

# RigidLam® LVL

ENGINEERED WOOD

*Stair Stringers*



## RIGIDLAM® LVL STAIR STRINGERS

Step up to Roseburg's RigidLam® LVL Stair Stringers and minimize waste while providing consistent, predictable performance. A product and performance warranty gives builders and end-users long-term peace of mind.

MAKING LIVES BETTER FROM THE GROUND UP.™

 **Roseburg**

# RigidLam® LVL Stair Stringers

Maximum Horizontal Stair Stringer Run for Both Douglas-fir LVL and Southern Pine LVL

1.4E RigidLam LVL					
1-1/2" Thick LVL					
Gross Stringer Depth	Tread Width				
	36"		42"	44"	48"
2 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers
40 psf Live Load and 12 psf Dead Load					
9-1/2"	4'-10"	5'-5"	5'-2"	5'-1"	5'-0"
11-7/8"	8'-8"	9'-10"	9'-4"	9'-3"	9'-0"
14"	12'-2"	13'-9"	13'-1"	12'-11"	12'-7"
16"	15'-5"	17'-5"	16'-7"	16'-5"	15'-11"
100 psf Live Load and 12 psf Dead Load					
9-1/2"	4'-3"	4'-9"	4'-7"	4'-6"	4'-5"
11-7/8"	7'-3"	8'-2"	7'-9"	7'-8"	7'-6"
14"	9'-11"	11'-2"	10'-8"	10'-6"	10'-3"
16"	12'-5"	14'-0"	13'-5"	13'-3"	12'-11"

1.4E RigidLam LVL					
1-3/4" Thick LVL					
Gross Stringer Depth	Tread Width				
	36"		42"	44"	48"
2 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers
40 psf Live Load and 12 psf Dead Load					
9-1/2"	5'-0"	5'-8"	5'-5"	5'-4"	5'-3"
11-7/8"	9'-1"	10'-3"	9'-10"	9'-8"	9'-5"
14"	12'-9"	14'-4"	13'-9"	13'-6"	13'-2"
16"	16'-2"	18'-2"	17'-5"	17'-2"	16'-9"
100 psf Live Load and 12 psf Dead Load					
9-1/2"	4'-5"	5'-0"	4'-9"	4'-9"	4'-7"
11-7/8"	7'-7"	8'-6"	8'-2"	8'-1"	7'-10"
14"	10'-5"	11'-8"	11'-2"	11'-0"	10'-9"
16"	13'-0"	14'-8"	14'-0"	13'-10"	13'-6"

1.6E RigidLam LVL					
1-1/2" Thick LVL					
Gross Stringer Depth	Tread Width				
	36"		42"	44"	48"
2 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers
40 psf Live Load and 12 psf Dead Load					
9-1/2"	5'-0"	5'-8"	5'-5"	5'-4"	5'-2"
11-7/8"	9'-1"	10'-3"	9'-9"	9'-8"	9'-5"
14"	12'-8"	14'-4"	13'-8"	13'-6"	13'-2"
16"	16'-1"	18'-2"	17'-4"	17'-1"	16'-8"
100 psf Live Load and 12 psf Dead Load					
9-1/2"	4'-5"	5'-0"	4'-9"	4'-8"	4'-7"
11-7/8"	7'-7"	8'-6"	8'-2"	8'-0"	7'-10"
14"	10'-4"	11'-8"	11'-2"	11'-0"	10'-8"
16"	13'-0"	14'-8"	14'-0"	13'-9"	13'-5"

1.6E RigidLam LVL					
1-3/4" Thick LVL					
Gross Stringer Depth	Tread Width				
	36"		42"	44"	48"
2 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers
40 psf Live Load and 12 psf Dead Load					
9-1/2"	5'-3"	5'-11"	5'-8"	5'-7"	5'-5"
11-7/8"	9'-6"	10'-9"	10'-3"	10'-1"	9'-10"
14"	13'-3"	15'-0"	14'-4"	14'-2"	13'-9"
16"	16'-10"	18'-11"	18'-2"	17'-11"	17'-6"
100 psf Live Load and 12 psf Dead Load					
9 1/2"	4'-8"	5'-3"	5'-0"	4'-11"	4'-10"
11-7/8"	7'-11"	8'-11"	8'-6"	8'-5"	8'-2"
14"	10'-10"	12'-3"	11'-8"	11'-6"	11'-3"
16"	13'-7"	15'-4"	14'-8"	14'-5"	14'-1"

2.1E RigidLam LVL					
1-1/2" Thick LVL					
Gross Stringer Depth	Tread Width				
	36"		42"	44"	48"
2 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers
40 psf Live Load and 12 psf Dead Load					
9-1/2"	5'-6"	6'-2"	5'-11"	5'-10"	5'-8"
11-7/8"	9'-11"	11'-3"	10'-8"	10'-6"	10'-3"
14"	13'-10"	15'-8"	15'-0"	14'-9"	14'-4"
16"	17'-7"	19'-10"	19'-0"	18'-9"	18'-3"
100 psf Live Load and 12 psf Dead Load					
9-1/2"	4'-10"	5'-5"	5'-2"	5'-1"	5'-0"
11-7/8"	8'-3"	9'-3"	8'-10"	8'-9"	8'-6"
14"	11'-3"	12'-9"	12'-2"	12'-0"	11'-8"
16"	14'-2"	15'-11"	15'-3"	15'-0"	14'-8"

2.1E RigidLam LVL					
1-3/4" Thick LVL					
Gross Stringer Depth	Tread Width				
	36"		42"	44"	48"
2 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers	3 Stringers
40 psf Live Load and 12 psf Dead Load					
9-1/2"	5'-9"	6'-6"	6'-2"	6'-1"	5'-11"
11-7/8"	10'-4"	11'-9"	11'-3"	11'-1"	10'-9"
14"	14'-6"	16'-5"	15'-8"	15'-6"	15'-1"
16"	18'-5"	20'-9"	19'-10"	19'-7"	19'-1"
100 psf Live Load and 12 psf Dead Load					
9-1/2"	5'-1"	5'-8"	5'-5"	5'-4"	5'-3"
11-7/8"	8'-7"	9'-9"	9'-3"	9'-2"	8'-11"
14"	11'-10"	13'-4"	12'-9"	12'-7"	12'-3"
16"	14'-10"	16'-9"	15'-11"	15'-9"	15'-4"

## How To Use Chart

- Determine grade and thickness of Roseburg RigidLam LVL
- Locate appropriate table
- Locate appropriate load (40 or 100 psf live load)
- Locate appropriate gross depth of LVL (9-1/2", 11-7/8", 14" or 16")
- Determine maximum allowable horizontal stringer run based on tread width and number of stringers

## General Notes

- For 40/12 loading (residential), stringer runs are based on a rise of 7-3/4" (maximum per 2018 IRC) and a run of 11" (1" longer than minimum run of 10" per 2018 IRC).
- For 100/12 loading (commercial), stringer runs are based on a rise of 7" (maximum per 2018 IRC) and a run of 11" (minimum per 2018 IRC).
- Consult a design professional for allowable stringer run if above rise and/or run values are exceeded.

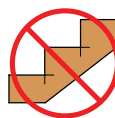
- Stringer runs are based on deflection criteria of L/360 Live Load and L/240 Total Load.
- All stringer runs are based on a 100% duration of load.
- Stringer runs account for self-weight of member.
- Stringers are unstable until connections at low and high ends are completed and treads are attached.
- Use subfloor adhesive to minimize squeaks and improve stair performance.
- When stringer is in direct contact with concrete, use moisture barrier.
- Refer to appropriate building code for story height restrictions.
- For loading and/or framing conditions outside the scope of this document, consult a design professional.
- Refer to the Roseburg EWP Residential Design and Installation Guide for RigidLam LVL storage and handling information.

RigidLam LVL Code Evaluation ICC ESR-1210

## INSTALLATION GUIDELINES



**DO NOT** notch or drill holes in stringer



**DO NOT** overcut stringer. Use hand saw to finish cut



**DO NOT** support stringer on nailer only



**DO NOT** walk on stringers until treads are attached

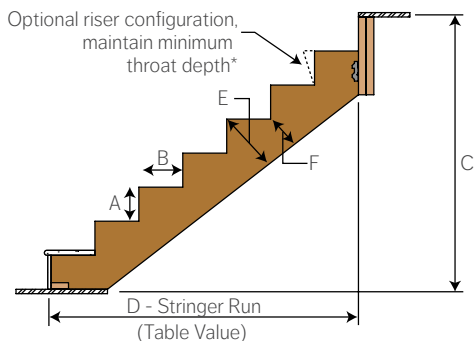
## RIGIDLAM® LVL ALLOWABLE DESIGN STRESSES<sup>1</sup>

		1.4E RigidLam LVL	1.6E RigidLam LVL	2.1E RigidLam LVL
True Modulus of Elasticity (MOE) <sup>2</sup> – Edgewise or Flatwise	E (psi) =	1,400,000	1,600,000	2,100,000
Apparent Modulus of Elasticity (MOE) <sup>2</sup> – Edgewise or Flatwise	E (psi) =	1,300,000	1,500,000	2,000,000
Bending – Edgewise <sup>3,4</sup>	F <sub>b</sub> edge (psi) =	2,250	2,250	3,100
Bending – Flatwise <sup>5</sup>	F <sub>b</sub> flat (psi) =	2,250	2,250	3,100
Horizontal Shear – Edgewise	F <sub>v</sub> edge (psi) =	200	220	290
Horizontal Shear – Flatwise	F <sub>v</sub> flat (psi) =	130	130	130
Compression Perp. To Grain <sup>2</sup> – Edgewise	F <sub>c</sub> perp edge (psi) =	560	575	750
Compression Perp. To Grain <sup>2</sup> – Flatwise	F <sub>c</sub> perp flat (psi) =	650	650	650
Compression Parallel to Grain	F <sub>c</sub> para (psi) =	1,950	1,950	3,000
Tension Parallel to Grain <sup>6</sup>	F <sub>t</sub> (psi) =	1,500	1,500	2,100
MOE for stability calculations <sup>2</sup>	E <sub>min</sub> (psi) =	687,023	792,718	1,056,958

- These allowable design stresses apply to dry service conditions.
- No increase is allowed for duration of load.
- For depths other than 12", multiply F<sub>b</sub> by (12/d)<sup>1/8</sup> for Douglas-fir or (12/d)<sup>1/5</sup> for SP, where d = depth of member (inches).
- A factor of 1.04 may be applied for repetitive members as defined in the *National Design Specification for Wood Construction*.

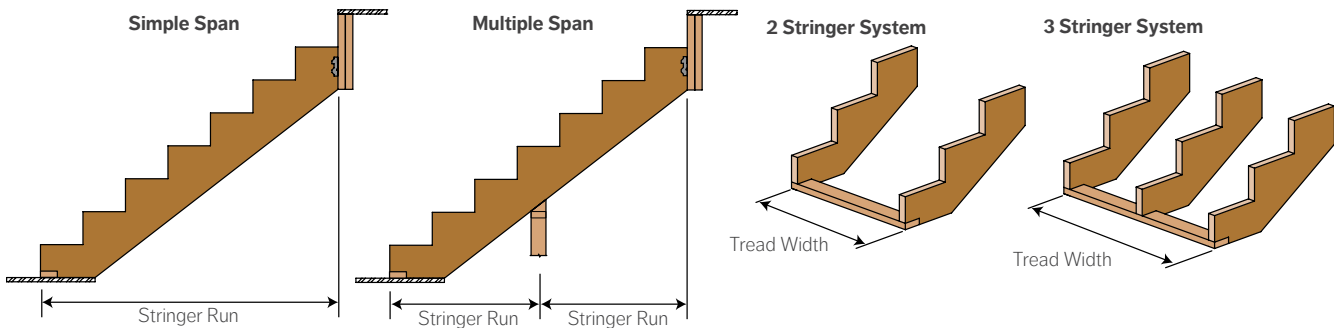
- Tabulated F<sub>b</sub> flat values are based on a thickness of 1-3/4". For other thicknesses, when loaded flatwise, multiply F<sub>b</sub> flat by (1.75/t)<sup>1/5</sup>, where t is the LVL thickness in inches. For thicknesses less than 1-3/4", use the tabulated value.
- Tensile stress is based on a 4-foot gage length. For greater lengths, multiply F<sub>t</sub> by (4/L)<sup>1/9</sup> where L = length in feet. For lengths less than 4-feet, use the published value.

## STAIR STRINGER TERMS AND DEFINITIONS



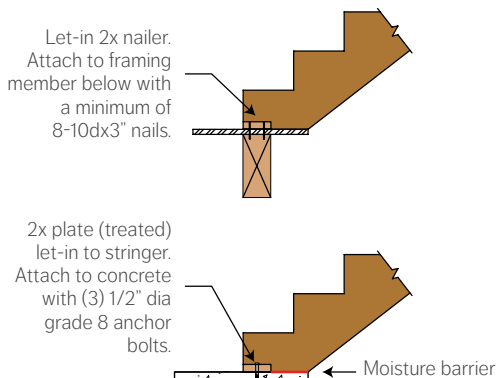
*Minimum Throat Depth		
Stringer Depth	Residential - 7-3/4" rise & 11" run	Commercial - 7" rise & 11" run
9-1/2" LVL	3-1/8"	3-9/16"
11-7/8" LVL	5-1/2"	5-15/16"
14" LVL	7-5/8"	8-1/16"
16" LVL	9-5/8"	10-1/16"

## STAIR STRINGER CONFIGURATIONS



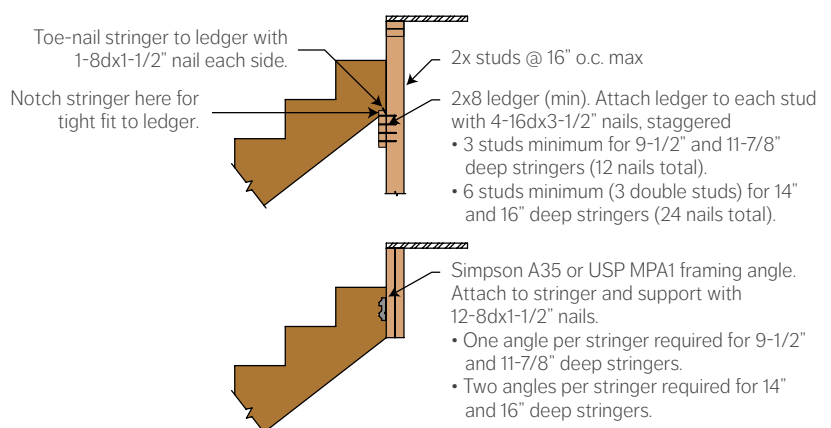
## CONNECTION DETAILS 40 PSF live load & 12 PSF dead load (for higher loading, consult design professional)

### Low End



NOTE: Only use fasteners approved for use with the corresponding wood treatment.

### High End





3660 Gateway St, Springfield, OR 97477  
800.245.1115 | [roseburg.com](http://roseburg.com)

ROS LVL STAIR STRINGERS 12292020