

<p style="text-align: center;">DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT Housing - Federal Housing Commissioner</p> <p>TO: DIRECTORS, SINGLE FAMILY HOCs DIRECTORS, MULTIFAMILY HUBs</p>	<p>Series and Series Number: MATERIALS RELEASE NO: 1310b (Supersedes issue dated March 2, 2007)</p>
	<p>ISSUE DATE</p> <p>May 17, 2017</p>
	<p>REVIEW DATE</p> <p>May 17, 2020</p>
<p>SUBJECT: 1. Product Pacific Woodtech Laminated Veneer Lumber</p> <p>2. Name and address of Manufacturer Pacific Woodtech Corporation 1850 Park Lane Burlington, WA 98233</p>	

Data on the nonstandard product described herein have been reviewed by the Department of Housing and Urban Development (HUD) and determination has been made that it is considered suitable from a technical standpoint for the use indicated herein. This Release does not purport to establish a comparative quality or value rating for this product as compared to standard products normally used in the same manner.

This Materials Release cannot be used as an indication of endorsement or approval by HUD of the described product, and any statement or representation, however made, indicating such approval or endorsement by HUD is unauthorized. See Code 18, U.S.C. 709.

Any reproduction of this Release must be in its entirety.

USE: General framing lumber.

DESCRIPTION:

Pacific Woodtech Laminated Veneer Lumber (LVL) is a structural composite lumber consisting of laminated wood veneers. Billets of Pacific Woodtech LVL are produced in thicknesses from 3/4 inches to 3-1/2 inches and a width of 48 inches. Veneer sheets, which measure approximately 48 inches across the grain and 101 inches along the grain, are joined end to end with lap or scarf joints, and layered in a continuous process. Veneer joints are staggered from layer to layer along the length of the billet. An exterior-type adhesive, complying with the durability requirements of ASTM D5456, is used in the manufacture of the LVL to bond veneers in the lay-up pattern specified in the manufacturer's quality control manual. LVL products are available in thicknesses from 3/4 to 3 1/2 inches, widths from 1 3/4 to 48 inches, and lengths up to 66 1/2 feet.

Pacific Woodtech LVL is private-labeled for building material wholesalers and distributors, as well as for other LVL manufacturers. All Pacific Woodtech LVL marked with the name of the manufacturer (Pacific Woodtech), the manufacturer's mill number (1047) and the number of this Materials Release (MR 1310b) conforms to the requirements of this MR regardless of the tradename or trademark applied to the product. See CERTIFICATION AND IDENTIFICATION below.

REQUIREMENTS:

Pacific Woodtech LVL shall meet the requirements of this MR.

1. Manufacturing tolerances shall be as specified in Pacific Woodtech Corporation's *LVL Quality Control Manual*.
2. Adhesives shall be an exterior-type complying with ASTM D5456 and shall be qualified in accordance with Pacific Woodtech Corporation's *LVL Quality Control Manual*.
3. The veneer thickness, specie, and grade shall be as prescribed for the billet grade by Pacific Woodtech Corporation's *LVL Quality Control Manual*.

DESIGN:

Pacific Woodtech LVL allowable design properties shall be in accordance with Table 1 below. The design provisions for sawn lumber in the Minimum Property Standards (MPS) and American Wood Council's *National Design Specification for Wood Construction* (NDS) apply to Pacific Woodtech LVL unless otherwise noted in this MR. Pacific Woodtech LVL is limited to dry service conditions where the average moisture content of sawn lumber is less than 16 percent.

Allowable design properties, allowable fastener capacities, and allowable load capacities noted in this MR are applicable for loading conditions of "normal" duration when materials have not been pressure-treated with fire retardants or preservatives. Duration of load adjustments, as provided for wood members and their connections, are permitted in accordance with the limitations specified in the NDS.

TABLE 1 - ALLOWABLE DESIGN PROPERTIES FOR PACIFIC WOODTECH LVL [psi]⁽¹⁾

Design Property		1.5E Grade	1.8E Grade	2.0E Grade
Flexural Stress, $F_b^{(6)(7)}$	beam ⁽²⁾⁽⁴⁾	2250	2750	3100
	plank ⁽³⁾⁽⁵⁾	2250	2750	3100
Modulus of Elasticity, E	beam ⁽²⁾	1,500,000	1,800,000	2,000,000
	plank ⁽³⁾	1,500,000	1,800,000	2,000,000
Horizontal Shear, $F_v^{(7)}$	beam ⁽²⁾	230	285	285
	plank ⁽³⁾	150	150	150
Compression Perpendicular to Grain, $F_{c\perp}$	beam ⁽²⁾	750	850	850
	plank ⁽³⁾	650	650	650
Tension Parallel to Grain, $F_t^{(7)(8)}$		1500	1850	2100
Compression Parallel to Grain, $F_c^{(7)}$		1950	2450	2750

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

1. The tabulated design properties apply to covered, dry service conditions of use.
2. Beam values apply to members loaded and supported on faces showing the narrow edge of all veneers, typically the narrow faces of the member.
3. Plank values apply to members loaded and supported on faces showing the face of one veneer, typically the wide faces of the member.
4. The tabulated flexural stress for beam orientation is based on a reference depth of 12 inches. For other depths (d inches), multiply by a size factor of $(12/d)^{1/5}$. For depths less than 1¾ inches, multiply by 1.47.
5. The tabulated flexural stress for the plank orientation is based on a reference depth of 1¾ inches. For other depths (d inches), multiply by a size factor of $(1.75/d)^{1/3}$. For depths less than 1¾ inches, multiply by 1.00.
6. The tabulated flexural stress is permitted to be increased by 4 percent for repetitive members as provided in the NDS.
7. The tabulated design stress is permitted to be adjusted for duration of load as provided in the NDS.
8. The tabulated tension parallel to grain stress is based on a reference gage length of 4 feet. For longer lengths (L feet), the tabulated tension parallel to grain stress shall be adjusted by multiplying by a factor of $(4/L)^{1/10}$.

Allowable withdrawal and lateral loads for nails installed in the faces and the edges of Pacific Woodtech LVL are the same as those provided in the NDS for sawn lumber having a minimum specific gravity as shown in Table 2 below. Allowable lateral loads for bolts installed in the faces of Pacific Woodtech LVL (i.e., axis of bolt perpendicular to glue lines), with loads applied parallel or perpendicular to the grain of the wood veneers, are the same as those provided in the NDS for sawn lumber having a minimum specific gravity as shown in Table 2 below. Bolted connections made in the edges of Pacific Woodtech LVL (i.e., axis of bolt parallel to glue lines) are not permitted.

TABLE 2 – EQUIVALENT SPECIFIC GRAVITY FOR FASTENER DESIGN

Connection Type	Face	Edge
Nail – Withdrawl	0.50	0.47
Nail – Lateral	0.50	0.50
Bolt – Lateral	0.50	N.A.
Face: member face showing the face of one veneer, typically the wide face of the member		
Edge: member faces showing the narrow edge of all veneer typically the narrow faces of the member		

Spacing, edge distance and end distance of fasteners installed in the faces of LVL members (member faces showing the face of one veneer, typically the wide faces of the member) are the same as those provided in the NDS for sawn lumber. Spacing of fasteners installed in the edges of LVL members (member faces showing the narrow edge of all veneers, typically the narrow faces of the member) is limited to spacings noted in Table 3.

TABLE 3 - MINIMUM EDGE FASTENER SPACING

LVL Dimensions	Fastener	Minimum Spacing [inches]
Minimum ¾ inches thick and 3½ inches deep	8d Nail	3
	10d Nail	4
	12d Nail	4
	16d Nail	Not Permitted
	14 Gage Staple	4
Minimum 1¼ inches thick and 3½ inches deep	10d Nail	4
	12d Nail	4
	16d Nail	6 ⁽¹⁾
	14 Gage Staple	4
For SI: 1 inch = 25.4 mm		
1. May be 4" when nailing through bottom wall plate and sheathing (maximum 1-3/8" penetration).		

Connections other than the nailed and bolted connections described in this Materials Release are outside the scope of this MR.

INSTALLATION AND LIMITATIONS:

Pacific Woodtech LVL product installation shall be in accordance with the NDS and applicable codes for solid lumber construction in addition to the provisions set forth in Pacific Woodtech Corporation's *User's Guide*, subject to the following limitations:

1. Pacific Woodtech LVL shall be stored and handled in accordance with the specifications contained in Pacific Woodtech Corporation's *User's Guide*.
2. This report does not evaluate the effects of holes or notches in Pacific Woodtech LVL.

QUALITY CONTROL

Pacific Woodtech LVL is manufactured to meet the requirements of Pacific Woodtech Corporation's *LVL Quality Control Manual* with quality control inspections provided by APA – The Engineered Wood Association.

MANUFACTURING PLANT LOCATIONS:

The product covered under this MR will be produced at the following plant:

William N. Grove, PE
Director of Engineering
Pacific Woodtech Corporation
1850 Park Lane
Burlington, WA 98233
360-707-2200

CERTIFICATION AND IDENTIFICATION:

Pacific Woodtech Corporation shall certify that each LVL product conforms to the requirements of this Materials Release. APA – The Engineered Wood Association shall validate the manufacturer's certification that Pacific Woodtech LVL meets the requirements of this MR. Quality assurance test records shall be made available for inspection by HUD upon request.

Each certified product shall be marked with the manufacturer's name and/or trademark (PACIFIC WOODTECH), the grade, the number of this MR (MR 1310b), the name and/or trademark of the inspection agency (APA), a code that identifies the date of manufacture (DD M YY), and code that identifies the production facility (1047).

SAMPLE STAMP:



2.0E-3100F

HUD MR 1310b

PACIFIC WOODTECH

1047

DD M YY

WARRANTY:

Pacific Woodtech Corporation warrants that Pacific Woodtech LVL, as manufactured, is free of defects in material and workmanship and, when stored, installed and finished in accordance with Pacific Woodtech Corporation's published installation instructions, will perform as specified in the current published specifications for the expected lifetime of the structure in which they are installed.

Pacific Woodtech Corporation must be given reasonable prior notice and opportunity to inspect the product before it will honor any claims under this warranty. If, after inspection and confirmation of the problem, Pacific Woodtech Corporation determines that there is a failure covered by the above warranty, Pacific Woodtech Corporation will repair or replace (at its option) the product at its expense. The product must be stored, handled and installed in accordance with Pacific Woodtech Corporation's current published installation instructions and design specifications. Failure to follow such instructions will void this warranty. The product must be stored in accordance with recommended procedures and protected from incidental exposure to moisture from whatever source by proper building standards.

The limited lifetime warranty set forth above is exclusive and in lieu of any other warrantee or guarantee, expressed or implied, including but not limited to any warranties of merchantability or fitness for a particular purpose. Correction of defects in the manner and under the conditions stated above shall constitute the fulfillment of all Pacific Woodtech Corporation's obligations and liabilities to any person with respect to the product, whether based on contract, negligence, strict liability or otherwise. No person or entity is authorized to create for Pacific Woodtech Corporation any other obligation or liability to any person relating to the product. In no event shall Pacific Woodtech Corporation be liable for indirect, special, incidental or consequential damages of any kind sustained from any cause.

The manufacturer's warranty does not, in any way, relieve the builder of responsibility under the terms of the Builder's Warranty required by the National Housing Act or under any provisions applicable to any other housing program. A copy of the manufacturer's warranty shall be furnished by the builder to the owner upon completion of the property.

MANUFACTURER'S RESPONSIBILITIES:

Issuance of this Materials Release (MR) commits the manufacturer to fulfill as a minimum, the following:

1. Produce, label and certify the material, product or system in strict accordance with the terms of this MR.
2. Provide necessary corrective action in a timely manner for all cases of justified complaint, poor performance or failure reported by HUD.
3. When requested, provide the Office of Manufactured Housing Programs, HUD Headquarters, with a representative list of properties in which the material, product or system has been used, including complete addresses or descriptions of locations and dates of installation.
4. Inform HUD, in advance, of changes in production facilities, methods, design of the product, company name, ownership or mailing address.

EVALUATION:

This MR shall be valid for a period of three years from the date of initial issuance or most recent renewal or revision, whichever is later. The holder of this MR shall apply for renewal or revision 90 days prior to the Review Date printed on this MR. Submittals for renewal or revision shall be sent to:

U. S. Department of Housing and Urban Development
Office of Manufactured Housing Programs
451 Seventh Street, SW, Room 9170
Washington, DC 20410-8000

Appropriate User Fee(s) for the TSP program can be submitted through the Pay.gov website at <https://pay.gov/public/form/start/73881741>

The holder of this MR may apply for revision at any time prior to the Review Date. Minor revision may be in the form of a supplement to the MR.

If the Department determines that a proposed renewal or supplement constitutes a revision, the appropriate User Fee for a revision will be need to be submitted in accordance with in accordance with Code of Federal Regulations 24 CFR 200.934, "User Fee System for the Technical Suitability of Products Program," and current User Fee Schedule.

CANCELLATION:

Failure to apply for a renewal or revision shall constitute a basis for cancellation of the MR. HUD will notify the manufacturer that the MR may be canceled when:

1. conditions under which the document was issued have changed so as to affect production of, or to compromise the integrity of the accepted material, product, or system;
2. the manufacturer has changed its organizational form without notifying HUD; or,
3. manufacturer has not complied with responsibilities it assumed as a condition of HUD's acceptance.

However, before cancellation, HUD will give the manufacturer a written notice, of the specific reasons for cancellation, and the opportunity to present views on why the MR should not be canceled. No refund of fees will be made on a canceled document.

This Materials Release is issued solely for the captioned firm, and is not transferable to any person or successor entity.
