



Boise Cascade®

ENGINEERED WOOD PRODUCTS

1⁵/₁₆" Versa-Lam® LVL 1.5E 1800
West Stair Stringer Guide



1⁵/₁₆" Versa-Lam® LVL **1.5E 1800** **West Stair Stringer Guide**

Laminated Veneer Lumber Stair Stringers
with Crossbands for Extra Durability

bc.com/ewp

Reorder # LVL-W2015

Span Tables and Details

1 5/16" Versa-Lam® LVL 1.5E 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
40 PSF Live Load / 12 PSF Dead Load										
9 1/2"	5'-1"	5'-2"	5'-9"	5'-9"	5'-6"	5'-6"	5'-5"	5'-6"	5'-3"	5'-4"
11 7/8"	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"
100 PSF Live Load / 12 PSF Dead Load										
9 1/2"	3'-9"	4'-0"	4'-3"	4'-6"	4'-1"	4'-4"	4'-0"	4'-3"	3'-11"	4'-2"
11 7/8"	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"

NOTES

- ▶ Deflection limited to L/360 live load and L/240 total load.
- ▶ Spans based upon 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.
- ▶ Consult governing building code and/or local building official for appropriate 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.
- ▶ Versa-Lam® LVL products shall be installed in dry-use applications only, per their ICC-ES/APA ESR evaluation report.
- ▶ Contact Boise Cascade EWP Engineering for design assistance on other stair stringer applications and/or loading.

Span Table Details

Single 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.

8" max. rise

9" max. run

Versa-Lam® LVL depth

Minimum Throat Depth
 3 1/2" min. for 9 1/2" Versa-Lam® LVL
 5 7/8" min. for 11 7/8" Versa-Lam® LVL
 8" min. for 14" Versa-Lam® LVL
 10" min. for 16" Versa-Lam® LVL

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 common nails, staggered. Nail into framing members below. For concrete floors, use three 1/2" diameter x 3" long anchor bolts.

Simpson Strong-Tie A35 or Mitek MPA1 framing anchor. Fasten with 8d x 1 1/2" nails. Use two framing anchors with all 14" Versa-Lam® LVL applications, stagger on each side to limit splitting.

Let-in 2x nailer on top of treated 2x plate

Concrete slab

Treated 2x plate, front and back required.

Studs at 16" o.c., maximum

Toenail stringer to ledger with one 8d nail per side.

2x8 min ledger nailed with three 16d common nails per stud. For framing with stair runs longer than 10'-9", 2x10 with four 16d common nails required. Alternate connection: three 1/4" x 4" (min) lag screws per stud, all framing.

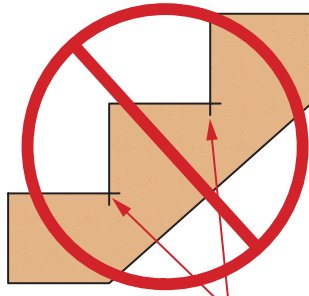
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Construction Information and Design Values

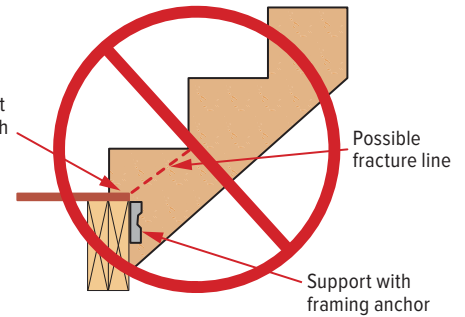
DO NOT overcut stair stringer



DO NOT overcut stair stringer

DO NOT support stringer on notch

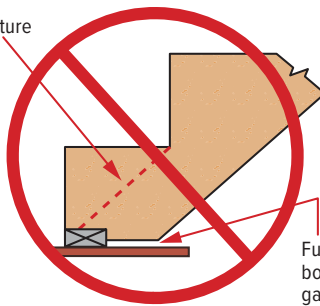
DO NOT support stringer on notch



Support with framing anchor

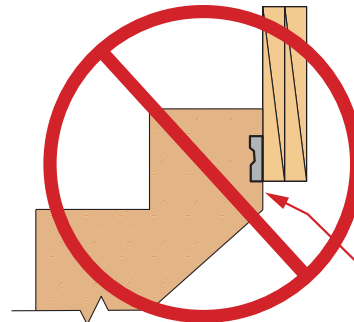
DO NOT support stringer on let-in nailer only

Possible fracture point



Full bearing required on bottom of stringer. No gaps allowed.

DO NOT use shallow header depths



Bottom of stringer cannot extend below bottom of header.



CONSTRUCTION NOTES

WARNING: 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 is required between stringers and concrete.
- ▶ Keep product as dry as possible during construction.
- ▶ All wood will split when significant stress is introduced across the grain.
DO NOT apply any substantial side impact load (such as using a hammer) to remaining triangular 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. Fasteners should be spaced no closer than 3" on-center.

1 5/16" Versa-Lam® LVL 1.5E 1800 Allowable Design Values

Modulus of Elasticity–True E (psi)	Bending F _b (psi)	Horizontal Shear F _v (psi)	Compression Parallel to Grain F _c (psi)	Compression Perpendicular to Grain F _c (psi)	Tension Parallel to Grain F _t (psi)
1,500,000	1,800 ⁽¹⁾	225	2,500	525	1,250

(1) Bending value should be multiplied by the depth factor, (12/d)^{1/3} where d = member depth (in).

Boise Cascade is one of the largest producers of engineered wood products in North America. With coast-to-coast distribution, we strive to meet our customer's needs through regional product offerings, on-time delivery, and continued technical support long after the sale. We know our success depends upon yours. And that's why we offer a full line of innovative engineered wood products that give you the strength, stability, and consistent performance you need for each project—and every challenge.

BCI® Joists

Straight and strong, yet lightweight and easy to install, our joists give you flat, stable, quiet floors and strong roofs with crisp ridge lines.

Boise Cascade® Rimboard

Offered in long lengths and depths that match BCI® joists, our rim board product installs quickly and saves you time.

Versa-Lam® LVL Beams and Headers

With superior strength and stability, our Versa-Lam® LVL beams are ideal for floors and roofs, and our headers make installing doors and windows a snap.

Versa-Stud® Wall Framing

Facing a tall wall challenge? Versa-Stud wall framing has the length, strength and wind resistance you need. It's also ideal for applications where a straight, stiff wall is critical.

BC Calc® Sizing Software

Whether you're a dealer creating material lists or an architect or builder looking to quickly analyze product options, BC Calc® software makes it easy. What's more, this cloud-based application is freely available to everyone and includes a full line of technical support.

When you put it all together, Boise Cascade's Engineered Wood Products (EWP) and software tools make building strong homes easier, faster, and more profitable for home builders.

FASTER. STRONGER. EASIER.

Limited Lifetime Warranty

All Boise Cascade BCI® joist, Versa-Lam® LVL, and AJS® joist products are covered by a limited lifetime warranty for the expected life of the structure. View the complete warranty on our website.

bc.com/terms-conditions/sales-terms-and-conditions

NEED MORE INFORMATION?

Visit bc.com/ewp
or call 1-800-232-0788



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ENGINEERED WOOD PRODUCTS

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