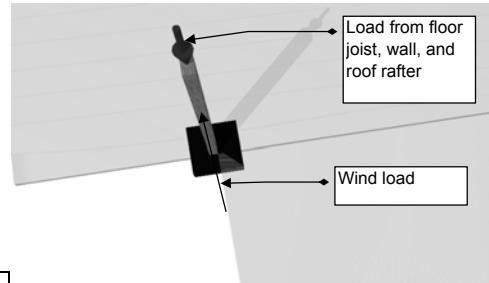


Column, Post, Stud Calculator

Assumptions: 1) Top and bottom connections are considered 'pinned' (not 'fixed' or embedded). 2) Bearing area at top and bottom is not checked. 3) The column is assumed to be laterally supported at its top and bottom. 4) Loads include axial compression and / or uniform wind (bending). 5) Wet or extreme temperature use of the material is not considered. 6) Design based on 1997 National Design Specification for Wood Construction values and equations.



Job Name: Two story wood-framed example
 Member I.D.: Post R2 (king stud)
 Other Info: (see next example for king stud)

General Information

Column, Post, or Stud Length, ft. L = 12.00 ft
 Max. Live Deflection L / 175 = 0.82 in
 Type Of Column, Post, or Stud: One Of Multiple Studs In Sheathed Wall
 Load Duration Factor: Ten Minutes (Wind / Earthqk.)
 Off-Center (Eccentric) Compression Loads or Add'l Bending Loads (other than wind)? No

Significant load is from wind on the garage door.

Applied Gravity Loads

	Live, psf	Dead, psf	x Length, ft	x Width, ft	Live Load, lbs	Dead Load, lbs	
Roof Loads (without snow)		16 psf	6.50 ft	1.30 ft	0 lb	0 lb	
Roof Snow (only)	38 psf		6.50 ft	1.30 ft	321 lb	0 lb	
Floor 3 Loads					0 lb	0 lb	
Floor 2 Loads					0 lb	0 lb	
Floor 1 Loads	40 psf	12 psf	6.00 ft	1.30 ft	312 lb	94 lb	
Wall Dead Load		10 psf	13.00 ft	1.30 ft	0 lb	169 lb	
Other 'psf' load and trib. area.					0 lb	0 lb	
Other point load: all Live, all Dead, or some of each, lbs.						0 lb	
Total Live and Dead Loads:						633 lb	398 lb
Combined Total Load:						1,031 lb	

Tributary width is the spacing of the studs. We're assuming studs at 16" OC will work.

Wind Load

(Assumes external sheathing of plywood, metal, etc. is applied)

Wind Applied To: Narrow Face
 Tributary Width of Wind Load, ft. z = 5.25 ft
 Wind Pressure q = 22.6 psf

The tributary width is half the width of the door plus half the distance to the next stud.

4x And Smaller (Lumber)

Lumber Material: Douglas Fir-Larch
 Lumber Grade: No. 1

2 x 12
(2) 2 x 6
3 x 8
4 x 6

Timber Material

A double 2x6 DF #1 is required for the king post (and a 2x6 DF #2 is required for the trimmer, see the prev example).

5x And Larger (Timbers)

Timber Material: Douglas Fir - Larch
 Timber Grade: WCLIB - No. 2

-	-	-
6 x 8	-	-
8 x 8	-	-
-	-	-

Glued Laminated Columns

Glulam Combo. 3 - DF (Visually Graded)

2.5 x 6	5.125 x 6
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1.8E Parallam PSL Columns

-	5-1/4" x 5-1/4"
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