BauBuche Beech laminated veneer lumber

Characteristic static strength values and dimensioning tables

04

Pollmeier

BauBuche

Characteristic static strength values and dimensioning tables

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4.1 Technical properties of Board BauBuche S/Q

Declared density, strength and stiffness values of Board BauBuche S/Q as specified in Declaration of Performance PM-003-2015.

Load/stress type		BauBuche S Laminated veneer lumber Beech LVL, longitudinal ply	BauBuche Q Laminated veneer lumber Beech LVL, cross ply
Nominal thickness		40, 60 mm	40, 60 mm
Strength values			
Flatwise bending			
Bending	$f_{m,0,flat,k}$	80 N/mm²	75 N/mm²
	$f_{m,90,flat,k}$	npd [c]	20 N/mm²
Compressive		10 N/mm² [b]	13 N/mm² [b]
Shear		8 N/mm²	3.8 N/mm²
Edgewise bending			
Bending [a]	$f_{m,0,edge,k}$	75 N/mm²	60 N/mm²
	$f_{m,90,edge,k}$	npd [c]	10 N/mm²
Tensile || to grain	$f_{t,0,k}$	60 N/mm²	51 N/mm²
Tensile ⊥ to grain	$f_{t,90,edge,k}$	1.5 N/mm²	8 N/mm²
Compressive || to grain	$f_{c,0,k}$	57.5 N/mm² [b]	53.3 N/mm² [b]
Compressive ⊥ to grain	$f_{c,90,edge,k}$	14 N/mm²	19 N/mm² [b]
Shear	$f_{v,0,edge,k}$	8 N/mm²	7.8 N/mm²
Stiffness values			
Modulus of elasticity	$E_{0,mean}$	16.800 N/mm²	13.200 N/mm²
Modulus of elasticity	$E_{0.05}$	14.900 N/mm²	12.200 N/mm²
Modulus of elasticity	$E_{90,mean}$	470 N/mm²	2.200 N/mm²
Modulus of elasticity	$E_{90.05}$	400 N/mm²	npd [c]
Shear modulus edgewise	$G_{v,0,edge,mean}$	760 N/mm²	820 N/mm²
Shear modulus flatwise	$G_{v,0,flat,mean}$	850 N/mm²	430 N/mm²
Density			
Mean density	ρ_{mean}	800 kg/m³	800 kg/m³
Characteristic density	ρ_k	730 kg/m³	730 kg/m³

a) Values valid for h ≤ 300 mm. For 300 < h ≤ 1000 mm, the characteristic strength value must be multiplied with factor $k_h = (300/h)^{0.12}$, where h is the dimension of the cross-section relevant for bending stress in mm.

b) For service class 1, the compressive strength must be increased by factor 1.2.

c) npd = no performance declared

4.2 Technical properties of Beam BauBuche GL75

Declared density, strength and stiffness values of Board BauBuche S/Q as specified in Declaration of Performance PM-008-2018 and ETA 14-0354.

Key property		Class/service class/numerical value	
Bending strength	$f_{m,k}$	75 N/mm² [1]	
Modulus of elasticity			
parallel to grain	$E_{0,mean}$	16.800 N/mm²	
in lamellas	$E_{0.05}$	15.300 N/mm²	
perpendicular to	$E_{90,mean}$	470 N/mm²	
grain in lamellas	$E_{90.05}$	400 N/mm²	
Tensile strength			
parallel to grain in lamellas	$f_{t,0,k}$	60 N/mm² [2]	
perpendicular to grain in lamellas	$f_{t,90,k}$	0.6 N/mm²	
Compressive strength		**Service class 1**	**Service class 2**
parallel to grain in lamellas	$f_{c,0,k}$	59.4 N/mm² [3]	49.5 N/mm² [3]
perpendicular to grain in lamellas	$f_{c,90,k}$	14.8 N/mm² [3]	12.3 N/mm² [3]
Shearing strength	$f_{v,k}$	4.5 N/mm² [4]	
Shear modulus	G_{mean}	850 N/mm²	
	G_{05}	760 N/mm²	
Density	ρ_{mean}	≥ 740 kg/m³	
	ρ_{k}	≥ 680 kg/m³	

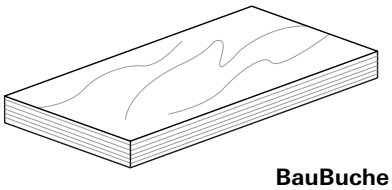
1) For flatwise bending, the characteristic strength value may be multiplied with factor $k_{h,m} = \left[\frac{600}{h}\right]^{0.10}$, where h is the height of the beam cross-section in mm.

2) The characteristic tensile strength may be multiplied with factor $k_{h,t} = \left[\frac{600}{h}\right]^{0.1}$, where h is the larger side length of the beam cross-section perpendicular to the longitudinal axis in mm.

3) The characteristic compressive strength may be increased for n > 3 with $k_{c,o}$ = min (0.0009*h + 0.892;1.18), where h is the height of the beam cross-section in mm and n is the number of plies.

4) The characteristic shear strength may be multiplied with factor $k_{h,v} = \left[\frac{600}{h}\right]^{0.13}$, where h is the height of the beam cross-section in mm.

4.3 Dimensioning tables Board BauBuche Q



BauBuche Q

according to Declaration of Performance PM-003-2015.

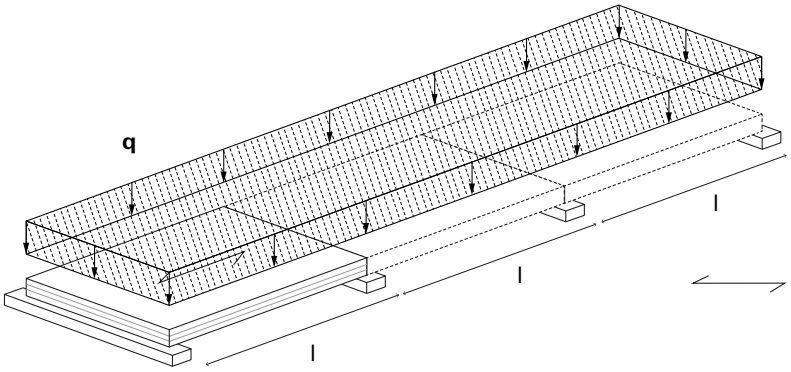
EXAMPLE 1	To be calculated: required board thickness
Known:	Snow load = 2.5 kN/m^2 Roof load + self-weight of board = 1.2 kN/m^2 q = 2.5 + 1.2 = 3.70 kN/m^2 2 single-span beams, l = 2.00 m w_{max} = l/300
Required:	h = 40 mm (q = 4.0 kN/m^2, l = 2.13 m)

EXAMPLE 2	To be calculated: required board thickness
Known:	Snow load = 2.5 kN/m^2 Roof load + self-weight of board = 1.2 kN/m^2 q = 2.5 + 1.2 = 3.70 kN/m^2 Cantilever l = 1.00 m, load in bearing direction w_{max} = l/150
Required:	h = 60 mm (q = 4.0 kN/m^2, l = 1.12 m)

Note: At the moment the boards are only available with a thickness of 40 mm.

Single, double and triple-span beams
max. span l [m]

Load q [kN/m²]		Single-span beams		Double-span beams		Triple-span beams	
		40	60	40	60	40	60 [mm]
1.0	w_{max} = l/200	2.89	4.34	3.87	5.81	3.60	5.39
	w_{max} = l/300	2.53	3.79	3.38	5.07	3.14	4.71
1.5	w_{max} = l/200	2.53	3.79	3.38	5.07	3.14	4.71
	w_{max} = l/300	2.21	3.31	2.96	4.43	2.74	4.12
2.0	w_{max} = l/200	2.29	3.44	3.07	4.61	2.85	4.28
	w_{max} = l/300	2.00	3.01	2.69	4.03	2.49	3.74
2.5	w_{max} = l/200	2.13	3.20	2.85	4.28	2.65	3.97
	w_{max} = l/300	1.86	2.79	2.49	3.74	2.31	3.47
3.0	w_{max} = l/200	2.00	3.01	2.69	4.03	2.49	3.74
	w_{max} = l/300	1.75	2.63	2.35	3.52	2.18	3.27
3.5	w_{max} = l/200	1.90	2.86	2.55	3.83	2.37	3.55
	w_{max} = l/300	1.66	2.50	2.23	3.34	2.07	3.10
4.0	w_{max} = l/200	1.82	2.73	2.44	3.66	2.26	3.40
	w_{max} = l/300	1.59	2.39	2.13	3.20	1.98	2.97
4.5	w_{max} = l/200	1.75	2.63	2.35	3.52	2.18	3.27
	w_{max} = l/300	1.53	2.29	2.05	3.07	1.90	2.85
5.0	w_{max} = l/200	1.69	2.54	2.26	3.40	2.10	3.15
	w_{max} = l/300	1.48	2.22	1.98	2.97	1.84	2.76

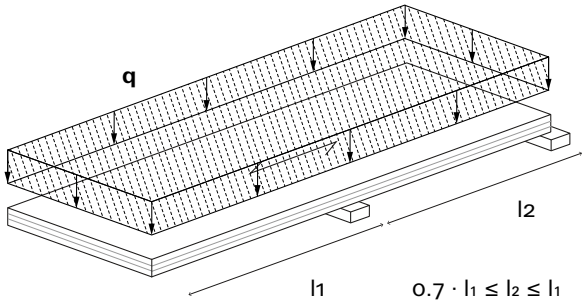


Grain direction in top layer
Note: The deformation criterion is the determining factor.

Not taken into account: creepage in wood; vibration requirements; fire safety requirements. The self-weight of the board must be taken into account (8 kN/m³). Uniform load distribution. Uniform spans. Individual span loading is not taken into account. Calculation by approximation with k_{mod} = 0.8; γ_m = 1.3 and γ_F = 1.4. Deformation under full load.
The tables are intended for dimensioning purposes. Prior to construction, always perform exact static strength and design calculations.

Cantilever, load in bearing direction
max. span l1 [m]

Load q [kN/m²]		Board thickness [mm] 40	60
1.0	w_{max} = l/100	1.36	2.04
	w_{max} = l/150	1.19	1.78
1.5	w_{max} = l/100	1.19	1.78
	w_{max} = l/150	1.04	1.56
2.0	w_{max} = l/100	1.08	1.62
	w_{max} = l/150	0.94	1.41
2.5	w_{max} = l/100	1.00	1.50
	w_{max} = l/150	0.88	1.31
3.0	w_{max} = l/100	0.94	1.41
	w_{max} = l/150	0.82	1.24
3.5	w_{max} = l/100	0.90	1.34
	w_{max} = l/150	0.78	1.17
4.0	w_{max} = l/100	0.86	1.29
	w_{max} = l/150	0.75	1.12
4.5	w_{max} = l/100	0.82	1.24
	w_{max} = l/150	0.72	1.08
5.0	w_{max} = l/100	0.80	1.19
	w_{max} = l/150	0.69	1.04

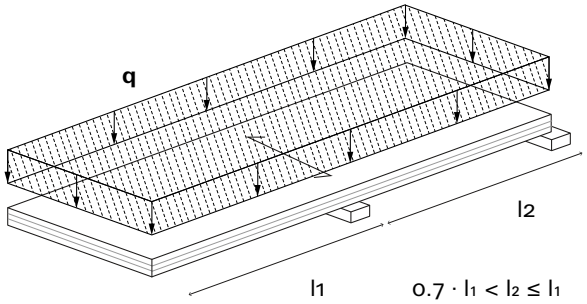


Grain direction in top layer
Note: The deformation criterion at the cantilever end is the determining factor.

Not taken into account: creepage in wood; vibration requirements; fire safety requirements. The self-weight of the board must be taken into account (8 kN/m³). Uniform load distribution. Uniform spans. Individual span loading is not taken into account. Calculation by approximation with k_{mod} = 0.8; γ_m = 1.3 and γ_F = 1.4. Deformation under full load.
The tables are intended for dimensioning purposes. Prior to construction, always perform exact static strength and design calculations.

Cantilever, load perpendicular to bearing direction
max. span l1 [m]

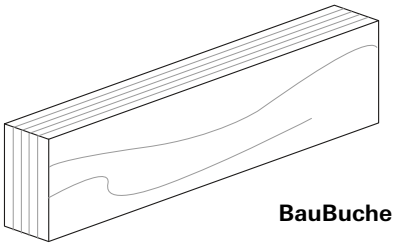
Load q [kN/m²]		Board thickness [mm] 40	60
1.0	w_{max} = l/100	0.78	1.17
	w_{max} = l/150	0.68	1.02
1.5	w_{max} = l/100	0.68	1.02
	w_{max} = l/150	0.59	0.89
2.0	w_{max} = l/100	0.62	0.93
	w_{max} = l/150	0.54	0.81
2.5	w_{max} = l/100	0.57	0.86
	w_{max} = l/150	0.50	0.75
3.0	w_{max} = l/100	0.54	0.81
	w_{max} = l/150	0.47	0.71
3.5	w_{max} = l/100	0.51	0.77
	w_{max} = l/150	0.45	0.67
4.0	w_{max} = l/100	0.49	0.73
	w_{max} = l/150	0.43	0.64
4.5	w_{max} = l/100	0.47	0.71
	w_{max} = l/150	0.41	0.62
5.0	w_{max} = l/100	0.45	0.68
	w_{max} = l/150	0.40	0.60



Grain direction in top layer
Note: The deformation criterion at the cantilever end is the determining factor.

Not taken into account: creepage in wood; vibration requirements; fire safety requirements. The self-weight of the board must be taken into account (8 kN/m³). Uniform load distribution. Uniform spans. Individual span loading is not taken into account. Calculation by approximation with k_{mod} = 0.8; γ_m = 1.3 and γ_F = 1.4. Deformation under full load.
The tables are intended for dimensioning purposes. Prior to construction, always perform exact static strength and design calculations.

4.4 Dimensioning tables for Beam BauBuche S



BauBuche S

according to Declaration of Performance PM-003-2015.

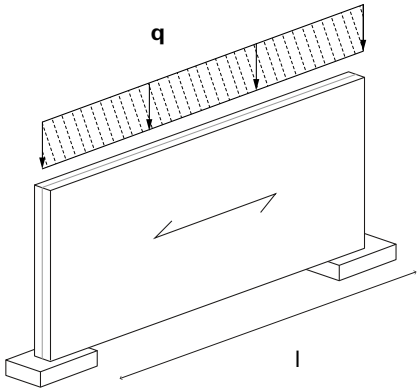
EXAMPLE 1	To be calculated: required beam height
Known:	Snow load = 2.5 kN/m^2 Roof load + self-weight of beam = 1.2 kN/m^2 Distance between beams e = 750 mm Beam width b = 60 mm Single-span beam, l = 4.5 m q = (2.5 + 1.2) · 750/1000 = 2.8 kN/m
Required:	h = 240 mm (q = 3 kN/m, l = 4.63 m)

EXAMPLE 2	To be calculated: required beam width
Known:	Snow load = 9.5 kN/m^2 Roof load + self-weight of beam = 3.5 kN/m^2 Beam height h = 400 mm Double-span beam, l = 6.0 m q = (9.5 + 3.5) = 13.0 kN/m
Required:	b = 80 mm (q = 14 kN/m, l = 6.23 m)

Note: At the moment the boards are only available with a thickness of 40 mm and 60 mm.

Single-span – board thickness = 40 mm
max. span l [m]

	Load q [kN/m]														
Beam height	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**12**	**14**	**16**	**18**	**20**
80	1.94	1.54	1.35	1.22	1.14	1.07	1.02	0.97	0.93	0.90	0.85	0.81	0.77	0.74	0.72
120	2.92	2.31	2.02	1.84	1.70	1.60	1.52	1.46	1.40	1.35	1.27	1.21	1.16	1.11	1.07
160	3.89	3.08	2.69	2.45	2.27	2.14	2.03	1.94	1.87	1.80	1.70	1.61	1.54	1.48	1.43
200	4.86	3.86	3.37	3.06	2.84	2.67	2.54	2.43	2.34	2.26	2.12	2.02	1.93	1.85	1.79
240	5.83	4.63	4.04	3.67	3.41	3.21	3.05	2.92	2.80	2.71	2.55	2.42	2.31	2.22	2.15
280	6.80	5.40	4.72	4.28	3.98	3.74	3.56	3.40	3.27	3.16	2.97	2.82	2.70	2.60	2.51
320	7.77	6.17	5.39	4.90	4.55	4.28	4.06	3.89	3.74	3.61	3.40	3.23	3.08	2.97	2.86
360	8.75	6.94	6.06	5.51	5.11	4.81	4.57	4.37	4.20	4.06	3.82	3.63	3.47	3.34	3.22
400	9.72	7.71	6.74	6.12	5.68	5.35	5.08	4.86	4.67	4.51	4.24	4.03	3.86	3.71	3.58
440	10.69	8.48	7.41	6.73	6.25	5.88	5.59	5.34	5.14	4.96	4.67	4.43	4.24	4.08	3.94
480	11.66	9.25	8.08	7.35	6.82	6.42	6.10	5.83	5.61	5.41	5.09	4.84	4.63	4.45	4.30
520	12.63	10.03	8.76	7.96	7.39	6.95	6.60	6.32	6.07	5.86	5.52	5.24	5.01	4.82	4.65
560	13.60	10.80	9.43	8.57	7.96	7.49	7.11	6.80	6.54	6.31	5.94	5.64	5.40	5.19	5.01
600	14.58	11.57	10.11	9.18	8.52	8.02	7.62	7.29	7.01	6.77	6.37	6.05	5.78	5.56	5.37
640	15.55	12.34	10.78	9.79	9.09	8.56	8.13	7.77	7.47	7.22	6.79	6.45	6.17	5.93	5.73
680	16.52	13.11	11.45	10.41	9.66	9.09	8.64	8.26	7.94	7.67	7.22	6.85	6.56	6.30	6.07
720	17.49	13.88	12.13	11.02	10.23	9.63	9.14	8.75	8.41	8.12	7.64	7.26	6.94	6.67	6.41
760	18.46	14.65	12.80	11.63	10.80	10.16	9.65	9.23	8.88	8.57	8.06	7.66	7.33	7.04	6.74
800	19.43	15.42	13.47	12.24	11.37	10.70	10.16	9.72	9.34	9.02	8.49	8.06	7.71	7.42	7.07
840	20.41	16.20	14.15	12.85	11.93	11.23	10.67	10.20	9.81	9.47	8.91	8.47	8.10	7.79	7.40
880	21.38	16.97	14.82	13.47	12.50	11.76	11.18	10.69	10.28	9.92	9.34	8.87	8.48	8.15	7.74
920	22.35	17.74	15.50	14.08	13.07	12.30	11.68	11.17	10.74	10.37	9.76	9.27	8.87	8.50	8.07
960	23.32	18.51	16.17	14.69	13.64	12.83	12.19	11.66	11.21	10.82	10.19	9.68	9.25	8.85	8.39
1000	24.29	19.28	16.84	15.30	14.21	13.37	12.70	12.15	11.68	11.28	10.61	10.08	9.64	9.19	8.72



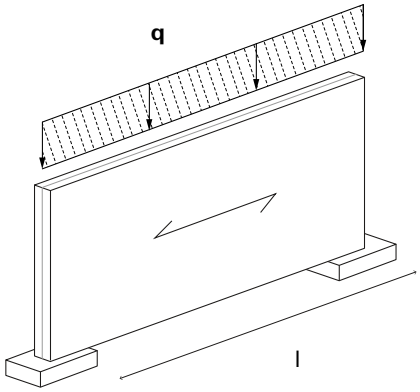
■ Determining factor: deflection (l/300)
■ Determining factor: moment
■ Determining factor: lateral force

Grain direction

Not taken into account: creepage in wood; vibration requirements; fire safety requirements. The self-weight of the board must be taken into account (8 kN/m^3). Uniform load distribution. Uniform spans. Individual span loading is not taken into account. Calculation by approximation with k_{mod} = 0.8; γ_m = 1.3 and γ_F = 1.4. w_{max} = l/300 under full load. Continuous compression area on beams. **The tables are intended for dimensioning purposes. Prior to construction, always perform exact static strength and design calculations.**

Single-span – board thickness = 60 mm
max. span l [m]

	Load q [kN/m]														
Beam height	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**12**	**14**	**16**	**18**	**20**
80	2.22	1.77	1.54	1.40	1.30	1.22	1.16	1.11	1.07	1.03	0.97	0.92	0.88	0.85	0.82
120	3.34	2.65	2.31	2.10	1.95	1.84	1.74	1.67	1.60	1.55	1.46	1.38	1.32	1.27	1.23
160	4.45	3.53	3.08	2.80	2.60	2.45	2.33	2.22	2.14	2.07	1.94	1.85	1.77	1.70	1.64
200	5.56	4.41	3.86	3.50	3.25	3.06	2.91	2.78	2.67	2.58	2.43	2.31	2.21	2.12	2.05
240	6.67	5.30	4.63	4.20	3.90	3.67	3.49	3.34	3.21	3.10	2.92	2.77	2.65	2.55	2.46
280	7.79	6.18	5.40	4.91	4.55	4.28	4.07	3.89	3.74	3.61	3.40	3.23	3.09	2.97	2.87
320	8.90	7.06	6.17	5.61	5.20	4.90	4.65	4.45	4.28	4.13	3.89	3.69	3.53	3.40	3.28
360	10.01	7.95	6.94	6.31	5.85	5.51	5.23	5.01	4.81	4.65	4.37	4.15	3.97	3.82	3.69
400	11.12	8.83	7.71	7.01	6.50	6.12	5.81	5.56	5.35	5.16	4.86	4.62	4.41	4.24	4.10
440	12.24	9.71	8.48	7.71	7.16	6.73	6.40	6.12	5.88	5.68	5.34	5.08	4.86	4.67	4.51
480	13.35	10.59	9.25	8.41	7.81	7.35	6.98	6.67	6.42	6.20	5.83	5.54	5.30	5.09	4.92
520	14.46	11.48	10.03	9.11	8.46	7.96	7.56	7.23	6.95	6.71	6.32	6.00	5.74	5.52	5.33
560	15.57	12.36	10.80	9.81	9.11	8.57	8.14	7.79	7.49	7.23	6.80	6.46	6.18	5.94	5.74
600	16.68	13.24	11.57	10.51	9.76	9.18	8.72	8.34	8.02	7.74	7.29	6.92	6.62	6.37	6.15
640	17.80	14.13	12.34	11.21	10.41	9.79	9.30	8.90	8.56	8.26	7.77	7.38	7.06	6.79	6.56
680	18.91	15.01	13.11	11.91	11.06	10.41	9.89	9.45	9.09	8.78	8.26	7.85	7.50	7.22	6.97
720	20,02	15.89	13.88	12.61	11.71	11.02	10.47	10.01	9.63	9.29	8.75	8.31	7.95	7.64	7.38
760	21.13	16.77	14.65	13.31	12.36	11.63	11.05	10.57	10.16	9.81	9.23	8.77	8.39	8.06	7.79
800	22.25	17.66	15.42	14.01	13.01	12.24	11.63	11.12	10.70	10.33	9.72	9.23	8.83	8.49	8.20
840	23.36	18.54	16.20	14.72	13.66	12.85	12.21	11.68	11.23	10.84	10.20	9.69	9.27	8.91	8.61
880	24.47	19.42	16.97	15.42	14.31	13.47	12.79	12.24	11.76	11.36	10.69	10.15	9.71	9.34	9.02
920	25.58	20.31	17.74	16.12	14.96	14.08	13.37	12.79	12.30	11.87	11.17	10.61	10.15	9.76	9.43
960	26.70	21.19	18.51	16.82	15.61	14.69	13.96	13.35	12.83	12.39	11.66	11.08	10.59	10.19	9.83
1000	27.81	22.07	19.28	17.52	16.26	15.30	14.54	13.90	13.37	12.91	12.15	11.54	11.04	10.61	10.24



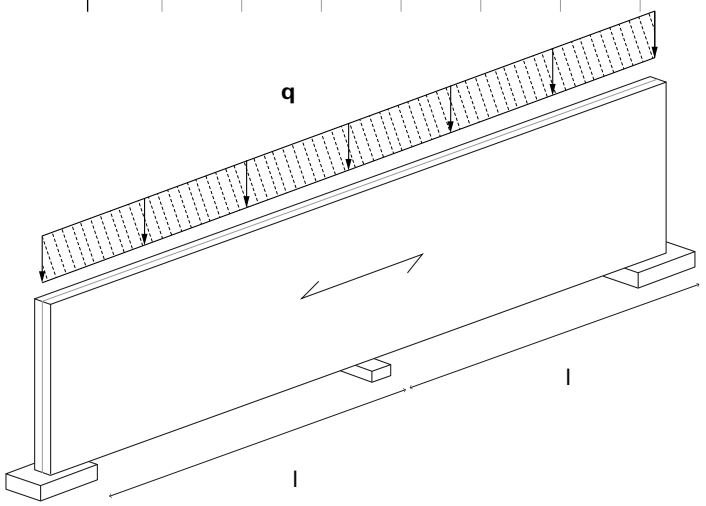
■ Determining factor: deflection (l/300)
■ Determining factor: moment
■ Determining factor: lateral force

Grain direction

Not taken into account: creepage in wood; vibration requirements; fire safety requirements. The self-weight of the board must be taken into account (8 kN/m^3). Uniform load distribution. Uniform spans. Individual span loading is not taken into account. Calculation by approximation with k_{mod} = 0.8; γ_m = 1.3 and γ_F = 1.4. w_{max} = l/300 under full load. Continuous compression area on beams. **The tables are intended for dimensioning purposes. Prior to construction, always perform exact static strength and design calculations.**

Double-span – board thickness = 40 mm
max. span l [m]

Beam height	Load q [kN/m]														
	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20
80	2.60	2.07	1.81	1.64	1.50	1.37	1.27	1.19	1.12	1.06	0.97	0.86	0.75	0.67	0.60
120	3.90	3.10	2.71	2.46	2.25	2.05	1.90	1.78	1.68	1.59	1.45	1.29	1.13	1.00	0.90
160	5.21	4.13	3.61	3.28	3.00	2.74	2.54	2.37	2.24	2.12	1.94	1.71	1.50	1.33	1.20
200	6.51	5.17	4.51	4.10	3.75	3.42	3.17	2.96	2.80	2.65	2.42	2.14	1.88	1.67	1.50
240	7.81	6.20	5.42	4.92	4.50	4.11	3.80	3.56	3.35	3.18	2.91	2.57	2.25	2.00	1.80
280	9.11	7.23	6.32	5.74	5.25	4.79	4.44	4.15	3.91	3.71	3.39	3.00	2.63	2.33	2.10
320	10.41	8.26	7.22	6.56	5.98	5.46	5.05	4.73	4.46	4.23	3.86	3.43	3.00	2.67	2.40
360	11.71	9.30	8.12	7.38	6.68	6.10	5.64	5.28	4.98	4.72	4.31	3.86	3.38	3.00	2.70
400	13.02	10.33	9.03	8.20	7.37	6.73	6.23	5.83	5.50	5.21	4.76	4.29	3.75	3.33	3.00
440	14.32	11.36	9.93	9.02	8.06	7.36	6.81	6.37	6.01	5.70	5.21	4.72	4.13	3.67	3.30
480	15.62	12.40	10.83	9.78	8.75	7.99	7.40	6.92	6.52	6.19	5.65	5.14	4.50	4.00	3.60
520	16.92	13.43	11.73	10.55	9.43	8.61	7.97	7.46	7.03	6.67	6.09	5.57	4.88	4.33	3.90
560	18.22	14.46	12.64	11.31	10.12	9.23	8.55	8.00	7.54	7.15	6.53	6.00	5.25	4.67	4.20
600	19.52	15.50	13.54	12.07	10.79	9.85	9.12	8.53	8.04	7.63	6.97	6.43	5.63	5.00	4.50
640	20.83	16.53	14.44	12.82	11.47	10.47	9.69	9.07	8.55	8.11	7.40	6.85	6.00	5.33	4.80
680	22.13	17.56	15.34	13.57	12.14	11.08	10.26	9.60	9.05	8.58	7.84	7.26	6.38	5.67	5.10
720	23.43	18.60	16.25	14.32	12.81	11.69	10.83	10.13	9.55	9.06	8.27	7.66	6.75	6.00	5.40
760	24.73	19.63	17.15	15.07	13.48	12.30	11.39	10.66	10.05	9.53	8.70	8.06	7.13	6.33	5.70
800	26.03	20.66	18.05	15.81	14.14	12.91	11.95	11.18	10.54	10.00	9.13	8.45	7.50	6.67	6.00
840	27.33	21.70	18.95	16.56	14.81	13.52	12.52	11.71	11.04	10.47	9.56	8.85	7.88	7.00	6.30
880	28.64	22.73	19.86	17.30	15.47	14.12	13.07	12.23	11.53	10.94	9.99	9.25	8.25	7.34	6.60
920	29.94	23.76	20.76	18.03	16.13	14.72	13.63	12.75	12.02	11.41	10.41	9.64	8.63	7.67	6.90
960	31.24	24.79	21.66	18.77	16.79	15.33	14.19	13.27	12.51	11.87	10.84	10.03	9.00	8.00	7.20
1000	32.54	25.83	22.52	19.50	17.45	15.93	14.74	13.79	13.00	12.34	11.26	10.43	9.38	8.34	7.50



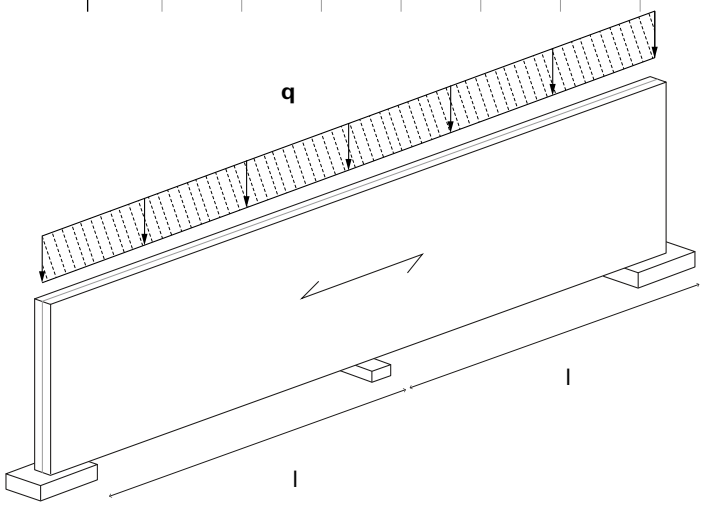
Determining factor: deflection (l/300)
Determining factor: moment
Determining factor: lateral force

Grain direction

Not taken into account: creepage in wood; vibration requirements; fire safety requirements. The self-weight of the board must be taken into account (8 kN/m^3). Uniform load distribution. Uniform spans. Individual span loading is not taken into account. Calculation by approximation with k_{mod} = 0.8; γ_m = 1.3 and γ_F = 1.4. w_{max} = l/300 under full load. Continuous compression area on beams. **The tables are intended for dimensioning purposes. Prior to construction, always perform exact static strength and design calculations.**

Double-span – board thickness = 60 mm
max. span l [m]

Beam height	Load q [kN/m]														
	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20
80	2.98	2.37	2.07	1.88	1.74	1.64	1.55	1.45	1.37	1.30	1.19	1.10	1.03	0.97	0.90
120	4.47	3.55	3.10	2.82	2.61	2.46	2.33	2.18	2.05	1.95	1.78	1.65	1.54	1.45	1.35
160	5.96	4.73	4.13	3.75	3.49	3.28	3.11	2.91	2.74	2.60	2.37	2.20	2.05	1.94	1.80
200	7.45	5.91	5.17	4.69	4.36	4.10	3.88	3.63	3.42	3.25	2.96	2.75	2.57	2.42	2.25
240	8.94	7.10	6.20	5.63	5.23	4.92	4.66	4.36	4.11	3.90	3.56	3.29	3.08	2.91	2.70
280	10.43	8.28	7.23	6.57	6.10	5.74	5.43	5.08	4.79	4.55	4.15	3.84	3.59	3.39	3.15
320	11.92	9.46	8.26	7.51	6.97	6.56	6.19	5.79	5.46	5.18	4.73	4.38	4.09	3.86	3.60
360	13.41	10.64	9.30	8.45	7.84	7.38	6.91	6.47	6.10	5.78	5.28	4.89	4.57	4.31	4.05
400	14.90	11.83	10.33	9.39	8.71	8.20	7.63	7.14	6.73	6.38	5.83	5.40	5.05	4.76	4.50
440	16.39	13.01	11.36	10.33	9.59	9.02	8.35	7.81	7.36	6.98	6.37	5.90	5.52	5.21	4.94
480	17.88	14.19	12.40	11.26	10.46	9.78	9.06	8.47	7.99	7.58	6.92	6.40	5.99	5.65	5.36
520	19.37	15.37	13.43	12.20	11.33	10.55	9.77	9.14	8.61	8.17	7.46	6.91	6.46	6.09	5.78
560	20.86	16.56	14.46	13.14	12.20	11.31	10.47	9.79	9.23	8.76	8.00	7.40	6.93	6.53	6.19
600	22.35	17.74	15.50	14.08	13.07	12.07	11.17	10.45	9.85	9.35	8.53	7.90	7.39	6.97	6.61
640	23.84	18.92	16.53	15.02	13.94	12.82	11.87	11.10	10.47	9.93	9.07	8.39	7.85	7.40	7.02
680	25.33	20.10	17.56	15.96	14.81	13.57	12.57	11.76	11.08	10.51	9.60	8.89	8.31	7.84	7.43
720	26.82	21.29	18.60	16.90	15.68	14.32	13.26	12.40	11.69	11.09	10.13	9.38	8.77	8.27	7.84
760	28.31	22.47	19.63	17.83	16.51	15.07	13.95	13.05	12.30	11.67	10.66	9.87	9.23	8.70	8.25
800	29.80	23.65	20.66	18.77	17.32	15.81	14.64	13.70	12.91	12.25	11.18	10.35	9.68	9.13	8.66
840	31.29	24.84	21.70	19.71	18.14	16.56	15.33	14.34	13.52	12.82	11.71	10.84	10.14	9.56	9.07
880	32.78	26.02	22.73	20.65	18.95	17.30	16.01	14.98	14.12	13.40	12.23	11.32	10.59	9.99	9.47
920	34.27	27.20	23.76	21.59	19.76	18.03	16.70	15.62	14.72	13.97	12.75	11.81	11.04	10.41	9.88
960	35.76	28.38	24.79	22.53	20.56	18.77	17.38	16.26	15.33	14.54	13.27	12.29	11.49	10.84	10.28
1000	37.25	29.57	25.83	23.47	21.37	19.50	18.06	16.89	15.93	15.11	13.79	12.77	11.94	11.26	10.68

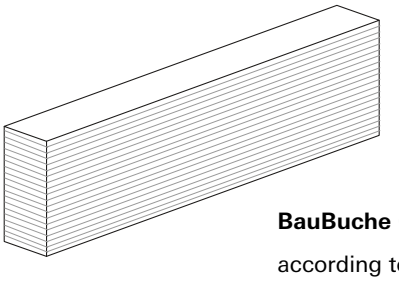


■ Determining factor: deflection (l/300)
■ Determining factor: moment
■ Determining factor: lateral force

Grain direction

Not taken into account: creepage in wood; vibration requirements; fire safety requirements. The self-weight of the board must be taken into account (8 kN/m^3). Uniform load distribution. Uniform spans. Individual span loading is not taken into account. Calculation by approximation with k_{mod} = 0.8; γ_m = 1.3 and γ_F = 1.4. w_{max} = l/300 under full load. Continuous compression area on beams. **The tables are intended for dimensioning purposes. Prior to construction, always perform exact static strength and design calculations.**

4.5 Dimensioning tables for Beam BauBuche GL75



BauBuche GL75

according to Declaration of Performance PM–008–2018.

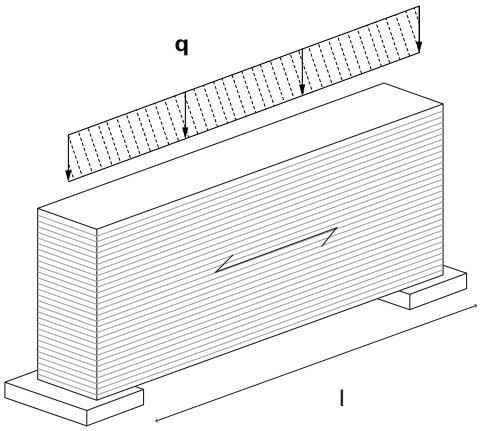
EXAMPLE 1	To be calculated: required beam height
Known:	Snow load = 2.5 kN/m^2 Roof load + self-weight of beam = 0.7 kN/m^2 Distance between beams e = 1500 mm Beam width b = 80 mm Single-span beam, l = 7.5 m q = (2.5 + 0.7) · 1500/1000 = 4.8 kN/m
Required:	h = 440 mm (q = 5 kN/m, l = 7.86 m)

EXAMPLE 2	To be calculated: required beam width
Known:	Snow load = 17.0 kN/m^2 Roof load + self-weight of beam = 7.0 kN/m^2 Beam height h = 400 mm Double-span beam, l = 4.5 m q = (17.0 + 7.0) = 24.0 kN/m
Required:	b = 160 mm (q = 25 kN/m, l = 5.31 m)

Note: According to approval, widths of 50 – 300 mm are permitted.

Single-span – beam width = 80 mm
max. span l [m]

Beam height	Load q [kN/m]																
	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	25	30
120	3.67	2.91	2.54	2.31	2.14	2.02	1.92	1.83	1.76	1.70	1.60	1.52	1.45	1.40	1.35	1.25	1.12
160	4.89	3.88	3.39	3.08	2.86	2.69	2.55	2.44	2.35	2.27	2.13	2.03	1.94	1.86	1.80	1.67	1.39
200	6.11	4.85	4.24	3.85	3.57	3.36	3.19	3.05	2.94	2.84	2.67	2.53	2.42	2.33	2.25	1.97	1.65
240	7.33	5.82	5.08	4.62	4.29	4.03	3.83	3.67	3.52	3.40	3.20	3.04	2.91	2.80	2.70	2.26	1.89
280	8.55	6.79	5.93	5.39	5.00	4.71	4.47	4.28	4.11	3.97	3.74	3.55	3.39	3.26	3.15	2.54	2.12
320	9.77	7.76	6.78	6.16	5.72	5.38	5.11	4.89	4.70	4.54	4.27	4.06	3.88	3.73	3.51	2.81	2.34
360	11.00	8.73	7.62	6.93	6.43	6.05	5.75	5.50	5.29	5.10	4.80	4.56	4.36	4.20	3.84	3.07	2.56
400	12.22	9.70	8.47	7.70	7.15	6.72	6.39	6.11	5.87	5.67	5.34	5.07	4.85	4.61	4.15	3.32	2.77
440	13.44	10.67	9.32	8.47	7.86	7.40	7.03	6.72	6.46	6.24	5.87	5.58	5.33	4.95	4.46	3.57	2.97
480	14.66	11.64	10.17	9.24	8.57	8.07	7.66	7.33	7.05	6.81	6.40	6.08	5.82	5.29	4.76	3.81	3.17
520	15.88	12.61	11.01	10.01	9.29	8.74	8.30	7.94	7.64	7.37	6.94	6.59	6.30	5.62	5.05	4.04	3.37
560	17.11	13.58	11.86	10.78	10.00	9.41	8.94	8.55	8.22	7.94	7.47	7.10	6.68	5.94	5.34	4.27	3.56
600	18.33	14.55	12.71	11.55	10.72	10.09	9.58	9.16	8.81	8.51	8.01	7.60	7.03	6.25	5.63	4.50	3.75



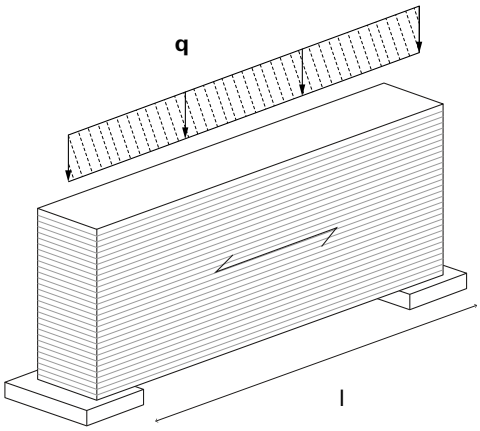
■ Determining factor: deflection (l/300)
■ Determining factor: moment
■ Determining factor: lateral force

Grain direction

Not taken into account: creepage in wood; vibration requirements; fire safety requirements. The self-weight of the board must be taken into account (8 kN/m^3). Uniform load distribution. Uniform spans. Individual span loading is not taken into account. Calculation by approximation with k_{mod} = 0.8; γ_m = 1.3 and γ_F = 1.4. w_{max} = l/300 under full load. Continuous compression area on beams. Horizontal lamellas (flatwise loading)
The tables are intended for dimensioning purposes. Prior to construction, always perform exact static strength and design calculations.

Single-span – beam width = 120 mm
max. span l [m]

Beam height	Load q [kN/m]																
	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	25	30
120	4.20	3.33	2.91	2.64	2.45	2.31	2.19	2.10	2.02	1.95	1.83	1.74	1.67	1.60	1.55	1.44	1.35
160	5.59	4.44	3.88	3.52	3.27	3.08	2.92	2.80	2.69	2.60	2.44	2.32	2.22	2.13	2.06	1.91	1.80
200	6.99	5.55	4.85	4.41	4.09	3.85	3.66	3.50	3.36	3.25	3.05	2.90	2.78	2.67	2.58	2.39	2.25
240	8.39	6.66	5.82	5.29	4.91	4.62	4.39	4.20	4.03	3.90	3.67	3.48	3.33	3.20	3.09	2.87	2.70
280	9.79	7.77	6.79	6.17	5.73	5.39	5.12	4.90	4.71	4.54	4.28	4.06	3.89	3.74	3.61	3.35	3.15
320	11.19	8.88	7.76	7.05	6.54	6.16	5.85	5.59	5.38	5.19	4.89	4.64	4.44	4.27	4.12	3.83	3.51
360	12.59	9.99	8.73	7.93	7.36	6.93	6.58	6.29	6.05	5.84	5.50	5.22	5.00	4.80	4.64	4.31	3.84
400	13.99	11.10	9.70	8.81	8.18	7.70	7.31	6.99	6.72	6.49	6.11	5.80	5.55	5.34	5.15	4.78	4.15
440	15.39	12.21	10.67	9.69	9.00	8.47	8.04	7.69	7.40	7.14	6.72	6.38	6.11	5.87	5.67	5.26	4.46
480	16.78	13.32	11.64	10.57	9.82	9.24	8.77	8.39	8.07	7.79	7.33	6.96	6.66	6.40	6.18	5.71	4.76
520	18.18	14.43	12.61	11.45	10.63	10.01	9.51	9.09	8.74	8.44	7.94	7.54	7.22	6.94	6.70	6.06	5.05
560	19.58	15.54	13.58	12.34	11.45	10.78	10.24	9.79	9.41	9.09	8.55	8.12	7.77	7.47	7.21	6.41	5.34
600	20.98	16.65	14.55	13.22	12.27	11.55	10.97	10.49	10.09	9.74	9.16	8.70	8.33	8.01	7.73	6.75	5.63



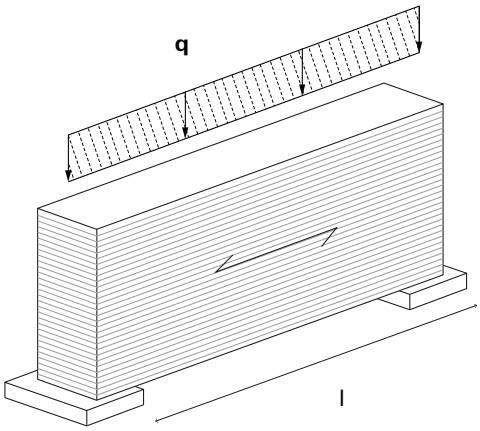
Determining factor: deflection (l/300)
Determining factor: moment
Determining factor: lateral force

Grain direction

Not taken into account: creepage in wood; vibration requirements; fire safety requirements. The self-weight of the board must be taken into account (8 kN/m^3). Uniform load distribution. Uniform spans. Individual span loading is not taken into account. Calculation by approximation with k_{mod} = 0.8; γ_m = 1.3 and γ_F = 1.4. w_{max} = l/300 under full load. Continuous compression area on beams. Horizontal lamellas (flatwise loading)
The tables are intended for dimensioning purposes. Prior to construction, always perform exact static strength and design calculations.

Single-span – beam width = 160 mm
max. span l [m]

Beam height	Load q [kN/m]																
	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	25	30
120	4.62	3.67	3.20	2.91	2.70	2.54	2.41	2.31	2.22	2.14	2.02	1.92	1.83	1.76	1.70	1.58	1.49
160	6.16	4.89	4.27	3.88	3.60	3.39	3.22	3.08	2.96	2.86	2.69	2.55	2.44	2.35	2.27	2.11	1.98
200	7.70	6.11	5.34	4.85	4.50	4.24	4.02	3.85	3.70	3.57	3.36	3.19	3.05	2.94	2.84	2.63	2.48
240	9.24	7.33	6.40	5.82	5.40	5.08	4.83	4.62	4.44	4.29	4.03	3.83	3.67	3.52	3.40	3.16	2.97
280	10.78	8.55	7.47	6.79	6.30	5.93	5.63	5.39	5.18	5.00	4.71	4.47	4.28	4.11	3.97	3.69	3.47
320	12.32	9.77	8.54	7.76	7.20	6.78	6.44	6.16	5.92	5.72	5.38	5.11	4.89	4.70	4.54	4.21	3.96
360	13.85	11.00	9.61	8.73	8.10	7.62	7.24	6.93	6.66	6.43	6.05	5.75	5.50	5.29	5.10	4.74	4.46
400	15.39	12.22	10.67	9.70	9.00	8.47	8.05	7.70	7.40	7.15	6.72	6.39	6.11	5.87	5.67	5.26	4.95
440	16.93	13.44	11.74	10.67	9.90	9.32	8.85	8.47	8.14	7.86	7.40	7.03	6.72	6.46	6.24	5.79	5.45
480	18.47	14.66	12.81	11.64	10.80	10.17	9.66	9.24	8.88	8.57	8.07	7.66	7.33	7.05	6.81	6.32	5.95
520	20,01	15.88	13.88	12.61	11.70	11.01	10.46	10.01	9.62	9.29	8.74	8.30	7.94	7.64	7.37	6.84	6.44
560	21.55	17.11	14.94	13.58	12.60	11.86	11.27	10.78	10.36	10.00	9.41	8.94	8.55	8.22	7.94	7.37	6.94
600	23.09	18.33	16.01	14.55	13.50	12.71	12.07	11.55	11.10	10.72	10.09	9.58	9.16	8.81	8.51	7.90	7.43



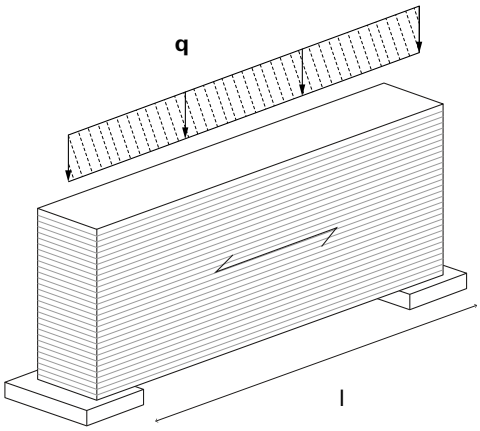
Determining factor: deflection (l/300)
Determining factor: moment
Determining factor: lateral force

Grain direction

Not taken into account: creepage in wood; vibration requirements; fire safety requirements. The self-weight of the board must be taken into account (8 kN/m^3). Uniform load distribution. Uniform spans. Individual span loading is not taken into account. Calculation by approximation with k_{mod} = 0.8; γ_m = 1.3 and γ_F = 1.4. w_{max} = l/300 under full load. Continuous compression area on beams. Horizontal lamellas (flatwise loading)
The tables are intended for dimensioning purposes. Prior to construction, always perform exact static strength and design calculations.

Single-span – beam width = 200 mm
max. span l [m]

Beam height	Load q [kN/m]																
	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	25	30
120	4.97	3.95	3.45	3.13	2.91	2.74	2.60	2.49	2.39	2.31	2.17	2.06	1.97	1.90	1.83	1.70	1.60
160	6.63	5.26	4.60	4.18	3.88	3.65	3.47	3.32	3.19	3.08	2.90	2.75	2.63	2.53	2.44	2.27	2.13
200	8.29	6.58	5.75	5.22	4.85	4.56	4.33	4.15	3.99	3.85	3.62	3.44	3.29	3.16	3.05	2.84	2.67
240	9.95	7.90	6.90	6.27	5.82	5.48	5.20	4.97	4.78	4.62	4.35	4.13	3.95	3.80	3.67	3.40	3.20
280	11.61	9.21	8.05	7.31	6.79	6.39	6.07	5.80	5.58	5.39	5.07	4.82	4.61	4.43	4.28	3.97	3.74
320	13.27	10.53	9.20	8.36	7.76	7.30	6.94	6.63	6.38	6.16	5.79	5.50	5.26	5.06	4.89	4.54	4.27
360	14.92	11.85	10.35	9.40	8.73	8.21	7.80	7.46	7.18	6.93	6.52	6.19	5.92	5.69	5.50	5.10	4.80
400	16.58	13.16	11.50	10.45	9.70	9.13	8.67	8.29	7.97	7.70	7.24	6.88	6.58	6.33	6.11	5.67	5.34
440	18.24	14.48	12.65	11.49	10.67	10.04	9.54	9.12	8.77	8.47	7.97	7.57	7.24	6.96	6.72	6.24	5.87
480	19.90	15.79	13.80	12.54	11.64	10.95	10.40	9.95	9.57	9.24	8.69	8.26	7.90	7.59	7.33	6.81	6.40
520	21.56	17.11	14.95	13.58	12.61	11.86	11.27	10.78	10.36	10.01	9.42	8.94	8.56	8.23	7.94	7.37	6.94
560	23.22	18.43	16.10	14.63	13.58	12.78	12.14	11.61	11.16	10.78	10.14	9.63	9.21	8.86	8.55	7.94	7.47
600	24.87	19.74	17.25	15.67	14.55	13.69	13.00	12.44	11.96	11.55	10.86	10.32	9.87	9.49	9.16	8.51	8.01



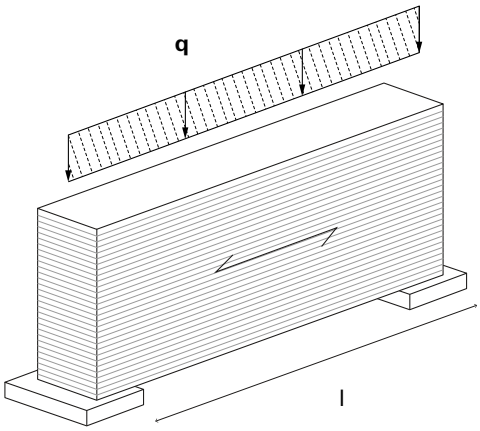
Determining factor: deflection (l/300)
Determining factor: moment
Determining factor: lateral force

Grain direction

Not taken into account: creepage in wood; vibration requirements; fire safety requirements. The self-weight of the board must be taken into account (8 kN/m^3). Uniform load distribution. Uniform spans. Individual span loading is not taken into account. Calculation by approximation with k_{mod} = 0.8; γ_m = 1.3 and γ_F = 1.4. w_{max} = l/300 under full load. Continuous compression area on beams. Horizontal lamellas (flatwise loading)
The tables are intended for dimensioning purposes. Prior to construction, always perform exact static strength and design calculations.

Single-span – beam width = 240 mm
max. span l [m]

Beam height	Load q [kN/m]																
	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	25	30
120	5.29	4.20	3.67	3.33	3.09	2.91	2.76	2.64	2.54	2.45	2.31	2.19	2.10	2.02	1.95	1.81	1.70
160	7.05	5.59	4.89	4.44	4.12	3.88	3.68	3.52	3.39	3.27	3.08	2.92	2.80	2.69	2.60	2.41	2.27
200	8.81	6.99	6.11	5.55	5.15	4.85	4.61	4.41	4.24	4.09	3.85	3.66	3.50	3.36	3.25	3.01	2.84
240	10.57	8.39	7.33	6.66	6.18	5.82	5.53	5.29	5.08	4.91	4.62	4.39	4.20	4.03	3.90	3.62	3.40
280	12.34	9.79	8.55	7.77	7.21	6.79	6.45	6.17	5.93	5.73	5.39	5.12	4.90	4.71	4.54	4.22	3.97
320	14.10	11.19	9.77	8.88	8.24	7.76	7.37	7.05	6.78	6.54	6.16	5.85	5.59	5.38	5.19	4.82	4.54
360	15.86	12.59	11.00	9.99	9.27	8.73	8.29	7.93	7.62	7.36	6.93	6.58	6.29	6.05	5.84	5.42	5.10
400	17.62	13.99	12.22	11.10	10.31	9.70	9.21	8.81	8.47	8.18	7.70	7.31	6.99	6.72	6.49	6.03	5.67
440	19.38	15.39	13.44	12.21	11.34	10.67	10.13	9.69	9.32	9.00	8.47	8.04	7.69	7.40	7.14	6.63	6.24
480	21.15	16.78	14.66	13.32	12.37	11.64	11.05	10.57	10.17	9.82	9.24	8.77	8.39	8.07	7.79	7.23	6.81
520	22.91	18.18	15.88	14.43	13.40	12.61	11.98	11.45	11.01	10.63	10.01	9.51	9.09	8.74	8.44	7.83	7.37
560	24.67	19.58	17.11	15.54	14.43	13.58	12.90	12.34	11.86	11.45	10.78	10.24	9.79	9.41	9.09	8.44	7.94
600	26.43	20.98	18.33	16.65	15.46	14.55	13.82	13.22	12.71	12.27	11.55	10.97	10.49	10.09	9.74	9.04	8.51



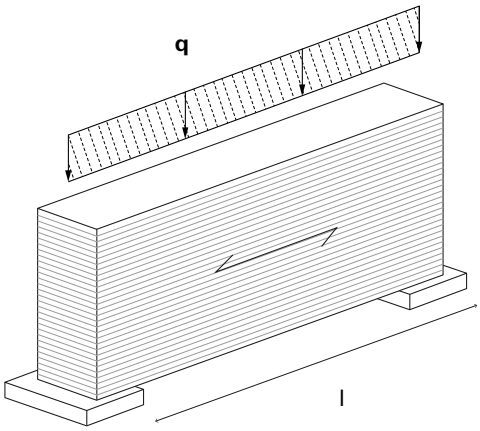
Determining factor: deflection (l/300)
Determining factor: moment
Determining factor: lateral force

Grain direction

Not taken into account: creepage in wood; vibration requirements; fire safety requirements. The self-weight of the board must be taken into account (8 kN/m^3). Uniform load distribution. Uniform spans. Individual span loading is not taken into account. Calculation by approximation with k_{mod} = 0.8; γ_m = 1.3 and γ_F = 1.4. w_{max} = l/300 under full load. Continuous compression area on beams. Horizontal lamellas (flatwise loading)
The tables are intended for dimensioning purposes. Prior to construction, always perform exact static strength and design calculations.

Single-span – beam width = 280 mm
max. span l [m]

Beam height	Load q [kN/m]																
	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	25	30
120	5.57	4.42	3.86	3.51	3.25	3.06	2.91	2.78	2.68	2.58	2.43	2.31	2.21	2.12	2.05	1.90	1.79
160	7.42	5.89	5.15	4.67	4.34	4.08	3.88	3.71	3.57	3.44	3.24	3.08	2.94	2.83	2.73	2.54	2.39
200	9.28	7.36	6.43	5.84	5.42	5.10	4.85	4.64	4.46	4.31	4.05	3.85	3.68	3.54	3.42	3.17	2.99
240	11.13	8.83	7.72	7.01	6.51	6.13	5.82	5.57	5.35	5.17	4.86	4.62	4.42	4.25	4.10	3.81	3.58
280	12.99	10.31	9.00	8.18	7.59	7.15	6.79	6.49	6.24	6.03	5.67	5.39	5.15	4.96	4.78	4.44	4.18
320	14.84	11.78	10.29	9.35	8.68	8.17	7.76	7.42	7.13	6.89	6.48	6.16	5.89	5.66	5.47	5.08	4.78
360	16.70	13.25	11.58	10.52	9.76	9.19	8.73	8.35	8.03	7.75	7.29	6.93	6.63	6.37	6.15	5.71	5.37
400	18.55	14.72	12.86	11.69	10.85	10.21	9.70	9.28	8.92	8.61	8.10	7.70	7.36	7.08	6.83	6.34	5.97
440	20.41	16.20	14.15	12.86	11.93	11.23	10.67	10.20	9.81	9.47	8.91	8.47	8.10	7.79	7.52	6.98	6.57
480	22.26	17.67	15.44	14.02	13.02	12.25	11.64	11.13	10.70	10.33	9.72	9.24	8.83	8.49	8.20	7.61	7.16
520	24.12	19.14	16.72	15.19	14.10	13.27	12.61	12.06	11.59	11.19	10.53	10.01	9.57	9.20	8.88	8.25	7.76
560	25.97	20.61	18.01	16.36	15.19	14.29	13.58	12.99	12.49	12.05	11.34	10.78	10.31	9.91	9.57	8.88	8.36
600	27.83	22.09	19.29	17.53	16.27	15.31	14.55	13.91	13.38	12.92	12.15	11.55	11.04	10.62	10.25	9.52	8.96



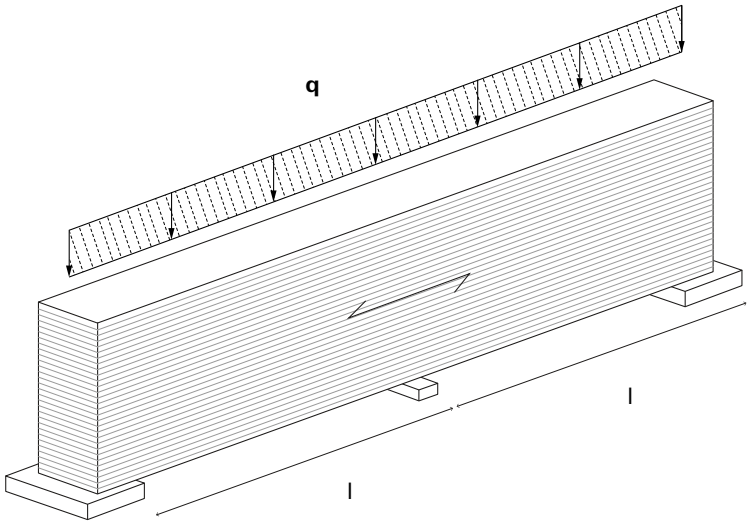
Determining factor: deflection (l/300)
Determining factor: moment
Determining factor: lateral force

Grain direction

Not taken into account: creepage in wood; vibration requirements; fire safety requirements. The self-weight of the board must be taken into account (8 kN/m^3). Uniform load distribution. Uniform spans. Individual span loading is not taken into account. Calculation by approximation with k_{mod} = 0.8; γ_m = 1.3 and γ_F = 1.4. w_{max} = l/300 under full load. Continuous compression area on beams. Horizontal lamellas (flatwise loading)
The tables are intended for dimensioning purposes. Prior to construction, always perform exact static strength and design calculations.

Double-span – beam width = 80 mm
max. span l [m]

Beam height	Load q [kN/m]																
	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	25	30
120	4.91	3.90	3.40	3.09	2.87	2.70	2.57	2.46	2.36	2.28	2.14	1.92	1.68	1.50	1.35	1.08	0.90
160	6.55	5.20	4.54	4.12	3.83	3.60	3.42	3.27	3.15	3.04	2.78	2.39	2.09	1.86	1.67	1.34	1.11
200	8.18	6.50	5.67	5.16	4.79	4.50	4.28	4.09	3.93	3.80	3.29	2.82	2.47	2.19	1.97	1.58	1.32
240	9.82	7.79	6.81	6.19	5.74	5.40	5.13	4.91	4.72	4.53	3.77	3.23	2.83	2.52	2.26	1.81	1.51
280	11.46	9.09	7.94	7.22	6.70	6.31	5.99	5.73	5.51	5.08	4.24	3.63	3.18	2.82	2.54	2.03	1.69
320	13.09	10.39	9.08	8.25	7.66	7.21	6.84	6.55	6.24	5.62	4.68	4.01	3.51	3.12	2.81	2.25	1.87
360	14.73	11.69	10.21	9.28	8.61	8.11	7.70	7.37	6.82	6.14	5.11	4.38	3.84	3.41	3.07	2.45	2.05
400	16.37	12.99	11.35	10.31	9.57	9.01	8.56	8.18	7.38	6.64	5.53	4.74	4.15	3.69	3.32	2.66	2.21
440	18.00	14.29	12.48	11.34	10.53	9.91	9.41	8.92	7.93	7.13	5.94	5.10	4.46	3.96	3.57	2.85	2.38
480	19.64	15.59	13.62	12.37	11.49	10.81	10.27	9.52	8.46	7.61	6.35	5.44	4.76	4.23	3.81	3.05	2.54
520	21.28	16.89	14.75	13.40	12.44	11.71	11.12	10.11	8.98	8.09	6.74	5.78	5.05	4.49	4.04	3.23	2.70
560	22.91	18.19	15.89	14.43	13.40	12.61	11.98	10.69	9.50	8.55	7.12	6.11	5.34	4.75	4.27	3.42	2.85
600	24.55	19.49	17.02	15.47	14.36	13.51	12.83	11.25	10.00	9.00	7.50	6.43	5.63	5.00	4.50	3.60	3.00



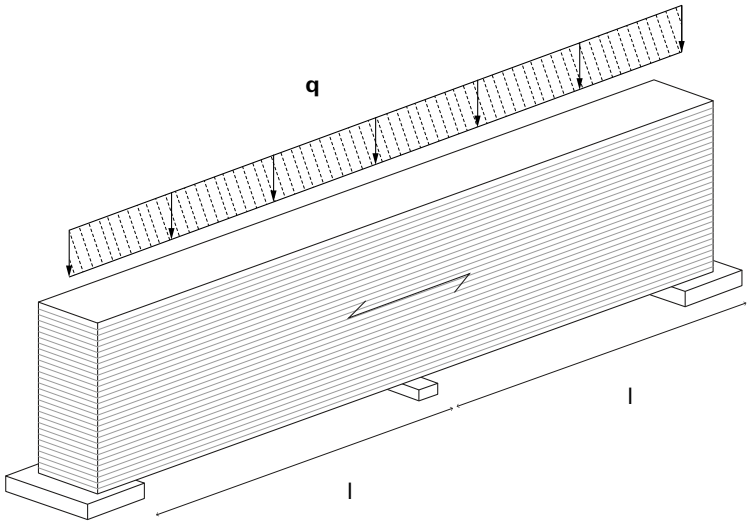
Determining factor: deflection (l/300)
Determining factor: moment
Determining factor: lateral force

Grain direction

Not taken into account: creepage in wood; vibration requirements; fire safety requirements. The self-weight of the board must be taken into account (8 kN/m^3). Uniform load distribution. Uniform spans. Individual span loading is not taken into account. Calculation by approximation with k_{mod} = 0.8; γ_m = 1.3 and γ_F = 1.4. w_{max} = l/300 under full load. Continuous compression area on beams. Horizontal lamellas (flatwise loading)
The tables are intended for dimensioning purposes. Prior to construction, always perform exact static strength and design calculations.

Double-span – beam width = 120 mm
max. span l [m]

Beam height	Load q [kN/m]																
	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	25	30
120	5.62	4.46	3.90	3.54	3.29	3.09	2.94	2.81	2.70	2.61	2.46	2.33	2.23	2.14	2.02	1.62	1.35
160	7.49	5.95	5.20	4.72	4.38	4.12	3.92	3.75	3.60	3.48	3.27	3.11	2.97	2.78	2.51	2.00	1.67
200	9.37	7.44	6.50	5.90	5.48	5.16	4.90	4.68	4.50	4.35	4.09	3.89	3.70	3.29	2.96	2.37	1.97
240	11.24	8.92	7.79	7.08	6.57	6.19	5.88	5.62	5.40	5.22	4.91	4.66	4.24	3.77	3.40	2.72	2.26
280	13.12	10.41	9.09	8.26	7.67	7.22	6.86	6.56	6.31	6.09	5.73	5.44	4.77	4.24	3.81	3.05	2.54
320	14.99	11.90	10.39	9.44	8.77	8.25	7.84	7.49	7.21	6.96	6.55	6.02	5.27	4.68	4.21	3.37	2.81
360	16.86	13.38	11.69	10.62	9.86	9.28	8.81	8.43	8.11	7.83	7.37	6.58	5.75	5.11	4.60	3.68	3.07
400	18.74	14.87	12.99	11.80	10.96	10.31	9.79	9.37	9.01	8.70	8.18	7.12	6.23	5.53	4.98	3.99	3.32
440	20.61	16.36	14.29	12.98	12.05	11.34	10.77	10.30	9.91	9.57	8.92	7.64	6.69	5.94	5.35	4.28	3.57
480	22.48	17.84	15.59	14.16	13.15	12.37	11.75	11.24	10.81	10.44	9.52	8.16	7.14	6.35	5.71	4.57	3.81
520	24.36	19.33	16.89	15.34	14.24	13.40	12.73	12.18	11.71	11.31	10.11	8.66	7.58	6.74	6.06	4.85	4.04
560	26.23	20.82	18.19	16.52	15.34	14.43	13.71	13.12	12.61	12.17	10.69	9.16	8.01	7.12	6.41	5.13	4.27
600	28.10	22.31	19.49	17.70	16.44	15.47	14.69	14.05	13.51	13.04	11.25	9.65	8.44	7.50	6.75	5.40	4.50



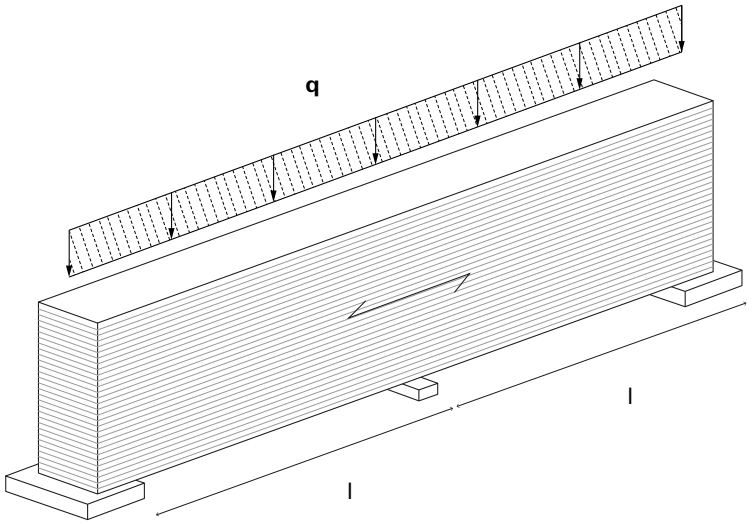
Determining factor: deflection (l/300)
Determining factor: moment
Determining factor: lateral force

Grain direction

Not taken into account: creepage in wood; vibration requirements; fire safety requirements. The self-weight of the board must be taken into account (8 kN/m^3). Uniform load distribution. Uniform spans. Individual span loading is not taken into account. Calculation by approximation with k_{mod} = 0.8; γ_m = 1.3 and γ_F = 1.4. w_{max} = l/300 under full load. Continuous compression area on beams. Horizontal lamellas (flatwise loading)
The tables are intended for dimensioning purposes. Prior to construction, always perform exact static strength and design calculations.

Double-span – beam width = 160 mm
max. span l [m]

Beam height	Load q [kN/m]																
	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	25	30
120	6.19	4.91	4.29	3.90	3.62	3.40	3.23	3.09	2.97	2.87	2.70	2.57	2.46	2.36	2.28	2.12	1.79
160	8.25	6.55	5.72	5.20	4.82	4.54	4.31	4.12	3.97	3.83	3.60	3.42	3.27	3.15	3.04	2.67	2.23
200	10.31	8.18	7.15	6.50	6.03	5.67	5.39	5.16	4.96	4.79	4.50	4.28	4.09	3.93	3.80	3.16	2.63
240	12.37	9.82	8.58	7.79	7.24	6.81	6.47	6.19	5.95	5.74	5.40	5.13	4.91	4.72	4.53	3.62	3.02
280	14.43	11.46	10.01	9.09	8.44	7.94	7.55	7.22	6.94	6.70	6.31	5.99	5.73	5.51	5.08	4.07	3.39
320	16.50	13.09	11.44	10.39	9.65	9.08	8.62	8.25	7.93	7.66	7.21	6.84	6.55	6.24	5.62	4.49	3.75
360	18.56	14.73	12.87	11.69	10.85	10.21	9.70	9.28	8.92	8.61	8.11	7.70	7.37	6.82	6.14	4.91	4.09
400	20.62	16.37	14.30	12.99	12.06	11.35	10.78	10.31	9.91	9.57	9.01	8.56	8.18	7.38	6.64	5.31	4.43
440	22.68	18.00	15.73	14.29	13.27	12.48	11.86	11.34	10.91	10.53	9.91	9.41	8.92	7.93	7.13	5.71	4.76
480	24.75	19.64	17.16	15.59	14.47	13.62	12.94	12.37	11.90	11.49	10.81	10.27	9.52	8.46	7.61	6.09	5.08
520	26.81	21.28	18.59	16.89	15.68	14.75	14.01	13.40	12.89	12.44	11.71	11.12	10.11	8.98	8.09	6.47	5.39
560	28.87	22.91	20,02	18.19	16.88	15.89	15.09	14.43	13.88	13.40	12.61	11.98	10.69	9.50	8.55	6.84	5.70
600	30.93	24.55	21.45	19.49	18.09	17.02	16.17	15.47	14.87	14.36	13.51	12.83	11.25	10.00	9.00	7.20	6.00



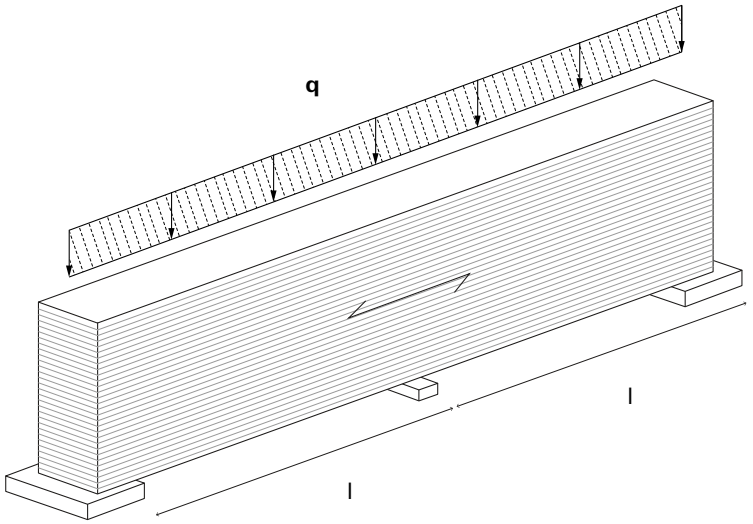
Determining factor: deflection (l/300)
Determining factor: moment
Determining factor: lateral force

Grain direction

Not taken into account: creepage in wood; vibration requirements; fire safety requirements. The self-weight of the board must be taken into account (8 kN/m^3). Uniform load distribution. Uniform spans. Individual span loading is not taken into account. Calculation by approximation with k_{mod} = 0.8; γ_m = 1.3 and γ_F = 1.4. w_{max} = l/300 under full load. Continuous compression area on beams. Horizontal lamellas (flatwise loading)
The tables are intended for dimensioning purposes. Prior to construction, always perform exact static strength and design calculations.

Double-span – beam width = 200 mm
max. span l [m]

Beam height	Load q [kN/m]																
	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	25	30
120	6.66	5.29	4.62	4.20	3.90	3.67	3.48	3.33	3.20	3.09	2.91	2.77	2.64	2.54	2.46	2.28	2.14
160	8.89	7.05	6.16	5.60	5.20	4.89	4.64	4.44	4.27	4.12	3.88	3.69	3.53	3.39	3.27	3.04	2.78
200	11.11	8.82	7.70	7.00	6.50	6.11	5.81	5.55	5.34	5.16	4.85	4.61	4.41	4.24	4.09	3.80	3.29
240	13.33	10.58	9.24	8.40	7.79	7.33	6.97	6.66	6.41	6.19	5.82	5.53	5.29	5.09	4.91	4.53	3.77
280	15.55	12.34	10.78	9.80	9.09	8.56	8.13	7.77	7.48	7.22	6.79	6.45	6.17	5.93	5.73	5.08	4.24
320	17.77	14.10	12.32	11.20	10.39	9.78	9.29	8.89	8.54	8.25	7.76	7.37	7.05	6.78	6.55	5.62	4.68
360	19.99	15.87	13.86	12.59	11.69	11.00	10.45	10.00	9.61	9.28	8.73	8.30	7.93	7.63	7.37	6.14	5.11
400	22.21	17.63	15.40	13.99	12.99	12.22	11.61	11.11	10.68	10.31	9.70	9.22	8.82	8.48	8.18	6.64	5.53
440	24.44	19.39	16.94	15.39	14.29	13.45	12.77	12.22	11.75	11.34	10.67	10.14	9.70	9.32	8.92	7.13	5.94
480	26.66	21.16	18.48	16.79	15.59	14.67	13.93	13.33	12.82	12.37	11.64	11.06	10.58	10.17	9.52	7.61	6.35
520	28.88	22.92	20,02	18.19	16.89	15.89	15.10	14.44	13.88	13.40	12.61	11.98	11.46	11.02	10.11	8.09	6.74
560	31.10	24.68	21.56	19.59	18.19	17.11	16.26	15.55	14.95	14.43	13.58	12.90	12.34	11.87	10.69	8.55	7.12
600	33.32	26.45	23.10	20.99	19.49	18.34	17.42	16.66	16.02	15.47	14.55	13.83	13.22	12.50	11.25	9.00	7.50



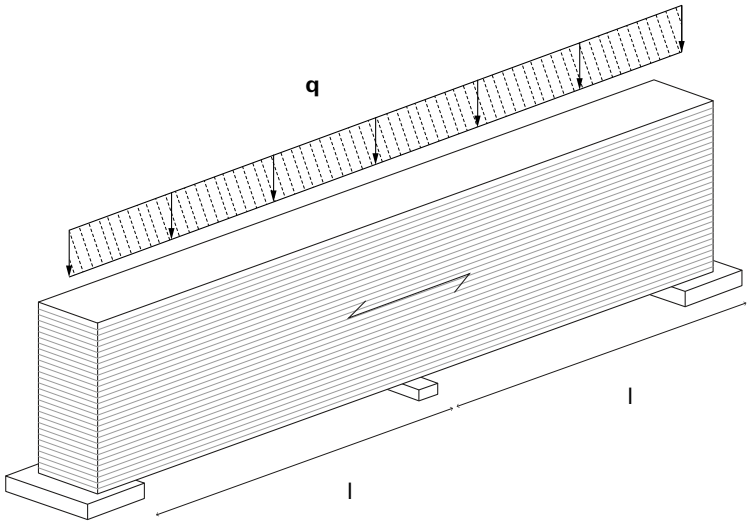
Determining factor: deflection (l/300)
Determining factor: moment
Determining factor: lateral force

Grain direction

Not taken into account: creepage in wood; vibration requirements; fire safety requirements. The self-weight of the board must be taken into account (8 kN/m^3). Uniform load distribution. Uniform spans. Individual span loading is not taken into account. Calculation by approximation with k_{mod} = 0.8; γ_m = 1.3 and γ_F = 1.4. w_{max} = l/300 under full load. Continuous compression area on beams. Horizontal lamellas (flatwise loading)
The tables are intended for dimensioning purposes. Prior to construction, always perform exact static strength and design calculations.

Double-span – beam width = 240 mm
max. span l [m]

Beam height	Load q [kN/m]																
	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	25	30
120	7.08	5.62	4.91	4.46	4.14	3.90	3.70	3.54	3.40	3.29	3.09	2.94	2.81	2.70	2.61	2.42	2.28
160	9.44	7.49	6.55	5.95	5.52	5.20	4.94	4.72	4.54	4.38	4.12	3.92	3.75	3.60	3.48	3.23	3.04
200	11.80	9.37	8.18	7.44	6.90	6.50	6.17	5.90	5.67	5.48	5.16	4.90	4.68	4.50	4.35	4.04	3.80
240	14.16	11.24	9.82	8.92	8.28	7.79	7.40	7.08	6.81	6.57	6.19	5.88	5.62	5.40	5.22	4.84	4.53
280	16.52	13.12	11.46	10.41	9.66	9.09	8.64	8.26	7.94	7.67	7.22	6.86	6.56	6.31	6.09	5.65	5.08
320	18.88	14.99	13.09	11.90	11.04	10.39	9.87	9.44	9.08	8.77	8.25	7.84	7.49	7.21	6.96	6.46	5.62
360	21.25	16.86	14.73	13.38	12.42	11.69	11.11	10.62	10.21	9.86	9.28	8.81	8.43	8.11	7.83	7.27	6.14
400	23.61	18.74	16.37	14.87	13.80	12.99	12.34	11.80	11.35	10.96	10.31	9.79	9.37	9.01	8.70	7.97	6.64
440	25.97	20.61	18.00	16.36	15.19	14.29	13.57	12.98	12.48	12.05	11.34	10.77	10.30	9.91	9.57	8.56	7.13
480	28.33	22.48	19.64	17.84	16.57	15.59	14.81	14.16	13.62	13.15	12.37	11.75	11.24	10.81	10.44	9.14	7.61
520	30.69	24.36	21.28	19.33	17.95	16.89	16.04	15.34	14.75	14.24	13.40	12.73	12.18	11.71	11.31	9.70	8.09
560	33.05	26.23	22.91	20.82	19.33	18.19	17.28	16.52	15.89	15.34	14.43	13.71	13.12	12.61	12.17	10.26	8.55
600	35.41	28.10	24.55	22.31	20.71	19.49	18.51	17.70	17.02	16.44	15.47	14.69	14.05	13.51	13.04	10.80	9.00



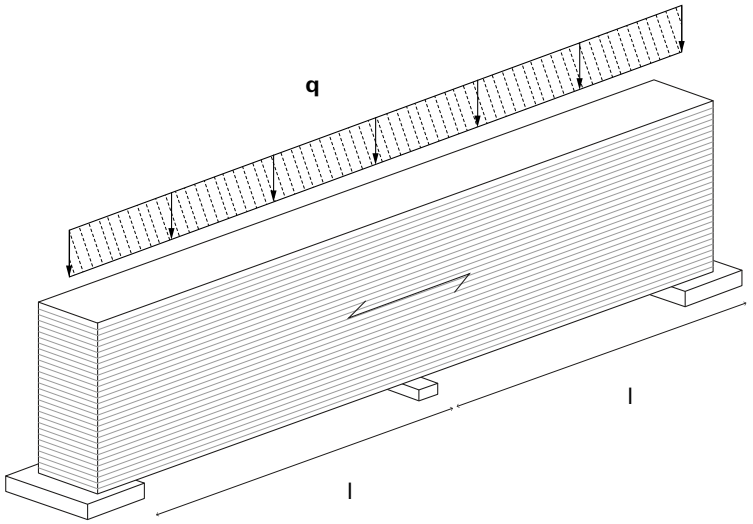
Determining factor: deflection (l/300)
Determining factor: moment
Determining factor: lateral force

Grain direction

Not taken into account: creepage in wood; vibration requirements; fire safety requirements. The self-weight of the board must be taken into account (8 kN/m^3). Uniform load distribution. Uniform spans. Individual span loading is not taken into account. Calculation by approximation with k_{mod} = 0.8; γ_m = 1.3 and γ_F = 1.4. w_{max} = l/300 under full load. Continuous compression area on beams. Horizontal lamellas (flatwise loading)
The tables are intended for dimensioning purposes. Prior to construction, always perform exact static strength and design calculations.

Double-span – beam width = 280 mm
max. span l [m]

Beam height	Load q [kN/m]																
	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	25	30
120	7.46	5.92	5.17	4.70	4.36	4.10	3.90	3.73	3.58	3.46	3.26	3.09	2.96	2.84	2.75	2.55	2.40
160	9.94	7.89	6.89	6.26	5.81	5.47	5.20	4.97	4.78	4.61	4.34	4.12	3.94	3.79	3.66	3.40	3.20
200	12.43	9.86	8.62	7.83	7.27	6.84	6.50	6.21	5.97	5.77	5.43	5.16	4.93	4.74	4.58	4.25	4.00
240	14.91	11.83	10.34	9.39	8.72	8.21	7.79	7.46	7.17	6.92	6.51	6.19	5.92	5.69	5.49	5.10	4.80
280	17.40	13.81	12.06	10.96	10.17	9.57	9.09	8.70	8.36	8.07	7.60	7.22	6.90	6.64	6.41	5.95	5.60
320	19.88	15.78	13.78	12.52	11.63	10.94	10.39	9.94	9.56	9.23	8.68	8.25	7.89	7.59	7.32	6.80	6.40
360	22.37	17.75	15.51	14.09	13.08	12.31	11.69	11.18	10.75	10.38	9.77	9.28	8.88	8.53	8.24	7.65	7.16
400	24.85	19.72	17.23	15.65	14.53	13.68	12.99	12.43	11.95	11.53	10.85	10.31	9.86	9.48	9.15	8.50	7.75
440	27.34	21.70	18.95	17.22	15.99	15.04	14.29	13.67	13.14	12.69	11.94	11.34	10.85	10.43	10.07	9.35	8.32
480	29.82	23.67	20.68	18.79	17.44	16.41	15.59	14.91	14.34	13.84	13.03	12.37	11.83	11.38	10.99	10.20	8.88
520	32.31	25.64	22.40	20.35	18.89	17.78	16.89	16.15	15.53	14.99	14.11	13.40	12.82	12.33	11.90	11.05	9.43
560	34.79	27.61	24.12	21.92	20.35	19.15	18.19	17.40	16.73	16.15	15.20	14.43	13.81	13.28	12.82	11.90	9.97
600	37.28	29.59	25.85	23.48	21.80	20.51	19.49	18.64	17.92	17.30	16.28	15.47	14.79	14.22	13.73	12.60	10.50



Determining factor: deflection (l/300)
Determining factor: moment
Determining factor: lateral force

Grain direction

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