



NYC Department of Buildings
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Patricia Lancaster, FAIA, Commissioner
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Report of Materials and Equipment Acceptance Division

Pursuant to Administrative Code Section 27-131, the following equipment or material has been found acceptable for use subject to the terms and conditions contained herein.

MEA 406-04-E Vol.4

Manufacturer: Sundre Forest Products, Inc., a Subsidiary of West Fraser Mills Ltd, Box 1737, Rocky Mountain House, Alberta, Canada T4T 1B3

Trade Name(s): West Fraser™ LVL.

Product: Laminated Veneer Lumber (LVL)

Pertinent Code Section(s): RS-10, Subchapter 10, Article 7.

Test(s): ASTM D 5456 and when applicable by D.5456: D 143, D 198, D 1761, D 2395, D 2915, D 4442, D 4761, D 4933, D 5764: Bending, tension parallel to grain, longitudinal shear; compression parallel and perpendicular to grain, modulus of elasticity, connections, moisture content, Specific gravity.

Laboratory: APA-The Engineered Wood Association, P.O. Box 11700 Tacoma, WA 98411-0700. In plant qualification testing conducted by Sundre Forest Products Inc. and witnessed by APA-EWS". Allowable design stresses were certified by James J. Barlow, P.E., New York State License Number: 078757.

Test Report(s): APA Report T2005P-42, Qualification of 1.8E Laminated Veneer Lumber, dated July 27, 2005; APA Letter Report on the use of true E, dated March 10, 2006 and designed by Thomas D. Skaggs,, PhD., P.E. for West Fraser LVL, Sundre Forest Products, Inc., Rocky Mountain House, Alberta, Canada.

Description – West Fraser™ LVL is manufactured by laminating sheets of veneer on top of each other. Veneer sheets are graded using Ultrasonic Propagation Time (UPT) grading method. Graded veneers may be scarfed or unscarfed before being sent to the sheet feeder. There the veneers are sequenced into prescribed lay-ups, with glue applied on the top face of each veneer sheet, with the exception of the top veneer. The glue is exterior-grade phenolic adhesive complying with ASTM 02559. The veneer sheets are staggered and lapped within lay-up patterns as specified in Sundre Forest Products, Inc. approved Quality Control Manual. The grain of all veneer is oriented along the length of the billet. The lay-up is then subjected to hot pressing until the glue is cured. Products are available in thickness of 3/4-inch to 3 ~ inches, depths of 3 -inches to 48-inches and lengths to 80 feet.

TABLE 1 - ALLOWABLE DESIGN PROPERTIES FOR WEST FRASERTM LVL,^{1,2,3,4,5}

PROPERTY ^{1,2,3,4,5}	DESIGN STRESS (psi)					
	1.3E GRADE ^{1,6}	1.7E GRADE ^{1,6}	1.8E GRADE ^{1,6}	1.9E ⁸ GRADE	2.0E GRADE, ^{1,7}	
Bending (F _b)	Joist	1700	2750	3000	3000	3100
	Plank	1900	2600	3000	3000	3500
Tension Parallel to Grain (F _t)		1300	1950	1950	1950	2100
Longitudinal Shear (F _v)	Joist	220	300	350	350	350
Compression Parallel. (F _c)		1800	2350	2500	2500	3000
Compression Perpendicular (F _{c⊥})	Joist	600	750	750	750	750
Modulus of Elasticity (10 ⁶). MOE		1.3	1.7	1.8	1.9 ⁸	2.0

For SI: 1 psi = 6.89 kPa. 1 inch = 25.4 mm.

¹The tabulated values are based on loads of a normal duration and a reference depth of 12 inches. For depths of 3 1/2 inches and deeper, when loaded edgewise, the allowable bending stress shall be modified by (12/d)^{0.1111} for 1.3E, 1.7E, 1.8E, 1.9E and 2.0E as shown in the following table:

Depth Factor									
Depth (in.)	3 ¹ / ₂	5 ¹ / ₂	7 ¹ / ₄	9 ¹ / ₂	11 ⁷ / ₈	14	16	18	24
Multiply by	1.15	1.09	1.06	1.03	1.00	0.98	0.97	0.96	0.93

²Tension (F_t) of the 1.3E, 1.7E, 1.8E, 1.9E and 2.0E grades is based on a gauge length of 4 feet. For specimens longer than 4 feet, a length factor of (4/L)^{1/11} shall be used to adjust the F_t, where L is the actual length in feet.

³Load parallel to glue line is for joist and perpendicular to glue line is for plank.

⁴Stresses may be adjusted for duration of load in accordance with the applicable code.

⁵Tabulated flexural stress (F_b) may be increased by 4 percent when the member qualifies as a repetitive member as defined in AFPA NDS.

⁶LVL grades produced in lodgepole pine.

⁷LVL grades produced in lodgepole pine, or lodgepole pine, Douglas fir in combination.

For uniformly loaded simple span beams, deflection is calculated as follows:

$$\Delta = \frac{270WL^4}{Ebd^3}$$

⁸ For 1.9E only, uniformly loaded simple span beams, deflection is calculated as follows:

$$\Delta = \frac{270WL^4}{Ebd^3} + \frac{28.8WL^2}{Ebd}$$

where : W = Uniform load, plf
 Δ = Deflection, inches
L = Span, feet

b = Beam width, inches
d = Beam depth, inches
E = Modulus of Elasticity, psi

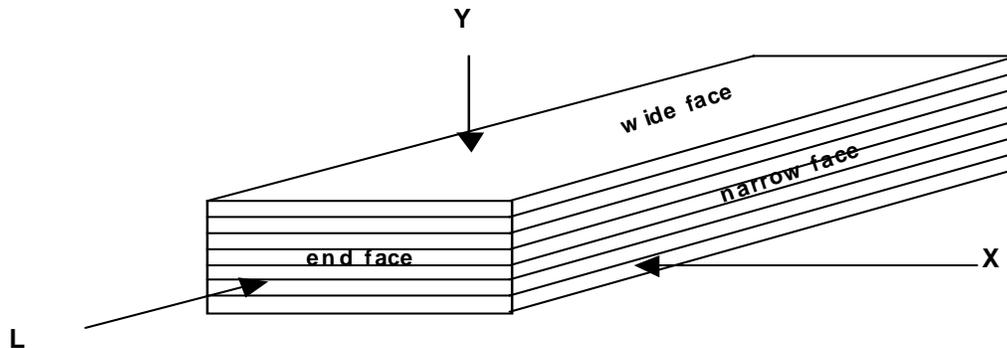
FASTENER DESCRIPTION		EQUIVALENT SPECIES SPECIFIC GRAVITY ^{1,2}				
		1.3E Grade	1.7E Grade	1.8E Grade	1.9E Grade	2.0E Grade
Nail Withdrawal						
Face	Installed perpendicular to the wide face	Hem-Fir (0.43)	Douglas Fir-Larch (0.50)	Douglas Fir-Larch (0.50)	Douglas Fir-Larch (0.50)	Douglas Fir-Larch (0.50)
Edge	Installed Parallel to the Wide Face	Hem-Fir (0.43)	Hem-Fir (0.43)	Hem-Fir (0.43)	Hem-Fir (0.43)	Hem-Fir (0.43)
Nail Lateral						
Face	Installed perpendicular to the wide face	Hem-Fir (0.43)	Douglas Fir-Larch (0.50)	Douglas Fir-Larch (0.50)	Douglas Fir-Larch (0.50)	Douglas Fir-Larch (0.50)
Edge	Installed parallel to the wide face	Hem-Fir (0.43)	Hem-Fir (0.43)	Hem-Fir (0.43)	Hem-Fir (0.43)	Hem-Fir (0.43)
Bolt Installed Perpendicular to the Wide Face						
Parallel to grain		Northern Species (0.34)	Hem-fir (0.43)	Hem-Fir (0.43)	Hem-Fir (0.43)	Hem-Fir (0.43)
Perpendicular to grain		Hem-Fir (0.43)	Hem-Fir (0.43)	Hem-Fir (0.43)	Hem-Fir (0.43)	Hem-Fir (0.43)

TABLE 2 - FASTENER DETAILS

¹ Allowable lateral values for nails noted in the applicable code apply to the LVL for conditions and the species noted in the table.

² See Figure 1 for orientation details.

FIGURE 1 - WEST FRASER™ LVL ORIENTATION



Terms and Conditions: That the West Fraser™ LVL be accepted on condition that all uses, locations and installations shall comply with the applicable requirements of the New York City Building Code and on further condition that the design provisions and specifications as listed in the above laboratory reports shall apply and on further condition that:

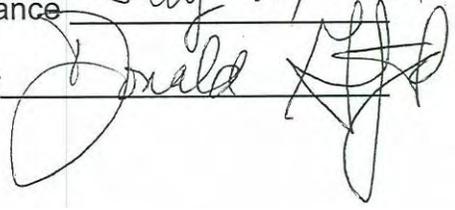
1. Structures designed using West Fraser™ LVL lumber shall conform to the Manufacturer's specifications except that appropriate design load(s), deflection limitation(s) and other performance standards of the New York City Building Code shall apply.
2. West Fraser™ LVL lumber shall be for interior use only and stamped "INTERIOR" and "MEA 406-04-E Vol. 4" on each beam.
3. West Fraser™ LVL, when stored out-of-doors or exposed to wet weather conditions during construction, be inspected by the user for swelling or warping etc. and replace if so damaged.
4. Beams less than 1 1/2" thick shall be fire-stopped every 500 square feet in floor construction.

All shipments and deliveries of such equipment shall be provided with a metal tag suitably placed, certifying that the equipment shipped or delivered is equivalent to that tested and accepted for use, as provided for in Section 27-131 of the Building Code.

Final Acceptance

July 10, 2006

Examined by

The 'Examined by' line is covered by two handwritten signatures. The signature on the left is written in cursive and appears to be 'Donald'. The signature on the right is more stylized and includes initials.