

ICC-ES Evaluation Report

ESR-5621

Issued February 2026

This report also contains:

- [City of Chicago Supplement](#)

Subject to renewal February 2027

- [OR Supplement](#)

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<p>DIVISION: 06 00 00— WOOD, PLASTIC AND COMPOSITES</p> <p>Section: 06 17 13— Laminated Veneer Lumber</p>	<p>REPORT HOLDER: UAB VMG LIGNUM CONSTRUCTION</p>	<p>EVALUATION SUBJECT: VMG LIGNUM LVL</p>	
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1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2024, 2021, 2018, and 2015 [International Building Code® \(IBC\)](#)
- 2024, 2021, 2018, and 2015 [International Residential Code® \(IRC\)](#)

Properties evaluated:

- Structural
- Fire resistance

2.0 USES

The VMG Lignum LVL is a laminated veneer lumber product and is used as an alternative to solid sawn lumber for structural applications including beams, headers, joists and rafters.

3.0 SCRIPTON

3.1 General:

The VMG Lignum LVL described in this report complies with ASTM D5456 and the requirements noted in IBC Section 2303.1.10 for allowable stress design in accordance with 2024, 2021 and 2018 IBC Section 2302.1(1) and 2015 IBC Section 2301.2(1). VMG Lignum LVL may also be used in structures regulated under the IRC when an engineered design is submitted in accordance with IRC Section R301.1.3.

3.2 Material

The VMG Lignum LVL is manufactured with layers of wood veneers laminated together using an exterior-type structural phenol-formaldehyde adhesive, conforming to ASTM D2559 and ASTM D5456. The wood veneer properties and species, adhesive, manufacturing parameter and finished product dimensions and tolerances are as specified in the approved quality documentation and manufacturing standard. The VMG Lignum LVL is available in nominal thickness from 1³/₁₆ inches (21 mm actual) to 3¹/₂ inches (90 mm actual), nominal width from 1³/₄ inches (45 mm actual) to 72 inches (1829 mm actual), and nominal length up to 60 feet (18.29 m).

4.0 DESIGN AND INSTALLATION

4.1 General:

Design and installation of VMG Lignum LVL must be in accordance with this report, the applicable code provisions and the manufacturer’s published installation instructions. The manufacturer’s published installation instructions must be available at the jobsite at all times during installation. The requirements specified for

allowable stress design in accordance with the 2024, 2021 and 2018 IBC Section 2302.1(1) and 2015 IBC Section 2301.2(1), and the design provisions for structural composite lumber in the American Wood Council *National Design Specification for Wood Construction* (NDS) are applicable to VMG Lignum LVL, except as modified within this report. Reference design values are noted in [Table 1](#).

4.2 Connections:

The design of mechanical connections in VMG Lignum LVL must be in accordance with the NDS. Equivalent specific gravities for the design of nail and bolt connections under dry use conditions are given in [Table 2](#). Minimum spacing, edge and end distance for nails and bolts in the faces and edges of the VMG Lignum LVL must comply with the NDS.

4.3 Fire Resistance and Fire Blocking:

4.3.1 Calculated Fire Resistance: For applications under the IBC, the fire resistance of the exposed VMG Lignum LVL members may be calculated in accordance with Chapter 16 of the ANSI/AWC *National Design Specification[®] for Wood Construction* (NDS).

4.3.2 Fire-resistance-rated Floor and Roof Systems: VMG Lignum LVL may be used as a direct replacement for non-fire-retardant-treated sawn lumber, of equivalent size, in the prescriptive fire-resistance-rated floor and roof assemblies listed in IBC Table 721.1(3).

4.3.3 Fire Protection of Floors: VMG Lignum LVL having a minimum thickness of 1½ inches (38 mm) and a minimum depth of 9¼ inches (235 mm), is considered equivalent to solid sawn lumber joists in accordance with Exception 4 to IRC Section R302.13.

4.3.4 Fire Blocking: VMG Lignum LVL, having a minimum net thickness of 1.125 inches (31.7 mm), may be used in fire blocking applications, as an alternative to the materials listed in IBC Section 718.2.1(1) and IRC Section R302.11.1(1).

5.0 CONDITIONS OF USE:

The VMG Lignum LVL described in this report complies with, or is a suitable alternative to what is specified in those codes listed in Section 1.0, subject to the following conditions:

- 5.1 Design, fabrication, installation, identification, and connection restrictions must be in accordance with the applicable building code, this evaluation report and the manufacturer's published installation instructions. In the event of a conflict between the manufacturer's published installation instructions and this report, this report governs.
- 5.2 Design calculations and drawings demonstrating compliance with this report must be submitted to the code official. The calculations and drawings must be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.
- 5.3 The VMG Lignum LVL is limited to use in dry, interior applications where the in-service average moisture content in sawn lumber is less than 16 percent.
- 5.4 Connections other than nailed and bolted connections described in this report, are outside of this report.
- 5.5 Evaluation of the effect of fire-retardant or preservative treatment on VMG Lignum LVL is outside of the scope of this report.
- 5.6 Use of VMG Lignum LVL as rim board has not been evaluated and is outside the scope of this report.
- 5.7 Use of VMG Lignum LVL as wall framing has not been evaluated and is outside the scope of this report.
- 5.8 Cutting, boring and notching of VMG Lignum LVL has not been evaluated and are outside the scope of this report.
- 5.9 The VMG Lignum LVL is manufactured under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the [ICC-ES Acceptance Criteria for Structural Wood-based Products \(AC47\)](#), dated May 2023 (editorially revised January 2025).

7.0 IDENTIFICATION

- 7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-5621) along with the name, registered trademark, or registered logo of the report holder must be included in the product label.

7.2 In addition, the VMG Lignum LVL must be identified with a stamp bearing the product designation (VMG Lignum LVL), the report holder name (UAB VMG Lignum Construction), the grade and the production date and shift.

7.3 The report holder’s contact information is the following:

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TABLE 1—REFERENCE DESIGN VALUES FOR VMG LIGNUM LVL^{1,2}

BEAM ORIENTATION ³					PLANK ORIENTATION ³					AXIAL	
Modulus of Elasticity		Bending ^{7,8} F _b (psi)	Shear F _v (psi)	Compression Perp-to-Grain F _{c⊥} ¹⁰ (psi)	Modulus of Elasticity		Bending F _b (psi)	Shear F _v (psi)	Compression Perp-to-Grain F _{c⊥} ¹⁰ (psi)	Compression F _c (psi)	Tension F _t ⁹ (psi)
E _{true} ⁴ (x10 ⁶ psi)	E _{apparent} ^{5,6} (x10 ⁶ psi)				E _{true} ⁴ (x10 ⁶ psi)	E _{apparent} ^{5,6} (x10 ⁶ psi)					
1.4	1.3	1,850	250	550	1.4	1.3	2,200	150	300	2,300	1,600
2.0	1.9	3,050	350	700	2.0	1.9	3,300	150	380	3,000	2,700

For SI: 1 inch = 25.4 mm, 1 psi= 6894.8 Pa.

¹The tabulated values are design values for normal duration of load and must be adjusted by the applicable adjustment factors in accordance with Section 8.3 of the 2024 and 2018 NDS. Modulus of elasticity and compression perpendicular-to-grain must not be adjusted for duration of load.

²The tabulated values are limited to dry interior conditions where the average moisture content in lumber is less than 16 percent.

³Refer to [Figure 1](#) for LVL orientations.

⁴Reference E_{true} values are the shear-free modulus of elasticity, which do not include the effects of the shear deformation. When calculating the total deflection, both bending and shear deformations must be included. Equations for various span and load conditions are available in engineering references.

⁵Reference E_{apparent} values are the apparent modulus of elasticity, which include the effects of shear deformation. When calculating the total deflection, standard engineering formulae for the pure bending deflection is sufficient.

⁶Reference reference modulus of elasticity, E_{min}, used for beam stability calculations, must be calculated using the tabulated E_{apparent} in accordance with Appendix D of the 2024 ad 2018 NDS. The COV_E may be taken as 0.10 when calculating E_{min}.

⁷Reference bending design values in the beam orientation, F_b, may be increased by 4% when the member qualifies as a repetitive member, in accordance with Section 8.3.7 of the 2024 and 2018 NDS.

⁸Reference bending design value in beam orientation is based on a reference depth of 12 inches. For other depths, the allowable bending stress, F_b must be adjusted by multiplying F_b by (12/d)^{0.15}, where d is the depth members in inches. For depths 3 1/2 inches or less, multiply F_b by 1.203.

⁹Reference tension design values, F_t, is assigned for a standard length of 36 inches. For lengths longer than 36 inches, multiply F_t by (36/L)^{0.09}, where L is the length in inches. For lengths less than 55 inches, use the reference tension design value given in the table above.

¹⁰The bearing area factor, C_b, is permitted to be applied to the reference compression perpendicular-to-grain design values, F_{c⊥}, in accordance with the 2024 and 2018 NDS.

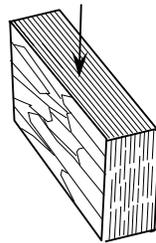
TABLE 2—EQUIVALENT SPECIFIC GRAVITY FOR FASTENER DESIGN^{1,2}

GRADE	EQUIVALENT SPECIFIC GRAVITY					
	Nails				Bolts ³	
	Withdrawal		Dowel bearing		Dowel bearing (Installation in face)	
	Installed in edge	Installed in face	Installed in edge	Installed in face	Load applied parallel to grain	Load applied perpendicular to grain
1.4E	0.41	0.41	0.41	0.49	0.41	0.41
2.0E	0.41	0.41	0.42	0.53	0.42	0.42

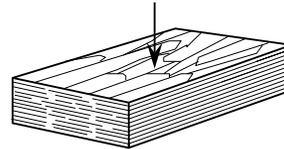
¹Fastener lateral and withdrawal design values calculated using the tabulated equivalent specific gravities for nail and bolt connections must be adjusted by the applicable adjustment factors specified in the 2018 NDS. Fastener types and orientations that are specifically described in [Table 2](#) are outside the scope of this report.

²Minimum spacing, end and edge distance for nails and bolts must comply with the specified in the 2024 and 2018 NDS.

³Equivalent specific gravities apply only to bolts installed into face of LVL, such that the bolt axis is perpendicular to the wide face of the veneer.



Beam Orientation



Plank Orientation

FIGURE 1—AN ILLUSTRATION OF BEAM AND PLANK ORIENTATION AS NOTED IN TABLE 1

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Section: 06 17 13— Laminated Veneer Lumber

REPORT HOLDER:**UAB VMG LIGNUM CONSTRUCTION****EVALUATION SUBJECT:****VMG LIGNUM LVL****1.0 REPORT PURPOSE AND SCOPE****Purpose:**

The purpose of this evaluation report supplement is to indicate that the VMG Lignum LVL, described in ICC-ES evaluation report [ESR-5621](#), have also been evaluated for compliance with the Chicago Construction Codes (Title 14 of the Chicago Municipal Code) as noted below.

Applicable code editions:

- 2019 *Chicago Building Code* (Title 14B)

2.0 CONCLUSIONS

The VMG Lignum LVL, described in Sections 2.0 through 7.0 of the evaluation report [ESR-5621](#), comply with Title 14B, and are subject to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The VMG Lignum LVL described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report [ESR-5621](#).
- The design, installation, conditions of use and identification of the VMG Lignum LVL are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report [ESR-5621](#).
- The design, installation and inspections are in accordance with additional requirements of Chapters 7,16 and 17 of Title 14B, as applicable.

This supplement expires concurrently with the evaluation report, ESR-5621, issued February 2026.

DIVISION: 06 00 00— WOOD, PLASTIC AND COMPOSITES
Section: 06 17 13— Laminated Veneer Lumber

REPORT HOLDER:

UAB VMG LIGNUM CONSTRUCTION

EVALUATION SUBJECT:

VMG LIGNUM LVL

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that the VMG Lignum LVL, described in ICC-ES evaluation report [ESR-5621](#), have also been evaluated for compliance with the code noted below.

Applicable code editions:

- 2025 Oregon Structural Specialty Code (OSSC)
- 2023 Oregon Residential Specialty Code (ORSC)

2.0 CONCLUSIONS

The VMG Lignum LVL, described in Sections 2.0 through 7.0 of the evaluation report [ESR-5621](#), comply with the OSSC Chapter 23, and the ORSC, and are subject to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The VMG Lignum LVL described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report [ESR-5621](#).
- The design, installation, conditions of use and identification of the VMG Lignum LVL are in accordance with the 2024 *International Building Code*® (IBC) or 2021 *International Residential Code*® (IRC) provisions, as applicable, noted in the evaluation report [ESR-5621](#).
- The design, installation and inspection are in accordance with additional requirements of OSSC Chapters 16 and 17, as applicable.
- Under the ORSC, an engineering design in accordance with ORSC Section R301.1.3 must be submitted.

This supplement expires concurrently with the evaluation report, [ESR-5621](#), issued February 2026.