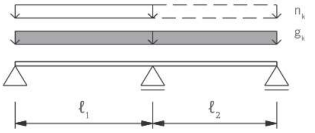
CLT Profi Ltd
Piedrujas street 7, k3, LV-1073, Riga, Latvia
www.cltprofi.com | info@cltprofi.com
CLT panels produced since 2015

Two span beam - vibration



Minimum panel thickness of various fire resistance classes.

Dead load g_k*	Imposed load n_k	Span of single - span beam								
kN/m	kN/m	3.0m	3.5m	4.0m	4.5m	5.0m	5.5m	6.0m	6.5m	7.0m
1,0	1,0	60 L3	80 L3	80 L3	100 L3	120 L3	140 L5	160 L5/2	180 L5	220 L7/2
	2,0	80 L3	90 L3	90 L3	120 L3	120 L3	160 L5/2		200 L5	
	2,8		80 L3			140 L5		180 L5	220 L7/2	
	3,5	80 L3		100 L3	120 L3					240 L7/2
	4,0		90 L3					200 L5		
	5,0		100 L3	120 L3						
1,5	1,0	80 L3	80 L3	90 L3	120 L3	140 L5	160 L5/2	180 L5	220 L7/2	220 L7/2
	2,0	80 L3						200 L5		240 L7/2
	2,8			100 L3	120 L3					
	3,5			100 L3						
	4,0		90 L3	120 L3		160 L5/2	180 L5			
	5,0		100 L3		140 L5			220 L7/2		
2,0	1,0	80 L3	80 L3	100 L3	120 L3	140 L5	160 L5/2	200 L5	220 L7/2	240 L7/2
	2,0				120 L3					
	2,8		80 L3	120 L3	140 L5	160 L5/2	180 L5	220 L7/2		
	3,5		90 L3							
	4,0			120 L3						
	5,0		100 L3				200 L5		240 L7/2	260 L7/2
2,5	1,0	80 L3	80 L3	120 L3	140 L5	160 L5/2	180 L5	220 L7/2	220 L7/2	240 L7/2
	2,0		90 L3							
	2,8		90 L3	120 L3			200 L5		240 L7/2	260 L7/2
	3,5									
	4,0									
	5,0	80 L3	100 L3							
3,0	1,0	80 L3	90 L3	120 L3	140 L5	160 L5/2	200 L5	220 L7/2	240 L7/2	240 L7/2
	2,0		90 L3							260 L7/2
	2,8		100 L3							
	3,5	80 L3				180 L5				
	4,0									280 L7/2
	5,0				160 L5/2		220 L7/2			

Service class 1, Imposed load category A (ψ_0 = 0.7; ψ_1 = 0.5; ψ_2 = 0.3), k_{mod} = 0.8

*In the table the CLT self weight is already taken into account.

Serviceability:

a) Quasi-constant design situation: zul w_{fin}=250

b) Inferquent design situation: zul $w_{q,inst}$ = 300;

zul w_{fin} - $w_{g,inst}$ = 200;

k_{def} = 0.6

Loading - bearing capacity:

a) verification of bending stresses;

b) Vertification of shearing stresses;

k_{mod}=0.8

c)Vibration according to EN 19951-1-1 and Kreuzinger & Mohr

(f_1 > 8 Hz or f_1> 5 Hz with a = 0.4 m/s^2, V<V_{grenz}, W_{EF}< 1 mm)

D = 2%, 5 cm cement screed, b = 1.2 * l

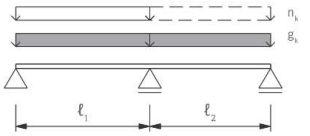
This table specifies the required thicknesses for the normal design situation (R0).
The table is only for perliminary estimate purpose and is not a substitute for a structural analysis.

Incendie:
β=0.65 mm/min

R0
R30
R60
R90

CLT Profi Ltd
Piedrujas street 7, k3, LV-1073, Riga, Latvia
www.cltprofi.com | info@cltprofi.com
CLT panels produced since 2015

Two span beam - deformation



Minimum panel thickness of various fire resistance classes.

Dead load g_k*	Imposed load n_k	Span of single - span beam								
kN/m	kN/m	3.0m	3.5m	4.0m	4.5m	5.0m	5.5m	6.0m	6.5m	7.0m
1,0	1,0	60 L3	80 L3	80 L3	80 L3	90 L3	120 L3	120 L3	140 L5	140 L5
	2,0		80 L3		90 L3	100 L3	120 L3			160 L5/2
	2,8	80 L3		90 L3	100 L3	120 L3		140 L5	160 L5/2	160 L5/2
	3,5	80 L3		100 L3	120 L3		140 L5			
	4,0		90 L3					160 L5/2		180 L5
	5,0		90 L3	120 L3		140 L5	160 L5/2	160 L5/2	180 L5	200 L5
1,5	1,0	60 L3	80 L3	80 L3	90 L3	100 L3	120 L3	120 L3	140 L5	160 L5/2
	2,0	80 L3		90 L3	100 L3	120 L3		140 L5	160 L5/2	160 L5/2
	2,8			90 L3						
	3,5			100 L3	120 L3		140 L5			
	4,0		90 L3					160 L5/2		180 L5
	5,0		100 L3	120 L3		140 L5	160 L5/2		180 L5	200 L5
2,0	1,0	80 L3	80 L3	90 L3	100 L3	120 L3	120 L3	140 L5	160 L5/2	160 L5/2
	2,0			90 L3	120 L3		140 L5		160 L5/2	
	2,8		80 L3	100 L3				160 L5/2		180 L5
	3,5									
	4,0		90 L3							
	5,0		100 L3	120 L3		140 L5	160 L5/2		180 L5	200 L5
2,5	1,0	80 L3	80 L3	90 L3	120 L3	120 L3	140 L5	140 L5	160 L5/2	160 L5/2
	2,0		80 L3	100 L3				160 L5/2		180 L5
	2,8		90 L3							
	3,5					140 L5			180 L5	200 L5
	4,0			120 L3						
	5,0	80 L3	100 L3				160 L5/2			
3,0	1,0	80 L3	80 L3	100 L3	120 L3	120 L3	140 L5	160 L5/2	160 L5/2	180 L5
	2,0		90 L3							200 L5
	2,8			120 L3		140 L5			180 L5	
	3,5	80 L3					160 L5/2			
	4,0									
	5,0		100 L3						200 L5	220 L7/2

Service class 1, Imposed load category A (ψ_0 = 0.7; ψ_1 = 0.5; ψ_2 = 0.3), k_{mod} = 0.8

*In the table the CLT self weight is already taken into account.

Serviceability:

a) Quasi-constant design situation: zul w_{fin}=250

b) Inferquent design situation: zul $w_{q,inst}$ = 300;

zul w_{fin} - $w_{g,inst}$ = 200;

k_{def} = 0.6

Loading - bearing capacity:

a) verification of bending stresses;

b) Vertification of shearing stresses

k_{mod}=0.8

Fire resistance
HFA 2011
v_1 = 0.65 mm/min

R0
R30
R60
R90

This table specifies the required thicknesses for the normal design situation (R0). The table is only for perliminary estimate purpose and is not a substitute for a structural analysis.