GLUED LAMINATED TIMBER

SMARTLAM

NORTH AMERICA

OUR COMPANY

SmartLam North America is a Mass Timber Solutions Company. Our focus is to develop practical, innovative, and sustainable solutions to satisfy customers' project requirements for glulam and cross-laminated timber. Now with production facilities located in Columbia Falls Montana and Dothan Alabama, SmartLam can offer cost-competitive engineered wood products to both the east coast and west coast construction markets.

GLULAM

Available in multiple stress grades, sizes and appearance classifications, SmartLam glulam is certified by APA – The Engineered Wood Association for use in building construction. Products bearing the APA trademark stamp signify conformance with ANSI A190.1, American National Standard for Structural Glued Laminated Timber, and have undergone rigorous quality control testing to ensure code requirements have been met. All glulam products are currently manufactured using Southern Pine sourced locally at our Dothan facility and are engineered for high-strength beam, header and column applications.

SERVICES AND SOLUTIONS

ENGINEERING AND DESIGN

Our engineering and design team can provide services on all phases of the project including conceptual design, schematic design, design development, construction documents, deferred submittals, shop/fabrication drawings, and construction support services. We are equipped with tools, and have the expertise, to optimize engineering, detailing and the fabrication process.

CONSULTING

Our team of experts can assist you through every step of the project including code interpretation, assembly options, engineering services, drafting services, logistics and more. We are solution driven and committed to satisfying your project requirements. Consider SmartLam as a Consultant on your next project.

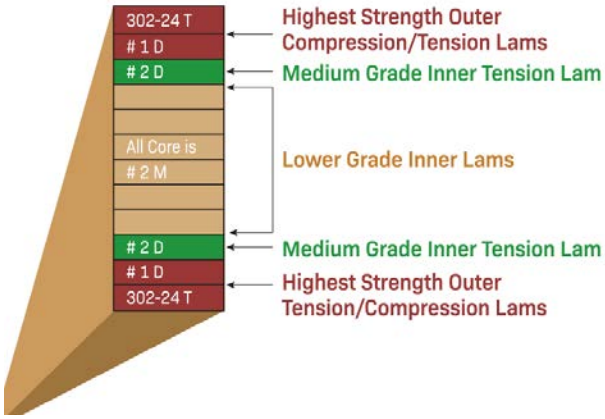
ADVANTAGES OF SMARTLAM GLULAM

- Straight and dimensionally stable; sealed to limit changes in moisture content to maintain dimensional tolerances
- Available in multiple appearance classifications for concealed or exposed members
- Built-to-order based on project specific requirements
- Coordinated with other building trades to ensure proper fit
- Pre-cut to length and prefabricated for hardware and connections saving time on-site
- Direct coordination with installers to confirm assembly order and logistics sequencing

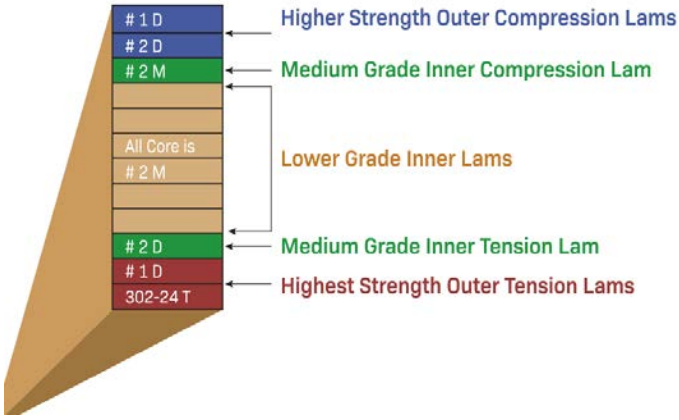
BALANCED AND UNBALANCED LAYUPS

SmartLam glulam is available in both unbalanced layups for single span conditions and balanced layups for multi-span and cantilever conditions. To facilitate installation, all top sides of unbalanced layups are identified with a stamp to designate orientation.

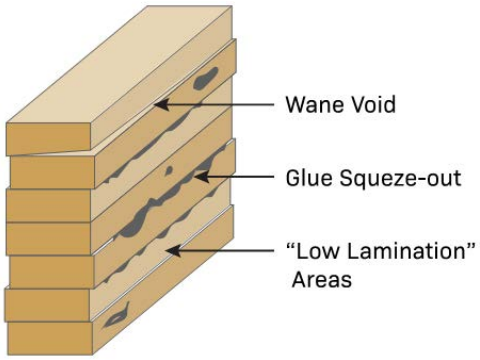
Balanced Layup



Unbalanced Layup

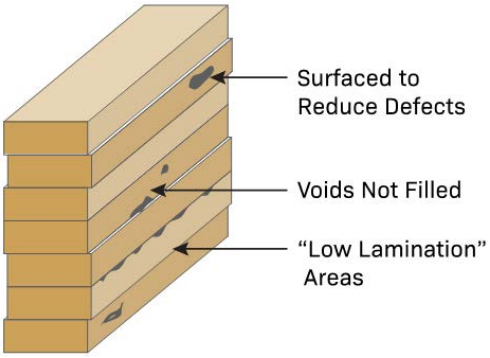


APPEARANCE CLASSIFICATIONS



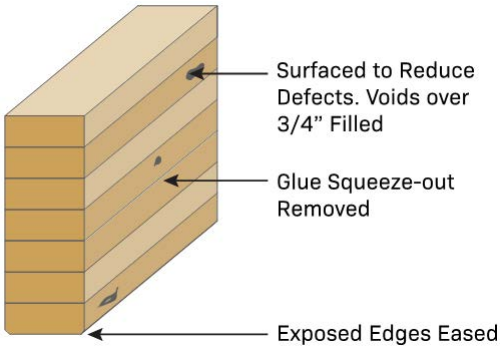
Framing Appearance

- Laminations may possess the natural growth characteristics of the lumber grade
- Voids and low lamination areas are not filled
- Members are not surfaced and glue squeeze out may be visible



Industrial Appearance

- Laminations may possess the natural growth characteristics of the lumber grade
- Voids and low lamination areas are not filled
- Limited surfacing to remove glue squeeze out - ideal for concealed applications



Architectural Appearance

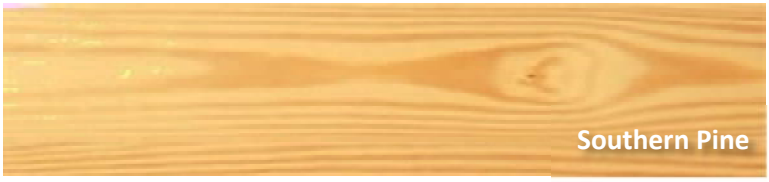
- Laminations may possess the natural growth characteristics of the lumber grade
- Voids larger than 3/4" are filled
- Exposed faces are surfaced and low laminations are repaired
- Exposed edges are eased

ADHESIVE

SmartLam uses a wet use, polyurethane adhesive for laminating all glulam members that meets all performance requirements, including fire, outlined in ANSI A190.1. Formaldehyde emissions meet or are exempt from the most stringent standards and regulations including the California Air Resources Board (CARB) Air Toxic Control Measure for Composite Wood Products and the Japanese Agricultural Standards (JAS).

STRESS GRADES AND LAMINATING STOCK

Design properties and limitations for all SmartLam glulam products are published in APA Product Report PR-L326. All lumber laminations are 1 3/8" thick Southern Pine.
24F Beam & Col #50 density: 36 pcf
28F & 30F Beam density: 40 pcf



Glulam Beam Design Values

Layup Combination	Allowable Flexural Stress, F_b (psi)		Compression Perpendicular to Grain, $F_{c\perp}$ (psi)		Allowable Shear Stress Parallel to Grain, F_v (psi)	Modulus of Elasticity, E (10^6 psi)	Specific Gravity for Dowel-Type Fasteners, SG	
	Bottom	Top	Bottom Face	Top Face			Top or Bottom Face	Side Face
24F-V3	2,400	2,000	740	740	300	1.8	0.55	0.55
24F-V4	2,400	1,650	740	650	210	1.7	0.55	0.43
24F-V5M1	2,400	2,400	740	740	300	1.8	0.55	0.55
28F-E1	2,800	2,300	805	805	300	2.1	0.55	0.55
28F-E2	2,800	2,800	805	805	300	2.1	0.55	0.55
30F-E1	3,000	2,400	805	805	300	2.1	0.55	0.55
30F-E2	3,000	3,000	805	805	300	2.1	0.55	0.55

Notes:
- Design values apply to bending in the strong axis only
- Allowable design values are for normal duration of loading (C_D = 1.0) and may be adjusted for other durations of loading per the applicable building code
- Allowable flexural stresses are based on a specific cross section size and span length and must be multiplied by the volume factor, C_V, per NDS Section 5.3.6 for other beam sizes
- Reduction factors may apply to the tabulated shear stresses for non-prismatic members, members subject to impact or cyclic loading, bending members at connections or for members containing wane. reference NDS section 3.3.3.8 for capacity adjustments.
- Tabulated Modulus of Elasticity values include a 5% allowance for the effects of shear deflection ($E = E_{app}$)

AVAILABLE BEAM SIZES

Layup Combination	Appearance Classification	Minimum Width (in)	Maximum Width (in)	Minimum Depth (in)	Maximum Depth (in)
24F-V3	Architectural or Industrial	3 1/8	10 1/2	6 7/8	48 1/8
24F-V4	Industrial	3 1/8	5 1/8	6 7/8	20 5/8
24F-V5M1	Architectural or Industrial	3 1/8	10 1/2	6 7/8	48 1/8
28F-E1	Framing	7	7	7 1/4	24 3/4
28F-E2	Framing	7	7	7 1/4	24 3/4
30F-E1	Framing	3 1/2	5 1/2	7 1/4	24 3/4
30F-E2	Framing	3 1/2	5 1/2	5 1/2	24 3/4

Contact SmartLam for variation options in width for each appearance classification

Glulam Column Design Values

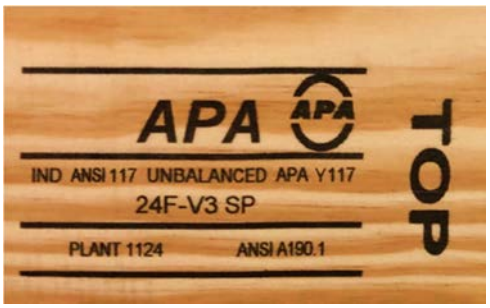
Layup Combination	Allowable Flexural Stress about X-X Axis, F_{bx} (psi)	Allowable Flexural Stress About Y-Y Axis, F_{by} (psi)	Compression Parallel to Grain, F_c (psi)	Modulus of Elasticity, E (10^6 psi)		Specific Gravity for Dowel-Type Fasteners, SG
				0.95 E_{axial}	$E_{axial\ min}$	
Combination #50 N1D14	2,100	2,300	2,300	1.9	1.0	0.55

Notes:
- Allowable flexural stress (F_b) and compression parallel to grain (F_C) is applicable to 4 or more laminations. Reference product report for design values of columns containing fewer than 4 laminations.
- Allowable design values are for normal duration of loading (C_D = 1.0) and may be adjusted for other durations of loading per the applicable building code
- Allowable flexural stresses are based on a specific cross section size and span length and must be multiplied by the volume factor, C_V, per NDS Section 5.3.6 for other column sizes
- Tabulated Modulus of Elasticity, 0.95 E_{axial} includes a 5% allowance for the effects of shear deflection (0.95 $E_{axial} = E_{app}$)
- Tabulated Modulus of Elasticity, $E_{axial\ min}$ applies to column stability calculations per NDS Section 5.2.7 for member buckling

AVAILABLE COLUMN SIZES

Layup Combination	Width (in)	Minimum Depth (in)	Maximum Depth (in)
Combination #50 N1D14	3 1/8	3 1/2	18
	3 1/2	3 1/2	18
	5 1/8	5 1/2	24 3/4
	5 1/2	5 1/2	24 3/4
	6 3/4	6 7/8	24 3/4
	7	6 7/8	24 3/4
	8 1/2	8 1/4	24 3/4
	10 1/2	9 5/8	24 3/4

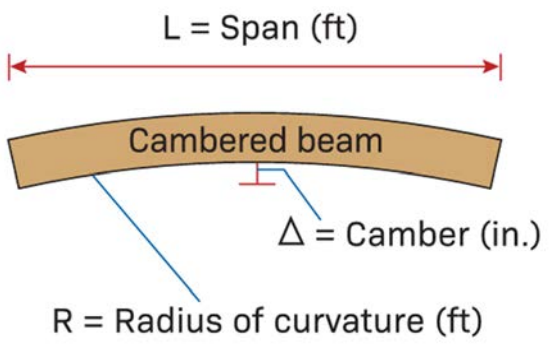
Contact SmartLam for variation options in width for each appearance classification



CAMBER

SmartLam glulam beams and columns are manufactured straight, without camber, unless otherwise requested at the time of order. For long span or high loaded, single span applications, beam camber may be required to limit deflection to a code acceptable amount. Our standard radius of curvature is 3,500 feet with a minimum of 1,800 feet.

Beam Camber Parameters



Standard Radius of Curvature: 3,500 ft

Span (ft)	Camber (in)
20	0.17
30	0.39
40	0.69
50	1.07
60	1.54

Tolerance (+/-) at time of manufacturing (ANSI A190.1)
1/4" for Span < 20 ft
3/8" for 20 ft < Span < 40 ft
1/2" for 40 ft < Span < 60 ft

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