PRODUCT REPORT®

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(Draft) Calvert GL 3000 Glulam — PR-L269
Calvert Company, Inc. — Issued March 30, 2007

Products: Calvert GL 3000 Glulam (APA Custom Product L-269)
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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
   - APA Report T2006P-65A and other qualification data

2. Product description:
   Calvert GL 3000 glulam beams are used as beams, headers, rafters, or purlins, and are manufactured with the EWS 30F-E2M3/SP balanced layup combination using laminated veneer lumber (LVL), as permitted by ANSI A190.1, as the tension and compression laminations, and Southern pine laminations in the remainder of the beam. The LVL laminations are supplied by manufacturers recognized by APA and identified in Calvert'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 durability requirements of ASTM D 2559.

3. Design properties:
   Table 1 lists the design properties for Calvert GL 3000 glulam beams. The allowable loads for Calvert GL 3000 shall be in accordance with the recommendations provided by the manufacturer and with EWS Data File: Glued Laminated Beam Design Tables, Form S475 (www.apawood.org/publications), as applicable.

4. Product installation:
   Calvert GL 3000 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). 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 Design/Construction Guide: Fire-Rated Systems, Form W305 (www.apawood.org/publications). For one- or two-hour rated glulam beams, the Calvert GL 3000 glulam beams 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) Calvert GL 3000 glulam beams shall be designed in accordance with the code using the design properties specified in this report.
   b) Calvert GL 3000 glulam beams shall have a minimum depth of 9-1/4 inches.
   c) Calvert GL 3000 glulam beams are produced at Calvert Company's facilities in Vancouver and Washougal, WA, under a quality control program audited by APA.
   d) This report is subject to periodical review and reexamination.

7. Identification:
   Calvert GL 3000 glulam beams described in this report are identified by a label bearing the manufacturer's name (Calvert) and/or trademark, the APA assigned plant number (1010 for the Vancouver, WA plant or 1035 for the Washougal, WA plant), the product standard (ANSI A190.1), the APA-EWS logo, the report number L269, and a means of identifying the date of manufacture.

Table 1. Design Values for Calvert GL 3000 Glulam Beams 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[4]		Shear Parallel to Grain[5]	Modulus of Elasticity[6]	Extreme Fiber in Bending[7]	Compr. Perpen-dicular to Grain	Shear Parallel to Grain[5]	Modulus of Elasticity[6]	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)	$F_{c\perp x}$ (psi)		F_{vx} (psi)	E_x (10^6 psi)	F_{by} (psi)	$F_{c\perp y}$ (psi)	F_{vy} (psi)	E_y (10^6 psi)	F_t (psi)	F_c (psi)	E_{axial} (10^6 psi)	SG	
Calvert GL 3000	LVL/SP	3000	3000	650	650	300	2.1	1900	650	265	1.7	1300	1850	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:
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 factors shown at the bottom of the table.
2. SP = Southern pine; LVL = laminated veneer lumber per the manufacturing standard.
3. 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 9-1/4 to 30 inches.
4. The values of $F_{c\perp x}$ 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.
5. 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.
6. The tabulated E_x and E_y values already include a 5% shear deflection (also known as "apparent E").
7. 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.

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

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