APA PRODUCT REPORT®

Murphy ConBeam LVL
Murphy Engineered Wood Division

PR-L307
Revised September 21, 2025

Product: Murphy ConBeam LVL
Murphy Engineered Wood Division, 412 West Central, Sutherlin, Oregon 97479
(541) 459-4545
www.murphyplywood.com

1. Basis of the product report:
   - 2024 National Design Specification for Wood Construction
   - ASTM D5456-21e1, Standard Specification for Evaluation of Structural Composite Lumber Products
   - APA Reports T2008P-10, T2008P-31, T2008P-43, T2008P-113A, T2009P-12, T2009P-15, T2010P-02, T2010P-33, T2012P-03, T2015P-14, and T2015P-16, T2024P-37, and other qualification data

2. Product description:
   Murphy ConBeam LVL is made with wood veneers laminated with grain parallel to the length of the member in accordance with the in-plant manufacturing standards approved by APA. Murphy ConBeam LVL is available in a range of thicknesses (1-1/2 inches to 10-1/2 inches), depths (3-1/2 inches to 24 inches), and lengths (up to 80 feet). Refer to the manufacturer's technical guide and a local Murphy LVL distributor for product availability.

3. Design properties:
   Table 1 lists the design properties, Table 2 lists the equivalent specific gravities for connection design, and Table 3 lists the allowable nail spacing for Murphy ConBeam LVL. The allowable spans for Murphy ConBeam LVL shall be determined based on the design properties provided in this report and/or the recommendations provided by the manufacturer (http://murphyplywood.com/pdfs/engineered/Murphy_Concrete_Form_Beam_Technical_Guide.pdf).

4. Product installation:
   Murphy ConBeam LVL shall be installed in accordance with the recommendations provided by Murphy Engineered Wood Division (see link above) and the engineering drawing(s) approved by the engineer of record. Permissible details shall be in accordance with the engineering drawing(s).

5. Storage, handling, inspection and evaluation:
   The storage and handling of Murphy ConBeam LVL shall be in accordance with the recommendations provided by Murphy Engineered Wood Division (see link above). Murphy ConBeam LVL shall be thoroughly visually inspected by a qualified person to ensure it is new or like-new prior to use. A guide for the evaluation of visual defects and subsequent required action is provided by Murphy Engineered Wood Division.

6. Limitations:
   a) Murphy ConBeam LVL used for concrete forming construction shall be designed using the design properties specified in this report, in accordance with the applicable code and the National Design Specification for Wood Construction.
   b) Murphy ConBeam LVL is limited to dry service conditions where the average equilibrium moisture content of sawn lumber is less than 16%.
   c) Murphy ConBeam LVL concrete forming beams shall not be reused in wood-framed permanent construction as structural members, such as columns, beams and headers.

© 2025 APA – The Engineered Wood Association

d) Murphy ConBeam LVL is produced at the Murphy Engineered Wood Division facilities in Sutherlin, Oregon under a quality assurance program audited by APA.
e) This report is subject to re-examination in one year.

7. Identification:
Murphy ConBeam LVL described in this report is identified by a label bearing the manufacturer's name and/or trademark, the APA assigned plant number (1089), the LVL grade, the APA logo, the report number PR-L307, and a means of identifying the date of manufacture.

Table 1. Design Properties (Allowable Stress Design) for Murphy ConBeam LVL[a,b,c]

Product Grade	Modulus of Elasticity[d] (10^6 psi)		Flexural Stress, F_b (psi)		Tension Parallel to Grain, F_t (psi)[g]	Comp. Parallel to Grain, F_c (psi)	Compression Perpendicular to Grain, $F_{c\perp}$ (psi)		Horizontal Shear, F_v (psi)	
	Joist	Plank	Joist[e]	Plank[f]			Joist	Plank	Joist	Plank
2950F_b-2.0E	2.0	2.0	2,950	2,950	2,100	3,200	750	550	290	150
3100F_b-2.0E	2.0	2.0	3,100	3,100	2,100	3,200	750	550	290	150
3100F_b-2.1E	2.1	2.1	3,100	3,100	2,100	3,200	750	550	290	150
3100F_b-2.2E	2.2	2.2	3,100	3,100	2,100	3,200	750	550	290	150

For SI: 1 inch = 25.4 mm, 1 lbf = 4.448 N, 1 psi = 6.9 kPa.

[a] The tabulated design values are for normal duration of load. All values, except for E and $F_{c\perp}$, are permitted to be adjusted for other load durations as permitted by the code. The design stresses are limited to conditions in which the average equilibrium moisture content of sawn lumber is less than 16 %.
[b] Reference design values must be adjusted, as applicable, in accordance with section 8.3 of the NDS.
[c] Joist = load parallel to glueline. Plank = load perpendicular to glueline.
[d] The tabulated modulus of elasticity of Murphy LVL is the apparent MOE, which includes the effects of shear deflection. When calculating deflections, standard engineering formulae for bending deflection shall be permitted to be used.
[e] The tabulated values are based on a reference depth of 12 inches. For depths less than 12 inches, multiply F_b by $(12/d)^{0.18}$, where d is the LVL depth in inches. For depths less than 3-1/2 inches, use the adjustment factor for 3-1/2 inches.
[f] For face-bonded multiple-layer LVL up to 7 inches in depth, the allowable bending stress (F_b) in plank orientation shall be modified by $(1.75/d)^{0.25} \leq 1.0$, where d = the LVL depth in inches.
[g] The tabulated values are based on a reference length of 3 feet. For other lengths, the allowable tensile stress shall be modified by $(3/L)^{0.11}$, where L = length in feet. For lengths less than 3 feet, use the tabulated allowable tension stresses unadjusted.

Table 2. Fastener Design for Murphy LVL[a,b]

Equivalent Specific Gravity (S.G.)				
Nails and Wood Screws				Bolts and Lag Screws
Withdrawal Load		Lateral Load		Lateral Load
Installed in Edge	Installed in Face	Installed in Edge	Installed in Face	Installed in Face
0.49	0.50	0.50	0.50	0.50

[a] Fastener values based on the equivalent specific gravities in the above table are for normal load duration and shall be permitted to be adjusted using the load duration factors in accordance with the code.
[b] Fasteners shall be installed in accordance with the NDS unless specified in Table 3.

© 2025 APA – The Engineered Wood Association

Table 3. Minimum Allowable Nail Spacings for Murphy LVL[a]

Thickness (in.)	Orientation	Nail Size[b,c] (Common or Box)	Minimum End Distance (in.)	Minimum Nail Spacing (in.)	
				Single Row	Multiple Rows[d,e]
1-1/4 ≤ thickness < 1-1/2	Edge[f]	8d & smaller	2-1/2	4	NR[h]
		10d & 12d	2-1/2	4	
		16d	3-1/2	5	
	Face[g]	8d & smaller	1-1/2	3	3
		10d & 12d	1-1/2	3	3
		16d	1-1/2	5	5
≥ 1-1/2	Edge[f]	8d & smaller	2-1/2	3	4
		10d & 12d	3-1/2[i]	4	5
		16d	3-1/2	5	6[j]
	Face[g]	8d & smaller	1-1/2	3	3
		10d & 12d	1-1/2	3	3
		16d	1-1/2	5	5

For SI: 1 inch = 25.4 mm.

[a] Edge distance shall be sufficient to prevent splitting.
[b] 16d sinkers (0.148 x 3-1/4 inches) may be spaced the same as a 12d common wire nail (0.148 x 3-1/4 inches).
[c] Fastener sizes and closest on-center spacing not specifically described above are beyond the scope of this report.
[d] Multiple rows in the edge orientation must be spaced 1/2 inch or more from each other and offset one-half of the tabulated minimum nail spacing, as shown in Figure 1.
[e] Multiple rows must be equally spaced from the centerline of the narrow face axis.
[f] Nail penetration for edge nailing shall not exceed 2 inches for 16d nails (common or box) and 2-1/2 inches for 10d and 12d nails (common or box).
[g] Tabulated closest on-center spacing for face orientation is applicable to nails that are installed in rows parallel to the grain (length) of the LVL. For nails installed in rows perpendicular to the direction of grain (width/depth) of the LVL, the closest on-center spacing for face orientation shall be sufficient to prevent splitting of the LVL.
[h] Not recommended.
[i] Minimum end distance may be reduced to 2-1/2 inches for single-row nailing.
[j] Minimum nail spacing may be reduced to 5 inches when the LVL is 1-3/4 inches or thicker.

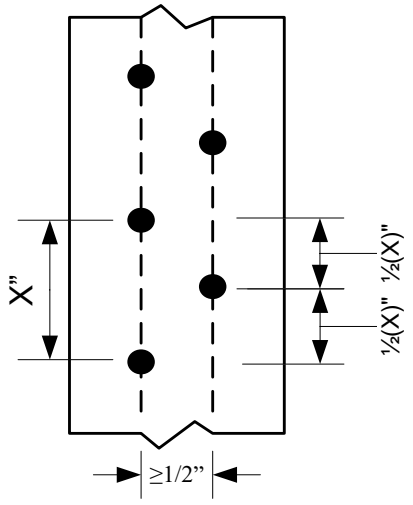

Figure 1. Spacing of multiple rows of nails.

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.

APA – THE ENGINEERED WOOD ASSOCIATION
HEADQUARTERS
7011 So. 19th St. ▪ Tacoma, Washington 98466
Phone: (253) 565-6600 ▪ Fax: (253) 565-7265 ▪ Internet Address: www.apawood.org

PRODUCT SUPPORT HELP DESK
(253) 620-7400 ▪ *E-mail Address*: 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. No warranties, express or implied, including as to fitness for a particular purpose, are made regarding this report. Neither APA nor its members shall be liable, or assume any legal liability or responsibility, for damages, direct or indirect, arising from 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.