APA PRODUCT REPORT®

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Rosboro 24F-V4/DF Treated Glulam
Rosboro

PR-L275

Revised June 21, 2024

Products: Rosboro 24F-V4/DF Treated Glulam

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1. Basis of the product report:
   - 2024, 2021, 2018, and 2015 International Building Code (IBC): Section 2303.1.3 Structural glued laminated timber
   - 2024, 2021, 2018, and 2015 International Residential Code (IRC): Sections R502.1.3, R602.1.3, and R802.1.2 Structural glued laminated timber
   - ANSI 117-2020 and ANSI 117-2015 recognized in the 2024 and 2021 IBC and IRC, and 2018 IBC and IRC, respectively
   - ANSI A190.1-2022, ANSI A190.1-2017, and ANSI A190.1-2012 recognized in the 2024 IBC and IRC, 2021 and 2018 IBC and IRC, and 2015 IBC and IRC, respectively
   - ASTM D3737-18e1 and D3737-12 recognized in the 2024 and 2021 IBC and IRC, and 2018 and 2015 IBC and IRC, respectively
   - APA Reports T2005P-60 and T2006P-37, and other qualification data

2. Product description:
   Rosboro Treated Glulam is used as beams, headers, rafters, or purlins, and is manufactured with the 24F-V4/DF unbalanced layup combination in accordance with ANSI A190.1. The 24F-V4/DF glulam is treated with oil-borne preservative systems in accordance with the American Wood Protection Association (AWPA) Standard U1 after manufacturing. The efficacy of the preservative treatment, and post-treatment inspection and quality assurance of the treatment are outside the scope of this report and the APA certification program.

3. Design properties:
   Table 1 lists the allowable design properties for Rosboro Treated Glulam 24F-V4/DF. The allowable spans for Rosboro Treated Glulam 24F-V4/DF shall be in accordance with the recommendations provided by the manufacturer (www.rosboro.com/resource-library/) and APA Data File: *Glued Laminated Beam Design Tables,* Form S475 (www.apawood.org/resource-library), as applicable. Based on AWPA Standard U1 and the studies conducted by APA, the preservative treatments do not have a negative effect on the bending strength and stiffness of glulam beams when used in accordance with the limitations specified in Section 6 of this report.

4. Product installation:
   Rosboro Treated Glulam 24F-V4/DF shall be installed in accordance with the recommendations provided by the manufacturer and APA Construction Guide: *Glulam Connection Details*, Form T300, and APA Technical Note: *Preservative Treatment of Glued Laminated Timber*, Form S580 (see link above). Permissible field notching and drilling shall be in accordance with the recommendations provided by the manufacturer and APA Technical Notes: *Field Notching and Drilling of Glued Laminated Timber Beams*, Form S560, and *Effect of Large Diameter Horizontal Holes on the Bending and Shear Properties of Structural Glued Laminated Timber*, Form V700 (see link above).

5. Fire-rated assemblies:
   Design of fire-resistant exposed wood members in accordance with Chapter 16 of the National Design Specification for Wood Construction (NDS), or Section 722.1 of the 2024,

2021, 2018, and 2015 IBC shall be applicable to Rosboro glulam beams and columns. Fire-rated assemblies shall be constructed in accordance with the recommendations provided by the manufacturer, and APA Design and Construction Guide: *Fire-Rated Systems*, Form W305 (see link above).

6. Limitations:
   a) Rosboro Treated Glulam 24F-V4/DF shall be designed in accordance with the code using the design properties specified in this report.
   b) Rosboro Treated Glulam 24F-V4/DF is limited to UC1 to UC3B, and not recommended for use in marine applications, such as docks and marinas, or applications in direct ground and standing water contact.
   c) Rosboro Treated Glulam 24F-V4/DF is produced at Rosboro, Springfield, OR and Veneta, OR facilities under a quality assurance program audited by APA prior to treatment. The efficacy of the preservative treatment, and post-treatment inspection and quality assurance of the treatment are outside the scope of this report and the APA certification program.
   d) This report is subject to re-examination in one year.

7. Identification:
   Rosboro Treated Glulam 24F-V4/DF described in this report are identified by a label bearing the manufacturer's name (Rosboro) and/or trademark, the APA assigned plant number (1001 for Springfield or 1078 for Veneta), the product standard (ANSI A190.1), the APA logo, the report number PR-L275, the treatment facility identification stamp, and a means of identifying the date of manufacture.

Table 1. Allowable Design Values for Rosboro Treated Glulam 24F-V4/DF for Normal Duration of Load[1,2]

Symbol	Species Outer/ Core[3] (Bal or Unbal[4])	**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[5]		Compression Perpendicular to Grain		Shear Parallel to Grain[6]	Modulus of Elasticity[7]			Extreme Fiber in Bending[8]	Comp. Perpen-dicular to Grain	Shear Parallel to Grain[6]	Modulus of Elasticity[7]			Tension Parallel to Grain	Comp. Parallel to Grain	Specific Gravity for Dowel-Type Fastener Design	
		Bottom of Beam Stressed in Tension (Positive Bending)	Top of Beam Stressed in Tension (Negative Bending)	Ten. Face	Comp. Face		True	App-arent	Beam Stabi-lity				True	App-arent	Beam Stabi-lity			Top or Bottom Face	Side Face
		F_{bx}^{+} (psi)	F_{bx}^{-} (psi)	$F_{c\perp x}$ (psi)		F_{vx} (psi)	$E_{x\ true}$ (10^6 psi)	$E_{x\ app}$ (10^6 psi)	$E_{x\ min}$ (10^6 psi)	F_{by} (psi)	$F_{c\perp y}$ (psi)	F_{vy} (psi)	$E_{y\ true}$ (10^6 psi)	$E_{y\ app}$ (10^6 psi)	$E_{y\ min}$ (10^6 psi)	F_t (psi)	F_c (psi)	SG	
Rosboro Treated Glulam 24F-V4/DF	DF/DF (U)	2,400	1,850	650	650	265	1.9	1.8	0.95	1,450	560	230	1.7	1.6	0.85	1,100	1,650	0.50	0.50
Wet-use factor		0.8		0.53		0.875	0.833			0.8	0.53	0.875	0.833			0.8	0.73	see NDS	

(1) The combinations in this table are limited to 4 or more laminations and are intended primarily for members stressed in bending due to loads applied perpendicular to the wide faces of the laminations. Allowable design values are tabulated, however, for loading both perpendicular and parallel to the wide faces of the laminations.

(2) The tabulated allowable design values are for normal duration of loading. For other durations of loading, see the applicable building code. The tabulated allowable 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.

(3) DF = Douglas fir-Larch.

(4) The unbalanced (U) layups are intended primarily for simple-span applications.

(5) 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, $C_v = (5.125/b)^{1/10}\ (12/d)^{1/10}\ (21/L)^{1/10}$, where b is the beam width (in.), d is the beam depth (in.), and L is the beam length between the points of zero moment (ft).

(6) For non-prismatic members, members subject to impact or cyclic loading, or shear design of bending members at connections (2024 NDS 3.4.3.1 or 2018 and 2015 NDS 3.4.3.3), the F_{vx} and F_{vy} values shall be multiplied by a factor of 0.72. The tabulated F_{vy} 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.

(7) The tabulated E values include true E (also known as "shear-free E"), apparent E, and E for beam stability calculation (NDS 3.3.3.8). For calculating beam deflections, the tabulated E_{app} values shall be used unless the shear deflection is determined in addition to bending deflection based on the tabulated E_{true}. The axial modulus of elasticity, E_{axial} and $E_{axial\ min}$, shall be equal to the tabulated $E_{y\ true}$ and $E_{y\ min}$ values.

(8) The values of F_{by} are based on members 12 inches in depth. For depths less than 12 inches, F_{by} shall be permitted to be increased by multiplying by the flat use 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.

APA – The Engineered Wood Association is an approved national standards developer accredited by American National Standards Institute (ANSI). APA publishes ANSI standards and Voluntary Product Standards for wood structural panels and engineered wood products. APA is an accredited certification body under ISO/IEC 17065 by Standards Council of Canada (SCC), an accredited inspection agency under ISO/IEC 17020 by ANSI National Accreditation Board (ANAB), and an accredited testing organization under ISO/IEC 17025 by ANAB. APA is also an approved Product Certification Agency, Testing Laboratory, Quality Assurance Entity, Validation Entity, and Product Evaluation Entity by the State of Florida, and an approved testing laboratory by City of Los Angeles.

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