DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT Housing - Federal Housing Commissioner	Series and Series Number: MATERIALS RELEASE NO: 1303b (Supercedes issue dated March 14, 2003)
TO: DIRECTORS, SINGLE FAMILY HOCs DIRECTORS, MULTIFAMILY HUBs	ISSUE DATE February 24, 2006
	REVIEW DATE February 24, 2009

SUBJECT: 1. **Product** Parallam® Parallel Strand Lumber (PSL)

2. **Name and address of Manufacturer** Weyerhaeuser
P. O. Box 8449
Boise, ID 83707

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:

Parallam® PSL is manufactured from strands of wood species, or species combinations, blended with a phenol formaldehyde based adhesive. The wood species, species combinations and adhesive used are as specified in the "Parallam® PSL Manufacturing Standard". Strands are oriented parallel to the length of the member and fed into a continuous press. The material is compressed and cured with microwave energy. Parallam PSL is available in cross-sections up to 11 inches by 19 inches and lengths up to 66 feet. Cross-sections up to 7 inches by 54 inches are available through secondary lamination. Parallam PSL is produced by Weyerhaeuser manufacturing plants with quality control inspections by PFS Corporation.

Requirements:

Parallam PSL shall meet the requirements of this MR.

1. Manufacturing tolerances shall be as specified in the applicable product manufacturing standard of Weyerhaeuser.

2. Adhesives shall be as specified in the applicable product manufacturing standard of Weyerhaeuser. Each plant shall maintain a list of all approved adhesive suppliers and the adhesives for which they are approved.

3. The strand specification shall be as specified in the applicable product manufacturing standard of Weyerhaeuser.

4. Wax, preservatives and other additives used in the product manufacture shall be as specified in the applicable product manufacturing standard of Weyerhaeuser.

Design and Allowable Stresses:

The structural performance of the finished member is assured by sampling and testing in accordance with the quality control performance procedures in the product manufacturing standard. The service conditions for the structural composite lumber described in this MR shall be in a covered dry condition of use. Dry conditions of use are those environmental conditions represented by sawn lumber at which the equilibrium moisture content is less than 16 percent.

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

Parallam PSL allowable unit stresses shall be in accordance with Table 1. The design practices for sawn lumber apply to Parallam PSL.

Parallam PSL lateral nail resistance and nail withdrawal values shall be as provided in the applicable code for Douglas fir-larch (minimum specific gravity $SG = 0.50$).

Nails installed perpendicular to the wide face of strands shall be installed in accordance with the applicable code. Nails installed parallel to the wide face of strands shall be spaced a minimum of 3 inches on center for 8d nails, 4 inches on center for 10d and 12d nails, and 6 inches on center for 16d nails. See Figure 1 of this report for details on strand orientation.

Bolt design values shall be as provided in the applicable code for Douglas fir-larch (minimum specific gravity $SG = 0.50$). Specific approval shall be required for nail and bolt connections not herein prescribed.

The fire resistance of Parallam PSL is considered to be equivalent to that of similar sizes of sawn lumber.

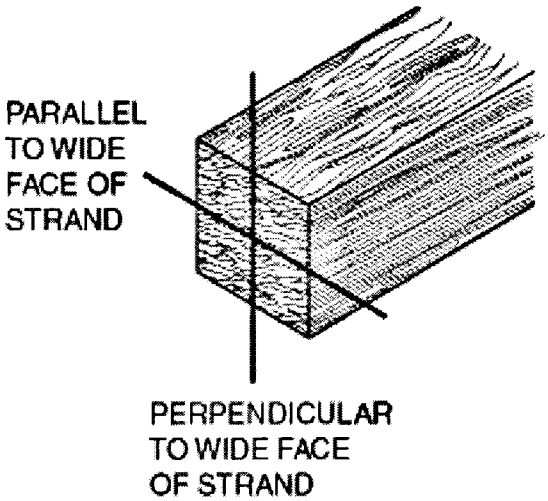


Figure No. 1.

TABLE 1: Parallam® PSL ALLOWABLE DESIGN STRESSES [1,2,7,9]
(Pounds per Square Inch)

SPECIE / GRADE		AXIAL		LOAD II To WFS (Joist)			LOAD⊥ TO WFS (Plank)			MOE (x10^6)
		Ft[3]	Fc	Fb[4,5]	Fv	Fc⊥[6]	Fb[4]	Fv	Fc⊥[6]	
DF	1.8E	1755	2500	2500	230	600	2400	190	425	1.8
	1.9E	1890	2700	2700	260	675	2600	200	450	1.9
	2.0E[8]	2025	2900	2900	290	750	2800	210	475	2.0
	2.1E	2160	3100	3100	320	775	3000	220	500	2.1
SP	1.8E	1755	2500	2500	230	600	2400	190	425	1.8
	1.9E	1890	2700	2700	260	675	2600	200	475	1.9
	2.0E	2025	2900	2900	290	750	2800	210	525	2.0
	2.1E	2160	3100	3100	320	825	3000	220	575	2.1
WH	1.8E	1755	2500	2500	230	500	2400	190	380	1.8
	1.9E	1890	2700	2700	260	575	2600	200	415	1.9
	2.0E	2025	2900	2900	290	650	2800	210	450	2.0
	2.1E	2160	3100	3100	320	700	3000	220	475	2.1
YP	1.8E	1755	2500	2500	230	600	2400	190	525	1.8
or	1.9E	1890	2700	2700	260	675	2600	200	600	1.9
YP/RM	2.0E	2025	2900	2900	290	750	2800	210	675	2.0
	2.1E	2160	3100	3100	320	825	3000	220	750	2.1

1. WFS - Wide face of strand. See Figure No. 1 for details on strand orientation. DF = Douglas fir-larch, SP = southern pine, WH = western hemlock, YP = yellow poplar, RM = red maple. DF and WH are permitted to be combined as Western Species (WS). SP, YP and YP/RM are permitted to be combined as Eastern Species (ES). When using the species group designations WS or ES, the allowable stresses shall be the lower values for the species in the group.
2. Allowable stresses are based on covered, dry conditions of use. Dry conditions of use are those environmental conditions represented by sawn lumber at which the moisture content is less than 16%.
3. The Ft values in the table are reduced to reflect the volume effects of length, width and thickness for a range of common application conditions. The Ft values for Parallam PSL may be higher when approved by Weyerhaeuser for use as a component of engineered products, which are manufactured under a recognized quality control program.
4. For 12 inch depth; for other depths, multiply by $(12/d)^{0.111}$. Adjustments for common depths are shown below. For depths less than 3.5 inches, use the factor for the 3.5-inch depth.

Depth (inches)	3.5	5.5	7.25	9.25	12.0	16.0	20.0	24.0
Multiplier	1.15	1.09	1.06	1.03	1.00	0.97	0.96	0.93

5. When members qualify as repetitive members, in accordance with the applicable code, a 4 percent increase is permitted for Fb, in addition to the increases permitted in Footnote 3.
6. Compression perpendicular values (Fc⊥) shall not be increased for duration of load.
7. For Uniformly loaded simple span beams, deflection shall be calculated as follows:

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

Where:

- Δ = Deflection, inches
- W = Uniform load, plf
- L = Span, feet
- b = Beam width, inches
- d = Beam depth, inches
- E = Modulus of Elasticity, psi

8. When used in cross-sections with depths of 20 inches or greater through approved secondary lamination, the MOE is 2.20 x 10^6 psi
9. The allowable design stresses shown in this Table are applicable to Parallam PSL, when secondary laminated in accordance with the approved Weyerhaeuser quality control manuals for secondary laminated Parallam PSL.

Installation and Limitations:

Installation shall be in strict accordance with HUD Minimum Property Standards (MPS) and the applicable code for sawn lumber construction. Parallam PSL shall be stored and handled in accordance with established recommendations for plywood.

Manufacturing Plants:

Note to sponsor: Please provide a contact person at each of the manufacturing plants.

Parallam PSL covered by this MR shall be produced at the following locations:

Trus Joist 1272 Derwent Way Annacis Island, B.C. V3M 5R1 Canada Lee Sneed (604) 526 4665	Trus Joist 100 TJM Drive Buckhannon, WV 26201 Walt Wagner (304) 472 8564	Trus Joist 268 Office Drive Colbert, GA 30628 David Craft (706) 788 3551

Certification and Identification:

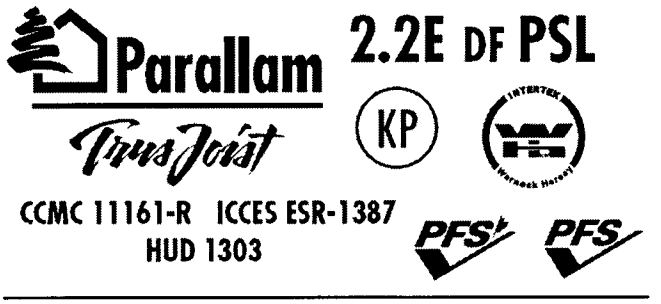
Weyerhaeuser shall certify that Parallam PSL conforms to the requirements of this MR. PFS Corporation shall validate the manufacturer's certification that Parallam PSL meets the requirements of this MR. Quality control test records shall be made available for inspection by HUD upon request.

Parallam PSL certified as conforming to this MR shall be identified with a with a stamp noting the name and plant number of the manufacturer, the product trade name, the grade, species or species designation group, "HUD 1303", and the name or logo of the quality control agency, PFS Corporation.

SAMPLE STAMPS:

Non-secondary laminated material

Secondary Laminated material:



Warranty:

Weyerhaeuser warrants Parallam® PSL against any defect due to faulty material and workmanship in the manufacturing process for a period of 20 years from the date of installation. The liability under this warranty of Weyerhaeuser shall be limited to replacement of any defective materials and the cost of installation or, at the option of Weyerhaeuser, equal payment thereof.

This warranty is limited and applies to any material failure due to manufacture only and does not cover, nor will the manufacturer be liable for, any defects or damages due to misuse, improper installation, or damages resulting from fire, lighting, or other causes beyond the manufacturer's control.

This manufacturer's warranty does not relieve the builder, in any way, 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 this warranty shall be furnished by the builder to the homeowner.

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 FHA Standards, 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
FHA Standards, Office of Manufactured Housing Programs
451 7th Street, SW, Room 9168
Washington, DC 20410-8000

Appropriate User Fees shall be sent to:

U. S. Department of Housing and Urban Development
Miscellaneous Income – Technical Suitability of Products Fees
Bank of America
P. O. Box 198762
Atlanta, GA 30384-8762

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

If the Department determines that a proposed renewal or supplement constitutes a revision, the appropriate User Fee for a revision will need to be submitted 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 or producer 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. The manufacturer has not compiled 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.

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

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