



Boise Cascade®
ENGINEERED WOOD PRODUCTS

1½" Versa-Lam® LVL 1.8E 2650
East Stair Stringer Guide



1½" Versa-Lam® LVL

1.8E 2650

East Stair Stringer Guide

Laminated Veneer Lumber Stair Stringers

bc.com/ewp

Reorder # LVL-E2015

Span Tables and Details

1½" Versa-Lam® LVL 1.8E 2650 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										
9½"	5'-7"	5'-8"	6'-5"	6'-4"	6'-1"	6'-1"	6'-0"	6'-0"	5'-10"	5'-10"
11⅞"	9'-6"	9'-1"	10'-10"	10'-4"	10'-4"	9'-10"	10'-2"	9'-8"	9'-11"	9'-5"
14"	13'-0"	12'-3"	14'-10"	13'-10"	14'-1"	13'-2"	13'-11"	13'-0"	13'-6"	12'-8"
100 PSF Live Load / 12 PSF Dead Load										
9½"	4'-2"	4'-5"	4'-9"	4'-11"	4'-6"	4'-8"	4'-6"	4'-8"	4'-4"	4'-6"
11⅞"	7'-1"	7'-0"	8'-1"	7'-10"	7'-8"	7'-6"	7'-7"	7'-5"	7'-4"	7'-3"
14"	9'-8"	9'-3"	11'-0"	10'-6"	10'-6"	10'-0"	10'-4"	9'-10"	10'-1"	9'-7"

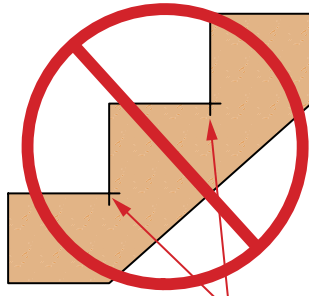
NOTES

- ▶ 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.
- ▶ 1¾" Versa-Lam® LVL 1.8E 2650 (or higher grade) may be directly substituted.
- ▶ 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 ESR evaluation report.
- ▶ Contact Boise Cascade EWP Engineering for design assistance on other stair stringer applications and/or loading.

Span Table Details			Allowable Cut Dimensions
Single Span 	Multiple Span 	Two Stringer Option Three Stringer Option 	Allowable Cut Dimensions Alternate step style. Maintain minimum throat depth. Versa-Lam® LVL depth Sawn out to receive treads and risers. 8" max. rise 9" max. run Minimum Throat Depth: 3½" min. for 9½" Versa-Lam® LVL 5⅞" min. for 11⅞" Versa-Lam® LVL 8" min. for 14" 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 ½" diameter × 3" long anchor bolts.	Simpson Strong-Tie A35 or Mitek MPA1 framing anchor. Fasten with 8d × 1½" 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 ¼" × 4" (min) lag screws per stud, all framing.			

Construction Information and Design Values

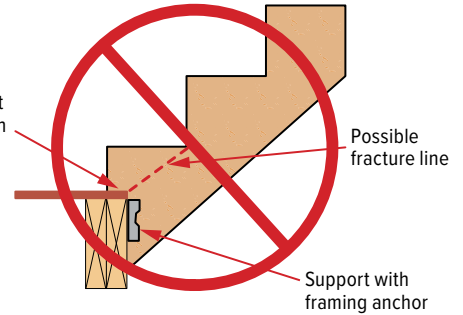
DO NOT overcut stair stringer



DO NOT overcut stair stringer

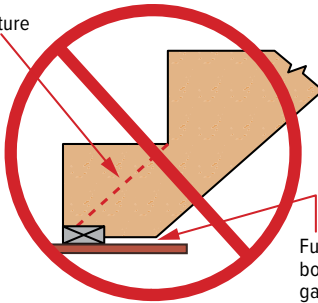
DO NOT support stringer on notch

DO NOT support stringer on notch



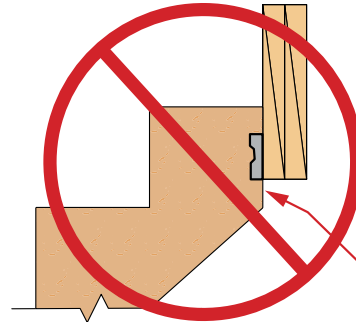
DO NOT support stringer on let-in nailer only

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.

1½" Versa-Lam® LVL 1.8E 2650 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)
1,800,000	2,650 ⁽¹⁾	285	3,000	750	1,650

(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® and AJS® Joists

High-performance floors start with BCI® and AJS® joists — providing strong, high-quality results along with the consistency and easy handling needed to get the job done efficiently.

Boise Cascade® Rimboard

Give floors the support they need with Boise Cascade® OSB Rimboard — a one-step, easy-to-install solution designed for use with BCI® and AJS® joists.

Versa-Lam® LVL Beams and Headers

Get industry-leading overall value without sacrificing strength. Versa-Lam LVL beams and headers resist twisting, shrinking, and splitting — creating flatter, quieter floors that keep customers happy.

Versa-Stud® Wall Framing

Whether tackling a grand stairway, tall window walls, or beyond, Versa-Stud LVL is manufactured with the reliability and strength needed to get the job done right.

Boise Cascade® Software Solutions

From 3D design tools to workflow management and beyond, the Boise Cascade® suite of software is built to make lumberyards, distributors, and their teams operate faster, stronger, and 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

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