POWER BEAM®

$3000F_b$ - $2.1E$ - $300F_v$

FRAMING APPEARANCE GLULAM

ANTHONY®
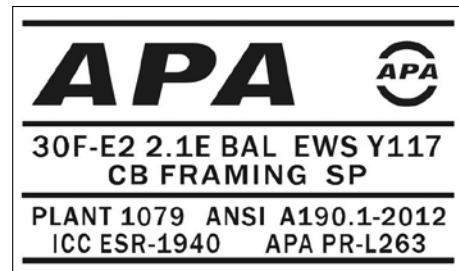ANTHONY FOREST PRODUCTS CO.

CANFOR

POWER BEAM® ADVANTAGES

- **Superior strength 3000F$_b$ - 2.1E - 300F$_v$**
- **Individually wrapped**
- **Competitively priced with SCL**
- **Surface sealed for stability**
- **Full 3-1/2", 5-1/2" & 7" framing widths**
- **No nail laminating - saves time & money**
- **I-Joist compatible depths**
- **Manufactured from a renewable resource**
- **Precut lengths up to 60'**

Power Beam® APA Stamp

SFI Beam Stamp

The Anthony POWER BEAM® is a superior framing appearance classification glued laminated beam and header for use where reliable engineered wood applications are required.

The 3-1/2" and 5-1/2" widths readily match 2x4 and 2x6 wall framing. The POWER BEAM® depths also match all joist, truss, LVL, SCL, and I-Joist floor or roof framing. The Anthony POWER BEAM® uses readily-available Southern Pine MSR lumber, sourced from our own Canfor Southern Pine Sawmills.

Power Beam® End Tag

FEATURES

Moisture Control: POWER BEAM® consistently averages 12% moisture, which is near equilibrium moisture content.

Code Evaluations/Standards:
APA ICC ESR 1940, APA Product Report L 263;
ANSI A190.1; APA Y-117; and ASTM D-3737.

AFP Power Sizer® Software: An easy-to-use structural analysis program capable of sizing AFP Power Products®.

Daily Proof Loading and Destructive Testing: Random beams are loaded daily to 1.5 times design for Quality Assurance.

SFI: Power Beam® is certified by Sustainable Forestry Initiative.

USGBC: LEED v4 low-emitting materials credit.

Dimensional Stability: POWER BEAM® is a laminated wood product with different grades of lumber. This randomizes any natural defect so there is greater beam strength and a higher degree of reliability. There is also less likelihood of warping, twisting, checking, cupping or shrinking when surface sealed.

Quality Assurance: POWER BEAM® is manufactured in accordance with ANSI A190.1 (Structural Glued Laminated Timber) with appropriate modifications. Plant implemented Total Quality Management, statistical process control procedures and APA-The Engineered Wood Association as our thdird party quality assurance program, ensure consistent quality and performance in every POWER BEAM®.

Canfor is one of the world's largest producers of sustainable lumber, pulp and paper and is also a North American leader in green energy production. We've built our reputation on the quality of our products, the reliability of our supply and our superior customer service.

Canfor Southern Pine Inc., headquartered in Mobile, Alabama, is the operating company for all of Canfor's operations in the southern United States.

Canfor's presence in the US dates back to 2006 and has continued to grow over the past decade. This includes the 2015 acquisition of Anthony Forest Products Company LLC and its sawmill in Urbana, Arkansas and engineered wood laminating plants in El Dorado, Arkansas and Washington, Georgia.

The Urbana sawmill has undergone considerable capital improvements over the past couple of years to increase production and efficiencies. It has increased the volume of quality laminating stock along with the other Canfor Southern Pine sawmills to ensure both glulam plants are fully integrated with an uninterrupted supply of MSR laminating stock lumber from our own sawmills.

Not only have our sawmills diversified with changing markets, our laminating plants have diversified to create new Power Products® to meet customer demands.

POWER PRODUCTS® CERTIFIED BY SFI

The Sustainable Forestry Initiative® (SFI) program is a comprehensive system of principles, objectives, and performance measures developed by professional foresters, conservationists and scientists, among others that combines the perpetual growing and harvesting of trees with the long term protection of wildlife, plants, soil and water quality. There are currently close to 285 million acres/115 million hectares of forestland in North America enrolled in the SFI® program, making it among the world's largest sustainable forestry programs.

Laminating Plant - El Dorado, AR

Laminating Plant - Washington, GA

POWER BEAM® DESIGN PROPERTIES

Allowable Design Stresses (psi)

	Flexural Stress** F_b	Tension Parallel to Grain F_t	Compression Perpendicular to Grain F_{c1}	Horizontal Stress F_v	Modulus of Elasticity E
3-1/2" & 5-1/2"	3000	1350	805	300	2,100,000
7"	2800	1300	805	300	2,100,000

Power Beam® Section Properties and Allowable Capacities

3-1/2″ 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)	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)	$7^1/4$	$9^1/4$	$9^1/2$	$11^1/4$	$11^7/8$	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	831	978	1601	2389	3402
Moment Capacity (lbs-ft)	14309	23232	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	$23^3/8$	$24^3/4$	$26^1/8$	$27^1/2$	$28^7/8$
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	194451	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 Y 117 where;

$$C_v = K_L \times [(21/L)^{0.05} \times (12/d)^{0.05} \times (5.125/b)^{0.05}] \leqslant 1.0$$

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.

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 tabulted 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.
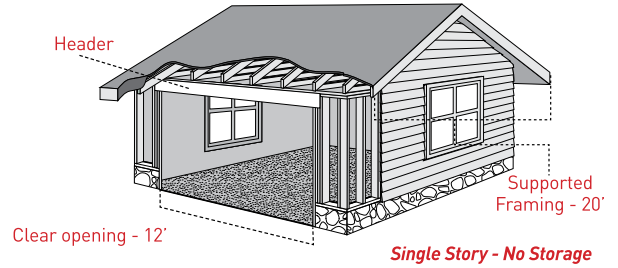
WINDOW, DOOR AND GARAGE DOOR HEADERS

STEPS IN USING THIS TABLE:
1. Find the row with the appropriate roof loading conditions (Live Load, Dead Load and LDF).
2. Find the clear opening that meets or exceeds the window, door or garage door size.
3. Find the span of the trusses or rafters that frame into the header.
4. Select the proper header size.

Key: Each cell contains two nominal header sizes:

Row 1: Header size for bearing length = 3.0"
Row 2: Header size for bearing length = 1-1/2"

Header
Clear opening - 12'
Supported Framing - 20'
Single Story - No Storage

Roof Loading	Clear Opening	Span of Supported Roof Framing						
		16'	20'	24'	28'	32'	36'	40'
Live 25 PSF Dead 15 PSF LDF 1.15	4'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
	6'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
	8'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
	9'3"	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 9-1/4	5-1/2 x 7-1/4
	10'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 9-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4
	12'	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 11-1/4
		3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4
	16'3"	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 14	3-1/2 x 14
		3-1/2 x 11-1/4	3-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-1/4	7 x 11-1/4	7 x 11-1/4
	18'3"	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	5-1/2 x 14
		3-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-1/4	7 x 11-1/4	7 x 11-1/4	**
Live 30 PSF Dead 15 PSF LDF 1.15	4'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
	6'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
	8'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	5-1/2 x 7-1/4
	9'3"	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-0 x 9-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4
	10'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 9-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4
	12'	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4
		3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4
	16'3"	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	5-1/2 x 11-7/8
		3-1/2 x 11-1/4	5-1/2 x 9-1/2	5-1/2 x 11-1/4	5-1/2 x 11-1/4	7 x 11-1/4	7 x 11-1/4	**
	18'3"	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	5-1/2 x 14	5-1/2 x 14
		5-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-1/4	7 x 11-1/4	7 x 11-1/4	**	**
Live 40 PSF Dead 15 PSF LDF 1.15	4'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
	6'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
	8'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4
	9'3"	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4
	10'	3-1/2 x 7-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/2	3-1/2 x 11-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 9-1/4	7 x 7-1/4
	12'	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/2	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8
		3-1/2 x 9-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4	7 x 9-1/4	7 x 9-1/4
	16'3"	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	5-1/2 x 11-7/8	5-1/2 x 14	5-1/2 x 14
		5-1/2 x 11-1/4	5-1/2 x 11-1/4	7 x 11-1/4	7 x 11-1/4	**	**	**
	18'3"	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	5-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16
		5-1/2 x 11-1/4	5-1/2 x 11-7/8	7 x 11-1/4	**	**	**	**

Power Beam® Selection Table for Window, Door and Garage Door Headers - One Story Application

Power Beam® Selection Table for Window, Door and Garage Door Headers - One Story Application

Roof Loading	Clear Opening	Span of Supported Roof Framing						
		16'	20'	24'	28'	32'	36'	40'
Live 20 PSF Dead 20 PSF LDF 1.25	4'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
	6'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
	8'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
	9'3"	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 9-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	5-1/2 x 7-1/4
	10'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 9-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4
	12'	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/2	3-1/2 x 11-1/4
		3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4
	16'3"	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14
		3-1/2 x 11-1/4	3-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-1/4	7 x 11-1/4	7 x 11-1/4
	18'3"	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	5-1/2 x 14
		3-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-1/4	7 x 11-1/4	7 x 11-1/4	**
Live 20 PSF Dead 15 PSF LDF 1.25	4'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
	6'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
	8'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
	9'3"	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 9-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
	10'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4
		3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 9-1/4	5-1/2 x 7-1/4
	12'	3-1/2 x 7-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4
		3-1/2 x 7-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4
	16'3"	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14
		3-1/2 x 11-1/4	3-1/2 x 11-1/4	5-1/2 x 9-1/4	5-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-1/4	7 x 11-1/4
	18'3"	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14
		3-1/2 x 11-1/4	3-1/2 x 11-7/8	5-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-1/4	7 x 11-1/4	7 x 11-1/4

Window, Door and Garage Door Header Example

Load Conditions:	Live = 30 psf
	Dead =15 psf
	LDF = 1.15
Clear Opening:	12'
Span of Supported Roof Framing:	20'
PowerBeam® Selected:	3-1/2 x 9-1/4 w/ 1 trimmer

Load Duration Factor (LDF)

LDF	Duration
1.00	10 years; normal loads
1.15	2 months; snow load
1.25	7 days; non-snow or construction

Notes: (Single Story Applications)

1. Local code may require an engineered system of wall bracing for wall sections less than 4' in length adjacent to garage door openings. A glulam garage door header extended continuously over these shorter walls adjacent to the garage door opening is an integral part of these engineered systems.
2. This table is for headers carrying roof loads only. For headers supporting floor, roof and exterior wall loads, see two-story applications.
3. Deflection is limited to L/240 for Live Load and L/180 for Total Load.
4. Design span is assumed to be the clear opening plus the bearing length of 1-1/2" (1 trimmer) or 3.0" (2 trimmers).
5. For bearing lengths longer than 3.0", use the Allowable Roof Load Tables to get required header size. Use of longer bearing lengths may allow the use of a smaller POWER BEAM®.
6. The header size is based on the load carried by 1/2 the span of the roof framing plus a 24" overhang.
7. It is assumed that the header has the truss or rafter framing attached to its top, and is supported laterally at the bearing points.
8. Live Load reductions may be taken per IRC and IBC. Live Load reductions have not been taken to produce this table.
9. For loads other than those shown, see Roof PLF table, or use a load condition that applies a higher load than you have.
10. A 9-1/2" depth member may be substituted for a 9-1/4" member, and an 11-7/8" for an 11-1/4", etc.

*** These locations require a longer bearing or wider width beam. Consult PLF tables or Power Sizer® Software for proper beam size.*
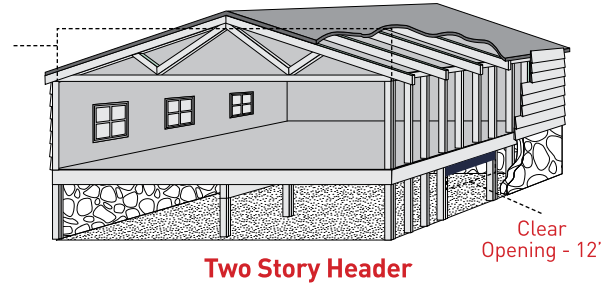
TWO-STORY APPLICATIONS

STEPS IN USING THIS TABLE:
1. Find the row with the appropriate roof loading conditions (Live Load, Dead Load and LDF).
2. Find the clear opening that meets or exceeds the window, door or garage door size.
3. Find the span of the trusses or rafters that frame into the header.
4. Select the proper header size.

Key: Each cell contains two nominal header sizes:

Row 1: Header size for bearing length = 3.0"
Row 2: Header size for bearing length = 1-1/2"

Supported Framing - 20'

Clear Opening - 12'

Two Story Header

POWER BEAM® Selection Table for Window, Door and Garage Door Headers - Two Story Applications

Roof Loading	Clear Opening	Span of Supported Roof Framing						
		16'	20'	24'	28'	32'	36'	40'
Roof Live 25 PSF Dead 15 PSF Floor Live 40 PSF Dead 12 PSF LDF 1.00	4'	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4
	6'	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4
	8'	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 9-1/4 / 5-1/2 x 7-1/4	3-1/2 x 9-1/4 / 5-1/2 x 7-1/4	3-1/2 x 9-1/4 / 5-1/2 x 7-1/4	3-1/2 x 9-1/4 / 5-1/2 x 7-1/4	3-1/2 x 9-1/4 / 5-1/2 x 7-1/4
	9'3"	3-1/2 x 9-1/4 / 3-1/2 x 9-1/4	3-1/2 x 9-1/4 / 3-1/2 x 9-1/4	3-1/2 x 9-1/4 / 5-1/2 x 7-1/4	3-1/2 x 9-1/4 / 5-1/2 x 9-1/4	3-1/2 x 9-1/4 / 5-1/2 x 9-1/4	3-1/2 x 9-1/2 / 7 x 9-1/4	3-1/2 x 11-1/4 / 7 x 9-1/4
	10'	3-1/2 x 9-1/4 / 3-1/2 x 9-1/4	3-1/2 x 9-1/4 / 5-1/2 x 9-1/4	3-1/2 x 9-1/4 / 5-1/2 x 9-1/4	3-1/2 x 11-1/4 / 5-1/2 x 9-1/4	3-1/2 x 11-1/4 / 7 x 9-1/4	3-1/2 x 11-1/4 / 7 x 9-1/4	3-1/2 x 11-1/4 / 7 x 9-1/4
	12'	3-1/2 x 11-1/4 / 5-1/2 x 9-1/4	3-1/2 x 11-1/4 / 5-1/2 x 9-1/4	3-1/2 x 11-1/4 / 5-1/2 x 9-1/2	3-1/2 x 11-7/8 / 7 x 9-1/4	3-1/2 x 11-7/8 / 7 x 9-1/2	5-1/2 x 11-1/4 / **	5-1/2 x 11-1/4 / **
	16'3"	3-1/2 x 14 / 5-1/2 x 11-1/4	3-1/2 x 14 / 7 x 11-1/4	5-1/2 x 14 / **	5-1/2 x 14 / **	5-1/2 x 14 / **	5-1/2 x 14 / **	5-1/2 x 16 / **
	18'3"	3-1/2 x 16 / 7 x 11-7/8	3-1/2 x 16 / 7 x 14	5-1/2 x 14 / **	5-1/2 x 16 / **	5-1/2 x 16 / **	7 x 16 / **	7 x 16 / **
Roof Live 30 PSF Dead 15 PSF Floor Live 40 PSF Dead 12 PSF LDF 1.00	4'	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4
	6'	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 5-1/2 x 7-1/4	3-1/2 x 7-1/4 / 5-1/2 x 7-1/4
	8'	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 9-1/4	3-1/2 x 9-1/4 / 5-1/2 x 7-1/4	3-1/2 x 9-1/4 / 5-1/2 x 7-1/4	3-1/2 x 9-1/4 / 5-1/2 x 7-1/4	3-1/2 x 9-1/4 / 7 x 7-1/4	3-1/2 x 9-1/4 / 7 x 7-1/4
	9'3"	3-1/2 x 9-1/4 / 3-1/2 x 9-1/4	3-1/2 x 9-1/4 / 5-1/2 x 7-1/4	3-1/2 x 9-1/4 / 5-1/2 x 7-1/4	3-1/2 x 9-1/4 / 3-1/2 x 9-1/4	3-1/2 x 9-1/2 / 7 x 9-1/4	3-1/2 x 11-1/4 / 7 x 9-1/4	3-1/2 x 11-1/4 / 7 x 9-1/4
	10'	3-1/2 x 9-1/4 / 3-1/2 x 9-1/4	3-1/2 x 9-1/4 / 5-1/2 x 9-1/4	3-1/2 x 9-1/2 / 5-1/2 x 9-1/4	3-1/2 x 11-1/4 / 5-1/2 x 9-1/4	3-1/2 x 11-1/4 / 7 x 9-1/4	3-1/2 x 11-1/4 / 7 x 9-1/4	5-1/2 x 9-1/2 / **
	12'	3-1/2 x 11-1/4 / 5-1/2 x 9-1/4	3-1/2 x 11-1/4 / 5-1/2 x 9-1/4	3-1/2 x 11-1/4 / 7 x 9-1/4	3-1/2 x 11-7/8 / 7 x 9-1/4	5-1/2 x 11-1/4 / **	5-1/2 x 11-1/4 / **	5-1/2 x 11-1/4 / **
	16'3"	3-1/2 x 14 / 7 x 11-1/4	3-1/2 x 16 / 7 x 11-7/8	5-1/2 x 14 / **	5-1/2 x 14 / **	5-1/2 x 14 / **	5-1/2 x 16 / **	7 x 14 / **
	18'3"	3-1/2 x 16 / 7 x 11-7/8	5-1/2 x 14 / **	5-1/2 x 16 / **	5-1/2 x 16 / **	5-1/2 x 16 / **	7 x 16 / **	7 x 16 / **
Roof Live 40 PSF Dead 15 PSF Floor Live 40 PSF Dead 12 PSF LDF 1.00	4'	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4
	6'	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 7-1/4 / 5-1/2 x 7-1/4	3-1/2 x 9-1/4 / 5-1/2 x 7-1/4
	8'	3-1/2 x 7-1/4 / 3-1/2 x 7-1/4	3-1/2 x 9-1/4 / 3-1/2 x 9-1/4	3-1/2 x 9-1/4 / 5-1/2 x 7-1/4	3-1/2 x 9-1/4 / 5-1/2 x 7-1/4	3-1/2 x 9-1/4 / 7 x 7-1/4	3-1/2 x 9-1/4 / 7 x 7-1/4	3-1/2 x 11-1/4 / 7 x 7-1/4
	9'3"	3-1/2 x 9-1/4 / 5-1/2 x 7-1/4	3-1/2 x 9-1/4 / 5-1/2 x 9-1/4	3-1/2 x 9-1/4 / 5-1/2 x 9-1/4	3-1/2 x 11-1/4 / 7 x 9-1/4	3-1/2 x 11-1/4 / 7 x 9-1/4	3-1/2 x 11-1/4 / 7 x 9-1/4	5-1/2 x 9-1/4 / **
	10'	3-1/2 x 9-1/4 / 5-1/2 x 9-1/4	3-1/2 x 9-1/2 / 5-1/2 x 9-1/4	3-1/2 x 11-1/4 / 5-1/2 x 9-1/4	3-1/2 x 11-1/4 / 7 x 9-1/4	3-1/2 x 11-1/4 / 7 x 9-1/4	5-1/2 x 9-1/2 / **	5-1/2 x 11-1/4 / **
	12'	3-1/2 x 11-1/4 / 5-1/2 x 9-1/4	3-1/2 x 11-1/4 / 7 x 9-1/4	3-1/2 x 11-7/8 / 7 x 9-1/4	3-1/2 x 11-1/4 / **	5-1/2 x 11-1/4 / **	5-1/2 x 11-7/8 / **	5-1/2 x 11-7/8 / **
	16'3"	3-1/2 x 16 / 7 x 11-1/4	5-1/2 x 14 / 7 x 11-7/8	5-1/2 x 14 / **	5-1/2 x 16 / **	5-1/2 x 16 / **	7 x 16 / **	7 x 16 / **
	18'3"	5-1/2 x 14 / 7 x 14	5-1/2 x 16 / 7 x 14	5-1/2 x 16 / **	7 x 16 / **	7 x 16 / **	7 x 16 / **	7 x 16 / **

POWER BEAM® Selection Table for Window, Door and Garage Door Headers - Two Story Applications

Roof Loading: Roof Live 20 PSF, Dead 20 PSF, Floor Live 40 PSF, Dead 12 PSF, LDF 1.00

Clear Opening	Span of Supported Roof Framing						
	16'	20'	24'	28'	32'	36'	40'
4'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
6'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4
8'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4
	3-1/2 x 7-1/4	3-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4
9'3"	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/2	3-1/2 x 11-1/4
	3-1/2 x 9-1/4	3-1/2 x 9-1/4	5-1/2 x 7-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4	7 x 9-1/4	7 x 9-1/4
10'	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4
	3-1/2 x 9-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4	7 x 9-1/4	7 x 9-1/4	7 x 9-1/4
12'	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 11-7/8	5-1/2 x 11-1/4	5-1/2 x 11-1/4
	5-1/2 x 9-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/2	7 x 9-1/4	7 x 9-1/2	**	**
16'3"	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16
	5-1/2 x 11-1/4	7 x 11-1/4	7-1/2 x 11-1/4	**	**	**	**
18'3"	3-1/2 x 16	3-1/2 x 16	5-1/2 x 14	5-1/2 x 16	5-1/2 x 16	7 x 16	7 x 16
	7 x 11-7/8	7 x 14	**	**	**	**	**

Roof Loading: Roof Live 20 PSF, Dead 15 PSF, Floor Live 40 PSF, Dead 12 PSF, LDF 1.00

Clear Opening	Span of Supported Roof Framing						
	16'	20'	24'	28'	32'	36'	40'
4'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
6'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4
	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	5-1/2 x 7-1/4
8'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4
	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4
9'3"	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/2
	3-1/2 x 7-1/4	3-1/2 x 9-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4	7 x 9-1/4
10'	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/2	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4
	3-1/2 x 9-1/4	5-1/2 x 7-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4	7 x 9-1/4	7 x 9-1/4
12'	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	5-1/2 x 11-1/4
	5-1/2 x 9-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4	7 x 9-1/4	7 x 9-1/4	7 x 9-1/2	**
16'3"	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16
	5-1/2 x 11-1/4	7 x 11-1/4	7 x 11-1/4	**	**	**	**
18'3"	3-1/2 x 16	3-1/2 x 16	5-1/2 x 14	5-1/2 x 16	5-1/2 x 16	5-1/2 x 16	7 x 16
	5-1/2 x 14	7 x 14	**	**	**	**	**

Window, Door and Garage Door Header 2-Story Application

Roof Load Conditions:	Live = 30 psf
	Dead = 15 psf
	LDF = 1.15
Clear Opening:	12'
Span of Supported Roof Framing:	20'
POWER BEAM® Selected:	3-1/2 x 11-1/4 w/ 2 trimmers

Load Duration Factor (LDF)

LDF	Duration
1.00	10 years; normal loads
1.15	2 months; snow load
1.25	7 days; non-snow or construction

Notes: (Two Story Application)

1. This table is for headers carrying floor, roof and wall loads.
2. Deflection is limited to L/360 for Live Load and L/240 for Total Load.
3. Design span is assumed to be the clear opening plus the bearing length of 1-1/2" (1 trimmer) or 3.0" (2 trimmers).
4. For bearing lengths longer than 3.0", use the Allowable Floor Load Tables to get required header size. Use of longer bearing lengths may allow the use of a smaller POWER BEAM®.
5. The header size is based on the load carried by 1/2 the span of the roof framing plus a 24" overhang plus 1/4 the span of the floor load plus the wall load.
6. The wall load is assumed to be 100 PLF (wood frame with no masonry).
7. It is assumed that the header has the joist framing attached to its top, and is supported laterally at the bearing points.
8. For loads other than those shown, see the Floor Load PLF Table, or use a load condition that applies a higher load than you have.
9. Live Load reductions may be taken per IRC and IBC. Live Load reductions have not been taken to produce this table.
10. A 9-1/2" depth member may be substituted for a 9-1/4" member, and an 11-7/8" for an 11-1/4", etc.

*** These locations require a longer bearing or wider width beam. Consult PLF tables or Power-Sizer® Software for proper beam size.*
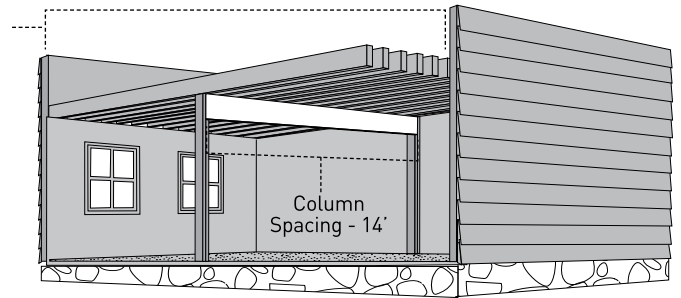
FLOOR GIRDER BEAMS

Steps in Using This Table:
1. Find the row with the appropriate floor loading conditions (Live Load, Dead Load and LDF).
2. Find the clear opening that meets or exceeds the column spacing.
3. Find the span of the joists that frame into the girder beam.
4. Select the proper header size.

Key: Each cell contains two nominal header sizes:

Row 1: Header size for bearing length = 3.0"
Row 2: Header size for bearing length = 1-1/2"

Supported Joist Framing - 30'

Column Spacing - 14'

Floor Girder Beam

POWER BEAM® Selection Table for Girder Beams

Floor Loading	Column Spacing	Span of Supported Joist Framing (the sum of joist spans from both sides of girder beam)						
		20'	24'	26'	28'	30'	32'	36'
Live 40 PSF Dead 12 PSF LDF 1.00	8'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4
		3-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4
	9'	3-1/2 x 7-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4
		3-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	7 x 7-1/4
	10'	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/2	3-1/2 x 11-1/4
		5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4	7 x 9-1/4	7 x 9-1/4
	11'	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/2	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	5-1/2 x 9-1/4
		5-1/2 x 9-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4	7 x 9-1/4	7 x 9-1/4	7 x 9-1/4	**
	12'	3-1/2 x 9-1/2	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	5-1/2 x 9-1/2	5-1/2 x 11-1/4
		5-1/2 x 9-1/4	5-1/2 x 9-1/4	7 x 9-1/4	7 x 9-1/4	7 x 9-1/4	**	**
	13'	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	5-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-1/4
		5-1/2 x 9-1/4	7 x 9-1/4	7 x 9-1/4	7 x 9-1/4	**	**	**
	14'	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	5-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-7/8
		5-1/2 x 9-1/2	7 x 9-1/4	7 x 9-1/2	**	**	**	**
	15'	3-1/2 x 11-7/8	3-1/2 x 14	5-1/2 x 11-1/4	5-1/2 x 11-7/8	5-1/2 x 11-7/8	5-1/2 x 11-7/8	5-1/2 x 14
		5-1/2 x 11-1/4	7 x 11-1/4	**	**	**	**	**
	16'	3-1/2 x 14	5-1/2 x 11-7/8	5-1/2 x 11-7/8	5-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 14
		7 x 11-1/4	**	**	**	**	**	**
	17'	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 14	7 x 14
		7 x 11-1/4	**	**	**	**	**	**
	18'	3-1/2 x 16	5-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16	7 x 14
		7 x 11-1/4	**	**	**	**	**	**
Live 40 PSF Dead 20 PSF LDF 1.00	8'	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4
		3-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	7 x 7-1/4
	9'	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 11-1/4
		5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	5-1/2 x 7-1/4	7 x 7-1/4	7 x 7-1/4	7 x 7-1/4
	10'	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/2	3-1/2 x 11-1/4	3-1/2 x 11-1/4	5-1/2 x 9-1/4
		5-1/2 x 7-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/4	7 x 9-1/4	7 x 9-1/4	7 x 9-1/4	**
	11'	3-1/2 x 9-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	5-1/2 x 9-1/4	5-1/2 x 9-1/2
		5-1/2 x 9-1/4	7 x 9-1/4	7 x 9-1/4	7 x 9-1/4	7 x 9-1/4	**	**
	12'	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	5-1/2 x 9-1/2	5-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-1/4
		5-1/2 x 9-1/4	7 x 9-1/4	7 x 9-1/4	**	**	**	**
	13'	3-1/2 x 11-1/4	3-1/2 x 11-7/8	5-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-1/4
		5-1/2 x 9-1/4	7 x 9-1/4	**	**	**	**	**
	14'	3-1/2 x 11-7/8	5-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-1/4	5-1/2 x 11-7/8	5-1/2 x 11-7/8	5-1/2 x 14
		7 x 9-1/4	**	**	**	**	**	**
	15'	3-1/2 x 14	5-1/2 x 11-1/4	5-1/2 x 11-7/8	5-1/2 x 11-7/8	5-1/2 x 14	5-1/2 x 14	7 x 11-7/8
		7 x 11-1/4	**	**	**	**	**	**
	16'	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 14	7 x 14
		7 x 11-1/4	**	**	**	**	**	**
	17'	5-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 14	7 x 14	7 x 14
		**	**	**	**	**	**	**
	18'	5-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16	7 x 14	7 x 14	7 x 16
		**	**	**	**	**	**	**

Notes: (Floor Girder Beams)

1. This table is for beams carrying floor loads only.
2. Deflection is limited to L/360 for Live Load and L/240 for Total Load.
3. The column spacing equals the design span. The beam is sized to consider simple or continuous beam applications.
4. For bearing lengths longer than 3.0", use the Allowable Floor Load tables to get the required header size.
5. The beam size is based on the load carried by continuous span joists. The beam load is based upon the load from 5/8 of the span of the supported floor joists. The intermediate bearing is assumed to be 6" or 3" corresponding to the 3" or 1-1/2" end bearing conditions, respectively.
6. For simple span floor joists, multiply the sum of the spans by 0.80 and use the calculated span as span of supported joist framing.
7. It is assumed that the beam has the truss or joist framing attached to its top or to the beam sides using hangers, and is supported laterally at the bearing points.
8. For load conditions other than those shown, see Floor Load Table, or use a load condition that applies a higher load than you have.
9. Live Load reductions may be taken per IRC and IBC. Live Load reductions have not been taken to produce this table.
10. A 9-1/2" header may be used for a 9-1/4" header, and an 11-7/8" for an 11-1/4", etc.

**These locations require a longer bearing or wider width beam. Consult PLF tables or the Power Sizer® Software for proper beam size.

Floor Girder Beam Example I
For Simple Span I-Joists

Load Conditions:	Live = 40 psf
	Dead = 12 psf
	LDF = 1.00
Column Spacing:	14'
Span of Supported Joist Framing	30' (ex: 15' + 15')
	Use 0.8 x 30 = 24' equivalent
POWER BEAM® Selected:	3-1/2 x 11-7/8 w /2 trimmers

Floor Girder Beam Example II
For Continuous Span I-Joists

Load Conditions:	Live = 40 psf
	Dead = 12 psf
	LDF = 1.00
Column Spacing:	14'
Span of Supported Joist Framing:	30' (ex: 15' + 15')
POWER BEAM® Selected:	5-1/2 x 11-1/4 w /2 trimmers

General Notes for All Size Selection Tables

1. Beam weight is included in all tables and does not have to be added to the applied load.

2. The top edge of the beam or header is assumed to have continuous lateral support.

3. Beams and headers are assumed to be used under dry conditions and normal temperatures.

4. All tables assume uniform load conditions.

Any concentrated load applications must be analyzed separately or converted to an equivalent uniform load.

5. Dead and Live Loads used to select a beam or header should be equal to or greater than the actual loads applied.

6. For other beam widths and depths, or for Architectural Appearance Beams, please contact Anthony Forest Products Company, LLC or your local dealer.

ALLOWABLE FLOOR LOAD TABLES LDF = 1.00 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 1.00, and deflection limited to L/240
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 POWER BEAM® in Pounds per Linear Foot

Actual Span	3 1/2" Depth (in.)								5 1/2" 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
7'	1251	2037	2149	3013	3311	4200	5169	6300	1967	3201	3377	4735	5203	6600	8123	9900
	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
8'	958	1560	1645	2307	2571	3459	4200	5040	1506	2451	2585	3625	4040	5435	6600	7920
	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
9'	712	1232	1300	1823	2031	2823	3537	4200	1118	1937	2043	2865	3192	4436	5558	6600
	474	985	1067	1772	2031	2823	3537	4200	745	1548	1677	2785	3192	4436	5558	6600
	1.5	3	3	4.5	6	6	6	7.5	1.5	3	3	3	4.5	6	6	7.5
10'	519	998	1053	1477	1645	2287	2987	3600	815	1569	1655	2320	2585	3593	4693	5657
	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
11'	390	809	870	1220	1360	1890	2468	3124	612	1272	1367	1918	2137	2970	3879	4909
	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
12'	300	623	675	1025	1142	1588	2074	2625	472	980	1061	1611	1795	2495	3259	4125
	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
13'	236	490	531	874	973	1353	1767	2237	371	771	835	1373	1530	2126	2777	3515
	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
14'	189	393	425	706	831	1167	1524	1929	297	617	668	1110	1305	1833	2395	3020
	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
15'	154	319	346	574	675	1016	1327	1680	242	502	543	902	1061	1597	2084	2622
	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
16'	127	263	285	473	556	893	1167	1477	199	413	448	744	874	1404	1825	2297
	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	4.5	4.5
17'	106	219	238	394	464	760	1033	1308	166	345	373	620	729	1195	1612	2028
	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
18'	89	185	200	332	391	640	922	1167	140	290	314	522	614	1006	1434	1804
	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
19'	76	157	170	283	332	545	813	1047	119	247	267	444	522	856	1277	1615
	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
20'	65	135	146	242	285	467	697	945	102	212	229	381	448	734	1095	1454
	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
21'	56	116	126	209	246	403	602	856	88	183	198	329	387	634	946	1315
	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
22'	49	101	110	182	214	351	524	745	77	159	172	286	336	551	823	1171
	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
23'	43	89	96	159	187	307	458	652	67	139	151	250	294	482	720	1025
	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
24'	38	78	84	140	165	270	403	574	59	122	133	220	259	425	634	902
	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
25'	33	69	75	124	146	239	357	508	52	108	117	195	229	376	561	798
	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'	30	61	66	110	130	212	317	452	46	96	104	173	204	334	498	710
	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
27'	26	55	59	98	116	190	283	403	41	86	93	155	182	298	445	634
	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	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3
28'	24	49	53	88	104	170	254	362	37	77	84	139	163	267	399	568
	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
29'	21	44	48	79	93	153	229	325	33	69	75	125	147	241	359	511
	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
30'	19	40	43	72	84	138	206	294	30	63	68	113	133	217	324	462
	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
32'	16	33	36	59	70	114	170	242	25	52	56	93	109	179	267	381
	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

ALLOWABLE FLOOR LOAD TABLES LDF = 1.00   2800F

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 1.00, and deflection limited to L/240
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 POWER BEAM® in Pounds per Linear Foot

7" Depth (in.)

Actual Span	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	2912	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	15947	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	8400	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	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	13.5	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	6362	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	4.5	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	4.5	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	6

ALLOWABLE ROOF LOAD TABLES LDF = 1.15 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 roof loads only coming onto the beam or header.

Key: For each clear span there are three numbers:
Row 1: Maximum Total Load with LDF of 1.15, and deflection limited to L/180
Row 2: Maximum Live Load limited by deflection of L/240
Row 3: Required Bearing Length in trimmer thickness
(e.g., 1.5 = 1 trimmer, 3.0 = 2 trimmers, etc.)

Allowable Loads for POWER BEAM® in Pounds per Linear Foot

Actual Span	3 1/2" Depth (in.)								5 1/2" 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
7'	1439	2343	2471	3465	3808	4830	5945	7245	2262	3682	3883	5446	5984	7590	9342	11385
	1439	2343	2471	3465	3808	4830	5945	7245	2262	3682	3883	5446	5984	7590	9342	11385
	3	4.5	4.5	6	6	7.5	9	10.5	3	4.5	4.5	6	6	7.5	9	10.5
8'	1102	1794	1892	2653	2956	3978	4830	5796	1732	2819	2973	4169	4645	6251	7590	9108
	1013	1794	1892	2653	2956	3978	4830	5796	1592	2819	2973	4169	4645	6251	7590	9108
	3	3	3	4.5	4.5	6	7.5	9	3	3	3	4.5	4.5	6	7.5	9
9'	871	1417	1495	2096	2336	3247	4067	4830	1368	2227	2349	3294	3670	5102	6392	7590
	712	1417	1495	2096	2336	3247	4067	4830	1118	2227	2349	3294	3670	5102	6392	7590
	1.5	3	3	4.5	4.5	6	7.5	9	1.5	3	3	4.5	4.5	6	7.5	9
10'	692	1148	1211	1698	1892	2630	3435	4140	1087	1804	1903	2668	2973	4132	5397	6506
	519	1077	1167	1698	1892	2630	3435	4140	815	1693	1834	2668	2973	4132	5397	6506
	1.5	3	3	4.5	4.5	6	7.5	9	1.5	3	3	4.5	4.5	6	7.5	9
11'	520	949	1001	1403	1564	2173	2839	3593	817	1491	1573	2205	2457	3415	4461	5645
	390	809	877	1403	1564	2173	2839	3593	612	1272	1378	2205	2457	3415	4461	5645
	1.5	3	3	3	4.5	4.5	6	7.5	1.5	3	3	3	4.5	4.5	6	7.5
12'	400	797	841	1179	1314	1826	2385	3019	629	1253	1321	1853	2065	2870	3748	4744
	300	623	675	1122	1314	1826	2385	3019	472	980	1061	1762	2065	2870	3748	4744
	1.5	3	3	3	3	4.5	6	7.5	1.5	3	3	3	3	4.5	6	7.5
13'	315	654	708	1005	1120	1556	2032	2572	495	1027	1113	1579	1759	2445	3194	4042
	236	490	531	882	1037	1556	2032	2572	371	771	835	1386	1630	2445	3194	4042
	1.5	3	3	3	3	4.5	6	7.5	1.5	3	3	3	3	4.5	6	7.5
14'	252	523	567	866	965	1342	1752	2218	396	823	891	1361	1517	2108	2754	3473
	189	393	425	706	831	1342	1752	2218	297	617	668	1110	1305	2108	2754	3473
	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
15'	205	426	461	755	841	1169	1527	1932	322	669	724	1186	1321	1837	2396	3015
	154	319	346	574	675	1107	1527	1932	242	502	543	902	1061	1739	2396	3015
	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
16'	169	351	380	631	739	1027	1342	1698	265	551	597	991	1161	1614	2099	2641
	127	263	285	473	556	912	1342	1698	199	413	448	744	874	1433	2099	2641
	1.5	1.5	1.5	3	3	3	4.5	6	1.5	1.5	1.5	3	3	3	4.5	6
17'	141	292	317	526	619	910	1188	1504	221	459	498	826	972	1429	1854	2333
	106	219	238	394	464	760	1135	1504	166	345	373	620	729	1195	1783	2333
	1.5	1.5	1.5	3	3	3	4.5	6	1.5	1.5	1.5	3	3	4.5	4.5	6
18'	119	246	267	443	521	812	1060	1342	186	387	419	696	819	1271	1649	2075
	89	185	200	332	391	640	956	1342	140	290	314	522	614	1006	1502	2075
	1.5	1.5	1.5	1.5	3	3	4.5	4.5	1.5	1.5	1.5	1.5	3	3	4.5	4.5
19'	101	209	227	377	443	726	951	1204	158	329	356	592	696	1138	1476	1857
	76	157	170	283	332	545	813	1157	119	247	267	444	522	856	1277	1819
	1.5	1.5	1.5	1.5	3	3	4.5	4.5	1.5	1.5	1.5	1.5	3	3	4.5	4.5
20'	86	180	194	323	380	622	859	1087	136	282	306	508	597	978	1329	1672
	65	135	146	242	285	467	697	992	102	212	229	381	448	734	1095	1559
	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
21'	75	155	168	279	328	538	779	985	117	244	264	438	516	845	1202	1513
	56	116	126	209	246	403	602	857	88	183	198	329	387	634	946	1347
	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
22'	65	135	146	243	285	468	698	895	102	212	230	381	448	735	1093	1375
	49	101	110	182	214	351	524	745	77	159	172	286	336	551	823	1171
	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
23'	57	118	128	212	250	409	611	817	89	186	201	334	393	643	960	1255
	43	89	96	159	187	307	458	652	67	139	151	250	294	482	720	1025
	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
24'	50	104	113	187	220	360	538	749	79	163	177	294	345	566	845	1150
	38	78	84	140	165	270	403	574	59	122	133	220	259	425	634	902
	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
25'	44	92	100	165	194	319	476	677	70	144	156	260	306	501	748	1058
	33	69	75	124	146	239	357	508	52	108	117	195	229	376	561	798
	1.5	1.5	1.5	1.5	1.5	1.5	3	4.5	1.5	1.5	1.5	1.5	1.5	1.5	3	4.5
26'	39	82	89	147	173	283	423	602	62	128	139	231	272	445	665	946
	30	61	66	110	130	212	317	452	46	96	104	173	204	334	498	710
	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
27'	35	73	79	131	154	253	378	538	55	115	124	206	243	398	593	845
	26	55	59	98	116	190	283	403	41	86	93	155	182	298	445	634
	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
28'	32	65	71	118	138	227	339	482	50	103	111	185	218	356	532	758
	24	49	53	88	104	170	254	362	37	77	84	139	163	267	399	568
	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
29'	28	59	64	106	125	204	305	434	45	93	100	166	196	321	479	682
	21	44	48	79	93	153	229	325	33	69	75	125	147	241	359	511
	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
30'	26	53	58	96	113	184	275	392	40	84	91	150	177	290	433	616
	19	40	43	72	84	138	206	294	30	63	68	113	133	217	324	462
	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	3	3
32'	21	44	47	79	93	152	227	323	33	69	75	124	146	239	356	508
	16	33	36	59	70	114	170	242	25	52	56	93	109	179	267	381
	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

ALLOWABLE ROOF LOAD TABLES LDF = 1.15 2800F

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 roof loads only coming onto the beam or header.

Allowable Loads for POWER BEAM® in Pounds per Linear Foot

7" Depth (in.)

Actual Span	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'	2687	4373	4613	6469	7207	9660	11889	14490	16348	18642	21252	24247	27720	31794	36641	42421
	2687	4373	4613	6469	7207	9660	11889	14490	16348	18642	21252	24247	27720	31794	36641	42421
	3	3	3	4.5	6	7.5	9	10.5	12	13.5	16.5	18	21	25.5	30	36
8'	2057	3348	3532	4953	5518	7670	9660	11592	12936	14556	16348	18339	20566	23074	25917	29169
	2026	3348	3532	4953	5518	7670	9660	11592	12936	14556	16348	18339	20566	23074	25917	29169
	1.5	3	3	4.5	4.5	6	7.5	9	10.5	12	13.5	15	18	19.5	22.5	25.5
9'	1625	2646	2790	3913	4360	6060	7915	9660	10702	11939	13283	14746	16348	18107	20049	22204
	1423	2646	2790	3913	4360	6060	7915	9660	10702	11939	13283	14746	16348	18107	20049	22204
	1.5	3	3	4.5	4.5	6	7.5	9	10.5	10.5	12	13.5	15	16.5	19.5	21
10'	1316	2143	2260	3170	3532	4909	6411	8114	9127	10120	11185	12331	13565	14900	16348	17923
	1037	2143	2260	3170	3532	4909	6411	8114	9127	10120	11185	12331	13565	14900	16348	17923
	1.5	3	3	3	4.5	6	6	9	9	10.5	12	12	13.5	15	16.5	19.5
11'	1039	1771	1868	2620	2919	4057	5299	6682	7617	8714	9660	10595	11592	12658	13800	15027
	779	1619	1754	2620	2919	4057	5299	6682	7617	8714	9660	10595	11592	12658	13800	15027
	1.5	3	3	3	3	4.5	6	7.5	9	10.5	10.5	12	13.5	15	15	16.5
12'	800	1488	1570	2201	2453	3409	4443	5591	6373	7291	8268	9288	10120	11002	11939	12936
	600	1247	1351	2201	2453	3409	4443	5591	6373	7291	8268	9288	10120	11002	11939	12936
	1.5	3	3	3	3	4.5	6	7.5	7.5	9	10.5	12	13.5	15	16.5	16.5
13'	630	1268	1337	1876	2090	2905	3771	4745	5408	6187	7017	7898	8829	9730	10521	11356
	472	981	1062	1764	2075	2905	3771	4745	5408	6187	7017	7898	8829	9730	10521	11356
	1.5	1.5	3	3	3	4.5	4.5	6	7.5	7.5	9	10.5	12	13.5	13.5	15
14'	504	1047	1134	1617	1802	2497	3240	4076	4646	5315	6028	6784	7584	8428	9314	10120
	378	785	851	1413	1661	2497	3240	4076	4646	5315	6028	6784	7584	8428	9314	10120
	1.5	1.5	1.5	3	3	4.5	4.5	6	6	7.5	9	9	10.5	12	13.5	15
15'	410	851	922	1409	1570	2168	2812	3538	4033	4614	5233	5890	6584	7316	8086	8893
	307	638	692	1148	1351	2168	2812	3538	4033	4614	5233	5890	6584	7316	8086	8893
	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
16'	338	701	760	1238	1378	1899	2464	3100	3534	4042	4584	5160	5768	6410	7084	7791
	253	526	570	946	1113	1824	2464	3100	3534	4042	4584	5160	5768	6410	7084	7791
	1.5	1.5	1.5	3	3	3	4.5	6	6	6	7.5	9	9	10.5	12	12
17'	282	585	633	1052	1217	1677	2176	2738	3121	3570	4049	4557	5094	5660	6256	6880
	211	439	475	789	928	1520	2176	2738	3121	3570	4049	4557	5094	5660	6256	6880
	1.5	1.5	1.5	3	3	3	4.5	4.5	6	6	7.5	7.5	9	9	10.5	12
18'	237	493	534	886	1042	1492	1935	2435	2776	3175	3601	4053	4531	5035	5564	6120
	178	369	400	665	782	1281	1912	2435	2776	3175	3601	4053	4531	5035	5564	6120
	1.5	1.5	1.5	1.5	3	3	4.5	4.5	6	6	6	7.5	7.5	9	10.5	10.5
19'	202	419	454	753	886	1335	1732	2179	2484	2842	3223	3628	4055	4506	4980	5478
	151	314	340	565	665	1089	1626	2179	2484	2842	3223	3628	4055	4506	4980	5478
	1.5	1.5	1.5	1.5	3	3	3	4.5	4.5	6	6	7.5	7.5	9	9	10.5
20'	173	359	389	646	760	1202	1559	1962	2236	2558	2902	3266	3651	4057	4483	4931
	130	269	292	484	570	934	1394	1962	2236	2558	2902	3266	3651	4057	4483	4931
	1.5	1.5	1.5	1.5	1.5	3	3	4.5	4.5	6	6	6	7.5	7.5	9	10.5
21'	149	310	336	558	656	1075	1411	1775	2023	2315	2625	2955	3303	3670	4057	4461
	112	233	252	419	492	807	1204	1714	2023	2315	2625	2955	3303	3670	4057	4461
	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
22'	130	270	292	485	571	935	1283	1614	1839	2104	2387	2686	3003	3337	3688	4056
	97	202	219	364	428	702	1047	1491	1824	2104	2387	2686	3003	3337	3688	4056
	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
23'	114	236	256	425	500	819	1171	1473	1679	1921	2179	2452	2741	3046	3366	3702
	85	177	192	319	375	614	916	1305	1596	1921	2179	2452	2741	3046	3366	3702
	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
24'	100	208	225	374	440	720	1073	1350	1539	1761	1997	2247	2512	2792	3085	3393
	75	156	169	280	330	540	807	1148	1405	1728	1997	2247	2512	2792	3085	3393
	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
25'	89	184	199	331	389	637	951	1242	1415	1619	1836	2067	2310	2567	2837	3121
	66	138	149	248	292	478	714	1016	1243	1529	1836	2067	2310	2567	2837	3121
	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
26'	79	163	177	294	346	567	846	1146	1306	1494	1694	1907	2132	2369	2618	2880
	59	123	133	221	259	425	634	903	1105	1359	1649	1907	2132	2369	2618	2880
	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
27'	70	146	158	263	309	506	755	1060	1209	1383	1568	1765	1973	2193	2423	2665
	53	109	119	197	232	380	566	807	987	1213	1473	1765	1973	2193	2423	2665
	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
28'	63	131	142	235	277	454	677	964	1122	1284	1456	1638	1832	2035	2249	2474
	47	98	106	177	208	340	508	723	885	1088	1320	1584	1832	2035	2249	2474
	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
29'	57	118	128	212	249	408	610	868	1044	1194	1355	1525	1704	1894	2093	2302
	43	88	96	159	187	306	457	651	796	979	1188	1426	1692	1894	2093	2302
	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	7.5
30'	51	106	115	191	225	369	551	784	959	1114	1264	1422	1590	1767	1953	2147
	38	80	86	144	169	277	413	588	719	885	1074	1288	1529	1767	1953	2147
	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
32'	42	88	95	158	185	304	454	646	790	972	1107	1246	1393	1548	1711	1881
	32	66	71	118	139	228	340	484	593	729	885	1061	1260	1481	1711	1881
	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

ALLOWABLE ROOF LOAD TABLES LDF = 1.25[1] 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 roof loads only coming onto the beam or header.

Key: For each clear span there are three numbers:
Row 1: Maximum Total Load with LDF of 1.25, and deflection limited to L/180
Row 2: Maximum Live Load limited by deflection of L/240
Row 3: Required Bearing Length in trimmer thickness
(e.g., 1.5 = 1 trimmer, 3.0 = 2 trimmers, etc.)

Allowable Loads for POWER BEAM® in Pounds per Linear Foot

Actual Span	3 1/2" Depth (in.)								5 1/2" 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
7'	1564	2547	2686	3767	4139	5250	6462	7875	2458	4002	4221	5919	6504	8250	10154	12375
	1512	2547	2686	3767	4139	5250	6462	7875	2376	4002	4221	5919	6504	8250	10154	12375
	3	4.5	4.5	6	6	7.5	9	12	3	4.5	4.5	6	6	7.5	9	12
8'	1198	1950	2056	2884	3213	4324	5250	6300	1882	3064	3232	4532	5049	6794	8250	9900
	1013	1950	2056	2884	3213	4324	5250	6300	1592	3064	3232	4532	5049	6794	8250	9900
	3	3	4.5	4.5	6	7.5	9	10.5	3	3	4.5	4.5	6	7.5	9	10.5
9'	946	1540	1625	2279	2539	3529	4421	5250	1487	2421	2553	3581	3990	5545	6947	8250
	712	1478	1601	2279	2539	3529	4421	5250	1118	2322	2516	3581	3990	5545	6947	8250
	3	3	3	4.5	4.5	6	9	10.5	3	3	3	4.5	4.5	6	9	10.5
10'	692	1248	1316	1846	2056	2858	3733	4500	1087	1961	2068	2900	3232	4492	5867	7071
	519	1077	1167	1846	2056	2858	3733	4500	815	1693	1834	2900	3232	4492	5867	7071
	1.5	3	3	4.5	4.5	6	7.5	9	1.5	3	3	4.5	4.5	6	7.5	9
11'	520	1031	1088	1525	1700	2362	3085	3905	817	1621	1709	2397	2671	3712	4848	6136
	390	809	877	1456	1700	2362	3085	3905	612	1272	1378	2288	2671	3712	4848	6136
	1.5	3	3	4.5	4.5	6	7.5	9	1.5	3	3	4.5	4.5	6	7.5	9
12'	400	831	900	1282	1428	1985	2593	3281	629	1306	1415	2014	2244	3119	4074	5156
	300	623	675	1122	1319	1985	2593	3281	472	980	1061	1762	2073	3119	4074	5156
	1.5	3	3	3	4.5	4.5	6	7.5	1.5	3	3	3	4.5	4.5	6	7.5
13'	315	654	708	1092	1217	1691	2209	2796	495	1027	1113	1716	1912	2658	3471	4393
	236	490	531	882	1037	1691	2209	2796	371	771	835	1386	1630	2658	3471	4393
	1.5	3	3	3	4.5	6	6	7.5	1.5	3	3	3	3	4.5	6	7.5
14'	252	523	567	942	1049	1458	1905	2411	396	823	891	1480	1649	2292	2993	3775
	189	393	425	706	831	1361	1905	2411	297	617	668	1110	1305	2139	2993	3775
	1.5	1.5	1.5	3	3	4.5	6	7.5	1.5	1.5	1.5	3	3	4.5	6	7.5
15'	205	426	461	766	900	1270	1659	2100	322	669	724	1203	1415	1996	2605	3277
	154	319	346	574	675	1107	1652	2100	242	502	543	902	1061	1739	2596	3277
	1.5	1.5	1.5	3	3	4.5	6	6	1.5	1.5	1.5	3	3	4.5	6	6
16'	169	351	380	631	742	1117	1458	1846	265	551	597	991	1166	1755	2282	2871
	127	263	285	473	556	912	1361	1846	199	413	448	744	874	1433	2139	2871
	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
17'	141	292	317	526	619	989	1292	1635	221	459	498	826	972	1553	2015	2535
	106	219	238	394	464	760	1135	1616	166	345	373	620	729	1195	1783	2535
	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
18'	119	246	267	443	521	854	1152	1458	186	387	419	696	819	1342	1792	2255
	89	185	200	332	391	640	956	1361	140	290	314	522	614	1006	1502	2139
	1.5	1.5	1.5	1.5	3	3	4.5	6	1.5	1.5	1.5	1.5	3	3	4.5	6
19'	101	209	227	377	443	726	1034	1309	158	329	356	592	696	1141	1604	2018
	76	157	170	283	332	545	813	1157	119	247	267	444	522	856	1277	1819
	1.5	1.5	1.5	1.5	3	3	4.5	4.5	1.5	1.5	1.5	1.5	3	3	4.5	4.5
20'	86	180	194	323	380	622	929	1181	136	282	306	508	597	978	1444	1817
	65	135	146	242	285	467	697	992	102	212	229	381	448	734	1095	1559
	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
21'	75	155	168	279	328	538	803	1070	117	244	264	438	516	845	1261	1644
	56	116	126	209	246	403	602	857	88	183	198	329	387	634	946	1347
	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
22'	65	135	146	243	285	468	698	973	102	212	230	381	448	735	1097	1495
	49	101	110	182	214	351	524	745	77	159	172	286	336	551	823	1171
	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
23'	57	118	128	212	250	409	611	870	89	186	201	334	393	643	960	1364
	43	89	96	159	187	307	458	652	67	139	151	250	294	482	720	1025
	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
24'	50	104	113	187	220	360	538	766	79	163	177	294	345	566	845	1203
	38	78	84	140	165	270	403	574	59	122	133	220	259	425	634	902
	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
25'	44	92	100	165	194	319	476	677	70	144	156	260	306	501	748	1064
	33	69	75	124	146	239	357	508	52	108	117	195	229	376	561	798
	1.5	1.5	1.5	1.5	1.5	1.5	3	4.5	1.5	1.5	1.5	1.5	1.5	1.5	3	4.5
26'	39	82	89	147	173	283	423	602	62	128	139	231	272	445	665	946
	30	61	66	110	130	212	317	452	46	96	104	173	204	334	498	710
	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
27'	35	73	79	131	154	253	378	538	55	115	124	206	243	398	593	845
	26	55	59	98	116	190	283	403	41	86	93	155	182	298	445	634
	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
28'	32	65	71	118	138	227	339	482	50	103	111	185	218	356	532	758
	24	49	53	88	104	170	254	362	37	77	84	139	163	267	399	568
	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
29'	28	59	64	106	125	204	305	434	45	93	100	166	196	321	479	682
	21	44	48	79	93	153	229	325	33	69	75	125	147	241	359	511
	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
30'	26	53	58	96	113	184	275	392	40	84	91	150	177	290	433	616
	19	40	43	72	84	138	206	294	30	63	68	113	133	217	324	462
	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
32'	21	44	47	79	93	152	227	323	33	69	75	124	146	239	356	508
	16	33	36	59	70	114	170	242	25	52	56	93	109	179	267	381
	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

[1]Allowable Roof Load data for 7" width 28F using a LDF=1.25 is available from Anthony Forest Products/Canfor.

POWER BEAM®

## NOTES FOR ALLOWABLE LOAD TABLES

1. Values shown are the maximum uniform loads in pounds per lineal foot (PLF) that can be applied to the beam. The beam weight is included in the allowable total load value. Load tables are based on dry use conditions.

2. LDF = Load Duration Factor per code requirements.

3. Bearing length shown is required at each end of header, and is based on an allowable bearing stress of 805 psi. The beam must be sitting directly on top of 1 or more trimmers. A longer bearing length may be required depending on the material that the beam is bearing on. For example, if the beam is sitting on a SPF top plate, a longer bearing length will be required due to the lower compression perpendicular-to-grain design value for SPF.

4. The bearing lengths show the number of trimmers needed (e.g., 1.5 = 1 trimmer, 3.0 = 2 trimmers, etc.). This is based on the maximum PLF loads. Shorter bearing lengths may be used with lighter loads.

5. Tables are based on simple span conditions using the actual span as the center-to-center of bearing.

6. The beam is assumed to be loaded on the top edge and supported at bearing points.

7. For floor deflection limits of L/240 and L/480, multiply the Maximum Live Load figure (Row 2) by 1.5 and 0.75, respectively. For roof deflection limits of L/180 and L/360, multiply the Maximum Live Load figure (Row 2) by 1.333 and 0.667, respectively. The result shall not exceed the Total Load Figure (Row 1).

8. A 9-1/2" depth member may be substituted for a 9-1/4" member, and an 11-7/8" for an 11-1/4", etc.

Steps in Sizing Beams or Headers:

1. Determine the Total Load (live + dead) on the beam in PLF (pounds per lineal foot).
2. Determine the Live Load in PLF.
3. Find the actual span that is the same or greater than the span you have.
4. From the actual span row selected, find the PLF load that meets or exceeds the required PLF load for Total Load (Row 1) and Live Load (Row 2). The required bearing length is given in Row 3.
5. The beam size is found at the top of the column of the selected cell that meets all of your conditions.
6. If the beam selected is too deep or the bearing length too long, continue in the selected row to find another that works.

Examples Using Allowable PLF Tables

Allowable PLF Calculation for Roof Loads

Roof Span = 26'
Door Opening = 18' (actual span)
Live Load = 30 psf
Dead Load = 15 psf
LDF = 1.15
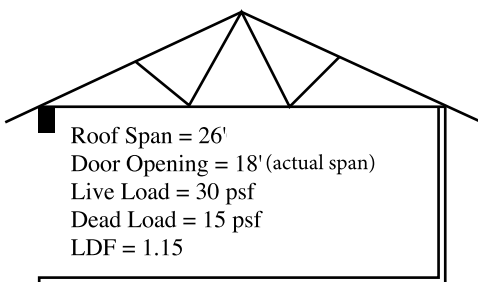
Total Load = (26'/2 + 2') x 45 psf (30 + 15) = 675 plf
Live Load = (26'/2 + 2') x 30 psf = 450 plf

Go to the allowable roof load table using LDF=1.15 and find the 18' actual span row. Using the top row, find a Total Load greater than 675 plf (3-1/2 x 14). Using the middle row, find a Live Load greater than 450 plf (3-1/2 x 14). You must select the larger of the two beams, or 3-1/2 x 14 with 4-1/2" (3 trimmers) of bearing. You could also use the 5-1/2 x 11-1/4 if you only had 3" (2 trimmers) of bearing.

Allowable PLF Calculation for Floor Loads

[1]Floor Joist Span = 1 @ 13' and @14'
Column Spacing = 15' (actual span)
Floor Live Load = 40 psf
Floor Dead Load = 10 psf
LDF = 1.0
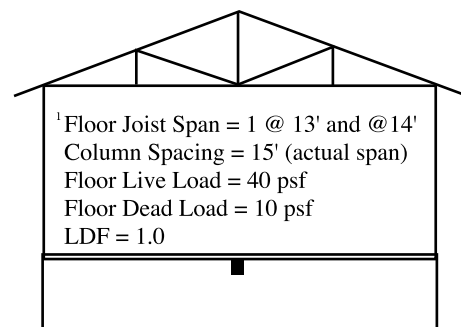
Total Load = (13/2 + 14/2) x 50 psf (40 + 10) = 675 plf
Live Load = (13/2 + 14/2) x 40 psf = 540 plf

Go to the allowable floor load table and find the 15' actual span. Using the top row, find a total load greater than 675 plf (3-1/2 x 14). Using the middle row, find a live load greater than 540 plf (3-1/2 x 14). You must select the larger of the two beams, or 3-1/2 x 14 and use 3.0" (2 trimmers) of bearing. You could also use the 5-1/2 x 11-1/4 if you only had 3" (2 trimmers) of bearing.

[1]For continuous joist (not simple span), multiply 1.25 times live and dead loads to correct loading on Power Beam®.

FRAMING CONNECTORS FOR POWER BEAM®

TOP MOUNT HANGERS

Supported Member Width	Supported Member Depth	Hanger	Maximum Load (lbs.)
3 - 1/2"	7 - 1/4"	BA48	3800
		WPU 3.56/7.25	4165
3 - 1/2"	9 - 1/4"	BA410	3800
		HB3.56/9.25	5650
3 - 1/2"	9 - 1/2"	BA410	3800
		HB3.56/9.5	5650
3 - 1/2"	11 - 1/4"	B3.56/11.25	3800
		HB3.56/11.25	5650
3 - 1/2"	11 - 7/8"	BA.56/11.88	3800
		HB3.56/11.88	5650
3 - 1/2"	14"	BA3.56/14	3800
		GLTV3.514	7200
3 - 1/2"	16"	BA3.56/16	3800
		GLTV3.516	7200
3 - 1/2"	18"	HB3.56/18	5650
		HGLTV3.518	8835
5 - 1/2"	7 - 1/4"	HB5.507.25	5650
5 - 1/2"	9 - 1/4"	HB5.50/9.25	5650
		GLTV5.50/9.25	7200
5 - 1/2"	9 - 1/2"	HB5.50/9.5	5650
		GLTV5.59	7200
5 - 1/2"	11 - 1/4"	HB5.50/11.25	5650
		GLTV5.50/11.25	7200
5 - 1/2"	11 - 7/8"	HB5.50/11.88	5650
		HGLTV5.511	8835
5 - 1/2"	14"	HB5.50/14	5650
		EGQ5.50-SDS3 [3]	19800
5 - 1/2"	16"	HGLT5.516	8835
		EGQ5.50-SDS3 [3]	19800
5 - 1/2"	18"	HGLTV5.518	8835
		EGQ5.50-SDS3 [3]	19800
7 "	9 - 1/4"	HB7.12/9.25	5650
		GLTV49.25-2	7200
7"	9 - 1/2"	HB7.12/9.5	5650
		GLTV49.5-2	7200
7"	11 - 1/4"	HB7.12/11.25	5650
		HGLTV411.25-2	8835
7"	11 - 7/8"	HB7.12/11.88	5650
		EGQ7.25-SDS3 [3]	19800
7"	14"	HGLTV414-2	8835
		EGQ7.25-SDS3 [3]	19800
7"	16"	HGLTV416-2	8835
		EGQ7.25-SDS3 [3]	19800
7"	18"	HGLTV418-2	8835
		EGQ7.25-SDS3 [3]	19800

FACE MOUNT HANGERS

Supported Member Width	Supported Member Depth	Hanger	Maximum Load (lbs.)
3 - 1/2"	7 - 1/4"	HHUS48	4210
3-1/2"	9 - 1/4" - 9-1/2"	HHUS410	5635
		HGUS410	9100
3 - 1/2"	11 - 1/4" - 11-7/8"	HHUS410	5635
		HGUS412	9600
3 - 1/2"	14" - 18"	HHUS410	5635
		HGUS414	10100
5-1/2"	7-1/4"	HGUS5.50/8	7460
5 - 1/2"	9 - 1/4" - 9-1/2"	HHUS5.50/10	5635
		HGUS5.50/10	9100
5 - 1/2"	11 - 1/4" - 11-7/8"	HHUS5.50/10	5635
		HGUS5.50/12	9600
5 - 1/2"	14"	HHUS5.50/10	5635
		HGUS5.50/14	10100
5 - 1/2"	16" - 18"	HGUS5.50/14	10100
		HGU5.50-SDS [3]	14145
7 "	9 - 1/4" - 9-1/2"	HHUS7.25/10	5635
		HGUS7.25/10	9100
7 "	11 - 1/4" - 11-7/8"	HHUS7.25/10	5635
		HGUS7.25/12	9600
7 "	14"	HGUS7.25/14	10100
		HGU7.25-SDS [3]	14145
7 "	16" - 18"	HGUS7.25/14	10100
		HHGU7.25-SDS [3]	17845

General Notes:

Maximum loads shown are based on a 3 1/2" minimum width Power Beam® for floor loads at 100% duration. Consult Simpson's Wood Construction Connectors catalog for allowable increases when other load durations apply and for installation information. Hangers only achieve Maximum load capacity when all nail holes are filled with the proper size nails and the minimum nail penetration. Full bearing is required at hanger seat. Hanger values listed are for dry service conditions only.

Top flange hanger configuration and thickness of top flange need to be considered for flush frame conditions.

When ordering EGQ, HGU, or HHGU specify height.

WPU   HGUS   LBV   BA   HB   EGQ   HU   HHGU (HHGUsim)

SIMPSON Strong-Tie

Top Mount Hangers

Beam Size	USP Stock No.	Fastener Schedule		Allowable Loads (Lbs.)	
		Header	Joist	100%	Uplift 160%
3-1/2 x 7-1/4	PHXU35725	(8) 16d	(6) 10d	5285	1290
3-1/2 x 9-1/4	PHXU35925	(8) 16d	(6) 10d	5285	1290
	HIBH35925	(15) NA16D-RS	(6) 16d	9600	1420
3-1/2 x 9-1/2	PHXU3595	(8) 16d	(6) 10d	5285	1290
	HIBH3595	(15) NA16D-RS	(6) 16d	9600	1420
3-1/2 x 11-1/4	PHXU35112	(8) 16d	(6) 10d	5285	1290
	HIBH35112	(15) NA16D-RS	(6) 16d	9600	1420
3-1/2 x 11-7/8	PHXU35118	(8) 16d	(6) 10d	5285	1290
	HIBH35118	(15) NA16D-RS	(6) 16d	9600	1420
3-1/2 x 14	PHXU3514	(8) 16d	(6) 10d	5285	1290
	HIBH3514	(15) NA16D-RS	(6) 16d	9600	1420
3-1/2 x 16	PHXU3516	(8) 16d	(6) 10d	5285	1290
	HIBH3516	(15) NA16D-RS	(6) 16d	9600	1420
3-1/2 x 18	PHXU3518	(8) 16d	(6) 10d	5285	1290
	HIBH3518	(15) NA16D-RS	(6) 16d	9600	1420
5-1/2 x 7-1/4	HBPH55725	(22) 16d	(10) 16d	6930	2705
5-1/2 x 9-1/4	PHXU55925	(8) 16d	(6) 10d	5285	1290
	HIBH55925	(15) NA16D-RS	(6) 16d	9600	1605
5-1/2 x 9-1/2	PHXU5595	(8) 16d	(6) 10d	5285	1290
	HIBH5595	(15) NA16D-RS	(6) 16d	9600	1605
5-1/2 x 11-1/4	PHXU55112	(8) 16d	(6) 10d	5285	1290
	HIBH55112	(15) NA16D-RS	(6) 16d	9600	1605
5-1/2 x 11-7/8	PHXU55118	(8) 16d	(6) 10d	5285	1290
	HIBH55118	(15) NA16D-RS	(6) 16d	9600	1605
5-1/2 x 14	PHXU5514	(8) 16d	(6) 10d	5285	1290
	HIBH5514	(15) NA16D-RS	(6) 16d	9600	1605
5-1/2 x 16	PHXU5516	(8) 16d	(6) 10d	5285	1290
	HIBH5516	(15) NA16D-RS	(6) 16d	9600	1605
5-1/2 x 18	PHXU5518	(8) 16d	(6) 10d	5285	1290
	HIBH5518	(15) NA16D-RS	(6) 16d	9600	1605
7 x 9-1/4	PHXU71925	(8) 16d	(6) 10d	5285	1290
	HIBH71925	(15) NA16D-RS	(6) 16d	9600	1605
7 x 9	PHXU7195	(8) 16d	(6) 10d	5285	1290
	HIBH7195	(15) NA16D-RS	(6) 16d	9600	1605
7 x 11-1/4	PHXU71112	(8) 16d	(6) 10d	5285	1290
	HIBH71112	(15) NA16D-RS	(6) 16d	9600	1605
7 x 11-7/8	PHXU71118	(8) 16d	(6) 10d	5285	1290
	HIBH71118	(15) NA16D-RS	(6) 16d	9600	1605
7 x 14	PHXU7114	(8) 16d	(6) 10d	5285	1290
	HIBH7114	(15) NA16D-RS	(6) 16d	9600	1605

Face Mount Hangers

Beam Size	USP Stock No.	Fastener Schedule		Allowable Loads (Lbs.)		
		Header	Joist	100%	125%	Uplift 160%
3-1/2 x 7-1/4	THD48	(28) 16d	(16) 10d	4310	5005	2595
	THDH48	(36) 16d	(10) 16d	7360	7835	3330
3-1/2 x 9-1/4 - 9-1/2	THD410	(38) 16d	(20) 10d	5850	7045	3905
	THDH410	(46) 16d	(12) 16d	9010	9010	4370
3-1/2 x 11-1/4 - 11-7/8	THD410	(38) 16d	(20) 10d	5850	7045	3905
	THDH410	(46) 16d	(12) 16d	9010	9010	4370
3-1/2 x 14 - 18	THD414	(58) 16d	(20) 10d	7045	7045	3905
	THDH414	(66) 16d	(16) 16d	12510	12510	6015
5-1/2 x 7-1/4	HD68	(14) 16d	(6) 10d	1975	2470	1140
5-1/2 x 9-1/4 - 9-1/2	THD610	(38) 16d	(20) 10d	6535	7605	3410
	THDH610	(46) 16d	(16) 16d	8990	8990	5400
5-1/2 x 11-1/4 - 11-7/8	THD610	(38) 16d	(20) 10d	6535	7605	3410
	THDH610	(46) 16d	(16) 16d	8990	8990	5400
5-1/2 x 14 - 18	THD614	(58) 16d	(20) 10d	8415	8415	4255
	THDH614	(66) 16d	(22) 16d	12510	12510	6015
7 x 9-1/4 - 9-1/2	THD7210	(38) 16d	(20) 10d	6535	7605	3410
	THDH7210	(46) 16d	(12) 16d	8990	8990	4370
7 x 11-1/4 - 11-7/8	THDH7212	(56) 16d	(14) 16d	8990	8990	5225
7 x 14 - 18	THDH7214	(66) 16d	(16) 16d	12510	12510	6015

USP STRUCTURAL CONNECTORS
MiTek

THDH Series
U.S. Pat. #5.217,317
Heavy Duty
Face Mount Hanger

HD Series
Heavy Duty
Face Mount Hanger

THD Series
Heavy Duty
Face Mount Hanger

HBPH Series
Heavy Duty
Top Mount Hanger

PHXU Series
Heavy Duty
Beam Hanger

Notes for Top Mount Hangers:

1. Top flange hanger configuration and thickness of top flange need to be considered for flush frame conditions.

2. 10d nails are 0.148" diameter by 3" long and 16d nails are 0.162" diameter by 3-1/2" long.

3. NA16D-RS nails are 0.148" diameter by 3-1/2" long, hardened ring shank nails.

4. Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.

Notes for Face Mount Hangers:

1. 10d nails are 0.148" diameter by 3" long and 16d nails are 0.162" diameter by 3-1/2" long.

2. Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.

CONNECTIONS FOR TWO-PIECE 3 $\frac{1}{2}$" WIDE POWER BEAM®

FOR TOP-LOADED APPLICATIONS

Minimum Connection Required:

Two rows of 1/2" Diameter Lag Screws or Bolts at 24" on center staggered (see notes below)

FOR SIDE-LOADED APPLICATIONS

Maximum Uniform Load Applied to Either Side:

Two Rows Spaced At:	24" o.c.	12" o.c.
Lag Screws[3]	500 plf	1000 plf
Bolts[4]	920 plf	1840 plf
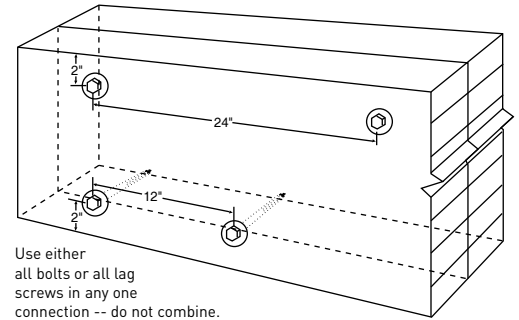
Use either all bolts or all lag screws in any one connection -- do not combine.

NOTES:

1. Verify adequacy of beam in uniform load tables.
2. Values listed are for 100% load duration. An increase of 15% for snow load roof applications or 25% for non-snow roof conditions is allowed where permitted by the building code.
3. Lag screws are to be 1/2" diameter x 7" of material conforming to ASTM Standard A307 with a minimum bending yield strength of 45,000 psi. A 3/8" lead hole is required for each lag screw. Turn lag screws tight with a wrench to achieve full penetration. Do not hammer. A standard cut washer is required between the wood and screw head.
4. Bolts are to be of 1/2" diameter material conforming to ASTM Standard A307 with a minimum bending yield strength of 45,000 psi. Bolt holes are to be the same diameter as the bolt, and located 2" from the top and bottom of the member. A standard cut washer is required between the wood and bolt head and between the wood and nut.
5. Beams loaded from only one side must be restrained to minimize rotation.

TYPICAL CONNECTIONS

Hanger

Beam to Beam

Wood or Steel Column

Beam to Column

Top Mount Hanger

Face Mount Hanger

Floor Beam to Joist

Strap per code if top plate is not continuous over header

Header to Frame

Tie strap

Beam to Frame
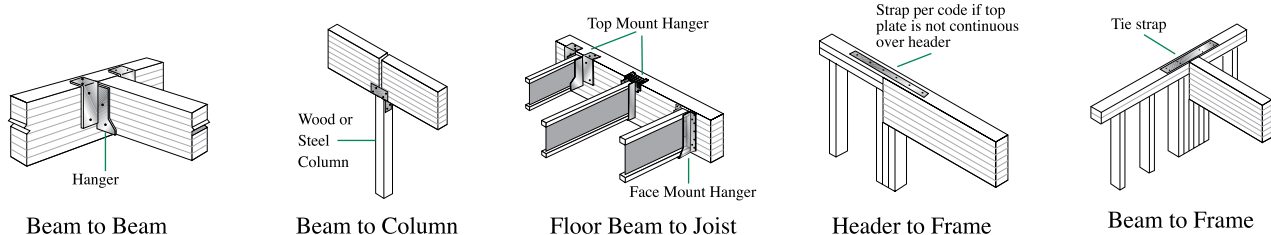
FOUNDATION BEAM POCKET DETAIL
When Uplift resistance is required by local building jurisdiction

Minimum 1/2" air space required at ends and sides

Untreated AFP Glulam Beam

Foundation Wall →

Moisture break required: 1/4" treated plywood, steel bearing plate, flashing, plastic bearing plates, etc. Sized for bearing of Glulam Beam

Minimum 1/2" air space required at ends and sides

Untreated AFP Glulam Beam

Moisture break required: 1/4" treated plywood, steel bearing plate, flashing, plastic bearing plates, etc. Sized for bearing of Glulam Beam

Use anchor of proper uplift capacity. (e.g. Simpson MTSM)

Foundation Wall →

Compression side

$$f_v = \frac{3V}{2bd}$$

(a) Square End Bearing

Compression side

$$f_v = \frac{3V}{2bd}$$

(b) Slope End Bearing

3d maximum

d/3 Min.

d_e

$$f_v = \frac{3V}{2bd_e}$$

(c) Sloped End Cut for Roof Drainage

$3d_e$ or 1/3 of the span, whichever is less

e

0.4d Max.

$d_e \geq 0.6d$

When $e \leq d_e$, $f_v = \dfrac{3V}{2b\left[d - \left(\dfrac{d - d_e}{d_e}\right)e\right]}$

When $e > d_e$, $f_v = \dfrac{3V}{2bd_e}$
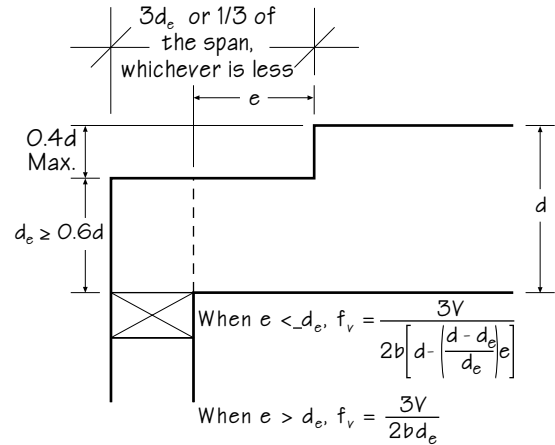
(d) Compression-side Notch

Lag screw extends past the neutral axis into the upper portion of the beam

d

Neutral Axis

Depth of notch $\leq$ 0.1d or 3 inches, whichever is less

Bearing Length

Washer

Use one or more fully threaded lag screws

Potential crack zone
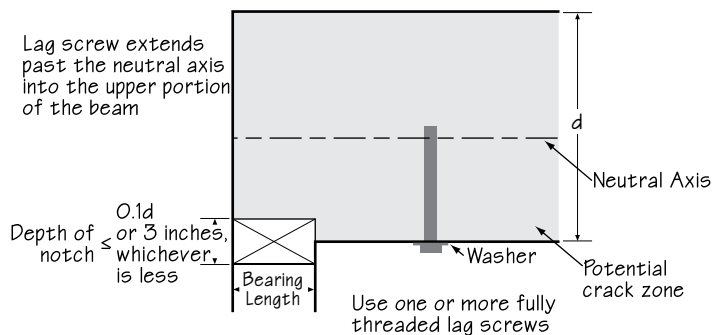
(e) Reinforcement Technique to Minimize Crack Propagation at the End Bearing Notches

$d_e \geq 0.9d$

0.1d or 3 inches max., whichever is less

d

$$f_v = \frac{3V}{2bd_e}\left(\frac{d}{d_e}\right)^2_e$$
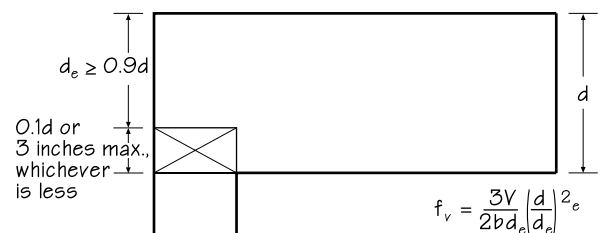
(f) Tension-side Notch

f_v = shear stress (psi)
d = depth of beam (in.)

V = shear force at notch location (lb)
d_e = effective depth as shown (in.)

b = width of beam (in.)
e = length of notch as shown (in.)

GUIDELINES FOR DRILLING VERTICAL AND HORIZONTAL HOLES

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, uniformly 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
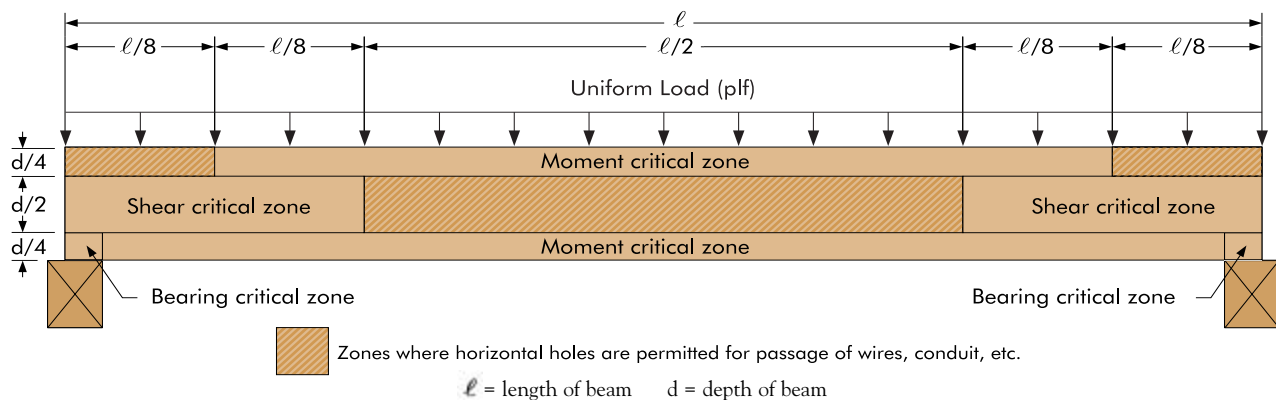
Figure 1

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 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 end of the beam, and 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 engineered or architect qualified in engineered timber design.

ZONES WHERE 1-INCH OR SMALLER DIAMETER HORIZONTAL HOLES ARE PERMITTED IN A UNIFORMLY LOADED SIMPLE OR MULTIPLE-SPAN BEAM (d ≥ = 7-1/4 INCHES)
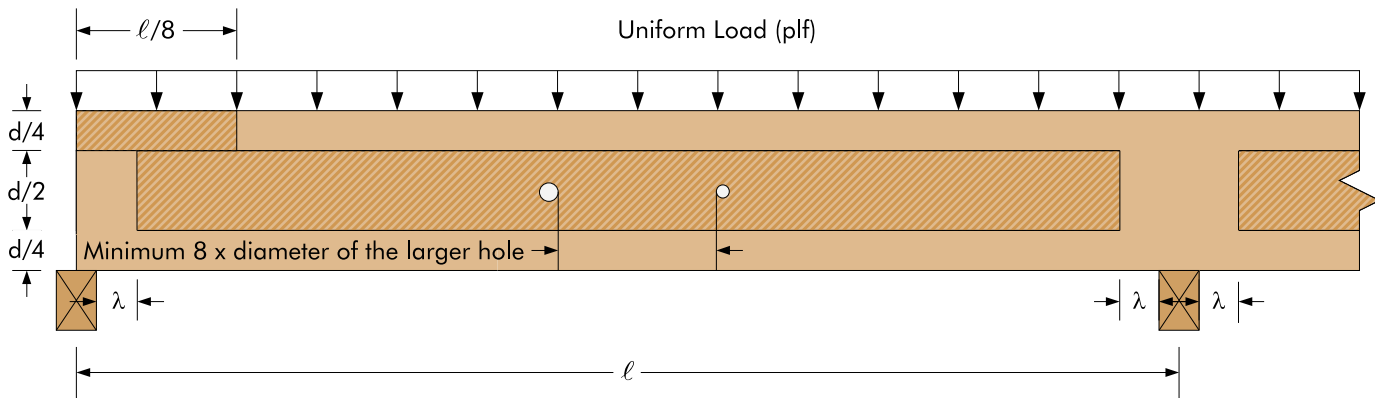
Zones where 1-inch or smaller diameter horizontal holes are permitted for passage of wire, conduit, etc.
a) the maximum number of holes for each span shall not exceed 1 hole per 5 feet and b) the hole must not be cut in cantilevers.

λ = 6 inches minimum when $\ell/d \geq 10$, or $\ell/6$ minimum when $\ell/d < 10$.

Figure 2

A 1-inch diameter or smaller hole may be cut at the middle half of the beam depth anywhere along the span, except for the area that is within 6 inches of clear distance between the face of the support and the nearest edge of the hole, providing the following conditions are met:

a. the beam is at least 7-1/4 inches in depth,
b. the beam is subject to uniform loads only,
c. the span-to-depth ratio (/d) is at least 10,
d. the hole spacing and maximum number of holes must meet the requirements specified in items 1 and 2 below, and
e. the hole must not be cut in cantilevers.

If the depth-to-span ratio of the beam is less than 10, the 1-inch diameter of smaller hole may be cut in accordance with the provisions listed above except that the location of the hole must maintain a clear distance between the face of the support and the nearest edge of the hole of at least 1/6 of the span.

1. Hole Spacing: The minimum clear spacing between adjacent holes, as measured between the nearest edge of the holes, should be 8 hole diameters based on the largest diameter of any adjacent hole in the beam.

2. Number of holes: The maximum number of holes should not exceed 1 hole per 5 feet of beam length. In other words, the maximum number of holes should not exceed 4 for a 20-foot-long beam. The hole spacing limitation, as given above, should be satisfied separately.

For glulam members that have been oversized, the guidelines given above may be relaxed based on an engineering analysis.

Regardless of the hole location, holes drilled horizontally through a member should be positioned and sized with the understanding that the beam will deflect over a period of time under in-service loading conditions. This deflection could cause distress to supported equipment or piping unless properly considered.

Beam depth, d (in.)	Span when $\ell/d = 10$
7-1/4	6'-1"
7-1/2	6'-3"
8-1/4	6'-11"
9	7'-6"
9-1/4	7'-9"
9-1/2	7'-11"
9-5/8	8'-1"
10-1/2	8'-9"
11	9'-2"
11-1/4	9'-5"
11-7/8	9'11"
12	10'-0"
12-3/8	10'-4"
13-1/2	11'-3"
14	11'-8"
15	12'-6"
15-1/8	12'-8"
16	13'-4"
16-1/2	13'-9"
17-7/8	14'-11"
18	15'-0"
19-1/4	16'-1"
19-1/2	16'-3"
20	16'-8"
20-5/8	17'-3"
21	17'-6"
22	18'-4"
22-1/2	18'-9"
23-38	19'-6"
24	20'-0"

All Allowable Tolerances shown below are at time of manufacture per ANSI A190.1.
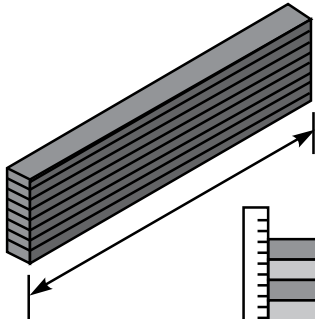
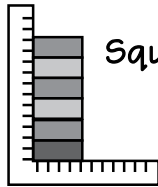**Width:** Plus or minus 1/16" of the specified width.
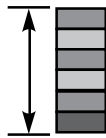
Depth: Plus 1/8" per foot of depth. Minus 3/16" or 1/16" per foot of depth, whichever is larger.
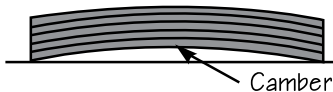
Length: Plus or minus 1/16" up to 20 feet. Plus or minus 1/16" per 20 feet of the specified length, except where length dimensions are not specified or critical.

Squareness: The cross section of all glued laminated structural members shall be square within plus or minus 1/8" per foot of specified depth of the member, unless a specially shaped member is specified.

Camber: The tolerances are applicable at the time of manufacture without allowance for dead load deflection. Plus or minus 1/4" up to 20 feet. Over 20 feet increase tolerance 1/8" per each additional 20 feet not to exceed 3/4".

Camber

FRAMING APPEARANCE CLASSIFICATION EXAMPLES

Wane Void

Glue Squeeze Out

"Low Lamination" Areas
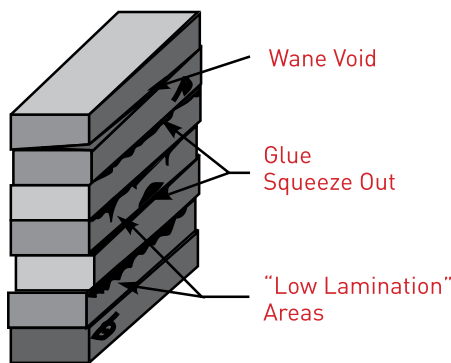
Framing Appearance Classification

• Laminations may possess the natural growth characteristics of the lumber grade.
• No voids or low laminations are filled.
• Members have a "Hit and Miss" appearance.
• Glue smear is allowed.
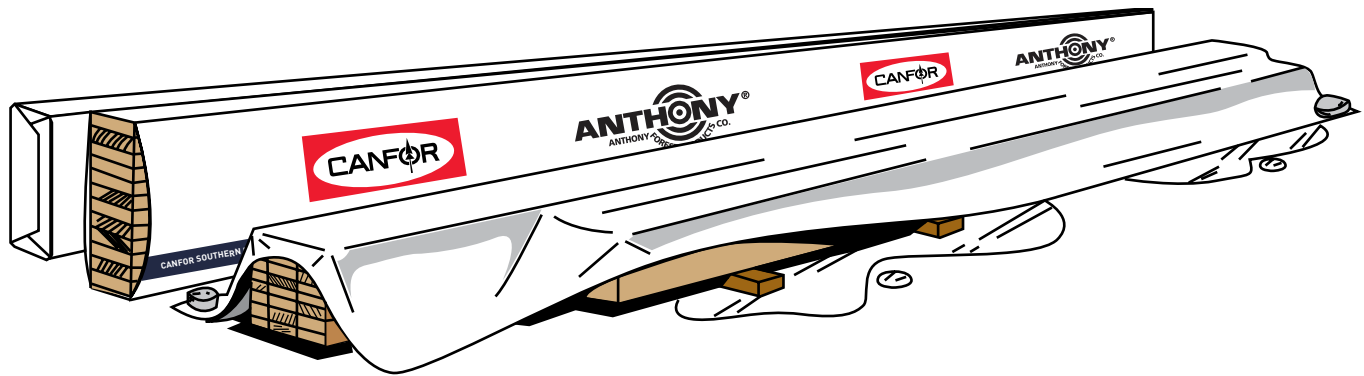
Power Beam® should be stored and handled in accordance with the following guidelines to maximize performance and to minimize necessary field adjustments.

- Protect the glulam products from direct exposure to weather conditions (i.e. sun, wind, rain, snow) by storing under cover or by leaving the paper wrap intact until they are installed in place.

- Store on stickers or racks above ground moisture and in orderly stacks at heights that may be handled safely.

- Use care in moving and storing with forklifts to prevent damage with forks.

- To minimize checking, seal ends of beams after trimming or cutting.

- Do not install damaged glulam. Notify Anthony Forest/Canfor or your local distributor for assistance.

- Once beams are installed, remove protective wrap. Allow them to gradually season and adjust to the temperature and moisture conditions of the structure.

- Do not directly expose glulam members to rapid changes in moisture and temperature, typical of temporary heating units. Such exposure may result in excessive surface checking.

In the field glulam is subject to humidity and moisture that can affect critical size tolerance and appearance. To maintain the dimensional stability and minimize checking of beams, each beam is surface sealed with a special protective wax emulsion coating for wood.

Our sealers are environmentally friendly, water-based products that help to stabilize the moisture content of wood. Not only does the sealant protect the beams from environmental moisture, but it allows the Power Beam® to adjust to the environment slowly.

Arkansas Laminating Plant

What is a Power Beam®?

Power Beam® is a high strength glulam produced for Beam and Header applications to compete with Structural Composite Lumber (SCL).

What is the warranty on Power Beam®?

Anthony Forest Products Company, LLC warrants that its Power Beam® will be free from defect in design, materials and workmanship. When installed and finished according to installation instructions and accepted engineering standards, our Power Products® will perform in accordance with our current published specification for the lifetime of your home or building.

How is it manufactured?

Power Beam® is manufactured using machine evaluated Southern Pine lumber in accordance with product standard ANSI A190.1-2012 and ASTM D-3737. Materials are manufactured using wet use adhesives and are certified under APA-EWS quality control and assurance program. Standard 28F and 30F Power Beam® are manufactured using balanced layups. These layups, designated as 28F-E2 and 30F-E2, are symmetric in their makeup, therefore no top or bottom orientation is required. An unbalanced layup for Power Beam® is available. The unbalanced Power Beam®, designated as 28F-E1 and 30F-E1, has an asymmetrical layup with stronger laminations in the tension zone than the compression zone. For this reason, unbalanced beams are marked with top stamps and should be installed with the compression face upward.

Is Power Beam® cambered like most glulams?

It can often be manufactured into glulams to offset the long term deflection due to gravity loads thus reducing the adverse aesthetic effect of in-service deflections. The use of camber is advantageous for long span members supporting large design loads. Typical residential and light commercial beam and header applications do not require camber, but many builders prefer cambered Power Beam to offset dead load deflection and those combinations are designated 28F-E1 and 30F-E1.

Does it look like a typical glulam?

Power Beam® is a framing appearance grade glulam and is not intended for architectural applications. Power Beam® is side stamped with Anthony/Canfor trademarks and APA-EWS quality marks.

How is Power Beam® packaged?

Power Beam® comes surface sealed and shipped individually or bundle wrapped, in water resistant paper.

What about storage?

As with any wood product, a well-drained covered storage site is preferred and recommended. Materials should be kept off of the ground using blocking, skids, or rack systems. For long term storage, slits should be cut in the bottom of the wrapping to allow ventilation and drainage of any entrapped moisture. Proper storage with adequate ventilation and drainage will reduce the likelihood of staining, or other affects from water infiltration such as cupping and dimensional changes.

Can you notch or drill holes in Power Beam® (see APA Technical Note EWS S560H).

Since glulams are highly engineered components manufactured from specifically selected and positioned lumber laminations, an improperly cut notch or hole drilled in the wrong location can significantly affect the member's structural performance. For this reason, field modifications such as notching, cutting, or drilling should be avoided if possible and never done without a thorough understanding of the effects on the member's structural integrity. For further information on field modifications see pages 19, 20 and 21 or contact Anthony Forest Products Company, LLC.
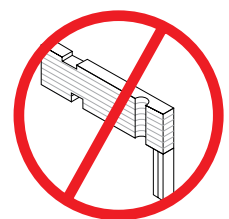
SOFTWARE

All Power Products®, like Power Beam®, can be sized for loading and spans using our free Power Sizer® software downloadable from our partner website or from the size selection and load tables on page 4-15. For sizes not shown in this brochure, use our Power Sizer® software.

TECHNICAL SUPPORT

If you need technical assistance, a skilled member of the Anthony Canfor EWP Team can be reached at **880.221.2326 or 870.862.3414**.

WARRANTY

All Power Products® are warranted for the life of the structure against defects in materials and workmanship. We guarantee prompt and courteous customer service. For a detailed copy of our limited warranty, call us at **800.221.2326** or visit our website at **www.anthonyforest.com** to download a copy.

Power Beam®

Power Rated Glulam (PRG®)

Power Column®

Power Preserved Glulam®

Stock 24F Glulam

SYP Lumber

ANTHONY®
ANTHONY FOREST PRODUCTS CO.

*Tomorrow's Engineered Wood - Today*SM

CANFOR

SUSTAINABLE FORESTRY INITIATIVE

2400F Glulam   Power Column®   Treated Glulam   MSR Lumber   Span Calculator

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ANTHONY®
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Power Beam® ▲ Power Column® ▲ SYP Lumber ▲ Power Preserved Glulam®

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