

COMPANY

PROJECT

Feb. 7, 2025 15:41

Bearing Assignment1.wwbc

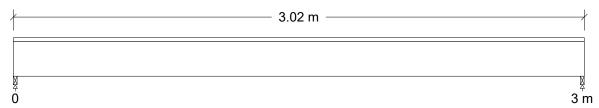
Design Check Calculation Sheet

WoodWorks Sizer 11.5

Loads:

Load	Type	Distribution	Pat-	Location [m]		Magnitude		Unit
			tern	Start	End	Start	End	
Load1	Dead	Full Area				1.50(400	mm)	kN/m2
Load2	Live	Full Area				2.40(400	mm)	kN/m2

Maximum Reactions (kN), Bearing Resistances (kN) and Bearing Lengths (mm):



Unfactored:		
Dead	0.91	0.91
Live	1.45	1.45
	1.45	1.45
Factored: Total	3.31	3.31
	3.31	3.31
Bearing:		
Capacity	2 21	2 21
Joist	3.31	3.31
Support	4.14	4.14
Des ratio		
Joist	1.00	1.00
Support	0.80	0.80
Load comb	#2	#2
Length	21	21
Min req'd	21	21
KB	1.00	1.00
KB min	1.00	1.00
KD	1.00	1.00
KB support	1.25	1.25
fcp sup	5.30	5.30
Kzcp sup	1.00	1.00

Lumber, S-P-F, No.1/No.2, 38x184 mm

Supports: All - Lumber Beam, S-P-F No.1/No.2

Floor joist spaced at 400 mm c/c; Total length: 3.021 m; Clear span: 3 m; Volume = 0.021 m³ Floor (vibration): 12.5 mm. CS Plywood subfloor, nailed or screwed, w/bracing and GWB ceiling Load sharing: Case 2; Lateral support: top = continuous, bottom = at supports;

This section PASSES the design code check.

Force vs. Resistance and Deflection using CSA 086-19:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf @d = 2.86	Vr = 10.57	kN	Vf/Vr = 0.27
Moment(+)	Mf = 2.46	Mr = 3.83	kN-m	Mf/Mr = 0.64
Perm. Defl'n	3.4 = L/888	8.3 = L/360	mm	0.41
Live Defl'n	5.4 = L/555	8.3 = L/360	mm	0.65
Total Defl'n	8.8 = L/341	16.7 = L/180	mm	0.53
Vibration	L = 3.000	Lv = 3.536	m	L/Lv = 0.85

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WoodWorks® Sizer 11.5

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Additional Data:										
FACTORS:	f/E(MPa)	KD	KH	KZ	KL	KT	KS	KN	LC#	
Fv	1.5	1.00	1.40	1.200	_	1.00	1.00	-	#2	
Fb+							1.00		"	
-	5.3									
	9500			1.000	_	1.00	1.00	-	#2	
CRITICAL LO	AD COMBIN	NATIONS	S:							
Shear	: LC #2	= 1.25	5D + 1.	5L						
Moment(+)										
Deflection			, т	•						
				L (live)						
	LC #2 = 1.0D + 1.0L (total)									
Bearing										l
	Support 2 - LC $\#2 = 1.25D + 1.5L$									
Load Type:				-	4 .	1 -	~			
Load combinations from NBC 2015; code references and LC's listed in the Analysis report										
CALCULATIONS:										
$EI = 187e06 \text{ kN-mm}^2$										
"Live" deflection is due to all non-dead loads (live, wind, snow)										
Vibration: EIeff = 194e06 kN-mm^2; mL = 5.42 kg/m; Ktss = 0.445										

Design Notes:

- 1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86 19 Engineering Design in Wood standard.
- 2. Please verify that the default deflection limits are appropriate for your application.
- 3. KL calculated as per O86 7.5.6.4
- 4. Allowable vibration-controlled span as per O86 A.5.4.5, with 5% increase for gypsum ceiling fastened directly, 5% increase for lateral bracing spaced no more than 2m apart.