7th Edition 6/20

ENGINEERED WOOD PRODUCTS

Technical Data Guide

Nordic® I-Joist | Norbord® Rim Board | Triforce® Open Joists | CP-LAM LVL | PWT Treated LVL

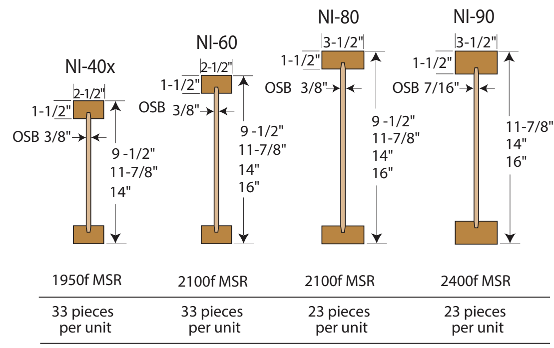
Anthony® Beams & Columns | LAMCO® Engineered Framing Lumber | Simpson® Engineered Connectors

COASTAL

SOLID-SAWN JOIST
DESIGN PROPERTIES

Chantiers Chibougamau Ltd. harvests its own trees, which enables Nordic products to adhere to strict quality control procedures throughout the manufacturing process. Every phase of the operation, from forest to the finished product, reflects our commitment to quality

Nordic® Engineered Wood I-joists use only finger-jointed black spruce lumber in their flanges ensuring consistent quality, superior strength, and longer span carrying capacity.



DESIGN PROPERTIES FOR NORDIC® I-JOISTS

(a) (b)

JOIST DEPTH	JOIST SERIES	EI (c) (10^6 lbf-in.^{2})	M (d) (lbf-ft)	V (e) (lbf)	IR (f) (l bf)	IR w/WS (g) (l bf)	ER (h) (lbf)	K (i) (10^6 lbf)	WEIGHT (lbf/ft)
9-1/2"	NI-20	145	2,590	1,120	1,700	1,700	900	4.94	2.55
	NI-40x	218	2,900	1,200	2,240	2,620	1,120	4.94	2.65
	NI-60	231	3,810	1,200	2,240	2,620	1,120	4.94	2.78
	NI-80	324	5,385	1,200	2,380	2,790	1,190	4.94	3.27
11-7/8"	NI-20	253	3,355	1,420	1,800	1,800	900	6.18	2.85
	NI-40x	371	3,760	1,480	2,750	2,930	1,250	6.18	2.85
	NI-60	396	4,935	1,480	2,750	2,930	1,250	6.18	2.99
	NI-80	547	6,980	1,480	2,900	3,120	1,330	6.18	3.45
	NI-90	601	8,780	1,925	3,670	3,670	1,400	6.18	3.45
14"	NI-40x	540	4,530	1,730	2,750	3,240	1,250	7.28	3.00
	NI-60	584	5,945	1,730	2,750	3,240	1,250	7.28	3.15
	NI-80	802	8,405	1,730	3,310	3,840	1,330	7.28	3.75
	NI-90	877	10,570	2,125	3,820	3,820	1,690	7.28	3.75
16"	NI-60	799	6,895	1,970	2,750	3,240	1,250	8.32	3.46
	NI-80	1,092	9,745	1,970	3,310	3,840	1,330	8.32	3.95
	NI-90	1,187	12,260	2,330	3,930	3,930	1,875	8.32	3.95

Highlighted sizes indicates stocked depths.

For SI: 1 lbf = 4.448 N, 1 lbf -in2 = 0 .00287 N-m2, 1 inch = 25.4 mm.

(a) The tabulated values are design values for normal duration of load. All values, except for EI and K, are permitted to be adjusted for other load durations as permitted by the code for solid sawn lumber.

(b) The vertical (bearing) load capacity is 2,000 lb/ft without bearing stiffeners.

(c) Bending stiffness (EI) of the I-joist.

(d) Moment capacity (M) of the I-joist, which shall not be increased by any code allowed repetitive member use factor.

(e) Shear capacity (V) of the I-joist.

(f) Intermediate reaction (IR) of the I-joist with a minimum bearing length of 3-1/2 inches without bearing stiffeners.

(g) Intermediate reaction (IR w/WS) of the I-joist with a minimum bearing length of 3-1/2 inches with bearing stiffeners.

(h) End reaction (ER) of the I-joist with a minimum bearing length of 1-3/4 inches without bearing stiffeners. Higher end reactions are permitted. For a bearing length of 4 inches, the end reaction may be set equal to the tabulated shear value. Interpolation of the end reaction between 1-3/4 and 4-inch bearing is permitted. For end reaction values over 1,550 lbf, bearing stiffeners are required.

(i) Coefficient of shear deflection (K). For calculating uniform load and center-point load deflections of the I-joist in a simple-span application, use Eqs. 1 and 2.

Uniform Load:
$$\delta = \frac{5\,\omega\ell^4}{384\,EI} + \frac{\omega\ell^2}{K} \qquad (1)$$

Center-Point Load:
$$\delta = \frac{P\ell^3}{48\,EI} + \frac{2P\ell}{K} \qquad (2)$$

Where:
δ= calculated deflection (in.)
ω = uniform load (lbf/in.)
ℓ = design span (in.)

P = concentrated load (lbf)
EI = bending stiffness of the I-joist (lbf-in.2)
K = coefficient of shear deflection (lbf)

SOLID-SAWN JOIST
ALLOWABLE FLOOR SPANS

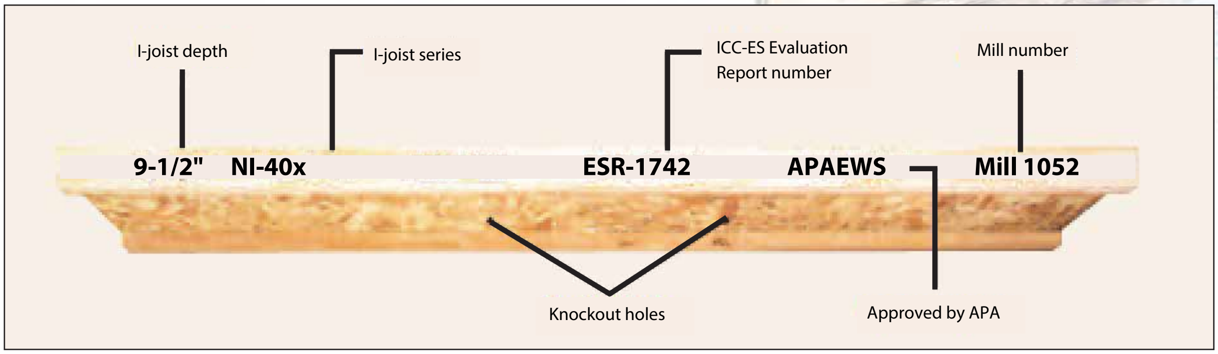
ALLOWABLE FLOOR SPANS — Live Load = 40 psf, Dead Load = 10 psf
Live Load Deflection Limit of L/480

JOIST DEPTH	JOIST SERIES	SIMPLE SPANS ON CENTER SPACING				MULTIPLE SPANS ON CENTER SPACING			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-7"	15'-3"	14'-5"	13'-6"	18'-1"	16'-7"	15'-8"	13'-5"
	NI-40x	18'-8"	17'-0"	16'-1"	15'-0"	20'-4"	18'-5"	16'-10"	15'-0"
	NI-60	18'-11"	17'-4"	16'-4"	15'-3"	20'-8"	18'-10"	17'-9"	16'-7"
	NI-80	20'-11"	19'-1"	18'-0"	16'-9"	22'-9"	20'-9"	19'-6"	18'-2"
11-7/8"	NI-20	19'-11"	18'-3"	17'-3"	16'-1"	21'-8"	19'-10"	17'-9"	14'-2"
	NI-40x	22'-2"	20'-3"	19'-2"	17'-2"	24'-2"	21'-0"	19'-2"	17'-1"
	NI-60	22'-8"	20'-8"	19'-6"	18'-2"	24'-8"	22'-6"	21'-2"	19'-8"
	NI-80	24'-11"	22'-8"	21'-4"	19'-11"	27'-1"	24'-8"	23'-3"	21'-7"
	NI-90	25'-7"	23'-3"	21'-11"	20'-5"	27'-10"	25'-4"	23'-10"	22'-2"
14"	NI-40x	25'-2"	22'-11"	21'-2"	18'-11"	26'-8"	23'-1"	21'-1"	18'-10"
	NI-60	25'-9"	23'-6"	22'-2"	20'-8"	28'-0"	25'-7"	24'-1"	21'-7"
	NI-80	28'-3"	25'-9"	24'-3"	22'-7"	30'-10"	28'-0"	26'-5"	24'-6"
	NI-90	29'-0"	26'-5"	24'-10"	23'-1"	31'-7"	28'-9"	27'-1"	25'-2"
16"	NI-60	28'-6"	26'-0"	24'-7"	22'-10"	31'-1"	28'-4"	26'-0"	21'-9"
	NI-80	31'-4"	28'-6"	26'-10"	25'-0"	34'-2"	31'-1"	29'-3"	26'-3"
	NI-90	32'-1"	29'-3"	27'-6"	25'-7"	35'-0"	31'-10"	29'-11"	27'-10"

Highlighted sizes indicates stocked depths.

NOTES:

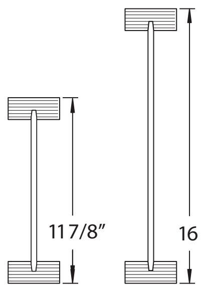
1. Allowable clear span applicable to residential floor construction with a design live load of 40 psf and dead load of 10 psf. The live load deflection is limited to L/480 as shown, and the total load deflection to L/360. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
2. Spans are based on a composite floor with glued-nailed sheathing meeting the requirements for APA Rated Sheathing or APA Rated STURD-I-FLOOR conforming to PRP-108, PS 1, or PS 2 with a minimum thickness of 19/32 inch (40/20 or 20 oc) for a joist spacing of 19.2 inches or less, or 23/32 inch (48/24 or 24 oc) for a joist spacing of 24 inches. Adhesive shall meet APA Specification AFG-01 or ASTM D3498.
3. Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
4. Bearing stiffeners are not required when I-joists are used with the spans and spacing given in these tables, except as required for hangers.
5. These span charts are based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties.
6. For ceramic tile applications, spacings greater than 16" o.c. are typically not recommended.



CPI-90 JOIST
DIMENSIONS & SPANS

IN STOCK

CPI-PRO JOIST DIMENSIONS – LVL



7/16" OSB Web
3-1/2" x 1-1/2" Flange

	I-Joist Depth	Coastal Code	APA Code	EI [4] ($X10^6$lb-in^2)	M[5] (ft-lb)	V[6] (lb)	IR[7] (lb)	ER[8] (lb)	K[9] ($X10^6$lb)
CPI-90	11-7/8"	CPI 9012	PRI-90	661	10255	1925	3355	1400	6.92
	14"	CPI 9014	PRI-90	965	12235	2125	3355	1400	8.17
	16"	CPI 9016	PRI-90	1306	14020	2330	3355	1400	9.35

Highlighted sizes indicates stocked depths.

1. The tabulated design properties are for normal duration of load. All properties, except EI and k , may be adjusted for other load durations as permitted by the code.
2. PRI-400 joist series designation. Design properties meet or exceed the requirements of the PRI-400 Performance Standard for APA EWS I-joist.
3. Coastal Forest Products Corporation proprietary joist series designation.
4. Bending stiffness (EI)
5. Moment capacity (M). The tabulated values shall not be increased by any code-allowed repetitive member factor.
6. Shear capacity (V).
7. Intermediate reaction capacity (iR) of the immediate I-joist without web stiffeners and a minimum bearing length of 3-1/2 inches.
8. End reaction capacity (ER) of the I-joist without web stiffeners and a minimum bearing length of 1-3/4 inches.
9. Coefficient of shear deflection (k). Use equations 1 or 2 to calculate uniform load or center point load deflections in a simple-span application.

Uniform Load:

$$(1)\ \delta = \frac{5\omega\ell^4}{384EI} + \frac{\omega\ell^2}{K}$$

Center-Point Load:

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

Where: δ = calculated deflection (in.)
ω = uniform load (lbf/in.)
ℓ = design span (in.)
P = concentrated load (lbf)
EI = bending stiffness of the CPI-joist (lbf-in.2)
K = coefficient of shear deflection (lbf)

10. 2x4 web stiffeners required. Attach with 10 nails (3-1/2" long x 0.131" diameter)
11. 2x4 web stiffeners required. Attach with 8 nails (3-1/2" long x 0.131" diameter)

	Allowable Floor Spans								
CPI Joist Series	CPI Joist Depth	12" O.C.	16" O.C.	19.2" O.C.	24" O.C.	12" O.C.	16" O.C.	19.2" O.C.	24" O.C.
CPI-90	9-1/2"	22' - 2"	20'- 2"	19' - 0"	17' - 8"	24' - 1"	21'- 11"	20'- 7"	19' - 2"
	11-7/8"	26' - 4"	23' - 11"	22' - 7"	21' - 0"	28' - 8"	26' - 1"	24'- 6"	22' - 9"
	14"	29' - 10"	27'- 2"	25' - 7"	23'- 9"	32'- 7"	29' - 7"	27'- 10"	25' - 10"
	16"	33' - 0"	30' - 1"	28' - 4"	26' - 4"	36' - 0"	32' - 9"	30' - 10"	26' - 7"

Highlighted sizes indicates stocked depths.

Notes:
1. Table values apply to uniformly loaded CPI joists.
Use sizing software to analyze conditions outside of the scope of this table such as commercial floors, cantilevers or concealed loads.
2. Span is measured from face to face of supports. Use beam sizing software to analyze multiple span CPI joists if the length of any span is less than half the length of an adjacent span.
3. Live Load deflection is limited to L/480.
4. Table values assume sheathing is glued and nailed to the CPI joists. Reduce spans by 12" if sheathing is nailed only.
5. Table values are based on 1-3/4" end and 3-1/2" intermediate bearing lengths without web stiffeners.

NORDIC® I-JOIST

UNIFORM LOADS

ALLOWABLE UNIFORM FLOOR LOADS (PLF) – 100%

JOIST DEPTH	JOIST SERIES	CRITERIA	CLEAR SPAN (ft)											
			8	10	12	14	16	18	20	22	24	26	28	30
9-1/2"	NI-40	l/480 LL			81	52	36	25	18	14	11	---	---	---
		l/480TL	165	133	111	95	72	51	37	28	22	---	---	---
	NI-60	l/480 LL			122	80	55	39	29	22	17	13	11	---
		l/480 TL	218	175	146	126	110	79	59	44	34	27	2 2	---
	NI-80	l/480 LL				108	75	54	40	30	24	19	15	12
		l/480TL	231	186	155	133	117	104	81	61	48	38	30	25
11-7/8"	NI-40	l/480 LL				125	87	62	46	35	27	22	17	14
		l/480TL	267	215	180	148	114	90	73	60	51	43	35	29
	NI-60	l/480 LL				132	92	66	49	37	29	23	18	15
		l/480TL	267	215	180	154	135	118	96	75	59	46	37	30
	NI-80	l/480 LL					122	88	66	51	39	31	25	21
		l/480TL	282	227	189	163	143	127	114	102	79	63	51	42
	NI-90	l/480 LL	---	---	---	187	132	96	72	55	43	34	28	23
		l/480TL	326	262	219	188	165	147	132	111	87	69	56	46
14"	NI-40	l/480 LL					123	89	66	51	39	31	25	20
		l/480 TL	267	215	180	154	135	109	88	73	61	52	45	39
	NI-60	l/480 LL					132	96	71	54	42	34	27	22
		l/480 TL	267	215	180	154	135	120	108	96	81	68	55	45
	NI-90	l/480 LL	---	---	---	---	---	136	102	79	62	49	40	33
		l/480TL	326	262	219	188	165	147	132	120	110	99	80	66
16"	NI-60	l/480 LL							96	74	57	46	37	30
		l/480 TL	267	215	180	154	135	120	108	99	90	80	69	60
	NI-80	l/480 LL							126	97	76	61	49	41
		l/480TL	322	259	216	186	163	145	130	119	109	100	93	82
	NI-90	l/480 LL							135	105	83	66	53	44
		l/480TL	354	284	238	204	179	159	144	131	120	111	103	88

Notes:

1. Table values are based on *clear* distance between supports and may be used for simple or multiple spans. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
2. Tabulated loads are based on uniform loads only, and assume continuous lateral bracing of the compression flange. Table values do not include additional stiffness from composite action with glue-nailed or nailed decking.
3 Both live and total loads must be checked. Where no value is shown in the live load row (LL), the total load governs the design. For floor applications with L/360 live load deflection, multiply L/480 value times 1.33. Total load deflection is limited to L/240.
4. Verify that the deflection criteria herein are accepted by local codes and authorities.
5. The I-joist weight has not been taken into account.
6. Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
7. Bearing stiffeners are not required, except as required for hangers.
8. Refer to appropriate sections for proper installation.
9. For double joist, double the table values and connect joist per detail 1p on page 19 of the Nordic catalog.

TYPICAL FLOOR FRAMING AND CONSTRUCTION DETAILS

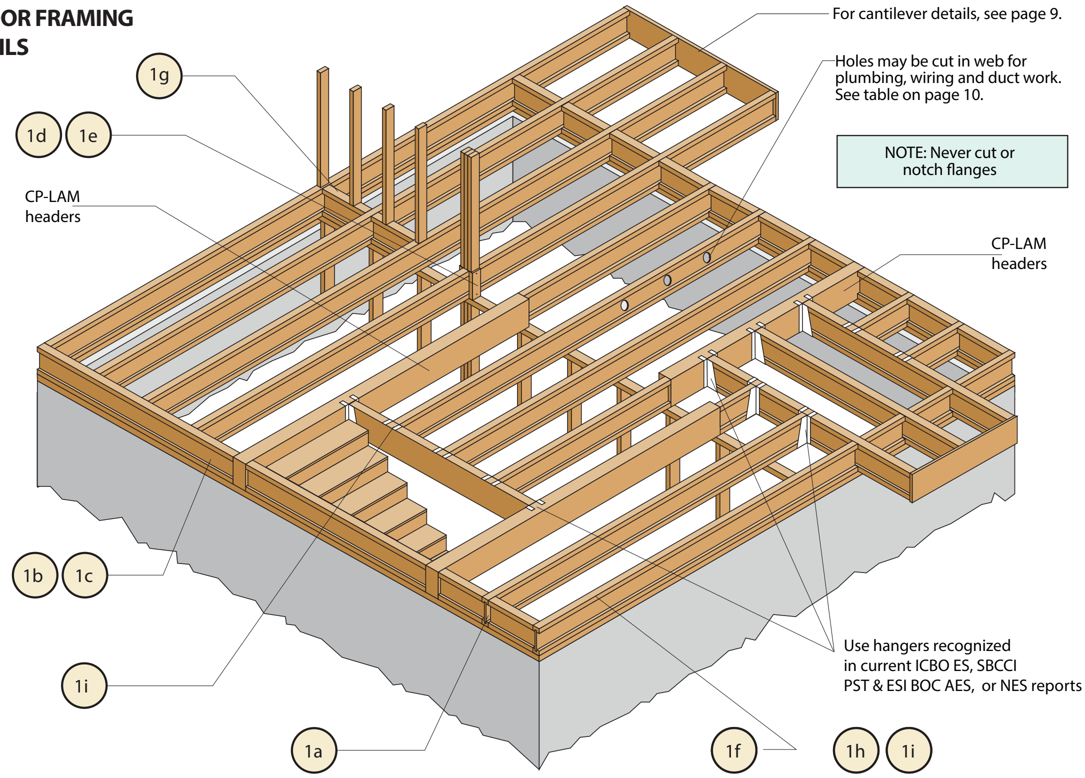
1. Except for cutting to length, I-joist flanges should never be cut, drilled or notched.
2. Install I-joists so that the top and bottom flanges are within 1/2" of true vertical alignment.
3. Concentrated loads should only be applied to the top surface of the top flange. At no time should concentrated loads be suspended from the bottom flange with the exception of light loads such as ceiling fans or light fixtures.
4. I-joists must be protected from the weather prior to installation.
5. I-joists must not be used in applications where they will be permanently exposed to weather, or will reach a moisture content greater than 16 percent, 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 rim board or I-joist blocking panels.
8. I-joists installed beneath bearing walls perpendicular to the joists shall have full-depth blocking panels, rim board or squash blocks (cripple blocks) to transfer gravity loads from above the floor system to the wall or foundation below.
9. For I-joists installed directly beneath bearing walls parallel to the joists or used as rim board or blocking panels, the maximum allowable vertical load using a single I-joist is 2,000 plf, and 4,000 plf if double I-joists are used.

I-JOIST

FLOOR FRAMING & CONSTRUCTION DETAILS

COMMON CPI/N I JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS

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



WEB STIFFENER REQUIREMENTS

Web stiffeners are pairs of small blocks, typically cut from wood structural panels, that are nailed to the joist web to stiffen a deep web, increase reaction capacity or accommodate a special connector. Web stiffeners are not required when joists are sized by means of the tables included in this guide, with the following exceptions:

1. Web stiffeners are required at the ends of joists set in hangers that are not deep enough to laterally support the top flanges of the joists. Refer to the hanger manufacturer's installation instructions.
2. Web stiffeners are required to accommodate special connector nailing requirements. Refer to the connector manufacturer's installation instructions.
3. Web stiffeners are required at birdsmouth cuts at the low end supports of sloped joists.
4. Web stiffeners are required at all supports on 22 and 24 inch joists.

When joists are sized by means of sizing software, or otherwise engineered for an application, web stiffeners are required as follows:

1. Web stiffeners are required for high reactions at supports. Refer to ICC-ES ESR-1225.
2. Web stiffeners are required under concentrated loads applied to the tops of joists between supports, or along cantilevers beyond the support, when the concentrated load exceeds 1500 pounds.

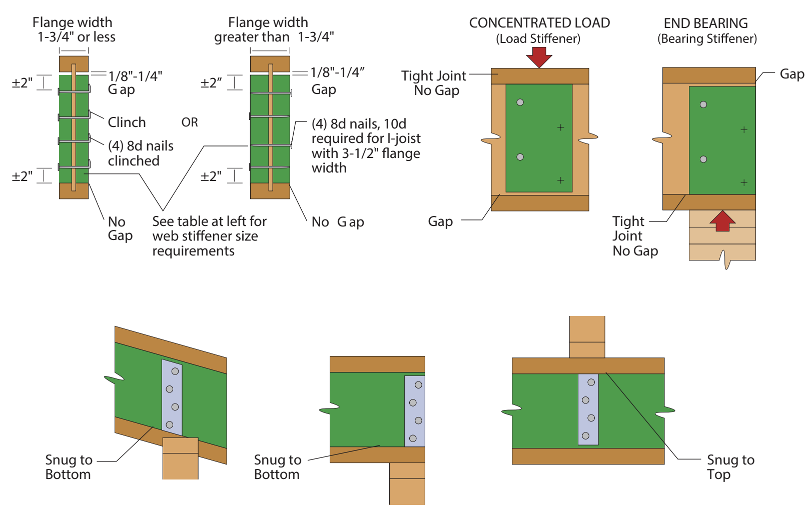
FIGURE B
WEB STIFFENER REQUIREMENTS

NUMBER OF WEB STIFFENER NAILS REQUIRED			
Joist Depth	24" & 22"	20" & 18"	16" & less
Intermediate Support	10	8	4
All Other Conditions	8	6	4

WEB STIFFENER SIZE REQUIRED

Series	Flange Width	Minimum Dimensions: Web Stiffeners Thickness	Minimum Dimensions: Web Stiffeners Width	Minimum Dimensions: Nails
N I-40X	2-1/2"	1"	2-5/16"	2-1/2" x 0.131"
N I-60	2-1/2"	1"	2-1/2"	2-1/2" x 0.131"
N I-80	3-1/2"	1-1/2"	3-1/2"	3-1/2" x 0.131"
NI/CPI-90	3-1/2"	1-1/2"	3-1/2"	3-1/2" x 0.131"

Web stiffener length is approximately 1/8" less than the clear distance between flanges.



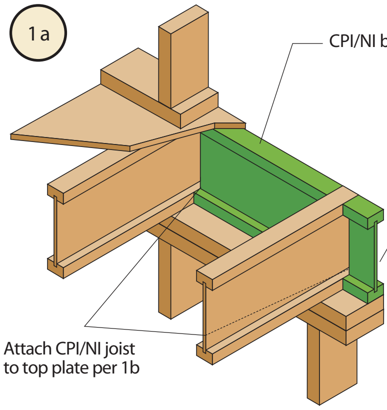
COASTAL PRO NORDIC STRUCTURES

I-JOIST
FLOOR FRAMING & DETAILS

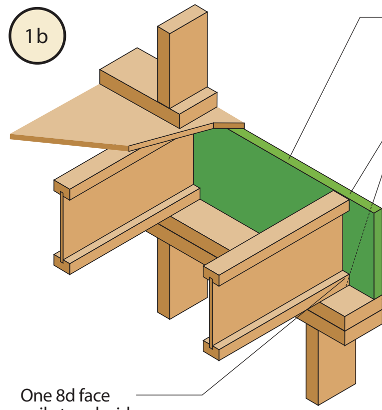
TYPICAL CPI/NI JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS

All nails shown in the details below are assumed to be common nails unless otherwise noted. 10d box nails may be substituted for 8d common shown in details. Individual components not shown to scale for clarity.

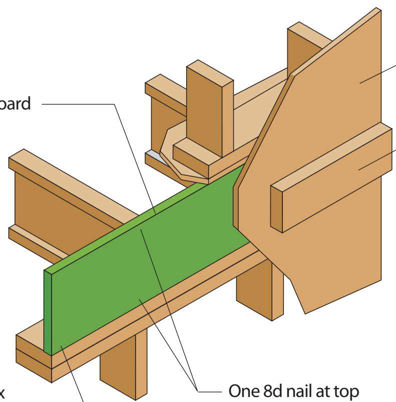
1a



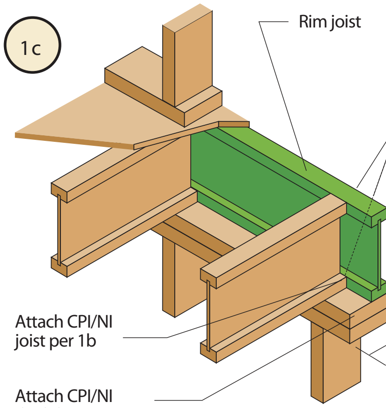
1b



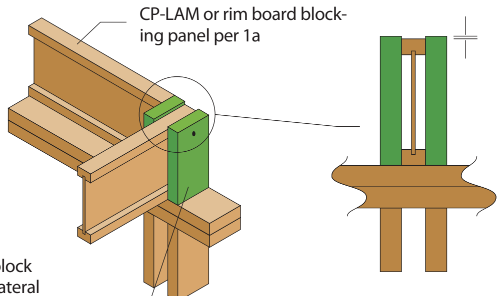
1b ALTERNATE



1c



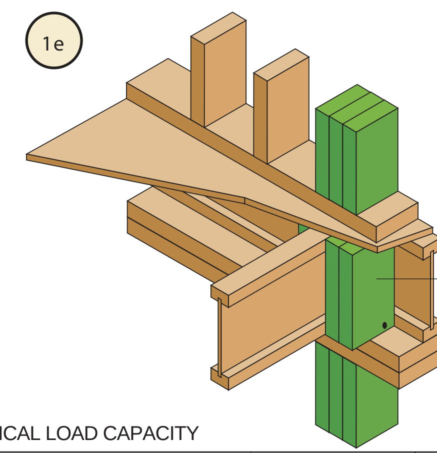
1d



Vertical load transfer per pair of squash blocks as shown:

Pair of Squash Blocks	(lb)
2 x 4	4000
1-1/8" Rim Board	3000
1" Rim Board	2700

1e



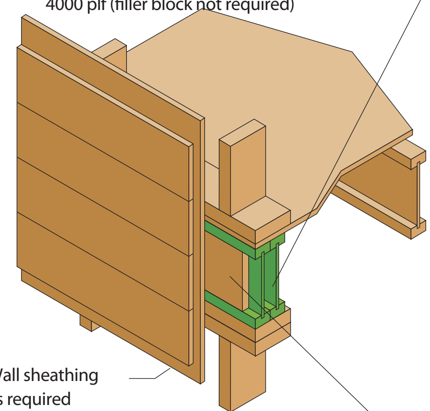
VERTICAL LOAD CAPACITY

Product (depths = 16")	Thickness	Vertical Load Capacity
Rim Joist / Blocking Panel	3/8" Web	2000 plf
	7/16" Web	2850 plf
APA Rim Board	1-1/8"	4400 plf

I-JOIST
FLOOR FRAMING & DETAILS

1f

Use single CPI/NI joist for loads up to 2000 plf, double joists for loads up to 4000 plf (filler block not required)



Wall sheathing as required

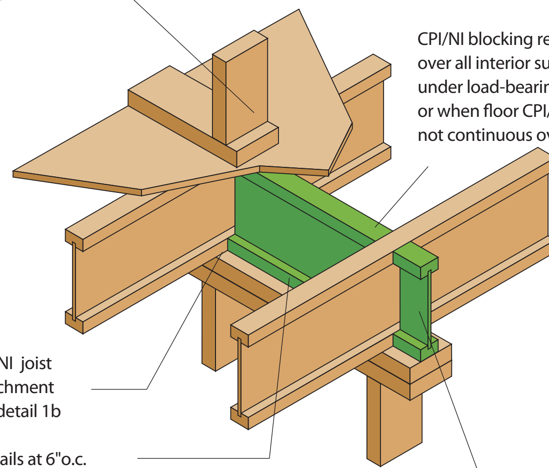
Provide backer for siding attachment unless nailable sheathing is used.

Rim board may be used in lieu of CPI/NI joists. Backer is not required when rim board is used.

1g

Load bearing wall above shall align vertically with the wall below. Other conditions such as offset walls are not covered by this detail.

CPI/NI blocking required over all interior supports under load-bearing walls or when floor CPI/NI joists are not continuous over supports.



CPI/NI joist attachment per detail 1b

8d nails at 6"o.c.

CPI/NI blocking panel

1h

Backer block (use if hanger load exceeds 250 lbs.) Before installing a backer block to a double CPI/NI joist, drive 3 additional 10d nails through the webs and filler block where the backer block will fit. Clinch. install backer tight to top flange. Use twelve 10d nails, clinched when possible. Maximum capacity for hanger for this detail = 1280 lb.

BACKER BLOCKS

(Blocks must be long enough to permit required nailing without splitting.)

Flange Width	Material Thickness Required*	Minimum Depth**
1-1/2"	19/32"	5-1/2"
1-3/4"	23/32"	5-1/2"
2-5/16"	1"	7-1/4"
2-1/2"	1"	5-1/2
3-1/2"	1-1/2"	7-1/4"

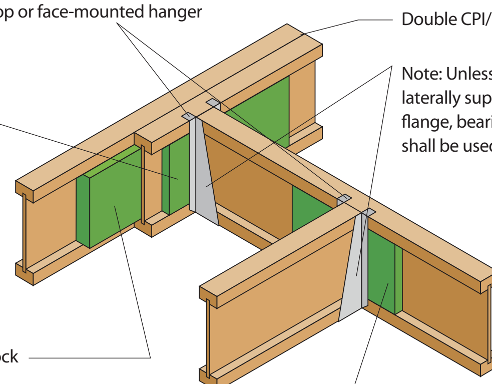
* Minimum grade for backer block material shall be Utility grade SPF (south) or better for solid sawn lumber and Rated Sheathing grade for wood structural panels.

** For face-mount hangers use net CPI/NI joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 1-5/16" thick flanges use depth minus 2-7/8".

Top or face-mounted hanger

Double CPI/NI joist header

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



Filler block

Backer block required (both sides for face-mounted hangers)

For hanger capacity see hanger manufacturer's recommendations. Verify double CPI/NI joist capacity to support concentrated loads.

CPI/NI BLOCKING PANELS

CPI/NI blocking panels prevent CPI/NI floor joists from overturning and transfer loads through the floor system into the structure below.

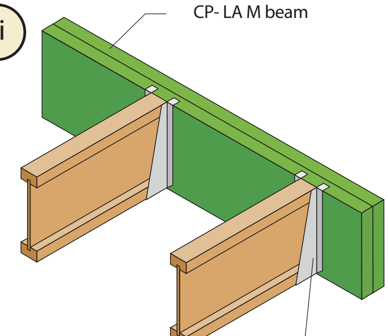
Due to difference in depth and possible shrinkage, common framing lumber set on edge is unacceptable as blocking. CPI/NI blocking panels must be cut to the proper length to between the CPI/NI joists, and their depth must match the depth of the joists.

CPI/NI blocking panels may be used:

1. To stabilize CPI/NI joists laterally at supports, as shown in Figures 1a and 1g. Lateral support is required during installation and is necessary to obtain design carrying capacity.
2. To transmit vertical loads up to 2,000 plf per CPI/NI blocking panel in accordance with Figures 1a, 1c, 1f, and 1g.
3. For closures such as that shown in Figures 1a and 1e.
4. To transmit lateral forces to shear walls. Shear transfer nailing into the flanges must be specified by the building designer.
5. To provide lateral stability to walls.

1i

CP- LA M beam

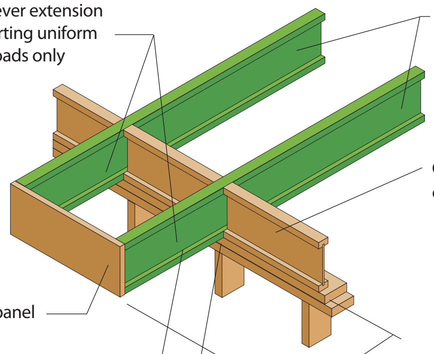


Top-or-face mounted hanger installed per manufacturer's recommendations

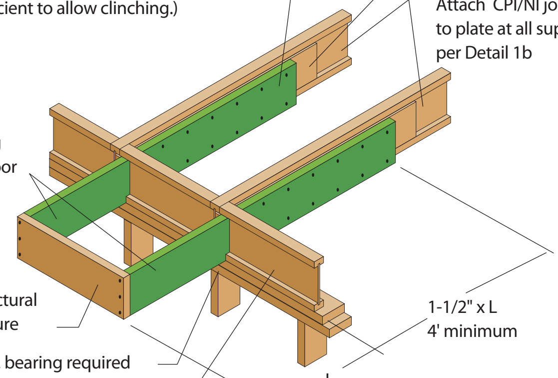
Note: Unless hanger sides laterally support the top flange, web stiffeners shall be used. (See Figure B on page 7)

I-JOIST
CANTILEVER DETAILS

CPI/NI JOIST CANTILEVER DETAIL FOR INTERIOR BALCONIES

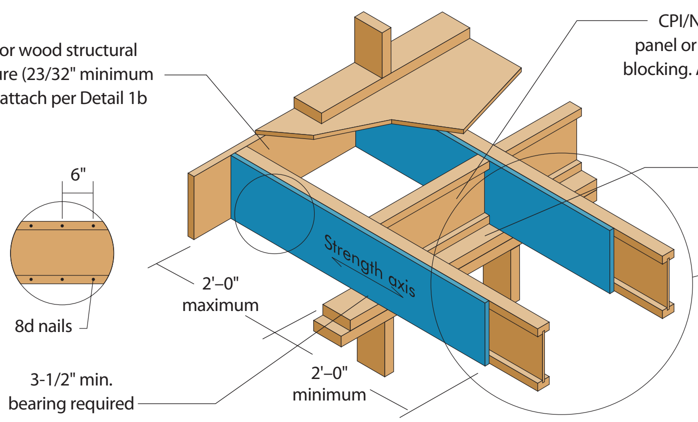


CANTILEVER DETAIL FOR EXTERIOR BALCONIES



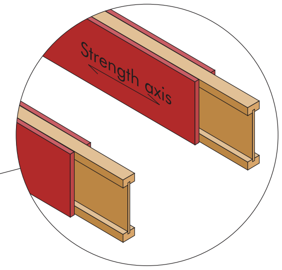
CANTILEVER DETAIL FOR VERTICAL BUILDING OFFSET

Method 1
SHEATHING REINFORCEMENT ONE SIDE



Method 2
SHEATHING REINFORCEMENT TWO SIDES

Use same installation as Method 1 but reinforce both sides of CPI/NI joist with sheathing or rim board.

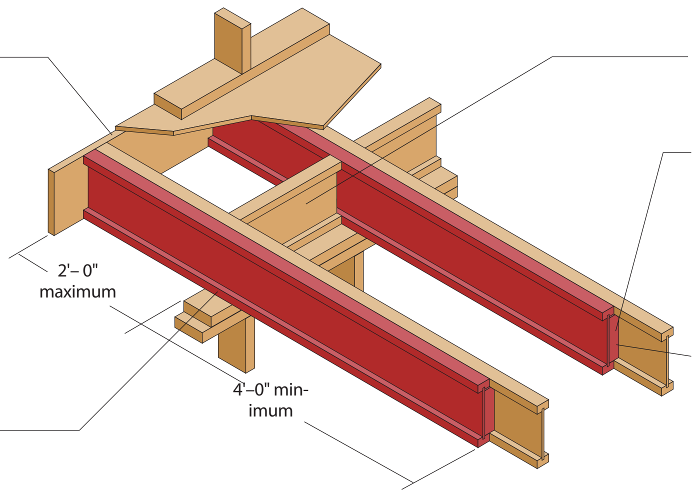


Use nailing pattern shown for Method 1 with opposite face nailing offset by 3"

Note: APA RATED SHEATHING 48/24 (minimum thickness 23/32") required on sides of I-joist.Depth shall match the full height of the joist. Nail with 8d nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach joist to plate at all supports per Detail 1b.

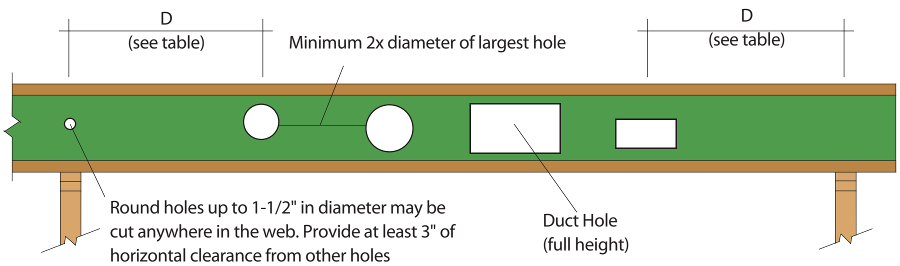
CANTILEVER DETAIL FOR VERTICAL BUILDING OFFSET

Alternate Method 2
DOUBLE CPI/NI JOIST



HOLE SPECIFICATIONS

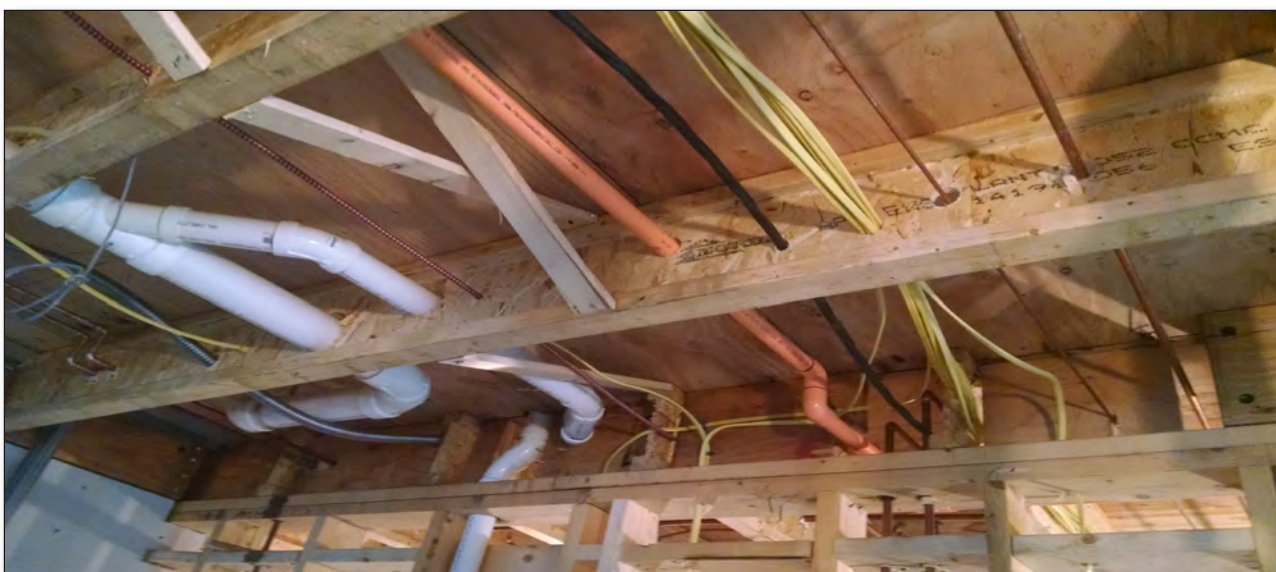
CPI/N I JOIST TYPICAL HOLES



Do not cut rectangular holes, or round holes larger than 1-1/2" in diameter, in cantilevers

ROUND AND RECTANGULAR HOLES

Round Hole Diameter		2"	3"	4"	5"	6"	6-1/4"	8-5/8"	10"	10-3/4"	12"	12-3/4"	14-3/4"	16-3/4"
Rectangular Hole Side		1-1/2"	2-1/4"	3"	3-3/4"	4-1/2"	4-1/2"	6-1/4"	7-1/2"	8"	9"	9-1/2'	11"	12-1/2"
Joist	Span	Minimum Distance 'D' From Any Support to the Centerline of the Hole												
9-1/2"	8 ft.	1'– 0"	1'– 6"	2'– 1"	2'– 7"	3'– 1"	3'– 3"							
	12 ft.	1'– 6"	2'– 4"	3'– 1"	3'– 11"	4'– 8"	4'– 11"							
	16 ft.	2'– 1"	3'– 1"	4'– 2"	5'– 3"	6'– 3"	6'– 6"							
11-7/8"	8 ft.	1'– 0"	1'– 1"	1'– 7"	2'– 0"	2'– 5"	2'– 6"	3'– 7"						
	12 ft.	1'– 0"	1'– 8"	2'– 4"	3'– 0"	3'– 8"	3'– 10"	5'– 4"						
	16 ft.	1'– 5"	2'– 3"	3'– 2"	4'– 0"	4'– 10"	5'– 1"	7'– 2"						
	20 ft.	1'– 9"	2'–10"	3'–11"	5'– 0"	6'– 1"	6'– 4"	8'– 11"						
14"	12 ft.	1'– 0"	1'– 1"	1'– 5"	2'– 0"	2'– 7"	2'– 9"	4'– 2"	5'– 0"	5'– 6"				
	16 ft.	1'– 0"	1'– 1"	1'–10"	2'– 8"	3'– 6"	3'– 8"	5'– 7"	6'– 9"	7'– 4"				
	20 ft.	1'– 0"	1'– 4"	2'– 4"	3'– 4"	4'– 4"	4'– 7"	7'– 0"	8'– 5"	9'– 2"				
	24 ft.	1'– 0"	1'– 7"	2'–10"	4'– 0"	5'– 3"	5'– 7"	8'– 5"	10'– 1"	11'– 0"				
16"	12 ft.	1'– 0"	1'– 1"	1'– 2"	1'– 2"	1'– 4"	1'– 6"	2'– 11"	3'– 9"	4'– 3"	5'– 0"	5'– 6"		
	16 ft.	1'– 0"	1'– 1"	1'– 2"	1'– 2"	1'–10"	2'– 0"	3'– 11"	5'– 1"	5'– 8"	6'– 8"	7'– 4"		
	20 ft.	1'– 0"	1'– 1"	1'– 2"	1'– 3"	2'– 3"	2'– 6"	4'– 11"	6'– 4"	7'– 1"	8'– 5"	9'– 2"		
	24 ft.	1'– 0"	1'– 1"	1'– 2"	1'– 6"	2'– 9"	3'– 0"	5'– 11"	7'– 7"	8'– 6"	10'– 1"	11'– 0"		
	28 ft.	1'– 0"	1'– 1"	1'– 2"	1'– 9"	3'– 2"	3'– 7"	6'– 11"	8'– 11"	10'– 0"	11'– 9"	12'– 10"		



GENERAL NOTES

1. Table values apply to joists sized by means of the load or span tables in this publication. Use beam sizing software for a more precise analysis or to analyze conditions outside of the scope of these tables.
2. Web holes may be located anywhere between the joist flanges. Leave at least 1/8" clearance between the edges of holes and the flanges.
3. Do not cut rectangular holes, or round holes larger than 1-1/2" diameter, in cantilevers.
4. The horizontal clearance between the edges of adjacent holes must be at least twice the diameter (or longest side) of the larger hole. ***Exception:*** A 1-1/2" inch diameter hole may be drilled anywhere in the web. Provide at least 3" of horizontal clearance from adjacent holes of any size.
5. 1-1/2" diameter holes are factory-scored in the web at 16" on center.

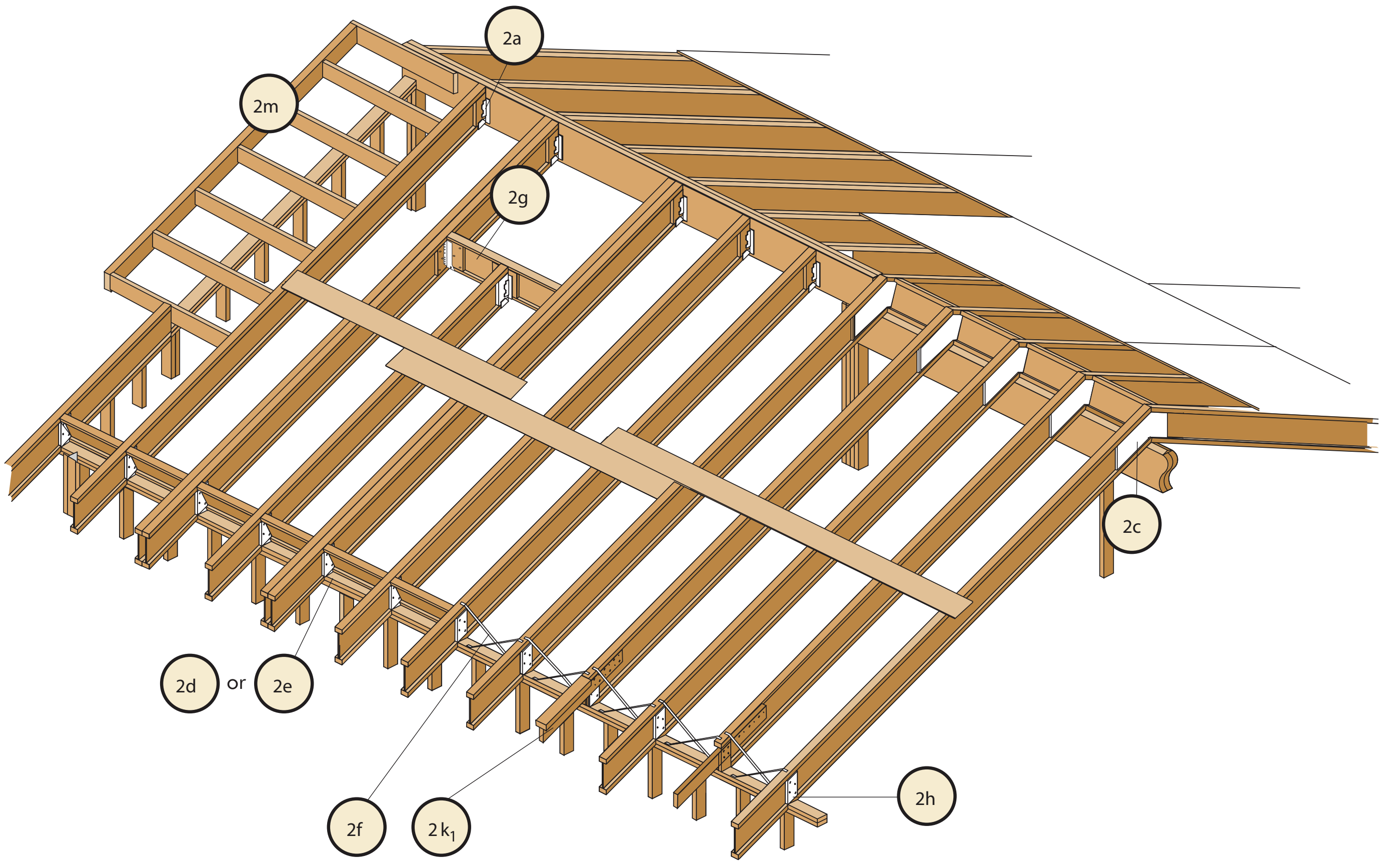
I-JOIST HANGER CHART

I-JOIST SIZE	TOP MOUNT	FACE MOUNT	TOP MOUNT DOUBLE	FACE MOUNT DOUBLE
NI-40 9-1/2"	ITS25695	IUS25695	MIT3952	MIU5129
NI-40 11-7/8"	ITS2561188	IUS2561188	MIT311882	MIU51211
NI-60 11-7/8"	ITS2561188	IUS2561188	MIT311882	MIU51211
NI-60 14"	ITS25614	IUS25614		MIU51211
NI-60 16"	ITS35616	IUS35616		MIU51216
NI-80 9-1/2"	ITS35695	IUS35695	WPI495-2	
NI-80 11-7/8"	ITS3561188	IUS3561188	WP1411882	
NI-80 14"	ITS35614	IUS35614	WP14142	
NI-80 16"	ITS35616	IUS35616	WP14162	
NI-90 11-7/8"	ITS3561188	IUS3561188	WP1411882	
NI-90 14"	ITS35614	IUS35614	WP14142	
NI-90 16"	ITS35616	IUS35616	WP14162	
CPI-90 11-7/8"	ITS3561188	IUS3561188	WP1411882	
CPI-90 14"	ITS35614	IUS35614	WP14142	
CPI-90 16"	ITS35616	IUS35616	WP14162	
OPEN JOIST TRI-FORCE	**TOP MOUNT**	**FACE MOUNT**	**TOP MOUNT DOUBLE**	**FACE MOUNT DOUBLE**
11-7/8" X 3'-18'	ITS2561188	IUS2561188	MIT311882	
11-7/8" X 20'-22	ITS3561188	IUS3561188	WP1411882	
14" X 3'-18'	ITS25614	IUS25614		
14" X 19'-24'	ITS35616	IUS35614	WP14142	
16" X 3'-16'	ITS25616	IUS25616		
16" X 18'-30'	ITS35616	IUS35616	WP14162	

All items in stock
For a complete list of all stocked Simpson Connectors, email us at plans@coastal.com

I-JOIST
ROOF FRAMING & CONSTRUCTION DETAILS

COMMON CPI/N I-JOIST ROOF FRAMING AND CONSTRUCTION DETAILS

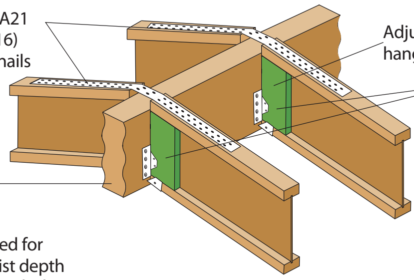


Optional overhangs

I-JOIST
ROOF DETAILS

TYPICAL CPI/N I JOIST ROOF FRAMING AND CONSTRUCTION DETAILS
Individual components not shown to scale for clarity.

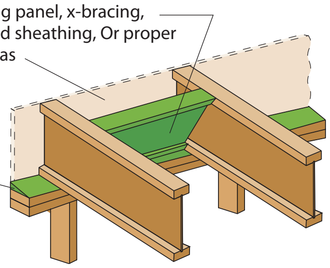
2a RIDGE CONNECTION – 12/12 MAXIMUM SLOPE



*Strap required for 16" CPI/NI Joist depth or members with slope of 7/12 or greater.

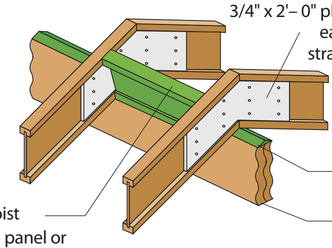
Uplift connections may be required.

2b UPPER END, BEARING ON WALL



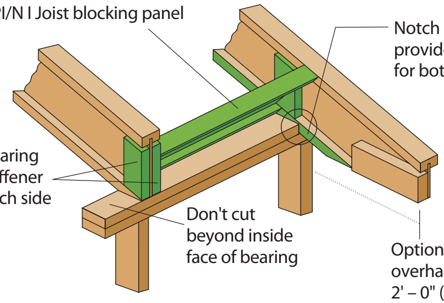
Uplift connections may be required.

2c CPI/N I JOIST ABOVE CP-LAM RIDGE BEAM



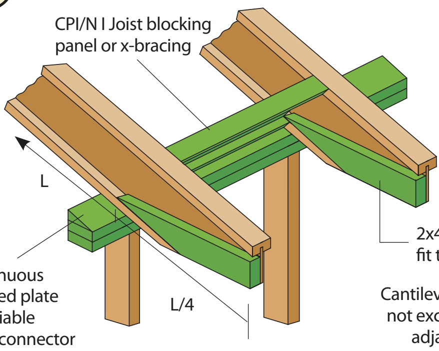
Uplift connections may be required.

2d BIRDSMOUTH CUT – LOW END OF CPI/N I JOIST ONLY



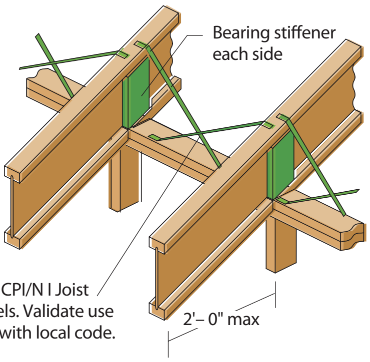
Uplift connections may be required.

2e CPI/N I JOIST ON BEVELED PLATE



Uplift connections may be required.

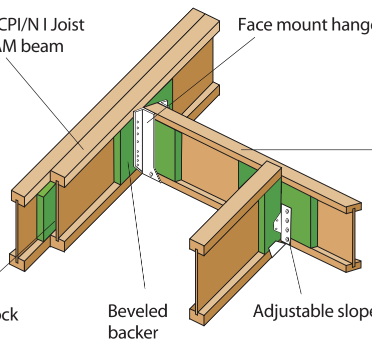
2f BIRDSMOUTH CUT – LOW END OF CPI/N I JOIST ONLY



I-JOIST
ROOF DETAILS

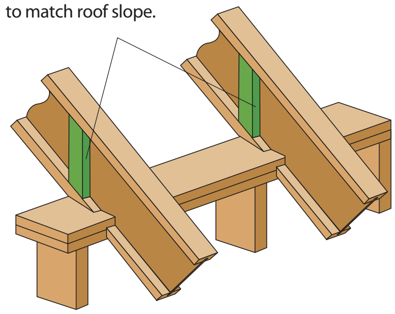
COMMON CPI/N I-JOIST ROOF FRAMING AND CONSTRUCTION DETAILS
Individual components not shown to scale for clarity.

2g ROOF OPENING, FACE MOUNTED HANGER



Uplift connections may be required

2h BEVELED CUT BEARING STIFFENER

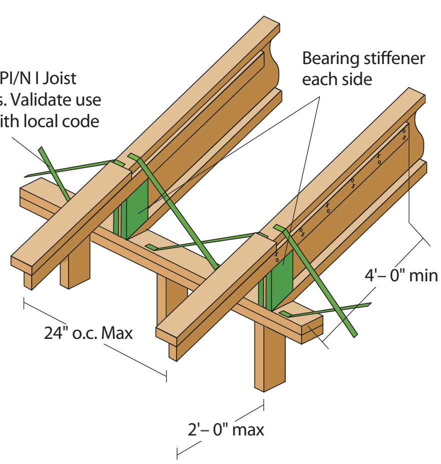


Uplift connections may be required

2k OPTIONAL OVERHANG EXTENSIONS FOR UNIFORMLY DISTRIBUTED LOADS ONLY

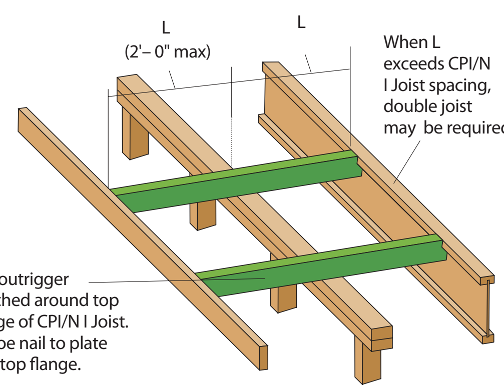
May be used with details 2d, 2e and 2f (Low end only)

Stop CPI/N I Joist at wall line and extend top flange with 2x4. Support extension with 2x4 nailed to web of joist with (2) rows of 8d nails at 8" o.c. clinched. Extend 2x4 support at least 4' into joist span and nail to top flange with 8d nails at 8"o.c.



Uplift connections may be required

2m OVERHANG PARALLEL TO CPI/N I JOIST



Uplift connections may be required

I-JOIST
ALLOWABLE ROOF SPANS

Snow Load = 40 psf , Dead Load = 15 psf

Joist Depth	Joist Series	Slope of 1/4: 12 to 4:12 On Centerspacing			Slope >4:12 to 8:12 On Centerspacing			Slope >8:12 to 12:12 On Centerspacing		
		12"	16"	24"	12"	16"	24"	12"	16"	24"
9-1/2"	NI-20	18'-11"	17'-1"	14'-4"	17'-11"	16'-2"	14'-1"	16'-8"	15'-1"	13'-1"
	NI-40X	21'-7"	18'-8"	15'-3"	20'-6"	18'-4"	14'-11"	19'-1"	17'-3"	14'-6"
	NI-60	22'-1"	20'-0"	17'-4"	20'-11"	18'-11"	16'-5"	19'-6"	17"-7"	15'-4"
	NI-70	24'-2"	21'-10"	19'-0"	22'-11"	20'-9"	18'-0"	21'-4"	19'-4"	16'-9"
	NI-80	24'-8"	22'-4"	19'-4"	23'-5"	21'-2'	18'-4"	21'-9"	19'-9"	17'-1"
11-7/8"	NI-20	22'-10"	20'-1"	16'-5"	21'-7"	19'-7"	16'-1"	20'1"	18'-3"	15'-8"
	NI-40X	24'-8"	21'-4"	17'-4"	24'-2"	20'-11"	17'-0"	22'-10"	20'-4"	16'-7"
	NI-60	26'-6"	24'-0"	19'-11"	25'-1"	22"-8"	19'-6"	23'-4"	21'-2"	18'-4"
	NI-70	28'-11"	26'-2"	22'-8"	27'-4"	24'-9"	21'-6"	25'-6"	23'-1"	20'-1"
	NI-80	29'-6"	26'-8"	23'-2"	27'-11"	25'-3"	21'-11"	26'-0"	23'-7"	20'-5"
	NI-90	32'-5"	27'-6"	23'-10"	28'-9"	26'-1"	22'-7"	26'-10"	24'-4"	21'-1"
14"	NI-40X	27'-1"	23'-5"	19'-1"	26'-7"	23'-0"	18'-8"	25'-10"	22'-4"	18'-2"
	NI-60	30'-2"	26'-10"	21'-11"	28'-7"	25'-11"	21'-6"	26'-8"	24'-1"	20'-11"
	NI-70	32'-10"	29'-8"	25'-5"	31'-0"	28'-1"	24'-5"	28'-11"	26'-2"	22'-9"
	NI-80	33'-7"	30'-4"	26'-1"	31'-9"	28'-9"	24'-11"	29'-7"	26'-10"	23'-3"
	NI-90	34'-7"	31'-3"	27'-1"	32'-8"	29'-7"	25'-8"	30'-6"	27'-7"	24'-0"
16"	NI-60	33'-6"	28'-11"	23'-7"	31'-9"	28'-5"	23'-2"	29'-7"	26'-10"	22'-6"
	NI-70	36'-4"	32'-11"	26'-11"	34'-5"	31'-2"	26'-10"	32'-1"	29'-0"	25'-3"
	NI-80	37'-3"	33'-8"	28'-1"	35'-3"	31'-11"	27'-7"	32'-10"	29'-9"	25'-10"
	NI-90	38'-8"	34'-8"	30'-1"	36'-3"	32'-10"	28'-6"	33'-9"	30'-7"	26'-7"

NOTES:

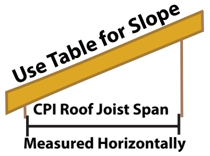
1. Allowable clear span applicable to simple-span roof construction with a design roof snow load as shown and dead load of 15 psf. The allowable span is based on the horizontal distance between inside face of supports. The snow load deflection is limited to L/240 and the total load deflection to L/180. Spans are based on a duration of load (DOL) factor of 1.15.
2. Spans include a cantilever of up to 2 feet on one end of the I-joist.
3. Minimum bearing length shall be 1-3/4" inches for the end bearings, and 3-1/2" inches on end bearing adjacent to cantilever.
4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in these tables, except as required for hangers.
5. These span charts are based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties.

SI units conversion: 1 inch = 25.4 mm, 1 foot = 0.305 m

CPI PRO JOISTS 50 PSF LIVE LOAD - 15 PSF DEAD LOAD

CPI Joist Series	CPI Joist Depth	Slope of 4/12 or Less			Slopes over 4/12 up to 8/12			Slopes over 8/12 up to 12/12		
		16" O.C.	19.2" O.C.	24" O.C.	16" O.C.	19.2" O.C.	24" O.C.	16" O.C.	19.2" O.C.	24" O.C.
CPI 20	9-1/2"	16'-0"	14'-7"	11'-7"	15'-5"	14'-1"	11'-3"	14'-4"	13'-6"	10'-9"
	11-7/8"	17'-7"	14'-7"	11'-7"	17'-0"	14'-1"	11'-3"	16'-3"	13'-6"	10'-9"
CPI 30	9-1/2"	16'-9"	15'-8"	13'-1"	15'-11"	14'-11"	12'-7"	14'-11"	14'-0"	12'-1"
	11-7/8"	19'-9"	16'-5"	13'-1"	19'-1"	15'-10"	12'-7"	17'-11"	15'-1"	12'-1"
CPI 40	9-1/2"	16'-8"	15'-2"	13'-7"	16'-5"	14'-11"	13'-4"	15'-10"	14'-7"	13'-0"
	11-7/8"	19'-0"	17'-4"	15'-6"	18'-8"	17'-1"	15'-3"	18'-3"	16'-8"	14'-10"
	14"	20'-11"	19'-1"	17'-0"	20'-7"	18'-9"	16'-8"	20'-1"	18'-4"	15'-11"
	16"	22'-6"	20'-6"	17'-3"	22'-2"	20'-2"	16'-8"	21'-8"	19'-9"	15'-11"
CPI 50	9-1/2"	17'-6"	16'-5"	14'-0"	16'-8"	15'-8"	13'-6"	15'-7"	14'-8"	12'-11"
	11-7/8"	21'-1"	17'-7"	14'-0"	20'-1"	17'-0"	13'-6"	18'-10"	16'-3"	12'-11"
	14"	21'-2"	17'-7"	14'-0"	20'-5"	17'-0"	13'-6"	19'-6"	16'-3"	12'-11"
	16"	21'-2"	17'-7"	14'-0"	20'-5"	17'-0"	13'-6"	19'-6"	16'-3"	12'-11"
CPI 60	9-1/2"	18'-10"	17'-8"	14'-10"	17'-11"	16'-10"	14'-4"	16'-9"	15'-9"	13'-8"
	11-7/8"	22'-5"	20'-5"	17'-3"	21'-6"	20'-1"	16'-8"	20'-2"	18'-11"	15'-11"
	14"	24'-7"	21'-7"	17'-3"	24'-2"	20'-10"	16'-8"	22'-11"	19'-11"	15'-11"
	16"	25'-11"	21'-7"	17'-3"	25'-1"	20'-10"	16'-8"	24'-0"	19'-11"	15'-11"
CPI 70	11-7/8"	23'-5"	20'-2"	16'-1"	22'-4"	19'-6"	15'-6"	20'-10"	18'-7"	14'-10"
	14"	24'-3"	20'-2"	16'-1"	23'-5"	19'-6"	15'-6"	22'-4"	18'-7"	14'-10"
	16"	24'-3"	20'-2"	16'-1"	23'-5"	19'-6"	15'-6"	22'-4"	18'-7"	14'-10"
CPI 90	9-1/2"	22'-6"	21'-1"	19'-6"	21'-5"	20'-1"	18'-7"	20'-0"	18'-10"	17'-5"
	11-7/8"	26'-10"	25'-2"	23'-2"	25'-7"	24'-0"	22'-2"	23'-11"	22'-5"	20'-9"
	14"	30'-5"	28'-7"	23'-2"	29'-0"	27'-3"	22'-5"	27'-2"	25'-6"	21'-5"
	16"	33'-9"	29'-1"	23'-2"	32'-2"	28'-1"	22'-5"	30'-1"	26'-10"	21'-5"

Stocked Joists



NOTES:

1. Table values apply to uniformly loaded simple or multiple span CPI joists. Span is the horizontal distance from face to face of supports. Use beam sizing software to analyze multiple span joists if the length of any span is less than half the length of an adjacent span.
2. Roofs must be sloped at least 1/4" in 12" to assure drainage.
3. Live load deflection is limited to L/240. Total load deflection is limited to L/180. Verify that the deflection criteria conform to local building code requirements.
4. Table values are based on 1-3/4" end and 3-1/2" intermediate bearing lengths without web stiffeners.

RIM BOARD

APA Rim Board Plus

Engineered Rim Board is a structural framing member designed to support wall loads and tie floor joists together.

Engineered Rim Board must be continuously supported along the bottom edge and not used to span openings. It may not be used as other structural framing elements such as joists, rafters, headers and ledgers.

ADVANTAGES

- No delamination
- Manufactured to match the depths of I-joist framing members
- Resistant to moisture
- Dimensionally stable
- 12 foot standard

PERFORMANCE CRITERIA

Norbord Rim Board is manufactured in accordance with ICBO AC-124 Acceptance Criteria for Wood-Based Rim Board Products.

STORAGE AND HANDLING

Ship Rim Board under tarp. Set bundles on supports to keep Rim Board off the ground and provide air circulation. Outdoors, keep Rim Board under a protective cover. When high moisture exists, cut banding on the stack to prevent edge damage. When using a forklift, put the stack on a pallet or supports to minimize damage from forks.

AVAILABLE SIZES AND WEIGHTS

Approximate Weight (PLF)					
Thickness (inches)		Depth (inches)			
		9-1/2	11-7/8	14	16
Norbord Rim Board Plus	1-1/8"	264	3.30	3.89	4.44

DESIGN CAPACITIES

	Rim Board (inches)	Horizontal Shear (plf)	Vertical Load Capacity (lbf/ft)	1/2" Lag Screw Lateral Resistance (lbf)
Norbord Rim Board Plus	1-1/8	200	4,850	350

Thickness: 1-1/8"
Available Depths: 9-1/2", 11-7/8", 14" & 16"
Available Length: 12'
Complies with ICC ES AC-124

INSTALLATION

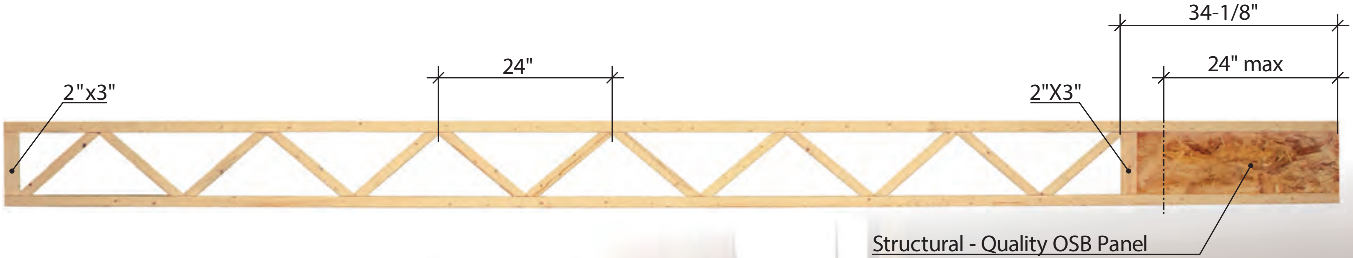
A full 1-1/8" edge surface allows for quick installation with virtually no risk of splitting. Installation of Rim Boards require 8d common or ring-shank nails.

- I-JOIST – drive 1 nail into the top flange and 1 into the bottom flange
- Plate - toe-nail Rim Board at 6" on center to wall plates.
- Floor Deck - space fasteners at 6" on center.
- Ledger - use 1/2" lag screws and ensure they completely penetrate Rim Board. Please refer to building code requirements for number and placement of lag screws.
- Starter Joist - when Rim Boards are used as starter joists to maintain the vertical loading, there are several installation options, such as blocking (maximum 24" o.c.), double up on the Rim Boards, or place an I-JOIST adjacent to the Rim Board. Please consult your designer for the appropriate option and details for your application.

THE OPEN JOIST

The Barrette® Structural Open Concept Floor System
The strength of triangulation, accuracy of finger-jointed assembly, maximation of dimensional lumber and environmentally-friendly field adjustability makes Open Joist TRIFORCE® the only trimmable, all wood, open-webbed, finger-jointed floor joist installed without metal plate connectors.

Reengineering wood components for your needs
For more than 25 years, our finger joint technology has demonstrated its strength and durability throughout North America. The open joist TRIFORCE® has surpassed industry standards by establishing a new level of excellence in the engineering of floor systems, while optimizing the use of lumber in its components.



OPEN JOIST
FLOOR SPANS

Maximum Allowable Floor Spans for Residential Application

USA - l/480, Glued and nailed, LL: 40 psf, DL: 15 psf							
		Spacing		12"	16"	19.2"	24"
		Subfloor - CSP		5/8"	5/8"	5/8"	3/4"
Depth (in)	Series	Chords	Weight (PLF)	Maximum Spans o.c.			
11-7/8"	OJ314	2" x 3"	2.80	16'-0"	16'-0"	16'-0"	14'-10"
	OJ315	2" x 3"	2.80	18'-0"	18'-0"	17'-9"	**16'-3"**
	OJ415	2" x 4"	3.35	20'-0"	20'-0"	19'-9"	**18'-4"**
	OJ418	2" x 4"	3.35	22'-0"	22'-0"	**20'-9"**	–
14"	OJ314	2" x 3"	2.85	16'-0"	16'-0"	16'-0"	16'-0"
	OJ415	2"x 4"	2.85	20'-0"	20'-0"	20'-0"	–
	OJ415	2" x 4"	3.45	22'-0"	22'-0"	22'-0"	**20'-11"**
	OJ418	2" x 4"	3.45	26'-0"	25'-0"	23'-7"	–
16"	OJ314	2" x 3"	2.95	16'-0"	16'-0"	16'-0"	16'-0"
	OJ315	2" x 3"	2.95	20'-0"	20'-0"	20'-0"	19'-3"
	OJ418	2" x 4"	3.55	26'-0"	26'-0"	**26'-0"**	**24'-2"**
	OJ420	2" x 4"	3.55	30'-0"	28'-6"	**26'-10"**	–

Notes:
1. Spans apply to simple span application only.
2. Minimum end bearing length is 1-1/2", **except for bold spans minimum 1-1/2" at the OSB section with web stiffeners**
3. Maximum spans are measured centerline to centerline of bearing and are based on uniformly loaded joists.
4. Dead load deflection is limited to L/240 and total load deflection is limited L/240
5. Live load is limited to L/480.
6. The spans shown consider a minimum 5/8" thick rated sheathing nailed and glued to joist in accordance with the applicable code or a 3/4" at 24" O.C.
7. Allowable spans take into consideration the composite effect from glued and nailed subfloor for deflections.
8. Refer to appropriate sections of the Specifier Guide for installation guide lines and construction details.
9. The nailing specifications are to be in accordance with in force building code and the adhesives used should comply with APA Specification AFG-01 or ASTM D3498.

Maximum Allowed Unfactored Live Load Chart for Residential Application

Dead Load: 15 PSF, L/360, Glued and Nailed												
Length	11-7/8" Loads PSF				14" Loads PSF				16" Loads PSF			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
8'-0"	**314**	**232**	**191**	**149**	**319**	**236**	**194**	**152**	**324**	**239**	**197**	**154**
10'-0"	**233**	**171**	**140**	**109**	**252**	**185**	**152**	**118**	**256**	**188**	**154**	**120**
12'-0"	**157**	**114**	**92**	**71**	**191**	**139**	**113**	**88**	**211**	**154**	**126**	**98**
14'-0"		79	63	48	**136**	**98**	**79**	**60**	**156**	**113**	**92**	**70**
16'-0"	81	57	45	------	100	71	57	42	116	83	66	50
18'-0"	76	53	42	------	95	68	54	40	**113**	**81**	**65**	**49**
20'-0"	**81**	**62**	**51**	------	74	52	40	------	88	62	49	------
22'-0"	**71**	**54**	**46**	------	80	**63**	**50**	------	**108**	**77**	**62**	**46**
24'-0"					**79**	**61**	**51**	------	**98**	**69**	**55**	**41**
26'-0"					63	**48**	------	------	**83**	**63**	**50**	------
28'-0"									**74**	**57**	**45**	------
30'-0"									**61**	**47**	------	------

Notes:
1. Uniform loads shown are for full span (bearing included). Higher loads could be applied using longer end bearing length.
2. Minimum end bearing length is 1-1/2", except for bold loads, minimum 1-1/2" with web stiffeners at the OSB section
3. Dead load deflection is limited to L/240 and total load deflection is limited to L/240
4. Live load deflection is limited to L/360.
5. Refer to appropriate sections of the Specifier Guide for installation guidelines and construction details.
6. The nailing specifications are to be in accordance with in force building code and the adhesives used should comply with APA Specification AFG-01 or ASTM D3498

Mid Span Continuous Strongback Recommendations

LL = 40 PSF DL = 15 PSF												
Length	11-7/8"				14"				16"			
Spacing o.c.	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
14'-0"	None	None	None	None	None	None	None	None	None	None	None	None
16'-0"	None	1-2x4	1-2x4	None	None	None	None	None	None	None	None	None
18'-0"	1-2x4	1-2x6	1-2x6	1-2x6	None	1-2x6	1-2x6	1-2x6	None	None	1-2x6	1-2x6
20'-0"	2-2x4	1-2x6	2-2x6	1-2x8	1-2x6	1-2x6	1-2x6	------	1-2x6	1-2x6	1-2x6	1-2x6
22'-0"	1-2x6	2-2x6	1-2x8	2-2x8	1-2x6	1-2x6	2-2x6	2-2x6	None	1-2x6	1-2x6	1-2x6
24'-0"	------	------	------	------	1-2x6	2-2x6	2-2x8	2-2x8	1-2x6	1-2x6	2-2x6	2-2x6
26'-0"	------	------	------	------	2-2x6	2-2x8	2-2x10	2-2x8	1-2x6	2-2x6	1-2x8	1-2x8
28'-0"	------	------	------	------	------	------	------	------	2-2x6	2-2x8	2-2x8	------
30'-0"	------	------	------	------	------	------	------	------	2-2x8	2-2x10	2-2x10	------

*Note: 9-1/2" size has been discontinued by manufacturer

Notes:
1. Specified continuous strongbacks installed at mid span shown, take into consideration a performance criterion.
2. Refer to appropriate sections of the Specifier Guide for installation guidelines and construction details.
3. Live load deflection is limited to L/360
4. This table of continuous strongback for maximum spans can also be used for maximum spans when the live load deflection is limited L/480.

TRIFORCE®

OPEN JOIST
FLOOR DETAILS

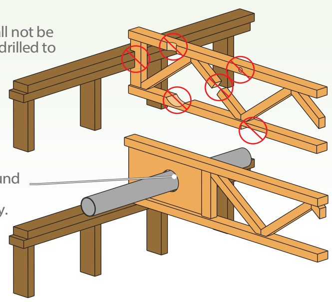
Mechanical Clearances

Mechanical Opening Dimension			
Depth	Round	Square	Rectangular
11-⁷⁄₈"	7 ¼"	5 ¾" x 5 ¾"	3" x 13"
14"	8 ½"	6 ½" x 6 ½"	3" x 14", 6" X 8"
16"	9 ½"	7 ½" x 7 ½"	3" x 15"

Possibility of round hole at 4 1/2" o.c. of joist extremity.
Contact your TRIFORCE® representative for more details.

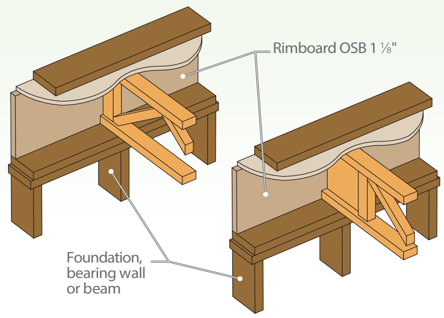
Typical Details

Detail 18

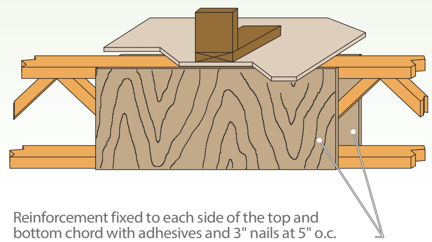


Contact your **TRIFORCE**® representative for more details.

Detail 2
Bearing Wall



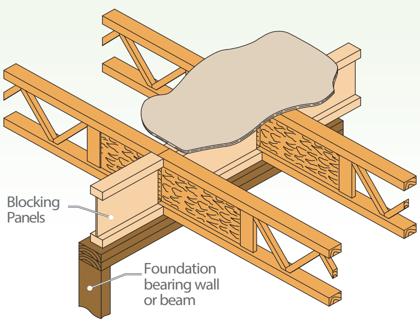
Detail 11VS
Reinforcement Under Concentrated Load



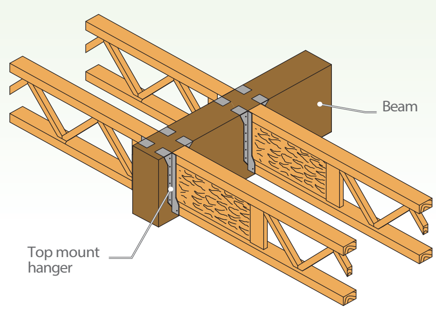
Reinforcement fixed to each side of the top and bottom chord with adhesives and 3" nails at 5" o.c.

* PL Premium Adhesive

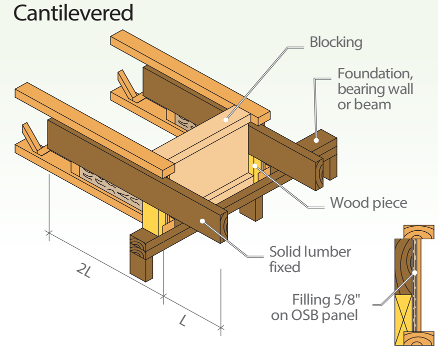
Detail 3P2B
End To End Joist



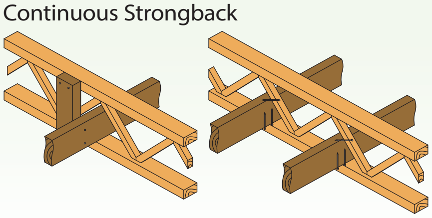
Detail 4P1
Joist To Beam With Hanger



Detail 12P
Cantilevered



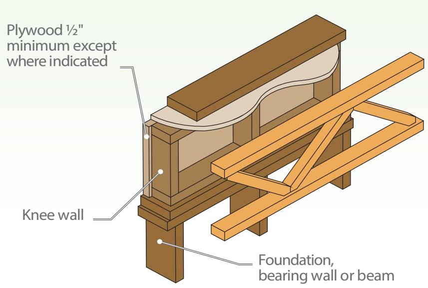
Detail 5
Continuous Strongback



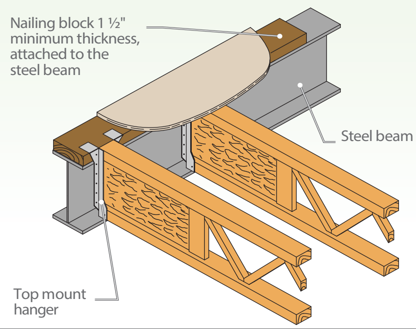
Option #1 (suggested)
Secure vertical (2x4) with 2 nails* to both chords and strongback to vertical with 2 nails*.
*(gun nails 0.122" x 3 ¼")

Option #2
Secure strongback with 2 nails* through the bottom chord and 1 nail* through the diagonal web.
*(gun nails 0.122" x 3 ¼")

Detail 6M
Knee Wall



Detail 15ETP
Steel Beam With Solid Wood Filler



For more specific details please contact plans@coastalfp.com

TRIFORCE®

STRONGBACKS
DETAILS

Strongbacks must be dry lumber and secured with 2 spiral or resined 3" nails or 2 - 3" screws at mid-span, to a vertical brace or diagonal web.

Strongbacks can be cut between 2 joists for ducts, pipes and wires if needed, but at least 3 consecutive joists must remain attached together.

11-7/8" = 2 x 4" or 2x6"

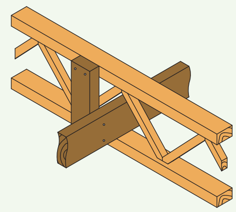
14" = 2 x 6" or 2 x 8"

16" = 2 x 6", 2 x 8" or 2x10"

Detail 5

Strongback (at mid span)

Option #1 (recommanded)

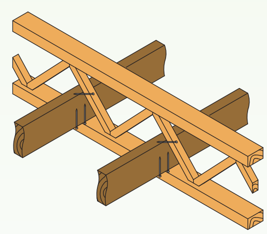


Secure vertical side block (2x4) as per detail, with 2 nails* to both chords and strongback to vertical with 2 nails*. *(gun nails 0.122" x 3¼")

Adding adhesive will provide an ultimate connection for high floor performance. Gun nails can be substituted with 3" screws.

Option #2

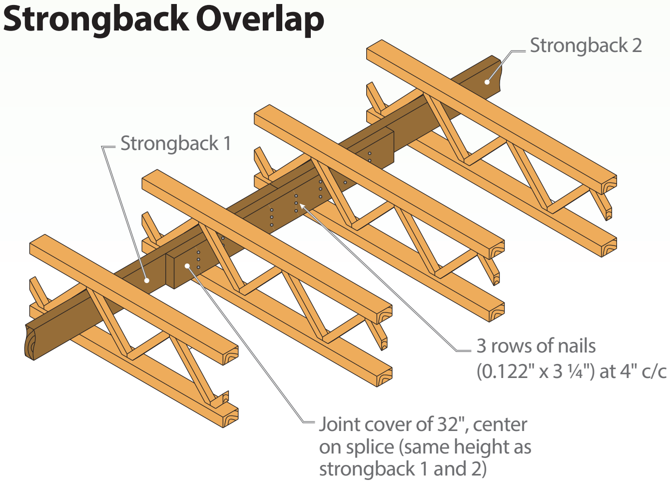
2x3 flanges: 1 - 3" (10d) through bottom flange and 1 - 3" (10d) through the diagonal, adding adhesive will insure long term performance



2x4 flanges: 2 - 3" (10d) through bottom flange and 1 - 3" (10d) through the diagonal.

Adding adhesive will ensure long term performance. Gun nails can be substituted with 3" screws.

Strongback Overlap



TRIFORCE

2.1E CP-LAM
DESIGN PROPERTIES

DOUG FIR LVL

ALLOWABLE DESIGN PROPERTIES – 1 3⁄4" 2.1E CP-LAM

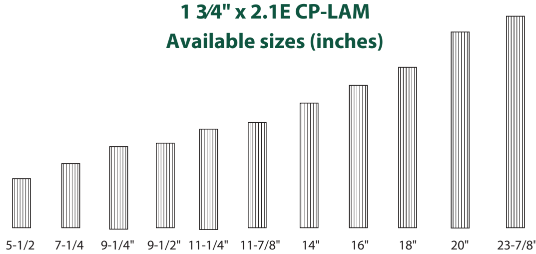
Depth	Maximum Vertical Shear (lbs)			Maximum Bending Moment (ft-lbs)			EI (x 10^6 lbs-in^2)	Weight (plf)
	100%	115%	125%	100%	115%	125%		
5-1/2"	1829	2103	2286	2664	3064	3330	49	2.50
7-1/4"	2411	2772	3013	4380	5037	5475	111	3.30
9-1/4" & 9-1/2"	3159	3633	3948	7125	8194	8907	250	4.32
11-1/4" & 11-7/8"	3948	4541	4936	10647	12245	13309	488	5.40
14"	4655	5353	5819	14320	16468	17900	800	6.36
16"	5320	6118	6650	18210	20942	22763	1195	7.27
18"	5985	6883	7481	22511	25888	28139	1701	8.18
20"	6650	7648	8313	27212	31294	34015	2333	9.1
23-7/8"	7938	9129	9923	37428	43043	46786	4032	10.85

Stocked Items

2.1E CP-LAM Allowable Design Stresses [1]

Modulus of Elasticity	E	=	2,100,000 psi[2]
Bending	F_b	=	3,100 psi[3][4]
Horizontal Shear (joist)	F_v	=	285 psi
Compression Perpendicular to Grain (joist)	$F_{c\perp}$	=	850 psi[2]
Compression Parallel to Grain	F_c	=	2,750 psi

1 3⁄4" x 2.1E CP-LAM
Available sizes (inches)

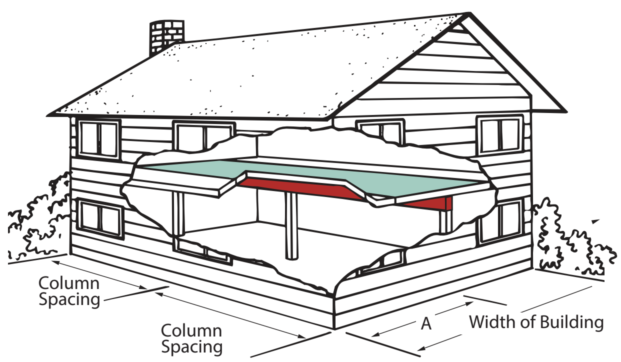


1. These allowable design stresses apply to dry service conditions.
2. No increase is allowed for load duration.
3. Multiply by $(12/d)^{1/5}$ where d = depth of member (in).
4. A factor of 1.04 may be applied for repetitive members as defined in the National Design Specification* for Wood Construction

FOR ADDITIONAL GRADES AND SIZES PLEASE VISIT OUR WEBSITE AT WWW.COASTALFP.COM

2.1E CP - LAM FLOOR BEAMS

This table provides CP-LAM beam sizes for center support of one level of floor framing over various column spacings. Where floor joists are continuous over the beam, this table applies only when the 'A' span is between 45% and 55% of the building width.



Width of Building (ft)	Column Spacing									
	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'
24'	2 – 11-7/8"	2 – 11-7/8"	2 – 11-7/8"	2 – 14"	2 – 14"	2 – 16"	2 – 16"	2 – 16"	2 – 18"	2 – 18"
	3 – 9-1/2"	3 – 9-1/2"	3 – 11-7/8"	3 – 11-7/8"	3 – 11-7/8"					
28'	2 – 11-7/8"	2 – 11-7/8"	2 – 14"	2 – 14"	2 – 14"	2 – 16"	2 – 16"	2 – 18"	2 – 18"	–
	3 – 9-1/2"	3 – 11-7/8"	3 – 11-7/8"	3 – 11-7/8"	3 – 14"	3 – 14"	3 – 14"	3 – 16"	3 – 16"	3 – 18"
32'	2 – 11-7/8"	2 – 11-7/8"	2 – 14"	2 – 14"	2 – 16"	2 – 16"	2 – 18"	2 – 18"	–	–
	3 – 9-1/2"	3 – 11-7/8"	3 – 11-7/8"	3 – 14"	3 – 14"	3 – 14"	3 – 16"	3 – 16"	3 – 18"	3 – 18"
36'	2 – 11-7/8"	2 – 14"	2 – 14"	2 – 16"	2 – 16"	2 – 18"	2 – 18"	–	–	–
	3 – 11-7/8"	3 – 11-7/8"	3 – 11-7/8"	3 – 14"	3 – 14"	3 – 16"	3 – 16"	3 – 16"	3 – 18"	3 – 18"
40'	2 – 11-7/8"	2 – 14"	2 – 14"	2 – 16"	2 – 16"	2 – 18"	–	–	–	–
	3 – 11-7/8"	3 – 11-7/8"	3 – 14"	3 – 14"	3 – 14"	3 – 16"	3 – 16"	3 – 18"	3 – 18"	–

Notes:

1. CP-LAM beam sizes are listed as the number of 1-3/4" thick pieces by the beam depth, e.g. 2 –1/2 indicates two 1-3/4" pieces by 9-1/2" deep.
2. All CP-LAM beams require support across their full width.
3. The minimum required end and intermediate bearing lengths (based on 850 psi) are 3" and 7-1/2" respectively unless the + symbol is shown. In that case, 4-1/2" and 10-1/2" end and intermediate bearing lengths are required.
4. CP-LAM beam sizes are based on residential floor loading of 40 psf live load and 10 psf dead load. The roof framing must be trusses supported at the exterior walls only.
5. Defection is limited to L/360 at live load and L/240 at total load.
6. CP-LAM beam sizes are based on continuous floor joist spans and simple or continuous beam spans. If the floor joists are not continuous, it is permissible to consider a "Width of Building" dimension that is equal to 0.8 times the actual width of the building.

2.1E CP-LAM

ALLOWABLE UNIFORM LOADS FLOOR 100%

ALLOWABLE UNIFORM LOADS* - POUNDS PER LINEAR FOOT - 1-3/4" 2.1E CP-LAM

Span (ft)	Key	One 1-3/4" CP-LAM			Two 1-3/4" CP-LAM					Three 1-3/4"CP-LAM				
		9-1/2"	11-7/8"	14"	9-1/2"	11-7/8"	14"	16"	18"	9-1/2"	11-7/8"	14"	16"	18"
6	LL	-	-	-	-	-	-	-	-	-	-	-	-	-
	TL	1063	1425	1796	2127	2850	3591	4388	5304	3190	4275	5387	6582	7955
	BRG	2.2/5.4	2.9/7.2	3.6/9.1	2.2/5.4	2.9/7.2	3.6/9.1	4.4/11.1	5.4/13.4	2.2/5.4	2.9/7.2	3.6/9.1	4.4/11.1	5.4/13/4
8	LL	724	-	-	1447	-	-	-	-	2171	-	-	-	-
	TL	746	979	1208	1493	1958	2416	2887	3404	2239	2937	3624	4331	5105
	BRG	2/5	2.6/6.6	3.3/8.2	2/5	2.6/6.6	3.3/8.2	3.9/8.8	4.6/11.5	2/5	2.6/6.6	3.3/8.2	3.9/9.8	4.6/11.5
10	LL	370	724	-	741	1447	-	-	-	1111	2171	-	-	-
	TL	551	745	909	1103	1490	1819	2150	2504	1654	2236	2728	3224	3755
	BRG	1.9/4.7	2.5/6.3	3.1/7.7	1.9/4.7	2.5/6.3	3.1/7.7	3.6/9.1	4.2/10.6	1.9/4.7	2.5/6.3	3.1/7.7	3.6/9.1	4.2/10.6
11	LL	278	544	-	557	1087	-	-	-	835	1631	-	-	-
	TL	413	665	809	826	1331	1618	1905	2211	1240	1996	2427	2858	3316
	BRG	1.5/3.9	2.5/6.2	3/7.5	1.5/3.9	2.5/6.2	3/7.5	3.5/8.9	4.1/10.3	1.5/3.9	2.5/6.2	3/7.5	3.5/8.9	4.1/10.3
12	LL	214	419	686	429	837	1372	-	-	643	1256	2058	-	-
	TL	317	586	729	635	1172	1452	1711	1979	952	1758	2186	2566	2968
	BRG	1.5/3.2	2.4/6	3/7.4	1.5/3.2	2.4/6	3/7.4	3.5/8.7	4/10.1	1.5/3.2	2.4/6	3/7.4	3.5/8.7	4/10.1
13	LL	169	329	540	337	659	1079	-	-	506	988	1619	-	-
	TL	249	489	663	497	977	1325	1552	1790	746	1466	1988	2328	2686
	BRG	1.5/3	2.2/5.4	2./9/7.3	1.5/3	2.2/5.4	2.9/7.3	3.4/8.6	3.9/9.9	1.5/3	2.2/5.4	2.9/7.3	3.4/8.6	3.9/9.9
14	LL	135	264	432	270	527	864	1290	-	405	791	1296	1935	-
	TL	198	390	578	396	780	1156	1420	1635	595	1170	1734	2130	2452
	BRG	1.5/3	1.9/4.7	2.8/6.9	1.5/3	1,9/4.7	2.8/6.9	3.4/8.4	3.9/9.7	1.5/3	19/4.7	2.8/6.9	3.4/8.4	3.9/9.7
15	LL	110	214	351	220	429	703	1049	1493	329	643	1054	1573	2240
	TL	160	316	503	321	632	1006	1280	1504	481	949	1508	1921	2255
	BRG	1.5/3	1.6/4.1	2.6/6.4	1.5/3	1.6/4.1	2.6/6.4	3.3/8.2	3.8/9.6	1.5/3	1.6/4.1	2.6/6.4	3.3/8.2	3.8/9.6
16	LL	90	177	289	181	353	579	864	1230	271	530	868	1296	1846
	TL	131	260	428	263	519	856	1124	1391	394	779	1284	1685	2086
	BRG	1.5/3	1.5/3.6	2.3/5.8	1.5/3	1.5/3.6	2.3/5.8	3.1/7.7	3.8/9.5	1.5/3	1.5/3.6	2.3/5.8	3.1/7.7	3.8/9.5
17	LL	75	147	241	151	295	483	720	1026	226	442	724	1081	1539
	TL	109	216	356	218	431	711	994	1230	326	647	1067	1490	1845
	BRG	1.5/3	1.5/3.2	2.1/5.2	1.5/3	1.5/3.2	2.1/5.2	2.9/7.2	3.6/8.9	1.5/3	1.5/3.2	2.1/5.2	2.9/7.2	3.6/8.9
18	LL	64	124	203	127	248	407	607	864	191	372	610	910	1296
	TL	91	181	299	182	361	597	885	1095	273	542	896	1327	1643
	BRG	1.5/3	1.5/3	1.8/4.6	1.5/3	1.5/3	1.8/4.6	2.7/6.8	3.4/8.4	1.5/3	1.5/3	1.8/4.6	2.7/6.8	3.4/8.4
19	LL	54	105	173	108	211	346	516	735	162	316	519	774	1102
	TL	77	153	253	153	306	506	760	981	230	459	759	1139	1472
	BRG	1.5/3	1.5/3	1.7/4.1	1.5/3	1.5/3	1.7/4.1	2.5/6.2	3.2/8	1.5/3	1.5/3	1.7/4.1	2.5/6.2	3.2/8
20	LL	46	90	148	93	181	296	442	630	139	271	445	664	945
	TL	65	130	216	130	261	432	649	884	195	391	648	974	1326
	BRG	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3.7	2.2/5.6	3/7.6	1.5/3	1.5/3	1.5/3.7	2.2/5.6	3/7.6
22	LL	35	68	111	70	136	223	332	473	104	204	334	499	710
	TL	48	97	161	96	193	321	484	694	144	290	482	726	1040
	BRG	1.5/3	1.5/3	1.5/3 .1	1.5/3	1.5/3	1.5/3.1	1.8/4.6	2.6/6.6	1.5/3	1.5/3	1.5/3.1	1.8/4.6	2.6/6.6
24	LL	27	52	86	54	105	172	256	365	80	157	257	384	547
	TL	36	73	122	72	146	245	370	530	108	219	367	554	796
	BRG	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3.9	2.2/5.5	1.5/3	1.5/3	1.5/3	1.5/3.9	2.2/5.5
26	LL	21	41	67	42	82	135	201	287	63	124	202	302	430
	TL	27	56	95	55	113	190	288	414	82	169	284	431	621
	BRG	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3.3	1.9/4.7	1.5/3	1.5/3	1.5/3	1.5/3.3	1.9/4.7
28	LL	17	33	54	34	66	108	161	230	51	99	162	242	344
	TL	21	44	75	42	88	149	227	328	63	132	224	341	492
	BRG	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.6/4.1	1.5/3	1.5/3	1.5/3	1.5/3	1.6/4.1
30	LL	14	27	44	27	54	88	131	187	41	80	132	197	280
	TL	16	35	60	33	70	119	182	264	49	104	179	273	395
	BRG	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3.5	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3.5

Can be applied to the CP-LAM beam in addition to its own weight. • Simple or multiple CP-LAM beam spans

Key to Table:

LL = Maximum live load- limits deflection to L/360

TL= Maximum total load - limits deflection to L/240

BRG= Required end/intermediate bearing length (inches), based on plate bearing stress of 850 psi.

2.1E CP-LAM

ALLOWABLE UNIFORM LOADS ROOF SNOW 115%

ALLOWABLE UNIFORM LOADS* - POUNDS PER LINEAR FOOT - 1-3/4" 2.1E CP-LAM

Span (ft)	Key	One 1-3/4" CP-LAM			Two 1-3/4" CP-LAM					Three 1-3/4" CP-LAM				
		9-1/2"	11-7/8"	14"	9-1/2"	11-7/8"	14"	16"	18"	9-1/2"	11-7/8"	14"	16"	18"
6	TL	1224	1640	2006	2447	3279	4132	5049	6102	3671	4919	6198	7573	9152
	LL	-	-	-	-	-	-	-	-	-	-	-	-	-
	BRG	2.5/6.2	3.3/8.3	4.2/10.4	2.5/6.2	3.3/8.3	4.2/10.4	5.1/12.8	6.2/15.4	2.5/6.2	3.3/8.3	4.2/10.4	5.1/12.8	6.2/15.4
8	TL	859	1127	1390	1718	2254	2780	3323	3917	2577	3380	4170	4984	5875
	LL	-	-	-	-	-	-	-	-	-	-	-	-	-
	BRG	2.3/5.8	3/7.6	3.8/9.4	2.3/5.8	3/7.6	3.8/9.4	4.5/11.2	5.3/13.2	2.3/5.8	3/7.6	3.8/9.4	4.5/11.2	5.3/13.2
10	LL	556	-	-	1111	-	-	-	-	1667	-	-	-	-
	TL	651	858	1047	1302	1716	2093	2474	2882	1954	2573	3140	3711	4322
	BRG	2.2/5.5	2.9/7.3	3.5/8.8	2.2/5.5	2.8/7.3	3.5/8.8	4.2/10.5	4.9/12.2	2.2/5.5	2.9/7.3	3.5/8.8	4.2/10.5	4.9/12.2
11	LL	418	-	-	835	-	-	-	-	1253	-	-	-	-
	TL	537	766	931	1075	1532	1863	2193	2545	1612	2298	2794	3290	3817
	BRG	2 / 5	2.9/7.1	3.5/8.7	2 / 5	2.9/7.1	3.5/8.7	4.1/10.2	4.7/11.8	2 / 5	2.9/7.1	3.5/8.7	4.1/10.2	4.7/11.8
12	LL	322	628	-	643	1256	-	-	-	965	1884	-	-	-
	TL	424	675	839	849	1350	1678	1970	2278	1273	2025	2517	2954	3417
	BRG	1.7/4.3	2.7/6.9	3.4/8.5	1.7/4.3	2.7/6.9	3.4/8.5	4 / 10	4.6/11.6	1.7/4.3	2.7/6.9	3.4/8.5	4 / 10	4.6/11.6
13	LL	253	494	-	506	988	-	-	-	759	1482	-	- -	
	TL	333	574	763	666	1148	1526	1787	2061	999	1723	2289	2681	3092
	BRG	1.5/3.7	2.5/6.3	3.4/8.4	1.5/3.7	2.5/6.3	3.4/8.4	3.9/9.8	4.5/11.3	1.5/3.7	2.5/6.3	3.4/8.4	3.9/9.8	4.5/11.3
14	LL	203	396	648	405	791	1296	-	-	608	1187	1944	-	-
	TL	266	494	666	531	989	1332	1635	1882	797	1483	1997	2453	2823
	BRG	1.5/3.2	2.4/5.9	3.2/7.9	1.5/3.2	2.4/5.9	3.2/7.9	3.9/9.7	4.5/11.2	1.5/3.2	2.4/5.9	3.2/7.9	3.9/9.7	4.5/11.2
15	LL	165	322	527	329	643	1054	-	-	494	965	1581	-	-
	TL	215	423	579	430	847	1158	1475	1732	646	1270	1737	2212	2597
	BRG	1.5/3	2.2/5.4	30/7.4	1.5/ 3	2.2/5.4	3 / 7.4	3.8/9.4	4.4/11	1.5/3	2.2/5.4	3 /7.4	3.8/9.4	4.4/ 11
16	LL	136	265	434	271	530	868	-	-	407	795	1303	-	-
	TL	177	348	508	353	696	1016	1294	1602	530	1044	1525	1941	2402
	BRG	1.5/03	1.9/4.8	2.8/6.9	1.5/ 3	1.9/4.8	2.8/6.9	3.8/8.8	4.4/10.9	1.5/ 3	1.8/4.8	2.8/6.9	3.5/8.8	4.4/10.9
17	LL	113	221	362	226	442	724	1081	-	339	663	1086	1621	-
	TL	146	289	449	293	578	899	1145	1417	439	867	1348	1717	2125
	BRG	1.5/ 3	1.7/4.2	2.6/6.5	1.5/ 3	1.7/4.2	2.6/6.5	3.3/8.3	4.1/10.2	1.5/ 3	1.7/4.2	2.6/6.5	3.3/8.3	4.1/10.2
18	LL	95	186	305	191	372	610	910	-	286	558	915	1366	-
	TL	123	243	400	245	485	800	1020	1262	368	728	1208	1529	1893
	BRG	1.5/ 3	1.5/3.8	2.5/6.2	1.5/ 3	1.5/3.8	2.5/6.2	3.1/7.8	3.9/9.7	1.5/ 3	1.5/3.8	2.5/6.2	3.1/7.8	3.9/9.7
19	LL	81	158	259	162	316	519	774	1102	243	475	778	1161	1653
	TL	104	206	339	207	411	679	914	1131	311	617	1018	1370	1696
	BRG	1.5/ 3	1.5/3.4	2.2/5.5	1.5/3	1.5/3.4	2.2/5.5	3 /7.4	3.7/9.2	1.5/ 3	1.5/3.4	2.2/5.5	3 /7.4	3.7/9.2
20	LL	69	136	222	139	271	445	664	945	208	407	667	996	1418
	TL	88	175	290	177	351	580	823	1019	265	526	870	1235	1529
	BRG	1.5/ 3	1.5/ 3	2 / 5	1.5/ 3	1.5/ 3	2 / 5	2.8/ 7	3.5/8.7	1.5/ 3	1.5/ 3	2 / 5	2.8/ 7	3.5/8.7
22	LL	52	102	167	104	204	334	499	710	157	306	501	748	1065
	TL	65	131	216	131	261	433	650	839	196	392	649	975	1259
	BRG	1.5/ 3	1.5/ 3	1.6/4.1	1.5/ 3	1.5/ 3	1.6/4.1	2.5/6.1	3.2/7.9	1.5/ 3	1.5/ 3	1.6/4.1	2.5/6.1	3.2/7.9
24	LL	40	79	129	80	157	257	384	547	121	236	386	576	820
	TL	49	99	165	99	199	330	498	703	148	298	496	746	1054
	BRG	1.5/ 3	1.5/ 3	1.5/3.5	1.5/ 3	1.5/ 3	1.5/3.5	2.1/5.2	2.9/7.3	1.5/ 3	1.5/ 3	1.5/3.5	2.1/5.2	2.9/7.3
26	LL	32	62	101	63	124	202	302	430	95	185	304	453	645
	TL	38	77	129	76	154	257	388	557	114	231	386	582	836
	BRG	1.5/ 3	1.5/ 3	1.5/ 3	1.5/ 3	1.5/ 3	1.5/ 3	1.8/4.4	2.5/6.3	1.5/ 3	1.5/ 3	1.5/ 3	1.8/4.4	2.5/6.3
28	LL	25	49	81	51	99	162	242	344	76	148	243	363	517
	TL	29	61	102	59	121	203	308	443	88	182	305	462	664
	BRG	1.5/ 3	1.5/ 3	1.5/ 3	1.5/ 3	1.5/ 3	1.5/ 3	1.5/3.8	2.2/5.4	1.5/ 3	1.5/ 3	1.5/ 3	1.5/3.8	2.2/5.4
30	LL	21	40	66	41	80	132	197	280	62	121	198	295	420
	TL	23	48	81	46	96	163	248	357	69	145	244	371	535
	BRG	1.5/ 3	1.5/ 3	1.5/ 3	1.5/ 3	1.5/ 3	1.5/ 3	1.5/ 3.3	1.9/4.7	1.5/ 3	1.5/ 3	1.5/ 3	1.5/ 3	1.9/4.7

Can be applied to the CP-LAM beam in addition to its own weight. • Simple or multiple CP-LAM beam spans

Key to Table:

LL = Maximum live load- limits deflection to L/360

TL= Maximum total load - limits deflection to L/240

BRG= Required end/intermediate bearing length (inches), based on plate bearing stress of 850 psi.

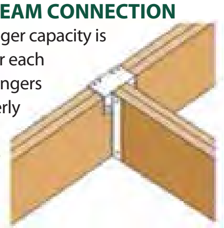
CP-LAM

BEARING DETAILS

3a

BEAM-TO-BEAM CONNECTION

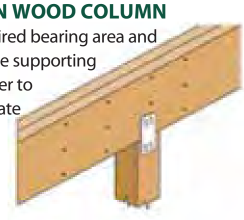
Make sure hanger capacity is appropriate for each application.Hangers must be properly installed to accommodate full capacity



3b

BEARING ON WOOD COLUMN

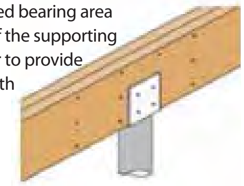
Verify the required bearing area and the ability of the supporting column member to provide adequate strength



3c

BEARING ON STEEL COLUMN

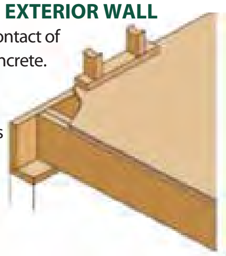
Verify the required bearing area and the ability of the supporting column member to provide adequate strength



3d

BEARING ON EXTERIOR WALL

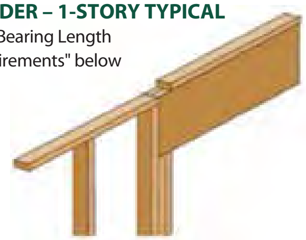
Prevent direct contact of CP-LAM with concrete. Consult local building code for requirements



3e

BEARING FOR DOOR OR WINDOW HEADER – 1-STORY TYPICAL

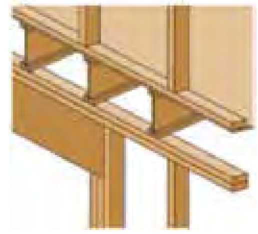
See "Bearing Length Requirements" below



3f

WINDOW/DOOR HEADER – 2-STORY TYPICAL

See "Bearing Length Requirements" below



For multi-ply CP Lam beam assembly conditions and fastening recommendations, see page 24

BEARING LENGTH REQUIREMENTS

CP-LAM BEARING LENGTH REQUIREMENTS

Support Material		S-P-F (South) Hem-Fir (North)(5)		Hem-Fir S-P-F(5)		Southern Pine Douglas Fir-Larch(5)		2.1E CP-LAM(6)	
F_{CL} (psi)		335		405		565		850	
CP-LAM Beam Width (in)		1-3/4"	3-1/2"	1-3/4"	3-1/2"	1-3/4"	3-1/2"	1-3/4"	3-1/2"
Reaction (x 1000 lbs)	1	3"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"
	2	3-1/2"	3"	3"	1-1/2"	3"	1-1/2"	1-1/2"	1-1/2"
	3	5-1/2"	3"	4-1/2"	3"	3-1/2"	3"	3"	1-1/2"
	4	7-1/2"	3-1/2"	6"	3"	4-1/2"	3"	3"	1-1/2"
	5	9-1/4"	4-1/2"	7-1/4"	4-1/2"	5-1/2"	3"	3-1/2"	3"
	6		5-1/2"	9-1/4"	4-1/2"	7-1/4"	3-1/2"	4-1/2"	3"
	7		6"		5-1/2"	7-1/4"	4-1/2"	5-1/2"	3"
	8		7-1/4"		6"	9-1/4"	4-1/2"	5-1/2"	3-1/2"
	9		9-1/4"		7-1/4"	9-1/4"	5-1/2"	7-1/2"	3-1/2"
	10		9-1/4"		7-1/4"		5-1/2"	7-1/2"	3-1/2"
	11				9-1/4"		6"	7-1/2"	4-1/2"
	12				9-1/4"		7-1/4"	9"	4-1/2"

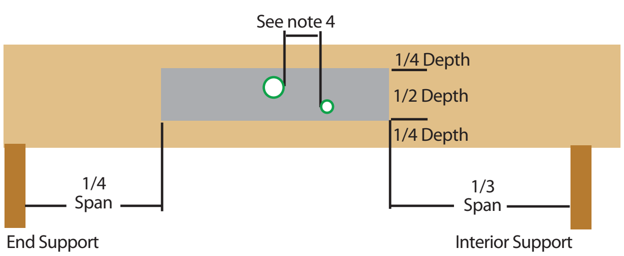
Support Material		S-P-F (South)		Hem-Fir S-P-F(5)		Southern Pine Douglas Fir-Larch(5)		2.1E CP-LAM(6)	
F_{CL} (psi)		335		405		565		850	
CP-LAM Beam Width (in)		1-3/4"	3-1/2"	1-3/4"	3-1/2"	1-3/4"	3-1/2"	1-3/4"	3-1/2"
Reaction (x 1000 lbs)	13				9-1/4"		7-1/4"		4-1/2"
	14						7-1/4"	9"	5-1/2"
	15						9-1/4"		5-1/2"
	16						9-1/4"		5-1/2"
	17						9-1/4"		6"
	18						9-1/4"		7-1/2"
	19								7-1/2"
	20								7-1/2"
	21								7-1/2"
	22								7-1/2"
	23								9"

Notes:

1. The minimum required bearing length is 1-1/2"
2. Duration of load factors may not be applied to bearing length requirements.
3. All CP-Lam beams require support across their full width.
4. All CP-LAM beams require lateral support at bearing points.
5. Use these values when the CP-LAM beam is supported by a wall plate, sill plate, timber or built up girder.
6. Use these values when the CP-LAM beam is supported by the end of a column or connection hardware.
7. The support member must be sized to carry the load from the CP-LAM beam.

HOLE DETAILS

HOLES IN CP-LAM BEAMS



NOTES:

1. This technical note applies only to uniformly loaded, simple and multiple span CP-LAM beams. Beams that carry concentrated loads, or cantilevered beams, are outside the scope of this technical note.
2. Square and rectangle holes are not permitted.
3. Round holes may be drilled or cut with a hole saw anywhere within the shaded area of the CP-LAM beam.
4. The horizontal distance between adjacent holes must be at least two times the size of the larger hole. This restriction also applies to the location of access holes relative to bolt holes in multi-ply CP-LAM beams.
5. Do not drill more than three access holes in any four foot long section of CP-LAM beam.
6. The maximum round hole diameter permitted is:

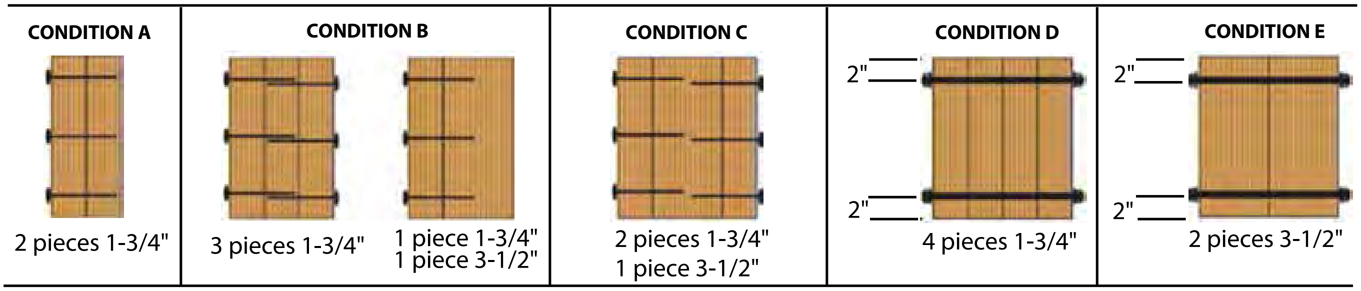
CP-LAM Beam Depth	5-1/2"	7-1/2"	9-1/2" to 24"
Maximum Hole Diameter	3/4"	1"	1-1/2"

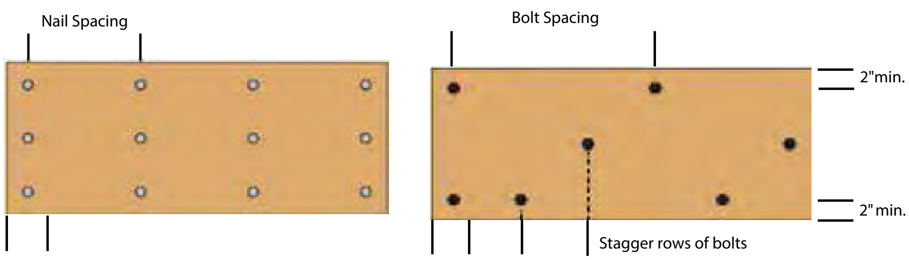
7. These limitations apply to holes drilled for plumbing or wiring access only. The size and location of holes drilled for fasteners are governed by the provisions of National Design Specifications® for wood construction.
8. CP-LAM beams deflect under load. Size holes to provide clearance where required.

MULTI-PLY

CP-LAM BEAM ASSEMBLY

COMBINATIONS OF 1-3/4" AMD 3-1/2" PLIES





MAXIMUM UNIFORM SIDE LOAD (PLF) 2.1 E CP-LAM

PIECES IN MEMBER	3-1/2" X 0.131: Nails		16d Common Nails		1/2" Bolts		
	2 Rows at 12" O.C.	3 Rows at 12" O.C.	2 Rows at 12" O.C.	3 Rows at 12" O.C.	2 Rows at 24" O.C.	2 Rows at 12" O.C.	3 Rows at 12" O.C.
Condition A (2-1-3/4")	390	585	505	760	510	1015	1520
Condition B (3-1-3/4")	290	435	380	570	380	760	1140
Condition C (2-1-3/4" + 1 -3-1/2")	260	390	340	505	465	930	1395
Condition D (4 - 1-3/4)		use bolts for this condition			340	680	1015
Condition E (2 - 3-1/2")		use bolts for this condition			860	1720	2580

Notes:

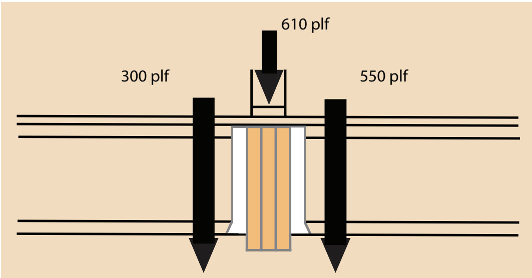
1. Minimum fastener schedule for smaller side loads and top-locked CP-LAM beams:
   Conditions A,B,& C, beams 12" deep or less:
   2 rows 3-1/2" x 0.131" at 12" O.C.
   Conditions A, B & C, beams deeper than 12":
   3 rows 3-1/2" x 0.131" at 12" O.C.
   Conditions D & E, all beam depths:
   2 rows 1/2" bolts at 24" O.C.
2. The table values for nails may be doubled for 6" O.C. and tripled for 4" O.C. nail spacings.
3. The nail schedules shown apply to both sides of a three-ply CP-LAM beams.
4. The table values apply to common bolts that conform to ANSI/ASME Standard B18.2.2-10981. A washer not less than a standard cut washer shall be between the wood and the bolt head and between the wood and the nut. The distance from the edge of the CP-LAM beam to the bolt holes must be at least 2" for 1/2" bolts. Bolt holes shall be the same diameter as the bolt.
5. 7" wide CP-LAM beams must be loaded from both sides and/or top loaded.
6. CP-LAM beams wider than 7" must be designed by the engineer of record.
7. Load duration factors may be applied to the table values.

HOW TO USE THE MAXIMUM UNIFORM SIDE LOAD TABLE

EXAMPLE:

2.1E CP-LAM beam loaded tables from both sides and above
THREE 1-3/4" Plies (CONDITION B)

1. Use allowable load tables or sizing software to size the CP-LAM beam to carry a total load of (300 + 610 + 550) = 1460 plf.
2. Refer to the 2.1E CP-LAM table for beam assembly requirements. Refer to the condition B row in the table. Scan across the Condition B row from left to right for a table value greater than 550 plf, which is the greatest side load carried by the beam. The fourth value in the row indicates that 3 rows of 16d common nails at 12" O.C. will accommodate a side load of 570 plf which is greater than the 550 plf required. Use 3 rows of 16d common nails at 12" O.C., from both sides, to assemble the beam.



PWT TREATED LVL

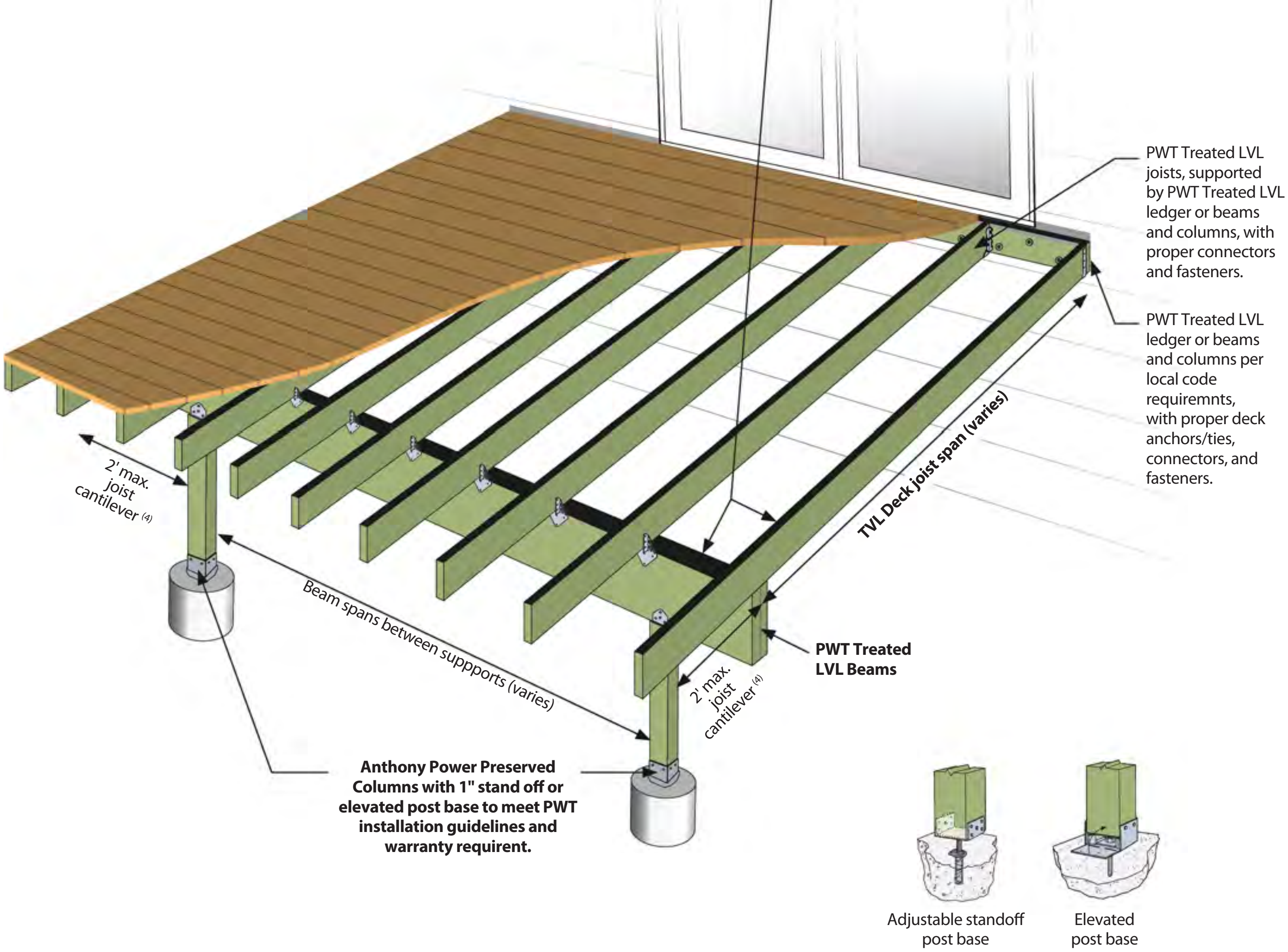
TREATED LAMINATED VENEER LUMBER

REFERENCE DESIGN VALUE
DRY USE

True (Shear-Free) Modulus of Elasticity,	E = 2,000,000[1,4]
Bending (beam),	Fb = 2,800[2,3]
Horizontal Shear (beam),	Fv = 285 psi
Compression perpendicular to grain [psi],	Fc = 850 psi

(1) Do not adjust for load duration.
(2) Adjust by $(12/d)^{0.2}$, where d is the depth of the member [inches].
(3) Adjust by 1.04 for repetitive members as defined in the NDS.
(4) True (Shear-Free) modulus of elasticity does not account for shear deformation.
(5) See APA Product Report PR-L329.

NOTE:
Not all exterior conditions are wet-use and not all interior conditions are dry use.
See What are wet use conditions on our website for more information on this subject.



NOTES:
1. For diagonal bracing, see AWC Deck Construction Guide, page 10, figure 10 located at pacificwoodtech.com/treated.
2. For flashing tape recommendations, visit pacificwoodtech.com/treated.
3. For fastener and hanger information, visit strongtie.com/deckcenter.
4. Design conditions outside of the scope of this guide may be designed using CSD Software.

PWT TREATED LVL
TREATED LAMINATED VENEER LUMBER

Product Hightlights

- PWT Treated LVL is the only manufacturer-treated LVL, and it is covered by a 25-year limited, transferable warrranty.
- PWT Treated LVL is protected against damage caused by fungal rot, decay and wood-destroying insects, including Formosan termites (interior or exterior usage.)
- We use a proprietary treatment system and process, utilizing TRU-CORE® technology.

The Product

- PWT Treated LVL may be used in exterior coonstruction above-ground applications (UC3B) and for components that are difficult to maintain, repair, or replace and that are critical to the performance and safety of the entire system:
  - Deck substructures, exterior columns, sill plates and fascia
- Treatment is added during the LVL manufacturing process, which fully penetrates throughout each veneer layer, offering complete protection from the inside out
- No treatement gradient - and double (2X) the preservative retention required in various standards around the world
- Additionally, envelope treated for best surface properties

2.0 PWT Treated TVL
Joist Span Table

Dry Use- Maximum Allowable Deck Joist Spans Without Overhangs
L/360 50 psf 10 psf

Species	Nominal Size	Joist Spacing (oc)		
		12"	16"	24"
2.0 true PWT Treated TVL	1 3/4" x 9 1/2"	19' 01"	17' 04"	15' 02"
	1 3/4" x 11 7/8"	23' 11"	21' 09"	19' 00"
	1 3/4" x 14"	28' 02"	25' 07"	22' 04"
	1 3/4" x 16"	32' 03"	29' 03"	25' 07"
Pressure Treated #2 Southern Pine	2x8	13' 06"	12' 03"	10' 06"
	2x10	17' 02"	15' 08"	13' 05"
	2x12	20' 11"	19' 00"	16' 04"

Product Identification

Product will have a muted olive tint

Stamp: "PWT TREATED"

Special PWT Treated LVL paper wrap

ENGINEERED STUDS

COASTAL PRO ENGINEERED TALL WALL STUDS

- Douglas fir LVL or MFR black spruce
- For walls that are stiff, straight, and strong
- Coastal Pro studs are engineered to reduce twisting, warping, and splitting
- The ideal product to be used in installation of counters and cabinets in kitchens without the hassles of shimming
- Reduce construction time when installing tall walls
- Available in 2x4 and 2x6 with lengths up to 24 feet
- Building-code approved

There is no question that the total savings to builders and framers far outweighs the initial premium they may pay for Coastal Pro Studs.

Coastal Pro LVL Studs:
Doug Fir, waxed & eased edge

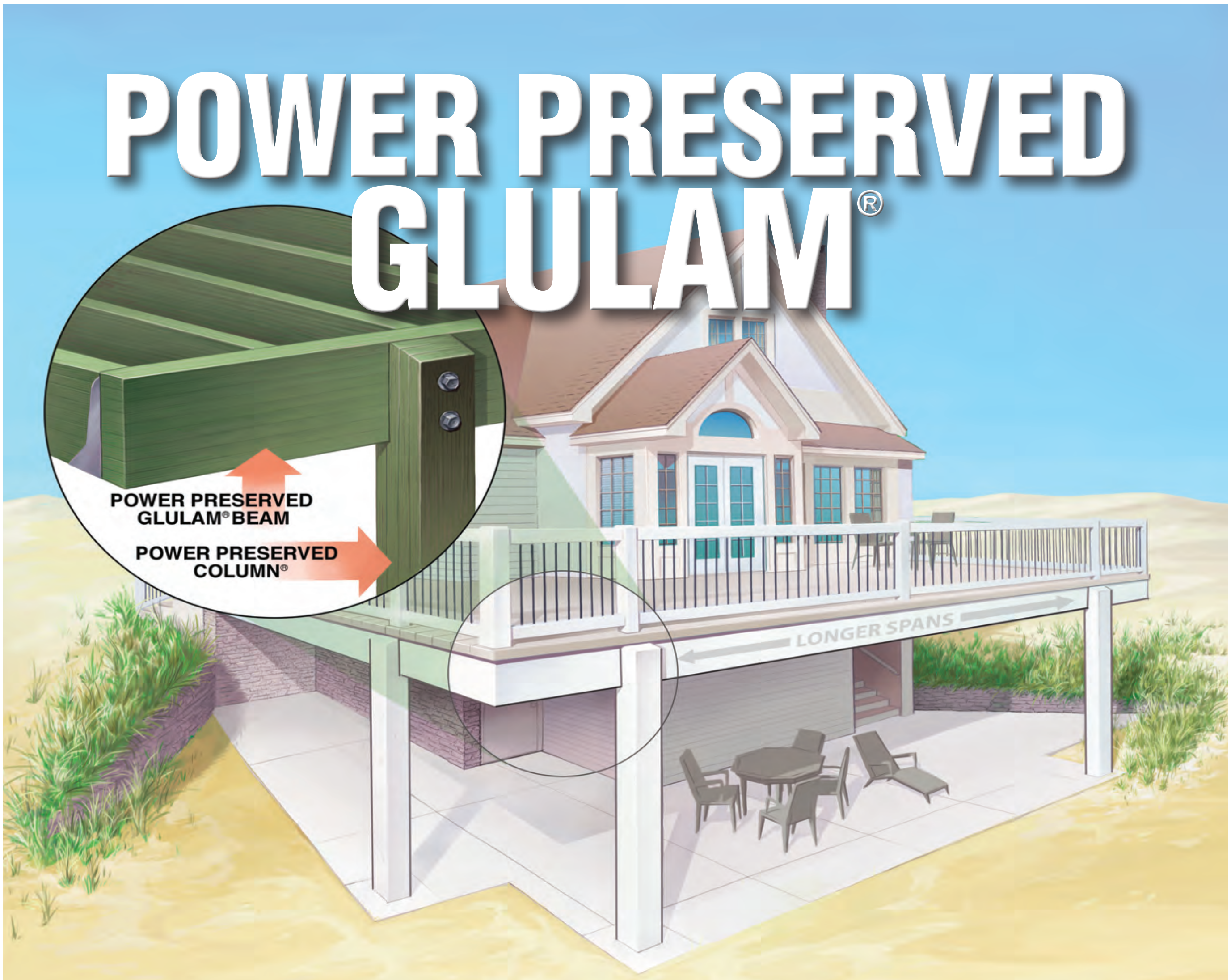
MOE (Modulus of Elasticity):	1,500,000 psi
Fb (Bending):	2735 psi – 2x4 2945 psi – 2x6
Fv (Horizontal Shear):	220 psi
Fe (Compression Parallel to grain):	1,950 psi

Also Available: Coastal Pro Engineered Framing Studs
MSR Black Spruce

MOE - Modulus of Elasticity):	1,600,000 psi
Fb (Bending):	1,200 psi
Fc (Compression Parallel To Grain)	1,600 psi

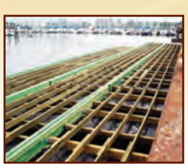
PRESSURE TREATED GLULAM® BEAMS & COLUMNS

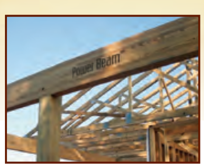
Power Glulam® Beams • Power Glulam® Columns • Power Glulam® Preserved®Preserved Beams • Power Glulam® Preserved Columns

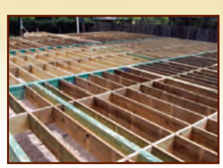


- Perfect for deck beams and columns, raised floor construction, coastal construction, boardwalks and pier/beam foundations
- Treated for above ground and ground contact applications
- $2400F_b$-$300F_v$-1.8E (Highest strength available)
- Meets FEMA's guidelines for "Flood Resistant Materials"
- Stock widths of $3^1/_2$" and $5^1/_4$" at IJC depths (custom widths and depths up to 52')
- Backed by a 25-year warranty as strong as our products


Beach Construction


Floating Docks


Power Beam®


Raised Floor


Beach Home

For additional information, please visit our website at www.coastalfp.com

Power Beam®

DESIGN PROPERTIES 3000F

Allowable Design Stresses (psi)					
	Flexural Stress** Fb	Tension Parallel to Grain Ft	Compression Perpendicular to Grain F c1	Horizontal Shear F_V	Modulus of Elasticity E
3-1/2", 5-1/2" & 7"	3000	1350	805	300	2,100,000

Depth (in)	7-1/4	9-1/4	9-1/4	11-1/4	11-7/8	14	16	18
Weight* (lbs/ft)	7.0	9.0	9.2	10.9	11.6	13.6	15.6	17.5
C_{db} Factor (L=21')	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.999
I (in^4)	111	231	250	415	489	800	1195	1701
Moment Capacity (lbs-ft)	7665	12478	13161	18457	20582	28583	37333	47193
Shear Capacity (lbs)	5075	6475	6650	7875	8316	9800	11200	12600
5-1/2" Beam Width								
Depth (in)	7-1/4	9-1/4	9-1/2	11-1/4	11-7/8	14	16	18
Weight* (lbs/ft)	11.1	14.1	14.5	17.2	18.2	21.4	24.4	27.5
C_{db} Factor (L=21')	1.00	1.00	1.00	0.997	0.989	0.989	0.982	0.976
I (in^4)	175	363	393	653	768	1258	1877	2673
Moment Capacity (lbs-ft)	12046	19608	20682	28916	32246	44415	57625	72503
Shear Capacity (lbs)	7975	10175	10450	12375	13068	15400	17600	19800
7" Beam Width								
Depth (in)	7-14	9-1/4	9-1/2	11-1/4	11-7/8	14	16	18
Weight* (lbs/ft)	14.1	18.0	18.5	21.9	23.1	27.2	31.1	35.0
C_{db} Factor (L=21')	1.00	0.997	0.996	0.988	0.985	0.977	0.970	0.965
I (in^4)	222	462	500	8.31	978	1601	2389	3402
Moment Capacity (lbs-ft)	14309	23231	24472	34030	37845	52127	67631	85093
Shear Capacity (lbs)	10150	12950	13300	15750	16632	19600	22400	25200
7" Beam Width								
Depth (in)	19-1/4	20-5/8	22	12-7/8	24-3/4	26-1/8	27-1/2	28-7/8
Weight* (lbs/ft)	37.4	40.1	42.8	45.5	48.1	50.8	53.5	56.1
C_{db} Factor (L=21')	0.962	0.958	0.955	0.952	0.950	0.947	0.945	0.942
I (in^4)	4161	5118	6211	7450	8844	10401	12132	14044
Moment Capacity (lbs-ft)	96996	110964	125845	141637	158338	175943	19451	213860
Shear Capacity (lbs)	26950	28875	30800	32725	34650	36575	38500	40425

* Beam Weights are based on 40 pcf.
** Flexural Stress, F_b, shall be modified by Volume Factor, C_V, as outlined in ICC ESR-1940, APA

Product report-L263 and APA-EWS Y117 where;
$C_V = K_L\,[(21/L)^{0.05} \times (12/d)^{0.05} \times (5.125/b)^{0.05}] < 1.0$
Where:
K_L = loading coefficient (1.0 for uniformly distributed),
L = length of bending member between points of zero moment, ft.,
d = depth of bending member, in.
b = width of bending member, in.

Stock Depths	
9-1/2"	16"
11-7/8"	18"
14"	

Tabulated Moment Capacities are based on a span of 21 feet and modified for other spans.
Width and depth portions of Volume Factor, C_V, are incorporated in tabulated Moment Capacities using C_{db} Factor.

Note:
Allowable design properties and load capacities are based on a load duration of 100 percent and dry use conditions.

DESIGN PROPERTIES 3000F

VERTICAL HOLES

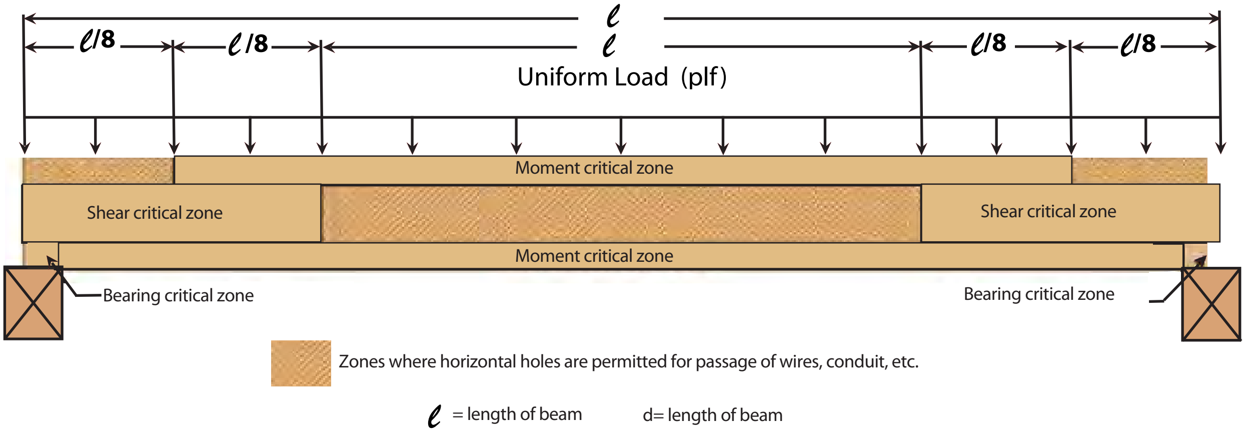
Whenever possible, avoid drilling vertical holes through glulam beams. As a rule of thumb, vertical holes drilled through the depth of a glulam beam will cause a reduction in the capacity at the location directly proportional to the ratio of 1-1/2 times the diameter of the hole to the width of the beam. For example a one inch drilled hole in a 6-inch wide beam would reduce the capacity of the beam at that section by approximately $\frac{(1 \times 1\text{-}1/2)}{6} = 25\%$

For this reason, when it is necessary to drill vertical holes through a glulam member, the holes should be positioned in areas of the member that are stressed to less than 50 percent of design in bending. In a simply supported, uniformally loaded beam, this area would be located from the end of the beam inward approximately 1/8 of the beam span. In all cases, the minimum clear edge distance, as measured from either side of the member to the nearest edge of the vertical hole, should be 2-1/2 times the hole diameter. Use a drill guide to minimize " wandering" of the bit as it passes through knots or material of varying density, and to insure a true alignment of the hole through the depth of the beam.

HORIZONTAL HOLES

Like notches, holes in a glulam beam remove wood fiber, thus reducing the net area of the beam at the hole location and introducing stress concentrations. These effects cause a reduction in the capacity of the beam in the area of the penetration. For this reason, horizontal holes in glued laminated timbers are limited in size and location to maintain the structural integrity of the beam. Figure 1 shows the zones of a uniformly loaded, simply supported beam where the field drilling of holes may be considered. These non-critical zones are located in portions of the beam stressed to less than 50 percent of design bending stress and less than 50 percent of design shear stress. For beams of more complex loading or other than simple spans, similar diagrams may be developed.

ZONES WHERE SMALL HORIZONTAL HOLES ARE PERMITTED IN A UNIFORMLY LOADED, SIMPLY SUPPORTED BEAM



Field-drilled holes should be used for access only and should not be used as attachment points for brackets or other load bearing hardware unless specifically designed as such by the engineer or designer. Examples of access holes include those used for the passage of wires, electrical conduit, small diameter sprinkler pipes, fiber optic cables, and other small, lightweight materials. These field-drilled horizontal holes should meet the following guidelines:

1. **Hole size**: the hole diameter should not exceed 1-1/2 inches or 1/10 the beam depth, whichever is smallest, with the exception of 1-inch-diameter or smaller holes as noted in Item 2 below.

2. **Hole location:** The hole should have a minimum clear distance, as measured from the edge of the hole to the nearest of the beam, of 4 hole diameters to the top or bottom face of the beam and 8 hole diameters from the end of the beam. Note that the horizontal hole should not be drilled in the moment-critical zone, as defined in the figure above, unless approved by an engineer or architect qualified in engineered timber design.

Power Beam® ALLOWABLE FLOOR LOAD TABLES LDF=1.0 - 3000F

These tables can be used to size simple span beams and headers that carry uniform loads. The PLF loads must be calculated and take into account all floor and roof framing loads coming onto the beam or header.

Key: For each clear span there are three numbers:

Row 1: Maximum Total Load with LDF of 1.0, and deflection limited to L/120
Row 2: Maximum Live Load limited by deflection of L/360
Row 3: Required Bearing Length in trimmer thickness
(e.g. 1.5 = 1 trimmer, 3.0 = 2 trimmers, etc.)

ALLOWABLE FLOOR LOAD TABLES LDF=1.0-3000F

Actual Span	3-1/2"								5-1/2"							
	Depth (in.)								Depth (in.)							
	7 1/4	9 1/4	9 1/2	11 1/4	11 7/8	14	16	18	7 1/4	9 1/4	9 1/2	11 1/4	11 7/8	14	16	18
	1251	2037	2149	3013	3311	4200	5169	6300	1967	3201	3377	4735	5203	6600	8123	9900
7'	1008	2037	2149	3013	3311	4200	5169	6300	1584	3201	3377	4735	5203	6600	8123	9900
	3	3	3	4.5	4.5	6	7.5	9	3	3	3	4.5	4.5	6	7.5	9
	958	1560	1645	2307	2571	3459	4200	5040	1506	2451	2585	3625	4040	5435	6600	7920
8'	675	1403	1520	2307	2571	3459	4200	5040	1061	2204	2388	3625	4040	5435	6600	7920
	1.5	3	3	4.5	4.5	6	7.5	9	1.5	3	3	4.5	4.5	6	7.5	9
	712	1232	1300	1823	2031	2823	3537	4200	1178	1937	2043	2865	3192	4436	5558	6600
9'	474	985	1067	1772	2031	2833	3537	4200	745	1548	1677	2785	3192	4436	5558	6600
	1.5	3	3	3	4.5	6	6	7.5	1.5	3	3	3	4.5	6	6	7.5
	519	998	1053	1477	1645	2287	2987	3600	815	1569	1655	2320	2585	3593	4693	5657
10'	346	718	778	1292	1520	2287	2987	3600	543	1129	1223	2030	2388	3593	4693	5657
	1.5	3	3	3	3	4.5	6	7.5	1.5	3	3	3	3	4.5	6	7.5
	390	809	870	1220	1360	1890	2468	3124	612	127	1367	1918	2137	2970	3879	4909
11'	260	540	585	971	1142	1871	2468	3124	408	848	919	1525	1794	2940	3879	4909
	1.5	3	3	3	3	4.5	6	7.5	1.5	3	3	3	3	4.5	6	7.5
	300	623	675	1025	1142	1588	2074	2625	472	980	1061	1611	1795	2495	3259	4125
12'	200	416	450	748	879	1441	2074	2625	314	653	707	1175	1382	2264	3259	4125
	1.5	1.5	1.5	3	3	4.5	6	6	1.5	1.5	1.5	3	3	4.5	6	6
	236	490	531	874	973	1353	1767	2237	371	771	835	1373	1530	2126	2777	3515
13'	157	327	354	588	692	1133	1692	2237	247	514	556	924	1087	1781	2658	3515
	1.5	1.5	1.5	3	3	4.5	4.5	6	1.5	1.5	1.5	3	3	4.5	4.5	6
	189	393	425	706	831	1167	1524	1929	297	617	668	1110	1305	1833	2395	3020
14'	126	262	284	471	554	907	1354	1929	198	411	446	740	870	1426	2128	3020
	1.5	1.5	1.5	3	3	3	4.5	6	1.5	1.5	1.5	3	3	3	4.5	6
	154	319	346	574	675	1016	1327	1680	242	502	543	902	1061	1597	2084	2622
15'	102	213	231	383	450	738	1101	1568	161	334	362	602	707	1159	1731	2464
	1.5	1.5	1.5	3	3	3	4.5	6	1.5	1.5	1.5	3	3	3	4.5	6
	127	263	285	473	556	893	1167	1477	199	413	448	744	874	1404	1825	2297
16'	84	175	190	315	371	608	907	1292	133	276	298	496	583	955	1426	2030
	1.5	1.5	1.5	1.5	3	3	4.5	4.5	1.5	1.5	1.5	1.5	3	3	45	4.5
	106	219	238	394	464	760	1033	1308	166	345	373	620	729	1195	1612	2028
17'	70	146	158	263	309	507	757	1077	111	230	249	413	486	796	1189	1693
	1.5	1.5	1.5	1.5	1.5	3	4.5	4.5	1.5	1.5	1.5	1.5	1.5	3	4.5	4.5
	89	185	200	332	391	640	922	1167	140	290	314	522	614	1006	1434	1804
18'	59	123	133	222	261	427	637	907	93	194	210	348	409	671	1001	1426
	1.5	1.5	1.5	1.5	1.5	3	3	4.5	1.5	1.5	1.5	1.5	1.5	3	3	4.5
	76	157	170	283	332	545	813	1047	119	247	267	444	522	856	1277	1615
19'	50	105	113	188	222	363	542	772	79	165	178	296	348	570	852	1212
	1.5	1.5	1.5	1.5	1.5	3	3	4.5	1.5	1.5	1.5	1.5	1.5	3	3	4.5
	65	135	146	242	285	467	697	945	102	212	229	381	448	734	1095	1454
20'	43	90	97	161	190	311	465	662	68	141	153	254	298	489	730	1040
	1.5	1.5	1.5	1.5	1.5	3	3	4.5	1.5	1.5	1.5	1.5	1.5	3	3	4.5
	56	116	126	209	246	403	602	856	88	183	198	329	387	634	946	1315
21'	37	78	84	140	164	269	401	571	59	122	132	219	258	422	631	898
	1.5	1.5	1.5	1.5	1.5	3	3	4.5	1.5	1.5	1.5	1.5	1.5	3	3	4.5
	49	101	110	182	214	351	524	745	77	159	172	286	336	551	823	1171
22'	32	67	73	121	143	234	349	497	51	106	115	191	224	367	549	781
	1.5	1.5	1.5	1.5	1.5	1.5	3	3	1.5	1.5	1.5	1.5	1.5	1.5	3	3
	43	89	96	159	187	307	458	652	67	139	151	250	294	482	720	125
23'	28	59	64	106	125	205	305	435	45	93	100	167	196	322	480	683
	1.5	1.5	1.5	1.5	1.5	1.5	3	3	1.5	1.5	1.5	1.5	1.5	1.5	3	3
	38	78	84	140	165	270	403	574	59	122	133	220	259	425	634	902
24'	25	52	56	93	110	180	269	383	39	82	88	147	173	283	422	602
	1.5	1.5	1.5	1.5	1.5	1.5	3	3	1.5	1.5	1.5	1.5	1.5	1.5	3	3
	33	69	75	124	146	239	357	508	52	108	117	195	229	376	561	798
25'	22	46	50	83	97	159	238	339	35	72	78	130	153	250	374	532
	1.5	1.5	1.5	1.5	1.5	1.5	3	3	1.5	1.5	1.5	1.5	1.5	1.5	3	3
	26	55	59	98	116	190	283	403	41	86	93	155	182	298	445	634
26'	18	36	40	66	77	127	189	269	28	57	62	103	121	199	297	422
	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3
	30	61	66	110	130	212	317	452	46	96	104	173	204	334	498	710
27'	20	41	44	74	86	142	211	301	31	64	70	116	136	223	332	473
	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3
	24	49	53	88	104	170	254	362	37	77	84	139	163	267	399	568
28'	16	33	35	59	69	113	169	241	25	51	56	92	109	178	266	379
	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3
	21	44	48	79	93	153	229	325	33	59	75	125	147	241	359	511
29'	14	29	32	53	62	102	152	217	22	46	50	83	98	160	239	341
	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3
	19	40	43	72	84	138	206	294	30	63	68	113	133	217	324	462
30'	13	27	29	48	56	92	138	196	20	42	45	75	88	145	216	308
	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3
	16	33	36	59	70	114	170	242	25	52	56	93	109	179	267	381
32'	11	22	24	39	46	76	113	161	17	34	37	62	73	119	178	254
	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

Power Beam® ALLOWABLE FLOOR LOAD TABLES LDF=1.0 - 3000F

These tables can be used to size simple span beams and headers that carry uniform loads. The PLF loads must be calculated and take into account all floor and roof framing loads coming onto the beam or header.

Key: For each clear span there are three numbers:

Row 1: Maximum Total Load with LDF of 1.0, and deflection limited to L/120
Row 2: Maximum Live Load limited by deflection of L/360
Row 3: Required Bearing Length in trimmer thickness
(e.g. 1.5 = 1 trimmer, 3.0 = 2 trimmers, etc.)

ALLOWABLE LOADS FOR ANTHONY POWER BEAM® IN POUNDS PER LINEAR FOOT

Actual Span	7" Depth (in.)													
	7-1/4	9-1/4	9-1/2	11-1/4	11-7/8	14	16	18	19-1/4	20 5/8	22	23-3/8	24-3/4	26-1/8	27-1/2	28-7/8
7'	2336	3803	4011	5625	6267	8400	10338	12600	14215	16211	18480	21085	24104	27647	31862	36888
	2016	3803	4011	5625	6267	8400	10338	12600	14215	16211	18480	21085	24104	27647	31862	36888
	1.5	3	3	4.5	4.5	6	7.5	9	10.5	12	13.5	16.5	18	21	25.5	30
8'	1789	912	3071	4307	4798	6669	8400	10080	11249	12658	14215	15947	17884	20064	22537	25365
	1351	2805	3039	4307	4798	6669	8400	10080	11249	12658	14215	15647	17884	20064	22537	25365
	1.5	3	3	4.5	4.5	6	7.5	9	9	10.5	12	13.5	15	16.5	19.5	22.5
9'	1413	2300	2426	3403	3791	5270	6883	840	9306	10382	11550	12823	14215	15745	17434	19307
	949	1970	2134	3403	3791	5270	6883	8400	9306	10382	11550	12823	14215	15745	17434	19307
	1.5	3	3	3	4.5	4.5	6	7.5	9	9	10.5	12	13.5	15	16.5	18
10'	1037	1863	1965	2756	3071	4268	5575	7056	7936	8800	9726	10722	11796	12956	14215	15586
	692	1436	1556	2584	3039	4268	5575	7056	7936	8800	9726	10722	11796	12956	14215	15586
	1.5	3	3	3	3	4.5	6	7.5	7.5	9	10.5	10.5	12	13.5	15	16.5
11'	779	1540	1624	2278	2538	3528	4608	5811	6624	7578	8400	9213	10080	11007	12000	13067
	520	1079	1169	1941	2283	3528	4608	5811	6624	7578	8400	9213	10080	11007	12000	13067
	1.5	3	3	3	3	4.5	6	6	7.5	9	9	10.5	12	12	13	15
12'	600	1247	1351	1914	2133	2964	3864	4862	5542	6340	7190	8076	8800	9567	10382	11249
	400	831	900	1495	1759	2882	3864	4862	5542	6340	7190	8076	8800	9567	10382	11249
	1.5	1.5	1.5	3	3	4.5	4.5	6	7.5	7.5	9	10.5	10.5	12	12	13.5
13'	472	981	1062	1631	1817	2526	3279	4126	4703	5380	6102	6867	7677	8461	9149	9875
	315	654	708	1176	1383	2267	3279	4126	4703	5380	6102	6867	7677	8461	9149	9875
	1.5	1.5	1.5	3	3	3	4.5	6	6	7.5	7.5	9	10.5	10.5	12	13.5
14'	378	785	851	1406	1567	2171	2817	3544	4040	4622	5242	5900	6595	7328	8099	8800
	252	523	567	942	1108	1815	2709	3544	4040	4622	5242	5900	6595	7328	8099	8800
	1.5	1.5	1.5	3	3	3	4.5	6	6	6	7.5	9	9	10.5	12	12
15'	307	638	692	1148	1351	1885	2445	3077	3507	4012	4550	5121	5725	6362	7031	7733
	205	426	461	766	900	1476	2203	3077	3507	4012	4550	5121	5725	1159	7031	7733
	1.5	1.5	1.5	3	3	3	4.5	4.5	6	6	7.5	7.5	9	9	10.5	12
16'	253	526	570	946	1113	1651	2142	2696	3073	3515	3986	4487	5016	5573	6160	6775
	169	351	380	631	742	1216	1815	2584	3073	3515	3986	4487	5016	5573	6160	6775
	1.5	1.5	1.5	1.5	3	3	4.5	4.5	4.5	6	6	7.5	7.5	9	10.5	10.5
17'	211	439	475	789	928	1458	1892	2381	2714	3104	3521	3962	4430	4922	5440	5983
	141	292	317	526	619	1014	1513	2154	2635	3104	3521	3962	4430	4922	5440	5983
	1.5	1.5	1.5	1.5	1.5	3	3	4.5	4.5	6	6	7.5	7.5	9	9	10.5
18'	178	369	400	665	782	1281	1683	2117	2413	2761	3131	3524	3940	4378	4838	5321
	119	246	267	443	521	854	1275	1815	2220	2730	3131	3524	3940	4378	4838	5321
	1.5	1.5	1.5	1.5	1.5	3	3	4.5	4.5	4.5	6	6	7.5	7.5	9	9
19'	151	314	340	565	665	1089	1506	1895	2160	2471	2803	3155	3526	3919	4331	4763
	101	209	227	377	443	726	1084	1543	1887	2321	2803	3155	3526	3919	4331	4763
	1.5	1.5	1.5	1.5	1.5	3	3	4.5	4.5	4.5	6	6	7.5	7.5	9	9
20'	130	269	292	484	570	934	1356	1706	1945	2225	2523	2840	3174	3527	3899	4288
	86	180	194	323	380	622	929	1323	1618	1990	2416	2840	3174	3527	3899	4288
	1.5	1.5	1.5	1.5	1.5	3	3	4.5	4.5	4.5	6	6	6	7.5	7.5	9
21'	112	233	252	419	492	807	1204	1544	1760	2013	2283	2569	2872	3192	3527	3880
	75	155	168	279	328	538	803	1143	1398	1719	2087	2503	2872	3192	3527	3880
	1.5	1.5	1.5	1.5	1.5	3	3	3	4.5	4.5	4.5	6	6	7.5	7.5	7.5
22'	97	202	219	364	428	702	1047	1403	1600	1830	2075	2336	2611	2901	3207	3527
	65	135	146	243	285	468	698	994	1216	1495	1815	2177	2584	2901	3207	3527
	1.5	1.5	1.5	1.5	1.5	1.5	3	3	4.5	4.5	4.5	6	6	6	7.5	7.5
23'	85	177	192	319	375	614	916	1281	1460	1670	1895	2132	2384	2649	2927	3220
	57	118	128	212	250	409	611	870	1064	1309	1588	1905	2261	2649	2927	3220
	1.5	1.5	1.5	1.5	1.5	1.5	3	3	4.5	4.5	4.5	4.5	6	6	7.5	7.5
24'	75	156	169	280	330	540	807	1148	1338	1531	1736	1954	2184	2427	2683	2951
	50	104	113	187	220	360	538	766	936	1152	1398	1677	1990	2341	2683	2951
	1.5	1.5	1.5	1.5	1.5	1.5	3	3	3	4.5	4.5	4.5	6	6	6	7.5
25'	66	138	149	248	292	478	714	1016	1231	1408	1597	1797	2009	2233	2467	2714
	44	92	100	165	194	319	476	677	829	1019	1237	1483	1761	2071	2416	2714
	1.5	1.5	1.5	1.5	1.5	1.5	3	3	3	4.5	4.5	4.5	6	6	6	7.5
26'	59	123	133	221	259	425	634	903	1105	1299	1473	1658	1854	2060	2277	2504
	39	82	89	147	173	283	423	602	737	906	1099	1319	1565	1841	2147	2486
	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3	3	4.5	4.5	4.5	4.5	6	6	6
27'	53	109	119	197	232	380	566	807	987	1203	1364	1535	1716	1907	2107	2318
	35	73	79	131	154	253	378	538	658	809	982	1178	1398	1644	1918	2220
	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3	3	3	4.5	4.5	4.5	6	6	6
28'	47	98	106	177	208	340	508	723	885	1088	1266	1425	1593	1770	1956	2151
	32	65	71	118	138	227	339	482	590	725	880	1056	1253	1474	1719	1990
	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3	3	3	4.5	4.5	4.5	4.5	6	6
29'	43	88	96	159	187	306	457	651	796	979	1178	1326	1482	1647	1820	2002
	28	59	64	106	125	204	305	434	531	653	792	950	1128	1327	1548	1791
	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3	3	3	4.5	4.5	4.5	4.5	6	6
30'	38	80	86	144	169	277	413	588	719	885	1074	1237	1383	1536	1698	1867
	26	53	58	96	113	184	275	392	479	590	716	858	1019	1198	1398	1618
	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3	3	3	3	4.5	4.5	4.5	6	6
32'	32	66	71	118	139	228	340	484	593	729	885	1061	1211	1346	1487	1636
	21	44	47	79	93	152	227	323	395	486	590	707	840	988	1152	1333
	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3	3	3	4.5	4.5	4.5	4.5	4.5

IN STOCK

For additional information, please visit our website at www.coastalfp.com

POWER PRESERVED GLULAM®
CLEAR GUARD™ TREATED GLULAMS

Stocked at Coastal Forest Products Up to 48' Lengths

3-1/2" x 9-1/2"	5-1/4" x 9-1/2"	5-1/4" x 16"
3-1/2" x 11-7/9"	5-1/4" x 11-7/8"	
3-1/2" x 14"	5-1/4" x 14"	

Cop-Guard® (Copper Naphthenate-CuN and Clear-Guard™ (PBC/Permethrin) wood preservatives are both dissolved in low odor mineral spirits as a carrier and are an ideal fungicide and insecticide for the long term preservation of wood products. PPG beams and columns have a green coloration when treated with Cop-Guard® and have no real color change when treated with Clear-Guard™ wood preservatives.Clear-Guard™ wood preservative treated glulam is in a solution of IPBC (fungicide) and Permethrin (insecticide) wood preservative listed in AWPA P-58-10. Both preservatives are low in toxicity, environmentally safe, and non-corrosive to fasteners. For more information on Cop-Guard® and Clear-Guard™, please see the SDS sheets and Hoover Technical Notes on our website at www.anthonyforest.com

- Three times as strong as #2 PT SYP 4x12
- No strength reductions required after treatment.
- Automatic substitute for Parallam® Plus PSL.
- Stainable and Paintable (See restrictions).
- Not considered hazardous material.

CONDITIONS OF USE (DRY OR WET)
Power Preserved Glulam® products are recommended for above ground use where the equilibrium moisture content (EMC) of the laminated beam will not exceed 16% thus allowing dry-use design values (over 16% considered wet-use.) The definitions of dry and wet service vary from the many publications available on the subject.

CODE APPROVALS
Power Preserved Glulam® is manufactured in accordance with ANSIA190.1, which is the code recognized standard for glued laminated timber and is accepted nationwide under the CC-ESR 1940 and APA Product Report L282. The adhesive used in our glulam conforms to wet-use complying with ASTM D2559. The APA-EWS is our third party inspection agency.

WARRANTY

Power Preserved Glulam® and Power Preserved Column® products are warranted for 25 years against defects in materials and workmanship. We guarantee prompt and courteous customer service. Hoover Treated Wood Products, Inc. warrants the Power Preserved Glulam and Power Preserved Column products against fungal decay and wood-destroying insect attacks for 25 years. For a detailed copy of our limited warranty, call us at 800-221-2326 or visit our website to download a copy.

POWER PRESERVED GLULAM® (PPG)
Anthony Forest Products® has been a name to trust in the glued laminated timber business for over 45 years. Anthony stock 2400F_b -2.1E - 300 F_v SYP glulam has been our mainstay in business along with the high strength Power Beam® 3000F_b - 1.8E - 300F_v IJC beam.

With the shortage of high-quality, high strength, solid southern pine treated timber, Anthony offers Power Preserved Glulam® Beams, which have been pressure treated with Hoover Cop-Guard® or Clear-Guard™ at .04 pounds per cubic foot (PCF) or .02 pounds per cubic foot retention levels suitable for above ground uses respectively. Power Preserved Glulam® products will resist fungal decay and wood-destroying insect attacks and are covered by a 25 year warranty by Hoover.

FACT SHEET
- 2400F_b - 1.8E - 300F_v SYP glulam industrial grade.
- High strength allows for reduction in size columns or number of pilings and piers.
- Two separate warranties for your protection.
- Balanced lay-up and zero camber.
- No top or bottom.
- As environmentally safe as untreated wood.
- Above ground use for beams (AWPA use categories UC3B) and ground contact for the columns (AWPA use categories UC4A, UC4B and UC4C).
- For PPG Beams sizes not listed, please call Anthony Forest.

FASTENERS
- Non-Corrosive fasteners may be used with PPG in protected areas.
- Corrosion resistant fasteners are required if a connection is made to other water borne copper treated wood.
- Local building code requirements will always supersede above restrictions.
- Above ground use for beams (AWPA use categories UC3B) and ground contact for the columns (AWPA use categories UC4A, UC4B and UC4C).
- For PPG Beams sizes not listed, please call Anthony Forest.

ANTHONY® FOREST PRODUCTS

POWER PRESERVED GLULAM®
CLEAR GUARD™ TREATED GLULAMS

Treated Glulam Allowable Floor Loads (plf)

EWS 24F-V5M1/SP • Dry-Use • F_b=2,400 psi • F_v=300 psi • E=1.8 x 10^6 psi • $F_{c\perp}$ =740 psi • (LDF=1.00)

Width (in)	Depth (in)	Load Condition	Span (feet) 6	8	10	12	14	16	18	20	22	24	26
3-1/2"	9 1/2	Total Load	2108	1293	827	474	298	200	140	102	77	59	47
		Live Load	---	1279	655	379	239	160	112	82	62	47	37
		Min. End/Int.Bearing (in.)	2.5/6.3	2.0/5.0	1.6/4.0	1.5/3.8	1.5/3.8	1.5/3.8	1.5/3.8	1.5/3.8	1.5/3.8	1.5/3.8	1.5/3.8
	11 7/8	Total Load	2901	1918	1293	898	583	390	274	200	150	116	91
		Live Load	---	---	1279	740	466	312	219	160	120	93	73
		Min. End/Int.Bearing (in.)	3.4/8.5	3.0/7.5	2.5/6.3	2.1/5.3	1.6/4.0	1.5/3.8	1.5/3.8	1.5/3.8	1.5/3.8	1.5/3.8	1.5/3.8
	14	Total Load	3743	2401	1782	1248	917	702	449	328	246	190	149
		Live Load	---	---	1784	1213	764	512	359	262	197	152	119
		Min. End/Int.Bearing (in.)	4.4/11.0	3.8/9.5	3.5/8.8	2.9/7.3	2.8/7.0	2.2/5.5	1.6/4.0	1.5/3.8	1.5/3.8	1.5/3.8	1.5/3.8
	16	Total Load	4719	2926	2101	1615	1182	901	671	489	367	283	223
		Live Load	---	---	---	---	1140	764	537	391	294	226	178
		Min. End/Int.Bearing (in.)	5.6/14.0	4.6/11.5	4.1/10.3	3.8/9.5	3.3/8.3	2.8/7.0	2.4/6.0	1.9/4.8	1.6/4.0	1.5/3.8	1.5/3.8
	18	Total Load	5917	3522	2485	2046	1499	1143	899	725	523	403	317
		Live Load	---	---	---	---	---	1088	764	557	418	322	253
		Min. End/Int.Bearing (in.)	7.0/17.5	5.5/13.8	4.9/2.3	4.8/12.0	4.1/10.3	3.6/9.0	3.2/8.0	2.8/7.0	2.3/5.8	1.9/4.8	1.6/4.0
5-1/4"	9 1/2	Total Load	3199	1948	1264	719	453	303	214	156	117	90	71
		Live Load	---	1181	605	350	220	148	104	76	57	44	34
		Min. End/Int.Bearing (in.)	2.5/6.3	2.0/5.0	1.6/4.0	1.5/3.8	1.5/3.8	1.5/3.8	1.5/3.8	1.5/3.8	1.5/3.8	1.5/3.8	1.5/3.8
	11 7/8	Total Load	4403	2910	1944	1344	885	593	419	305	229	177	139
		Live Load	---	---	---	1131	712	477	335	244	183	141	111
		Min. End/Int.Bearing (in.)	3.4/8.5	3.0/7.5	2.5/6.3	2.1/5.3	1.6/4.0	1.5/3.8	1.5/3.8	1.5/3.8	1.5/3.8	1.5/3.8	1.5/3.8
	14	Total Load	5679	3644	2707	1874	1371	1044	682	497	373	289	228
		Live Load	---	---	---	1853	1167	782	549	400	301	232	182
		Min. End/Int.Bearing (in.)	4.4/11.0	3.8/9.5	3.5/8.8	2.8/7.0	2.8/6.3	2.2/5.5	1.6/4.0	1.5/3.8	1.5/3.8	1.5/3.8	1.5/3.8
	16	Total Load	7161	4440	3188	2425	1794	1400	1018	742	558	460	340
		Live Load	---	---	---	---	1741	1167	819	597	449	346	272
		Min. End/Int.Bearing (in.)	5.6/14.0	4.6/11.5	4.1/10.3	3.8/9.5	3.3/8.3	2.8/7.0	2.4/6.0	1.9/4.8	1.6/4.0	1.5/3.8	1.5/3.8
	18	Total Load	8979	5343	3770	3106	2274	1734	1365	1128	794	615	484
		Live Load	---	---	---	---	---	1661	1167	851	639	492	387
		Min. End/Int.Bearing (in.)	7.0/17.5	5.5/13.8	4.912.3	4.8/12.0	4.1/10.3	3.6/9.0	3.2/8.0	2.8/7.0	2.3/5.8	1.9/4.8	1.6/4.0

NOTES:

1. Values shown are the maximum uniform loads (beam weight included) in pounds per linear foot (PLF) that can be applied to the beam.
2. These tables are for preliminary design when considering load and other conditions. The final design should include complete design analysis.
3. Bearing lengths shown in the third row of each cell are for maximum PLF loads for the two end bearings and for the middle or intermediate bearings when beam is continuous. A shorter bearing may be used if proper analysis is done.
4. Live load is based on the deflection criterion of L/360 and includes the beam weight (48 pcf).
5. Total load is based on the deflection criterion with a LL/DL ration of 4 or higher.
6. For deflection limits of L/240 and L/480, multiply the live load figures by 1.5 and 0.75 respectfully.
7. The beam is assumed to be loaded on the top edge and with full lateral support at bearing points.
8. Selected beam must satisfy both live and total load.
9. Where no live load shows, live load is the same as total load.
10. Call Coastal Forest Products for sizes not listed.

Stock Sizes

3-1/2" x 9-1/2"	5-1/4" x 9-1/2"
11-7/8"	11-7/8"
14"	14"
	16"

Power Column®
COMBINATION #50

Stocked at Coastal Forest Products
Up to 48' Lengths

3-1/2" x 3-1/2"	5-1/2" x 5-1/2"
3-1/2" x 5-1/2"	5-1/2" x 7"
3-1/2" x 7"	7" x 7"

FEATURES:
- Combination #50
  (#1 Dense SYP)
- MOE = 1.9 x 10 psi
- F_b = 2100-2300 psi
- F_c = 1700-2300 psi
- Treated Columns Available

Power Column®
COMBINATION #50

Allowable Axial Loads (Pounds) for Combination No. 50

Side loads are not permitted. End loads are limited to a maximum eccentricity of either 1/6 column width or depth, whichever is worse.

Effective Column Length (ft)	Lamination Net Width = 3-12"											
	Net Depth = 3-1/2" (3 lams)			Net Depth = 4-1/8" (3 lams)			Net Depth = 5-1/2" (4 lams)			Net Depth = 7" (6 lams)		
				Load Duration Factor			Load Duration Factor			Load Duration Factor		
	1.00	1.15	1.25	1.00	1.15	1.25	1.00	1.15	1.25	1.00	1.15	1.25
4	11,750	13,130	13,990	14,410	16,190	17,320	22,740	25,110	26,560	29,700	32,950	34,950
6	9,130	9,810	10,200	11,330	12,150	12,610	16,260	17,220	17,770	21,900	23,300	24,110
8	6,600	6,910	7,090	8,100	8,460	8,670	11,220	11,660	11,920	15,350	16,000	16,370
10	4,830	5,000	5,090	5,880	6,070	6,190	8,040	8,290	8,430	11,090	11,450	11,650
12	3,650	3,750	3,810	4,420	4,540	4,610	6,010	6,160	6,250	8,330	8.540	8,670
14	2,840	2,910	2,950	3,430	3,510	3,550	4,650	4,750	4,800	6,460	6,600	6,680

Effective Column Length (ft)	Lamination Net Width = 5-1/2"						Lamination Net Width = 7"		
	Net Depth = 5-1/2" (4 lamas)			Net Depth = 7" (6 lams)			Net Depth = 7" (6 lams)		
	Load Duration Factor			Load Duration Factor			Load Duration Factor		
	1.00	1.15	1.25	1.00	1.15	1.25	1.00	1.15	1.25
6	32,920	36,550	38,810	45,610	51,260	54,840			
8	27,420	29,640	30,950	39,290	42,590	44,520	53,480	59,380	63,060
10	21,970	23,280	24,000	31,680	33,560	34,650	46,900	51,070	53,550
12	17,550	18,380	18,850	25,300	26,470	27,140	40,070	42,840	44,450
14	14,200	14,760	15,080	20,430	21,210	21,660	38,840	35,730	36,830
16	11,670	12,060	12,290	16,760	17,300	17,610	28,630	29,990	30,770
18	9,730	10,020	10,180	13,950	14,350	14,580	24,400	25,400	25,980
20	8,230	8,440	8,570	11,780	12,080	12,250	20,980	21,740	22,180
22	7,040	7,210	7,300	10,070	10,290	10,420	18,190	18,780	19,120
24	----	----	----	-----	-----	-----	15,900	16,370	16,640

NOTES and Allowable Design Properties

1. The tabulated allowable loads apply to one-piece glulam members made with all N1D14 laminations (Combination 50) without special tension laminations.
2. Applicable service conditions = dry.
3. The tabulated allowable loads are based on simply axially loaded columns subjected to a maximum eccentricity of either 1/6 column width or 1/6 column depth, whichever is worse. For side loads, other eccentric end loads, or other combined axial and flexural loads, see 2005 NDS.
4. The column is assumed to be unbraced, except at the column ends, and the effective column length is equal to the actual column length.
5. Design properties for normal load duration and dry-use service conditions:
   - Compression parallel to grain (F_c) = 2,300 psi for 4 or more lams, or 1,700 psi for 2 or 3 lams.
   - Modulus of elasticity (E) = 1.9 x 10 psi.
   - Flexural stress when loaded parallel to wide faces of lamination (F_{by}) = 2,300 psi for 4 or more lams, or 2,100 psi for 3 lams.
   - Lexural stress when loaded perpendicular to wide faces of lamination (F_{bx}) = 2,100 psi for 2 lams to 15" deep without special tension laminations.
   - Volume factor for F_{bx} is in accordance with 2005 NDS. Size factor for F_{by} is $(12/d)^{1/9}$, where d is equal to the lamination width inches.

For additional information, please visit our website at www.coastalfp.com

COASTAL ENGINEERED FRAMING LUMBER

Stocked at Coastal Forest Products Up to 32' Lengths	
2 x 4	2 x 12 (11-1/4")
2 x 6	2 x 10 (9-1/4")
2 x 8	2 x 14

- 1.6 MOE
- Same size as SPF/Fir (1-1/2")
- Low moisture content means dimensionally stable
- Ideal for long rafters (up to 32')
- Similar spans like I-joists
- Approved as substitute in new IRC fire code
- Uses standard size joist hangers
- MSP Black Spruce
- Frame roof with traditional compression ridge and collar ties
- No problem notching birdmouths
- Every piece is wane free!
- Excellent product for stair stringers!
- No cracks, rot or large knots, dried to 14%
- Engineered sizing available through CSD
- I-Struct software
- MOE 1.6 (Modulas of Elasticity)
- F_b 1200 psi (Fiber Bending)
- F_v 135 psi (Shear)
- F_c 1600 psi (Compression Parallel to Grain)
- These values are based on normal load duration.
- When structural members qualify as repetitive members in accordance with applicable code, a 4% increase is permitted to Fb.
- Manufactured by Lamco EWP

LAMCO

COASTAL ENGINEERING FRAMING LUMBER SPANS

Coastal Engineering Framing Lumber Spans

FLOOR SPANS

Chart Based Upon Uniform Loads		Floor Joists - 40 psf Live Load, 10 psf Dead Load, L/480				Floor Joists - 40 psf Live Load, 10 psf Dead Load, L/360			
Size	**Strength**	**12" O.C.**	**16" O.C.**	**19.2" O.C.**	**24" O.C.**	**12" O.C.**	**16" O.C.**	**19.2" O.C.**	**24" O.C.**
1-1/2" x 7-1/4"	1.6 MOE	13'09"	12'09"	12'02"	11'02"	15'02"	13'08"	12'06"	11'02"
1-1/2" x 9-1/4"	1.6 MOE	17'02"	15'11"	15'02"	13'08"	18'11"	16'09"	15'03"	13'08"
1-1/2" x 11-1/4"	1.6 MOE	20'08"	19'01"	17'11"	16'01"	22'09"	19'08"	17'11"	16'01"
1-1/2" x 14"	1.6 MOE	25'05"	23'05"	21'06"	19'03"	27'03"	23'07"	21'06"	19'03"
1-1/2v x 16"	1.6 MOE	28'10"	26'04"	24'01"	24'06"	30'05"	26'04"	24'01"	21'06"

ROOF SPANS

40 PSF Ground Snow Load
10PSF Dead Load,

Live Load L/240 Total Load L/180

Size	Strength	12" O.C.	16" O.C.	19.2" O.C.	24" O.C.
1-1/2" x 7-1/4"	1.6 MOE	17'02"	15'05"	14'01"	12'07"
1-1/2" x 9-1/4"	1.6 MOE	21'02"	18'11"	17'03"	15'05"
1-1/2" x 11-1/4"	1.6 MOE	25'08"	22'03"	20'04"	18'02"
1-1/2" x 14"	1.6 MOE	30'09"	26'08"	24'04"	21'09"
1-1/2" x 16"	1.6 MOE	31'08"	29'09"	27'02"	24'04"

52 PSF Ground Snow Load
10 PSF Dead Load

Live Load L/240 Total Load L/180

Size	Strength	12" O.C.	16" O.C.	19.2" O.C.	24" O.C.
1-1/2"x 7-1/4"	1.6 MOE	15'10"	14'04"	13'04"	11'11"
1-1/2" x 9-1/4"	1.6 MOE	20'02"	17'11"	16'04"	14'07"
1-1/2"x 11-1/4"	1.6 MOE	24'04"	21'01"	19'03"	17'02"
1-1/2" x 14"	1.6 MOE	29'03"	25'03"	23'01"	20'08"
1-1/2" x 16"	1.6 MOE	32'08"	28'03"	25'10"	23'01"

70 PSF Ground Snow Load
10 PSF Dead Load

Live Load L/240 Total Load L/180

Size	Strength	12" O.C.	16" O.C.	19.2" O.C.	24" O.C.
1-1/2" x 7-1/4"	1.6 MOE	14'02"	12'10"	11'08"	10'06"
1-1/2" x 9-1/4"	1.6 MOE	18'02"	15'09"	14'04"	12'10"
1-1/2" x 11-1/4"	1.6 MOE	21'04"	18'06"	16'10"	15'01"
1-1/2" x 14"	1.6 MOE	25'07"	22'02"	20'03"	18'01"
1-1/2" x 16"	1.6 MOE	32'08"	28'03"	25'10"	23'01"

91 PSF Ground Snow Load
10 PSF Dead Load

Live Load L/240 Total Load L/180

Size	Strength	12" O.C.	16" O.C.	19.2" O.C.	24" O.C.
1-1/2" x 7-1/4"	1.6 MOE	13'01"	11'07"	10'07"	9'05"
1-1/2" x 9-1/4"	1.6 MOE	16'04"	14'02"	12'11"	11'07"
1-1/2" x 11-1/4"	1.6 MOE	19'03"	16'08"	15'02"	13'07"
1-1/2" x 14"	1.6 MOE	23'01"	20'00"	18'03"	16'04"
1-1/2" x 16"	1.6 MOE	25'10"	22'04"	20'05"	18'03"

Support Requirements: Rafters must have adequate support. Ceiling joists are not required when properly designed ridge beams are used. A ridge board may be substituted for a ridge beam when the slope equals or exceeds 3 in 12, except that ridge beams are required for cathedral ceilings. Ridge boards must be 1" nominal thickness and not less than the depth of the cut end of the rafter. Rafters must be placed directly opposite each other, and ceiling joists must be installed parallel to the rafters to provide a continuous tie between exterior walls or alternatively, standard building code approved Ridge Board and Collar-Tie framing is acceptable.

Rafter spans do not include composite action of adhesive and sheathing. Uplift loads caused by wind also have not been considered. Spans in the tables are given in feet and inches and are the maximum allowable horizontal span of the member from inside to inside of bearings. For sloping rafters, the span is also measured along the horizontal projection.

For rafters, the load duration used in these tables is 1.15 (Cd). Rafter spans have been evaluated for wind loads up to and including Vasd=110 mph, to determine that wind does not control design. For wind greater than Vasd=110 mph, engineering design is required.

Highlighted columns indicate stocked sizes

POWER PRESERVED COLUMN®

PRESSURE TREATED COLUMNS

Stocked at Coastal Forest Products Up to 28' Lengths
5-1/2" x 5 1/2" - up to 28'

POWER PRESERVED COLUMN®
Anthony Forest Products offers our popular Power Column® as a Power Preserved Column® for ground contact using Hoover Cop-Guard® These columns are treated to the high retention level of 0.075 PCF, meeting AWPA use categories 4A, 4B and 4C (should not be used in direct contact with water).

Suggested Uses: (Exterior only)
- Deck support columns and boardwalks
- Residential and commercial exposed structural columns
- Raised coastal construction supports replacing piling
- Industrial and farming applications
- Pedestrian bridges and park shelters
- Pergolas

Power Preserved Column Design Values[1]

Combination #50 #1 Dense SYP	F_b x-x axis	F_b y-y axis		MOE	Compression Parallel to Grain F_{c1} =	
	F_b	3 laminations	4 or more laminations		3 laminations	4 or more laminations
Design Value	2,100 psi	2,100	2,300	1.9×10^6	1,700	2,300
Wet-Use Factor	0.8	0.8	0.8	0.833	0.53	0.73

[1] The tabulated values are for moisture content of less than 16%. Apply wet-use adjustment factors for columns in direct contact with the ground. Use of column bases or standoff may allow for dry-use.

Besides the best product on the market, individual house jobs are delivered with color-coded plans with corresponding labeled lumber components

THE MOST POWERFUL SOFTWARE TOOLS IN THE MARKET

iStruct™ software suite featuring isPlan™ and is Design™

Our goal is to provide our customers with the best information services in the industry. Coastal Forest Products supplies its customer base with various software tools to perform daily engineering and drawing functions required in today's market.

isPlan™ includes capabilities to draw and design EWP framing plans (floor and roof layouts), structural analysis and reporting, takeoffs, quotes, cutting and the single member design (beam software), that supports the full Coastal Forest Products product line. isPlan™ will automatically develop loads and produce bold color graphics layouts in 2D and 3D. (Intended for the lumber yard that has dedicated design staff to operate.)

isDesign™ is a single member sizing program that is user friendly and reflects impeccable graphics that make the beam calc easy to read and pleasant to look at. isDesign™ will analyse loads, calculate sizes and spacing for Coastal engineered products. isDesign™ requires little or no training for the architect or engineer/designer specifying designs with Coastal engineered products.

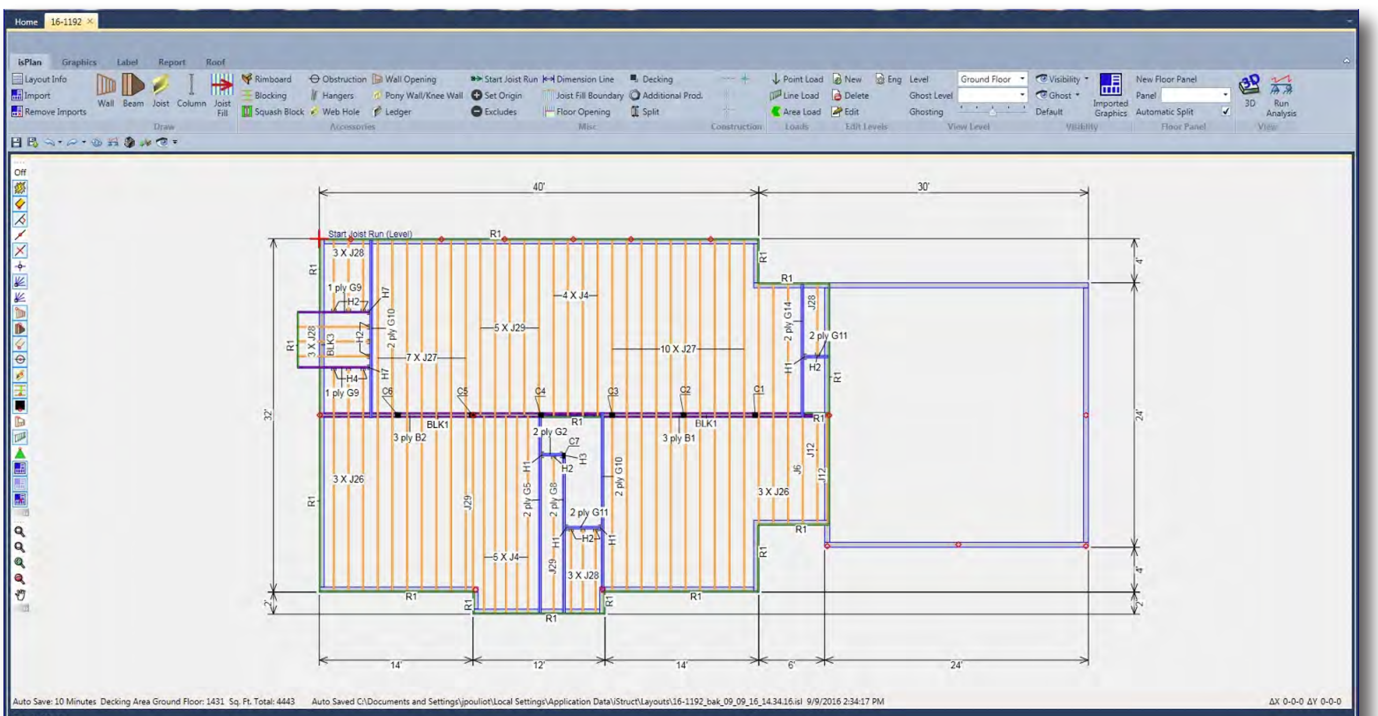
Coastal Forest Products Customers Receive:

- No charge for isDesign™ single member sizing software.
- No charge for customers to distribute is Design™ to its customer base.
- Printed calc sheets showing sheer, deflection, moment and reaction
- Value engineered framing plans.
- Internet software training and support.
- Internet updates for all software.

The iStruct™ software suite is truly a solution like no other and is designed for quick learning and entry.

Training is reduced significantly so users are up and running quickly and cost effective.

What you get from Coastal Forest Products is what your customers expect from you –
The best tool and best service possible!

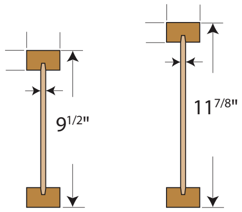


Stock Reference Guide

NORDIC STRUCTURES

NI-40X
2" X 3"
Solid Flanges

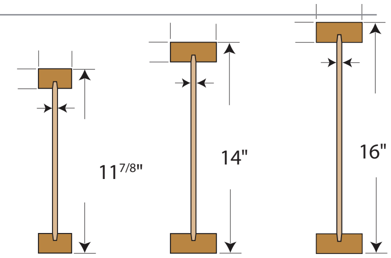
Spans Up To
9-1/2" - 17' 00"
11-7/8" - 20' 03"



3/8" OSB Web
2" x 3"

NI-60
2" X 3"
Solid Flanges

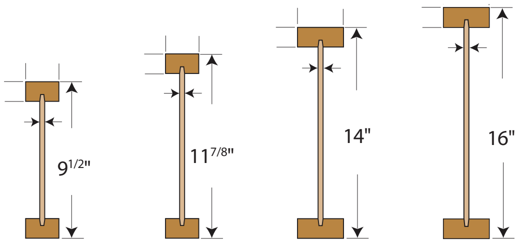
Spans Up To
11-7/8" - 20' 8"
14" - 23' 06"
16" - 26' 00"



3/8" OSB Web
2" x 3"

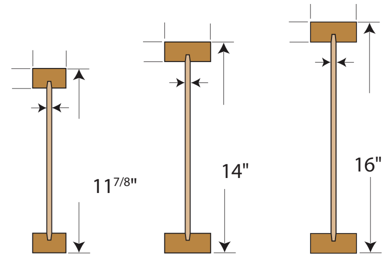
NI-80
2" X 4"
Solid Flanges

Spans Up To
9-1/2" - 19' 01"
11-7/8" - 22' 08"
14" - 25' 09"
16" - 28' 06"



NI-90
2" X 4"
Solid Flanges

Spans Up To
11-7/8" - 23' 03"
14" - 26" 06"
16" - 29' 03"



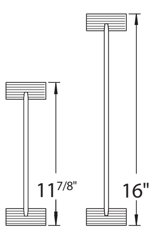
3/8" OSB Web
2" x 4"

***All spans base on typical residential 40/10 loading, l/480 16" O/C

COASTAL PRO

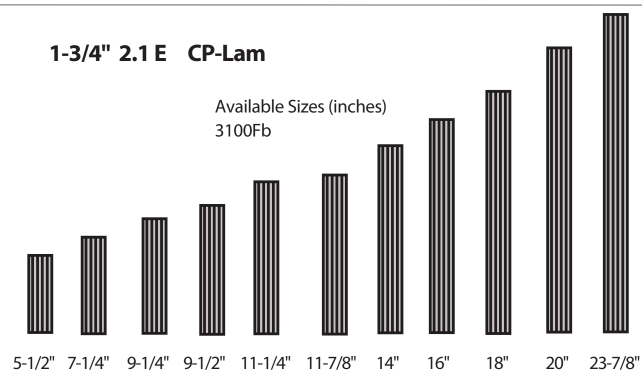
2" X 4"
LVL Flanges

Spans Up To
11-7/8" - 23' 11"
16" - 30' 01"

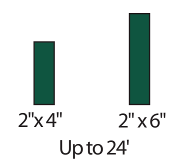


1-3/4" 2.1 E CP-Lam

Available Sizes (inches)
3100Fb

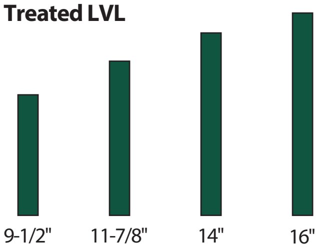


Engineered Studs
Doug Fir LVL
1.55 MOE



PWT TREATED — NEW

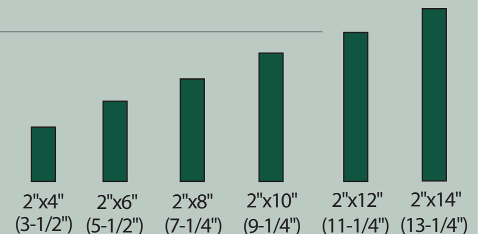
Treated LVL



MEETS IRC FIRE CODES

COASTAL PRO — LAMCO

Engineered Framing Lumber
1-1/2" wide, 1.6 MOE
2"x4" - up to 16' lengths
2"x6" - up to 20' lengths
2"x10" - 2"x12" - 2"x14" up to 32' lengths
2"x8" - up to 28' lengths



SIMPSON Strong-Tie

Matching Connectors In-Stock!!!

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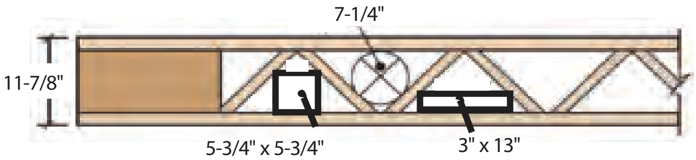
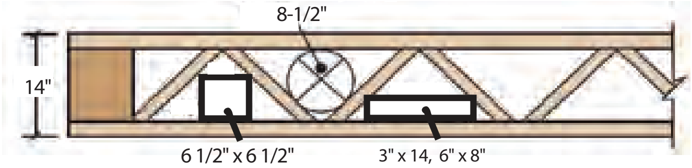
Stock Reference Guide

TRIFORCE

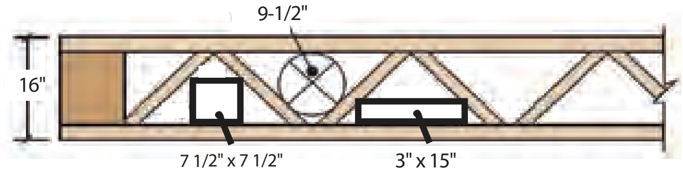
24" TRIMMABLE



Spans up to 22'00"



Spans up to 25'

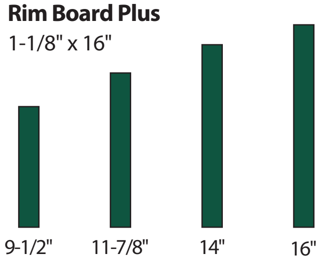


Spans up to 28'06"

Norbord

Rim Board Plus

1-1/8" x 16"

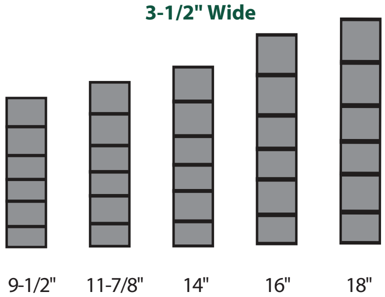


ANTHONY

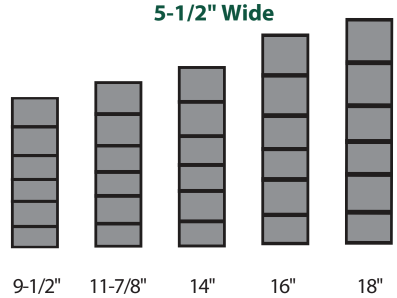
Power Beam®

2.1 MOE / 3000Fb / 25 Year Warranty

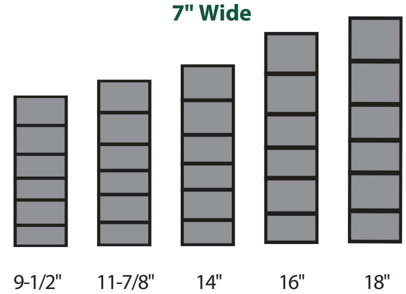
3-1/2" Wide



5-1/2" Wide



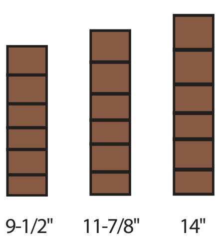
7" Wide



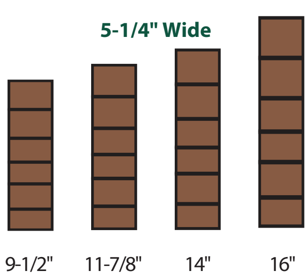
Power Preserved Glulam™

1.8 MOE / 2400Fb

3-1/2" Wide



5-1/4" Wide



Power Column®

1.8 MOE / 2400Fb

3-1/2" Wide **5-1/2" Wide** **7" Wide**

Up to 48' Lengths

ADDITIONAL SERVICES

- Full Stocking Inventory for Prompt Delivery
- Inventory is Kept Covered
- Jobsite Delivery Available*
- In-house Design Specialists
- Prompt Turnaround for Drawings
- Scanning, Printing, Laminating Available*
- Commercial Joists/Architectural Glulams Available*
- Stamped Calcs Available*
- iStruct® Software Available*
- In-House/On-site Training*

*See Coastal Rep for more details

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THE COASTAL ADVANTAGE

- Job-site delivery available in most areas
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- Wide range of engineered products
- Commercial joists available
- In-house and on site training available
- Architectural Glulams & curved Glulams

NORDIC STRUCTURES

COASTAL PRO

SIMPSON Strong-Tie

COASTAL PRO-I

Norbord

TRIFORCE

COASTAL PRO-LAM

FOREST ANTHONY PRODUCTS

LAMCO

PWT TREATED TREATED RIGHT

COASTAL

MAILING ADDRESS

Coastal Forest Products

660 River Road

Bow, NH 03304

SHIPPING ADDRESS

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