

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 International, Beams, Inc. 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.

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 2005 NDS and 2006 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

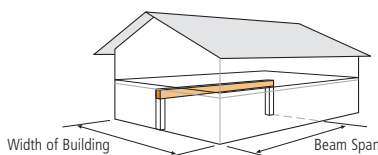
Modulus of Elasticity $E = 2.0$

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

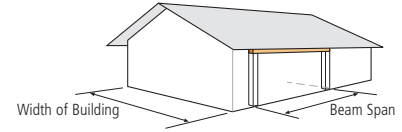
1. Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
2. Span is based on the more restrictive of simple or simple continuous beam span. Ratio of short span to long span should be greater than 0.4.
3. Beam must be centered in building if floor joists are continuous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



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

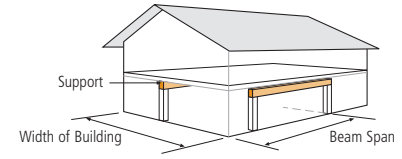


1-Story Application Table - 2.0E Garage Door Headers - 1 3/4" Width

| 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.



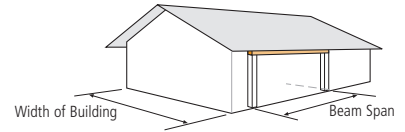
2-Story Application Table - 2.0E Garage Door Headers - 1 3/4" Width

| 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 | 3-9 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* | 3-18 | 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

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

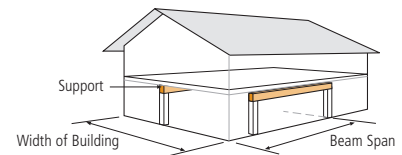


1-Story Application Table - 2.0E Window & Door Headers - 1 3/4" Width

| 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:

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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 Garage 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 | 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.

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' | 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".

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

| Allowable Uniform Loads - 2.0E - Floor 100% - 1 3/4" 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 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 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.

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



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Allowable Uniform Loads - 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".

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

| Allowable Uniform Loads - 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 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 it's 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.

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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 $F_b = 2250$ psi*

Horizontal Shear $F_v = 285$ psi

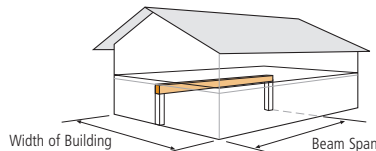
Modulus of Elasticity $E = 1.5$ psi

Compression Perpendicular to Grain $F_c = 750$ psi

Compression Parallel to Grain $f_c = 2,350$ psi

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

1.5E LVL Floor Beams



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

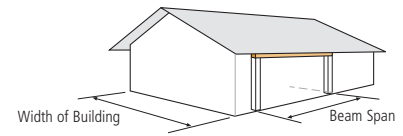
| Width of Building | Beam Span | | | | | | | | | |
|-------------------|-----------|----------|----------|------|------|------|------|------|------|------|
| | 11' | 12' | 13' | 14' | 15' | 16' | 17' | 18' | 19' | 20' |
| 24' | 2-11 1/4 | 2-11 7/8 | 2-14 | 2-14 | 2-16 | 2-16 | 2-18 | 2-18 | 3-16 | 3-18 |
| | 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 | 3-16 | 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 | 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 or 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 = $L/360$ LL $L/240$ 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

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



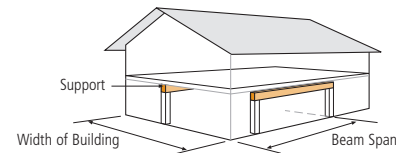
1-Story Application Table - 1.5E Garage Door Headers - 1 3/4" Width

| 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' | 2-7/4 | 2-14 | 2-14 | 2-9/4 | 2-14 | 2-16 | 2-9/4 | 2-16 | 2-18 | 2-7/4 | 2-11/8 | 2-14 | 2-7/4 | 2-14 | 2-14 | 2-7/4 | 2-14 | 2-14 |
| | - | 3-11/4 | - | 3-7/4 | 3-11/8 | 3-14 | 3-7/4 | 3-14 | 3-14 | - | 3-11/4 | 3-11/4 | - | 3-11/4 | 3-11/8 | - | 3-11/4 | - |
| 24' | 2-9/4 | 2-14 | 2-16 | 2-9/4 | 2-16 | 2-18 | 2-9/4 | 2-16 | 2-18* | 2-7/4 | 2-14 | 2-14 | 2-7/4 | 2-14 | 2-16 | 2-9/4 | 2-14 | 2-16 |
| | 3-7/4 | 3-11/8 | 3-14 | 3-7/4 | 3-11/8 | 3-14 | 3-7/4 | 3-14 | 3-16 | - | 3-11/4 | 3-11/8 | - | 3-11/4 | 3-14 | 3-7/4 | 3-11/8 | 3-14 |
| 28' | 2-9/4 | 2-16 | 2-18 | 2-9/4 | 2-16 | 2-18 | 2-9/4 | 2-18* | 3-16 | 2-7/4 | 2-14 | 2-16 | 2-9/4 | 2-14 | 2-16 | 2-9/4 | 2-14 | 2-16 |
| | 3-7/4 | 3-14 | 3-14 | 3-7/4 | 3-14 | 3-14 | - | 3-14 | - | - | 3-11/4 | 3-14 | 3-7/4 | 3-11/8 | 3-14 | 3-7/4 | - | 3-14 |
| 32' | 2-9/4 | 2-16 | 2-18 | 2-9/4 | 2-18 | 3-16 | 2-11/4 | 2-18* | 3-18 | 2-9/4 | 2-14 | 2-16 | 2-9/4 | 2-14 | 2-16 | 2-9/4 | 2-16 | 2-18 |
| | 3-7/4 | 3-14 | 3-14 | - | 3-14 | - | 3-9/4 | 3-16 | - | 3-7/4 | 3-11/8 | 3-14 | 3-7/4 | - | 3-14 | 3-7/4 | 3-14 | 3-14 |
| 36' | 2-9/4 | 2-18 | 3-16 | 2-9/2 | 2-18* | 3-16 | 2-11/4 | 3-16 | 3-18 | 2-9/4 | 2-14 | 2-16 | 2-9/4 | 2-16 | 2-18 | 2-9/4 | 2-16 | 2-18* |
| | - | 3-14 | - | 3-9/4 | 3-14 | - | 3-9/4 | - | - | 3-7/4 | 3-11/8 | 3-14 | 3-7/4 | 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' | 2-9/4 | 2-18 | 3-16 | 2-9/2 | 2-18* | 3-18 | 2-11/4 | 2-18* | 3-18 | 2-9/4 | 2-16 | 2-18 | 2-9/4 | 2-16 | 2-18 | 2-9/4 | 2-18 | 3-16 |
| | - | 3-16 | - | 3-9/4 | 3-16 | - | 3-9/4 | 3-16 | - | - | 3-14 | 3-16 | - | 3-14 | 3-16 | - | 3-16 | - |
| 24' | 2-11/4 | 2-18* | 3-18 | 2-11/4 | 2-18* | 3-18 | 2-11/2 | 3-18 | 3-18 | 2-9/4 | 2-18 | 3-16 | 2-9/2 | 2-18* | 3-18 | 2-11/4 | 2-18* | 3-18 |
| | 3-9/4 | 3-16 | - | 3-9/4 | 3-16 | - | 3-9/4 | - | - | - | 3-16 | - | 3-9/4 | 3-16 | - | 3-9/4 | 3-16 | - |
| 28' | 2-11/4 | 3-16 | 3-18 | 2-11/2 | 3-16 | 3-18 | 2-11/4 | 3-18 | - | 2-11/4 | 2-18* | 3-18 | 2-11/4 | 2-18* | 3-18 | 2-11/4 | 2-18* | 3-18 |
| | 3-9/4 | - | - | 3-9/4 | - | - | 3-9/2 | - | - | 3-9/4 | 3-16 | - | 3-9/4 | 3-16 | - | 3-9/4 | 3-16 | - |
| 32' | 2-11/4 | 3-18 | - | 2-11/4 | 3-18 | - | 2-14 | 3-18* | - | 2-11/4 | 2-18* | 3-18 | 2-11/2 | 3-16 | 3-18 | 2-11/4 | 3-18 | 3-18 |
| | 3-18* | 3-9/4 | - | - | 3-9/2 | - | - | 3-11/4 | - | - | 3-9/4 | 3-16 | - | 3-9/4 | - | - | 3-9/4 | - |
| 36' | 2-11/8 | 3-18* | - | 2-11/8 | 3-18* | - | 2-14* | - | - | 2-11/2 | 3-16 | 3-18 | 2-11/4 | 3-18 | - | 2-11/4 | 3-18* | 3-18 |
| | 3-9/4 | - | - | 3-11/4 | - | - | 3-11/4 | - | - | 3-9/4 | - | - | 3-9/2 | - | - | 3-11/4 | - | - |

Notes:

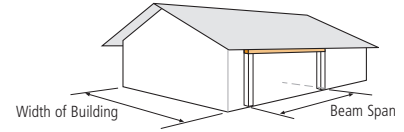
1. Table indicates the number of 1 3/4" wide LVL plies to be used for the given application.
2. Assumes simple span measured from the inside face of bearing. Assumed bearing length is 3" each end (* indicates 4 1/2" end bearing).
3. Roof truss framing with 24" soffits.
4. Floor beam is located at the 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.

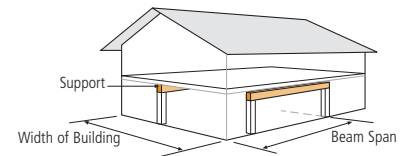


1-Story Application Table - 1.5E Window & Door Headers - 1 3/4" Width

| 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 |
| 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 1/4 | 2-9 1/4 | 2-9 1/4 | 2-11 1/4 | 2-11 1/4 | 2-7 1/4 | 2-9 1/4 | 2-11 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 Garage 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 | - | 3-11 7/8 |
| 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 | 2-9 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 | 3-9 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 1/4 | 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 | 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"

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' | 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".

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



Murphy

Allowable Uniform Loads - 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' | 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 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. 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.

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.



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

Allowable Uniform Loads - 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) | 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 | 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".

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



Murphy

Allowable Uniform Loads - 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' | 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 it's 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.

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



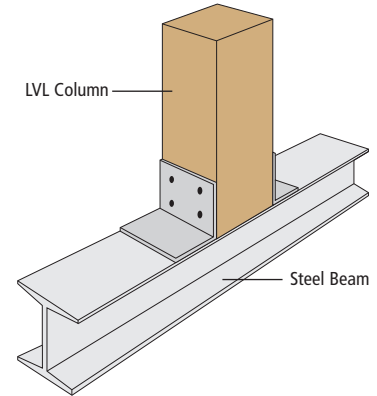
2.0 E Column Allowable Axial Loads (lbs)

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

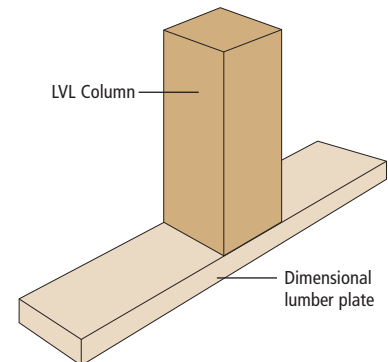
Plate Bearing

| 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 2005.
2. Solid, one piece member.
3. Effective column length equals the actual column length; ends are braced about both axis.

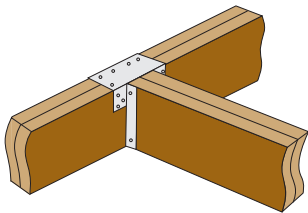


Column base not shown; verify capacity with manufacturer



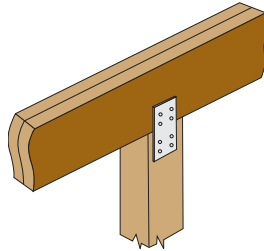
Connection Details

Beam-to-Beam Connection



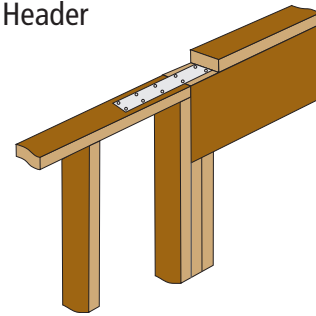
Install hanger per manufacturer's instructions. Hanger must distribute load to each ply of the assemble. Contact International Beams Inc technical support with questions.

Bearing on Wood Column



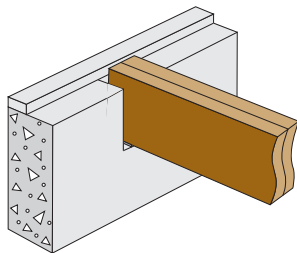
Install column cap per manufacturer's instructions; verify cap and column capacity.

Bearing for Door or Window Header



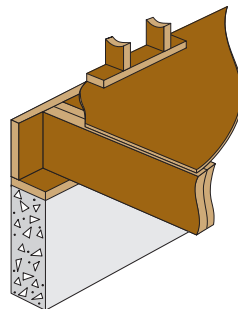
Strap per building code if top plate is not continuous over header.

Beam Pocket in Masonry Wall



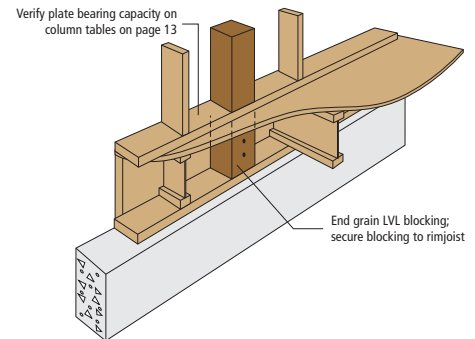
Protect LVL from moisture with a vapor barrier and airspace. LVL should not directly contact concrete.

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

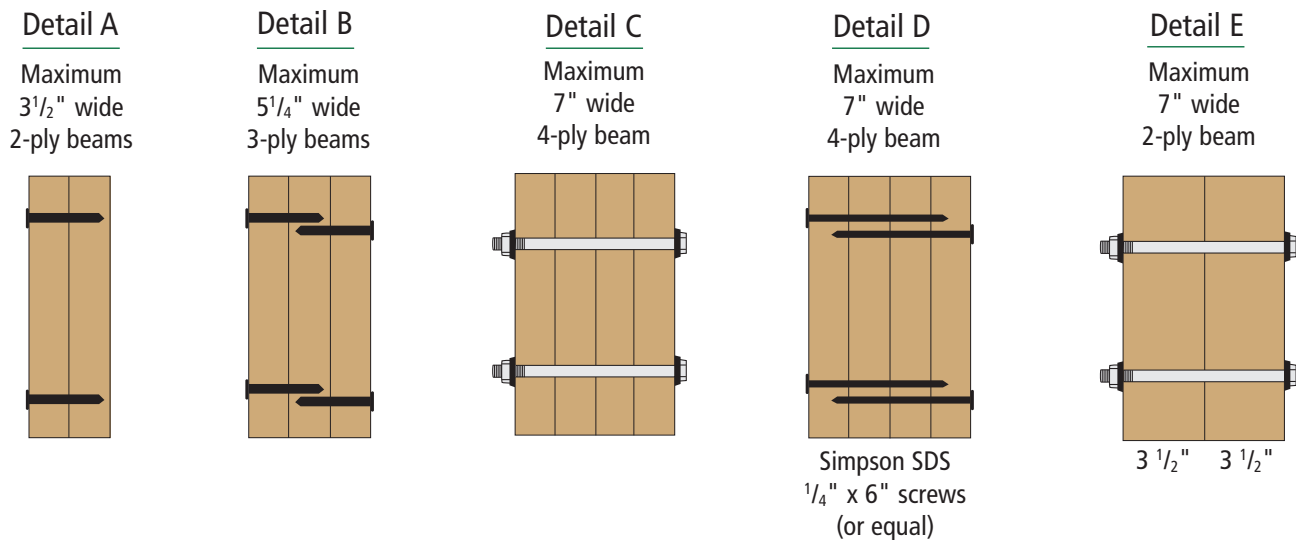
| Nail Size | Single Row | Multiple Rows ¹ |
|---------------------|------------|----------------------------|
| 8d Common (2 1/2") | 3" | 4" |
| 10d Common (3") | 4" | 5" |
| 12d Common (3 1/4") | 4" | 5" |
| 16d Common (3 1/2") | 5" | 6" ² |

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

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:

1. Design values based on 2005 NDS and PR-L283 APA and ICC-ES ESR-2913 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.
5. 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:

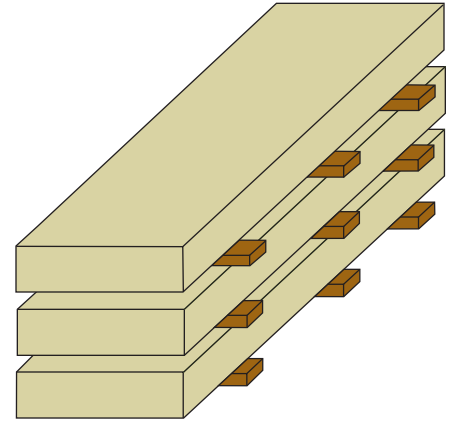
1. Use any combination of 1 3/4" and 3 1/2" members using proper nailing or bolting guidelines.
2. Minimum bearing length is 1 1/2". Bearing across the full width of the beam is required.
3. Reported bearing length is based on 750 psi compression perpendicular to grain stress of the LVL member.
Beams 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 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

Engineered Wood Division

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