

Murphy

**LVL
Technical
Product
Guide**

2.0 E-LVL

1.9 E-LVL

1.8 E-LVL

1.5 E-LVL





Murphy

Engineered Wood Division

Murphy LVL

Providing the superior performance and durability of engineered wood, Murphy LVL is perfectly suited to spans bearing heavy loads and multi-span applications. The normal problems associated with increased lumber sizes – like decreased dimensional stability and uniformity – do not apply to Murphy LVL, which utilizes ultrasonically tested and graded Douglas Fir veneer with evenly dispersed natural defects.

Engineered for Quality

Checking is minimized because Murphy LVL is cured in a controlled process in which waterproof adhesives boost stability and reduce warps and twists. All products are machine-ripped to generate uniform size and rigid, flat surfaces with inherently superior nail-holding characteristics.

Tested for strength, engineered for quality, Murphy LVL represents our ongoing commitment to unsurpassed performance and service.



General notes for this product guide:

1. All tables assume dry conditions. Calculations are based on 2005 NDS and 2006 IBC.
2. Lateral support of the compression edge of all beams must be provided at 24" on center.
3. Application tables include live load reductions applied in accordance with 2006 IBC.
4. Tables apply to Dead, Floor Live, Roof Live and Snow loads. Lateral loads must be considered by the building designer.
5. This design manual is intended to be used for preliminary design purposes; a complete structural analysis should be performed by a design professional.
6. Beams that are 1³/₄" x 16" and deeper require multiple plies.

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2.0E LVL Design Properties



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Allowable Design Properties – 1 3/4" "

Depth	Max. Vertical Shear (lbs)			Max. Bending Moment (ft-lbs)			EI (x 10 ⁶ lbs-in ²)	Weight (plf)
	100%	115%	125%	100%	115%	125%		
5 1/2	1861	2140	2326	2623	3016	3279	49	2.8
7 1/4	2453	2821	3066	4336	4987	5421	111	3.7
9 1/4	3130	3599	3912	6756	7770	8445	231	4.7
9 1/2	3214	3696	4018	7092	8156	8865	250	4.8
11 1/4	3806	4377	4758	9648	11095	12059	415	5.7
11 7/8	4018	4620	5022	10645	12242	13306	488	6.1
14	4737	5447	5921	14364	16519	17955	800	7.1
16	5413	6225	6767	18315	21063	22894	1195	8.2
18	6090	7004	7613	22694	26098	28368	1701	9.2

Allowable Design Properties – 3 1/2" "

Depth	Max. Vertical Shear (lbs)			Max. Bending Moment (ft-lbs)			EI (x 10 ⁶ lbs-in ²)	Weight (plf)
	100%	115%	125%	100%	115%	125%		
5 1/2	3722	4280	4652	5246	6033	6557	97	5.6
7 1/4	4906	5642	6132	8673	9974	10841	222	7.4
9 1/4	6259	7198	7824	13512	15539	16890	462	9.4
9 1/2	6428	7393	8035	14184	16312	17730	500	9.7
11 1/4	7613	8754	9516	19295	22189	24119	831	11.5
11 7/8	8035	9241	10044	21290	24484	26613	977	12.1
14	9473	10894	11842	28728	33037	35910	1601	14.3
16	10827	12451	13533	36631	42126	45789	2389	16.3
18	12180	14007	15225	45388	52197	56736	3402	18.4

2.0E LVL Allowable Design Stresses

Bending $F_b = 3100 \text{ psi}^*$

Horizontal Shear $F_v = 290 \text{ psi}$

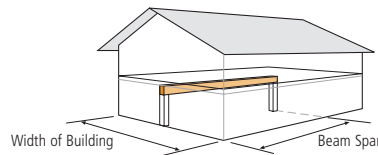
Modulus of Elasticity $E = 2.0 \times 10^6$

Compression Perpendicular to Grain $F_c = 750 \text{ psi}$

Compression Parallel to Grain $f_c = 3200 \text{ psi}$

*Adjust F_b value by a factor of $(12/d)^{0.18}$ where $d = \text{depth}$.

2.0E LVL Floor Beams



Application Table – 2.0E Floor Beams - 1 3/4" Width

Width of Building	Beam Span									
	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'
24'	2 - 11 1/4	2 - 11 1/4	2 - 11 7/8	2 - 14	2 - 14	2 - 16	2 - 16	2 - 16	2 - 18	2 - 18
	3 - 9 1/4	3 - 9 1/2	3 - 11 1/4	3 - 11 1/4	3 - 11 7/8	3 - 14	3 - 14	3 - 14	3 - 16	3 - 16
28'	2 - 11 1/4	2 - 11 1/4	2 - 14	2 - 14	2 - 14	2 - 16	2 - 16	2 - 18	2 - 18*	2 - 18*
	3 - 9 1/4	3 - 11 1/4	3 - 11 1/4	3 - 11 7/8	3 - 14	3 - 14	3 - 14	3 - 16	3 - 16	3 - 16
32'	2 - 11 1/4	2 - 11 7/8	2 - 14	2 - 14	2 - 16	2 - 16*	2 - 16*	2 - 18*	2 - 18*	3 - 18
	3 - 9 1/2	3 - 11 1/4	3 - 11 1/4	3 - 11 7/8	3 - 14	3 - 14	3 - 14	3 - 16	3 - 16	4 - 16
36'	2 - 11 1/4	2 - 14	2 - 14	2 - 14	2 - 16*	2 - 16*	2 - 18*	2 - 18*	3 - 16	3 - 18
	3 - 11 1/4	3 - 11 1/4	3 - 11 7/8	3 - 14	3 - 14	3 - 14	3 - 16	3 - 16	4 - 16	4 - 16
40'	2 - 11 7/8	2 - 14	2 - 14*	2 - 16*	2 - 16*	2 - 18*	2 - 18*	3 - 16	3 - 18	3 - 18
	3 - 11 1/4	3 - 11 1/4	3 - 11 7/8	3 - 14	3 - 14	3 - 14	3 - 16	4 - 14	4 - 16	4 - 16

Notes

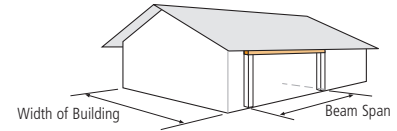
- Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
- Span is based on the more restrictive of simple continuous beam span. Ratio of short span to long span should be greater than 0.4.
- Beam must be centered in building if floor joists are continuous over the top. Beam may be located off-center and "width of building" may be taken as 80% of the actual width if joists hang from beam and are simple span.
- Max beam deflection = $L/360 \text{ LL } L/240 \text{ TL}$
- 40 psf floor LL, 12 psf floor DL
- Min. 3" bearing each end, 7 1/2" interior bearing length (*indicates 4 1/2" end bearing and/or 11 1/4" interior bearing length).

2.0E LVL Garage Door Headers



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These tables provide two selections for supporting roof loads over standard garage door openings in various conditions.



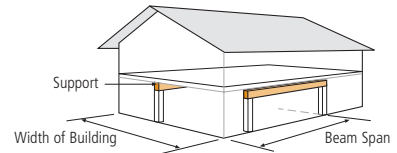
1-Story Application Table - 2.0E Garage Door Headers - 1 3/4" Width

Width of Building	Snow 115%									Non-Snow 125%								
	25 psf LL + 20 psf DL			30 psf LL + 20 psf DL			40 psf LL + 20 psf DL			20 psf LL + 15 psf DL			20 psf LL + 20 psf DL			20 psf LL + 25 psf DL		
	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"
20'	2-7 1/4	2-11 7/8	2-14	2-7 1/4	2-11 7/8	2-14	2-7 1/4	2-14	2-14	2-7 1/4	2-11 1/4	2-11 7/8	2-7 1/4	2-11 1/4	2-14	2-7 1/4	2-11 7/8	2-14
	-	3-11 1/4	3-11 1/4	-	3-11 1/4	3-11 7/8	-	3-11 1/4	-	3-5 1/2	3-9 1/4	3-11 1/4	3-5 1/2	3-9 1/2	3-11 1/4	-	3-11 1/4	3-11 1/4
24'	2-7 1/4	2-11 7/8	2-14	2-7 1/4	2-14	2-14	2-9 1/4	2-14	2-16*	2-7 1/4	2-11 1/4	2-14	2-7 1/4	2-11 7/8	2-14	2-7 1/4	2-11 7/8	2-14
	-	3-11 1/4	3-11 7/8	-	3-11 1/4	-	3-7 1/4	3-11 7/8	3-14	3-5 1/2	-	3-11 1/4	-	3-11 1/4	3-11 1/4	-	3-11 1/4	3-11 7/8
28'	2-7 1/4	2-14	2-14	2-9 1/4	2-14	2-16	2-9 1/4	2-16*	2-16*	2-7 1/4	2-11 7/8	2-14	2-7 1/4	2-14	2-14	2-7 1/4	2-14	2-14
	-	3-11 1/4	-	3-7 1/4	3-11 1/4	3-14	3-7 1/4	3-14	3-14	-	3-11 1/4	3-11 1/4	-	3-11 1/4	3-11 7/8	-	3-11 1/4	-
32'	2-9 1/4	2-14	2-16	2-9 1/4	2-14	2-16*	2-9 1/4	2-16*	2-18*	2-7 1/4	2-11 7/8	2-14	2-7 1/4	2-14	2-14	2-9 1/4	2-14	2-16
	3-7 1/4	3-11 7/8	3-14	3-7 1/4	3-11 7/8	3-14	3-7 1/4	3-14	3-14	-	3-11 1/4	3-11 7/8	-	3-11 1/4	-	3-7 1/4	3-11 7/8	3-14
36'	2-9 1/4	2-14	2-16*	2-9 1/4	2-16*	2-18*	2-9 1/4	2-16*	2-18*	2-7 1/4	2-14	2-14	2-9 1/4	2-14	2-16	2-9 1/4	2-14	2-16*
	3-7 1/4	3-11 7/8	3-14	3-7 1/4	3-14	3-14	-	3-14	3-16	-	3-11 1/4	-	3-7 1/4	3-11 1/4	3-14	3-7 1/4	3-11 7/8	3-14

Notes:

1. Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
2. Assumes simple span measured from the inside face of bearing. Assumed bearing length is 3" each end (* indicates 4 1/2" end bearing).
3. Roof truss framing with 24" soffits.
4. Maximum beam deflection = L/240 LL, L/180 TL.

Accounting for a second-story floor and wall, these tables provide two selections for supporting roof loads over standard garage door openings in various conditions.



2-Story Application Table - 2.0E Garage Door Headers - 1 3/4" Width

Width of Building	Snow 115%									Non-Snow 125%								
	25 psf LL + 20 psf DL			30 psf LL + 20 psf DL			40 psf LL + 20 psf DL			20 psf LL + 15 psf DL			20 psf LL + 20 psf DL			20 psf LL + 25 psf DL		
	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"
20'	2-9 1/4	2-16	2-18*	2-9 1/4	2-16*	2-18*	2-9 1/4	2-16*	2-18*	2-9 1/4	2-14	2-16	2-9 1/4	2-16	2-16	2-9 1/4	2-16	2-18*
	-	3-14	3-16	-	3-14	3-16	-	3-14	3-16	3-7 1/4	-	3-14	3-7 1/4	3-14	3-14	-	3-14	3-16
24'	2-9 1/4	2-16*	2-18*	2-9 1/4	2-16*	2-18*	2-9 1/2	2-18*	3-16	2-9 1/4	2-16	2-18*	2-9 1/4	2-16*	2-18*	2-9 1/4	2-16*	2-18*
	-	3-14	3-16	-	3-14	3-16	3-9 1/4	3-16	-	-	3-14	3-16	-	3-14	3-16	-	3-14	3-16
28'	2-9 1/4	2-16*	2-18*	2-9 1/2	2-18*	3-18	2-11 1/4	2-18*	3-18*	2-9 1/4	2-16*	2-18*	2-9 1/4	2-16*	2-18*	2-9 1/4	2-16*	2-18*
	-	3-14	3-16	3-9 1/4	3-16	-	3-9 1/4	3-16	-	-	3-14	3-16	-	3-14	3-16	-	3-14	3-16
32'	2-11 1/4	2-18*	3-18*	2-11 1/4	2-18*	3-18*	2-11 1/4	3-16*	3-18*	2-9 1/4	2-16*	2-18*	2-9 1/2	2-18*	3-16	2-11 1/4	2-18*	3-18*
	3-9 1/4	3-16	-	3-9 1/4	3-16	-	3-9 1/4	-	-	-	3-14	3-16	3-9 1/4	3-16	-	3-9 1/4	3-16	-
36'	2-11 1/4	2-18*	3-18*	2-11 1/4	3-16*	3-18*	2-11 1/4*	3-16*	3-18*	2-9 1/2	2-18*	3-18	2-11 1/4	2-18*	3-18*	2-11 1/4	2-18*	3-18*
	3-9 1/4	3-16*	-	3-9 1/4	-	-	3-9 1/4	-	-	-	3-16	-	3-9 1/4	3-16	-	3-9 1/4	3-16*	-

Notes:

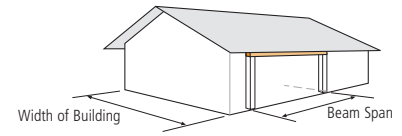
1. Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
2. Assumes simple span measured from the inside face of bearing. Assumed bearing length is 3" each end (* indicates 4 1/2" end bearing).
3. Roof truss framing with 24" soffits.
4. Floor beam is located at the centerline of the building; 40 psf floor LL, 12 psf floor DL.
5. Exterior wall weight of 80 plf.
6. Max beam defl = L/360 LL, L/240 TL.

2.0E LVL Window & Door Headers



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These tables provide two selections for supporting roof loads over rough openings in various conditions.



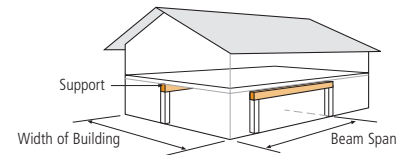
1-Story Application Table - 2.0E Window & Door Headers - 1 3/4" Width

Width of Building	Snow 115%										Non-Snow 125%									
	25 psf LL + 20 psf DL					40 psf LL + 20 psf DL					20 psf LL + 15 psf DL					20 psf LL + 25 psf DL				
	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'
20'	2-5 1/2	2-7 1/4	2-7 1/4	2-7 1/4	2-9 1/4	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-5 1/2	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-5 1/2	2-7 1/4	2-7 1/4	2-7 1/4	2-9 1/4
	-	3-5 1/2	-	-	-	-	3-5 1/2	-	3-7 1/4	-	-	-	3-5 1/2	-	3-7 1/4	-	3-5 1/2	-	-	-
24'	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-5 1/2	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-9 1/4
	-	3-5 1/2	-	3-7 1/4	-	-	-	-	3-7 1/4	3-9 1/4	-	-	3-5 1/2	-	3-7 1/4	-	3-5 1/2	-	3-7 1/4	-
28'	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-5 1/2	2-7 1/4	2-7 1/4	2-7 1/4	2-9 1/4	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-9 1/4
	-	3-5 1/2	-	3-7 1/4	-	-	-	-	3-7 1/4	-	-	3-9 1/4	-	-	-	-	3-5 1/2	-	3-7 1/4	-
32'	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-11 1/4	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-11 1/4
	-	-	-	3-7 1/4	3-9 1/4	-	-	-	3-7 1/4	-	-	3-5 1/2	-	3-7 1/4	-	-	-	-	3-7 1/4	3-9 1/4
36'	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-9 1/2	2-11 7/8	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4
	-	-	3-7 1/4	3-7 1/4	3-9 1/4	3-5 1/2	3-7 1/4	3-7 1/4	3-9 1/4	3-11 1/4	-	3-5 1/2	-	3-7 1/4	-	-	-	-	3-7 1/4	3-9 1/4

Notes:

1. Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
2. Assumes simple span measured from the inside face of bearing. Assumed bearing length is 3" each end (* indicates 4 1/2" end bearing).
3. Roof truss framing with 24" soffits.
4. Maximum beam deflection = L/240 LL, L/180 TL.

Accounting for a second-story floor and wall, these tables provide two selections for supporting roof loads over rough openings in various conditions.



2-Story Application Table - 2.0E LVL Window & Door Headers - 1 3/4" Width

Width of Building	Snow 115%										Non-Snow 125%									
	25 psf LL + 20 psf DL					40 psf LL + 20 psf DL					20 psf LL + 15 psf DL					20 psf LL + 25 psf DL				
	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'
20'	2-7 1/4	2-9 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-11 7/8	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-9 1/4	2-11 1/4
	3-5 1/2	3-7 1/4	3-7 1/4	-	3-9 1/2	3-5 1/2	3-7 1/4	-	3-9 1/4	3-11 1/4	-	-	3-7 1/4	-	3-9 1/4	3-5 1/2	3-7 1/4	3-7 1/4	-	3-9 1/2
24'	2-7 1/4	2-9 1/4	2-9 1/4	2-9 1/2	2-11 7/8	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-14	2-7 1/4	2-9 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-9 1/2	2-11 7/8
	3-5 1/2	3-7 1/4	-	3-9 1/4	3-11 1/4	3-5 1/2	3-7 1/4	-	3-9 1/4	3-11 1/4	3-5 1/2	3-7 1/4	3-7 1/4	-	3-9 1/2	3-5 1/2	3-7 1/4	3-7 1/4	-	3-9 1/4
28'	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-11 7/8	2-7 1/4	2-9 1/4	2-11 1/4	2-11 1/4	2-14*	2-7 1/4	2-9 1/4	2-9 1/4	2-9 1/2	2-11 7/8	2-7 1/4	2-9 1/4	2-9 1/4	2-9 1/2	2-11 7/8
	3-5 1/2	3-7 1/4	-	3-9 1/4	3-11 1/4	-	-	3-9 1/4	3-9 1/4	3-11 1/4	3-5 1/2	3-7 1/4	-	3-9 1/4	3-11 1/4	3-5 1/2	3-7 1/4	-	3-9 1/4	3-11 1/4
32'	2-7 1/4	2-9 1/4	2-9 1/2	2-11 1/4	2-14*	2-7 1/4	2-9 1/4	2-11 1/4	2-11 1/4*	2-14*	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-11 7/8	2-7 1/4	2-9 1/4	2-9 1/2	2-11 1/4	2-14*
	3-5 1/2	3-7 1/4	3-9 1/4	3-9 1/4	3-11 1/4	-	-	3-9 1/4	-	3-11 7/8	3-5 1/2	3-7 1/4	-	3-9 1/4	3-11 1/4	3-5 1/2	3-7 1/4	3-9 1/4	3-9 1/4	3-11 1/4
36'	2-7 1/4	2-9 1/4	2-11 1/4	2-11 1/4	2-14*	2-7 1/4	2-9 1/4	2-11 1/4*	2-11 7/8*	2-16*	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-14	2-7 1/4	2-9 1/4	2-11 1/4	2-11 1/4	2-14*
	-	-	3-9 1/4	3-9 1/2	3-11 1/4	-	-	3-9 1/4	3-11 1/4	3-11 7/8	3-5 1/2	3-7 1/4	-	3-9 1/4	3-11 1/4	-	-	3-9 1/4	3-9 1/2	3-11 1/4

Notes:

1. Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
2. Assumes simple span measured from the inside face of bearing. Assumed bearing length is 3" each end (* indicates 4 1/2" end bearing).
3. Roof truss framing with 24" soffits.
4. Floor beam is located at the centerline of the building; 40 psf floor LL, 12 psf floor DL.
5. Exterior wall weight of 80 plf.
6. Max beam defl = L/360 LL, L/240 TL.

2.0E LVL Allowable Uniform Loads - Floor 100% 1³/₄"



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Allowable Uniform Loads - 2.0E - Floor 100% - 1³/₄" Width

Span (ft)	7 ¹ / ₄ "			9 ¹ / ₄ "			9 ¹ / ₂ "			11 ¹ / ₄ "		
	Live Load		Total Load L/240	Live Load		Total Load L/240	Live Load		Total Load L/240	Live Load		Total Load L/240
	L/480	L/360		L/480	L/360		L/480	L/360		L/480	L/360	
6'	568	759	776	1046	1046	1046	1082	1082	1082	1348	1348	1348
8'	238	318	479	496	663	735	538	719	759	895	931	931
9'	166	222	335	347	464	640	376	503	660	627	806	806
10'	120	161	243	252	337	508	273	366	551	456	609	711
11'	89	120	182	188	252	381	204	273	413	341	456	632
12'	68	92	139	144	193	292	156	210	317	261	350	528
13'	53	71	109	112	151	229	122	164	248	204	274	414
14'	41	56	86	89	120	182	96	130	198	162	218	331
15'	-	45	69	71	97	147	77	105	160	131	177	268
16'	-	-	-	58	79	121	63	86	131	107	144	220
18'	-	-	-	-	54	83	43	59	90	73	100	152
20'	-	-	-	-	-	-	-	41	65	52	71	110
22'	-	-	-	-	-	-	-	-	-	-	52	81
24'	-	-	-	-	-	-	-	-	-	-	-	-
26'	-	-	-	-	-	-	-	-	-	-	-	-
28'	-	-	-	-	-	-	-	-	-	-	-	-
30'	-	-	-	-	-	-	-	-	-	-	-	-
32'	-	-	-	-	-	-	-	-	-	-	-	-
34'	-	-	-	-	-	-	-	-	-	-	-	-

Span (ft)	11 ⁷ / ₈ "			14"			16"			18"		
	Live Load		Total Load L/240	Live Load		Total Load L/240	Live Load		Total Load L/240	Live Load		Total Load L/240
	L/480	L/360		L/480	L/360		L/480	L/360		L/480	L/360	
6'	1449	1449	1449	1826	1826	1826	2232	2232	2232	2697	2697	2697
8'	996	996	996	1229	1229	1229	1468	1468	1468	1731	1731	1731
9'	738	861	861	1055	1055	1055	1253	1253	1253	1467	1467	1467
10'	537	718	758	882	925	925	1093	1093	1093	1273	1273	1273
11'	402	538	677	661	823	823	969	969	969	1124	1124	1124
12'	308	413	585	507	679	741	760	870	870	1006	1006	1006
13'	241	323	488	398	533	673	596	789	789	851	910	910
14'	192	258	389	317	425	579	476	637	722	680	831	831
15'	155	208	316	256	344	504	385	516	643	551	737	764
16'	126	171	259	210	282	427	316	424	564	452	606	700
18'	87	118	180	145	196	298	219	295	444	315	423	551
20'	62	84	130	104	141	215	158	213	324	227	306	445
22'	45	62	96	76	104	160	116	158	241	168	227	346
24'	-	46	72	57	79	122	88	120	184	128	173	264
26'	-	-	-	43	60	94	67	93	143	98	134	206
28'	-	-	-	-	47	74	52	72	113	77	106	163
30'	-	-	-	-	-	-	41	57	90	61	84	131
32'	-	-	-	-	-	-	-	46	73	48	68	106
34'	-	-	-	-	-	-	-	-	-	-	55	87

Notes:

1. Table is based on uniform loads; member weight has been considered.
2. Assumes the more restrictive of simple or continuous span.
3. Spans are measured from center to center of bearing.
4. Table is based on 1³/₄" width. Values may be multiplied by 2 for 3¹/₂" width, 3 for 5¹/₄", and 4 for 7".

2.0E LVL Allowable Uniform Loads - Roof 100% 1 3/4"



Murphy

Allowable Uniform Loads - 2.0E - Roof 100% - 1 3/4" Width

Span (ft)	7 1/4"				9 1/4"				9 1/2"				11 1/4"			
	Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%	
	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total
	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180
6'	893	893	971	971	1203	1203	1308	1308	1245	1245	1353	1353	1551	1551	1686	1686
8'	479	620	479	640	846	846	920	920	873	873	950	950	1072	1072	1165	1165
9'	335	448	335	448	699	737	699	801	757	760	757	826	928	928	1009	1009
10'	243	326	243	326	508	617	508	671	551	648	551	704	818	818	890	890
11'	182	244	182	244	381	509	381	509	413	534	413	552	688	728	688	792
12'	139	187	139	187	292	391	292	391	317	424	317	424	528	611	528	664
13'	109	146	109	146	229	307	229	307	248	332	248	332	414	519	414	554
14'	86	116	86	116	182	245	182	245	198	265	198	265	331	443	331	443
15'	69	94	69	94	147	198	147	198	160	215	160	215	268	359	268	359
16'	57	77	57	77	121	162	121	162	131	176	131	176	220	295	220	295
18'	-	-	-	-	83	113	83	113	90	122	90	122	152	205	152	205
20'	-	-	-	-	59	81	59	81	65	88	65	88	110	148	110	148
22'	-	-	-	-	43	60	43	60	47	65	47	65	81	110	81	110
24'	-	-	-	-	-	-	-	-	-	-	-	-	61	83	61	83
26'	-	-	-	-	-	-	-	-	-	-	-	-	47	64	47	64
28'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Span (ft)	11 7/8"				14"				16"				18"				
	Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%		
	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	
	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	
6'	1668	1668	1813	1813	2101	2101	2285	2285	2568	2568	2792	2792	3103	3103	3374	3374	
8'	1146	1146	1246	1246	1414	1414	1537	1537	1690	1690	1837	1837	1992	1992	2166	2166	
9'	991	991	1077	1077	1215	1215	1321	1321	1442	1442	1569	1569	1689	1689	1836	1836	
10'	872	872	949	949	1064	1064	1158	1158	1258	1258	1368	1368	1465	1465	1593	1593	
11'	779	779	809	847	947	947	1030	1030	1115	1115	1213	1213	1294	1294	1407	1407	
12'	622	674	622	733	853	853	928	928	1001	1001	1089	1089	1158	1158	1260	1260	
13'	488	573	488	624	775	775	802	843	908	908	988	988	1048	1048	1140	1140	
14'	389	494	389	521	641	667	641	726	831	831	904	904	957	957	1041	1041	
15'	316	423	316	423	520	580	520	631	741	741	778	806	880	880	957	957	
16'	259	347	259	347	427	509	427	554	640	650	640	707	806	806	877	877	
18'	180	242	180	242	298	399	298	399	447	512	447	557	635	635	639	691	
20'	130	175	130	175	215	289	215	289	324	413	324	434	463	513	463	558	
22'	96	130	96	130	160	216	160	216	241	324	241	324	346	422	346	460	
24'	72	99	72	99	122	164	122	164	184	248	184	248	264	353	264	355	
26'	56	76	56	76	94	128	94	128	143	193	143	193	206	278	206	278	
28'	43	60	43	60	74	101	74	101	113	153	113	153	163	220	163	220	
30'	-	-	-	-	59	81	59	81	90	123	90	123	131	177	131	177	
32'	-	-	-	-	47	65	47	65	73	100	73	100	106	145	106	145	
34'	-	-	-	-	-	-	-	-	53	59	82	59	82	87	119	87	119

Notes:

1. Table is based on uniform loads; member weight has been considered.
2. Assumes the more restrictive of simple or continuous span.
3. Spans are measured from center to center of bearing.
4. Table is based on 1 3/4" width. Values may be multiplied by 2 for 3 1/2" width, 3 for 5 1/4", and 4 for 7".

1.9E LVL Design Properties



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Allowable Design Properties – 1 3/4" "

Depth	Max. Vertical Shear (lbs)			Max. Bending Moment (ft-lbs)			EI (x 10 ⁶ lbs-in ²)	Weight (plf)
	100%	115%	125%	100%	115%	125%		
5 1/2	1829	2103	2286	2411	2773	3014	46	2.8
7 1/4	2411	2772	3013	3987	4585	4983	106	3.7
9 1/4	3076	3537	3845	6211	7143	7764	219	4.7
9 1/2	3159	3633	3948	6520	7498	8150	238	4.8
11 1/4	3741	4302	4676	8870	10200	11087	395	5.7
11 7/8	3948	4541	4936	9787	11255	12233	464	6.1
14	4655	5353	5819	13206	15186	16507	760	7.1
16	5320	6118	6650	16838	19364	21048	1135	8.2
18	5985	6883	7481	20864	23994	26080	1616	9.2

Allowable Design Properties – 3 1/2" "

Depth	Max. Vertical Shear (lbs)			Max. Bending Moment (ft-lbs)			EI (x 10 ⁶ lbs-in ²)	Weight (plf)
	100%	115%	125%	100%	115%	125%		
5 1/2	3658	4206	4572	4823	5546	6028	92	5.6
7 1/4	4821	5544	6027	7973	9170	9967	211	7.4
9 1/4	6151	7074	7689	12423	14286	15528	439	9.4
9 1/2	6318	7265	7897	13040	14996	16300	475	9.7
11 1/4	7481	8603	9352	17739	20400	22174	789	11.5
11 7/8	7897	9081	9871	19573	22509	24467	928	12.1
14	9310	10707	11638	26411	30373	33014	1521	14.3
16	10640	12236	13300	33677	38728	42096	2270	16.3
18	11970	13766	14963	41728	47987	52160	3232	18.4

2.0E LVL Allowable Design Stresses

Bending $F_b = 2850 \text{ psi}^*$

Horizontal Shear $F_v = 285 \text{ psi}$

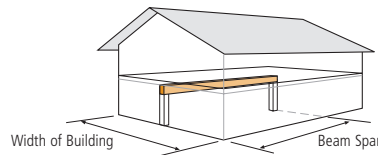
Modulus of Elasticity $E = 1.9 \times 10^6$

Compression Perpendicular to Grain $F_c = 750 \text{ psi}$

Compression Parallel to Grain $f_c = 2350 \text{ psi}$

*Adjust F_b value by a factor of $(12/d)^{0.18}$ where $d = \text{depth}$.

1.9E LVL Floor Beams



Application Table – 2.0E Floor Beams - 1 3/4" Width

Width of Building	Beam Span									
	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'
24'	2 - 11 1/4	2 - 11 1/4	2 - 11 7/8	2 - 14	2 - 14	2 - 16	2 - 16	2 - 18	2 - 18	2 - 18
	3 - 9 1/4	3 - 9 1/2	3 - 11 1/4	3 - 11 1/4	3 - 11 7/8	3 - 14	3 - 14	3 - 16	3 - 16	3 - 16
28'	2 - 11 1/4	2 - 11 7/8	2 - 14	2 - 14	2 - 16	2 - 16	2 - 16	2 - 18	2 - 18*	3 - 16
	3 - 9 1/4	3 - 11 1/4	3 - 11 1/4	3 - 11 7/8	3 - 14	3 - 14	3 - 14	3 - 16	3 - 16	-
32'	2 - 11 1/4	2 - 14	2 - 14	2 - 14	2 - 16	2 - 16*	2 - 18*	2 - 18*	3 - 16	3 - 18
	-	3 - 11 1/4	3 - 11 1/4	-	3 - 14	3 - 14	3 - 16	3 - 16	-	4 - 16
36'	2 - 11 7/8	2 - 14	2 - 14	2 - 16	2 - 16*	2 - 18*	2 - 18*	3 - 16	3 - 18	3 - 18
	3 - 11 1/4	3 - 11 1/4	3 - 11 7/8	3 - 14	3 - 14	3 - 14	3 - 16	4 - 14	4 - 16	4 - 16
40'	2 - 11 7/8	2 - 14	2 - 14*	2 - 16*	2 - 16*	2 - 18*	2 - 18*	3 - 16	3 - 18	3 - 18
	3 - 11 1/4	3 - 11 1/4	3 - 11 7/8	3 - 14	3 - 14	3 - 16	3 - 16	-	4 - 16	4 - 16

Notes

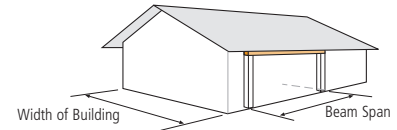
- Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
- Span is based on the more restrictive of simple continuous beam span. Ratio of short span to long span should be greater than 0.4.
- Beam must be centered in building if floor joists are continuous over the top. Beam may be located off-center and "width of building" may be taken as 80% of the actual width if joists hang from beam and are simple span.
- Max beam deflection = $L/360 \text{ LL } L/240 \text{ TL}$
- 40 psf floor LL, 12 psf floor DL
- Min. 3" bearing each end, 7 1/2" interior bearing length (*indicates 4 1/2" end bearing and/or 11 1/4" interior bearing length).

1.9E LVL Garage Door Headers



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These tables provide two selections for supporting roof loads over standard garage door openings in various conditions.



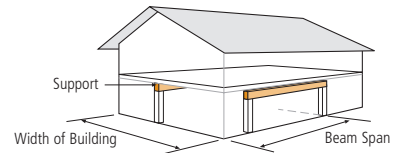
1-Story Application Table - 1.9E Garage Door Headers - 1 3/4" Width

Width of Building	Snow 115%									Non-Snow 125%								
	25 psf LL + 20 psf DL			30 psf LL + 20 psf DL			40 psf LL + 20 psf DL			20 psf LL + 15 psf DL			20 psf LL + 20 psf DL			20 psf LL + 25 psf DL		
	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"
20'	2-7 1/4	2-11 7/8	2-14	2-7 1/4	2-14	2-14	2-7 1/4	2-14	2-16	2-7 1/4	2-11 1/4	2-11 7/8	2-7 1/4	2-11 1/4	2-14	2-7 1/4	2-11 7/8	2-14
	-	3-11 1/4	3-11 7/8	-	3-11 1/4	3-11 7/8	-	3-11 1/4	3-14	3-5 1/2	3-9 1/2	3-11 1/4	-	-	3-11 1/4	-	3-11 1/4	3-11 7/8
24'	2-7 1/4	2-14	2-14	2-7 1/4	2-14	2-16	2-9 1/4	2-14	2-16*	2-7 1/4	2-11 1/4	2-14	2-7 1/4	2-11 7/8	2-14	2-7 1/4	2-14	2-14
	-	3-11 1/4	3-11 7/8	-	3-11 1/4	3-14	3-7 1/4	3-11 7/8	3-14	-	-	3-11 1/4	-	3-11 1/4	3-11 7/8	-	3-11 1/4	3-11 7/8
28'	2-7 1/4	2-14	2-16	2-9 1/4	2-14	2-16	2-9 1/4	2-16*	2-18*	2-7 1/4	2-11 7/8	2-14	2-7 1/4	2-14	2-14	2-7 1/4	2-14	2-16
	-	3-11 1/4	3-14	3-7 1/4	3-11 7/8	3-14	3-7 1/4	3-14	3-14	-	3-11 1/4	3-11 7/8	-	3-11 1/4	-	-	3-11 1/4	3-14
32'	2-9 1/4	2-14	2-16	2-9 1/4	2-16	2-18*	2-9 1/4	2-16*	2-18*	2-7 1/4	2-14	2-14	2-7 1/4	2-14	2-16	2-9 1/4	2-14	2-16
	3-7 1/4	3-11 7/8	3-14	3-7 1/4	3-14	3-14	3-7 1/4	3-14	3-16	-	3-11 1/4	3-11 7/8	-	3-11 1/4	3-14	3-7 1/4	3-11 7/8	3-14
36'	2-9 1/4	2-16	2-18*	2-9 1/4	2-16*	2-18*	2-9 1/4	2-18*	3-16	2-7 1/4	2-14	2-16	2-9 1/4	2-14	2-16	2-9 1/4	2-14	2-16*
	3-7 1/4	3-14	3-14	3-7 1/4	3-14	3-14	-	3-14	-	-	3-11 1/4	3-14	3-7 1/4	3-11 7/8	3-14	3-7 1/4	-	3-14

Notes:

1. Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
2. Assumes simple span measured from the inside face of bearing. Assumed bearing length is 3" each end (* indicates 4 1/2" end bearing).
3. Roof truss framing with 24" soffits.
4. Maximum beam deflection = L/240 LL, L/180 TL.

Accounting for a second-story floor and wall, these tables provide two selections for supporting roof loads over standard garage door openings in various conditions.



2-Story Application Table - 1.9E Garage Door Headers - 1 3/4" Width

Width of Building	Snow 115%									Non-Snow 125%								
	25 psf LL + 20 psf DL			30 psf LL + 20 psf DL			40 psf LL + 20 psf DL			20 psf LL + 15 psf DL			20 psf LL + 20 psf DL			20 psf LL + 25 psf DL		
	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"
20'	2-9 1/4	2-16	2-18*	2-9 1/4	2-16*	2-18*	2-9 1/4	2-16*	2-18*	2-9 1/4	2-16	2-16	2-9 1/4	2-16	2-18	2-9 1/4	2-16	2-18*
	-	3-14	3-16	-	3-14	3-16	-	3-14	3-16	3-7 1/4	3-14	3-14	-	3-14	3-16	-	3-14	3-16
24'	2-9 1/4	2-16*	2-18*	2-9 1/4	2-16*	2-18*	2-11 1/4	2-18*	3-18	2-9 1/4	2-16	2-18*	2-9 1/4	2-16*	2-18*	2-9 1/4	2-16*	2-18*
	-	3-14	3-16	-	3-14	3-16	3-9 1/4	3-16	-	-	3-14	3-16	-	3-14	3-16	-	3-14	3-16
28'	2-9 1/2	2-18*	3-16	2-11 1/4	2-18*	3-18	2-11 1/4	3-16	3-18*	2-9 1/4	2-16*	2-18*	2-9 1/4	2-16*	2-18*	2-9 1/2	2-18*	3-16
	3-9 1/4	3-16	-	3-9 1/4	3-16	-	3-9 1/4	-	-	-	3-14	3-16	-	3-14	3-16	3-9 1/4	3-16	-
32'	2-11 1/4	2-18*	3-18*	2-11 1/4	3-16	3-18*	2-11 1/4	3-16*	3-18*	2-9 1/4	2-18*	3-16	2-9 1/2	2-18*	3-18	2-11 1/4	2-18*	3-18*
	3-9 1/4	3-16	-	3-9 1/4	-	-	3-9 1/4	-	-	-	3-16	-	3-9 1/4	3-16	-	3-9 1/4	3-16	-
36'	2-11 1/4	3-18*	3-18*	2-11 1/4	3-16*	3-18*	2-11 1/4*	3-18*	-	2-11 1/4	2-18*	3-18	2-11 1/4	2-18*	3-18*	2-11 1/4	2-18*	3-18*
	3-9 1/4	-	-	3-9 1/4	-	-	3-9 1/2	-	-	3-9 1/4	3-16	-	3-9 1/4	3-16	-	3-9 1/4	3-16*	-

Notes:

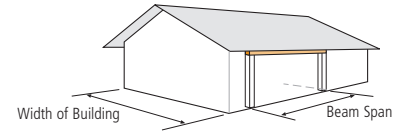
1. Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
2. Assumes simple span measured from the inside face of bearing. Assumed bearing length is 3" each end (* indicates 4 1/2" end bearing).
3. Roof truss framing with 24" soffits.
4. Floor beam is located at the centerline of the building; 40 psf floor LL, 12 psf floor DL.
5. Exterior wall weight of 80 plf.
6. Max beam defl = L/360 LL, L/240 TL.

1.9E LVL Window & Door Headers



Murphy

These tables provide two selections for supporting roof loads over rough openings in various conditions.



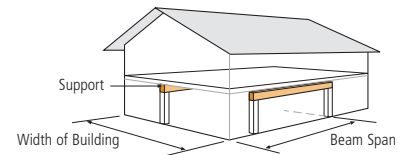
1-Story Application Table - 1.9E Window & Door Headers - 1³/₄" Width

Width of Building	Snow 115%										Non-Snow 125%									
	25 psf LL + 20 psf DL					40 psf LL + 20 psf DL					20 psf LL + 15 psf DL					20 psf LL + 25 psf DL				
	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'
20'	2-5 ¹ / ₂	2-7 ¹ / ₄	2-7 ¹ / ₄	2-7 ¹ / ₄	2-9 ¹ / ₄	2-5 ¹ / ₂	2-7 ¹ / ₄	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₂	2-5 ¹ / ₂	2-5 ¹ / ₂	2-7 ¹ / ₄	2-7 ¹ / ₄	2-9 ¹ / ₄	2-5 ¹ / ₂	2-7 ¹ / ₄	2-7 ¹ / ₄	2-7 ¹ / ₄	2-9 ¹ / ₄
	-	3-5 ¹ / ₂	-	-	-	-	3-5 ¹ / ₂	-	3-7 ¹ / ₄	3-9 ¹ / ₄	-	-	3-5 ¹ / ₂	-	3-7 ¹ / ₄	-	3-5 ¹ / ₂	-	-	-
24'	2-5 ¹ / ₂	2-7 ¹ / ₄	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-5 ¹ / ₂	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄	2-5 ¹ / ₂	2-7 ¹ / ₄	2-7 ¹ / ₄	2-7 ¹ / ₄	2-9 ¹ / ₄	2-5 ¹ / ₂	2-7 ¹ / ₄	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄
	-	3-5 ¹ / ₂	-	3-7 ¹ / ₄	-	-	-	3-7 ¹ / ₄	3-7 ¹ / ₄	3-9 ¹ / ₄	-	3-5 ¹ / ₂	3-5 ¹ / ₂	-	3-7 ¹ / ₄	-	3-5 ¹ / ₂	-	3-7 ¹ / ₄	-
28'	2-5 ¹ / ₂	2-7 ¹ / ₄	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₂	2-5 ¹ / ₂	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄	2-5 ¹ / ₂	2-7 ¹ / ₄	2-7 ¹ / ₄	2-7 ¹ / ₄	2-9 ¹ / ₄	2-5 ¹ / ₂	2-7 ¹ / ₄	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₂
	-	3-5 ¹ / ₂	-	3-7 ¹ / ₄	3-9 ¹ / ₄	-	-	3-7 ¹ / ₄	-	3-9 ¹ / ₄	-	3-5 ¹ / ₂	-	-	-	-	3-5 ¹ / ₂	-	3-7 ¹ / ₄	3-9 ¹ / ₄
32'	2-5 ¹ / ₂	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄	2-5 ¹ / ₂	2-9 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₈	2-5 ¹ / ₂	2-7 ¹ / ₄	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-5 ¹ / ₂	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄
	-	-	3-7 ¹ / ₄	3-7 ¹ / ₄	3-9 ¹ / ₄	-	3-7 ¹ / ₄	3-7 ¹ / ₄	3-9 ¹ / ₄	3-9 ¹ / ₂	-	3-5 ¹ / ₂	-	3-7 ¹ / ₄	-	-	-	3-7 ¹ / ₄	3-7 ¹ / ₄	3-9 ¹ / ₄
36'	2-5 ¹ / ₂	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₂	2-14	2-5 ¹ / ₂	2-7 ¹ / ₄	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₂	2-5 ¹ / ₂	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄
	-	-	3-7 ¹ / ₄	-	3-9 ¹ / ₄	3-5 ¹ / ₂	3-7 ¹ / ₄	-	3-9 ¹ / ₄	3-11 ¹ / ₄	-	3-5 ¹ / ₂	-	3-7 ¹ / ₄	3-9 ¹ / ₄	-	-	3-7 ¹ / ₄	-	3-9 ¹ / ₄

Notes:

1. Table indicates the number of 1³/₄" wide LVL plies to be used for the given application.
2. Assumes simple span measured from the inside face of bearing. Assumed bearing length is 3" each end (* indicates 4 1/2" end bearing).
3. Roof truss framing with 24" soffits.
4. Maximum beam deflection = L/240 LL, L/180 TL.

Accounting for a second-story floor and wall, these tables provide two selections for supporting roof loads over rough openings in various conditions.



2-Story Application Table - 1.9E LVL Window & Door Headers - 1³/₄" Width

Width of Building	Snow 115%										Non-Snow 125%									
	25 psf LL + 20 psf DL					40 psf LL + 20 psf DL					20 psf LL + 15 psf DL					20 psf LL + 25 psf DL				
	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'
20'	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄	2-11 ⁷ / ₈	2-5 ¹ / ₂	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄
	3-5 ¹ / ₂	3-7 ¹ / ₄	-	-	-	3-5 ¹ / ₂	3-7 ¹ / ₄	-	3-9 ¹ / ₄	3-11 ¹ / ₄	-	-	3-7 ¹ / ₄	-	3-9 ¹ / ₄	3-5 ¹ / ₂	3-7 ¹ / ₄	-	-	-
24'	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₂	2-11 ⁷ / ₈	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₂	2-11 ¹ / ₄	2-14	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄	2-11 ⁷ / ₈	
	3-5 ¹ / ₂	3-7 ¹ / ₄	-	3-9 ¹ / ₄	3-11 ¹ / ₄	3-5 ¹ / ₂	3-7 ¹ / ₄	3-9 ¹ / ₄	3-9 ¹ / ₄	3-11 ¹ / ₄	3-5 ¹ / ₂	3-7 ¹ / ₄	-	-	3-5 ¹ / ₂	3-7 ¹ / ₄	-	3-9 ¹ / ₄	3-11 ¹ / ₄	
28'	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄	2-14	2-7 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄	2-11 ¹ / ₄	2-14*	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₂	2-11 ⁷ / ₈	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄	
	3-5 ¹ / ₂	3-7 ¹ / ₄	-	3-9 ¹ / ₄	3-11 ¹ / ₄	-	-	3-9 ¹ / ₄	3-9 ¹ / ₂	3-11 ¹ / ₄	3-5 ¹ / ₂	3-7 ¹ / ₄	-	3-9 ¹ / ₄	3-11 ¹ / ₄	3-5 ¹ / ₂	3-7 ¹ / ₄	-	3-9 ¹ / ₄	
32'	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₂	2-11 ¹ / ₄	2-14*	2-7 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄	2-11 ⁷ / ₈ *	2-14*	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄	2-14	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₂	2-11 ¹ / ₄	
	-	-	3-9 ¹ / ₄	3-9 ¹ / ₄	3-11 ¹ / ₄	-	-	3-9 ¹ / ₄	3-11 ¹ / ₄	3-11 ⁷ / ₈	3-5 ¹ / ₂	3-7 ¹ / ₄	-	3-9 ¹ / ₄	3-11 ¹ / ₄	-	-	3-9 ¹ / ₄	3-9 ¹ / ₄	
36'	2-7 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄	2-11 ¹ / ₄	2-14*	2-7 ¹ / ₄	2-9 ¹ / ₂	2-11 ¹ / ₄ *	2-14*	2-16*	2-7 ¹ / ₄	2-9 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄	2-14	2-7 ¹ / ₄	2-9 ¹ / ₄	2-11 ¹ / ₄	2-11 ¹ / ₄	
	-	-	3-9 ¹ / ₄	3-9 ¹ / ₂	3-11 ⁷ / ₈	-	3-9 ¹ / ₄	3-9 ¹ / ₄	3-11 ¹ / ₄	3-14	3-5 ¹ / ₂	-	3-9 ¹ / ₄	3-9 ¹ / ₄	3-11 ¹ / ₄	-	-	3-9 ¹ / ₄	3-9 ¹ / ₂	

Notes:

1. Table indicates the number of 1³/₄" wide LVL plies to be used for the given application.
2. Assumes simple span measured from the inside face of bearing. Assumed bearing length is 3" each end (* indicates 4 1/2" end bearing).
3. Roof truss framing with 24" soffits.
4. Floor beam is located at the centerline of the building; 40 psf floor LL, 12 psf floor DL.
5. Exterior wall weight of 80 plf.
6. Max beam defl = L/360 LL, L/240 TL.

1.9E LVL Allowable Uniform Loads - Floor 100% 1³/₄"



Murphy

Allowable Uniform Loads - 1.9E - Floor 100% - 1³/₄" Width

Span (ft)	7 ¹ / ₄ "			9 ¹ / ₄ "			9 ¹ / ₂ "			11 ¹ / ₄ "		
	Live Load		Total Load L/240	Live Load		Total Load L/240	Live Load		Total Load L/240	Live Load		Total Load L/240
	L/480	L/360		L/480	L/360		L/480	L/360		L/480	L/360	
6'	539	721	763	1028	1028	1028	1063	1063	1063	1324	1324	1324
8'	225	302	455	471	630	723	511	683	746	850	915	915
9'	157	211	318	330	441	609	357	478	639	596	792	792
10'	114	153	231	239	320	483	259	347	517	433	579	698
11'	84	114	173	178	239	361	193	260	392	324	433	581
12'	64	87	132	136	183	277	148	199	301	248	332	487
13'	50	68	103	106	143	217	115	155	235	194	260	393
14'	-	-	-	84	114	173	91	123	188	154	207	314
15'	-	-	-	67	92	140	73	99	152	124	167	254
16'	-	-	-	55	75	114	60	81	124	101	137	208
18'	-	-	-	-	-	-	40	55	86	69	94	145
20'	-	-	-	-	-	-	-	-	-	49	67	104
22'	-	-	-	-	-	-	-	-	-	-	-	-
24'	-	-	-	-	-	-	-	-	-	-	-	-
26'	-	-	-	-	-	-	-	-	-	-	-	-
28'	-	-	-	-	-	-	-	-	-	-	-	-
30'	-	-	-	-	-	-	-	-	-	-	-	-
32'	-	-	-	-	-	-	-	-	-	-	-	-
34'	-	-	-	-	-	-	-	-	-	-	-	-

Span (ft)	11 ⁷ / ₈ "			14"			16"			18"		
	Live Load		Total Load L/240	Live Load		Total Load L/240	Live Load		Total Load L/240	Live Load		Total Load L/240
	L/480	L/360		L/480	L/360		L/480	L/360		L/480	L/360	
6'	1424	1424	1424	1795	1795	1795	2193	2193	2193	2651	2651	2651
8'	978	978	978	1207	1207	1207	1443	1443	1443	1701	1701	1701
9'	701	846	846	1037	1037	1037	1231	1231	1231	1442	1442	1442
10'	509	681	745	838	909	909	1074	1074	1074	1251	1251	1251
11'	381	510	641	628	808	808	939	952	952	1104	1104	1104
12'	292	392	538	482	645	726	722	855	855	988	988	988
13'	229	307	457	377	506	618	566	757	775	808	894	894
14'	182	244	370	301	403	532	451	605	679	645	816	816
15'	147	198	299	243	327	462	365	490	591	523	700	733
16'	120	162	246	199	268	405	300	402	518	429	575	643
18'	82	112	171	138	186	283	208	280	408	299	401	506
20'	58	80	123	98	134	204	149	202	307	215	290	408
22'	42	58	91	72	99	152	110	150	229	159	216	328
24'	-	-	-	54	74	115	83	113	174	121	164	251
26'	-	-	-	41	57	89	64	87	135	93	127	195
28'	-	-	-	-	-	-	49	68	107	73	100	154
30'	-	-	-	-	-	-	-	-	-	57	79	124
32'	-	-	-	-	-	-	-	-	-	46	64	100
34'	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

1. Table is based on uniform loads; member weight has been considered.
2. Assumes the more restrictive of simple or continuous span.
3. Spans are measured from center to center of bearing.
4. Table is based on 1³/₄" width. Values may be multiplied by 2 for 3¹/₂" width, 3 for 5¹/₄", and 4 for 7".

1.9E LVL Allowable Uniform Loads - Roof 100% 1³/₄"



Murphy

Allowable Uniform Loads - 1.9E - Roof 100% - 1³/₄" Width

Span (ft)	7 ¹ / ₄ "				9 ¹ / ₄ "				9 ¹ / ₂ "				11 ¹ / ₄ "			
	Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%	
	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total
	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180
6'	878	878	954	954	1183	1183	1286	1286	1223	1223	1330	1330	1524	1524	1657	1657
8'	455	569	455	607	832	832	904	904	858	858	933	933	1053	1053	1145	1145
9'	318	425	318	425	664	701	664	762	719	736	719	800	912	912	992	992
10'	231	309	231	309	483	567	483	616	523	595	523	647	804	804	871	874
11'	173	231	173	231	361	468	361	483	392	491	392	524	653	669	653	727
12'	132	177	132	177	277	371	277	371	301	402	301	402	502	561	502	610
13'	103	139	103	139	217	291	217	291	235	316	235	316	393	477	393	519
14'	82	110	82	110	173	232	173	232	188	252	188	252	314	411	314	420
15'	66	89	66	89	140	188	140	188	152	204	152	204	254	341	254	341
16'	54	73	54	73	114	154	114	154	124	167	124	167	208	280	208	280
18'	-	-	-	-	79	107	79	107	86	116	86	116	145	195	145	195
20'	-	-	-	-	56	77	56	77	61	83	61	83	104	140	104	140
22'	-	-	-	-	41	56	41	56	45	61	45	61	77	104	77	104
24'	-	-	-	-	-	-	-	-	-	-	-	-	58	79	58	79
26'	-	-	-	-	-	-	-	-	-	-	-	-	44	61	44	61
28'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Span (ft)	11 ⁷ / ₈ "				14"				16"				18"			
	Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%	
	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total
	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180
6'	1639	1639	1782	1782	2065	2065	2245	2245	2523	2523	2744	2744	3050	3050	3316	3316
8'	1126	1126	1225	1225	1389	1389	1511	1511	1660	1660	1805	1805	1957	1957	2128	2128
9'	974	974	1059	1059	1194	1194	1298	1298	1417	1417	1541	1541	1659	1659	1804	1804
10'	857	857	932	932	1046	1046	1138	1138	1236	1236	1344	1344	1440	1440	1566	1566
11'	738	738	769	803	931	931	1012	1012	1096	1096	1192	1192	1271	1271	1383	1383
12'	591	619	591	674	837	837	910	910	984	984	1070	1070	1138	1138	1238	1238
13'	463	527	463	573	712	712	762	774	893	893	971	971	1030	1030	1120	1120
14'	370	453	370	493	609	613	609	667	782	782	851	851	940	940	1023	1023
15'	299	394	299	401	493	533	493	580	680	680	739	740	844	844	918	918
16'	246	330	246	330	405	467	405	509	597	597	608	650	741	741	806	806
18'	171	230	171	230	283	368	283	379	424	470	424	512	583	583	607	635
20'	123	166	123	166	204	274	204	274	307	379	307	412	440	471	440	512
22'	91	123	91	123	152	204	152	204	229	308	229	308	328	387	328	422
24'	69	93	69	93	115	156	115	156	174	235	174	235	251	324	251	337
26'	53	72	53	72	89	121	89	121	135	183	135	183	195	263	195	263
28'	41	57	41	57	70	95	70	95	107	145	107	145	154	209	154	209
30'	-	-	-	-	55	76	55	76	85	116	85	116	124	168	124	168
32'	-	-	-	-	-	-	-	-	69	94	69	94	100	137	100	137
34'	-	-	-	-	-	-	-	-	56	77	56	77	82	113	82	113

Notes:

1. Table is based on uniform loads; member weight has been considered.
2. Assumes the more restrictive of simple or continuous span.
3. Spans are measured from center to center of bearing.
4. Table is based on 1³/₄" width. Values may be multiplied by 2 for 3¹/₂" width, 3 for 5¹/₄", and 4 for 7".

1.8E LVL Design Properties



Allowable Design Properties – 1 3/4" "

Depth	Max. Vertical Shear (lbs)			Max. Bending Moment (ft-lbs)			EI (x 10 ⁶ lbs-in ²)	Weight (plf)
	100%	115%	125%	100%	115%	125%		
5 1/2	1829	2103	2286	2327	2676	2908	44	2.8
7 1/4	2411	2772	3013	3847	4424	4809	100	3.7
9 1/4	3076	3537	3845	5993	6892	7492	208	4.7
9 1/2	3159	3633	3948	6291	7235	7864	225	4.8
11 1/4	3741	4302	4676	8558	9842	10698	374	5.7
11 7/8	3948	4541	4936	9443	10860	11804	440	6.1
14	4655	5353	5819	12742	14654	15928	720	7.1
16	5320	6118	6650	16248	18685	20310	1075	8.2
18	5985	6883	7481	20132	23152	25165	1531	9.2

Allowable Design Properties – 3 1/2" "

Depth	Max. Vertical Shear (lbs)			Max. Bending Moment (ft-lbs)			EI (x 10 ⁶ lbs-in ²)	Weight (plf)
	100%	115%	125%	100%	115%	125%		
5 1/2	3658	4206	4572	4654	5352	5817	87	5.6
7 1/4	4821	5544	6027	7694	8848	9617	200	7.4
9 1/4	6151	7074	7689	11987	13785	14983	416	9.4
9 1/2	6318	7265	7897	12583	14470	15729	450	9.7
11 1/4	7481	8603	9352	17117	19684	21396	748	11.5
11 7/8	7897	9081	9871	18887	21720	23608	879	12.1
14	9310	10707	11638	25484	29307	31855	1441	14.3
16	10640	12236	13300	32495	37369	40619	2150	16.3
18	11970	13766	14963	40264	46304	50330	3062	18.4

2.0E LVL Allowable Design Stresses

Bending $F_b = 2750 \text{ psi}^*$

Horizontal Shear $F_v = 285 \text{ psi}$

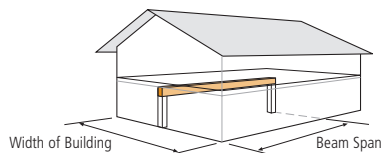
Modulus of Elasticity $E = 1.8 \times 10^6$

Compression Perpendicular to Grain $F_c = 750 \text{ psi}$

Compression Parallel to Grain $f_c = 2350 \text{ psi}$

*Adjust F_b value by a factor of $(12/d)^{0.18}$ where $d = \text{depth}$.

1.8E LVL Floor Beams



Application Table – 1.8E Floor Beams - 1 3/4" Width

Width of Building	Beam Span									
	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'
24'	2 - 11 1/4	2 - 11 1/4	2 - 14	2 - 14	2 - 14	2 - 16	2 - 16	2 - 18	2 - 18	2 - 18
	3 - 9 1/4	-	3 - 11 1/4	3 - 11 1/4	-	3 - 14	3 - 14	3 - 16	3 - 16	3 - 16
28'	2 - 11 1/4	2 - 11 7/8	2 - 14	2 - 14	2 - 16	2 - 16	2 - 18	2 - 18	2 - 18*	3 - 18
	3 - 9 1/4	3 - 11 1/4	3 - 11 1/4	3 - 11 7/8	3 - 14	3 - 14	3 - 16	3 - 16	3 - 16	4 - 16
32'	2 - 11 1/4	2 - 14	2 - 14	2 - 14	2 - 16	2 - 16*	2 - 18*	2 - 18*	3 - 16	3 - 18
	-	3 - 11 1/4	3 - 11 7/8	-	3 - 14	3 - 14	3 - 16	3 - 16	-	4 - 16
36'	2 - 11 7/8	2 - 14	2 - 14	2 - 16	2 - 16*	2 - 18*	2 - 18*	3 - 16	3 - 18	3 - 18
	3 - 11 1/4	3 - 11 1/4	3 - 11 7/8	3 - 14	3 - 14	3 - 16	3 - 16	-	4 - 16	4 - 16
40'	2 - 14	2 - 14	2 - 16*	2 - 16*	2 - 18*	2 - 18*	3 - 16	3 - 16	3 - 18	3 - 18
	3 - 11 1/4	3 - 11 1/4	3 - 14	3 - 14	3 - 14	3 - 16	4 - 14	-	4 - 16	4 - 16

Notes

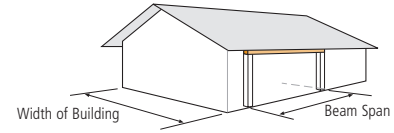
1. Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
2. Span is based on the more restrictive of simple continuous beam span. Ratio of short span to long span should be greater than 0.4.
3. Beam must be centered in building if floor joists are continuous over the top. Beam may be located off-center and "width of building" may be taken as 80% of the actual width if joists hang from beam and are simple span.
4. Max beam deflection = $L/360 \text{ LL } L/240 \text{ TL}$
5. 40 psf floor LL, 12 psf floor DL
6. Min. 3" bearing each end, 7 1/2" interior bearing length (*indicates 4 1/2" end bearing and/or 11 1/4" interior bearing length).

1.8E LVL Garage Door Headers



Murphy

These tables provide two selections for supporting roof loads over standard garage door openings in various conditions.



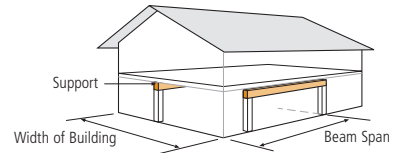
1-Story Application Table - 1.8E Garage Door Headers - 1³/₄" Width

Width of Building	Snow 115%									Non-Snow 125%								
	25 psf LL + 20 psf DL			30 psf LL + 20 psf DL			40 psf LL + 20 psf DL			20 psf LL + 15 psf DL			20 psf LL + 20 psf DL			20 psf LL + 25 psf DL		
	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"
20'	2-7 ¹ / ₄	2-11 ⁷ / ₈	2-14	2-7 ¹ / ₄	2-14	2-14	2-7 ¹ / ₄	2-14	2-14	2-7 ¹ / ₄	2-11 ¹ / ₄	2-14	2-7 ¹ / ₄	2-11 ¹ / ₄	2-14	2-7 ¹ / ₄	2-11 ⁷ / ₈	2-14
	-	3-11 ¹ / ₄	3-11 ⁷ / ₈	-	3-11 ¹ / ₄	-	3-7 ¹ / ₄	3-11 ¹ / ₄	3-14	3-5 ¹ / ₂	3-9 ¹ / ₄	3-11 ¹ / ₄	-	-	3-11 ¹ / ₄	-	3-11 ¹ / ₄	3-11 ⁷ / ₈
24'	2-7 ¹ / ₄	2-14	2-14	2-9 ¹ / ₄	2-14	2-16	2-9 ¹ / ₄	2-14	2-16*	2-7 ¹ / ₄	2-11 ⁷ / ₈	2-14	2-7 ¹ / ₄	2-11 ⁷ / ₈	2-14	2-7 ¹ / ₄	2-14	2-14
	-	3-11 ¹ / ₄	-	3-7 ¹ / ₄	3-11 ¹ / ₄	3-14	3-7 ¹ / ₄	3-11 ⁷ / ₈	3-14	-	3-11 ¹ / ₄	3-11 ¹ / ₄	-	-	3-11 ¹ / ₄	-	3-11 ¹ / ₄	3-14
28'	2-9 ¹ / ₄	2-14	2-16	2-9 ¹ / ₄	2-14	2-16	2-9 ¹ / ₄	2-16*	2-18*	2-7 ¹ / ₄	2-11 ⁷ / ₈	2-14	2-7 ¹ / ₄	2-14	2-14	2-9 ¹ / ₄	2-14	2-16
	3-7 ¹ / ₄	3-11 ¹ / ₄	3-14	3-7 ¹ / ₄	3-11 ⁷ / ₈	3-14	3-7 ¹ / ₄	3-14	3-14	-	3-11 ¹ / ₄	3-11 ⁷ / ₈	-	3-11 ¹ / ₄	-	3-7 ¹ / ₄	3-11 ¹ / ₄	3-14
32'	2-9 ¹ / ₄	2-14	2-16	2-9 ¹ / ₄	2-16	2-18*	2-9 ¹ / ₄	2-16*	3-16	2-7 ¹ / ₄	2-14	2-14	2-9 ¹ / ₄	2-14	2-16	2-9 ¹ / ₄	2-14	2-16
	3-7 ¹ / ₄	3-11 ⁷ / ₈	3-14	3-7 ¹ / ₄	3-14	3-14	-	3-14	-	-	3-11 ¹ / ₄	-	3-7 ¹ / ₄	3-11 ¹ / ₄	3-14	3-7 ¹ / ₄	3-11 ⁷ / ₈	3-14
36'	2-9 ¹ / ₄	2-16	2-18*	2-9 ¹ / ₄	2-16*	2-18*	2-9 ¹ / ₄	2-18*	3-16	2-7 ¹ / ₄	2-14	2-16	2-9 ¹ / ₄	2-14	2-16	2-9 ¹ / ₄	2-14	2-16*
	3-7 ¹ / ₄	3-14	3-14	3-7 ¹ / ₄	3-14	3-16	-	3-14	-	3-7 ¹ / ₄	3-11 ¹ / ₄	3-14	3-7 ¹ / ₄	3-11 ⁷ / ₈	3-14	3-7 ¹ / ₄	-	3-14

Notes:

1. Table indicates the number of 1³/₄" wide LVL plies to be used for the given application.
2. Assumes simple span measured from the inside face of bearing. Assumed bearing length is 3" each end (* indicates 4 1/2" end bearing).
3. Roof truss framing with 24" soffits.
4. Maximum beam deflection = L/240 LL, L/180 TL.

Accounting for a second-story floor and wall, these tables provide two selections for supporting roof loads over standard garage door openings in various conditions.



2-Story Application Table - 2.0E Garage Door Headers - 1³/₄" Width

Width of Building	Snow 115%									Non-Snow 125%								
	25 psf LL + 20 psf DL			30 psf LL + 20 psf DL			40 psf LL + 20 psf DL			20 psf LL + 15 psf DL			20 psf LL + 20 psf DL			20 psf LL + 25 psf DL		
	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"
20'	2-9 ¹ / ₄	2-16	2-18*	2-9 ¹ / ₄	2-16*	2-18*	2-9 ¹ / ₄	2-18*	3-16	2-9 ¹ / ₄	2-16	2-18	2-9 ¹ / ₄	2-16	2-18	2-9 ¹ / ₄	2-16	2-18*
	-	3-14	3-16	-	3-14	3-16	-	3-16	-	3-7 ¹ / ₄	3-14	3-16	-	3-14	3-16	-	3-14	3-16
24'	2-9 ¹ / ₄	2-16*	2-18*	2-9 ¹ / ₄	2-18*	3-16	2-11 ¹ / ₄	2-18*	3-18	2-9 ¹ / ₄	2-16	2-18*	2-9 ¹ / ₄	2-16*	2-18*	2-9 ¹ / ₄	2-16*	2-18*
	-	3-14	3-16	3-9 ¹ / ₄	3-16	-	3-9 ¹ / ₄	3-16	-	-	3-14	3-16	-	3-14	3-16	-	3-14	3-16
28'	2-11 ¹ / ₄	2-18*	3-18	2-11 ¹ / ₂	2-18*	3-18	2-11 ¹ / ₄	3-16	3-18*	2-9 ¹ / ₄	2-16*	2-18*	2-9 ¹ / ₂	2-18*	3-16	2-11 ¹ / ₄	2-18*	3-18
	3-9 ¹ / ₄	3-16	-	3-9 ¹ / ₄	3-16	-	3-9 ¹ / ₄	-	-	-	3-14	3-16	3-9 ¹ / ₄	3-16	-	3-9 ¹ / ₄	3-16	-
32'	2-11 ¹ / ₄	2-18*	3-18*	2-11 ¹ / ₄	3-16	3-18*	2-11 ¹ / ₄	3-18*	3-18*	2-9 ¹ / ₄	2-18*	3-18	2-11 ¹ / ₄	2-18*	3-18	2-11 ¹ / ₄	2-18*	3-18*
	3-9 ¹ / ₄	3-16	-	3-9 ¹ / ₄	-	-	3-9 ¹ / ₄	-	-	3-9 ¹ / ₄	3-16	-	3-9 ¹ / ₄	3-16	-	3-9 ¹ / ₄	3-16	-
36'	2-11 ¹ / ₄	3-16*	3-18*	2-11 ¹ / ₄	3-16*	3-18*	2-11 ⁷ / ₈ *	3-18*	-	2-11 ¹ / ₄	2-18*	3-18	2-11 ¹ / ₄	2-18*	3-18*	2-11 ¹ / ₄	2-18*	3-18*
	3-9 ¹ / ₄	-	-	3-9 ¹ / ₄	-	-	3-11 ¹ / ₄	-	-	3-9 ¹ / ₄	3-16	-	3-9 ¹ / ₄	3-16	-	3-9 ¹ / ₄	3-16*	-

Notes:

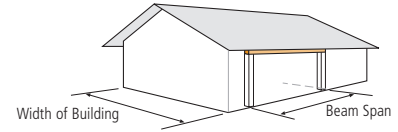
1. Table indicates the number of 1³/₄" wide LVL plies to be used for the given application.
2. Assumes simple span measured from the inside face of bearing. Assumed bearing length is 3" each end (* indicates 4 1/2" end bearing).
3. Roof truss framing with 24" soffits.
4. Floor beam is located at the centerline of the building; 40 psf floor LL, 12 psf floor DL.
5. Exterior wall weight of 80 plf.
6. Max beam defl = L/360 LL, L/240 TL.

1.8E LVL Window & Door Headers



Murphy

These tables provide two selections for supporting roof loads over rough openings in various conditions.



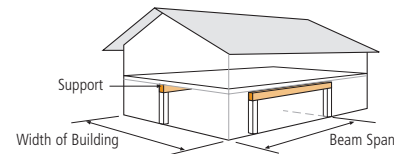
1-Story Application Table - 1.8E Window & Door Headers - 1 3/4" Width

Width of Building	Snow 115%										Non-Snow 125%									
	25 psf LL + 20 psf DL					40 psf LL + 20 psf DL					20 psf LL + 15 psf DL					20 psf LL + 25 psf DL				
	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'
20'	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-11 1/4	2-5 1/2	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-9 1/4
	-	3-5 1/2	-	-	-	-	-	3-7 1/4	3-7 1/4	3-9 1/4	-	-	3-5 1/2	-	3-7 1/4	-	3-5 1/2	-	3-7 1/4	-
24'	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-9 1/4
	-	3-5 1/2	-	3-7 1/4	-	-	-	3-7 1/4	-	3-9 1/4	-	3-5 1/2	-	-	-	-	3-5 1/2	-	3-7 1/4	-
28'	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-11 1/4
	-	-	-	3-7 1/4	3-9 1/4	-	-	3-7 1/4	-	3-9 1/4	-	3-5 1/2	-	3-7 1/4	-	-	-	-	3-7 1/4	3-9 1/4
32'	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4
	-	-	3-7 1/4	3-7 1/4	3-9 1/4	3-5 1/2	3-7 1/4	3-7 1/4	3-9 1/4	3-9 1/4	-	3-5 1/2	-	3-7 1/4	-	-	-	3-7 1/4	3-7 1/4	3-9 1/4
36'	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-14	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4
	-	-	3-7 1/4	-	3-9 1/4	3-5 1/2	3-7 1/4	-	3-9 1/4	3-11 1/4	-	-	-	3-7 1/4	3-9 1/4	-	-	3-7 1/4	-	3-9 1/4

Notes:

1. Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
2. Assumes simple span measured from the inside face of bearing. Assumed bearing length is 3" each end (* indicates 4 1/2" end bearing).
3. Roof truss framing with 24" soffits.
4. Maximum beam deflection = L/240 LL, L/180 TL.

Accounting for a second-story floor and wall, these tables provide two selections for supporting roof loads over rough openings in various conditions.



2-Story Application Table - 1.8E LVL Window & Door Headers - 1 3/4" Width

Width of Building	Snow 115%										Non-Snow 125%									
	25 psf LL + 20 psf DL					40 psf LL + 20 psf DL					20 psf LL + 15 psf DL					20 psf LL + 25 psf DL				
	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'
20'	2-7 1/4	2-9 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-14	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-9 1/4	2-11 1/4
	3-5 1/2	3-7 1/4	-	3-9 1/4	-	3-5 1/2	3-7 1/4	-	3-9 1/4	3-11 1/4	-	-	3-7 1/4	-	3-9 1/4	3-5 1/2	3-7 1/4	-	3-9 1/4	-
24'	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-11 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-14	2-7 1/4	2-9 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-9 1/4	2-11 1/4
	3-5 1/2	3-7 1/4	-	3-9 1/4	3-11 1/4	-	-	3-9 1/4	3-9 1/4	3-11 1/4	3-5 1/2	3-7 1/4	-	3-9 1/4	-	3-5 1/2	3-7 1/4	3-9 1/4	3-9 1/4	3-11 1/4
28'	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-14	2-7 1/4	2-9 1/4	2-11 1/4	2-11 1/4	2-14*	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-11 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-9 1/4	2-11 1/4
	3-5 1/2	3-7 1/4	3-9 1/4	3-9 1/4	3-11 1/4	-	-	3-9 1/4	-	3-11 1/4	3-5 1/2	3-7 1/4	-	3-9 1/4	3-11 1/4	3-5 1/2	3-7 1/4	3-9 1/4	3-9 1/4	3-11 1/4
32'	2-7 1/4	2-9 1/4	2-11 1/4	2-11 1/4	2-14*	2-7 1/4	2-9 1/4	2-11 1/4	2-11 1/4	2-16*	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-14	2-7 1/4	2-9 1/4	2-11 1/4	2-11 1/4	2-14*
	-	-	3-9 1/4	3-9 1/4	3-11 1/4	-	-	3-9 1/4	3-11 1/4	3-14	3-5 1/2	3-7 1/4	-	3-9 1/4	3-11 1/4	-	-	3-9 1/4	3-9 1/4	3-11 1/4
36'	2-7 1/4	2-9 1/4	2-11 1/4	2-11 1/4	2-14*	2-7 1/4	2-11 1/4	2-11 1/4	2-14*	2-16*	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-14	2-7 1/4	2-9 1/4	2-11 1/4	2-11 1/4	2-14*
	-	-	3-9 1/4	-	3-11 1/4	-	3-9 1/4	3-9 1/4	3-11 1/4	3-14	-	-	3-9 1/4	3-9 1/4	3-11 1/4	-	-	3-9 1/4	-	3-11 1/4

Notes:

1. Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
2. Assumes simple span measured from the inside face of bearing. Assumed bearing length is 3" each end (* indicates 4 1/2" end bearing).
3. Roof truss framing with 24" soffits.
4. Floor beam is located at the centerline of the building; 40 psf floor LL, 12 psf floor DL.
5. Exterior wall weight of 80 pfl.
6. Max beam defl = L/360 LL, L/240 TL.

1.8E LVL Allowable Uniform Loads - Floor 100% 1³/₄"



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Allowable Uniform Loads - 1.8E - Floor 100% - 1³/₄" Width

Span (ft)	7 ¹ / ₄ "			9 ¹ / ₄ "			9 ¹ / ₂ "			11 ¹ / ₄ "		
	Live Load		Total Load L/240	Live Load		Total Load L/240	Live Load		Total Load L/240	Live Load		Total Load L/240
	L/480	L/360		L/480	L/360		L/480	L/360		L/480	L/360	
6'	511	682	763	1028	1028	1028	1063	1063	1063	1324	1324	1324
8'	213	286	430	446	596	723	484	646	746	805	915	915
9'	149	200	301	312	417	587	338	453	617	564	754	792
10'	107	144	219	226	303	457	245	329	495	410	548	679
11'	80	108	163	169	227	342	183	246	371	306	410	560
12'	61	82	125	129	173	262	140	188	285	235	315	470
13'	47	64	97	100	135	205	109	147	223	183	246	372
14'	37	50	77	79	107	164	86	117	177	146	196	297
15'	-	-	-	64	86	132	69	94	143	117	158	240
16'	-	-	-	52	70	108	56	77	117	96	129	197
18'	-	-	-	-	-	-	-	-	-	65	89	137
20'	-	-	-	-	-	-	-	-	-	46	63	98
22'	-	-	-	-	-	-	-	-	-	-	-	-
24'	-	-	-	-	-	-	-	-	-	-	-	-
26'	-	-	-	-	-	-	-	-	-	-	-	-
28'	-	-	-	-	-	-	-	-	-	-	-	-
30'	-	-	-	-	-	-	-	-	-	-	-	-
32'	-	-	-	-	-	-	-	-	-	-	-	-
34'	-	-	-	-	-	-	-	-	-	-	-	-

Span (ft)	11 ⁷ / ₈ "			14"			16"			18"		
	Live Load		Total Load L/240	Live Load		Total Load L/240	Live Load		Total Load L/240	Live Load		Total Load L/240
	L/480	L/360		L/480	L/360		L/480	L/360		L/480	L/360	
6'	1424	1424	1424	1795	1795	1795	2193	2193	2193	2651	2651	2651
8'	948	978	978	1207	1207	1207	1443	1443	1443	1701	1701	1701
9'	664	846	846	1037	1037	1037	1231	1231	1231	1442	1442	1442
10'	482	645	745	793	909	909	1074	1074	1074	1251	1251	1251
11'	361	483	618	594	795	808	889	952	952	1104	1104	1104
12'	277	371	519	456	610	701	683	855	855	975	988	988
13'	216	290	439	357	479	596	536	717	761	765	894	894
14'	172	231	350	285	382	513	427	572	655	611	813	813
15'	139	187	283	230	309	446	346	464	570	495	663	707
16'	113	153	232	188	253	384	284	381	500	406	545	620
18'	78	106	161	130	176	267	197	265	393	282	380	488
20'	55	75	116	93	126	193	141	191	291	203	274	393
22'	40	55	86	68	93	143	104	141	216	151	204	310
24'	-	-	-	51	70	109	78	107	165	114	155	237
26'	-	-	-	-	-	-	60	82	128	88	120	184
28'	-	-	-	-	-	-	46	64	101	68	94	146
30'	-	-	-	-	-	-	-	-	-	54	75	117
32'	-	-	-	-	-	-	-	-	-	43	60	95
34'	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

1. Table is based on uniform loads; member weight has been considered.
2. Assumes the more restrictive of simple or continuous span.
3. Spans are measured from center to center of bearing.
4. Table is based on 1³/₄" width. Values may be multiplied by 2 for 3¹/₂" width, 3 for 5¹/₄", and 4 for 7".

1.8E LVL Allowable Uniform Loads - Roof 100% 1³/₄"



Murphy

Allowable Uniform Loads - 1.8E - Roof 100% - 1³/₄" Width

Span (ft)	7 ¹ / ₄ "				9 ¹ / ₄ "				9 ¹ / ₂ "				11 ¹ / ₄ "			
	Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%	
	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total
	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180
6'	878	878	954	954	1183	1183	1286	1286	1223	1223	1330	1330	1524	1524	1657	1657
8'	430	549	430	575	832	832	897	904	858	858	933	933	1053	1053	1145	1145
9'	301	403	301	403	629	676	629	735	681	710	681	772	912	912	992	992
10'	219	293	219	293	457	547	457	595	495	574	495	624	782	782	825	850
11'	163	219	163	219	342	451	342	458	371	474	371	496	618	645	618	702
12'	125	168	125	168	262	352	262	352	285	381	285	381	475	541	475	589
13'	97	131	97	131	205	275	205	275	223	299	223	299	372	460	372	498
14'	77	104	77	104	164	220	164	220	177	238	177	238	297	396	297	398
15'	62	84	62	84	132	178	132	178	143	193	143	193	240	322	240	322
16'	51	69	51	69	108	146	108	146	117	158	117	158	197	265	197	265
18'	-	-	-	-	74	101	74	101	81	109	81	109	137	184	137	184
20'	-	-	-	-	53	72	53	72	58	79	58	79	98	133	98	133
22'	-	-	-	-	-	-	-	-	42	58	42	58	72	98	72	98
24'	-	-	-	-	-	-	-	-	-	-	-	-	54	74	54	74
26'	-	-	-	-	-	-	-	-	-	-	-	-	42	57	42	57
28'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Span (ft)	11 ⁷ / ₈ "				14"				16"				18"			
	Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%	
	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total
	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180
6'	1639	1639	1782	1782	2065	2065	2245	2245	2523	2523	2744	2744	3050	3050	3316	3316
8'	1126	1126	1225	1225	1389	1389	1511	1511	1660	1660	1805	1805	1957	1957	2128	2128
9'	974	974	1059	1059	1194	1194	1298	1298	1417	1417	1541	1541	1659	1659	1804	1804
10'	857	857	932	932	1046	1046	1138	1138	1236	1236	1344	1344	1440	1440	1566	1566
11'	712	712	728	774	931	931	1012	1012	1096	1096	1192	1192	1271	1271	1383	1383
12'	559	597	559	650	807	807	878	878	984	984	1070	1070	1138	1138	1238	1238
13'	439	508	439	553	687	687	721	747	876	876	953	953	1030	1030	1120	1120
14'	350	437	350	469	576	591	576	643	754	754	821	821	936	936	1018	1018
15'	283	380	283	380	467	514	467	559	656	656	700	714	814	814	886	886
16'	232	312	232	312	384	451	384	491	575	576	627	714	714	777	777	
18'	161	217	161	217	267	355	267	359	402	453	402	493	562	562	574	612
20'	116	157	116	157	193	260	193	260	291	366	291	390	416	454	416	494
22'	86	116	86	116	143	193	143	193	216	291	216	291	310	373	310	407
24'	65	88	65	88	109	147	109	147	165	222	165	222	237	312	237	319
26'	50	68	50	68	84	114	84	114	128	173	128	173	184	249	184	249
28'	-	-	-	-	66	90	66	90	101	137	101	137	146	197	146	197
30'	-	-	-	-	52	72	52	72	80	110	80	110	117	159	117	159
32'	-	-	-	-	42	58	42	58	65	89	65	89	95	129	95	129
34'	-	-	-	-	-	-	-	-	53	73	53	73	77	106	77	106

Notes:

1. Table is based on uniform loads; member weight has been considered.
2. Assumes the more restrictive of simple or continuous span.
3. Spans are measured from center to center of bearing.
4. Table is based on 1³/₄" width. Values may be multiplied by 2 for 3¹/₂" width, 3 for 5¹/₄", and 4 for 7".

1.5E LVL Design Properties



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Allowable Design Properties – 1 3/4" "

Depth	Max. Vertical Shear (lbs)			Max. Bending Moment (ft-lbs)			EI (x 10 ⁶ lbs-in ²)	Weight (plf)
	100%	115%	125%	100%	115%	125%		
5 1/2	1829	2103	2286	1904	2189	2380	36	2.8
7 1/4	2411	2772	3013	3147	3620	3934	83	3.7
9 1/4	3076	3537	3845	4904	5639	6130	173	4.7
9 1/2	3159	3633	3948	5148	5920	6434	188	4.8
11 1/4	3741	4302	4676	7002	8053	8753	311	5.7
11 7/8	3948	4541	4936	7726	8885	9658	366	6.1
14	4655	5353	5819	10425	11989	13032	600	7.1
16	5320	6118	6650	13293	15288	16617	896	8.2
18	5985	6883	7481	16472	18942	20590	1276	9.2

Allowable Design Properties – 3 1/2" "

Depth	Max. Vertical Shear (lbs)			Max. Bending Moment (ft-lbs)			EI (x 10 ⁶ lbs-in ²)	Weight (plf)
	100%	115%	125%	100%	115%	125%		
5 1/2	3658	4206	4572	3807	4379	4759	73	5.6
7 1/4	4821	5544	6027	6295	7239	7869	167	7.4
9 1/4	6151	7074	7689	9807	11278	12259	346	9.4
9 1/2	6318	7265	7897	10295	11839	12869	375	9.7
11 1/4	7481	8603	9352	14005	16105	17506	623	11.5
11 7/8	7897	9081	9871	15453	17771	19316	733	12.1
14	9310	10707	11638	20851	23978	26064	1201	14.3
16	10640	12236	13300	26587	30575	33234	1792	16.3
18	11970	13766	14963	32943	37885	41179	2552	18.4

1.5E LVL Allowable Design Stresses

Bending $F_b = 2250 \text{ psi}^*$

Horizontal Shear $F_v = 285 \text{ psi}$

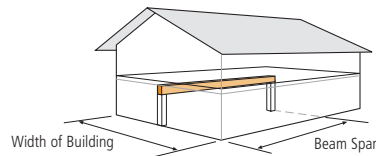
Modulus of Elasticity $E = 1.5 \times 10^6 \text{ psi}$

Compression Perpendicular to Grain $F_c = 750 \text{ psi}$

Compression Parallel to Grain $f_c = 2350 \text{ psi}$

*Adjust F_b value by a factor of $(12/d)^{0.18}$ where $d = \text{depth}$.

1.5E LVL Floor Beams



Application Table – 1.5E Floor Beams - 1 3/4" Width

Width of Building	Beam Span									
	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'
24'	2-11 1/4	2-11 7/8	2-14	2-14	2-16	2-16	2-18	2-18	3-16	3-18
	3-9 1/2	3-11 1/4	3-11 1/4	3-14	3-14	3-14	3-16	3-16	4-16	4-16
28'	2-11 7/8	2-14	2-14	2-16	2-16	2-18	2-18	3-16	3-18	3-18
	3-11 1/4	3-11 1/4	3-11 7/8	3-14	3-14	3-16	3-16	4-16	4-16	4-16
32'	2-14	2-14	2-16	2-16	2-18	2-18	3-16	3-18	3-18	3-18
	3-11 1/4	3-11 1/4	3-14	3-14	3-14	3-16	4-14	4-16	4-16	4-18
36'	2-14	2-16	2-16	2-18	2-18	3-16	3-16	3-18	3-18	4-18
	3-11 1/4	3-11 7/8	3-14	3-14	3-16	4-14	4-16	4-16	4-16	-
40'	2-14	2-16	2-16	2-18	3-16	3-16	3-18	3-18	4-18	4-18
	3-11 1/4	3-11 7/8	3-14	3-14	4-14	4-14	4-16	4-16	-	-

Notes:

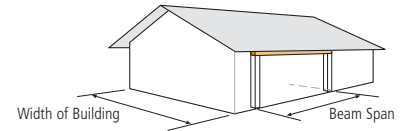
- Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
- Span is based on the more restrictive of simple continuous beam span. Ratio of short span to long span should be greater than 0.4.
- Beam must be centered in building if floor joists are continuous over the top. Beam may be located off-center and "width of building" may be taken as 80% of the actual width if joists hang from beam and are simple span.
- Max beam deflection = $L/360 \text{ LL}$ $L/240 \text{ TL}$
- 40 psf floor LL, 12 psf floor DL
- Min. 3" bearing each end, 7 1/2" interior bearing length (*indicates 4 1/2" end bearing and/or 11 1/4" interior bearing length).

1.5E LVL Garage Door Headers



Murphy

These tables provide two selections for supporting roof loads over rough openings in various conditions.



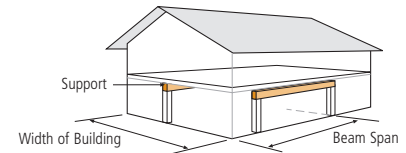
1-Story Application Table - 1.5E Garage Door Headers - 1 3/4" Width

Width of Building	Snow 115%									Non-Snow 125%								
	25 psf LL + 20 psf DL			30 psf LL + 20 psf DL			40 psf LL + 20 psf DL			20 psf LL + 15 psf DL			20 psf LL + 20 psf DL			20 psf LL + 25 psf DL		
	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"
20'	2-7 1/4	2-14	2-14	2-9 1/4	2-14	2-16	2-9 1/4	2-16	2-18	2-7 1/4	2-11 7/8	2-14	2-7 1/4	2-14	2-14	2-7 1/4	2-14	2-14
	-	3-11 1/4	-	3-7 1/4	3-11 7/8	3-14	3-7 1/4	3-14	3-14	-	3-11 1/4	3-11 1/4	-	3-11 1/4	3-11 7/8	-	3-11 1/4	-
24'	2-9 1/4	2-14	2-16	2-9 1/4	2-16	2-18	2-9 1/4	2-16	2-18*	2-7 1/4	2-14	2-14	2-7 1/4	2-14	2-16	2-9 1/4	2-14	2-16
	3-7 1/4	3-11 7/8	3-14	3-7 1/4	3-11 7/8	3-14	3-7 1/4	3-14	3-16	-	3-11 1/4	3-11 7/8	-	3-11 1/4	3-14	3-7 1/4	3-11 7/8	3-14
28'	2-9 1/4	2-16	2-18	2-9 1/4	2-16	2-18	2-9 1/4	2-18*	3-16	2-7 1/4	2-14	2-16	2-9 1/4	2-14	2-16	2-9 1/4	2-14	2-16
	3-7 1/4	3-14	3-14	3-7 1/4	3-14	3-14	3-14	-	3-14	-	3-11 1/4	3-14	3-7 1/4	3-11 7/8	3-14	3-7 1/4	-	3-14
32'	2-9 1/4	2-16	2-18	2-9 1/4	2-18	3-16	2-11 1/4	2-18*	3-18	2-9 1/4	2-14	2-16	2-9 1/4	2-14	2-16	2-9 1/4	2-16	2-18
	3-7 1/4	3-14	3-14	-	3-14	-	3-9 1/4	3-16	-	3-7 1/4	3-11 7/8	3-14	3-7 1/4	-	3-14	3-7 1/4	3-14	3-14
36'	2-9 1/4	2-18	3-16	2-9 1/2	2-18*	3-16	2-11 1/4	3-16	3-18	2-9 1/4	2-14	2-16	2-9 1/4	2-16	2-18	2-9 1/4	2-16	2-18*
	-	3-14	-	3-9 1/4	3-14	-	3-9 1/4	-	-	3-7 1/4	3-11 7/8	3-14	3-7 1/4	3-14	3-14	-	3-14	3-16

Notes:

1. Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
2. Assumes simple span measured from the inside face of bearing. Assumed bearing length is 3" each end (* indicates 4 1/2" end bearing).
3. Roof truss framing with 24" soffits.
4. Maximum beam deflection = L/240 LL, L/180 TL.

Accounting for a second-story floor and wall, these tables provide two selections for supporting roof loads over rough openings in various conditions.



2-Story Application Table - 1.5E Garage Door Headers - 1 3/4" Width

Width of Building	Snow 115%									Non-Snow 125%								
	25 psf LL + 20 psf DL			30 psf LL + 20 psf DL			40 psf LL + 20 psf DL			20 psf LL + 15 psf DL			20 psf LL + 20 psf DL			20 psf LL + 25 psf DL		
	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"
20'	2-9 1/4	2-18	3-16	2-9 1/2	2-18*	3-18	2-11 1/4	2-18*	3-18	2-9 1/4	2-16	2-18	2-9 1/4	2-16	2-18	2-9 1/4	2-18	3-16
	-	3-16	-	3-9 1/4	3-16	-	3-9 1/4	3-16	-	-	3-14	3-16	-	3-14	3-16	-	3-16	-
24'	2-11 1/4	2-18*	3-18	2-11 1/4	2-18*	3-18	2-11 1/4	3-16	3-18	2-9 1/4	2-18	3-16	2-9 1/2	2-18*	3-18	2-11 1/4	2-18*	3-18
	3-9 1/4	3-16	-	3-9 1/4	3-16	-	3-9 1/4	-	-	-	3-16	-	3-9 1/4	3-16	-	3-9 1/4	3-16	-
28'	2-11 1/4	3-16	3-18	2-11 1/4	3-16	3-18	2-11 1/4	3-18	-	2-11 1/4	2-18*	3-18	2-11 1/4	2-18*	3-18	2-11 1/4	2-18*	3-18
	3-9 1/4	-	-	3-9 1/4	-	-	3-9 1/2	-	-	3-9 1/4	3-16	-	3-9 1/4	3-16	-	3-9 1/4	3-16	-
32'	2-11 1/4	3-18	-	2-11 1/4	3-18	-	2-14	3-18*	-	2-11 1/4	2-18*	3-18	2-11 1/2	3-16	3-18	2-11 1/4	3-18	3-18
	3-18*	3-9 1/4	-	3-9 1/2	3-9 1/2	-	3-11 1/4	-	-	3-9 1/4	3-16	-	-	3-9 1/4	-	-	3-9 1/4	-
36'	2-11 7/8	3-18*	-	2-11 7/8	3-18*	-	2-14*	-	-	2-11 1/4	3-16	3-18	2-11 1/4	3-18	-	2-11 1/4	3-18*	3-18
	3-11 1/4	-	-	3-11 1/4	-	-	3-11 1/4	-	-	3-9 1/4	-	-	3-9 1/2	-	-	3-11 1/4	-	-

Notes:

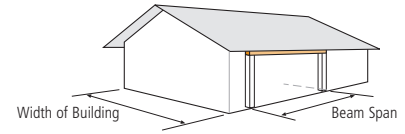
1. Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
2. Assumes simple span measured from the inside face of bearing. Assumed bearing length is 3" each end (* indicates 4 1/2" end bearing).
3. Roof truss framing with 24" soffits.
4. Floor beam is located at the centerline of the building; 40 psf floor LL, 12 psf floor DL.
5. Exterior wall weight of 80 plf.
6. Max beam defl = L/360 LL, L/240 TL.

1.5E LVL Window & Door Headers



Murphy

These tables provide two selections for supporting roof loads over standard garage door openings in various conditions.



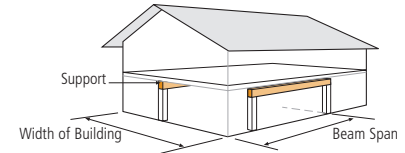
1-Story Application Table - 1.5E Window & Door Headers - 1 3/4" Width

Width of Building	Snow 115%										Snow 125%									
	25 psf LL + 20 psf DL					40 psf LL + 20 psf DL					20 psf LL + 15 psf DL					20 psf LL + 25 psf DL				
	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'
20'	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-5 1/2	2-7 1/4	2-7 1/4	2-7 1/4	2-9 1/4	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-9 1/4
	-	3-5 1/2	-	3-7 1/4	-	-	-	-	3-7 1/4	-	-	3-5 1/2	-	-	-	-	3-5 1/2	-	3-7 1/4	-
24'	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4
	-	-	3-7 1/4	3-7 1/4	3-9 1/4	-	-	3-7 1/4	-	3-9 1/2	-	3-5 1/2	-	3-7 1/4	-	-	-	3-7 1/4	3-7 1/4	3-9 1/4
28'	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-14	2-5 1/2	2-7 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4
	-	-	3-7 1/4	-	3-9 1/4	3-5 1/2	3-7 1/4	-	3-9 1/4	3-11 1/4	-	3-5 1/2	-	3-7 1/4	3-9 1/4	-	-	3-7 1/4	3-9 1/4	3-9 1/4
32'	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-7 1/4	2-9 1/4	2-9 1/2	2-11 1/4	2-14	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-5 1/2	2-7 1/4	2-9 1/4	-	2-11 1/4
	-	-	3-7 1/4	-	3-9 1/4	3-5 1/2	3-7 1/4	3-9 1/4	3-9 1/4	3-11 1/4	-	-	3-7 1/4	3-7 1/4	3-9 1/4	-	-	3-7 1/4	-	3-9 1/4
36'	2-7 1/2	2-9 1/4	2-9 1/4	2-11 1/4	2-11 1/4	2-7 1/4	2-9 1/4	2-11 1/4	2-11 1/2	2-14	2-5 1/2	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-7 1/4	2-9 1/4	2-9 1/4	2-9 1/4	2-11 1/4
	3-5 1/2	3-7 1/4	3-7 1/4	3-9 1/4	-	3-5 1/2	3-7 1/4	3-9 1/4	3-9 1/4	3-11 1/4	-	-	3-7 1/4	-	3-9 1/4	3-5 1/2	3-7 1/4	3-7 1/4	-	-

Notes:

1. Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
2. Assumes simple span measured from the inside face of bearing. Assumed bearing length is 3" each end (* indicates 4 1/2" end bearing).
3. Roof truss framing with 24" soffits.
4. Maximum beam deflection = L/240 LL, L/180 TL.

Accounting for a second-story floor and wall, these tables provide two selections for supporting roof loads over standard garage door openings in various conditions.



2-Story Application Table - 1.5E LVL Window & Door Headers - 1 3/4" Width

Width of Building	Snow 115%										Snow 125%									
	25 psf LL + 20 psf DL					40 psf LL + 20 psf DL					20 psf LL + 15 psf DL					20 psf LL + 25 psf DL				
	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'	6'	8'	9'	10'	12'
20'	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-14	2-7 1/4	2-9 1/4	2-11 1/4	2-11 1/4	2-14	2-7 1/4	2-9 1/4	2-9 1/4	2-9 1/2	2-11 7/8	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-14
	3-5 1/2	3-7 1/4	-	3-9 1/4	3-11 1/4	-	-	3-9 1/4	3-9 1/2	3-11 1/4	3-5 1/2	3-7 1/4	-	3-9 1/4	3-11 1/4	3-5 1/2	3-7 1/4	-	3-9 1/4	3-11 1/4
24'	2-7 1/4	2-9 1/4	2-9 1/2	2-11 1/4	2-14	2-7 1/4	2-9 1/4	2-11 1/4	2-11 7/8	2-14	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-14	2-7 1/4	2-9 1/4	2-9 1/2	2-11 1/4	2-14
	-	-	3-9 1/4	3-9 1/4	3-11 1/4	-	-	3-9 1/4	3-11 1/4	3-11 7/8	3-5 1/2	3-7 1/4	-	3-9 1/4	3-11 1/4	-	-	3-9 1/4	3-9 1/4	3-11 1/4
28'	2-7 1/4	2-9 1/4	2-11 1/4	2-11 1/4	2-14	2-7 1/4	2-11 1/4	2-11 1/4	2-14	2-16*	2-7 1/4	2-9 1/4	2-9 1/2	2-11 1/4	2-14	2-7 1/4	2-9 1/4	2-11 1/4	2-11 1/4	2-14
	-	-	3-9 1/4	-	3-11 7/8	-	3-9 1/4	3-9 1/4	3-11 1/4	3-14	-	-	3-9 1/4	3-9 1/4	3-11 1/4	-	-	3-9 1/4	-	3-11 7/8
32'	2-7 1/4	2-9 1/4	2-11 1/4	2-11 7/8	2-16	2-9 1/4	2-11 1/4	2-11 7/8	2-14*	2-16*	2-7 1/4	2-9 1/4	2-11 1/4	2-11 1/4	2-14	2-7 1/4	2-9 1/4	2-11 1/4	2-11 7/8	2-14*
	-	-	3-9 1/4	3-11 1/4	3-11 7/8	3-7 1/4	3-9 1/4	3-11 1/4	3-11 1/4	3-14	-	-	3-9 1/4	3-9 1/2	3-11 7/8	-	-	3-9 1/4	3-11 1/4	3-11 7/8
36'	2-7 1/4	2-11 1/4	2-11 1/4	2-14	2-16*	2-9 1/4	2-11 1/4	2-14*	2-14*	2-18*	2-7 1/4	2-9 1/4	2-11 1/4	2-11 1/4	2-14	2-7 1/4	2-9 1/2	2-11 1/4	2-11 7/8	2-16*
	-	3-9 1/4	3-9 1/2	3-11 1/4	3-14	3-7 1/4	3-9 1/4	3-11 1/4	3-11 1/4	3-14	-	-	3-9 1/4	-	3-11 7/8	-	3-9 1/4	3-9 1/2	3-11 1/4	3-14

Notes:

1. Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
2. Assumes simple span measured from the inside face of bearing. Assumed bearing length is 3" each end (* indicates 4 1/2" end bearing).
3. Roof truss framing with 24" soffits.
4. Maximum beam deflection = L/240 LL, L/180 TL.

1.5E LVL Allowable Uniform Loads - Floor 100% 1³/₄"



Murphy

Allowable Uniform Loads - 1.5E - Floor 100% - 1³/₄" Width

Span (ft)	7 ¹ / ₄ "			9 ¹ / ₄ "			9 ¹ / ₂ "			11 ¹ / ₄ "		
	Live Load		Total Load L/240	Live Load		Total Load L/240	Live Load		Total Load L/240	Live Load		Total Load L/240
	L/480	L/360		L/480	L/360		L/480	L/360		L/480	L/360	
6'	425	568	696	886	1028	1028	960	1063	1063	1324	1324	1324
8'	177	238	358	371	496	608	402	538	639	670	870	870
9'	123	166	250	259	347	480	281	376	504	469	627	686
10'	89	120	182	188	252	380	204	273	407	340	456	554
11'	66	89	135	140	188	284	152	204	308	254	341	457
12'	50	68	104	107	144	218	116	156	236	195	261	383
13'	-	-	81	83	112	170	90	122	185	152	204	309
14'	-	41	64	65	89	135	71	96	147	120	162	246
15'	-	-	51	52	71	109	57	77	119	97	131	199
16'	-	-	42	42	58	89	46	63	97	79	107	163
18'	-	-	-	-	-	-	-	43	67	54	73	113
20'	-	-	-	-	-	-	-	-	-	-	52	81
22'	-	-	-	-	-	-	-	-	-	-	-	-
24'	-	-	-	-	-	-	-	-	-	-	-	44
26'	-	-	-	-	-	-	-	-	-	-	-	-
28'	-	-	-	-	-	-	-	-	-	-	-	-
30'	-	-	-	-	-	-	-	-	-	-	-	-
32'	-	-	-	-	-	-	-	-	-	-	-	-
34'	-	-	-	-	-	-	-	-	-	-	-	-

Span (ft)	11 ⁷ / ₈ "			14"			16"			18"		
	Live Load		Total Load L/240	Live Load		Total Load L/240	Live Load		Total Load L/240	Live Load		Total Load L/240
	L/480	L/360		L/480	L/360		L/480	L/360		L/480	L/360	
6'	1424	1424	1424	1795	1795	1795	2193	2193	2193	2651	2651	2651
8'	789	960	960	1207	1207	1207	1443	1443	1443	1701	1701	1701
9'	552	738	757	908	1023	1023	1231	1231	1231	1442	1442	1442
10'	401	537	612	660	827	827	987	1055	1055	1251	1251	1251
11'	300	402	505	494	661	682	740	871	871	1056	1080	1080
12'	229	308	423	379	507	572	568	730	730	811	906	906
13'	179	241	360	296	398	486	445	596	621	636	771	771
14'	142	192	291	236	317	418	355	476	534	507	663	663
15'	115	155	235	190	256	364	287	385	464	411	551	576
16'	93	126	193	156	210	319	235	316	407	337	452	506
18'	64	87	134	107	145	222	163	219	320	234	315	398
20'	45	62	96	76	104	160	116	158	241	168	227	320
22'	-	45	70	55	76	118	85	116	179	124	168	257
24'	-	-	53	41	57	89	64	88	136	93	128	196
26'	-	-	-	-	43	69	48	67	105	71	98	152
28'	-	-	-	-	-	54	-	52	83	55	77	120
30'	-	-	-	-	-	-	-	41	66	43	61	96
32'	-	-	-	-	-	-	-	-	-	-	48	77
34'	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

1. Table is based on uniform loads; member weight has been considered.
2. Assumes the more restrictive of simple or continuous span.
3. Spans are measured from center to center of bearing.
4. Table is based on 1³/₄" width. Values may be multiplied by 2 for 3¹/₂" width, 3 for 5¹/₄", and 4 for 7".

1.5E LVL Allowable Uniform Loads - Roof 100% 1 3/4"



Murphy

Allowable Uniform Loads - 1.5E - Roof 100% - 1 3/4" Width

Span (ft)	7 1/4"				9 1/4"				9 1/2"				11 1/4"			
	Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%	
	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total
	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180
6'	801	801	854	871	1183	1183	1286	1286	1223	1223	1330	1330	1524	1524	1657	1657
8'	358	449	358	479	700	700	747	761	735	735	799	799	1001	1001	1088	1088
9'	250	335	250	335	523	552	523	601	567	580	567	631	790	790	859	859
10'	182	243	182	243	380	446	380	486	412	469	412	510	638	638	686	694
11'	135	182	135	182	284	368	284	381	308	387	308	413	514	527	514	573
12'	104	139	104	139	218	292	218	292	236	317	236	317	395	442	395	481
13'	81	109	81	109	170	229	170	229	185	248	185	248	309	375	309	409
14'	64	86	64	86	135	182	135	182	147	198	147	198	246	323	246	331
15'	51	69	51	69	109	147	109	147	119	160	119	160	199	268	199	268
16'	42	57	42	57	89	121	89	121	97	131	97	131	163	220	163	22
18'	-	-	-	-	61	83	61	83	67	90	67	90	113	152	113	152
20'	-	-	-	-	43	59	43	59	47	65	47	65	81	110	81	110
22'	-	-	-	-	-	-	-	-	-	-	-	-	59	81	59	81
24'	-	-	-	-	-	-	-	-	-	-	-	-	44	61	44	61
26'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Span (ft)	7 1/4"				9 1/4"				9 1/2"				11 1/4"			
	Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%		Snow 115%		Non-Snow 125%	
	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total
	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180	L/240	L/180
6'	1639	1639	1782	1782	2065	2065	2245	2245	2523	2523	2744	2744	3050	3050	3316	3316
8'	1105	1105	1201	1201	1389	1389	1511	1511	1660	1660	1805	1805	1957	1957	2128	2128
9'	871	871	948	948	1177	1177	1280	1280	1417	1417	1541	1541	1659	1659	1804	1804
10'	705	705	767	767	952	952	1035	1035	1215	1215	1321	1321	1440	1440	1566	1566
11'	581	581	606	632	786	786	854	854	1003	1003	1090	1090	1243	1243	1352	1352
12'	465	488	465	530	659	659	717	717	841	841	915	915	1043	1043	1135	1135
13'	364	415	364	451	560	560	600	610	716	716	778	778	887	887	965	965
14'	291	357	291	388	479	482	479	525	616	616	670	670	764	764	831	831
15'	235	310	235	316	388	419	388	456	535	535	582	583	664	664	723	723
16'	193	259	193	259	319	368	319	400	470	470	478	511	583	583	634	634
18'	134	180	134	180	222	289	222	298	333	369	333	402	459	459	477	499
20'	96	130	96	130	160	215	160	215	241	298	241	324	345	370	345	403
22'	70	96	70	96	118	160	118	160	179	241	179	241	257	304	257	331
24'	53	72	53	72	89	122	89	122	136	184	136	184	196	254	196	264
26'	40	56	40	56	69	94	69	94	105	143	105	143	152	206	152	206
28'	-	-	-	43	54	74	54	74	83	113	83	113	120	163	120	163
30'	-	-	-	-	42	59	42	59	66	90	66	90	96	131	96	131
32'	-	-	-	-	-	-	-	-	53	73	53	73	77	106	77	106
34'	-	-	-	-	-	-	-	-	42	59	42	59	63	87	63	87

Notes:

1. Table is based on uniform loads; member weight has been considered.
2. Assumes the more restrictive of simple or continuous span.
3. Spans are measured from center to center of bearing.
4. Table is based on 1 3/4" width. Values may be multiplied by 2 for 3 1/2" width, 3 for 5 1/4", and 4 for 7".

2.0 E Column Allowable Axial Loads (lbs)



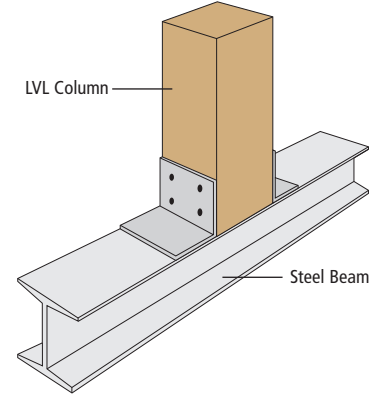
Murphy

Steel or Column Bearing

Column Length	3 1/2" x 3 1/2"			3 1/2" x 5 1/2"			3 1/2" x 7"		
	100%	115%	125%	100%	115%	125%	100%	115%	125%
6	12962	13613	13987	20358	21381	21967	25900	27200	27945
7	10550	10981	11228	16570	17245	17633	21081	21939	22431
8	8695	8995	9167	13656	14127	14397	17373	17971	18314
9	7264	7482	7607	11409	11751	11947	14514	14948	15197
10	6148	6311	6404	9655	9911	10058	12283	12608	12793
11	5264	5389	5461	8267	8463	8575	10516	10766	10908
12	4554	4652	4708	7152	7306	7394	9098	9293	9405
13	3976	4055	4100	6245	6368	6438	7944	8100	8188
14	3500	3564	3600	5497	5597	5654	6993	7119	7191
> 14	Not Permitted			Not Permitted			Not Permitted		

Note:

1. Eccentricity of 1/6 the column width/thickness.



Column to beam connection by design professional

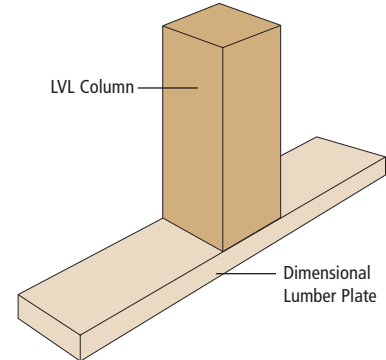
Plate Bearing

Column Length	3 1/2" x 3 1/2"			3 1/2" x 5 1/2"			3 1/2" x 7"		
	100%	115%	125%	100%	115%	125%	100%	115%	125%
6	5206	5206	5206	8181	8181	8181	10412	10412	10412
7	5206	5206	5206	8181	8181	8181	10412	10412	10412
8	5206	5206	5206	8181	8181	8181	10412	10412	10412
9	5206	5206	5206	8181	8181	8181	10412	10412	10412
10	5206	5206	5206	8181	8181	8181	10412	10412	10412
11	5206	5206	5206	8181	8181	8181	10412	10412	10412
12	4554	4652	4708	7152	7306	7394	9098	9293	9405
13	3976	4055	4100	6245	6368	6438	7944	8100	8188
14	3500	3564	3600	5497	5597	5654	6993	7119	7191
> 14	Not Permitted			Not Permitted			Not Permitted		

Table displays the maximum column load as controlled by the column or the dimensional lumber plate below with $F_{c\perp}$ = psi as a typical for #2 and Better Spruce, Pine, or Fir.

Notes:

1. Assumes NDS 2005.
2. Solid, one piece member.
3. Effective column length equals the actual column length; ends are braced about both axes.

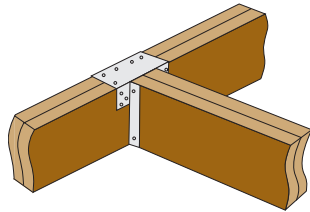


Column base not shown; verify capacity with manufacturer



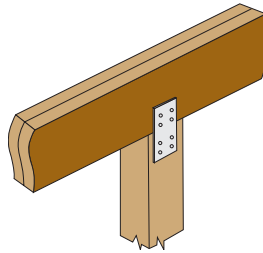
Connection Details

Beam-to-Beam Connection



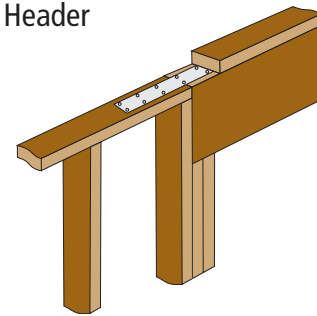
Install hanger per manufacturer's instructions. Hanger must distribute load to each ply of the assembly. Contact International Beams, Inc. technical support with questions.

Bearing on Wood Column



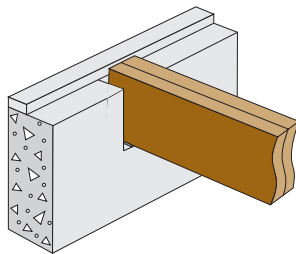
Install column cap per manufacturer's instructions; verify cap and column capacity.

Bearing for Door or Window Header



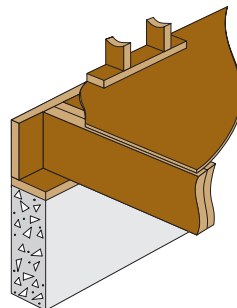
Strap per building code if top plate is not continuous over header.

Beam Pocket in Masonry Wall



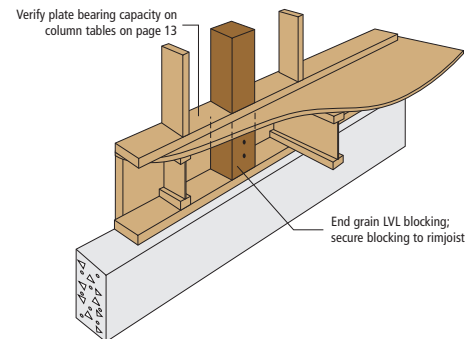
Protect LVL from moisture with a vapor barrier and airspace. LVL should not directly contact concrete.

Bearing on Exterior Wall



LVL should not directly contact concrete. Verify plate bearing capacity on page 15.

Solid Blocking at Post



Provide a continuous load path to concrete.

Minimum Nail Spacing

for nails installed parallel to the glue-line

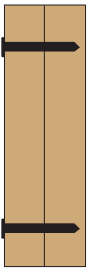
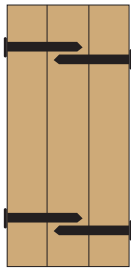
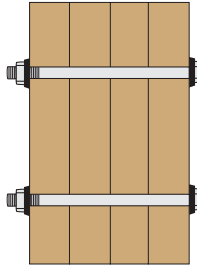
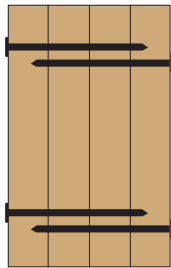
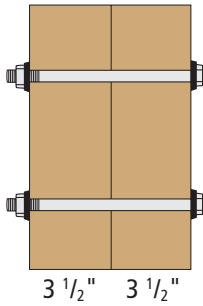
Nail Size	Single Row	Multiple Rows ¹
8d Common (2 1/2")	3"	4"
10d Common (3")	4"	5"
12d Common (3 1/4")	4"	5"
16d Common (3 1/2")	5"	6" ²

1. Offset multiple rows 1/2" and stagger nails on equal-equal layout.
2. Minimum nail spacing may be reduced to 5" for 1 3/4" wide members.
3. Nail penetration shall not exceed 2 1/2" for 10d and 12d nor 2" for 16d.



Multiple Piece Assembly & Side Load Capacity

When assembling more than one LVL ply into a single load-bearing beam, follow the appropriate guidelines:

<p><u>Detail A</u></p> <p>Maximum 3 1/2" wide 2-ply beams</p> 	<p><u>Detail B</u></p> <p>Maximum 5 1/4" wide 3-ply beams</p> 	<p><u>Detail C</u></p> <p>Maximum 7" wide 4-ply beam</p> 	<p><u>Detail D</u></p> <p>Maximum 7" wide 4-ply beam</p>  <p>Simpson SDS 1/4" x 6" screws (or equal)</p>	<p><u>Detail E</u></p> <p>Maximum 7" wide 2-ply beam</p>  <p>3 1/2" 3 1/2"</p>
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Uniform Side-load Capacity (lbs)

Connection Detail	2 Rows of 10d Box Nails at 12" oc	3 Rows of Nails 10d Box Nails at 12" oc	2 Rows of 1/2" dia. Bolts at 24" oc	2 Rows of 1/2" dia. Bolts at 24" oc
A	365	545	500	1000
B	270	410	375	750
C	-	-	335	670
D	Refer to Simpson Strong-Tie catalog for SDS capacities			
E	-	-	855	1715

Notes:

1. Design values based on 2005 NDS and PR-L283 APA Product Report.
2. Dry conditions of use.
3. Design values may be increased for load duration; see 2005 NDS.
4. Verify load capacity of framing member in addition to connection design.

Bearing Length and Maximum Reaction (lbs)

Width (in) ¹	Bearing Length																					
	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	4 1/2"	5"	5 1/2"	6"	6 1/2"	7"	7 1/2"	8"	8 1/2"	9"	9 1/2"	10"	10 1/2"	11"	11 1/2"	12"
1 3/4"	1969	2625	3281	3938	4594	5250	5906	6563	7219	7875	8531	9188	9844	10500	11156	11813	12469	13125	13781	14438	15094	15750
3 1/2"	3938	5250	6563	7875	9188	10500	11813	13125	14438	15750	17063	18375	19688	21000	22313	23625	24938	26250	27563	28875	30188	31500
5 1/4"	5906	7875	9844	11813	13781	15750	17719	19688	21656	23625	25594	27563	29531	31500	33469	35438	37406	39375	41344	43313	45281	47250
7"	7875	10500	13125	15750	18375	21000	23625	26250	28875	31500	34125	36750	39375	42000	44625	47250	49875	52500	55125	57750	60375	63000

Notes:

1. Use any combination of 1 3/4" and 3 1/2" members using proper nailing or bolting guidelines.
2. Minimum bearing length is 1 1/2". Bearing across the full width of the beam is required.
3. Reported bearing length is based on 750 psi compression perpendicular to grain stress of the LVL member.
Beams bearing on #2 and better, 2x plates must be increased by the following factor:

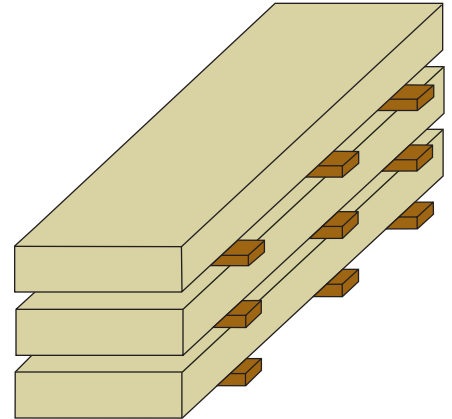
Spruce-Pine-Fir	1.76
Southern Yellow Pine	1.33
Douglas Fir	1.20

Handling Instructions

Sizing Software

Handling and Storage Guidelines

- LVL should be protected from the weather and stored lying flat.
- Product must not be stored in contact with the ground.
- Store LVL in wrapped bundles, provide air circulation and support bundles with 2x4 stickers.
- Protect from the weather on the job site both before and after installation. LVL is intended for use in covered, dry conditions only.
- Except as described in this product guide, LVL should not be cut, drilled or notched.
- Do not install wet or visually damaged product.



Sizing Software

To better assist engineers, designers and specifiers, Murphy has partnered with Keymark of Boulder, Colorado, an industry leader in design software to provide KeyBeam®. This single-member sizing system will aid in the specification of framing members to structurally resist engineering problems described by the software user.

KeyBeam recognizes all the United States building codes and offers printable design calculations and beam capabilities. The software user can specify simple span applications, point loads, cantilevers and many more common applications. Please contact Murphy EWS Sales to learn more about receiving a complimentary copy of KeyBeam Software.



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