



## LP SOLIDSTART LSL & LVL STAIR STRINGERS

## WHEN STRAIGHT AND CONSISTENT ARE NOT AN OPTION

Lumber is officially obsolete. LP SolidStart Laminated Strand Lumber (LSL) and Laminated Veneer Lumber (LVL) are the perfect alternatives. LP SolidStart LSL is made from a mixture of Aspen and Maple hardwoods – from sustainably-managed forests – for superior strength. According to research, this mix has proven to produce a higher strength LSL. Our LSL manufacturing process includes a state-of-the-art steam injection press, which cures resins for a stronger bond and straighter board than traditional lumber with significantly less swelling. LP Solid Start LVL is made from visually graded veneers arranged in a specific pattern, so naturally occurring defects have no concentrated effect on performance. Our LVL is then bonded with waterproof adhesives under pressure

and heat, making it strong, solid and straight. And because both products are available in longer pieces, they offer far greater design flexibility and faster installation than traditional lumber.

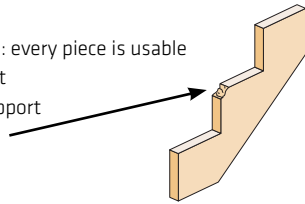
As the main structural component of a staircase, straight, true and consistent stair stringers couldn't be more important. And LP SolidStart LSL and LVL couldn't be more perfect for the job. Every piece is usable, so there's no more cutting around knots. The uniformity makes installation fast and accurate. With all of the traffic a staircase will endure through time, true from the start means durability through the years. LP SolidStart LSL and LVL: Better Performance. Better Value.

## PREDICTABLE PERFORMANCE

LP SolidStart LSL and LVL Rim Board and Framing Lumber is straight, uniform, and won't split like traditional lumber when notched. Along with their predictable performance, they also allow the builder to use inventoried products so there's no need for an extra SKU. Here are just a few of the key advantages.

### Consistently Stable = Fewer Call Backs

- Reduces squeaks
- No knots to cut around: every piece is usable
- Uniform and consistent
- Less prone to tread support breakage (dog-ears)



### Increased Efficiency = Reduced Build Cycle

- No scabbing or reinforcements needed

### Better Value = Better Homes

- No wasted time culling
- Lifetime Limited Warranty

## GREEN BUILDING

### LP SOLIDSTART LSL & LVL CAN HELP BUILDERS WORK TOWARD GREEN BUILDING CERTIFICATION QUICKLY AND EASILY.

- LP SolidStart LSL and LVL use SFI-certified wood from well-managed forests.
- LP uses only a minimal amount of low-emitting, safe resin as a binder.
- As engineered products, LP SolidStart LSL and LVL use less raw material and offer more consistent performance than traditional lumber.

### LP PRODUCTS ARE A NATURAL CHOICE FOR BUILDING GREEN.

#### As wood-based products they:

- Have a low environmental impact
- Are a renewable resource

#### As engineered products they:

- Use raw materials more efficiently than traditional products
- Are made with low-emitting, safe resins

All of LP's wood-based products are made from third-party certified wood from sustainably managed forests.

### MATERIAL AND RESOURCE EFFICIENCY

#### GREEN ATTRIBUTE

- Renewable Materials
- 3<sup>rd</sup> Party-Certified Wood
- Engineered Products
- Resource Efficient Materials

#### WHY LP SOLIDSTART LSL AND LVL QUALIFY

- Wood-Based Product
- SFI-Certified Wood
- Engineered Product

### Selected Green Building Programs where LP SolidStart LSL and LVL help builders earn points towards certification:



1-1/4" 1.35E LSL and 1-1/4" 1.3E LVL	LSL or LVL Depth	Stair Tread Width				
		36"		42"	44"	48"
		2 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers
40 psf Live Load; 12 psf Dead Load						
9-1/2"	5'-7"	6'-5"	6'-1"	6'-0"	5'-10"	
11-7/8"	9'-7"	11'-0"	10'-5"	10'-3"	10'-0"	
14"	13'-3"	15'-1"	14'-4"	14'-1"	13'-9"	
16"	16'-7"	18'-11"	18'-0"	17'-9"	17'-3"	
40 psf Live Load; 25 psf Dead Load						
9-1/2"	5'-3"	6'-0"	5'-8"	5'-7"	5'-5"	
11-7/8"	7'-9"	10'-3"	9'-9"	9'-6"	8'-9"	
14"	12'-5"	14'-1"	13'-5"	13'-3"	12'-10"	
16"	15'-7"	17'-9"	16'-11"	16'-8"	16'-2"	
100 psf Live Load; 12 psf Dead Load						
9-1/2"	4'-2"	4'-9"	4'-6"	4'-5"	4'-4"	
11-7/8"	4'-11"	7'-4"	6'-4"	6'-0"	5'-6"	
14"	9'-9"	11'-2"	10'-8"	10'-6"	10'-2"	
16"	9'-10"	14'-1"	12'-8"	12'-1"	11'-1"	
100 psf Live Load; 25 psf Dead Load						
9-1/2"	4'-1"	4'-9"	4'-6"	4'-5"	4'-4"	
11-7/8"	4'-3"	6'-5"	5'-6"	5'-3"	4'-9"	
14"	8'-6"	11'-2"	10'-7"	10'-6"	9'-7"	
16"	8'-6"	12'-10"	11'-0"	10'-6"	9'-7"	

1-1/2" 1.55E LSL and 1-1/2" 1.5E LVL	LSL or LVL Depth	Stair Tread Width				
		36"		42"	44"	48"
		2 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers
40 psf Live Load; 12 psf Dead Load						
9-1/2"	6'-3"	7'-1"	6'-9"	6'-8"	6'-6"	
11-7/8"	10'-8"	12'-2"	11'-7"	11'-5"	11'-1"	
14"	14'-8"	16'-9"	15'-11"	15'-8"	15'-3"	
16"	18'-5"	21'-1"	20'-0"	19'-9"	19'-2"	
40 psf Live Load; 25 psf Dead Load						
9-1/2"	5'-10"	6'-8"	6'-4"	6'-3"	6'-1"	
11-7/8"	8'-2"	11'-5"	10'-6"	10'-0"	9'-2"	
14"	13'-9"	15'-8"	14'-11"	14'-8"	14'-3"	
16"	16'-4"	19'-8"	18'-9"	18'-6"	17'-11"	
100 psf Live Load; 12 psf Dead Load						
9-1/2"	4'-7"	5'-3"	5'-0"	4'-11"	4'-9"	
11-7/8"	5'-2"	7'-9"	6'-7"	6'-4"	5'-9"	
14"	10'-4"	12'-5"	11'-10"	11'-8"	11'-4"	
16"	10'-4"	15'-6"	13'-3"	12'-8"	11'-7"	
100 psf Live Load; 25 psf Dead Load						
9-1/2"	4'-5"	5'-3"	5'-0"	4'-11"	4'-9"	
11-7/8"	4'-5"	6'-8"	5'-9"	5'-6"	5'-0"	
14"	8'-11"	12'-5"	11'-6"	11'-0"	10'-1"	
16"	8'-11"	13'-5"	11'-6"	11'-0"	10'-1"	

1-3/4" 1.55E LSL and 1-3/4" 1.5E LVL	LSL or LVL Depth	Stair Tread Width				
		36"		42"	44"	48"
		2 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers
40 psf Live Load; 12 psf Dead Load						
9-1/2"	6'-7"	7'-1"	7'-1"	7'-0"	6'-10"	
11-7/8"	10'-8"	12'-10"	12'-2"	12'-0"	11'-8"	
14"	15'-5"	17'-8"	16'-9"	16'-6"	16'-1"	
16"	19'-5"	22'-2"	21'-1"	20'-9"	20'-2"	
40 psf Live Load; 25 psf Dead Load						
9-1/2"	6'-1"	7'-0"	6'-8"	6'-7"	6'-4"	
11-7/8"	8'-2"	12'-0"	10'-6"	10'-0"	9'-2"	
14"	14'-5"	16'-6"	15'-8"	15'-5"	15'-0"	
16"	16'-4"	20'-9"	19'-9"	19'-5"	18'-4"	
100 psf Live Load; 12 psf Dead Load						
9-1/2"	4'-10"	5'-6"	5'-3"	5'-2"	5'-0"	
11-7/8"	5'-2"	7'-9"	6'-7"	6'-4"	5'-9"	
14"	10'-4"	13'-1"	12'-5"	12'-3"	11'-7"	
16"	10'-4"	15'-6"	13'-3"	12'-8"	11'-7"	
100 psf Live Load; 25 psf Dead Load						
9-1/2"	4'-5"	5'-6"	5'-3"	5'-2"	5'-0"	
11-7/8"	4'-5"	6'-8"	5'-9"	5'-6"	5'-0"	
14"	8'-11"	13'-1"	11'-6"	11'-0"	10'-1"	
16"	8'-11"	13'-5"	11'-6"	11'-0"	10'-1"	

### DESIGN ASSUMPTIONS:

- General guidelines for calculating Step Rise and Run:
  - The rise times the run should equal approximately 75"
  - Two times the rise plus one run should equal approximately 25"
  - Rise plus run should be 17" to 18"
- Spans have been limited by the capacity of typical framing anchors at the stringer to header connection on page 4. Longer spans may be possible with other details. Contact your LP representative for additional information.
- Design Values for LP® SolidStart® LSL and LVL are located in ICC-ES Report ESR-2403 and ESR-1254, respectively.

### ADDITIONAL NOTES:

- Tables are valid for stairs with an 8" maximum riser and 9" minimum tread. Consult local building codes for restrictions on riser and tread dimensions.
- Deflection criteria of L/360 live load and L/240 total load.
- Stringers are not stable until treads and risers are securely in place.
- Subfloor adhesive will minimize squeaks.
- A 12' floor-to-floor height (or between landings) is the maximum allowed by code.
- Adequate moisture barrier is required between stringers and concrete.
- Refer to LP's technical guides for LP SolidStart LSL and LVL for additional information.
- LP SolidStart LSL and LVL are intended for dry-use conditions only.

# Suggested Details for Residential Construction

SPAN TABLE DETAILS			CUT DIMENSIONS
<p><b>SIMPLE SPAN</b></p>	<p><b>MULTIPLE SPAN</b></p>	<p><b>TWO STRINGER OPTION</b></p> <p><b>THREE STRINGER OPTION</b></p>	<p><b>ALLOWABLE CUT DIMENSIONS</b></p> <p>Alternate step style – maintain minimum throat depth</p> <p>Sawn out to receive treads and risers</p> <p>Depth</p> <p>8" max. rise* (typ)</p> <p>9" min. run* (typ)</p> <p><b>Minimum Throat Depth</b>          3-1/2" min. for 9-1/2"          5-7/8" min. for 11-7/8"          8" min. for 14"          10" min. for 16"</p> <p>* Consult local building codes for restrictions on riser and tread dimensions</p>

## SUGGESTED DETAILS FOR RESIDENTIAL CONSTRUCTION

For 40 psf Live Load/12 psf Dead Load. Consult design professional for Live Loads greater than 40 psf.

<p>Let-in 2x nailer. Use eight 16d sinker nails, staggered. Nail into framing members below.</p>	<p>Simpson Strong-Tie A35 or USP MPA1 framing anchor. Fasten with 8d x 1-1/2" nails. Use two framing anchors with all 14" and 16" applications, stagger on each side to limit splitting.</p> <p>Studs at 16" on-center max.</p> <p>Toenail stringer to ledger with one 8d nail per side.</p> <p>2 x 8 min. ledger nailed with three 16d common nails per stud. For SPF &amp; Hem-fir framing with 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.</p>	<p>Treated 2x plate, front and back required</p> <p>Concrete slab</p> <p>Connect each stringer to 2x plates with two 10d or 16d nails, toe-nailed to each 2x plate. <b>Connect each 2x plate to concrete with three 1/2" diameter x 3" long anchor bolts.</b></p> <p>When installing treated wood, use only connectors/fasteners that are approved for use with the corresponding wood treatment.</p>
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## WARNINGS

<p><b>DON'T</b> overcut stair stringer.</p> <p>Do not overcut stringer</p>	<p><b>DON'T</b> support stringer on notch detail.</p> <p>Do not support stringer on notch</p> <p>Possible fracture point</p> <p>Support with framing anchor</p>	<p><b>DON'T</b> support stringer on let-in nailer only.</p> <p>Possible fracture point</p> <p>Full bearing required on bottom of stringer—no gaps allowed</p>	<p><b>DON'T</b> use shallow header depths.</p> <p>Bottom of stringer cannot extend below bottom of header</p>
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LP SolidStart Engineered Wood Products are manufactured at different locations in the United States and Canada. Please verify availability with the LP SolidStart Engineered Wood Products distributor in your area before specifying these products.

**Cal. Prop 65 Warning:** Use of this product may result in exposure to wood dust, known to the State of California to cause cancer.



For more information on the full line of LP SolidStart Engineered Wood Products or the nearest distributor, please contact 1.888.820.0325 or e-mail [customer.support@lpcorp.com](mailto:customer.support@lpcorp.com). Visit our web site at [www.lpcorp.com](http://www.lpcorp.com).

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