

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
ASSISTANT SECRETARY FOR HOUSING-FEDERAL HOUSING COMMISSIONER

Series and Series Number :

(Supersedes issue dated
July 27, 1994)

MATERIALS RELEASE NO. 1241b

TO: DIRECTORS, HOUSING DIVISION
DIRECTORS, MULTIFAMILY DIVISION
DIRECTORS, SINGLE FAMILY DIVISION

ISSUE DATE: January 16, 1997

REVIEW DATE: January 16, 2000

SUBJECT: 1. Product **VERSA-LAM®, VERSA-LAM PLUS® AND VERSA-RIM 98™**

2. Name and Address
of Manufacturer

Boise Cascade Corporation
P.O. Box 2400
White City, OR 97503-0400

Data on the nonstandard product described herein have been reviewed by the Department of Housing and Urban Development 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, approval or acceptance by HUD of the described product, and any statement or representation, however made, indicating such approval, endorsement or acceptance by HUD is unauthorized. See Code 18, U.S.C. 709.

Any reproduction of this Release must be in its entirety.

USE: VERSA-LAM and VERSA-LAM PLUS used as general framing lumber and VERSA-RIM 98 used only as rim joist.

DESCRIPTION:

VERSA-LAM and VERSA-LAM PLUS are laminated veneer lumber (LVL). VERSA-RIM 98 is a laminated veneer rim joist (LVRJ) used only as a continuously supported rim joist. VERSA-LAM laminated veneer lumber has vertical glue lines and is available in five grades, designated 20Fb, 22Fb, 24Fb, 26Fb and 28Fb. VERSA-LAM PLUS laminated veneer lumber has horizontal glue lines and is only available in one grade, designated 28Fb. The veneer on both faces of VERSA-RIM 98 laminated veneer rim joist are perpendicular to the core veneer with the core veneers parallel to the length of the rim joist.

Veneer used in the VERSA-LAM and VERSA-LAM PLUS is peeled from Douglas fir logs into 1/10 inch thickness. Nominal 4-foot by 8-foot panels with all grain parallel, are laid up into various thicknesses in a plywood press using a phenol-formaldehyde adhesive which complies with ASTM D 2559. Panels for use in VERSA-LAM and VERSA-LAM PLUS are finger-jointed and fed through a glue extruder and pressed into billet form. Finished VERSA-LAM and VERSA-LAM PLUS sizes are available in structural cross sections from 1 1/2 inches by 1 1/2 inches to 7 inches by 25 inches and lengths up to 66 feet except the minimum width of VERSA-LAM 26Fb is 3 1/2 inches and maximum depths of VERSA-LAM 24Fb and 20Fb are 20 inches and 16 inches, respectively. Finished VERSA-RIM 98 is 1 inch thick by 98 inches long or 242" long and is available in depths up to 16 inches.

VERSA-LAM, VERSA-LAM PLUS and VERSA-RAM 98 are intended for dry service conditions where the maximum moisture content of the wood will not exceed 19%. The fire resistance of the LVL may be considered to be that similar sizes of sawn lumber.

REQUIREMENTS:

General:

VERSA-LAM, VERSA-LAM PLUS and VERSA-RIM 98 shall be manufactured to meet the requirements of the Manufacturing Standards/Quality Control Manual for Laminated Veneer Lumber on file with HUD. The quality control test records shall be made available to HUD upon request.

Veneer:

Veneer shall be Douglas Fir meeting grade requirements of PS 1-83. The VERSA-RIM 98 IS manufactured with nothing lower than grade D Veneers and the amount of grade D Veneer shall not exceed 50% in 28Fb VERSA-LAM and VERSA-LAM PLUS.

Adhesive:

The adhesive shall meet the requirements of ASTM D2559 Specification for Adhesives for Structural Laminated Wood Products for Use Under Exterior (Wet Use) Exposure Conditions. The adhesive bond shall meet the requirements of PS 1-83 for Interior with Exterior Glue.

Design:

The customary design practices for sawn lumber are applicable to VERSA-LAM, VERSA-LAM PLUS and VERSA-RIM 98. Design shall be in accordance with the National Design Specification for Wood Construction (NDS) unless modified by this Materials Release (MR). The allowable design stresses shall be in accordance with TABLE 1 - ALLOWABLE STRESSES.

TABLE 1 - ALLOWABLE STRESSES (pounds per square inch)¹

PRODUCT DESIGNATION	GLUE LINE ORIENTATION	MAXIMUM DEPTH (inches)	GRADE	FLEXURAL ² STRESS F _b	TENSION PARALLEL TO GRAIN ³ F _t	COMPRESSION PARALLEL TO GRAIN F _c	COMPRESSION PERPENDICULAR TO GRAIN F _c		HORIZONTAL SHEAR F _v		MODULUS OF ELASTICITY
							Perpendicular to the Glue line (plank)	Parallel to the Glue Line (joist)	Parallel to the Glue Line (plank)	Perpendicular to the Glue Line (joist)	
							VERSA-LAM	Vertical	16	20F _v	
		16	22F _v ⁵	2200	1600 ⁴	3000	550	900	190	285	1,800,000
		20	24F _v	2400	1950 ⁴	3000	550	900	190	285	2,000,000
		20	26F _v ⁵	2640	1950 ⁴	3000	550	900	190	285	2,000,000
		25	28F _v	2800	2100	3000	550	900	190	285	2,000,000
VERSA-LAM PLUS	Horizontal	25	28F _v	2400 ⁴	2100	3000	550	900	190	285	2,000,000
VERSA-RIM	Vertical	16	N/A ⁷	N/A	N/A	N/A	N/A	4000 <small>(lbs./lineal ft.)</small>	N/A	N/A	N/A

¹Allowable stresses are based on a moisture content of 16 percent.

²The allowable flexural stress is for VERSA-LAM and VERSA-LAM PLUS with a 12 inch depth. For other depths, multiply by the size factor $C_f = (12/d)^{1/9}$

³The allowable tension stress is for VERSA-LAM and VERSA-LAM PLUS with a 4 foot length. For longer lengths, the allowable tension stress is multiplied by the length factor $C_L = (4/L)^{1/8}$ where L is the member length in feet.

⁴Allowable flexural stress is 2,800 psi for members with thickness of 3 1/2 inches and greater.

⁵Available in 3 1/2 inches and greater widths.

⁶Values are for use with VERSA-LAM and VERSA-LAM PLUS manufactured from 8 ply parallel laminated veneer panels.

⁷N/A = Not Applicable.

INSTALLATION:

Installation shall be in accordance with the HUD Minimum Property Standards (MPS) and the requirements of the local code for sawn lumber construction with the following modifications:

1. Allowable lateral values for nail installed in the VERSA-LAM, VERSA-LAM PLUS and VERSA-RIM 98 are as provided in the adopted code for Douglas fir-larch solid-sawn lumber with a specific gravity of 0.50. Allowable withdrawal values for nails installed in the VERSA-RIM 98 perpendicular to the glue lines and installed in the VERSA-LAM and VERSA-LAM PLUS parallel or perpendicular to the glue lines are as provided in the adopted code for Douglas fir-larch-solid-sawn lumber with a specific gravity of 0.50. Allowable withdrawal values for nails installed in the VERSA-RIM 98 parallel to the glue lines are as provided in the applicable code for Douglas fir-south solid-sawn lumber with a specific gravity of 0.46.

2. For 10d and 12d common nails installed into the narrow face of the VERSA-LAM and VERSA-LAM PLUS parallel to the VERSA-LAM and VERSA-LAM PLUS glue lines, the minimum nail spacing is 4 inches on center and the VERSA-LAM and VERSA-LAM PLUS shall be at least 1 3/4 inches thick and 3 1/2 inches wide. When the nail spacing is reduced to 3 inches, the VERSA-LAM and VERSA-LAM PLUS shall have a minimum width and thickness of 3 1/2 inches.

The minimum spacing of 16d common nails installed parallel to the glue lines and into the narrow face of the VERSA-LAM and VERSA-LAM PLUS at least 1 1/2 inches thick and 3 1/2 inches wide is 8 inches on center. When the spacing of 16d nails is reduced to 3 inches on center, the VERSA-LAM and VERSA-LAM PLUS shall have a minimum width and thickness of 3 1/2 inches.

3. Nails installed parallel to the glue lines on the narrow face of VERSA-RIM 98 shall have a maximum diameter equivalent to a 10d common nail and be spaced a minimum of 6 inches on center.
4. Nails installed perpendicular to the glue lines on the width face of VERSA-LAM, VERSA-LAM PLUS and VERSA-RIM 98 shall be installed in accordance with the spacing, end and edge distance requirements of the applicable code for nails installed in solid-sawn lumber.

QUALITY ASSURANCE AND CERTIFICATION:

Boise Cascade Corporation shall certify that VERSA-LAM, VERSA-LAM PLUS and VERSA-RIM 98 conform to the requirements of this MR. PFS Corporation shall validate the manufacturer's certification that VERSA-LAM, VERSA-LAM PLUS and VERSA-RIM 98 meet the requirements of this MR.

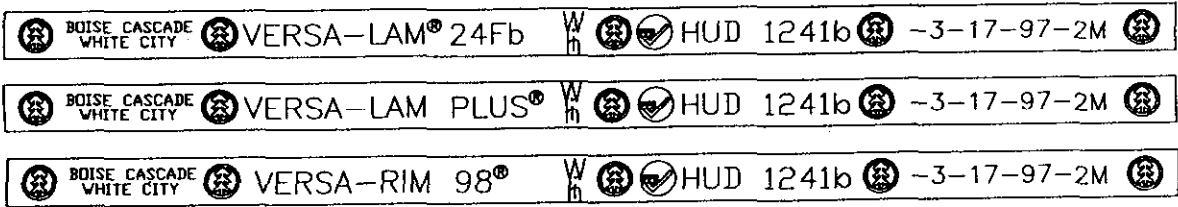
Each piece of VERSA-LAM, VERSA-LAM PLUS and VERSA-RIM 98 certified as conforming to this MR shall be marked with the following information:

1. Boise Cascade Corporation.
2. VERSA-LAM, VERSA-LAM PLUS or VERSA-RIM 98.
3. The registered PFS Validation Mark.

4. MR 1241b*
5. Date of manufacture
6. Identification of the manufacturing plant.

*HUD MR 1241 may be used instead of HUD MR 1241b if the products are date stamped.

SAMPLE STAMPS



WARRANTY:

Boise Cascade Corporation warrants VERSA-LAM, VERSA-LAM PLUS and VERSA-RIM 98 against any defects due to faulty materials and workmanship in the manufacturing process for a period of twenty (20) years from the date of installation.

The liability of Boise Cascade Corporation on the warranty shall be limited to replacement of any defective members and the cost of installation; or at the option of Boise Cascade Corporation payment in lieu thereof.

The warranty applies to any material failure due to manufacture only and does not cover, nor will the manufacturer be liable for, any defects or damage due to misuse, improper installation or damages resulting from fire, lightning or other unforeseen causes beyond the manufacturer control.

The 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 the manufacturer's warranty shall be furnished by the builder to the owner.

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 Consumer and Regulatory Affairs, Manufactured Housing and Standards Division, 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 HUD Headquarters. Appropriate User Fee shall be sent to:

U. S. Department of Housing and Urban Development
Technical Suitability of Products Fees
P. O. Box 954199
St. Louis, MO 63195-4199

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 the 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 Regulatory 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. the 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 caption firm, and
is not transferable to any person or successor entity.
