Laminated Veneer Lumber Roof Headers

Note: Flexural stresses are based on 2,800 psi. Refer to the manufacturer's engineered specifications for LVLs having fiber stresses other than 2,800 psi.

Number of 1¾-inch LVLs Single Story Trussed Roof Applications

Live Load = 25 psf Dead Load = 15 psf

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Truss Span	LVL Size	8	9	10	11	12	13	14	15	16	17	18
18	9.25	1	1	1	1	2	2	2	3	3	4	4
	9.5	1	1	1	1	2	2	2	2	3	4	4
	11.25	1	1	1	1	1	1	1	1	2	2	2
	11.875	1	1	1	1	1	1	1	1	2	2	2
	14.0	1	1	1	1	1	1	1	1	1	1	2
20	9.25	1	1	1	2	2	2	2	3	3	4	4
	9.5	1	1	1	1	2	2	2	2	3	3	4
	11.25	1	1	1	1	1	2	2	2	2	2	3
	11.875	1	1	1	1	1	1	2	2	2	2	3
	14.0	1	1	1	1	1	1	1	1	2	2	2
22	9.25	1	1	1	2	2	2	3	3	4	4	5
	9.5	1	1	1	2	2	2	2	3	3	4	4
	11.25	1	1	1	1	1	2	2	2	2	3	3
	11.875	1	1	1	1	1	1	2	2	2	2	3
	14.0	1	1	1	1	1	1	1	1	2	2	2
24	9.25	1	1	1	2	2	2	3	3	3	4	5
	9.5	1	1	1	2	2	2	2	3	3	4	5
	11.25	1	1	1	1	2	2	2	2	2	3	3
	11.875	1	1	1	1	1	2	2	2	2	2	3
	14.0	1	1	1	1	1	1	1	2	2	2	2
26	9.25	1	1	2	2	2	2	3	3	4	5	5
	9.5	1	1	2	2	2	2	3	3	4	4	5
	11.25	1	1	1	1	2	2	2	2	2	3	3
	11.875	1	1	1	1	2	2	2	2	2	3	3
	14.0	1	1	1	1	1	1	1	2	2	2	2
28	9.25	1	1	2	2	2	2	3	3	4	5	6
	9.5	1	1	1	2	2	2	3	3	4	5	6
	11.25	1	1	1	1	2	2	2	2	3	3	3
	11.875	1	1	1	1	2	2	2	2	2	3	3
	14.0	1	1	1	1	1	1	2	2	2	2	2
30	9.25	1	1	2	2	2	3	3	3	4	5	6
	9.5	1	1	2	2	2	2	3	3	4	5	5
	11.25	1	1	1	2	2	2	2	2	3	3	3
	11.875	1	1	1	2	2	2	2	2	3	3	3
	14.0	1	1	1	1	1	1	2	2	2	2	2
32	9.25	1	2	2	2	2	3	3	4	5	6	7
	9.5	1	2	2	2	2	3	3	4	4	5	6
	11.25	1	1	1	2	2	2	2	3	3	3	4
	11.875	1	1	1	1	2	2	2	2	3	3	3
	14.0	1	1	1	1	1	2	2	2	2	2	2
34	9.25	1	2	2	2	2	3	4	4	5	6	7
	9.5	1	1	2	2	2	3	3	4	5	6	6
	11.25	1	1	1	2	2	2	2	3	3	4	4
	11.875	1	1	1	2	2	2	2	2	3	3	4
	14.0	1	1	1	1	1	1	2	2	2	2	2
36	9.25	1	2	2	2	3	3	4	4	5	6	7
	9.5	1	2	2	2	2	3	3	4	5	6	7
	11.25	1	1	2	2	2	2	2	3	3	4	4
	11.875	1	1	1	2	2	2	2	3	3	3	4
	14.0	1	1	1	1	1	2	2	2	2	2	3

Footnotes:

1. Based on a 25 psf live load due to snow on a roof having a slope greater than 3:12, and a dead load of 15 psf.
2. Roof loads include a 2'0" overhang.
3. Deflection is based on the length in inches divided by 240 for the total load and the length in inches divided by 180 for live load only.
4. Stresses in bending are adjusted for snow load duration factor of 15 percent and depth factor.
5. Modulus of Elasticity - E = 2,000,000 psi; Flextural Stress in bending - F_b = 2,800; Horizontal shear - F_v = 285.
6. All calculations are based on simple span applications.

7. For depths (d) less than 12", F_b is multiplied by $(12/d)^{1/9}$, for depths (d) greater than 12", F_b is multiplied by $(12/d)^{1/6}$

Overhead Garage Door Header Schedule

Live Load = 25 psf Dead Load = 10 psf

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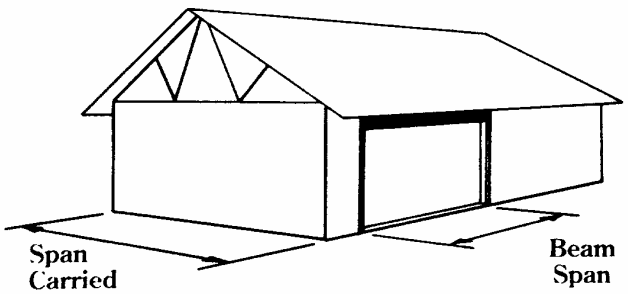
Number of Members Per Grade and Species/Solid Sawn Lumber for Single-Story Applications

9-Foot Spans										
RoofSpan	Header Size	Hem Fire Select Structural	Hem Fir #1 and Better	Hem Fir #1	Hem Fir #2	Spruce Pine Fir Select Structural	Spruce Pine Fir#1/#2	Douglas Fir Larch Select Structural	Douglas Fir Larch #1	Douglas Fir Larch #2
18'	2x8s	2	3	3	4	2	4	2	3	4
	2x10s	2	2	2	3	2	3	2	2	3
	2x12s	2	2	2	2	2	2	2	2	2
20'	2x8s	3	3	4	4	3	4	3	3	4
	2x10s	2	2	3	3	2	3	2	2	3
	2x12s	2	2	2	2	2	2	2	2	2
22'	2x8s	3	4	4	4	3	4	3	4	4
	2x10s	2	3	3	3	2	3	2	3	3
	2x12s	2	2	2	2	2	2	2	2	2
24'	2x8s	3	4	4	5	3	4	3	4	4
	2x10s	2	3	3	3	2	3	2	3	3
	2x12s	2	2	2	3	2	2	2	2	2
26'	2x8s	3	4	4	5	3	5	3	4	5
	2x10s	2	3	3	3	2	3	2	3	3
	2x12s	2	2	2	3	2	3	2	2	3
28'	2x8s	3	4	4	5	4	5	3	4	5
	2x10s	2	3	3	4	3	3	2	3	4
	2x12s	2	2	3	3	2	3	2	2	3
30'	2x8s	4	5	5	5	4	5	3	5	5
	2x10s	3	3	3	4	3	4	2	3	4
	2x12s	2	2	3	3	2	3	2	3	3
32'	2x8s	4	5	5	6	4	6	4	5	6
	2x10s	3	3	4	4	3	4	3	3	4
	2x12s	2	3	3	3	2	3	2	3	3

16-Foot Spans										
Roof Span	Header Size	Hem Fire Select Structural	Hem Fir #1 and Better	Hem Fir #1	Hem Fir #2	Spruce Pine Fir Select Structural	Spruce Pine Fir #1/#2	Douglas Fir Larch Select Structural	Douglas Fir L:arch #1	Douglas Fir L Arch #2
18'	2x12s	3	4	5	5	4	5	3	5	5
20'	2x12s	4	5	5	6	4	6	4	5	6
22'	2x12s	4	5	6	6	4	6	4	5	6
24'	2x12s	4	6	6	7	5	7	4	6	7



Design Criteria: Based on a 25 psf live load due to snow and a 10 psf dead load on a roof having a slope greater than 3:12. Roof loads include a 2'0" overhang. Deflection is based on the span in inches divided by 240. Stresses in bending are adjusted for a snow load duration factor of 15 percent and a size

adjustment factor per Table 23-I-A-1 of the 1994 Uniform Building Code. Minimum bearing length is three inches at each end.