	COMPANY	PROJECT
WoodWorks® SOFTWARE FOR WOOD DESIGN	Apr. 30, 2025 12:41	Bearing_Design-US.wwbu

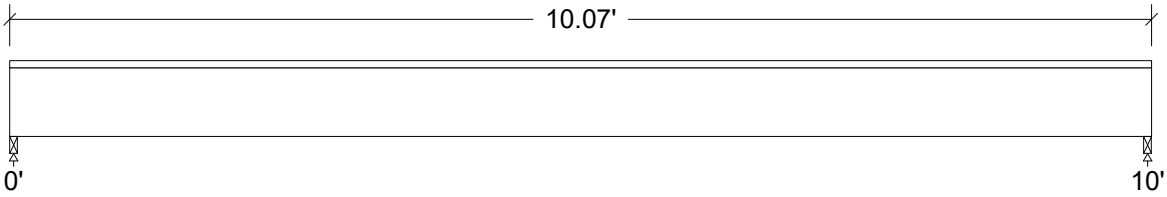
Design Check Calculation Sheet

WoodWorks Sizer 13.2.1

Loads:

Load	Type	Distribution	Pat-tern	Location [ft] Start	End	Magnitude Start	End	Unit
D	Dead	Full Area				30.00(16.0")		psf
L	Live	Full Area				50.00(16.0")		psf

Maximum Reactions (lbs), Bearing Capacities (lbs) and Bearing Lengths (in) :



Unfactored:			
Dead	201		201
Live	336		336
Factored:			
Total	537		537
Bearing:			
Capacity			
Joist	537		537
Support	671		671
Des ratio			
Joist	1.00		1.00
Support	0.80		0.80
Load comb	#2		#2
Length	0.84		0.84
Min req'd	0.84		0.84
Cb	1.00		1.00
Cb min	1.00		1.00
Cb support	1.25		1.25
Fcp sup	425		425

Lumber-soft, S-P-F, No.1/No.2, 2x8 (1-1/2"x7-1/4")

Supports: All - Timber-soft Beam, S-P-F No.2

Floor joist spaced at 16.0" c/c; Total length: 10.07'; Clear span: 9.93'; Volume = 0.8 cu.ft.

Lateral support: top = continuous, bottom = at supports; Repetitive factor: applied where permitted (refer to online help);

This section FAILS the design check

WARNING: This section violates the following design criteria: Bending

Analysis vs. Allowable Stress and Deflection using NDS 2024 :

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	fv = 64	Fv' = 135	psi	fv/Fv' = 0.48
Bending(+)	fb = 1218	Fb' = 1207	psi	fb/Fb' = 1.01
Live Defl'n	0.22 = L/533	0.33 = L/360	in	0.67
Total Defl'n	0.43 = L/280	0.50 = L/240	in	0.85

Additional Data:

FACTORS:	F/E(psi)	CD	CM	Ct	CL	CF	Cfu	Cr	Cfrt	Ci	LC#
Fv'	135	1.00	1.00	1.00	-	-	-	-	1.00	1.00	2
Fb'+	875	1.00	1.00	1.00	1.000	1.200	-	1.15	1.00	1.00	2
Fcp'	425	-	1.00	1.00	-	-	-	-	1.00	1.00	-
E'	1.4 million		1.00	1.00	-	-	-	-	1.00	1.00	2
Emin'	0.51 million		1.00	1.00	-	-	-	-	1.00	1.00	2

CRITICAL LOAD COMBINATIONS:

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 Shear     : LC #2  = D + L
 Bending(+): LC #2  = D + L
 Deflection: LC #2  = D + L  (live)
             LC #2  = D + L  (total)
 Bearing   : Support 1 - LC #2 = D + L
             Support 2 - LC #2 = D + L
 Load Types: D=dead L=live
 Load combinations: ASD Basic from ASCE 7-22 2.4; all LC's listed in the Analysis report
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CALCULATIONS:

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 V max = 533, V design = 465 (NDS 3.4.3.1(a)) lbs; M(+) = 1333 lbs-ft
 EI = 66.69e06 lb-in^2
 "Live" deflection is due to all non-dead loads (live, wind, snow…)
 Total deflection = 1.50 permanent + "live"
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Design Notes:

1. Analysis and design are in accordance with the ICC International Building Code (IBC 2024) and the National Design Specification (NDS 2024), using Allowable Stress Design (ASD). Design values are from the NDS Supplement.
2. Please verify that the default deflection limits are appropriate for your application.
3. Sawn lumber bending members shall be laterally supported according to the provisions of NDS Clause 4.4.1.