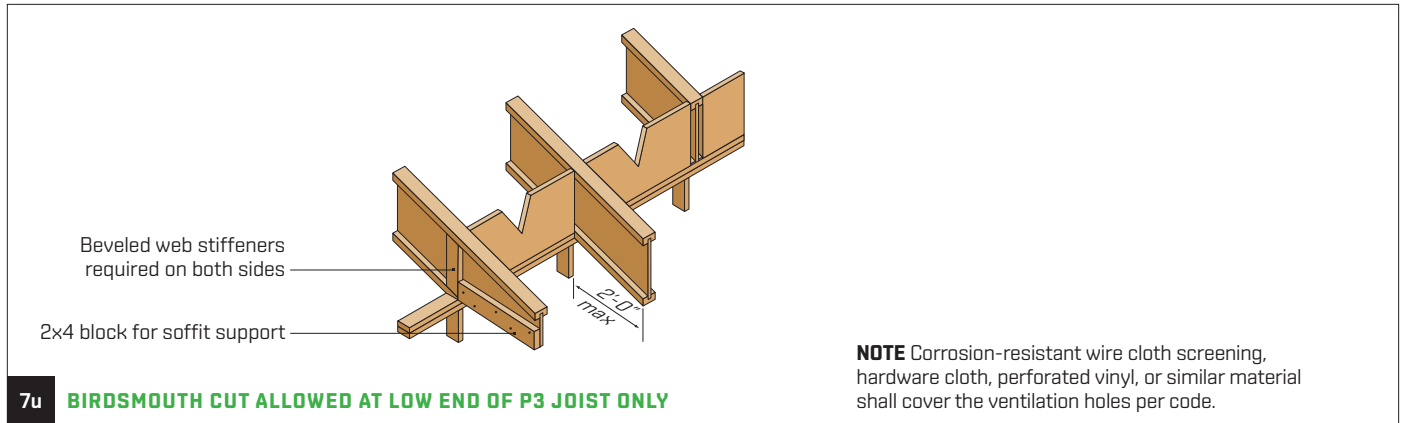
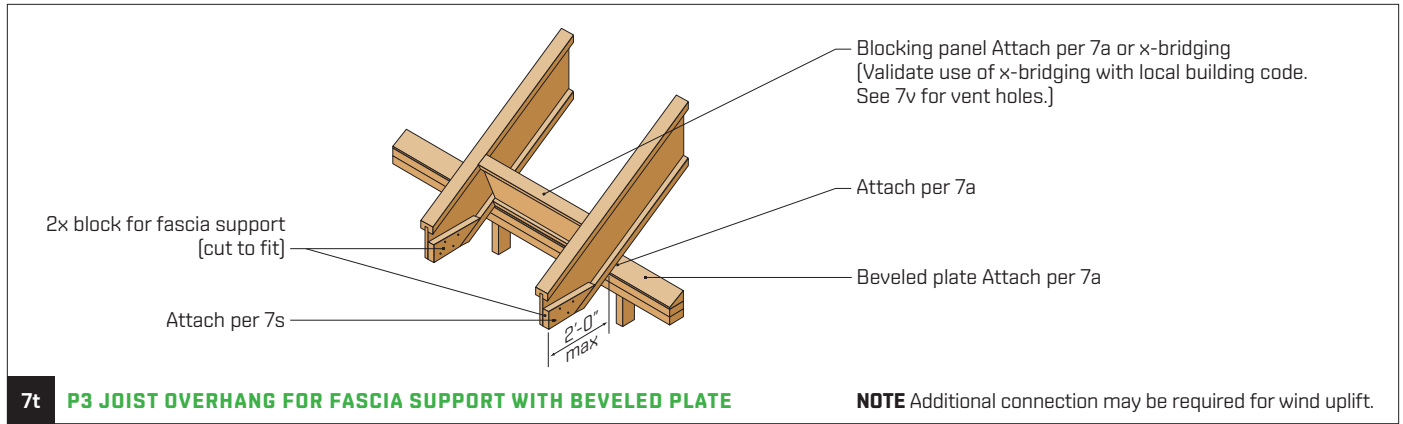
Slope	2.5:12	3:12	3.5:12	4:12	4.5:12	5:12	6:12	7:12	8:12	9:12	10:12	11:12	12:12	
Slope Factor	1.021	1.031	1.042	1.054	1.068	1.083	1.118	1.158	1.202	1.250	1.302	1.357	1.414	
Depth Factor	9-1/2"	2"	2-3/8"	2-7/8"	3-1/4"	3-5/8"	4"	4-3/4"	5-5/8"	6-3/8"	7-1/4"	8"	8-3/4"	9-1/2"
	11-7/8"	2-1/2"	3"	3-1/2"	4"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

Source: APA

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. Framing lumber is assumed to be Spruce-Pine-Fir. Individual components are not shown to scale for clarity.



Allowable Roof Spans – Simple Span

TABLE 10

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

Series	Depth	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'-4"	20'-0"	18'-7"	20'-6"	19'-3"	17'-10"	19'-3"	18'-1"	16'-9"
	11-7/8	25'-6"	24'-0"	21'-9"	24'-6"	23'-0"	21'-2"	23'-0"	21'-8"	20'-1"
	14	29'-0"	26'-8"	23'-10"	27'-10"	25'-11"	23'-3"	26'-1"	24'-7"	22'-5"
	16	31'-6"	28'-9"	25'-8"	30'-7"	27'-11"	25'-0"	29'-0"	26'-11"	24'-1"
PJI 60	9-1/2	22'-8"	21'-3"	19'-8"	21'-9"	20'-5"	18'-11"	20'-5"	19'-2"	17'-9"
	11-7/8	27'-1"	25'-6"	23'-7"	26'-0"	24'-5"	22'-8"	24'-5"	23'-0"	21'-3"
	14	30'-11"	29'-0"	26'-10"	29'-8"	27'-10"	25'-9"	27'-10"	26'-2"	24'-3"
	16	34'-4"	32'-3"	29'-10"	32'-11"	30'-11"	28'-8"	30'-11"	29'-1"	26'-11"
PJI 80	9-1/2	25'-3"	23'-8"	21'-11"	24'-2"	22'-9"	21'-1"	22'-9"	21'-5"	19'-10"
	11-7/8	30'-2"	28'-4"	26'-3"	28'-11"	27'-2"	25'-2"	27'-2"	25'-7"	23'-8"
	14	34'-3"	32'-2"	29'-10"	32'-11"	30'-11"	28'-7"	30'-11"	29'-1"	26'-11"
	16	38'-0"	35'-9"	33'-1"	36'-6"	34'-3"	31'-9"	34'-3"	32'-3"	29'-10"
	18	41'-5"	38'-11"	36'-1"	39'-9"	37'-4"	34'-7"	37'-4"	35'-1"	32'-7"
	20	44'-10"	42'-2"	39'-0"	43'-1"	40'-5"	37'-6"	40'-5"	38'-0"	35'-3"
	22	48'-2"	45'-3"	41'-11"	46'-3"	43'-5"	40'-3"	43'-5"	40'-10"	37'-10"
	24	51'-5"	48'-4"	44'-0"	49'-4"	46'-4"	42'-10"	46'-4"	43'-7"	40'-4"
PJI 90	11-7/8	31'-1"	29'-3"	27'-0"	29'-10"	28'-0"	26'-0"	28'-1"	26'-4"	24'-5"
	14	35'-4"	33'-2"	30'-8"	33'-11"	31'-10"	29'-6"	31'-10"	29'-11"	27'-9"
	16	39'-1"	36'-8"	34'-0"	37'-6"	35'-3"	32'-7"	35'-3"	33'-1"	30'-8"
	18	42'-8"	40'-1"	37'-2"	41'-0"	38'-6"	35'-8"	38'-6"	36'-2"	33'-6"
	20	46'-3"	43'-5"	40'-2"	44'-4"	41'-8"	38'-7"	41'-8"	39'-2"	36'-3"
	22	49'-7"	46'-7"	43'-2"	47'-7"	44'-9"	41'-5"	44'-9"	42'-0"	38'-11"



TABLE 11

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

Series	Depth	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'-7"	17'-5"	16'-1"	17'-10"	16'-9"	15'-6"	16'-11"	15'-11"	14'-9"
	11-7/8	22'-3"	20'-10"	19'-0"	21'-4"	20'-0"	18'-6"	20'-3"	19'-0"	17'-7"
	14	25'-3"	23'-4"	20'-11"	24'-2"	22'-9"	20'-6"	23'-0"	21'-7"	19'-11"
	16	27'-7"	25'-2"	22'-6"	26'-10"	24'-8"	22'-0"	25'-6"	23'-11"	21'-5"
PJI 60	9-1/2	19'-8"	18'-6"	17'-1"	18'-11"	17'-9"	16'-5"	17'-11"	16'-10"	15'-7"
	11-7/8	23'-7"	22'-2"	20'-6"	22'-8"	21'-3"	19'-8"	21'-6"	20'-2"	18'-8"
	14	26'-10"	25'-3"	23'-4"	25'-9"	24'-3"	22'-5"	24'-6"	23'-0"	21'-4"
	16	29'-10"	28'-0"	25'-11"	28'-8"	26'-11"	24'-11"	27'-2"	25'-7"	23'-8"
PJI 80	9-1/2	21'-11"	20'-7"	19'-0"	21'-1"	19'-9"	18'-3"	20'-0"	18'-9"	17'-5"
	11-7/8	26'-3"	24'-7"	22'-9"	25'-2"	23'-8"	21'-10"	23'-11"	22'-6"	20'-10"
	14	29'-10"	28'-0"	25'-11"	28'-7"	26'-10"	24'-10"	27'-2"	25'-7"	23'-8"
	16	33'-1"	31'-0"	28'-8"	31'-9"	29'-10"	27'-7"	30'-2"	28'-4"	26'-3"
	18	36'-3"	33'-10"	31'-4"	34'-7"	32'-6"	30'-1"	32'-11"	30'-11"	28'-7"
	20	39'-0"	36'-8"	33'-11"	37'-6"	35'-2"	32'-7"	35'-7"	33'-5"	31'-0"
	22	41'-11"	39'-4"	36'-5"	40'-3"	37'-9"	35'-0"	38'-3"	35'-11"	33'-3"
	24	44'-9"	42'-0"	38'-6"	42'-11"	40'-4"	37'-4"	40'-9"	38'-4"	35'-6"
PJI 90	11-7/8	27'-0"	25'-4"	23'-5"	26'-0"	24'-4"	22'-7"	24'-8"	23'-2"	21'-5"
	14	30'-8"	28'-10"	26'-8"	29'-6"	27'-8"	25'-7"	28'-0"	26'-4"	24'-4"
	16	34'-0"	31'-11"	29'-6"	32'-7"	30'-8"	28'-4"	31'-0"	29'-1"	27'-0"
	18	37'-2"	34'-10"	32'-3"	35'-8"	33'-6"	31'-0"	33'-10"	31'-10"	29'-6"
	20	40'-2"	37'-9"	34'-11"	38'-7"	36'-3"	33'-6"	36'-8"	34'-5"	31'-11"
	22	43'-2"	40'-6"	37'-6"	41'-5"	38'-11"	36'-0"	39'-4"	37'-0"	34'-3"

Allowable Roof Spans—Simple Span

TABLE 12

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

Series	Depth	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'-9"	15'-9"	14'-7"	16'-2"	15'-2"	14'-0"	15'-4"	14'-5"	13'-4"
	11-7/8	20'-1"	18'-10"	17'-2"	19'-4"	18'-2"	16'-9"	18'-4"	17'-3"	15'-11"
	14	22'-10"	21'-1"	18'-10"	21'-11"	20'-7"	18'-6"	20'-10"	19'-7"	18'-1"
PJI 60	9-1/2	17'-10"	16'-8"	15'-5"	17'-1"	16'-1"	14'-10"	16'-3"	15'-3"	14'-2"
	11-7/8	21'-4"	20'-0"	18'-6"	20'-6"	19'-3"	17'-10"	19'-6"	18'-4"	16'-11"
	14	24'-4"	22'-10"	21'-1"	23'-4"	21'-11"	20'-3"	22'-2"	20'-10"	19'-4"
PJI 80	16	27'-0"	25'-4"	23'-5"	25'-11"	24'-4"	22'-6"	24'-8"	23'-2"	21'-5"
	9-1/2	19'-10"	18'-7"	17'-2"	19'-1"	17'-10"	16'-6"	18'-1"	17'-0"	15'-9"
	11-7/8	23'-9"	22'-3"	20'-7"	22'-9"	21'-5"	19'-9"	21'-8"	20'-4"	18'-10"
	14	27'-0"	25'-4"	23'-5"	25'-11"	24'-4"	22'-6"	24'-8"	23'-2"	21'-5"
	16	29'-11"	28'-1"	25'-11"	28'-9"	27'-0"	24'-11"	27'-4"	25'-8"	23'-9"
	18	32'-8"	30'-7"	28'-4"	31'-4"	29'-5"	27'-3"	29'-9"	28'-0"	25'-11"
	20	35'-4"	33'-2"	30'-8"	33'-11"	31'-10"	29'-6"	32'-3"	30'-3"	28'-0"
22	37'-11"	35'-7"	32'-11"	36'-5"	34'-3"	31'-8"	34'-8"	32'-6"	30'-1"	
24	40'-6"	38'-0"	34'-9"	38'-11"	36'-6"	33'-9"	36'-11"	34'-9"	32'-2"	
PJI 90	11-7/8	24'-5"	22'-11"	21'-2"	23'-6"	22'-1"	20'-5"	22'-4"	21'-0"	19'-5"
	14	27'-9"	26'-1"	24'-1"	26'-8"	25'-0"	23'-2"	25'-4"	23'-10"	22'-1"
	16	30'-9"	28'-10"	26'-8"	29'-6"	27'-9"	25'-8"	28'-1"	26'-4"	24'-5"
	18	33'-7"	31'-6"	29'-2"	32'-3"	30'-4"	28'-0"	30'-8"	28'-10"	26'-8"
	20	36'-4"	34'-1"	31'-7"	34'-11"	32'-10"	30'-4"	33'-3"	31'-2"	28'-10"
	22	39'-1"	36'-8"	33'-11"	37'-6"	35'-3"	32'-7"	35'-8"	33'-6"	31'-0"
24	41'-8"	39'-1"	36'-2"	40'-0"	37'-7"	34'-9"	38'-1"	35'-9"	33'-1"	



TABLE 13

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

Series	Depth	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	15'-6"	14'-7"	13'-5"	14'-11"	14'-0"	12'-11"	14'-2"	13'-4"	12'-4"
	11-7/8	18'-7"	17'-5"	15'-9"	17'-10"	16'-9"	15'-6"	17'-0"	15'-11"	14'-9"
	14	21'-2"	19'-4"	17'-3"	20'-4"	19'-0"	17'-0"	19'-4"	18'-1"	16'-8"
PJI 60	16	22'-9"	20'-10"	18'-7"	22'-6"	20'-6"	18'-4"	21'-5"	20'-1"	18'-0"
	9-1/2	16'-6"	15'-5"	14'-3"	15'-10"	14'-10"	13'-9"	15'-1"	14'-2"	13'-1"
	11-7/8	19'-9"	18'-6"	17'-1"	19'-0"	17'-10"	16'-5"	18'-0"	16'-11"	15'-8"
PJI 80	14	22'-6"	21'-1"	19'-6"	21'-7"	20'-3"	18'-9"	20'-7"	19'-4"	17'-10"
	16	25'-0"	23'-5"	21'-8"	24'-0"	22'-6"	20'-10"	22'-10"	21'-5"	19'-10"
	9-1/2	18'-4"	17'-2"	15'-10"	17'-7"	16'-6"	15'-3"	16'-9"	15'-9"	14'-7"
	11-7/8	21'-11"	20'-7"	19'-0"	21'-1"	19'-9"	18'-3"	20'-1"	18'-10"	17'-5"
	14	24'-11"	23'-5"	21'-7"	24'-0"	22'-6"	20'-9"	22'-10"	21'-5"	19'-10"
	16	27'-8"	25'-11"	24'-0"	26'-7"	24'-11"	23'-1"	25'-4"	23'-9"	22'-0"
	18	30'-2"	28'-4"	26'-2"	29'-0"	27'-3"	25'-2"	27'-7"	25'-11"	24'-0"
20	32'-8"	30'-8"	28'-4"	31'-5"	29'-6"	27'-3"	29'-10"	28'-0"	25'-11"	
22	35'-1"	32'-11"	30'-5"	33'-9"	31'-8"	29'-3"	32'-1"	30'-1"	27'-10"	
24	37'-6"	35'-2"	31'-10"	36'-0"	33'-9"	31'-3"	34'-3"	32'-2"	29'-9"	
PJI 90	11-7/8	22'-7"	21'-2"	19'-7"	21'-9"	20'-5"	18'-10"	20'-8"	19'-5"	17'-11"
	14	25'-8"	24'-1"	22'-3"	24'-8"	23'-2"	21'-5"	23'-6"	22'-1"	20'-5"
	16	28'-5"	26'-8"	24'-7"	27'-4"	25'-8"	23'-8"	26'-0"	24'-5"	22'-7"
	18	31'-1"	29'-2"	26'-11"	29'-10"	28'-0"	25'-11"	28'-5"	26'-8"	24'-8"
	20	33'-8"	31'-7"	29'-2"	32'-4"	30'-4"	28'-1"	30'-9"	28'-10"	26'-9"
	22	36'-2"	33'-11"	31'-4"	34'-9"	32'-9"	30'-2"	33'-0"	31'-0"	28'-8"
24	38'-7"	36'-2"	33'-5"	37'-1"	34'-9"	32'-2"	35'-3"	33'-1"	30'-7"	



NOTES

1. The maximum tabulated span is based on the horizontal distance between centerline of bearing supports, and applicable to simple-span roof construction with 2' overhang. The live load deflection is limited to L/360, and total load deflection is limited to L/180.
2. Design is as per NBCC and CSA 086 with a load duration factor (LDF) of 1.0.
3. Minimum bearing lengths must be 1-3/4" for the end bearings and 3-1/2" 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.
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. I-Joists shall be used in a dry, well ventilated environment where the average moisture content will not exceed 15% over a year period and does not exceed 19% at any time.
8. Point loads from above over bearing supports shall be properly transferred by squash blocks or pass-thru framing.
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.

Allowable Roof Uniform Load Capacities

TABLE 14
P3 Joist — PJI 40

Allowable uniform loads (PLF) Roof

Clear Span (ft)	9-1/2"				11-7/8"				14"				16"			
	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load
	Live		Total		Live		Total		Live		Total		Live		Total	
	L/360	L/240	L/180	L/360	L/240	L/180	L/360	L/240	L/180	L/360	L/240	L/180	L/360	L/240	L/180	
8	393	-	-	423	-	-	-	423	-	-	-	423	-	-	-	423
9	293	-	-	377	-	-	-	377	-	-	-	377	-	-	-	377
10	223	335	-	340	-	-	-	340	-	-	-	340	-	-	-	340
11	173	260	-	289	282	-	-	310	-	-	-	310	-	-	-	310
12	137	206	-	243	225	-	-	284	-	-	-	284	-	-	-	284
13	110	165	-	208	181	-	-	263	257	-	-	263	-	-	-	263
14	90	135	-	180	149	223	-	233	211	-	-	244	-	-	-	244
15	74	111	148	157	123	185	-	203	175	-	-	228	-	-	-	228
16	62	93	124	138	103	155	-	179	147	-	-	214	196	-	-	214
17	52	78	104	122	87	131	-	159	124	187	-	191	166	-	-	202
18	44	66	88	109	74	111	-	142	106	160	-	171	142	-	-	190
19	38	57	76	98	63	95	-	127	91	137	-	153	123	-	-	178
20	32	49	65	89	55	82	110	115	79	119	-	138	106	160	-	161
21	28	42	57	80	48	72	96	104	69	103	-	126	93	139	-	146
22	25	37	50	73	42	63	84	95	60	91	-	115	81	122	-	133
23	21	32	43	67	37	55	74	87	53	80	-	105	72	108	-	122
24	19	29	38	62	32	49	65	80	47	71	94	96	63	95	-	112
25	17	25	34	57	29	43	58	74	42	63	84	89	56	85	-	103
26	15	23	30	52	26	39	52	68	37	56	75	82	50	76	-	95
27	13	20	27	49	23	35	46	63	33	50	67	76	45	68	-	88
28					21	31	42	59	30	45	60	71	41	61	82	82
29					18	28	37	55	27	41	54	66	37	55	74	77
30					17	25	34	51	24	37	49	62	33	50	67	72
31					15	23	31	48	22	33	45	58	30	45	61	67
32					14	21	28	45	20	30	41	54	27	41	55	63
33					13	19	26	42	18	28	37	51	25	38	51	59
34					11	17	23	40	17	25	34	48	23	35	46	56

NOTES

- Clear sloped span is the distance between the face of the supports.
- The load values are for standard term load duration and dry service conditions only. The dead load must not exceed the live load.
- The load values above represent the worst case of simple span or multiple span single member applications.
- Design of continuous spans is based on the longest span. The shortest span must not be less than 50% of the longest span.
- Provide continuous lateral support for top & bottom flanges. Provide lateral support at points of bearing to prevent twisting of joist.
- The unfactored load columns are based on deflection only. The factored load column is based on strength only. Unfactored live load (either L/360 or L/240), unfactored total load, and factored load must be checked. Where the unfactored load column is blank, the factored load column governs.
- Provide 1-3/4" bearing at end supports and 3-1/2" bearing at interior support minimum.
- Web stiffeners are required at each support for depths > 16".**
- The loads have been calculated in accordance with CSA O86.
- Use the horizontal span from the building plans to size the joists. For slopes greater than 1 in 12, multiply the horizontal span by the appropriate factor listed below. Provide a roof slope of at least 1/4 in 12 for drainage.

Slope factor to convert the horizontal span into a sloped span:

roof slope /12	1	2	3	4	5	6	7	8	9	10	11	12
slope factor	1.003	1.014	1.031	1.054	1.083	1.118	1.158	1.202	1.250	1.302	1.357	1.414

Depth correction (ft)	roof slope /12											
	1	2	3	4	5	6	7	8	9	10	11	12
Joist depth (in)												
9.5	0.07	0.13	0.20	0.26	0.33	0.40	0.46	0.53	0.59	0.66	0.73	0.79
11.875	0.08	0.16	0.25	0.33	0.41	0.49	0.58	0.66	0.74	0.82	0.91	0.99
14	0.10	0.19	0.29	0.39	0.49	0.58	0.68	0.78	0.88	0.97	1.07	1.17
16	0.11	0.22	0.33	0.44	0.56	0.67	0.78	0.89	1.00	1.11	1.22	1.33
18	0.13	0.25	0.38	0.50	0.63	0.75	0.88	1.00	1.13	1.25	1.38	1.50
20	0.14	0.28	0.42	0.56	0.69	0.83	0.97	1.11	1.25	1.39	1.53	1.67
22	0.15	0.31	0.46	0.61	0.76	0.92	1.07	1.22	1.38	1.53	1.68	1.83
24	0.17	0.33	0.50	0.67	0.83	1.00	1.17	1.33	1.50	1.67	1.83	2.00

Clear sloped span = slope factor * clear horizontal span

Total sloped length (including depth correction) = (slope factor * clear horizontal span) + depth correction

Allowable Roof Uniform Load Capacities (continued)

TABLE 15
P3 Joist — PJI 60

Allowable uniform loads (PLF) Roof

Clear Span (ft)	9-1/2"				11-7/8"				14"				16"			
	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load
	Live		Total L/180		Live		Total L/180		Live		Total L/180		Live		Total L/180	
	L/360	L/240			L/360	L/240			L/360	L/240			L/360	L/240		
8	-	-	-	423	-	-	-	423	-	-	-	423	-	-	-	423
9	337	-	-	377	-	-	-	377	-	-	-	377	-	-	-	377
10	258	-	-	340	-	-	-	340	-	-	-	340	-	-	-	340
11	202	303	-	310	-	-	-	310	-	-	-	310	-	-	-	310
12	160	241	-	284	261	-	-	284	-	-	-	284	-	-	-	284
13	129	194	259	263	212	-	-	263	-	-	-	263	-	-	-	263
14	105	158	211	244	174	-	-	244	-	-	-	244	-	-	-	244
15	87	131	175	217	145	217	-	228	207	-	-	228	-	-	-	228
16	73	109	146	191	121	182	-	214	174	-	-	214	-	-	-	214
17	61	92	123	169	103	154	-	202	148	-	-	202	197	-	-	202
18	52	78	105	151	87	131	175	190	126	190	-	190	169	-	-	190
19	45	67	90	136	75	113	151	176	109	163	-	181	146	-	-	181
20	39	58	78	123	65	98	131	159	94	142	-	172	127	-	-	172
21	33	50	67	111	57	85	114	144	82	124	-	163	111	-	-	163
22	29	44	59	101	50	75	100	132	72	108	145	156	97	146	-	156
23	26	39	52	93	44	66	88	120	64	96	128	145	86	129	-	149
24	23	34	46	85	39	58	78	111	56	85	113	133	76	114	-	143
25	20	30	41	79	34	52	69	102	50	75	101	123	68	102	136	137
26	18	27	36	73	31	46	62	94	45	67	90	114	61	91	122	132
27	16	24	32	67	27	41	55	88	40	60	81	105	54	82	109	122
28					25	37	50	81	36	54	73	98	49	74	98	114
29					22	33	45	76	33	49	66	91	44	67	89	106
30					20	30	40	71	29	44	59	85	40	60	81	99
31					18	27	37	66	27	40	54	80	36	55	73	93
32					16	25	33	62	24	37	49	75	33	50	67	87
33					15	23	31	59	22	34	45	71	30	46	61	82
34					14	21	28	55	20	31	41	66	28	42	56	77

Allowable Roof Uniform Load Capacities (continued)

TABLE 16
P3 Joist — PJI 80

Allowable uniform loads (PLF) Roof

Clear Span (ft)	9-1/2"				11-7/8"				14"				16"			
	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load
	Live		Total L/180		Live		Total L/180		Live		Total L/180		Live		Total L/180	
	L/360	L/240	L/180	L/360	L/240	L/180	L/360	L/240	L/180	L/360	L/240	L/180				
8	-	-	-	424	-	-	-	431	-	-	-	464	-	-	-	501
9	-	-	-	378	-	-	-	384	-	-	-	413	-	-	-	447
10	334	-	-	341	-	-	-	347	-	-	-	373	-	-	-	403
11	264	-	-	310	-	-	-	316	-	-	-	339	-	-	-	367
12	211	-	-	285	-	-	-	290	-	-	-	312	-	-	-	337
13	171	257	-	263	-	-	-	268	-	-	-	288	-	-	-	311
14	141	211	-	245	228	-	-	249	-	-	-	268	-	-	-	289
15	117	176	-	228	190	-	-	233	-	-	-	250	-	-	-	270
16	98	147	196	214	161	-	-	218	227	-	-	235	-	-	-	254
17	83	125	166	202	136	205	-	206	194	-	-	221	-	-	-	239
18	71	106	142	191	117	175	-	194	166	-	-	209	220	-	-	226
19	61	91	122	181	101	151	-	184	144	-	-	198	191	-	-	214
20	53	79	106	172	87	131	-	175	125	188	-	188	167	-	-	203
21	46	69	92	158	76	115	153	167	110	165	-	179	146	-	-	194
22	40	60	81	144	67	101	134	159	96	145	-	171	129	-	-	185
23	35	53	71	132	59	89	119	152	85	128	-	164	114	171	-	177
24	31	47	63	121	52	79	105	146	76	114	152	157	101	152	-	170
25	28	42	56	112	47	70	94	140	67	101	135	151	90	136	-	163
26	25	37	50	104	42	63	84	134	60	91	121	145	81	122	-	157
27	22	33	45	96	37	56	75	124	54	81	109	140	73	109	146	151
28					34	51	68	115	49	73	98	135	66	99	132	146
29					30	46	61	108	44	66	89	130	59	89	119	141
30					27	41	55	101	40	60	80	121	54	81	108	136
31					25	38	50	94	36	55	73	114	49	74	99	132
32					23	34	46	88	33	50	67	107	45	67	90	124
33					21	31	42	83	30	46	61	100	41	62	83	117
34					19	29	38	78	28	42	56	94	38	57	76	110

Slope Factor

roof slope / 12	2	3	4	5	6	7	8	9	10	11	12
unfactored live load	0.986	0.970	0.949	0.923	0.894	0.864	0.832	0.800	0.768	0.737	0.707
unfactored total load	0.973	0.941	0.900	0.852	0.800	0.746	0.692	0.640	0.590	0.543	0.500
factored loads	0.986	0.970	0.949	0.923	0.894	0.864	0.832	0.800	0.768	0.737	0.707



NOTES

1. Clear span is the distance between the face of the supports.
2. The load values are for standard term load duration and dry service conditions only. The dead load must not exceed the live load.
3. The load values above represent the worst case of simple span or multiple span single member applications.
4. Design of continuous spans is based on the longest span. The shortest span must not be less than 50% of the longest span.
5. Provide continuous lateral support for top flange. Provide lateral support at points of bearing to prevent twisting of joist.
6. The unfactored load columns are based on deflection only. The factored load column is based on strength only. Unfactored live load (either L/360 or L/240), unfactored total load, and factored load must be checked. Where the unfactored load column is blank, the factored load column governs.
7. Provide 1-3/4" bearing at end supports and 3-1/2" bearing at interior support minimum.
8. Web stiffeners are not required for the joists in this table.
9. The loads have been calculated in accordance with CSA 086-14.
10. Use the horizontal span from the building plans to size the joists. For slopes greater than 1 in 12, multiply the tabulated loads by the appropriate factor listed below. Provide a roof slope of at least 1/4 in 12 for drainage.

Allowable Roof Uniform Load Capacities (continued)

TABLE 17
P3 Joist — PJI 80 with Web Stiffeners
 Allowable uniform loads (PLF) Roof

Clear Span (ft)	18"				20"				22"				24"						
	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load			
	Live		Total L/180		Live		Total L/180		Live		Total L/180		Live		Total L/180		Live		Total L/180
	L/360	L/240			L/360	L/240			L/360	L/240			L/360	L/240			L/360	L/240	
12	-	-	-	408	-	-	-	408	-	-	-	408	-	-	-	408			
13	-	-	-	377	-	-	-	377	-	-	-	377	-	-	-	377			
14	-	-	-	350	-	-	-	350	-	-	-	350	-	-	-	350			
15	-	-	-	327	-	-	-	327	-	-	-	327	-	-	-	327			
16	-	-	-	307	-	-	-	307	-	-	-	307	-	-	-	307			
17	-	-	-	289	-	-	-	289	-	-	-	289	-	-	-	289			
18	-	-	-	273	-	-	-	273	-	-	-	273	-	-	-	273			
19	242	-	-	259	-	-	-	259	-	-	-	259	-	-	-	259			
20	211	-	-	246	-	-	-	246	-	-	-	246	-	-	-	246			
21	185	-	-	235	230	-	-	235	-	-	-	235	-	-	-	235			
22	164	-	-	224	203	-	-	224	-	-	-	224	-	-	-	224			
23	145	-	-	214	181	-	-	214	-	-	-	214	-	-	-	214			
24	129	194	-	205	161	-	-	205	196	-	-	205	-	-	-	205			
25	115	173	-	197	144	-	-	197	175	-	-	197	-	-	-	197			
26	103	155	-	190	129	-	-	190	158	-	-	190	189	-	-	190			
27	93	140	-	183	117	175	-	183	142	-	-	183	170	-	-	183			
28	84	126	169	176	105	158	-	176	129	-	-	176	154	-	-	176			
29	76	115	153	170	95	143	-	170	117	-	-	170	140	-	-	170			
30	69	104	139	160	87	130	-	165	106	160	-	165	128	-	-	165			
31	63	95	127	150	79	119	159	159	97	146	-	159	117	-	-	159			
32	58	87	116	140	72	109	145	154	89	133	-	154	107	-	-	154			
33	53	79	106	132	66	100	133	146	81	122	-	150	98	147	-	150			
34	48	73	97	124	61	92	122	138	75	112	-	145	90	135	-	145			
35	44	67	89	117	56	84	113	130	69	103	138	141	83	125	-	141			
36	41	62	83	111	52	78	104	123	63	95	127	135	77	115	-	137			
37	38	57	76	105	48	72	96	116	59	88	118	128	71	106	-	134			
38	35	53	71	100	44	67	89	110	54	82	109	121	66	99	-	130			
39	32	49	65	95	41	62	82	105	50	76	101	115	61	92	122	125			
40	30	45	61	90	38	57	77	100	47	71	94	109	57	85	114	119			
41	28	42	57	86	35	53	71	95	44	66	88	104	53	79	106	113			
42	26	39	53	82	33	50	67	90	41	61	82	99	49	74	99	108			
43	24	37	49	78	31	46	62	86	38	57	77	95	46	69	92	103			
44	23	34	46	74	29	43	58	82	36	54	72	90	43	65	86	98			

NOTES

1. Clear span is the distance between the face of the supports.
2. The load values are for standard term load duration and dry service conditions only. The dead load must not exceed the live load.
3. The load values above represent the worst case of simple span or multiple span single member applications.
4. Design of continuous spans is based on the longest span. The shortest span must not be less than 50% of the longest span.
5. Provide continuous lateral support for top flange. Provide lateral support at points of bearing to prevent twisting of joist.
6. The unfactored load columns are based on deflection only. The factored load column is based on strength only. Unfactored live load (either L/360 or L/240), unfactored total load, and factored load must be checked. Where the unfactored load column is blank, the factored load column governs.
7. Provide 1-3/4" bearing at end supports and 3-1/2" bearing at interior support minimum.
8. **Web stiffeners are required at each support.**
9. The loads have been calculated in accordance with CSA 086-14.
10. Use the horizontal span from the building plans to size the joists. For slopes greater than 1 in 12, multiply the tabulated loads by the appropriate factor listed below. Provide a roof slope of at least 1/4 in 12 for drainage.

Slope Factor

roof slope / 12	2	3	4	5	6	7	8	9	10	11	12
unfactored live load	0.986	0.970	0.949	0.923	0.894	0.864	0.832	0.800	0.768	0.737	0.707
unfactored total load	0.973	0.941	0.900	0.852	0.800	0.746	0.692	0.640	0.590	0.543	0.500
factored loads	0.986	0.970	0.949	0.923	0.894	0.864	0.832	0.800	0.768	0.737	0.707

Allowable Roof Uniform Load Capacities (continued)

TABLE 18
P3 Joist — PJI 90

Allowable uniform loads (PLF) Roof

Clear Span (ft)	11-7/8"				14"				16"			
	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load
	Live		Total		Live		Total		Live		Total	
	L/360	L/240	L/180	L/360	L/240	L/180	L/360	L/240	L/180			
8	-	-	-	431	-	-	-	464	-	-	-	501
9	-	-	-	384	-	-	-	413	-	-	-	447
10	-	-	-	347	-	-	-	373	-	-	-	403
11	-	-	-	316	-	-	-	339	-	-	-	367
12	-	-	-	290	-	-	-	312	-	-	-	337
13	-	-	-	268	-	-	-	288	-	-	-	311
14	246	-	-	249	-	-	-	268	-	-	-	289
15	206	-	-	233	-	-	-	250	-	-	-	270
16	174	-	-	218	-	-	-	235	-	-	-	254
17	148	-	-	206	209	-	-	221	-	-	-	239
18	127	191	-	194	180	-	-	209	-	-	-	226
19	109	164	-	184	155	-	-	198	205	-	-	214
20	95	143	-	175	135	-	-	188	179	-	-	203
21	83	125	167	167	119	178	-	179	157	-	-	194
22	73	110	146	159	104	157	-	171	138	-	-	185
23	64	97	129	152	92	139	-	164	123	-	-	177
24	57	86	115	146	82	123	-	157	109	164	-	170
25	51	76	102	140	73	110	147	151	97	146	-	163
26	45	68	91	135	65	98	131	145	87	131	-	157
27	41	61	82	130	59	88	118	140	79	118	-	151
28	37	55	74	125	53	80	107	135	71	107	142	146
29	33	50	67	121	48	72	96	130	64	97	129	141
30	30	45	61	117	43	65	87	126	58	88	117	136
31	27	41	55	113	40	60	80	122	53	80	107	132
32	25	38	50	109	36	54	73	118	48	73	97	127
33	23	34	46	102	33	50	66	114	44	67	89	124
34	21	31	42	96	30	46	61	111	41	61	82	120

NOTES

1. Clear span is the distance between the face of the supports.
2. The load values are for standard term load duration and dry service conditions only. The dead load must not exceed the live load.
3. The load values above represent the worst case of simple span or multiple span single member applications.
4. Design of continuous spans is based on the longest span. The shortest span must not be less than 50% of the longest span.
5. Provide continuous lateral support for top flange. Provide lateral support at points of bearing to prevent twisting of joist.
6. The unfactored load columns are based on deflection only. The factored load column is based on strength only. Unfactored live load (either L/360 or L/240), unfactored total load, and factored load must be checked. Where the unfactored load column is blank, the factored load column governs.
7. Provide 1-3/4" bearing at end supports and 3-1/2" bearing at interior support minimum.
8. Web stiffeners are not required for the joists in this table.
9. The loads have been calculated in accordance with CSA 086-14.
10. Use the horizontal span from the building plans to size the joists. For slopes greater than 1 in 12, multiply the tabulated loads by the appropriate factor listed below. Provide a roof slope of at least 1/4 in 12 for drainage.

Allowable Roof Uniform Load Capacities (continued)

TABLE 19
P3 Joist — PJI 90 with Web Stiffeners
 Allowable uniform loads (PLF) Roof

Clear Span (ft)	18"				20"				22"				24"						
	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load			
	Live		Total L/180		Live		Total L/180		Live		Total L/180		Live		Total L/180		Live		Total L/180
	L/360	L/240			L/360	L/240			L/360	L/240			L/360	L/240			L/360	L/240	
12	-	-	-	408	-	-	-	408	-	-	-	408	-	-	-	408			
13	-	-	-	377	-	-	-	377	-	-	-	377	-	-	-	377			
14	-	-	-	350	-	-	-	350	-	-	-	350	-	-	-	350			
15	-	-	-	327	-	-	-	327	-	-	-	327	-	-	-	327			
16	-	-	-	307	-	-	-	307	-	-	-	307	-	-	-	307			
17	-	-	-	289	-	-	-	289	-	-	-	289	-	-	-	289			
18	-	-	-	273	-	-	-	273	-	-	-	273	-	-	-	273			
19	-	-	-	259	-	-	-	259	-	-	-	259	-	-	-	259			
20	227	-	-	246	-	-	-	246	-	-	-	246	-	-	-	246			
21	200	-	-	235	-	-	-	235	-	-	-	235	-	-	-	235			
22	177	-	-	224	219	-	-	224	-	-	-	224	-	-	-	224			
23	157	-	-	214	195	-	-	214	-	-	-	214	-	-	-	214			
24	140	-	-	205	174	-	-	205	-	-	-	205	-	-	-	205			
25	125	188	-	197	156	-	-	197	189	-	-	197	-	-	-	197			
26	112	168	-	190	140	-	-	190	170	-	-	190	-	-	-	190			
27	101	152	-	183	126	-	-	183	154	-	-	183	-	-	-	183			
28	91	137	-	176	114	171	-	176	139	-	-	176	167	-	-	176			
29	83	124	166	170	104	156	-	170	126	-	-	170	151	-	-	170			
30	75	113	151	165	94	141	-	165	115	-	-	165	138	-	-	165			
31	69	103	138	159	86	129	-	159	105	158	-	159	126	-	-	159			
32	63	94	126	154	79	118	-	154	96	144	-	154	115	-	-	154			
33	57	86	115	150	72	108	144	150	88	133	-	150	106	-	-	150			
34	53	79	106	145	66	99	133	145	81	122	-	145	97	-	-	145			
35	48	73	97	141	61	92	122	141	75	112	-	141	90	135	-	141			
36	45	67	90	136	56	85	113	137	69	104	-	137	83	125	-	137			
37	41	62	83	129	52	78	104	134	64	96	128	134	77	115	-	134			
38	38	58	77	122	48	72	97	130	59	89	119	130	71	107	-	130			
39	35	53	71	116	45	67	90	127	55	83	110	127	66	99	-	127			
40	33	50	66	110	41	62	83	122	51	77	102	124	62	93	124	124			
41	31	46	62	105	39	58	78	116	47	71	95	121	57	86	115	121			
42	29	43	58	100	36	54	72	111	44	67	89	118	53	80	107	118			
43	27	40	54	95	34	51	68	106	41	62	83	115	50	75	100	115			
44	25	38	50	91	31	47	63	101	39	58	78	110	47	70	94	112			

NOTES

- Clear span is the distance between the face of the supports.
- The load values are for standard term load duration and dry service conditions only. The dead load must not exceed the live load.
- The load values above represent the worst case of simple span or multiple span single member applications.
- Design of continuous spans is based on the longest span. The shortest span must not be less than 50% of the longest span.
- Provide continuous lateral support for top flange. Provide lateral support at points of bearing to prevent twisting of joist.
- The unfactored load columns are based on deflection only. The factored load column is based on strength only. Unfactored live load (either L/360 or L/240), unfactored total load, and factored load must be checked. Where the unfactored load column is blank, the factored load column governs.
- Provide 1-3/4" bearing at end supports and 3-1/2" bearing at interior support minimum.
- Web stiffeners are required at each support.**
- The loads have been calculated in accordance with CSA 086-14.
- Use the horizontal span from the building plans to size the joists. For slopes greater than 1 in 12, multiply the tabulated loads by the appropriate factor listed below. Provide a roof slope of at least 1/4 in 12 for drainage.

P3 Joist Design Properties

TABLE 20
Factored Resistance for P3 Joists¹

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]	Factored Vertical Bearing [lbf/ft]
PJI 40	9-1/2	193	4,549	2,210	4.94	2.6	3,336
	11-7/8	330	5,896	2,557	6.18	2.9	3,336
	14	482	7,102	2,865	7.28	3.1	3,336
	16	657	8,233	3,157	8.32	3.4	3,336
PJI 60	9-1/2	231	6,287	2,210	4.94	2.6	3,336
	11-7/8	396	8,150	2,557	6.18	2.9	3,336
	14	584	9,805	2,865	7.28	3.1	3,336
	16	799	11,368	3,157	8.32	3.4	3,336
PJI 80	9-1/2	321	8,940	2,218	4.94	3.4	3,336
	11-7/8	547	11,593	2,604	6.18	3.6	3,336
	14	802	13,954	2,944	7.28	3.8	3,336
	16	1,092	16,183	3,267	8.32	4.0	3,336
	18	1,413	18,295	3,867	9.36	4.3	3,336
	20	1,790	20,258	4,025	10.4	4.5	2,869
	22	2,214	22,187	4,183	11.44	4.7	2,402
PJI 90	24	2,687	24,100	4,341	12.48	4.9	2,319
	11-7/8	601	14,162	2,604	6.18	3.6	3,336
	14	877	17,056	2,944	7.28	3.8	3,336
	16	1,187	19,784	3,267	8.22	4.0	3,336
	18	1,546	22,362	3,867	9.36	4.3	3,336
	20	1,957	24,757	4,025	10.4	4.5	2,869
	22	2,419	27,118	4,183	11.44	4.7	2,402
24	2,934	29,455	4,341	12.48	4.9	2,319	

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. Factored Moment resistances of the P3 Joist which shall not be increased by any code-allowed repetitive member use factor.

4. Factored Shear resistance [V_j] 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:

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

2- Center-Point Load:

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

Where: δ = calculated deflection [in]
 ω = unfactored uniform load [lbf/in]

ℓ = design span [in]

P = concentrated load [lbf]

EI = bending stiffness of the P3 Joist [lbf-in²]
 K = coefficient of shear deflection [lbf]

Reaction Capacities for P3 Joist

TABLE 21
Factored Reaction Values for P3 Joist¹

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	1,886	2,012	1,989	2,210	4,349	4,577	5,122	5,122
	11-7/8	1,894	2,304	2,257	2,557	4,349	4,806	5,122	5,327
	14	1,894	2,557	2,494	2,865	4,349	5,011	5,122	5,501
	16	1,894	2,762	2,715	3,157	4,349	5,209	5,122	5,674
PJI 60	9-1/2	1,886	2,012	1,989	2,210	4,349	4,577	5,122	5,122
	11-7/8	1,894	2,304	2,257	2,257	4,349	4,806	5,122	5,327
	14	1,894	2,557	2,494	2,865	4,349	5,011	5,122	5,501
	16	1,894	2,762	2,715	3,157	4,349	5,209	5,122	5,674
PJI 80	9-1/2	2,060	2,218	2,218	2,218	4,356	4,806	5,122	5,367
	11-7/8	2,076	2,510	2,510	2,604	4,435	5,209	5,138	5,659
	14	2,091	2,778	2,549	2,944	4,767	5,453	5,422	5,911
	16	2,099	3,023	2,573	3,267	5,154	5,682	6,156	2,099
	18	2,115	3,038	2,604	3,867	5,051	6,235	5,761	6,866
	20	2,131	3,425	2,628	4,025	5,051	6,235	5,761	6,866
	22	2,139	3,812	2,660	4,183	5,051	6,235	5,761	6,866
PJI 90	24	2,155	4,199	2,683	4,341	5,051	6,235	5,761	6,866
	11-7/8	2,076	2,510	2,510	2,604	4,435	5,209	5,138	5,659
	14	2,091	2,778	2,549	2,944	4,767	5,453	5,422	5,911
	16	2,099	3,023	2,573	3,267	5,154	5,682	5,422	5,911
	18	2,115	3,038	2,604	3,867	5,051	6,235	5,761	6,866
	20	2,131	3,425	2,628	4,025	5,051	6,235	5,761	6,866
	22	2,139	3,812	2,660	4,183	5,051	6,235	5,761	6,866
24	2,155	4,199	2,683	4,341	5,051	6,235	5,761	6,866	

NOTES

1. The tabulated values are factored resistances for standard term duration of load. All values shall be permitted to be adjusted for other load durations as permitted by the code.

2. For end reaction values above 2,450 lbf, bearing stiffeners are required.

P3 Joists Framing Connectors — Single P3 Joists

SIMPSON Strong-Tie

TABLE 22

Joist Height	Top Flange						Snap In Face Mount						Face Mount Hanger								
	Model	B Dim	Fastener Type		Factored Resistance		Model	B Dim	Fastener Type		Factored Resistance		Model	B Dim	Fastener Type		Factored Resistance				
			Header	Joist	Uplift (1.15)	Normal			Header	Joist	Uplift (1.15)	Normal			Header	Joist	Uplift (1.15)	Normal	SPF		
P3 Joist 40, 60 Width = 2-1/2"																					
9-1/2	LT259	2	6-3"	1-#8x1-1/4ws ⁴	105	2560	1725	IUS2.56/9.5	2	8-3"	—	175	2385	1690	LF259	2	10-3"	1-#8x1-1/4ws ⁴	105	2525	2155
11-7/8	LT251188	2	6-3"	1-#8x1-1/4ws ⁴	105	2560	1725	IUS2.56/11.88	2	10-3"	—	175	2565	1820	LF2511	2	12-3"	1-#8x1-1/4ws ⁴	105	2880	2270
14	LT2514	2	6-3"	1-#8x1-1/4ws ⁴	105	2560	1725	IUS2.56/14	2	12-3"	—	175	2565	1820	LF2514	2	14-3"	1-#8x1-1/4ws ⁴	105	3235	2385
16	LT2516	2	6-3"	1-#8x1-1/4ws ⁴	100	2560	1725	IUS2.56/16	2	14-3"	—	175	2725	1935	MIU2.56/16	2-1/2	24-3"	2-10dx1-1/2	375	4930	3485
P3 Joist 80 Width = 3-1/2"																					
11-7/8	LT351188	2	6-3"	2-#8x1-1/4ws ⁴	105	2560	1725	IUS3.56/11.88	2	12-3"	—	175	2375	1695	LF3511	2	12-3"	2-#8x1-1/4ws ⁴	105	2880	2270
14	LT3514	2	6-3"	2-#8x1-1/4ws ⁴	105	2560	1725	IUS3.56/14	2	12-3"	—	175	2375	1695	LF3514	2	14-3"	2-#8x1-1/4ws ⁴	105	3235	2385
16	LT3516	2	6-3"	2-#8x1-1/4ws ⁴	100	2560	1725	IUS3.56/16	2	14-3"	—	175	2375	1695	MIU3.56/16	2-1/2	24-3-1/2"	2-10dx1-1/2	375	4930	3485
18	MIT418	2-1/2	8-3-1/2"	2-10dx1-1/2	265	3490	2420	No IUS for these depths						MIU3.56/18	2-1/2	26-3-1/2"	2-10dx1-1/2	375	4930	3485	
20	MIT420	2-1/2	8-3-1/2"	2-10dx1-1/2	265	3490	2420							MIU3.56/20	2-1/2	28-3-1/2"	2-10dx1-1/2	375	4930	3485	
22	HIT422	3	10-3-1/2"	2-10dx1-1/2	320	3725	2705							MIU3.56/20	2-1/2	28-3-1/2"	2-10dx1-1/2	375	4930	3485	
24	HIT424	3	10-3-1/2"	2-10dx1-1/2	320	3725	2705							MIU3.56/20	2-1/2	28-3-1/2"	2-10dx1-1/2	375	4930	3485	

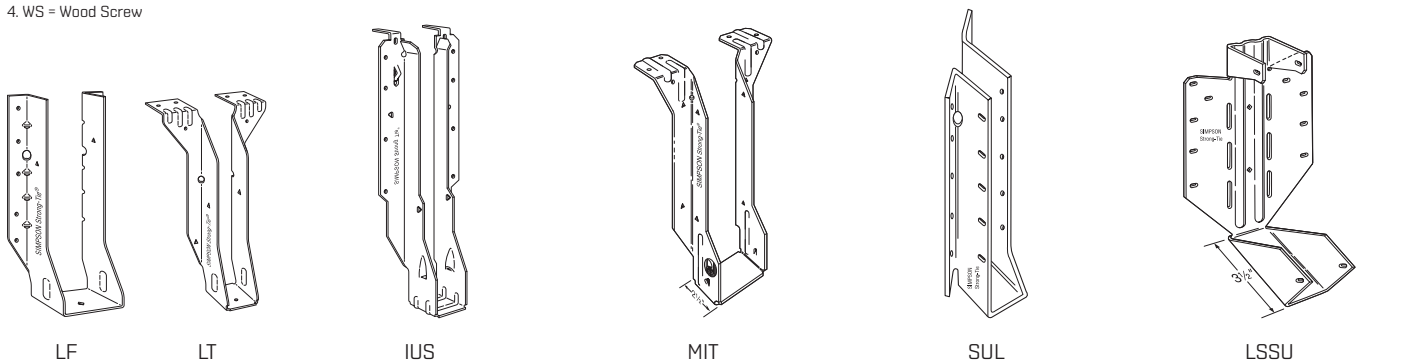
1.LWS = wood screw

TABLE 23

Joist Height	45° Skew						Adjustable Height						Field Slope and Skew								
	Model	B Dim	Fastener Type		Factored Resistance		Model	B Dim	Fastener Type		Factored Resistance		Model	B Dim	Fastener Type		Factored Resistance				
			Header	Joist	Uplift (1.15)	Normal			Header	Joist	Uplift (1.15)	Normal			Header	Joist	Uplift (1.15)	Normal	SPF		
P3 Joist 40, 60 Width = 2-1/2"																					
9-1/2	SUR/L2.56/9	3-3/8	14-3-1/2"	2-10dx1-1/2	385	3950	2805	THAI322	2-1/4	6-3"	2-10dx1-1/2	—	2810	2385	LSSUH310	3-1/2	14-3-1/2"	12-10dx1-1/2	1155	2345	1665
11-7/8	SUR/L2.56/11	3-3/8	16-3-1/2"	2-10dx1-1/2	385	3950	2805	THAI322	2-1/4	6-3"	2-10dx1-1/2	—	2810	2385	LSSUH310	3-1/2	14-3-1/2"	12-10dx1-1/2	1155	2345	1665
14	SUR/L2.56/14	3-3/8	18-3-1/2"	2-10dx1-1/2	385	3950	2805	THAI322	2-1/4	6-3"	2-10dx1-1/2	—	2810	2385	LSSUH310	3-1/2	14-3-1/2"	12-10dx1-1/2	1155	2345	1665
16	SUR/L2.56/16	3-3/8	18-3-1/2"	2-10dx1-1/2	385	3950	2805	See Wood Construction Connectors Catalog for hanger selection						LSSUH310	3-1/2	14-3-1/2"	12-10dx1-1/2	1155	2345	1665	
P3 Joist 80 Width = 3-1/2"																					
11-7/8	SUR/L410	2-5/8	14-3-1/2"	6-3-1/2"	1540	4065	2875	THAI422	2-1/4	6-3"	2-10dx1-1/2	—	2810	2385	LSSU410	3-1/2	14-3-1/2"	12-10dx1-1/2	1155	2345	1665
14	SUR/L414	2-5/8	18-3-1/2"	8-3-1/2"	2090	4095	2895	THAI422	2-1/4	6-3"	2-10dx1-1/2	—	2810	2385	LSSU410	3-1/2	14-3-1/2"	12-10dx1-1/2	1155	2345	1665
16	SUR/L414	2-5/8	18-3-1/2"	8-3-1/2"	2090	4095	2895	See Wood Construction Connectors Catalog for hanger selection						See Wood Construction Connectors Catalog for hanger selection							
18	SUR/L414	2-5/8	18-3-1/2"	8-3-1/2"	2090	4095	2895														
20	SUR/L414	2-5/8	18-3-1/2"	8-3-1/2"	2090	4095	2895														
22	See Wood Construction Connectors Catalog for hanger selection																				
24	See Wood Construction Connectors Catalog for hanger selection																				

NOTES

- All nails are common wire nails unless noted otherwise.
- Hangers that are marked by green shading in tables require web stiffeners. The I-Joist manufacturer may require web stiffeners for hangers that are not marked by shading.
- THAI hangers require a minimum of 4 top and 2 face nails installed.
- WS = Wood Screw



LF - 18 gauge
LT - 18 gauge
 The LF and LT series feature fast and easy installation. No web stiffeners are required.

IUS - 18 gauge
 The IUS is a hybrid hanger that incorporates the advantages of face-mount and top-flange hangers. Joist nails are not required.

MIT - 16 gauge
 The MIT's Positive Angle Nailing helps eliminate splitting of the I-joists' bottom flange. It features uplift capacity and extended seat design.

SUR/L - 16 gauge
SURI/LI - 16 gauge
 All models are skewed 45°. The installation of these hangers does not require a beveled end cut. Web stiffeners are required when used with I-joists.

LSSUH310, LSSU410 - 16 gauge
 LSSU models provide uplift capacity and can be field sloped and/or skewed to 45°. Web stiffeners are required when used with I-joists.

P3 Joists Framing Connectors — Double P3 Joists

SIMPSON Strong-Tie

TABLE 24

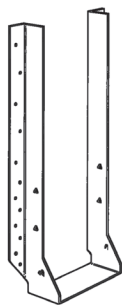
Joist Height	Top Flange						Face Mount						45° Skew								
	Model	B Dim	Fastener Type		Factored Resistance		Model	B Dim	Fastener Type		Factored Resistance		Model	B Dim	Fastener Type		Factored Resistance				
			Header	Joist	Uplift (L15)	Normal			Header	Joist	Uplift (L15)	Normal			Header	Joist	Uplift (L15)	Normal	DF/SP	SPF	
Double PJI 40, 60 Joist Width = 5"																					
9-1/2	MIT39.5-2	2-½	8-3-½"	2-10dx1-½"	265	3490	2420	MIU5.12/9	2-½	16-3-½"	2-10dx1-½"	375	4550	3230	HSUR/L5.12/9	2-¾	12-3-½"	2-10dx1-½"	195	2995	2350
11-7/8	MIT311.88-2	2-½	8-3-½"	2-10dx1-½"	265	3490	2420	MIU5.12/11	2-½	20-3-½"	2-10dx1-½"	375	4550	3230	HSUR/L5.12/11	2-¾	16-3-½"	2-10dx1-½"	195	4190	2965
14	MIT314-2	2-½	8-3-½"	2-10dx1-½"	265	3490	2420	MIU5.12/14	2-½	22-3-½"	2-10dx1-½"	375	4930	3485	HSUR/L5.12/11	2-¾	16-3-½"	2-10dx1-½"	195	4190	2965
16	MIT5.12/16	2-½	8-3-½"	2-10dx1-½"	265	3490	2420	MIU5.12/16	2-½	24-3-½"	2-10dx1-½"	375	4930	3485	HSUR/L5.12/11	2-¾	16-3-½"	2-10dx1-½"	195	4190	2965
Double PJI 80 Joist Width = 7" web stiffeners required																					
11-7/8	B712/11.88	2-½	14-3-½"	8-3-½"	1170	5940	3910	HU412-2	2-½	22-3-½"	8-3-½"	2280	5780	4690	HU412-2X ³	2-½	22-3-½"	8-3-½"	1710	3755	3050
14	B712/14	2-½	14-3-½"	8-3-½"	1170	5940	3910	HU414-2	2-½	26-3-½"	12-3-½"	3420	7025	5780	HU412-2X ³	2-½	26-3-½"	12-3-½"	2565	4565	3755
16	B712/16	2-½	14-3-½"	8-3-½"	1170	5940	3910	HU414-2	2-½	26-3-½"	12-3-½"	3420	7025	5780	HU412-2X ³	2-½	26-3-½"	12-3-½"	2565	4565	3755
18	B712/18	2-½	14-3-½"	8-3-½"	1170	5940	3910	HU414-2	2-½	26-3-½"	12-3-½"	3420	7025	5780	HU412-2X ³	2-½	26-3-½"	12-3-½"	2565	4565	3755
20	B712/20	2-½	14-3-½"	8-3-½"	1170	5940	3910	HU414-2	2-½	26-3-½"	12-3-½"	3420	7025	5780	HU412-2X ³	2-½	26-3-½"	12-3-½"	2565	4565	3755
22	B712/22	2-½	14-3-½"	8-3-½"	1170	5940	3910	HU414-2	2-½	26-3-½"	12-3-½"	3420	7025	5780	HU412-2X ³	2-½	26-3-½"	12-3-½"	2565	4565	3755
24	B712/24	2-½	14-3-½"	8-3-½"	1170	5940	3910	HU414-2	2-½	26-3-½"	12-3-½"	3420	7025	5780	See Wood Construction Connectors Catalog for hanger selection						

TABLE 25

Joist Height	Field Slope						Adjustable Height							
	Model	B Dim	Fastener Type		Factored Resistance		Model	B Dim	Fastener Type		Factored Resistance			
			Header	Joist	Uplift (L15)	Normal			Header	Joist	Uplift (L15)	Normal	DF/SP	SPF
Double PJI 40, 60 Joist Width = 5"														
9-1/2	LSU5.12 ^a	3-½	24-3-½"	16-10dx1-½"	910	2600	1845	THAI-2 ²	2-½	6-3"	2-10dx1-½"	—	2800	2800
11-7/8	LSU5.12 ^a	3-½	24-3-½"	16-10dx1-½"	910	2600	1845	THAI-2 ²	2-½	6-3"	2-10dx1-½"	—	2800	2800
14	LSU5.12 ^a	3-½	24-3-½"	16-10dx1-½"	910	2600	1845	THAI-2 ²	2-½	6-3"	2-10dx1-½"	—	2800	2800
16	See Wood Construction Connectors Catalog for hanger selection						See Wood Construction Connectors Catalog for hanger selection							
Double PJI 80 Joist Width = 7"														
11-7/8 to 24	See Wood Construction Connectors Catalog for hanger selection						See Wood Construction Connectors Catalog for hanger selection							

NOTES

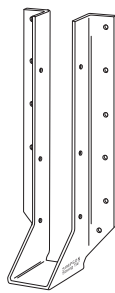
1. Hangers that are marked by green shading in tables require web stiffeners. The I-Joist manufacturer may require web stiffeners for hangers that are not marked by shading.
2. THAI hangers require a minimum of 4 top and 2 face nails installed. THAI-2 must be special ordered; specify hanger seat width between 3-1/8" and 5-5/16".
3. Skewed option must be special ordered. Specify skew angle and direction (i.e. HU412-2X, SKR45).
4. The LSU is field slopable only. Skew options must be special ordered from the factory.



MIU

MIU - 16 gauge

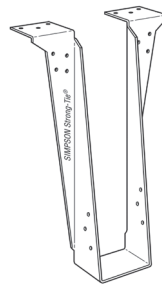
The MIU series features 16 gauge steel and extra nailing for higher loads than the IUT.



HU

HU - 14 gauge

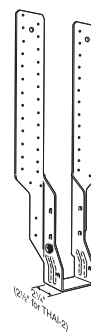
The HU series features uplift capacity and a large selection of sizes and load ranges. HU hangers have triangle holes that can be filled for increased loads. Web stiffeners are required when used with I-joists.



B

B - 12 gauge

The B Series offer versatility for I-Joist and SCL lumber enhanced load capacity widens the range of application for these hangers.



THAI

THAI - 18 gauge

This hanger has extra long straps and can be field-formed to give height adjustability and top-flange hanger convenience. Positive angle nailing helps eliminate splitting of the I-joist's bottom flange. Not all strap nail holes need to be filled for maximum nailing. Web stiffeners are required when used with I-joists.

P3 Products Warranty

Limited Lifetime Warranty

EACOM Timber Corporation warrants that its line of P3 Products are free from defects in design, materials and workmanship. When installed and finished according to our published installation instructions and accepted engineering standards, our P3 Products will perform in accordance with our current published specifications for the lifetime of your home or building.

Warranty Limitations

EACOM Timber Corporation must be given a reasonable opportunity to inspect the product before it will honor any claims under this warranty. If after inspection and verification of the problem, we determine that there is a structural failure covered by the warranty, we will pay to the owner of the structure an amount of money equal to the reasonable cost of the defective product, or, at our option, replace any defective product. This warranty does not cover the cost of installation, removal of the defective product, or reinstallation of replacement product. Checks, cracks or splits of P3 Products resulting from the natural physical properties of wood are not covered — unless the condition causes a structural weakness.

Please protect your investment! P3 Products must be protected from exposure to moisture from whatever source by proper building standards. Exposure to moisture beyond incidental exposure during normal construction periods may cause product failure and will void this limited warranty.

This warranty shall apply only if the P3 Product is subjected to normal use and exposure. The products must be stored, handled, and installed in a manner generally accepted in the industry, and in accordance with our current published installation instructions and in compliance with our product design specifications relating to spans and loading. Failure to follow such instructions will void this warranty.

Disclaimer

EXCEPT FOR THE EXPRESS WARRANTY AND REMEDY SET FORTH ABOVE, EACOM TIMBER CORPORATION DISCLAIMS ALL OTHER WARRANTIES AND GUARANTEES, EXPRESS OR IMPLIED, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. No other warranty or guarantee will be made by or on behalf of the manufacturer or the seller or by operation of law with respect to the product or its installation, storage, handling, maintenance, use, replacement, or repair. Neither EACOM Timber Corporation nor the seller shall be liable by virtue of any warranty or guarantee, or otherwise, for any special or incidental or consequential loss or damage resulting from the use of the product. EACOM Timber Corporation makes no warranty or guarantee with respect to installation of the product by the builder or the builder's contractor or by any other installer.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

For information on our P3 Products or our warranty, contact us at:

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