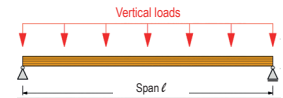


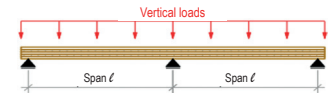
# PRE-SIZING TABLE

## SINGLE-SPAN SYSTEM



Loads (kN/m <sup>2</sup> )		Span $l$ (m)																	
		3.0		3.5		4.0		4.5		5.0		5.5		6.0		6.5		7.0	
$g_k$	$q_k$	Panel thickness in mm at a maximum deformation of:																	
		$l/350$	$l/500$	$l/350$	$l/500$	$l/350$	$l/500$	$l/350$	$l/500$	$l/350$	$l/500$	$l/350$	$l/500$	$l/350$	$l/500$	$l/350$	$l/500$	$l/350$	$l/500$
1.0	2.0	90	100	120	120	120	140	140	160	160	180	180	200	200	220	220	240	220	240
1.5	2.0	90	120	120	120	140	140	140	160	160	200	180	220	200	240	220	240	240	260
2.0	2.0	100	120	120	140	140	160	160	180	180	200	200	220	220	240	240	240	240	280
2.0	2.5	100	120	120	140	140	160	160	180	180	220	200	220	220	240	240	260	240	280
2.0	3.0	120	120	120	140	140	160	160	200	180	220	220	240	220	240	240	260	260	280
2.0	3.5	120	120	140	140	160	180	180	200	200	220	220	240	240	240	240	280	260	300
2.0	4.0	120	120	140	160	160	180	180	200	200	220	220	240	240	260	240	280	260	300
2.5	2.0	120	120	140	140	160	180	180	200	180	220	220	240	240	260	240	280	260	300
2.5	2.5	120	120	140	140	160	180	180	200	180	220	220	240	240	260	240	280	260	300
2.5	3.0	120	120	140	160	160	180	180	200	200	220	220	240	240	260	240	280	260	300
2.5	3.5	120	140	140	160	160	180	180	200	200	220	220	240	240	260	240	280	260	300
2.5	4.0	120	140	140	160	160	180	180	220	200	220	220	240	240	260	260	280	280	320

## TWO-SPAN SYSTEM



Loads (kN/m <sup>2</sup> )		Span $l$ (m)																	
		3.0		3.5		4.0		4.5		5.0		5.5		6.0		6.5		7.0	
$g_k$	$q_k$	Panel thickness in mm at a maximum deformation of:																	
		$l/350$	$l/500$	$l/350$	$l/500$	$l/350$	$l/500$	$l/350$	$l/500$	$l/350$	$l/500$	$l/350$	$l/500$	$l/350$	$l/500$	$l/350$	$l/500$	$l/350$	$l/500$
1.0	2.0	80	80	80	90	120	120	120	120	120	140	140	160	140	180	160	180	180	200
1.5	2.0	80	90	90	100	120	120	120	120	140	140	140	160	160	180	180	200	180	220
2.0	2.0	80	90	120	120	120	120	120	140	140	160	160	180	180	180	220	200	200	220
2.0	2.5	80	90	120	120	120	120	120	140	140	160	160	180	180	200	200	220	200	240
2.0	3.0	80	100	120	120	120	140	140	140	140	160	160	180	180	200	200	220	220	240
2.0	3.5	90	100	120	120	120	140	140	160	160	180	160	200	180	220	200	220	220	240
2.0	4.0	90	100	120	120	120	140	140	160	160	180	180	200	180	220	200	240	220	240
2.5	2.0	90	100	120	120	120	140	140	160	160	180	180	200	180	220	200	240	220	240
2.5	2.5	120	100	120	120	120	140	140	160	160	180	180	200	180	220	200	240	220	240
2.5	3.0	120	100	120	120	120	140	140	160	160	180	180	200	180	220	200	240	220	240
2.5	3.5	120	100	120	120	120	140	140	160	160	180	180	200	200	220	220	240	220	240
2.5	4.0	120	100	120	120	120	140	140	160	160	180	180	200	200	220	220	240	220	240

Application example:

Single-span floor with a dead load of  $g_k = 2.0 \text{ kN/m}^2$ . Living area with a live load of  $q_k = 3.0 \text{ kN/m}^2$ .  
Span  $l = 5.5 \text{ m}$ , deformation of  $w = l/500$ . Usable thickness: CLT-7L-220mm

### Requirements and assumptions

Calculation according to the «gamma» method, the Eurocode standards and ETA-18/0884

Minimum width of slab elements: 1.0m

Moisture class 1

$g_k$ : CLT dead loads excluding own weight (already taken into account)

$q_k$ : variable actions categories A and B ( $\Psi_0 = 0.7$ ,  $\Psi_1 = 0.5$ ,  $\Psi_2 = 0.3$ )

Outer layer with a longitudinal orientation of the panel

In the two-span system, the length of one of the spans can be assumed to be between 80% and 100% of the span  $l$ .

Verification of fitness for service (deformation) according to DTA 3.3/17-920\_V3:

Long-term deformation (creep) is taken into account:  $k_{def} = 0.8$

Feature limit state for items not very sensitive to deformations:  $w \leq l/350$

Feature limit state for items susceptible to deformations:  $w \leq l/500$

Fire resistance classification (according to AL13-119\_V3):

No protective panel is considered

Single-sided burning rate of the first layer:  $\beta_0 = 0,65 \text{ mm/min}$

Burning rate after the previous ply has fallen (up to 25mm):  $\beta_1 = 1.30 \text{ mm/min}$

Burning rate after the previous ply has fallen (from 25mm):  $\beta_1 = 0.65 \text{ mm/min}$

Compensation depth  $s_0 = 12 \text{ mm}$

Collapse resistance RXX (in minutes): R30  R60  R90

80	CLT-3L-80mm
90	CLT-3L-90mm
100	CLT-3L-100mm
120	CLT-3L-120mm
140	CLT-5L-140mm
160	CLT-5L-160mm
180	CLT-5L-180mm
200	CLT-5L-200mm
220	CLT-7L-220mm
240	CLT-7DL-240mm
260	CLT-7DL-260mm
280	CLT-7DL-280mm
300	CLT-8DL-300mm
320	CLT-8DL-320mm

This table gives information for pre-sizing but does not replace a static calculation.