



**Boise Cascade**  
*Engineered Wood Products*

# STAIR STRINGER GUIDE

## 1<sup>5</sup>/<sub>16</sub>" **VERSA-LAM®** 1.4 1800

Laminated Veneer Lumber Stair Stringers with Crossbands for Extra Durability



### **Lifetime Guaranteed Quality and Performance**

Boise warrants its BCI® Joist, VERSA-LAM®, and ALLJOIST® products to comply with our specifications, to be free from defects in material and workmanship, and to meet or exceed our performance specifications for the normal and expected life of the structure when correctly stored, installed and used according to our Installation Guide.

For information about Boise's engineered wood products, including sales terms and conditions, warranties and disclaimers,

visit our website at [www.BC.com/ewp](http://www.BC.com/ewp)

email us at [EWPIInfo@bc.com](mailto:EWPIInfo@bc.com) or call us at 800-232-0788

Boise EWP is a participant in the Sustainable Forestry Initiative® (SFI®), a comprehensive forest management program that is a combination of environmental responsibilities and sound business practices. The procurement systems of Boise's engineered wood product facilities have been audited by PricewaterhouseCoopers to the SFI® Standard and its products will carry the SFI® Label. These procurement systems provide tracking information on Boise's supply chain sources.



FIBER USED IN THIS PRODUCT LINE  
MEETS THE SOURCING REQUIREMENTS  
OF THE SFI PROGRAM  
[WWW.SFIPROGRAM.ORG](http://WWW.SFIPROGRAM.ORG)

## 1<sup>5</sup>/<sub>16</sub>" VERSA-LAM® 1.4 1800 Allowable Stair Stringer Spans

Material Depth	36" Tread Width				42" Tread Width		44" Tread Width		48" Tread Width	
	2 Stringers		3 Stringers		3 Stringers		3 Stringers		3 Stringers	
	Stringer Run	Total Rise	Stringer Run	Total Rise	Stringer Run	Total Rise	Stringer Run	Total Rise	Stringer Run	Total Rise
<b>40 PSF Live Load / 12 PSF Dead Load</b>										
9 <sup>1</sup> / <sub>2</sub> "	5'-1"	5'-2"	5'-9"	5'-9"	5'-6"	5'-6"	5'-5"	5'-6"	5'-3"	5'-4"
11 <sup>7</sup> / <sub>8</sub> "	8'-7"	8'-3"	9'-9"	9'-4"	9'-3"	8'-11"	9'-2"	8'-9"	8'-11"	8'-7"
14"	11'-8"	11'-1"	13'-4"	12'-6"	12'-8"	11'-11"	12'-6"	11'-9"	12'-2"	11'-5"
16"	14'-8"	13'-8"	16'-8"	15'-6"	15'-10"	14'-9"	15'-8"	14'-7"	15'-3"	14'-2"
<b>100 PSF Live Load / 12 PSF Dead Load</b>										
9 <sup>1</sup> / <sub>2</sub> "	3'-9"	4'-0"	4'-3"	4'-6"	4'-1"	4'-4"	4'-0"	4'-3"	3'-11"	4'-2"
11 <sup>7</sup> / <sub>8</sub> "	6'-5"	6'-4"	7'-3"	7'-1"	6'-11"	6'-10"	6'-10"	6'-9"	6'-8"	6'-7"
14"	8'-9"	8'-5"	9'-11"	9'-6"	9'-6"	9'-1"	9'-4"	8'-11"	9'-1"	8'-9"
16"	10'-11"	10'-5"	12'-5"	11'-9"	11'-10"	11'-2"	11'-8"	11'-1"	11'-4"	10'-9"

### SPAN/LOADING NOTES

- Deflection limited to L/360 live load & L/240 total load.
- Spans based upon a stair limits of 8" max rise and 9" min. run, verify actual required minimum riser and tread width as required by local building code and amendments.
- Contact Boise EWP Engineering for design assistance on other stair stringer applications and/or loading.
- Consult governing building code and/or local building official for proper live load per application.
- Building codes typically restrict stair widths to 44" or greater for stairways serving an occupant load of 50 or less.
- Maximum total rise between floors is 12'-0" per building codes.
- Actual thickness of VERSA-LAM® 1.4 1800 is 1<sup>5</sup>/<sub>16</sub>".

### SPAN TABLE DETAILS

**Simple Span**

**Multiple Span**

**Two Stringer Option**

**Three Stringer Option**

**ALLOWABLE CUT DIMENSIONS**

Alternate step style. Maintain minimum throat depth.

Sawn out to receive treads and risers.

VERSALAM® Depth

8" max. rise

9" min. run

**Minimum Throat Depth**  
 3<sup>1</sup>/<sub>2</sub>" min. for 9<sup>1</sup>/<sub>2</sub>" VERSA-LAM®  
 5<sup>7</sup>/<sub>8</sub>" min. for 11<sup>7</sup>/<sub>8</sub>" VERSA-LAM®  
 8" min. for 14" VERSA-LAM®  
 10" min. for 16" VERSA-LAM®

### CONNECTION DETAILS - For 40 PSF Live Load Applications Only (Consult design professional of record for connections of 100 PSF applications.)

Let-in 2x nailer. Use eight 16d sinker nails, staggered. Nail into framing members below.

USP CSHLR-TZ stringer hanger or Simpson Strong Tie A35 or USP MPA1 framing anchor. Fasten with 8d x 1<sup>1</sup>/<sub>2</sub>" nails. Use two framing anchors with all 14" VERSA-LAM® applications, stagger on each side to limit splitting.

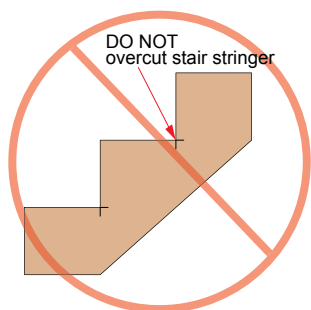
Treated 2x plate, front and back required.

Concrete Slab

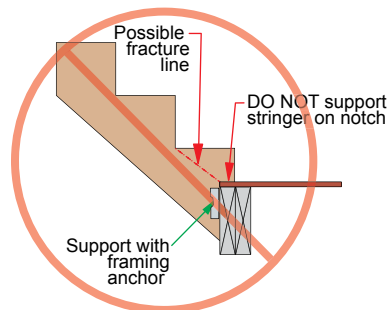
Connect each stringer to 2x plates with two 10d or 16d nails, toe-nailed to each 2x plate.  
**Connect each 2x plate to concrete with three 1<sup>1</sup>/<sub>2</sub>" diameter x 3" long anchor bolts.**

When installing treated wood, use only connectors/fasteners that are approved for use with the corresponding wood treatment.

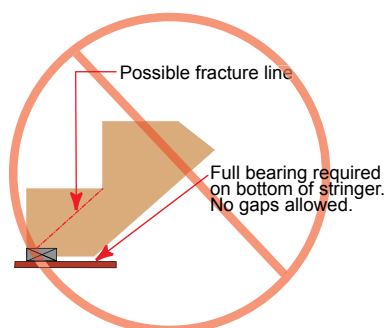
## DO NOT overcut stair stringer



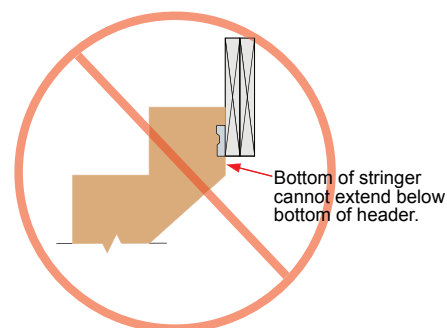
## DO NOT support stringer on notch detail



## DO NOT support stringer on let-in nailer only



## DO NOT use shallow header depths



## CONSTRUCTION NOTES

- **STAIR STRINGERS ARE EXTREMELY UNSTABLE, USE CAUTION WHEN INSTALLING TREADS. DO NOT ALLOW WORKERS ON STAIRS UNTIL EACH END OF EACH STRINGER HAS BEEN PROPERLY ATTACHED AND TEMPORARY TREADS HAVE BEEN INSTALLED.**
- Use subfloor adhesive on all contact surfaces to minimize squeaks.
- Adequate moisture barrier required between stringers and concrete.
- Keep product as dry as possible during construction.
- All wood splits when significant stress is induced across the grain - **DO NOT** apply significant side impact load (e.g., hammer) to remaining triangle sections of stringers.
- When installing treated wood, use only connectors/fasteners that are approved for use with the corresponding wood treatment.
- Use fasteners no larger than 8d box nail or #8 wood screw for attaching standard treads, space no closer than 3" on-center.

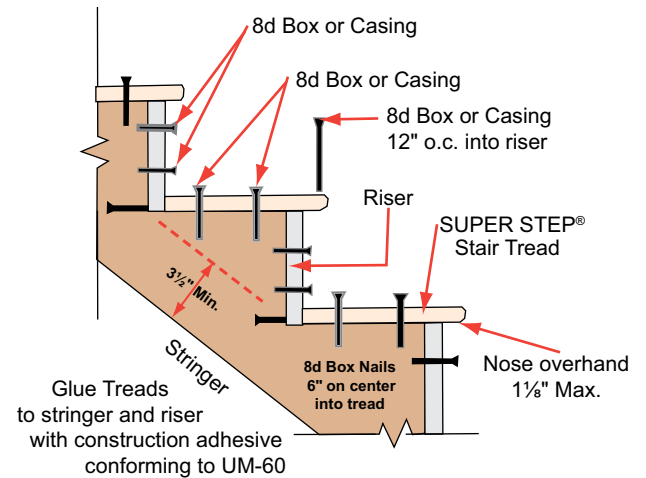
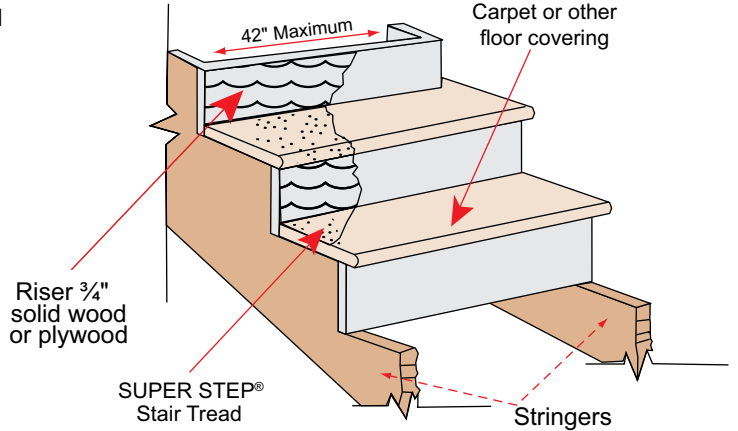
## 1<sup>5</sup>/<sub>16</sub>" VERSA-LAM® 1.4 1800 Allowable Design Values

Modulus of Elasticity E [psi]	Bending F <sub>b</sub> [psi]	Horizontal Shear F <sub>v</sub> [psi]	Compression Parallel to Grain F <sub>c</sub> [psi]	Compression Perpendicular to Grain F <sub>c</sub> [psi]	Tension Parallel to Grain F <sub>t</sub> [psi]
1,400,000	1800	225	2500	525	1250

# SUPER STEP®

## SUPER STEP® INSTALLATION INSTRUCTIONS

1. **SUPER STEP®** stair tread is for interior application only. It should be kept dry during storage and construction.
2. **SUPER STEP®** stair tread shall be covered with carpeting or other finish flooring material.
3. Stringers should be installed using conventional framing and fastening practices with a maximum distance of 42" between stringers.
4. **SUPER STEP®** stair tread shall be installed using conventional framing and fastening practices that are in compliance with all applicable code requirements. In addition, structural adhesives must be used in combination with nailing.
5. In all installations, each **SUPER STEP®** stair tread must be supported at both front and back by a full length  $\frac{3}{4}$ " (minimum) solid wood or structural grade plywood riser which is fastened with both nails and structural adhesives. The back support shall be nailed (with adhesive) through the back face of the adjoining riser and into the center of the back edge of the **SUPER STEP®** stair tread.
6. Stairs where entries may be subject to wet foot traffic should have the treads protected with a waterproof wearing surface such as linoleum or vinyl floor covering. When carpeting is used in these areas, the tread shall be protected with suitable moisture-resistant coating before installation of carpet.



MANUFACTURING STANDARDS Average	IMPERIAL	METRIC
Thickness - Nominal	1 $\frac{1}{8}$ inches	28.5 mm
Width	11 $\frac{1}{4}$ inches	28.56 mm
Lengths - other lengths available upon request	6', 8', 10', 12'	1.83m, 2.44m, 3.05m, 3.66m
Length: Standard (6', 8', 10', 12')	Up to +1 inches	25.4 mm
Custom	Up to + $\frac{1}{4}$ inches	6.35 mm
Weight / MSF	4,500 lbs	2,035 Kg
Packaging - Pieces per unit	44	44
Modulus of Rupture	2,400 psi	16.55 N/mm <sup>2</sup>
Modulus of Elasticity	420,000 psi	2,896 N/mm <sup>2</sup>
Internal Bond	90 psi	0.62 N/mm <sup>2</sup>
Hardness	900 lbs	4,003 N
Formaldehyde, Emissions	< 0.3 ppm	< 0.3 ppm
Linear Expansion - Maximum	0.35%	0.35%
Water Absorption - Maximum	20.0%	20.0%
Thickness Swell - Maximum	0.035 inches	0.889 mm
Moisture Content	7.0%	6.8%
Target Thickness	±0.005 inches	0.127 mm
Sanding	100 grit	

### THICKNESS RANGE

1 $\frac{1}{8}$ " Only

### DESCRIPTION

An engineered composite wood product cut into strips of standard width and custom lengths with one long edge bullnosed.

### SPECIFICATION CONFORMANCE

The manufacturing standards shown on the left represent an average of all our product thicknesses. Conforms to American Society of Testing and Materials Fire Test Method E-84 (flamespread rating is Class C).



**Boise Cascade**  
Engineered Wood Products

For more information about **BOISE PARTICLE-BOARD**, including sales terms and conditions, visit our website at

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