



rettenmeier® P20 formwork beams

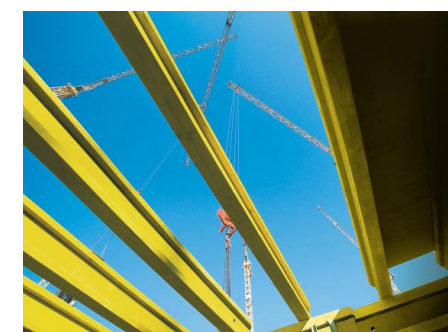


rettenmeier® Formwork – a complete product range for the professional builder.

- 3-ply shuttering panels
- rettenmeier® P20 formwork beams

rettenmeier® Formwork – the name which stands for new, innovative quality products, which enrich the experience of living and working with that unique material, timber. For years now, ideas have been transformed into top-class products at the company's site in Polomka. Our top priority in this has always been environmentally sound and state of the art production. This way, Rettenmeier has always adopted its responsibilities for future generations.


Formwork®



For the difficult working conditions at building sites: economical, safe and effective

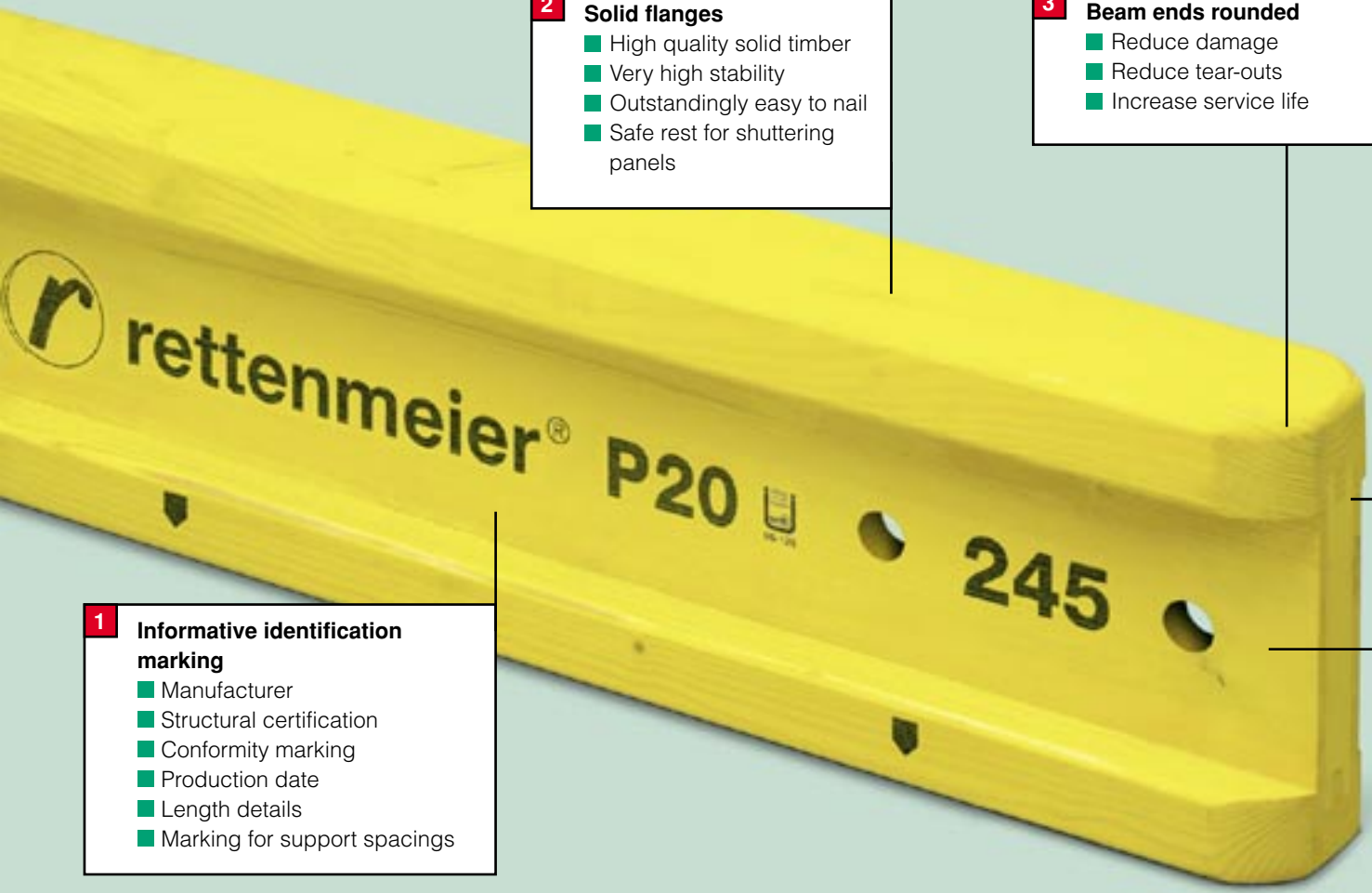
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rettenmeier®



- 1 Informative identification marking**
- Manufacturer
 - Structural certification
 - Conformity marking
 - Production date
 - Length details
 - Marking for support spacings

- 2 Solid flanges**
- High quality solid timber
 - Very high stability
 - Outstandingly easy to nail
 - Safe rest for shuttering panels

- 3 Beam ends rounded**
- Reduce damage
 - Reduce tear-outs
 - Increase service life

- 4 Force transferring dovetail connection**
- High-quality bonding
 - Exact fit
 - High-load bearing strength

- 5 Solid web**
- 3-ply, crosswise-bonded solid wood panels
 - Best form stability
 - High durability
 - High load bearing capacity

Summary of product range

Flange: 40 mm x 80 mm
Web: 31 mm thick
Beam height: 200 mm

Lengths (cm):
 245, 290, 330, 360, 390, 450, 490, 590
 Special lengths upon request

Static values for rettenmeier® P20 formwork beams

- Dimensioning in accordance with DIN 1052-1:1988-04**
- $z_{ul M} = 5,0 \text{ kNm}$ (permitted modulus of bending)
 - $z_{ul Q} = 11,0 \text{ kN}$ (permitted shearing force)
 - Reductions of shearing forces are not permitted. For the permitted pressing of the load bearing surface, section 5.1.11 and table 5 line 5a of DIN 1052-1:1988-04 applies with
 - $z_{ul \sigma_{DL}} = 2 \text{ N/mm}^2$ (permitted imposed load)

- Dimensioning in accordance with DIN 1052:2004-08**
- $V_k = 23,9 \text{ kN}$ (characteristic limit of the shearing force)
 - $M_k = 10,9 \text{ kNm}$ (characteristic limit of the bending modulus)
 - Reductions of the shearing forces are not permitted
 - $\gamma = 1,5$ (part safety factor for the influence)
 - $k_{mod} = 0,9$ (modification factor)
 - $k_{c,90} = 1,0$ (shear force factor at verification that pressure is perpendicular to grain of timber)
 - $f_{c,90,k} = 2,7 \text{ N/mm}^2$ (characteristic compression strength perpendicular to grain of timber)

rettenmeier® P20: Formwork beams proven in practice for efficient formwork construction



rettenmeier® P20 are high-capacity timber formwork supports with solid full-depth web panels and structural certification.

They are always used when efficiencies, cost control and safety are important factors. Whether for ceilings or walls, in residential or industrial construction or even when special solutions are required, they always prove themselves in day-to-day work thanks to their quality and functionality.

rettenmeier® P20 offer you a high level of product safety and an optimum in cost effectiveness. They are easy to handle, dimensionally very stable and are designed and manufactured for a long service life.

And that has its reasons: quality management and economic efficiency at all stages of production. Only specially-selected, high-quality conifers, e.g. from the low mountain ranges of the High Tatra, are used for rettenmeier® P20. Production is carried out on modern, high-performance machinery, it is efficient, it treats material and the environment with due care and is subject to continuous quality monitoring.

- Advantages:**
- very high standard of timber strength through the use of slow-growing timber from the low mountain ranges
 - structural certificate Z-9.1-647
 - gluing certificate C
 - permanent quality control and regular outside monitoring by authorised institutes
 - dimensional and form stability
 - very strong, long service life
 - high load bearing capacity at low weight (5 kg/lineal m)
 - each beam end with 2 holes drilled
 - no significant reduction in load bearing surface at the ends
 - butt-to-butt extensions possible due to optimised profiling

Determination of spans

Example

Required: truss spacing and support beam spacing

Given: ○ a 24 cm concrete ceiling having a total load of 7,94 kN/m²

Selected: ○ transverse beam spacing 75 cm

Established: □ 228 cm truss spacing (select the next smaller truss spacing, in this case □ 225 cm)
 ○ 123 cm support spacing (check the load-bearing capacity of the supports)

ceiling depth cm	total load* kN/m ²	Maximum permissible spacing for trusses and supports (cm)											
		transverse beam spacing (cm)			truss spacing (cm)								
		38	50	75	100	125	150	175	200	225	250	300	350
10	4,30	353	320	280	254	236	222	211	202	194	187	171	146
12	4,82	339	308	269	245	227	214	203	194	187	180	152	130
14	5,34	328	298	260	237	219	207	196	188	180	165	137	118
16	5,86	318	289	252	229	213	200	190	182	167	150	125	107
18	6,38	309	281	245	223	207	195	185	172	153	138	115	99
20	6,90	301	274	239	217	202	190	180	159	142	128	106	91
22	7,42	294	267	233	212	197	185	169	148	132	119	99	85
24	7,94	287	261	228	207	192	181	158	139	123	111	92	79
26	8,46	281	256	223	203	188	173	149	130	116	104	87	74
28	8,98	276	251	219	199	185	163	140	122	109	98	82	70
30	9,50	271	246	215	195	181	154	132	116	103	93	77	66
40	12,10	250	227	198	180	145	121	104	91	81	73	61	52
50	14,70	234	213	186	150	120	100	86	75	67	60	51	43
60	17,30	222	201	169	127	102	85	73	64	57	51	42	36

* including working load 1,5 kN/m² I_y = 4181 cm⁴A = 101 cm² Max. deflection in centre of field l/500
 Note: the table is provided for provisional dimensioning, and does not replace structural verifications.

