

Span Tables

Glulam - Made in Denmark

- Available here

| National network of stockists plus weekly deliveries throughout mainland GB.



CE-mærket
EN 14080:2013

Valid from January 2019



BS EN 14080:2013

Production Standard

Since August 2015 the production standard for Glulam BS EN 14080:2013 has been mandatory for all manufacturers of Glulam for load bearing structures.

EU STANDARD

The revised standard provides common European requirements for the production of laminated timber and strength classes for Glulam.

Designers need to be aware of the strength classes available on the UK market. The strength classes are GL28cs and GL30c.

Although the strength classes have been standardized, Lilleheden still delivers the same quality product.



Your best choice for Glulam.

GLULAM GL28cs and GL30c

Strength [MPa]		GL28cs	GL30c
Bending strength	$f_{m,k}$	28	30
Tensile strength	$f_{t,0,k}$	19.5	19.5
	$f_{t,90,k}$	0.5	0.5
Compression strength	$f_{c,0,k}$	24.5	24.5
	$f_{c,90,k}$	2.5	2.5
Shear strength	$f_{v,k}$	3.5	3.5
Rolling shear strength	$f_{r,k}$	1.2	1.2

Stiffness Properties [MPa]		GL28cs	GL30c
Modulus of elasticity	$E_{0,mean}$	12500	13000
	$E_{0,05}$	10400	10800
	$E_{90,mean}$	300	300
	$E_{90,05}$	250	250
Shear modulus	G_{mean}	650	650
	G_{05}	540	540
Rolling shear modulus	$G_{r,mean}$	65	65
	$G_{r,05}$	54	54

Density [kg/m ³]		GL28cs	GL30c
Density	ρ_k	390	390
	ρ_{mean}	430	430

Span tables

Simply supported beams

Horizontal beams												
Section size [mm]	Ridge beam / Eaves beam / Purlin						Floor beam					
	Load width [m]						Load width [m]					
	2.0	2.5	3.0	3.5	4.0	4.5	2.0	2.5	3.0	3.5	4.0	4.5
90 x 225	4.3	4.0	3.8	3.6	3.4	3.3	3.6	3.3	3.1	3.0	2.7	2.4
90 x 270	5.2	4.8	4.5	4.3	4.1	4.0	4.3	4.0	3.8	3.6	3.2	2.9
90 x 315	6.1	5.6	5.3	5.1	4.8	4.6	5.0	4.7	4.4	4.2	3.8	3.4
90 x 360	6.9	6.4	6.1	5.8	5.5	5.3	5.7	5.3	5.0	4.8	4.3	3.8
90 x 405	7.8	7.2	6.8	6.5	6.2	6.0	6.4	6.0	5.7	5.4	4.9	4.3
115 x 225	4.7	4.4	4.1	3.9	3.7	3.6	3.9	3.6	3.4	3.2	3.1	2.9
115 x 270	5.6	5.2	4.9	4.7	4.5	4.3	4.7	4.8	4.5	4.3	4.1	4.0
115 x 315	6.5	6.1	5.8	5.5	5.2	5.0	5.4	5.1	4.8	4.5	4.3	4.2
115 x 360	7.5	7.0	6.6	6.3	6.0	5.8	6.2	5.8	5.5	5.2	5.0	4.8
115 x 405	8.4	7.8	7.4	7.0	6.7	6.5	6.8	6.5	6.1	5.8	5.6	5.4
115 x 450	9.3	8.7	8.2	7.8	7.5	7.2	7.3	7.2	6.8	6.5	6.2	6.0
115 x 495	10.2	9.5	9.0	8.6	8.2	7.9	7.8	7.7	7.4	7.1	6.8	6.6
140 x 225	5.0	4.6	4.4	4.2	4.0	3.8	4.1	3.8	3.6	3.4	3.3	3.2
140 x 270	6.0	5.6	5.3	5.0	4.8	4.6	5.0	4.6	4.3	4.1	4.0	3.8
140 x 315	7.0	6.5	6.1	5.8	5.6	5.4	5.8	5.4	5.1	4.8	4.6	4.4
140 x 360	7.9	7.4	7.0	6.7	6.4	6.1	6.5	6.2	5.8	5.5	5.3	5.1
140 x 405	8.9	8.3	7.9	7.5	7.2	6.9	7.1	6.9	6.5	6.2	6.0	5.7
140 x 450	9.9	9.2	8.7	8.3	8.0	7.7	7.7	7.5	7.2	6.9	6.6	6.4
140 x 495	10.8	10.1	9.6	9.1	8.8	8.4	8.2	8.0	7.7	7.5	7.3	7.0

Rafters												
Section size [mm]	Roof pitch 0°-15°						Roof pitch 16°-30°					
	Centres [m]						Centres [m]					
	2.0	2.5	3.0	3.5	4.0	4.5	2.0	2.5	3.0	3.5	4.0	4.5
90 x 225	4.4	4.1	3.8	3.6	3.5	3.3	4.1	3.8	3.6	3.4	3.3	3.1
90 x 270	5.2	4.9	4.6	4.4	4.2	4.0	4.9	4.6	4.3	4.1	3.9	3.8
90 x 315	6.1	5.7	5.4	5.1	4.9	4.7	5.8	5.4	5.0	4.8	4.6	4.4
90 x 360	7.0	6.5	6.1	5.8	5.6	5.4	6.6	6.1	5.8	5.5	5.3	5.1
90 x 405	7.9	7.3	6.9	6.6	6.3	6.1	7.4	6.9	6.5	6.2	5.9	5.7
115 x 225	4.7	4.4	4.1	3.9	3.8	3.6	4.4	4.1	3.9	3.7	3.5	3.4
115 x 270	5.7	5.3	5.0	4.7	4.5	4.4	5.3	5.0	4.7	4.5	4.3	4.1
115 x 315	6.6	6.2	5.8	5.5	5.3	5.1	6.2	5.8	5.5	5.2	5.0	4.8
115 x 360	7.5	7.0	6.6	6.3	6.1	5.8	7.1	6.6	6.2	5.9	5.7	5.5
115 x 405	8.5	7.9	7.5	7.1	6.8	6.6	8.0	7.4	7.0	6.7	6.4	6.2
115 x 450	9.4	8.8	8.3	7.9	7.6	7.3	8.8	8.2	7.8	7.4	7.1	6.8
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140 x 360	8.0	7.5	7.1	6.7	6.5	6.2	7.5	7.0	6.6	6.3	6.1	5.8
140 x 405	9.0	8.4	7.9	7.6	7.3	7.0	8.4	7.9	7.5	7.1	6.8	6.6
140 x 450	9.9	9.3	8.8	8.4	8.1	7.8	9.3	8.7	8.3	7.9	7.6	7.3
140 x 495	10.9	10.2	9.7	9.2	8.9	8.5	10.2	9.6	9.1	8.7	8.3	8.0

Permissible horizontal spans [m]

Basis of design

Standards:
 BS EN 1990:2002+A1:2005 + NA
 BS EN 1991-1-1:2002 + NA
 BS EN 1991-1-3:2003 + NA
 BS EN 1995-1-1:2004+A2:2014 + NA

Strength class:
 GL30c acc. to BS EN 14080:2013

Dead loads:
 Roof: 0.7 kN/m² on slope
 Floor: 0.5 kN/m²

Imposed loads:
 Roof: 0.6 kN/m² on plan
 Floor: 1.5 kN/m²
 Partitions: 0.5 kN/m²

Service class: 1

Limiting values for deflections:
 $w_{fin} \leq \text{span}/250$

Vibrations in residential floors:
 $f_1 \geq 8 \text{ Hz}$

Lateral restraint to top flange:
 Max distance between lateral support 15 x section width.

Fire requirement:
 No fire requirement considered.

Liability of the span tables:
 The span tables serve as a design aid but do not replace structural calculations.

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Glulam - Made in Denmark

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