Facts on formwork timber beams:

Wood types
- Spruce / Fir

Beam height
- 20 cm

Lengths
- Lengths up to 10 m

Product standard
- Technical approval certificate Z-9.1-146

Weight
- 4.6 kg / m

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HT 20plus

Globally recognised quality

HT 20plus is the internationally recognised brandname for concrete formwork beams of the Mayr-Melnhof Kaufmann Group. The worldwide unique protective cap system, the high quality finishing and the proven durability have made it what it is today: A successful brand par excellence!

The HT 20plus is manufactured at the Reuthe factory in Bregenzerwald, Austria and delivered from there to more than 60 worldwide.

The Kaufmann formwork beams have become one of the leading brands over more than 50 years. In the formwork industry the product is renowned for its exceptional quality.

At a glance

- The shock-resistant, bevelled protective cap made of synthetic materials provides protection from splintering at the chord ends.
- 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 inscription of the monitoring stamp, the length and production data provide unique labelling of the HT 20plus beams.
- Guaranteed safety based on certified quality by the German Institute of Structural Engineering.

Many areas of application

- Ceiling formworks
- Wall formworks
- Bridge formworks
- Tunnel formworks
- Special formworks
- Scaffolding
- Working platforms
Solid-wall I-joist beam for concrete formwork construction

The 20 cm high HT 20plus is produced in various standard lengths. A patented, solid plastic cap prevents premature chipping on the chord ends. Moreover, the superior quality solid wood chords combined with triple laminated solid wood webs guarantee above-average durability.

Customers around the world rely on this quality product «Made in Austria». The HT 20plus does what it says – you can count on it!

General technical approval certificate
Z - 9.1-146 (DIBt)

Certificate of compliance
ÜZ - BWU03 – I 14.24.27
(MPA Stuttgart)

PEFC
Chain of Custody

ISO 9001
Quality management
**Technical Data**

**Product**
Formwork timber beam, glued, solid-wall I-joist beams

**Wood types**
Spruce, fir, a mixture of wood types is permitted

**Wood moisture**
12% + / - 3% at the time of delivery

**Weight**
4.6 kg / m

**Gluing**
Melamine resin-based adhesive, Adhesive Type I acc. to EN 301 approved for gluing load-bearing timber components.

**Chords**
- Made of carefully selected class S 10 spruce wood according to DIN 4074
- Finger-jointed, solid wood cross-sections with a dimension of 80 x 40 mm
- Finger-jointing of the chords according to DIN 68140-1
- Web milling on the opposing side of the core (left-sided chord surface)
- Planed and chamfered to approx. 0.4 mm

**Webs**
3-ply solid wood panel, laminated primarily showing vertical growth rings.

**Design**
Technical approval certificate Z-9.1-146 in conjunction with DIN 1052 or Eurocode 5 and EN 12812 apply for the design of the HT 20plus formwork beams.

**Surface protection**
The complete beam is waterproofed using a water-repellent colour glaze.

**Supports**
Thanks to the 3-ply solid wood webs, HT 20plus formwork beams can be cut into and supported at any lengths.

**Dimensions tolerances**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>HT 20 plus</th>
<th>Tolerances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beam height</td>
<td>200 mm</td>
<td>+ / - 2,0 mm</td>
</tr>
<tr>
<td>Chord height</td>
<td>40 mm</td>
<td>- 1,5%</td>
</tr>
<tr>
<td>Chord width</td>
<td>80 mm</td>
<td>- 1,5%</td>
</tr>
<tr>
<td>Web thickness</td>
<td>26.8 mm</td>
<td>+ / - 0,5 mm</td>
</tr>
</tbody>
</table>

**Material properties**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Strains</td>
<td>Permissible stress values</td>
<td>Characteristic limits of load-bearing capacity</td>
</tr>
<tr>
<td>Shear force</td>
<td>zum Q = 11,0 kN</td>
<td>V_zul = 23,9 kN</td>
</tr>
<tr>
<td>Bending moment</td>
<td>zum M = 5,0 kNm</td>
<td>M_zul = 10,9 kNm</td>
</tr>
<tr>
<td>Support</td>
<td>-</td>
<td>R_b,k = 47,8 kN</td>
</tr>
<tr>
<td>Section modulus(^1)</td>
<td>W_x = 461 cm^3</td>
<td></td>
</tr>
<tr>
<td>Geometrical moment of inertia(^1)</td>
<td>I_x = 4,613 cm^4</td>
<td></td>
</tr>
<tr>
<td>Modulus of elasticity</td>
<td>E = 10.000 N / mm^2</td>
<td></td>
</tr>
<tr>
<td>Shear modulus</td>
<td>G = 600 N / mm^2</td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) These values apply at a wood moisture content of 12%  
\(^2\) According to technical approval certificate Z-9.1-146

**Standard lengths**
2,45 / 2,90 / 3,30 / 3,60 / 3,90 / 4,50 / 4,90 / 5,90 m / max. 10,0 m length

**Package units**
- Standard package
  60 pieces each
- Container package
  100 pieces each

**Packaging**
The packages are delivered suitable for the construction site and protected by integrated supporting timber.
Example of calculation: Floor thickness: 20 cm, distance between crossbeams: 75 cm; we are looking for the distance between the main beams and the supports.

The 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, read downwards in column «2,50 m» and sideways in row «20 cm» floor thickness, the result is 1,27 m. Caution! Examine the supports to ensure the corresponding carrying force.