

HT20^{Plus} table of dimensions

Permissible distances between main beams and supports

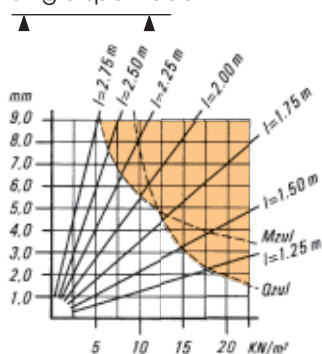
- Max. deflection: $l/500$
- Live load: 1.5 kN/m^2 or 20 % of concrete weight
- Permissible carrying force

- of the supports: min. 22 kN
- Technical specifications: permissible moment = 5.0 kNm

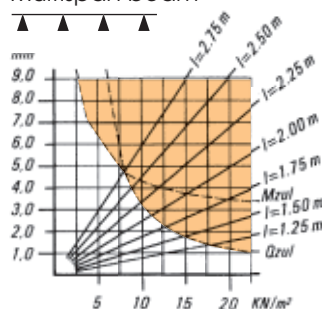
permissible surface load (q) = 11.0 kN

Floor thickness cm	Total load KN/m^2	Table 1: Crossbeams Distance between crossbeams (m)				Table 2: Main beams Selected distance between the main beams (m)									
		0,50	0,625	0,667	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	3,00	3,50	
		Max. permissible support width of the cross-beam = max. distance between main beams				Max. permissible support width = distance between supports									
10	4,35	3,67	3,40	3,33	3,20	2,91	2,70	2,48	2,29	2,14	2,02	1,92	1,69	1,44	
12	4,87	3,47	3,22	3,15	3,03	2,75	2,55	2,34	2,17	2,03	1,91	1,81	1,51	1,29	
14	5,39	3,30	3,07	3,00	2,89	2,62	2,43	2,22	2,06	1,93	1,81	1,63	1,36	1,17	
16	5,91	3,17	2,94	2,88	2,77	2,52	2,33	2,12	1,97	1,84	1,65	1,49	1,24	1,06	
18	6,43	3,05	2,83	2,77	2,67	2,42	2,23	2,04	1,89	1,71	1,52	1,37	1,14	0,98	
20	6,95	2,95	2,74	2,68	2,58	2,34	2,15	1,96	1,81	1,58	1,41	1,27	1,06	0,90	
22	7,47	2,86	2,66	2,60	2,50	2,27	2,07	1,89	1,68	1,47	1,31	1,18	0,98	0,84	
24	7,99	2,79	2,59	2,53	2,43	2,21	2,00	1,83	1,57	1,38	1,22	1,10	0,92	0,79	
26	8,51	2,72	2,52	2,47	2,37	2,16	1,94	1,72	1,48	1,29	1,15	1,03	0,86	0,74	
28	9,03	2,65	2,46	2,41	2,32	2,10	1,88	1,62	1,39	1,22	1,08	0,97	0,81	0,70	
30	9,61	2,59	2,41	2,36	2,27	2,04	1,82	1,53	1,31	1,14	1,02	0,92	0,76	0,65	
35	11,17	2,47	2,29	2,24	2,16	1,89	1,58	1,31	1,13	0,98	0,88	0,79	0,66	0,56	
40	12,73	2,36	2,19	2,15	2,05	1,73	1,38	1,15	0,99	0,86	0,77	0,69	0,58	0,49	
45	14,29	2,27	2,11	2,05	1,93	1,54	1,23	1,03	0,88	0,77	0,68	0,62	0,51	0,44	
50	15,85	2,20	2,01	1,95	1,83	1,39	1,11	0,93	0,79	0,69	0,62	0,56	0,46	0,40	
55	17,41	2,13	1,92	1,86	1,68	1,26	1,01	0,84	0,72	0,63	0,56	0,51	0,42	0,36	
60	18,97	2,05	1,84	1,74	1,55	1,16	0,93	0,77	0,66	0,58	0,52	0,46	0,39	0,33	
65	20,53	1,97	1,71	1,61	1,43	1,07	0,86	0,71	0,61	0,54	0,48	0,43	0,36	0,31	
70	22,09	1,90	1,59	1,49	1,33	1,00	0,80	0,66	0,57	0,50	0,44	0,40	0,33	0,28	
75	23,65	1,84	1,49	1,40	1,24	0,93	0,74	0,62	0,53	0,47	0,41	0,37	0,31	0,27	
80	25,21	1,75	1,40	1,31	1,16	0,87	0,70	0,58	0,50	0,44	0,39	0,35	0,29	0,25	
85	26,77	1,64	1,31	1,23	1,10	0,82	0,66	0,55	0,47	0,41	0,37	0,33	0,27	0,23	
90	28,33	1,55	1,24	1,16	1,04	0,78	0,62	0,52	0,44	0,39	0,35	0,31	0,26	0,22	
95	29,89	1,47	1,18	1,10	0,98	0,74	0,59	0,49	0,42	0,37	0,33	0,29	0,25	0,21	
100	31,45	1,40	1,12	1,05	0,93	0,70	0,56	0,47	0,40	0,35	0,31	0,28	0,23	0,20	

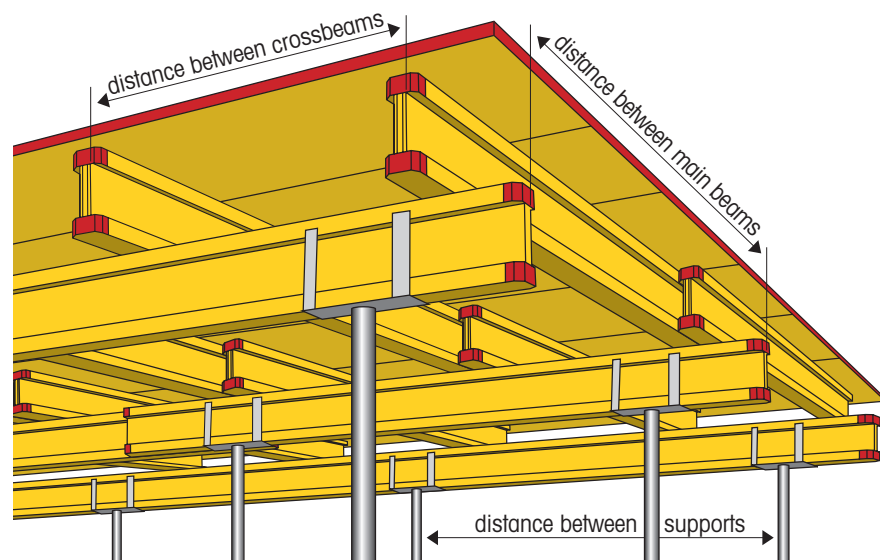
Single span beam



Multispan beam



Example of calculation: Ceiling strength: 20 cm, distance between crossbeams: 75 cm; we are looking for the distance between main beams and supports: permissible distance between main beams according to table 1 = **2,58 m**. The identical or next smaller distance between main beams in table 2 = **2,5 m**. Look for the permissible distance between supports in table 2, in column 2,5 depending on the ceiling strength (20 cm) = **1,27 m**. Caution! Examine the supports to ensure the corresponding carrying force.



Technical specifications

Product

- Wooden formwork beams, glued, solid I-beams

Chords

- Made of carefully selected class S 10 spruce wood according to DIN 4074
- Finger-jointed, high grade, solid whitewood
- Finger-joints and glueing according to DIN 68140-1
- Planed and chamfered with approx. 0.4 mm

Webs

- 3-ply solid wood panel, laminated
- Primarily showing vertical growth rings

Construction approval

- Institute for structural engineering, Berlin, approval notice Z-9.1-146
- Institute for quality and

materials testing, Baden-Württemberg

Design

The design of the Kaufmann HT20^{Plus} wooden formwork beam is based on the construction approval Z-9.1-146, in particular DIN 1052-1 and DIN 4421 – supporting structures; calculation, construction and implementation:

- Modulus of elasticity E 11,000 N/mm²
- Shear modulus G 600 N/mm²

Wood types

- Spruce, fir, a mixture of wood species permitted

Glueing

- 3-ply solid wood panel, veneer panel 100 (AW 100) pursuant to Austrian standard B 3023
- Finger-joints between

chords and webs pursuant to approval notice Z-9.1-146

Wood moisture

- Approx. 12 % +/- 3 % at the time of delivery

Standard lengths

- 2.45 / 2.90 / 3.30 / 3.60 / 3.90 / 4.50 / 4.90 / 5.90 m
- Max. length: 10.0 m

Weight

- 4,8 kg/m

Surface protection

- The complete beam is waterproofed using a water-repellent colour glaze

Support

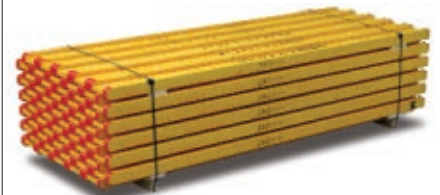
- Thanks to the 3-ply solid wood webs, HT20^{Plus} formwork beams can be cut into and supported at any lengths

Package units

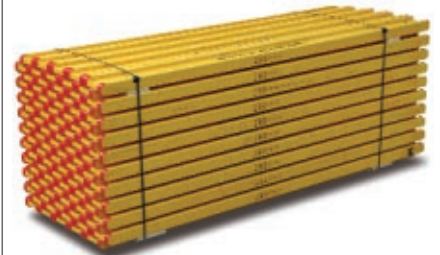
- 60 or 100 pieces per package

Packaging

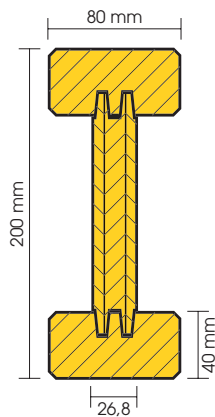
- The packages are delivered suitable for the construction site and protected by integrated supporting timber



Standard package: 60 pieces



Container package: 100 pieces



Dimensions and tolerances

Dimensions ¹⁾	HT20 ^{Plus}	Tolerances ²⁾
Beam height (mm)	200	+/- 2 mm
Chord height (mm)	40	- 1,5 %
Chord width (mm)	80	- 1,5 %
Web thickness (mm)	26,8	+/- 0,5 mm

¹⁾ these values apply at a wood moisture content of 12 %

²⁾ pursuant to approval notice Z-9.1-146

Technical specifications

	HT20 ^{Plus}
Permissible modulus M (kNm)	5,0
Permissible shearing force Q (kN)	11,0
Section modulus ¹⁾ W _x (cm ³)	461
Geometrical moment of inertia ¹⁾ J _x (cm ⁴)	4613

¹⁾ The values of the section modulus and the geometrical moment of inertia apply to new or used concrete formwork beams. An analogously increased factor of safety needs to be added for severely worn beams.



The shock-resistant, bevelled **protective cap** made of synthetic materials provides protection from splintering at the chord ends, significantly increasing durability

Indestructible **finger-joints** between chords and webs

The **Webs** made of 3-ply, laminated solid wood panels ensure high carrying capacity for continuous use in all climate zones

The **chords** are made of superior quality, selected solid wood with friction-fitted finger-joints, smoothly surfaced and slightly chamfered

The length and production date printed on the top side provide unique **labelling** of the HT20^{plus} timber beams

Guaranteed **safety** based on certified quality by the German Institute for structural engineering in Berlin, construction supervision approval notice Z-9.1-146



The Kaufmann HT20^{plus} formwork timber beam is a solid I-beam used for concrete formwork construction. The height of the beam is 20 cm and it is available in different standard lengths. The patented, stable synthetic cap prevents premature splintering at the highly sensitive chord ends. Moreover, the superior quality solid wood chords combined with triple laminated solid wood webs guarantee the above-average durability of the HT20^{plus}.

Our customers all over the world rely on this quality product "made in Austria". It will also meet your requirements – you can count on it!

KAUFMANN HT20^{plus}

KHT20^{Plus} formwork timber beam

The formwork timber beam featuring the worldwide unique protective cap system

