

Rosboro Structural Glued Laminated Timber PR-L251  
Rosboro Revised May 15, 2008

---

Products: Rosboro 24F-V8M4/DF Glulam  
Rosboro, P.O. Box 20, 2509 Main Street, Springfield, OR 97477  
(541) 746-8411  
[www.rosboro.com](http://www.rosboro.com)

1. Basis of the product report:
  - 2006 International Building Code: Section 104.11 Alternative Materials
  - 2006 International Residential Code: Section R104.11 Alternative Materials
  - ASTM D 3737 recognized by the 2006 IBC and IRC
  - ANSI/AITC A190.1 recognized by the 2006 IBC and IRC
2. Product description:

Rosboro 24F-V8M4/DF glulam beams are used as beams, headers, rafters, or purlins, and are manufactured with the conventional EWS 24F-V8/DF balanced layup combination with the exception that the tension and compression laminations are substituted by laminated veneer lumber (LVL), as permitted by ANSI/AITC A190.1. The LVL laminations are supplied by manufacturers recognized by APA and identified in Rosboro's in-plant manufacturing standard approved by APA. The LVL complies with the control values listed in the manufacturing standard and is manufactured in full length and width laminations, and in thicknesses up to 2 inches from wood veneers. All veneer grain is parallel to the length of the billets. The veneers are bonded with exterior-type adhesives, which comply with ASTM D 2559.
3. Design properties:

Table 1 lists the design properties for Rosboro 24F-V8M4/DF glulam beams. The allowable spans for Rosboro 24F-V8M4/DF shall be in accordance with the recommendations provided by the manufacturer ([www.rosboro.com/pdfs/TechGuide060326.pdf](http://www.rosboro.com/pdfs/TechGuide060326.pdf)), and with EWS Data File: *Glued Laminated Beam Design Tables*, Form S475 ([www.apawood.org/publications](http://www.apawood.org/publications)), as applicable.
4. Product installation:

Rosboro 24F-V8M4/DF glulam beams 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](http://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](http://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 Design/Construction Guide: *Fire-Rated Systems*, Form W305 ([www.apawood.org/publications](http://www.apawood.org/publications)). For one- or two-hour rated glulam beams, the Rosboro 24F-V8M4/DF glulam beams shall be constructed in accordance with ANSI/AITC 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](http://www.apawood.org/publications)).

6. Limitations:

- a) Rosboro 24F-V8M4/DF glulam beams shall be designed in accordance with the code using the design properties specified in this report.
- b) Rosboro 24F-V8M4/DF glulam beams shall have a minimum depth of 9-1/2 inches.
- c) Rosboro 24F-V8M4/DF glulam beams are produced at Rosboro, Springfield, OR and Veneta, OR facilities under a quality assurance program audited by APA.
- d) This report is subject to reexamination in 1 year.

7. Identification:

Rosboro 24F-V8M4/DF glulam beams 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/AITC A190.1), the APA-EWS logo, the combination symbol, the report number PR-L251, and a means of identifying the date of manufacture.

Table 1. Design Values for Rosboro 24F-V8M4/DF Glulam Beams for Normal Duration of Load <sup>(1)</sup>

| Symbol              | Species <sup>(2)</sup><br>Outer/Core | Bending About X-X Axis<br>(Loaded Perpendicular to Wide Faces of Laminations) |                                 |   |                    |  |  | Bending About Y-Y Axis<br>(Loaded Parallel to Wide Faces of Laminations) |                               |  |  | Axially Loaded            |                          |                                      | Fasteners                                       |           |
|---------------------|--------------------------------------|---|---------------------------------|---|--------------------|--|--|--|-------------------------------|--|--|---------------------------|--------------------------|--------------------------------------|---|-----------|
|                     |                                      | Extreme Fiber in Bending <sup>(3)</sup>                                       |                                 | Compression Perpendicular to Grain <sup>(4)</sup> |                    | Shear Parallel to Grain <sup>(5)</sup> | Modulus of Elasticity <sup>(6,7)</sup> | Extreme Fiber in Bending <sup>(8)</sup>                                  | Compr. Perpendicular to Grain | Shear Parallel to Grain <sup>(5)</sup> | Modulus of Elasticity <sup>(6,7)</sup> | Tension Parallel to Grain | Compr. Parallel to Grain | Modulus of Elasticity <sup>(7)</sup> | 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 |
|                     |                                      | $F_{bx}^+$<br>(psi)   | $F_{bx}^-$<br>(psi)             | $F_{cLx}$<br>(psi)                                |                    | $F_{vx}$<br>(psi)                      | $E_x$<br>(10 <sup>6</sup> psi)         | $F_{by}$<br>(psi)  | $F_{cLy}$<br>(psi)            | $F_{vy}$<br>(psi)                      | $E_y$<br>(10 <sup>6</sup> psi)         | $F_t$<br>(psi)            | $F_c$<br>(psi)           | $E_{axial}$<br>(10 <sup>6</sup> psi) | SG  |           |
| Rosboro 24F-V8M4/DF | LVL/DF                               | 2,400   | 2,400                           | 510 <sup>(9)</sup>                                | 510 <sup>(9)</sup> | 265                                    | 1.8                                    | 1,450  | 560                           | 230                                    | 1.6                                    | 1,100                     | 1,650                    | 1.7                                  | 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                     | 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.
- DF = Douglas fir; LVL = laminated veneer lumber per the manufacturing standard.
- 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 1/10 as the exponent. The beam depths are limited to 9-1/2 inches minimum.
- The values of  $F_{cLx}$  shall be permitted to be increased to the published allowable compressive stress perpendicular to grain of the outermost laminated veneer lumber in the plank (flatwise) orientation.
- 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 beam stability and column stability calculations,  $E_{min}$  can be determined by multiplying the tabulated modulus of elasticity by 0.528.
- 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.
- The value of  $F_{cL}$  shall be permitted to be increased to the published value of the outermost LVL in the plank orientation.

APA – The Engineered Wood Association is an accredited certification body under ISO 65 by Standards Council of Canada (SCC) and an accredited inspection agency by the International Code Council (ICC) International Accreditation Service (IAS) under ISO/IEC 17020. APA is also an accredited testing organization recognized by IAS and SCC under ISO/IEC 17025. APA is a recognized testing laboratory by Miami-Dade County, and a Product Testing Laboratory, Product Quality Assurance Entity, and Product Validation Entity by the Florida Department of Community Affairs (DCA).

**APA – THE ENGINEERED WOOD ASSOCIATION**  
**HEADQUARTERS**

7011 So. 19<sup>th</sup> St. • Tacoma, Washington 98466  
 Phone: (253) 565-6600 • Fax: (253) 565-7265 • Internet Address: [www.apawood.org](http://www.apawood.org)

**PRODUCT SUPPORT HELP DESK**  
 (253) 620-7400 • E-mail Address: [help@apawood.org](mailto:help@apawood.org)

**DISCLAIMER**

APA Product Report® is a trademark of APA – The Engineered Wood Association, Tacoma, Washington. The information contained herein is based on the product evaluation in accordance with the references noted in this report. Neither APA, nor its members make any warranty, expressed or implied, or assume any legal liability or responsibility for the use, application of, and/or reference to opinions, findings, conclusions, or recommendations included in this report. Consult your local jurisdiction or design professional to assure compliance with code, construction, and performance requirements. Because APA has no control over quality of workmanship or the conditions under which engineered wood products are used, it cannot accept responsibility of product performance or designs as actually constructed.