

Murphy

**LVL
Technical
Product
Guide**

2.0 E-LVL

1.5 E-LVL





Our Company

At Murphy Company we take pride in providing our customers with premium quality products and services. Our LVL is manufactured to provide consistent, high performance floor and roof systems.

Our technical services consist of highly trained technical experts available to assist you with any design or construction question and to provide full support for our software.



About LVL

Providing the superior performance and durability of engineered wood, Murphy Company 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 our LVL, which utilizes ultrasonically tested and graded Douglas Fir veneer with evenly dispersed natural defects.

Engineered for Quality

Checking is minimized because Murphy Company LVL is cured in a controlled process in which water-proof 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.

We are confident that our products will provide our customers with consistent high performance when handled and installed in accordance with our Installation Guide.

Tested for strength and engineered for quality, Murphy Company 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 NDS and IBC and ICC-ESR#2913.
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.

2.0E 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)	Weight (plf)
	100%	115%	125%	100%	115%	125%		
5 1/2	1861	2140	2326	2623	3016	3279	49	2.51
7 1/4	2453	2821	3066	4336	4987	5421	111	3.30
9 1/4	3130	3599	3912	6756	7770	8445	231	4.22
9 1/2	3214	3696	4018	7092	8156	8865	250	4.33
11 1/4	3806	4377	4758	9648	11095	12059	415	5.13
11 7/8	4018	4620	5022	10645	12242	13306	488	5.41
14	4737	5447	5921	14364	16519	17955	800	6.38
16	5413	6225	6767	18315	21063	22894	1195	7.29
18	6090	7004	7613	22694	26098	28368	1701	8.19
20	6767	7782	8458	27491	31615	34364	2333	9.12
22	7443	8560	9304	32699	37603	40873	3106	10.03
24	8120	9338	10150	38309	44056	47877	4032	10.94

Allowable Design Properties – 3 1/2" "								
Depth	Max. Vertical Shear (lbs)			Max. Bending Moment (ft-lbs)			EI (x 10 ⁶ lbs-in)	Weight (plf)
	100%	115%	125%	100%	115%	125%		
5 1/2	3722	4280	4652	5246	6033	6557	97	5.01
7 1/4	4906	5642	6132	8673	9974	10841	222	6.61
9 1/4	6259	7198	7824	13512	15539	16890	462	8.43
9 1/2	6428	7393	8035	14184	16312	17730	500	8.66
11 1/4	7613	8754	9516	19295	22189	24119	831	10.25
11 7/8	8035	9241	10044	21290	24484	26613	977	10.82
14	9473	10894	11842	28728	33037	35910	1601	12.76
16	10827	12451	13533	36631	42126	45789	2389	14.58
18	12180	14007	15225	45388	52197	56736	3402	16.41
20	13534	15564	16916	54982	63230	68728	4666	18.23
22	14886	17120	18608	65398	75206	81746	6212	20.05
24	16240	18676	20300	76618	88112	95774	8064	21.87

2.0E LVL Allowable Design Stresses

Bending $F_b = 3100$ psi*

Horizontal Shear $F_v = 290$ psi

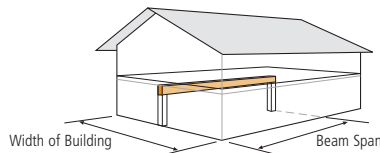
Modulus of Elasticity $E = 2.0$

Compression Perpendicular to Grain $F_c = 750$ psi

Compression Parallel to Grain $f_c = 3,200$ psi

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

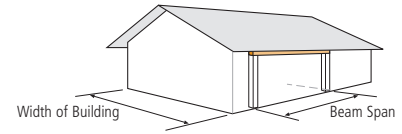
1. Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
2. Span is based on the more restrictive of simple or simple continuous beam span. Ratio of short span to long span should be greater than 0.4.
3. Beam must be centered in building if floor joists are continuous 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 = $L/360$ LL $L/240$ 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).

2.0E LVL Garage Door Headers



Murphy

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

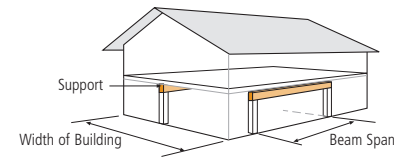


1-Story Application Table - 2.0E Garage Door Headers - 1 3/4" Width

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.
5. Table indicates LVL beams laterally braced at the top edge at maximum 24" o.c. by framing fastened directly to the LVL or to single or double top plate nailed to the LVL. Dropped headers (with cripple studs above) may have reduced capacity due to unbraced length and are beyond the scope of this table.



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

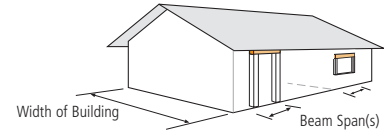
Width of Building	Snow 115%									Non-Snow 125%								
	25 psf LL + 20 psf DL			30 psf LL + 20 psf DL			40 psf LL + 20 psf DL			20 psf LL + 15 psf DL			20 psf LL + 20 psf DL			20 psf LL + 25 psf DL		
	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 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	3-9 1/4	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*	3-16	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.
7. Table indicates LVL beams laterally braced at the top edge at maximum 24" o.c. by framing fastened directly to the LVL or to single or double top plate nailed to the LVL. Dropped headers (with cripple studs above) may have reduced capacity due to unbraced length and are beyond the scope of this table.

2.0E LVL Window & Door Headers

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

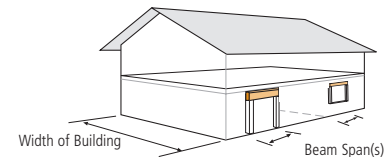


1-Story Application Table - 2.0E Window & Door Headers - 1 3/4" Width

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	2-9 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	3-7 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	-	-	-	-	3-5 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	-	3-9 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	-	-	3-5 1/2	-	3-7 1/4	-	-	-	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.
5. Table indicates LVL beams laterally braced at the top edge at maximum 24" o.c. by framing fastened directly to the LVL or to single or double top plate nailed to the LVL. Dropped headers (with cripple studs above) may have reduced capacity due to unbraced length and are beyond the scope of this table.



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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	3-5 1/2	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	3-9 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	-	3-9 1/4	3-11 1/4
28'	2-7 1/4	2-9 1/4	2-9 1/4	2-11 1/4	2-11 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	2-11 1/4	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 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.
7. Table indicates LVL beams laterally braced at the top edge at maximum 24" o.c. by framing fastened directly to the LVL or to single or double top plate nailed to the LVL. Dropped headers (with cripple studs above) may have reduced capacity due to unbraced length and are beyond the scope of this table.

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



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Allowable Uniform Loads (plf) - 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'	572	762	776	1046	1046	1046	1082	1082	1082	1348	1348	1348
8'	241	322	479	501	668	735	543	724	759	901	931	931
9'	169	226	335	352	469	640	381	508	660	633	806	806
10'	123	165	243	256	342	508	278	370	551	461	615	711
11'	93	124	182	193	257	381	209	278	413	347	462	632
12'	71	95	139	148	198	292	161	214	317	267	356	528
13'	56	75	109	117	156	229	126	169	248	210	280	414
14'	-	60	86	93	125	182	101	135	198	168	224	331
15'	-	45	69	71	97	147	77	105	160	131	177	268
16'	-	-	-	76	101	147	82	110	160	137	182	268
18'	-	-	-	63	83	121	68	90	131	113	150	220
20'	-	-	-	-	59	83	-	64	90	79	105	152
22'	-	-	-	-	-	-	-	-	-	58	77	110
24'	-	-	-	-	-	-	-	-	-	-	58	81
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'	744	861	861	1055	1055	1055	1253	1253	1253	1467	1467	1467
10'	543	724	758	889	925	925	1093	1093	1093	1273	1273	1273
11'	408	544	677	668	823	823	969	969	969	1124	1124	1124
12'	314	419	585	515	686	741	768	870	870	1006	1006	1006
13'	247	329	488	405	540	673	604	789	789	860	910	910
14'	198	264	389	324	432	579	484	645	722	689	831	831
15'	161	214	316	263	351	504	393	524	643	560	747	764
16'	132	177	259	217	289	427	324	432	564	461	615	700
18'	93	124	180	152	203	298	228	303	444	324	432	551
20'	68	90	130	111	148	215	166	221	324	236	315	445
22'	51	68	96	84	111	160	125	166	241	177	237	346
24'	-	52	72	64	86	122	96	128	184	137	182	264
26'	-	-	-	51	67	94	76	101	143	108	143	206
28'	-	-	-	-	54	74	60	81	113	86	115	163
30'	-	-	-	-	-	-	49	66	90	70	93	131
32'	-	-	-	-	-	-	-	54	73	58	77	106
34'	-	-	-	-	-	-	-	-	-	48	64	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".
5. Depths of 16" and greater should be used with a minimum of two plies unless designed specifically as a single ply of 1³/₄" with proper lateral bracing spaced at 24" along the length of the beam. (Example: the marriage beam for each half of a manufactured home before units are joined.)
6. Table indicates LVL beams continuously laterally braced at the top edge by subfloor (for joist application) or at maximum 24" o.c. by framing fastened directly to the LVL or to single or double top plate nailed to the LVL.

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

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

Span (ft)	20"			22"			24"		
	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	
6'	3238	3238	3238	3872	3872	3872	4628	4628	4628
8'	2020	2020	2020	2339	2339	2339	2694	2694	2694
9'	1699	1699	1699	1952	1952	1952	2228	2228	2228
10'	1466	1466	1466	1674	1674	1674	1898	1898	1898
11'	1289	1289	1289	1465	1465	1465	1653	1653	1653
12'	1150	1150	1150	1302	1302	1302	1464	1464	1464
13'	1038	1038	1038	1172	1172	1172	1313	1313	1313
14'	945	945	945	1065	1065	1065	1191	1191	1191
15'	768	868	868	976	976	976	1089	1089	1089
16'	633	802	802	842	900	900	1003	1003	1003
18'	445	593	669	592	779	779	768	866	866
20'	324	432	540	431	575	643	560	747	754
22'	243	325	444	324	432	529	421	561	621
24'	188	250	365	250	333	443	324	432	520
26'	148	197	285	196	262	376	255	340	441
28'	118	157	226	157	210	303	204	272	379
30'	96	128	182	128	170	244	166	221	320
32'	79	105	148	105	140	199	137	182	261
34'	66	88	122	88	117	164	114	152	216

Notes:

1. Single 1³/₄" members are limited to 14" in depth. For multiple member applications, multiply the allowable uniform load by the corresponding number of plies in the built-up beam.
2. Table displays the maximum uniform load which may be applied to the member in addition to it's own weight.
3. Total load deflection is limited to L/240.
4. Assumes the more restrictive of simple or continuous (2 span) condition.
5. Spans are measured from the center to center of bearing.
6. Depths of 16" and greater should be used with a minimum of two plies unless designed specifically as a single ply of 1³/₄" with proper lateral bracing spaced at 24" along the length of the beam. (Example: the marriage beam for each half of a manufactured home before units are joined.)
7. Table indicates LVL beams continuously laterally braced at the top edge by subfloor (for joist application) or at maximum 24" o.c. by framing fastened directly to the LVL or to single or double top plate nailed to the LVL.

Demonstrating our commitment to responsibly managed forests, Murphy Company offers FSC-certified LVL. For more information on our FSC-certified products and our support for renewable wood resources, please contact your Murphy sales representative.



2.0E LVL Allowable Uniform Loads - Roof 1³/₄"



Murphy

Allowable Uniform Loads (plf) - 2.0E - Roof - 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'	893	893	971	971	1203	1203	1308	1308	1245	1245	1353	1353	1551	1551	1686	1686
8'	482	620	482	640	846	846	920	920	873	873	950	950	1072	1072	1165	1165
9'	339	448	339	448	704	737	704	801	757	760	762	826	928	928	1009	1009
10'	247	326	247	326	513	617	513	671	556	648	556	704	818	818	890	890
11'	186	244	186	244	385	509	385	509	418	534	418	552	693	728	693	792
12'	143	187	143	187	297	391	297	391	322	424	322	424	534	611	534	664
13'	112	146	112	146	233	307	233	307	253	332	253	332	420	519	420	554
14'	90	116	90	116	187	245	187	245	203	265	203	265	336	443	336	443
15'	73	94	73	94	152	198	152	198	165	215	165	215	273	359	273	359
16'	60	77	60	77	125	162	125	162	136	176	136	176	225	295	225	295
18'	-	-	-	-	88	113	88	113	95	122	95	122	158	205	158	205
20'	-	-	-	-	64	81	64	81	69	88	69	88	115	148	115	148
22'	-	-	-	-	-	-	-	-	52	65	52	65	87	110	87	110
24'	-	-	-	-	-	-	-	-	-	-	-	-	67	83	67	83
26'	-	-	-	-	-	-	-	-	-	-	-	-	53	64	53	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	815	847	947	947	1030	1030	1115	1115	1213	1213	1294	1294	1407	1407
12'	628	674	628	733	853	853	928	928	1001	1001	1089	1089	1158	1158	1260	1260
13'	494	573	494	624	775	775	810	843	908	908	988	988	1048	1048	1140	1140
14'	396	494	396	521	648	667	648	726	831	831	904	904	957	957	1041	1041
15'	322	423	322	423	527	580	527	631	741	741	787	806	880	880	957	957
16'	265	347	265	347	434	509	434	554	648	650	648	707	806	806	877	877
18'	186	242	186	242	305	399	305	399	455	512	455	557	635	635	648	691
20'	136	175	136	175	222	289	222	289	332	413	332	434	473	513	473	558
22'	102	130	102	130	167	216	167	216	249	324	249	324	355	422	355	460
24'	79	99	79	99	129	164	129	164	192	248	192	248	273	353	273	355
26'	62	76	62	76	101	128	101	128	151	193	151	193	215	278	215	278
28'	-	-	-	-	81	101	81	101	121	153	121	153	172	220	172	220
30'	-	-	-	-	66	81	66	81	98	123	98	123	140	177	140	177
32'	-	-	-	-	54	65	54	65	81	100	81	100	115	145	115	145
34'	-	-	-	-	-	-	-	-	68	82	68	82	96	119	96	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 1³/₄" width. Values may be multiplied by 2 for 3¹/₂" width, 3 for 5¹/₄", and 4 for 7".
5. Depths of 16" and greater should be used with a minimum of two plies unless designed specifically as a single ply of 1³/₄" with proper lateral bracing spaced at 24" along the length of the beam. (Example: the marriage beam for each half of a manufactured home before units are joined.)
6. Table indicates LVL beams continuously laterally braced at the top edge by subfloor (for joist application) or at maximum 24" o.c. by framing fastened directly to the LVL or to single or double top plate nailed to the LVL.

2.0E LVL Allowable Uniform Loads - Roof 1³/₄"

Allowable Uniform Loads (plf) - 2.0E - Roof - 1 ³ / ₄ " Width												
Span (ft)	20"				22"				24"			
	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
	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'	3725	3725	4050	4050	4455	4455	4843	4843	5324	5324	5788	5788
8'	2324	2324	2527	2527	2692	2692	2927	2927	3100	3100	3371	3371
9'	1956	1956	2127	2127	2246	2246	2443	2443	2564	2564	2788	2788
10'	1688	1688	1835	1835	1927	1927	2095	2095	2185	2185	2376	2376
11'	1484	1484	1614	1614	1687	1687	1834	1834	1903	1903	2070	2070
12'	1324	1324	1440	1440	1499	1499	1631	1631	1686	1686	1833	1833
13'	1195	1195	1299	1299	1349	1349	1468	1468	1512	1512	1645	1645
14'	1088	1088	1184	1184	1226	1226	1334	1334	1371	1371	1491	1491
15'	999	999	1087	1087	1124	1124	1222	1222	1254	1254	1364	1364
16'	924	924	1005	1005	1037	1037	1128	1128	1155	1155	1257	1257
18'	770	770	838	838	898	898	977	977	997	997	1085	1085
20'	622	622	648	677	741	741	806	806	869	869	945	945
22'	487	512	487	558	610	610	648	664	716	716	779	779
24'	375	429	375	467	499	511	499	556	600	600	648	653
26'	295	364	295	383	393	434	393	472	498	509	510	554
28'	236	305	236	305	314	372	314	406	408	437	408	476
30'	192	246	192	246	256	323	256	330	332	379	332	413
32'	158	201	158	201	211	270	211	270	273	332	273	352
34'	132	166	132	166	176	223	176	223	228	292	228	292

Notes:

1. Single 1³/₄" members are limited to 14" in depth. For multiple member applications, multiply the allowable uniform load by the corresponding number of plies in the built-up beam.
2. Table displays the maximum uniform load which may be applied to the member in addition to its own weight.
3. Assumes the more restrictive of simple or continuous (2 span) condition.
4. Spans are measured from the center to center of bearing.
5. Depths of 16" and greater should be used with a minimum of two plies unless designed specifically as a single ply of 1³/₄" with proper lateral bracing spaced at 24" along the length of the beam. (Example: the marriage beam for each half of a manufactured home before units are joined.)
6. Table indicates LVL beams continuously laterally braced at the top edge by subfloor (for joist application) or at maximum 24" o.c. by framing fastened directly to the LVL or to single or double top plate nailed to the LVL.

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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)	Weight (plf)
	100%	115%	125%	100%	115%	125%		
5 1/2	1829	2103	2286	1904	2189	2380	36	2.51
7 1/4	2411	2772	3013	3147	3620	3934	83	3.30
9 1/4	3076	3537	3845	4904	5639	6130	173	4.22
9 1/2	3159	3633	3948	5148	5920	6434	188	4.33
11 1/4	3741	4302	4676	7002	8053	8753	311	5.13
11 7/8	3948	4541	4936	7726	8885	9658	366	5.41
14	4655	5353	5819	10425	11989	13032	600	6.38
16	5320	6118	6650	13293	15288	16617	896	7.29
18	5985	6883	7481	16472	18942	20590	1276	8.19
20	6650	7648	8313	19953	22946	24942	1750	9.12
22	7315	8412	9144	23733	27293	29666	2329	10.03
24	7980	9177	9975	27805	31976	34756	3024	10.94

Allowable Design Properties – 3 1/2" "

Depth	Max. Vertical Shear (lbs)			Max. Bending Moment (ft-lbs)			EI (x 10 ⁶ lbs-in)	Weight (plf)
	100%	115%	125%	100%	115%	125%		
5 1/2	3658	4206	4572	3807	4379	4759	73	5.01
7 1/4	4821	5544	6027	6295	7239	7869	167	6.61
9 1/4	6151	7074	7689	9807	11278	12259	346	8.43
9 1/2	6318	7265	7897	10295	11839	12869	375	8.66
11 1/4	7481	8603	9352	14005	16105	17506	623	10.25
11 7/8	7897	9081	9871	15453	17771	19316	733	10.82
14	9310	10707	11638	20851	23978	26064	1201	12.76
16	10640	12236	13300	26587	30575	33234	1792	14.58
18	11970	13766	14963	32943	37885	41179	2552	16.41
20	13300	15296	16626	39906	45892	49884	3500	18.23
22	14630	16824	18288	47466	54586	59332	4658	20.05
24	15960	18354	19950	55610	63952	69512	6048	21.87

1.5E LVL Allowable Design Stresses

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

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

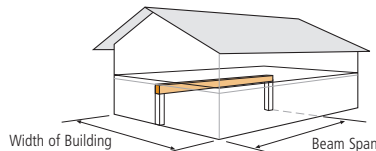
Modulus of Elasticity $E = 1.5 \text{ psi}$

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

Compression Parallel to Grain $f_c = 2,350 \text{ psi}$

*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

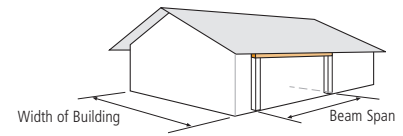
Width of Building	Beam Span									
	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'
24'	2-11 1/4	2-11 7/8	2-14	2-14	2-16	2-16	2-18	2-18	3-16	3-18
	3-9 1/2	3-11 1/4	3-11 1/4	3-14	3-14	3-14	3-16	3-16	4-16	4-16
28'	2-11 7/8	2-14	2-14	2-16	2-16	2-18	2-18	3-16	3-18	3-18
	3-11 1/4	3-11 1/4	3-11 7/8	3-14	3-14	3-16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

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 or 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 = $L/360$ LL $L/240$ 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).

1.5E LVL Garage Door Headers

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

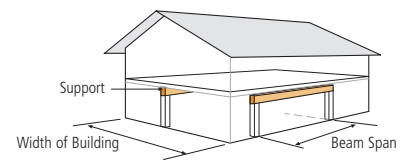


1-Story Application Table - 1.5E Garage Door Headers - 1 3/4" Width

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	-	-	3-11 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.
5. Table indicates LVL beams laterally braced at the top edge at maximum 24" o.c. by framing fastened directly to the LVL or to single or double top plate nailed to the LVL. Dropped headers (with cripple studs above) may have reduced capacity due to unbraced length and are beyond the scope of this table.



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 1/2	3-18	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 1/2	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	-	-	3-11 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 1/2	3-16	3-18	2-11 1/4	3-18	-	2-11 1/4	3-18*	3-18
	3-9 1/4	-	-	3-11 1/4	-	-	3-11 1/4	-	-	3-9 1/4	-	-	3-9 1/2	-	-	3-11 1/4	-	-

Notes:

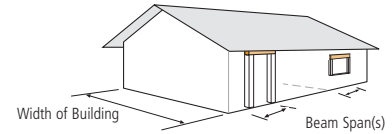
1. Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
2. Assumes simple span measured from the inside face of bearing. Assumed bearing length is 3" each end (* indicates 4 1/2" end bearing).
3. Roof truss framing with 24" soffits.
4. Floor beam is located at the 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.
7. Table indicates LVL beams laterally braced at the top edge at maximum 24" o.c. by framing fastened directly to the LVL or to single or double top plate nailed to the LVL. Dropped headers (with cripple studs above) may have reduced capacity due to unbraced length and are beyond the scope of this table.

1.5E LVL Window & Door Headers



Murphy

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

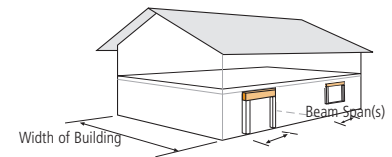


1-Story Application Table - 1.5E Window & Door Headers - 1 3/4" Width

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
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
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.
5. Table indicates LVL beams laterally braced at the top edge at maximum 24" o.c. by framing fastened directly to the LVL or to single or double top plate nailed to the LVL. Dropped headers (with cripple studs above) may have reduced capacity due to unbraced length and are beyond the scope of this table.



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 and 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	3-9 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 1/4	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	3-11 1/2	3-5 1/2	3-7 1/4	-	3-9 1/4	3-11 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	2-11 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
	-	-	-	-	3-11 7/8	-	3-9 1/4	3-9 1/4	3-11 1/4	3-14	-	-	-	3-9 1/4	3-11 1/4	-	-	-	3-9 1/4	-
32'	2-7 1/4	2-9 1/4	2-11 1/4	2-11 7/8	2-16	2-7 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	-	3-11 1/4	3-11 1/4	3-11 1/4	3-14	-	-	-	3-9 1/4	3-11 7/8	-	-	-	3-9 1/4	3-11 1/4
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 1/4	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 1/2	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. Maximum beam deflection = L/240 LL, L/180 TL.
5. Table indicates LVL beams laterally braced at the top edge at maximum 24" o.c. by framing fastened directly to the LVL or to single or double top plate nailed to the LVL. Dropped headers (with cripple studs above) may have reduced capacity due to unbraced length and are beyond the scope of this table.

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

Allowable Uniform Loads (plf) - 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'	429	572	696	891	1028	1028	965	1063	1063	1324	1324	1324
8'	181	241	358	376	501	608	407	543	639	676	870	870
9'	127	169	250	264	352	480	286	381	504	475	633	686
10'	93	123	182	192	256	380	208	278	407	346	461	554
11'	70	93	135	145	193	284	157	209	308	260	347	457
12'	54	71	104	111	148	218	121	161	236	200	267	383
13'	-	56	81	88	117	170	95	126	185	158	210	309
14'	-	45	64	70	93	135	76	101	147	126	168	246
15'	-	37	51	57	76	109	62	82	119	103	137	199
16'	-	-	-	-	63	89	51	68	97	84	113	163
18'	-	-	-	-	44	61	-	-	-	59	79	113
20'	-	-	-	-	-	-	-	-	-	-	58	81
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'	795	960	960	1207	1207	1207	1443	1443	1443	1701	1701	1701
9'	558	744	757	915	1023	1023	1231	1231	1231	1442	1442	1442
10'	407	543	612	667	827	827	996	1055	1055	1251	1251	1251
11'	306	408	505	501	668	682	748	871	871	1065	1080	1080
12'	236	314	423	386	515	572	576	730	730	820	906	906
13'	185	247	360	304	405	486	453	604	621	645	771	771
14'	148	198	291	243	324	418	363	484	534	517	663	663
15'	121	161	235	198	263	364	295	393	464	420	560	576
16'	99	132	193	163	217	319	243	324	407	346	461	506
18'	70	93	134	114	152	222	171	228	320	243	324	398
20'	51	68	96	83	111	160	124	166	241	177	236	320
22'	-	51	70	63	84	118	93	125	179	133	177	257
24'	-	-	-	-	64	89	72	96	136	103	137	196
26'	-	-	-	-	51	69	57	76	105	81	108	152
28'	-	-	-	-	-	-	-	60	83	65	86	120
30'	-	-	-	-	-	-	-	-	-	53	70	96
32'	-	-	-	-	-	-	-	-	-	-	58	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".
5. Depths of 16" and greater should be used with a minimum of two plies unless designed specifically as a single ply of 1³/₄" with proper lateral bracing spaced at 24" along the length of the beam. (Example: the marriage beam for each half of a manufactured home before units are joined.)
6. Table indicates LVL beams continuously laterally braced at the top edge by subfloor (for joist application) or at maximum 24" o.c. by framing fastened directly to the LVL or to single or double top plate nailed to the LVL.

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



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

Span (ft)	20"			22"			24"		
	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	
6'	3182	3182	3182	3805	3805	3805	4548	4548	4548
8'	1985	1985	1985	2299	2299	2299	2648	2648	2648
9'	1670	1670	1670	1918	1918	1918	2189	2189	2189
10'	1441	1441	1441	1645	1645	1645	1865	1865	1865
11'	1267	1267	1267	1440	1440	1440	1625	1625	1625
12'	1098	1098	1098	1280	1280	1280	1439	1439	1439
13'	885	934	934	1112	1112	1112	1291	1291	1291
14'	709	804	804	943	957	957	1123	1123	1123
15'	576	699	699	767	833	833	976	976	976
16'	475	613	613	632	730	730	820	857	857
18'	333	445	482	444	575	575	576	674	674
20'	243	324	389	324	431	463	420	544	544
22'	183	243	320	243	324	381	316	421	447
24'	141	188	267	187	250	318	243	324	374
26'	111	148	211	147	196	270	191	255	317
28'	89	118	167	118	157	225	153	204	271
30'	72	96	134	96	128	180	124	166	235
32'	59	79	108	79	105	147	103	137	193
34'	49	66	89	66	88	120	85	114	159

Notes:

1. Single 1³/₄" members are limited to 14" in depth. For multiple member applications, multiply the allowable uniform load by the corresponding number of plies in the built-up beam.
2. Table displays the maximum uniform load which may be applied to the member in addition to its own weight.
3. Total load deflection is limited to L/240.
4. Assumes the more restrictive of simple or continuous (2 span) condition.
5. Spans are measured from the center to center of bearing.
6. Depths of 16" and greater should be used with a minimum of two plies unless designed specifically as a single ply of 1³/₄" with proper lateral bracing spaced at 24" along the length of the beam. (Example: the marriage beam for each half of a manufactured home before units are joined.)
7. Table indicates LVL beams continuously laterally braced at the top edge by subfloor (for joist application) or at maximum 24" o.c. by framing fastened directly to the LVL or to single or double top plate nailed to the LVL.

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1.5E LVL Allowable Uniform Loads - Roof 1³/₄"

Allowable Uniform Loads (plf) - 1.5E - Roof - 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'	801	801	858	871	1183	1183	1286	1286	1223	1223	1330	1330	1524	1524	1657	1657
8'	362	449	362	479	700	700	751	761	735	735	799	799	1001	1001	1088	1088
9'	254	335	254	335	528	552	528	601	572	580	572	631	790	790	859	859
10'	185	243	185	243	385	446	385	486	417	469	417	510	638	638	692	694
11'	139	182	139	182	289	368	289	381	313	387	313	413	520	527	520	573
12'	107	139	107	139	223	292	223	292	241	317	241	317	401	442	401	481
13'	84	109	84	109	175	229	175	229	190	248	190	248	315	375	315	409
14'	68	86	68	86	140	182	140	182	152	198	152	198	252	323	252	331
15'	55	69	55	69	114	147	114	147	123	160	123	160	205	268	205	268
16'	-	-	-	57	94	121	94	121	102	131	102	131	169	220	169	220
18'	-	-	-	-	66	83	66	83	71	90	71	90	119	152	119	152
20'	-	-	-	-	-	-	-	59	52	65	52	65	87	110	87	110
22'	-	-	-	-	-	-	-	-	-	-	-	-	65	81	65	81
24'	-	-	-	-	-	-	-	-	-	-	-	-	50	61	50	61
26'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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'	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	612	632	786	786	854	854	1003	1003	1090	1090	1243	1243	1352	1352
12'	471	488	471	530	659	659	717	717	841	841	915	915	1043	1043	1135	1135
13'	371	415	371	451	560	560	607	610	716	716	778	778	887	887	965	965
14'	297	357	297	388	479	482	486	525	616	616	670	670	764	764	831	831
15'	241	310	241	316	395	419	395	456	535	535	582	583	664	664	723	723
16'	199	259	199	259	326	368	326	400	470	470	486	511	583	583	634	634
18'	140	180	140	180	229	289	229	298	341	369	341	402	459	459	486	499
20'	102	130	102	130	167	215	167	215	249	298	249	324	354	370	354	403
22'	76	96	76	96	125	160	125	160	187	241	187	241	266	304	266	331
24'	59	72	59	72	96	122	96	122	144	184	144	184	205	254	205	264
26'	-	-	-	-	76	94	76	94	113	143	113	143	161	206	161	206
28'	-	-	-	-	61	74	61	74	91	113	91	113	129	163	129	163
30'	-	-	-	-	-	-	-	-	74	90	74	90	105	131	105	131
32'	-	-	-	-	-	-	-	-	61	73	61	73	87	106	87	106
34'	-	-	-	-	-	-	-	-	51	59	51	59	72	87	72	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".
5. Depths of 16" and greater should be used with a minimum of two plies unless designed specifically as a single ply of 1³/₄" with proper lateral bracing spaced at 24" along the length of the beam. (Example: the marriage beam for each half of a manufactured home before units are joined.)
6. Table indicates LVL beams continuously laterally braced at the top edge by subfloor (for joist application) or at maximum 24" o.c. by framing fastened directly to the LVL or to single or double top plate nailed to the LVL.

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



Murphy

Allowable Uniform Loads (plf) - 1.5E - Roof - 1 3/4" Width

Span (ft)	20"				22"				24"			
	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
	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'	3661	3661	3980	3980	4378	4378	4759	4759	5232	5232	5688	5688
8'	2284	2284	2484	2484	2645	2645	2876	2876	3047	3047	3313	3313
9'	1922	1922	2090	2090	2207	2207	2400	2400	2519	2519	2739	2739
10'	1658	1658	1803	1803	1893	1893	2059	2059	2147	2147	2335	2335
11'	1458	1458	1586	1586	1657	1657	1802	1802	1870	1870	2034	2034
12'	1265	1265	1375	1375	1473	1473	1602	1602	1656	1656	1801	1801
13'	1076	1076	1170	1170	1281	1281	1393	1393	1486	1486	1616	1616
14'	926	926	1008	1008	1103	1103	1200	1200	1293	1293	1406	1406
15'	806	806	877	877	959	959	1044	1044	1125	1125	1224	1224
16'	707	707	769	769	842	842	916	916	987	987	1074	1074
18'	556	556	606	606	663	663	721	721	777	777	846	846
20'	449	449	486	489	535	535	582	582	627	627	683	683
22'	365	369	365	402	440	440	475	479	516	516	562	562
24'	281	308	281	336	363	368	374	401	432	432	470	470
26'	221	261	221	285	294	312	294	340	366	366	382	399
28'	177	224	177	226	236	267	236	291	306	314	306	342
30'	144	182	144	182	192	231	192	244	249	272	249	297
32'	119	148	119	148	158	199	158	199	205	238	205	259
34'	99	122	99	122	132	164	132	164	171	209	171	216

Notes:

1. Single 1 3/4" members are limited to 14" in depth. For multiple member applications, multiply the allowable uniform load by the corresponding number of plies in the built-up beam.
2. Table displays the maximum uniform load which may be applied to the member in addition to its own weight.
3. Assumes the more restrictive of simple or continuous (2 span) condition.
4. Spans are measured from the center to center of bearing.
5. Depths of 16" and greater should be used with a minimum of two plies unless designed specifically as a single ply of 1 3/4" with proper lateral bracing spaced at 24" along the length of the beam. (Example: the marriage beam for each half of a manufactured home before units are joined.)
6. Table indicates LVL beams continuously laterally braced at the top edge by subfloor (for joist application) or at maximum 24" o.c. by framing fastened directly to the LVL or to single or double top plate nailed to the LVL.

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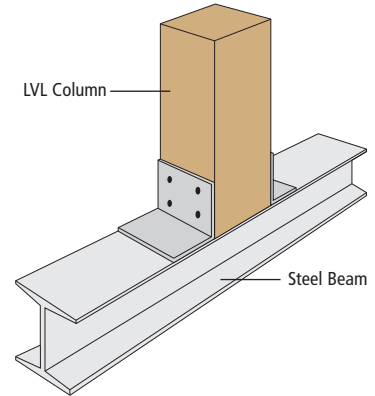
2.0 E Column Allowable Axial Loads (lbs)

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

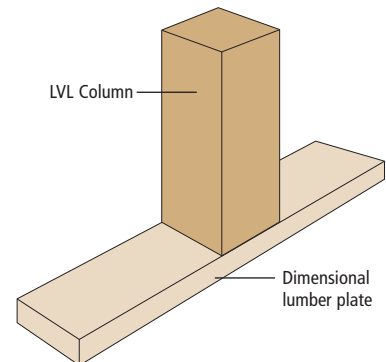
Plate Bearing

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_{\perp} = psi as a typical for #2 and Better Spruce, Pine, or Fir.

Notes:

1. Assumes NDS 2006.
2. Solid, one piece member.
3. Effective column length equals the actual column length; ends are braced about both axis.

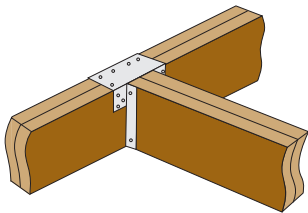


Column base not shown; verify capacity with manufacturer



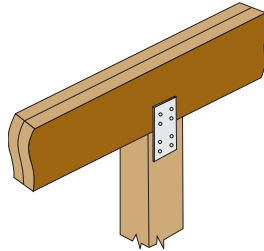
Connection Details

Beam-to-Beam Connection



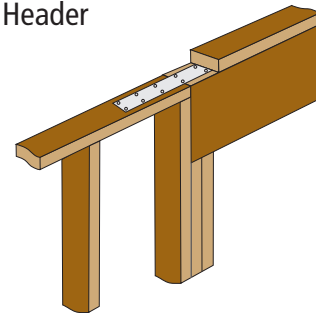
Install hanger per manufacturer's instructions. Hanger must distribute load to each ply of the assemble. Contact Murphy Company technical support with questions.

Bearing on Wood Column



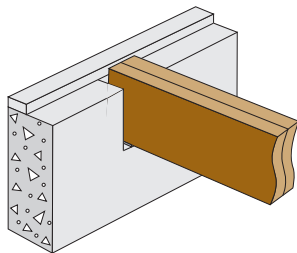
Install column cap per manufacturer's instructions; verify cap and column capacity.

Bearing for Door or Window Header



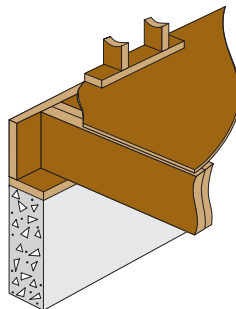
Strap per building code if top plate is not continuous over header.

Beam Pocket in Masonry Wall



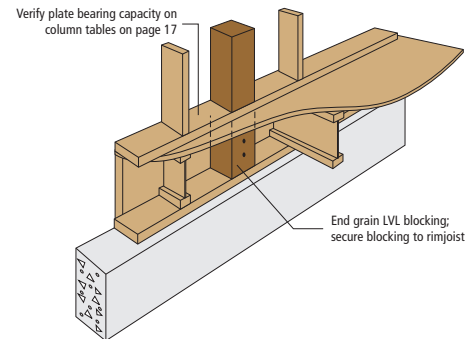
Protect LVL from moisture with a vapor barrier and airspace. LVL should not directly contact concrete.

Bearing on Exterior Wall



LVL should not directly contact concrete. Verify plate bearing capacity on page 19.

Solid Blocking at Post



Provide a continuous load path to concrete.

Minimum Nail Spacing

for nails installed parallel to the glue line

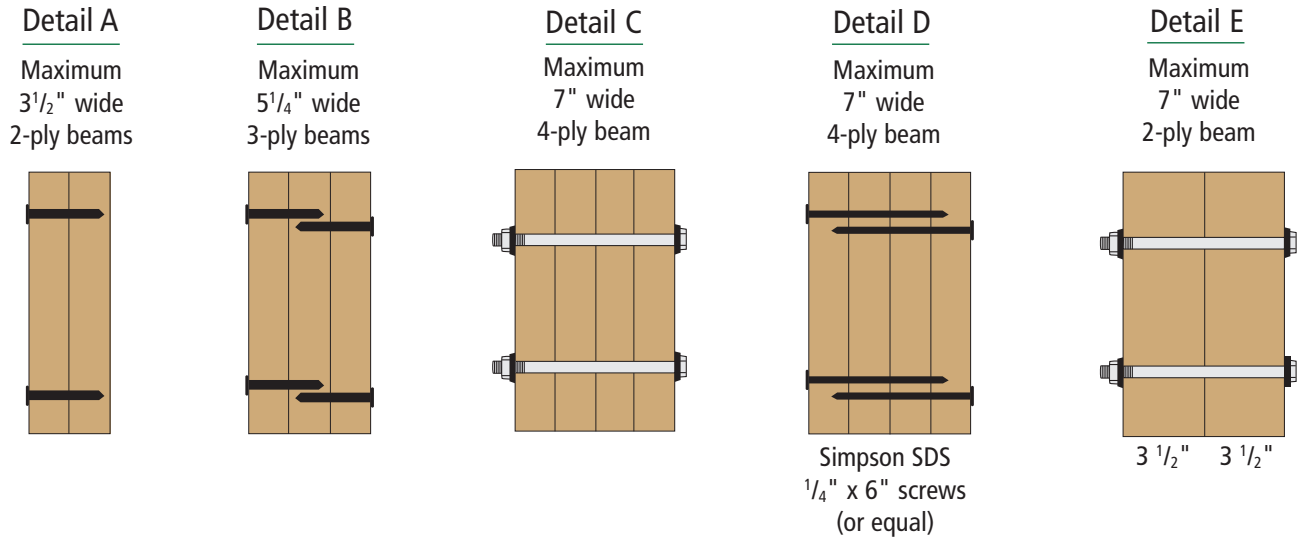
Nail Size	Single Row	Multiple Rows ¹
8d Common (2 1/2")	3"	4"
10d Common (3")	4"	5"
12d Common (3 1/4")	4"	5"
16d Common (3 1/2")	5"	6" ²

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

Installation Instructions

Multiple Piece Assembly & Side Load Capacity

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



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 12" 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:**
- Design values based on 2006 NDS and PR-L283 APA and ICC-ES ESR-2913 Product Report.
 - Dry conditions of use.
 - Design values may be increased for load duration; see 2006 NDS.
 - Verify load capacity of framing member in addition to connection design.
 - Use minimum two rows of fasteners for up to 11 7/8" LVL beam depth and minimum three rows of fasteners for 14" to 18" LVL beam depths. For 20" to 24" LVL beam depths, contact Murphy Company.

Bearing Length and Maximum Reaction (lbs)

Width (in)	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

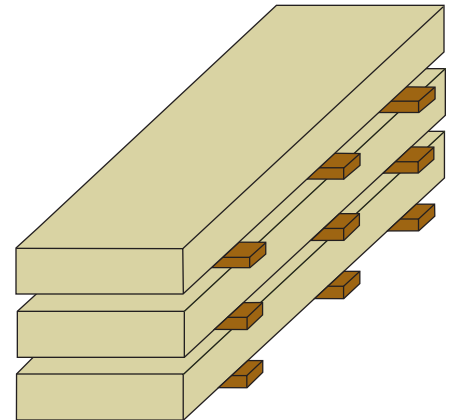
- Notes:**
- Use any combination of 1 3/4" and 3 1/2" members using proper nailing or bolting guidelines.
 - Minimum bearing length is 1 1/2". Bearing across the full width of the beam is required.
 - Reported bearing length is based on 750 psi compression perpendicular to grain stress of the LVL member.
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 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 Company 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 Company Sales to learn more about receiving a complimentary copy of KeyBeam Software.



Murphy

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