



ANTHONY Power Beam[®] Anthony Forest Products Company

PR-L263
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Products: ANTHONY Power Beam[®] (APA Custom Product L-263)
Anthony Forest Products Company, 309 N. Washington, El Dorado, AR 71730
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1. Basis of the product report:
 - 2006 International Building Code: Section 104.11 Alternative Materials
 - ASTM D 3737 recognized by the 2006 International Building Code and International Residential Code
 - ANSI A190.1 recognized by the 2006 International Building Code and International Residential Code
2. Product description:

Power Beam[®] is a Southern Pine structural glued laminated timber manufactured in accordance with ANSI A190.1 using 28F-E1, 28F-E2, 30F-E1, or 30F-E2 layup combinations recognized in the 2005 National Design Specification (NDS) Supplement, APA Design/Construction Guide: Glulam Design Properties and Layup, Form Y117 (www.apawood.org/publications), and AITC 117. Power Beam[®] is used as beams, headers, rafters, or purlins, and is manufactured in nominal widths of 3, 4, 6, and 8 inches, depths ranging from 5-1/2 to 28-7/8 inches, and lengths up to 60 feet.
3. Design properties:

Table 1 lists the design properties for Power Beam[®]. The allowable spans for Power Beam[®] shall be in accordance with the recommendations provided by the manufacturer (<http://www.anthonyforest.com/powerbeamsl.pdf>) and with EWS Data File: Glued Laminated Beam Design Tables, Form S475 (www.apawood.org/publications), as applicable.
4. Product installation:

Power Beam[®] shall be installed in accordance with the recommendations provided by the manufacturer and EWS Technical Note: Glulam Connection Details, Form T300 (www.apawood.org/publications). Permissible filed notching and drilling shall be in accordance with the recommendations provided by the manufacturer and with EWS Technical Note: Field Notching and Drilling of Glued Laminated Timber Beams, Form S560 (www.apawood.org/publications).
5. Fire-rated assemblies:

Fire rated assemblies shall be constructed in accordance with the recommendations provided by the manufacturer and with APA Product Guide: Fire Rated Systems, Form W305 (www.apawood.org/publications). For one- or two-hour rated glulam beams, Power Beam[®] shall be constructed in accordance with ANSI A190.1 and designed in accordance with the recommendations provided by the manufacturer and with EWS Technical Note: Calculating Fire Resistance of Glulam Beams and Columns, Form Y245 (www.apawood.org/publications).
6. Limitations:
 - a) Power Beam[®] shall be designed in accordance with the code using the design properties specified in this report.
 - b) Power Beam[®] shall have a minimum depth of 5-1/2 inches.

- c) Power Beam® is produced at Anthony, El Dorado, AR and Washington, GA facilities under a quality control program audited by APA.
- d) This report is subject to periodical review and reexamination.

7. Identification:

Power Beam® described in this report are identified by a label bearing the manufacturer's name (Anthony Forest Products Company) and/or trademark, the APA assigned plant number (1079 for El Dorado, AR or 1080 for Washington, GA), the product standard (ANSI A190.1), the APA-EWS logo, the report number L263, and a means of identifying the date of manufacture.

Table 1. Design Values for Power Beam® Manufactured by Anthony Forest Products Company for Normal Duration of Load ⁽¹⁾

Symbol	Species ⁽²⁾ Outer/Core	Bending About X-X Axis (Loaded Perpendicular to Wide Faces of Laminations)						Bending About Y-Y Axis (Loaded Parallel to Wide Faces of Laminations)				Axially Loaded			Fasteners	
		Extreme Fiber in Bending ⁽³⁾		Compression Perpendicular to Grain		Shear Parallel to Grain ⁽⁴⁾	Modulus of Elasticity ⁽⁵⁾	Extreme Fiber in Bending ⁽⁶⁾	Compr. Perpendicular to Grain	Shear Parallel to Grain ^(4,7)	Modulus of Elasticity ⁽⁵⁾	Tension Parallel to Grain	Compr. Parallel to Grain	Modulus of Elasticity	Specific Gravity for Dowel-Type Fastener Design	
		Tension Zone Stressed in Tension	Compr. Zone Stressed in Tension	Tension Face	Compr. Face										Top or Bottom Face	Side Face
		F _{bx} ⁺ (psi)	F _{bx} ⁻ (psi)	F _{cLx} (psi)		F _{vx} (psi)	E _x (10 ⁶ psi)	F _{by} (psi)	F _{cLy} (psi)	F _{vy} (psi)	E _y (10 ⁶ psi)	F _t (psi)	F _c (psi)	E _{axial} (10 ⁶ psi)	SG	
28F-E1	SP/SP	2,800	2,300	805	805	300	2.1	1,600	650	260	1.7	1,300	1,850	1.7	0.55	0.55
28F-E2	SP/SP	2,800	2,800	805	805	300	2.1	1,600	650	260	1.7	1,300	1,850	1.7	0.55	0.55
30F-E1 ⁽⁶⁾	SP/SP	3,000	2,400	805	805	300	2.1	1,750	650	260	1.7	1,250	1,750	1.7	0.55	0.55
30F-E2 ⁽⁶⁾	SP/SP	3,000	3,000	805	805	300	2.1	1,750	650	260	1.7	1,350	1,750	1.7	0.55	0.55
Wet-use factor		0.8		0.53		0.875	0.833	0.8	0.53	0.875	0.833	0.8	0.73	0.833	see NDS	

Footnotes to Table 1:

- The tabulated design values are for normal duration of loading. For other durations of loading, see the applicable building code. The tabulated design values are for dry conditions of use. For wet conditions of use, multiply the tabulated values by the wet-use factors shown at the bottom of the table.
- SP = Southern Pine.
- The values of F_{bx} are based on members 5-1/8 inches in width by 12 inches in depth by 21 feet in length. For members with a larger volume, F_{bx} shall be multiplied by a volume factor, C_v, determined in accordance with applicable building code using 1/20 as the exponent. The beam depths are limited to 4 or more laminations.
- For non-prismatic members, members subject to impact or cyclic loading, or shear design of bending members at connections, the F_{vx} and F_{vy} values shall be multiplied by a factor of 0.72.
- The tabulated E values already include a 5% shear deflection (also known as "apparent E"). For members of more than 15 laminations, E_x = 2.0 x 10⁶ psi.
- The values of F_{by} are based on members 12 inches in depth. For depths other than 12 inches, F_{by} shall be permitted to be increased by multiplying by the size factor, (12/d)^{1/9}, where d is the beam depth in inches. When d is less than 3 inches, use the size adjustment factor for 3 inches.
- Design values are for timbers with laminations made from a single piece of lumber across the width or multiple pieces that have been edge bonded. For timber manufactured from multiple piece laminations (across width) that are not edge bonded, value shall be multiplied by 0.4 for members with 5, 7, or 9 laminations or by 0.5 for all other members. This reduction shall be cumulative with the adjustment in Footnote 4.
- This layout combination is limited to nominal 6 inches or less in width.

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**APA – THE ENGINEERED WOOD ASSOCIATION
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