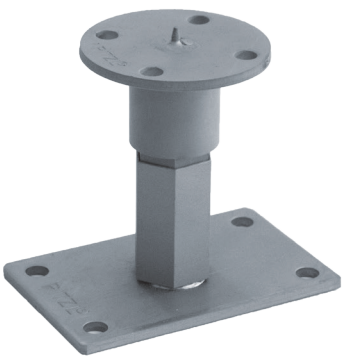
Statics manual post bases

Innovative wood connection systems for highest requirements.

ETA-10/0413 ETA-15/0187

Pitzl Metallbau GmbH & Co. KG
DIN EN 1090-2

Welcome to the world of Pitzl



This is Pitzl

As a supplier of innovative timber connecting systems to meet the highest demands, our goal is constant further development and product optimisation. The Pitzl range includes post bases, plug connection systems, balcony/fence posts/railing posts, a comprehensive sound insulation concept and helpful tools for the processing of our products. Of course, we also manufacture custom solutions for you – if desired with CE certification too – for your application area.

All Pitzl connectors and post bases can be installed with screws from various manufacturers. These must have a technical approval or have been manufactured in accordance with a currently valid standard.

Intensive cooperation with noted universities in Germany and Austria as well as our customers in the fields of carpentry, timber construction and morn timber construction engineering enables us to develop efficient timber connection systems. Extensive European Technical Approvals, the company's own statics program, a technical manual and competent technical support guarantee absolute security both in the planning phase and in the implementation of your project.

The design manual was created with the greatest possible care. Even so, occasional errors cannot be excluded. The use of this statics book and the information contained therein is expressly at your own risk. Before execution, all calculations must be checked and approved by the responsible planner or structural engineer.

ETA-10/0413

European Technical Assessment

The post bases bearing the CE mark have been assessed through the ETA-10/0413 of 21/12/2017.

Production facility

Pitzl Metallbau GmbH & Co. KG, Siemensstrasse 26, DE-84051 Altheim

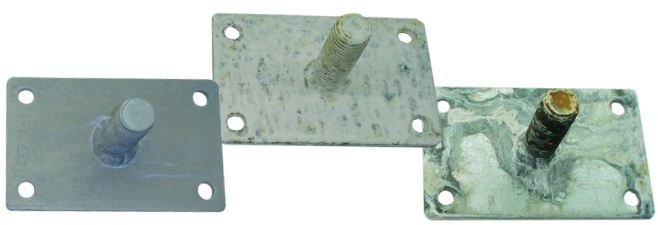
ZiNiP® coating for SERVICE CLASS 3

Purpose of use

The optimum connection of foundation and timber for carports, canopies, etc.

Very high durability

Our ZiNiP® coating offers high resistance to environmental influences. The ZiNiP® coating offers protection against corrosion, especially for post base systems that are used where humidity is high in exposed outdoor areas or in maritime climates.

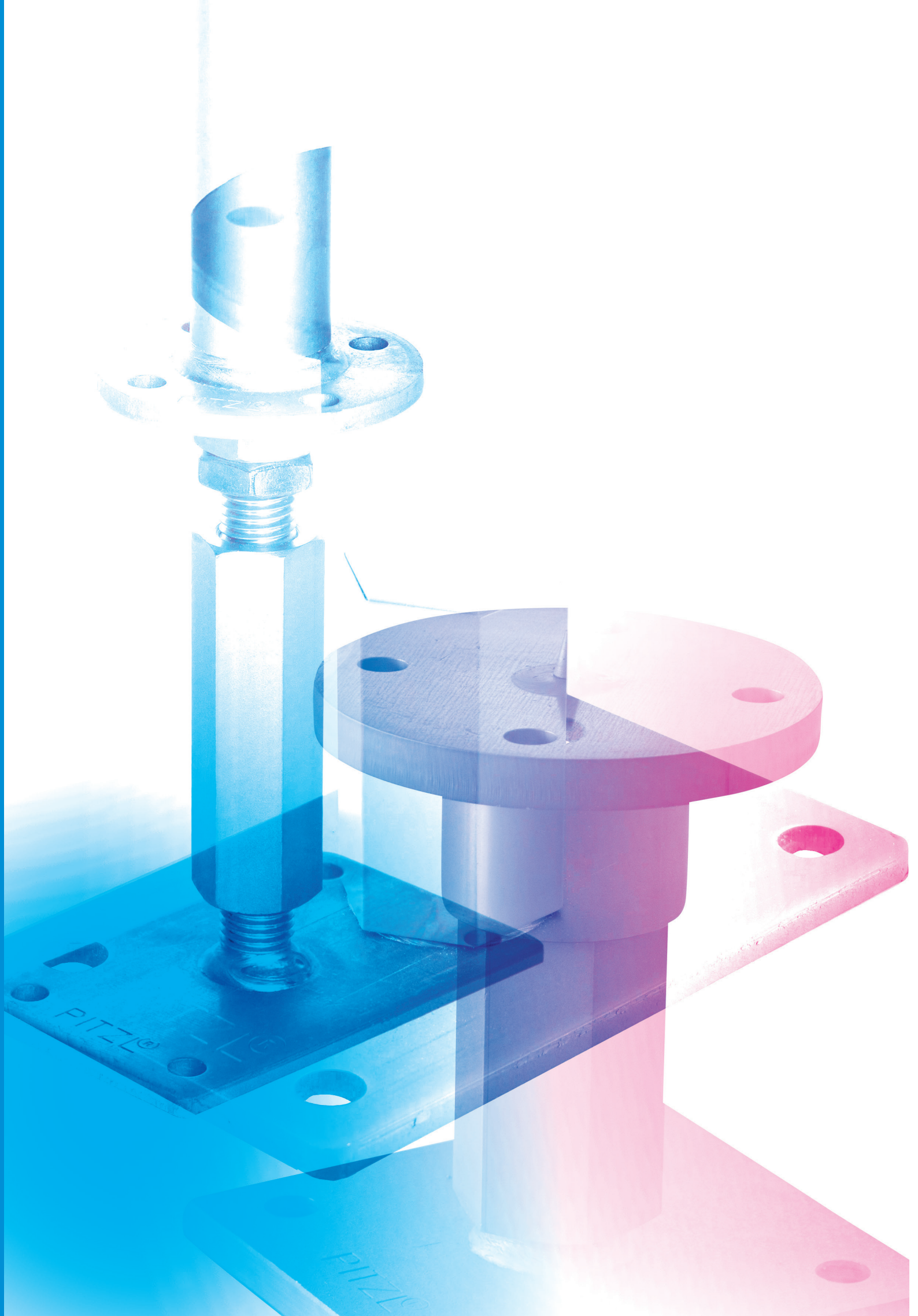


Hot dip galvanised 55 µm

ZiNiP®
After 1500 hours

After 408 hours

Galvanised
After 240 hours


PITZL

Content

A/ Design values

1. Application

Pitzl post bases are intended for the fastening of timber columns and posts as load-bearing components in light structures (e.g. carports, pergolas, terraces, etc.) or with larger timber columns.
The design values for the load-bearing capacity of the Pitzl post bases are determined by means of static calculations and approval certificates for the post bases named in the ETA-10/0413.
European Technical Approval: ETA-10/0413

Building materials

- Timber:
  Solid timber from coniferous wood, min. strength class C24 according to EN 338: 2010-02

- Fasteners:
  Wood screws with washer-head for the post bases according to EN 14592 or with ETA, dowels Ø12 mm with $R_m \geq 360$ N/mm²

- Steel quality of the post bases:
  Steel sort S235JR according to EN 10025-2:2005-04 with $R_{eH} \geq 235$ N/mm² and $R_m \geq 360$ N/mm²
  Steel sort 1.4301 according to EN 10088-3:2005-09 with $R_{po,2} \geq 190$ N/mm² and $R_m \geq 500$ N/mm²

- Threaded rod:
  Strength class 4.8 according to EN ISO 898-1:2009-08
  $R_p \geq 320$ N/mm² and $R_m \geq 400$ N/mm²; for stainless steel with property class 70 according to EN ISO 3506-1:2009

- Tube profile:
  Steel sort P235 according to EN 10216-1:2004 or EN 10217-1:2005 with $R_{eH} \geq 235$ N/mm² and $R_m \geq 360$ N/mm²

Fasteners

Ø12 mm dowels and full-thread washer-head wood screws Ø10 x min. 120 mm (minimum thread length: 100 mm) according to EN 14592 (DIN 571 and thread according to DIN 7998) or with ETA are used as fasteners for the post bases. Holes are to be pre-drilled for the wood screws according to the specifications in EN 1995-1-1, fig. 10.4. 5. Optionally, the specifications for pre-drilling in the ETA for the screws should be considered.

Posts

The characteristic values for solid timber of the strength class C24 according to EN 338:2003-09 were taken as the basis for the posts. The minimum dimensions of the posts are to be observed here. Unless illustrated otherwise, the end-grain surface of the post must lie fully against the base plate.

Post base installation

The load is transmitted into the substrate either via a threaded rod or a tube profile. The minimum screw-in depth of the threaded rods into the sleeve is to be guaranteed with the single diameter of the threaded rod.
The anchorage of the post base in the concrete is to be verified with the specified anchor tensile force.
The post base and column are to be installed vertically. An inadvertent inclined position of the column was not considered when determining the load-bearing capacities. The post bases must be installed centrally in the timber cross-section and level with the end-grain surface of the post.
The technical data for the post bases from the ETA-10/0413 can be found in the following tables (pages 8 – 10).

Corrosion protection

The post bases are protected against corrosion by a zinc layer. A galvanic coating is adequate for the use of the post bases indoors (service class 1) and in roofed-over outdoor areas (service class 2). In exposed outdoor areas (service class 3), the corrosion protection is ensured by hot dip galvanising with a layer thickness of at least 70 µm according to EN ISO 1461 or a ZiNiP coating with a thickness of at least 8 µm. The fasteners must likewise be protected for outdoor use by a zinc layer (galvanisation Fe/Zn 25c according to EN ISO 2081) or must be made of stainless steel.

Anchorage of the post bases in the foundation

No performance specifications are defined for the anchorage of the post bases in the foundation. The load-bearing capacity is to be checked by the construction designer to ensure that the performance is no lower than the load-bearing capacity of the post base. If necessary, the load-bearing capacity of the post base must be reduced accordingly.
(Load-bearing capacity of the anchor bolts: see p. 12)

Technical data for the post bases

Post bases				Posts
Art-No.	Head plate	Foot plate	Installation height [mm]	min w/h [mm]
11001.0000	100 x 100 x 6	100 x 100 x 6	125	120/120
11003.0000	100 x 100 x 6	100 x 100 x 6	125	120/120
11005.0000	120 x 120 x 6	120 x 120 x 6	160	140/140
11007.0000	120 x 120 x 6	120 x 120 x 6	160	140/140
11008.1250	140 x 140 x 15	140 x 140 x 15	250	150/150
11013.1100	100 x 100 x 6	100 x 160(220) x 6	150	120/120
11013.1180	80 x 80 x 5	100 x 160(220) x 6	150	100/100
11013.0200	100 x 100 x 6	100 x 100 x 6	250	120/120
11013.0280	80 x 80 x 5	100 x 100 x 6	250	100/100
11013.1200	100 x 100 x 6	100 x 160(220) x 6	250	120/120
11013.1300	100 x 100 x 6	100 x 160(220) x 6	330	120/120
11013.1500	100 x 100 x 6	100 x 160(220) x 6	500	120/120
11013.1280	80 x 80 x 5	100 x 160(220) x 6	250	100/100
11013.1380	80 x 80 x 5	100 x 160(220) x 6	330	100/100
11013.1580	80 x 80 x 5	100 x 160(220) x 6	500	100/100
11016.1200	100 x 100 x 10	100 x 160(220) x 10	250	120/120
11016.1300	100 x 100 x 10	100 x 160(220) x 10	330	120/120
11016.1500	100 x 100 x 10	100 x 160(220) x 10	500	120/120
10920.1000	100 x 100 x 6	100 x 160(220) x 6	142 - 207	120/120
10920.1100	100 x 100 x 6	100 x 160(220) x 6	167 - 232	120/120
10920.1200	100 x 100 x 6	100 x 160(220) x 6	227 - 292	120/120
10920.1300	100 x 100 x 6	100 x 160(220) x 6	277 - 342	120/120
10920.1400	100 x 100 x 6	100 x 160(220) x 6	327 - 392	120/120
10920.1003	100 x 100 x 10	100 x 160(220) x 10	150 - 210	120/120
10921.1000	ø 100 x 6	100 x 160(220) x 6	142 - 207	120/120
10921.1100	ø 100 x 6	100 x 160(220) x 6	167 - 232	120/120
10921.1200	ø 100 x 6	100 x 160(220) x 6	227 - 292	120/120
10921.1300	ø 100 x 6	100 x 160(220) x 6	277 - 342	120/120
10921.1400	ø 100 x 6	100 x 160(220) x 6	327 - 392	120/120
10921.1600	ø 100 x 6	100 x 160(220) x 6	82 - 92	120/120
10921.1003	ø 100 x 10	100 x 160(220) x 10	150 - 210	120/120
10921.1006	100 x 100 x 15	100 x 160(220) x 15	160 - 220	120/120
10921.1106	100 x 100 x 15	100 x 160(220) x 15	185 - 245	120/120
10921.1206	100 x 100 x 15	100 x 160(220) x 15	245 - 305	120/120
10921.1306	100 x 100 x 15	100 x 160(220) x 15	295 - 355	120/120
10921.1406	100 x 100 x 15	100 x 160(220) x 15	345 - 405	120/120
10921.1104	ø 100 x 6	100 x 160(220) x 6	190 - 255	120/120
10930.1000	ø 100 x 8	100 x 160(220) x 8	170 - 285	120/120
10930.1100	ø 100 x 8	100 x 160(220) x 8	195 - 310	120/120
10930.1200	ø 100 x 8	100 x 160(220) x 8	255 - 370	120/120
10930.1300	ø 100 x 8	100 x 160(220) x 8	305 - 420	120/120
10930.1600	ø 100 x 8	100 x 160(220) x 8	110 - 200	120/120
10930.1003	ø 100 x 10	100 x 160(220) x 10	195 - 285	120/120
10930.1006	100 x 100 x 15	100 x 160(220) x 15	205 - 300	120/120
10930.1106	100 x 100 x 15	100 x 160(220) x 15	230 - 325	120/120
10930.1206	100 x 100 x 15	100 x 160(220) x 15	290 - 385	120/120
10930.1306	100 x 100 x 15	100 x 160(220) x 15	340 - 435	120/120

Post bases				Posts
Art-No.	Head plate	Foot plate	Installation height [mm]	min w/h [mm]
10931.1000	ø 100 x 8	100 x 160(220) x 8	170 - 285	120/120
10931.1100	ø 100 x 8	100 x 160(220) x 8	195 - 310	120/120
10931.1200	ø 100 x 8	100 x 160(220) x 8	255 - 370	120/120
10931.1300	ø 100 x 8	100 x 160(220) x 8	305 - 420	120/120
10931.1600	ø 100 x 8	100 x 160(220) x 8	110 - 200	120/120
10931.1003	ø 100 x 10	100 x 160(220) x 10	195 - 285	120/120
10931.1006	100 x 100 x 15	100 x 160(220) x 15	205 - 300	120/120
10931.1106	100 x 100 x 15	100 x 160(220) x 15	230 - 325	120/120
10931.1206	100 x 100 x 15	100 x 160(220) x 15	290 - 385	120/120
10931.1306	100 x 100 x 15	100 x 160(220) x 15	340 - 435	120/120
10934.2402	ø 100 x 8	Cast in concrete	250	120/120
10934.3402	ø 100 x 8	Cast in concrete	330	120/120
10934.2302	ø 100 x 10	Cast in concrete	250	120/120
10934.3302	ø 100 x 10	Cast in concrete	330	120/120
10934.2403	ø 100 x 8	Cast in concrete	250	120/120
10934.3403	ø 100 x 8	Cast in concrete	330	120/120
10934.2303	ø 100 x 10	Cast in concrete	250	120/120
10934.3303	ø 100 x 10	Cast in concrete	330	120/120
10950.1412	ø 100 x 6	ø 140 x 8	125	120/120
10950.1422	ø 100 x 6	ø 140 x 8	160	120/120
10950.1432	ø 100 x 6	ø 140 x 8	200	120/120
10950.1612	ø 100 x 6	100 x 160(220) x 8	125	120/120
10950.1622	ø 100 x 6	100 x 160(220) x 8	160	120/120
10950.1632	ø 100 x 6	100 x 160(220) x 8	200	120/120
10950.7042	ø 100 x 6	70 x 60 x 5	350	120/120
10950.7052	ø 100 x 6	70 x 60 x 5	450	120/120
10950.1413	ø 100 x 6	ø 140 x 8	125	120/120
10950.1423	ø 100 x 6	ø 140 x 8	160	120/120
10950.1433	ø 100 x 6	ø 140 x 8	200	120/120
10950.1613	ø 100 x 6	100 x 160(220) x 8	125	120/120
10950.1623	ø 100 x 6	100 x 160(220) x 8	160	120/120
10950.1633	ø 100 x 6	100 x 160(220) x 8	200	120/120
10950.7043	ø 100 x 6	70 x 60 x 5	350	120/120
10950.7041	ø 100 x 6	70 x 60 x 5	350	120/120
10950.7053	ø 100 x 6	70 x 60 x 5	450	120/120
10950.7051	ø 100 x 6	70 x 60 x 5	450	120/120
10950.1411	ø 100 x 6	ø 140 x 8	125	120/120
10950.1421	ø 100 x 6	ø 140 x 8	160	120/120
10950.1431	ø 100 x 6	ø 140 x 8	200	120/120
10950.1611	ø 100 x 6	100 x 160(220) x 8	125	120/120
10950.1621	ø 100 x 6	100 x 160(220) x 8	160	120/120
10950.1631	ø 100 x 6	100 x 160(220) x 8	200	120/120
10952.1000	ø 100 x 8	100 x 160(220) x 8	146 - 211	120/120
10529.1090	Ø 96 x 8	100 x 160 x 8	141 - 201	120/120
10529.1093	Ø 120 x 12	140 x 140 x 12	149 - 209	120/120
10529.1990	Ø 96 x 8	100 x 160 x 8	203 - 318	120/120
10529.1993	Ø 120 x 12	140 x 140 x 12	215 - 325	120/120

Post bases				Posts
Art-No.	Head plate	Foot plate	Installation height [mm]	min w/h [mm]
10920.1090	Ø 96 x 6	100 x 160 x 6	142 - 207	120/120
10920.1190	Ø 96 x 6	100 x 160 x 6	167 - 232	120/120
10920.1290	Ø 96 x 6	100 x 160 x 6	227 - 292	120/120
10920.1390	Ø 96 x 6	100 x 160 x 6	277 - 342	120/120
10920.1490	Ø 96 x 6	100 x 160 x 6	327 - 392	120/120
10920.1093	Ø 100 x 10	100 x 160 x 10	150 - 210	120/120
10920.1193	Ø 100 x 10	100 x 160 x 10	175 - 235	120/120
10920.1293	Ø 100 x 10	100 x 160 x 10	235 - 295	120/120
10920.1393	Ø 100 x 10	100 x 160 x 10	285 - 345	120/120
10920.1493	Ø 100 x 10	100 x 160 x 10	335 - 395	120/120
11008.6150	Ø 140 x 8	140 x 140 x 10	150 - 200	160/160
11008.6200	Ø 140 x 8	140 x 140 x 10	200 - 250	160/160
11008.6250	Ø 140 x 8	140 x 140 x 10	250 - 300	160/160
11008.1160	140 x 140 x 15	140 x 140 x 15	160	160/160
11008.2160	140 x 140 x 15	140 x 140 x 15	160	160/160
11008.2250	140 x 140 x 15	140 x 140 x 15	250	160/160
11008.7190	160 x 160 x 12	160 x 160 x 12	190 - 260	160/160
11008.8190	160 x 160 x 12	160 x (170-280) x 12	190 - 260	160/160
94000.0106	[3]	110 x 110 x 6	150 [3]	120/120

2. Dimensioning concept

The design values for the load-bearing capacity specified in the following were determined taking into account the European standard Eurocode 5: „Design of timber structures“ (EN 1995-1-1:2010-12) and Eurocode 3: „Design of steel structures“ (EN 1993-1:2010-12) and take into account the current state of technical development with regard to safety concepts, determination of internal forces and dimensioning.

On the action side, the characteristic loads are increased by partial safety factors (γ_G = 1.35 for constant actions, γ_Q = 1.5 for changeable actions), while on the resistance side the characteristic load-bearing capacities are reduced through division by the partial safety factor γ_M.

$$\frac{E_d}{R_d} \leq 1 \text{ with:}$$

$$E_d = \sum_{j \geq 1} \gamma_{G,j} \cdot G_{k,j} + \gamma_{Q,1} \cdot Q_{k,1} + \sum_{i>1} \gamma_{Q,i} \cdot \Psi_{0,i} \cdot Q_{k,i} \qquad \text{(Basic combination) according to EN 1990}$$

Eurocode 5: „Design of timber structures“

For derived timber materials the influence of the service class and the load action duration are additionally accounted for by the modification factor k_{mod}.

$$R_d = k_{mod} \cdot \frac{R_k}{\gamma_M}; \quad \gamma_M = 1{,}3$$

Modification factor k_{mod} according to EN 1995-1-1:2008-09

Building material	Service class	Class of the load action duration				
		constant	long	morate	short	very short
Solid timber and glulam	1	0,60	0,70	0,80	0,90	1,10
	2	0,60	0,70	0,80	0,90	1,10
	3	0,50	0,55	0,65	0,70	0,90

$\gamma_M = 1{,}3$ for solid timber and glulam according to EN 1995-1-1/NA:2010-12 (National Annex Germany)

Eurocode 3: „Design of steel structures“

$$R_d = \frac{R_k}{\gamma_{Mi}}$$

Partial safety factors γ_M for steel failure according to EN 1993-1-1/NA:2010-12:

	Germany	Austria	Italy	SIA
Structural safety γ_{M0}	1,0	1,1	1,05	1,0
Stability γ_{M1}	1,1	1,1	1,05	1,0
Tensile structural safety γ_{M2}	1,25	1,25	1,25	1,25

Design value of the load-bearing capacity of the post bases
In case of failure of the timber component or the fasteners, the design value of the load-bearing capacity is to be calculated according to EN 1995-1-1. The characteristic load-bearing capacity values are to be divided by the partial safety factor and additionally multiplied by the coefficient k_{mod}.

In the case of steel failure, the design value of the load-bearing capacity according to EN 1993-1-1 is to be calculated by reducing the characteristic load-bearing capacity values by various partial safety factors.

The design value of the post base is the respective lowest value of all load-bearing capacity values:

$$F_{Rd} = min\left\{\frac{k_{mod} \cdot F_{Rk,H}}{\gamma_{M,H}}; \frac{F_{Rk,S}}{\gamma_{Mi,S}}\right\}$$

Design value of the load-bearing capacity in case of failure of the timber component or the fasteners according to Eurocode 5

Design value of the load-bearing capacity in case of steel failure according to Eurocode 3

The class of the load action duration and the service class are thus accounted for in case of failure of the timber and the fasteners.
The various partial safety factors γ_M for steel or timber failure are likewise accounted for correctly.

Load-bearing capacity of the anchor bolts
If the post base is loaded by tensile and horizontal forces, the following must apply to the load-bearing capacity of the anchor bolts:

$$R_{Bolt,ax,d} \geq F_A + F_{d,tensile}/4$$

$R_{Bolt,ax,d}$	Design value of the tensile capacity per anchor bolt
F_A	Anchor tensile force per anchor bolt under horizontal load (dependent on the installation height and the spacing of the dowels)
$F_{d,tensile}$	Design value of the tensile load on the post base

Combined stress
For the load-bearing capacity of the post base with a combined stress of horizontal loads H and vertical loads F, the following applies:

$$\frac{E_{F,d}}{R_{F,d}} + \sum \frac{E_{H,d}}{R_{H,d}} \leq 1{,}0$$

$E_{F,d}$	Design value of the stress in the load cases F_1 (compressive) or F_1 (tensile) in N
$R_{F,d}$	Design value of the load-bearing capacity in the load cases F_1 (compressive) or F_1 (tensile) in N
$E_{H,d}$	Design value of the stress in the load cases $F_{2/3}$ or $F_{4/5}$ in N
$R_{H,d}$	Design value of the load-bearing capacity in the load cases $F_{2/3}$ or $F_{4/5}$ in N

Increase in the tensile capacity (in case of timber failure)
The load-bearing capacity of the fasteners in the timber was calculated under the precondition of an effective thread length of the screws of 100 mm.

If screws with a larger effective thread length are used, the design value of the tensile capacity can be calculated using the following equation:

$$R_{Fd(tensile)} = k_{mod} \cdot \frac{16{,}3}{\gamma_M} \cdot \left(\frac{l_{ef}}{100}\right)^{0{,}9} \quad \text{and} \quad R_{Fd(tensile)} \leq R_{Fd(tensile),steel\ failure}$$

$R_{Fd,(tensile)}$ Design value of the load-bearing capacity in the load case F (tensile) for the thread length l_{ef} in kN

l_{ef} Effective thread length of the screws in mm

$R_{Fd(tensile),steel\ failure}$ Design value of the load-bearing capacity as a consequence of steel failure in kN

Example:
Design value of the tensile capacity with 200 mm full-thread screws (l_{ef} = 190 mm), short CLAD:

$$R_{Fd(tensile)} = 0{,}9 \cdot \frac{16{,}3}{1{,}3} \cdot \left(\frac{190}{100}\right)^{0{,}9} = 20{,}1kN \quad \text{and} \quad R_{Fd(tensile)} \leq R_{Fd(tensile),steel\ failure}$$

3. Design values of the post bases

3.1 Information about the tables

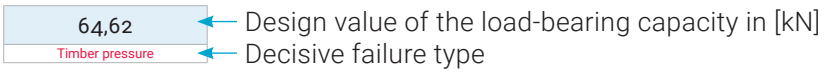
Formation of the values

The values were calculated from the characteristic values of the approval on the basis of the material safety factors according to EC 3 (steel construction) and EC 5 (timber construction). On the safe side, the design load-bearing capacities are specified for the maximum adjustment height of each post base.

The material safety factors are, per failure type:

Failure type		Value	Abbreviations in the table
Failure of solid timber on account of pressure parallel to the fibres	k_{mod}/ γ_m	$k_{mod}/ 1{,}3$	Timber pressure
Failure of the screw/solid timber connection	$k_{mod}/ \gamma_{m,Ver}$	$k_{mod}/ 1{,}3$	ScrTim
Failure due to exceeding the loadability of the steel cross-section	γ_{Mo}	1,0	Steel mo
Stability failure – buckling of the threaded rod or the tube	γ_{M1}	1,1	Steel m1
Failure due to breakage under tensile stress	γ_{M2}	1,25	Steel m2

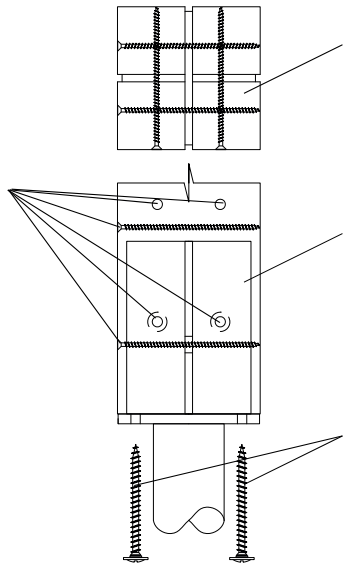
In the tables, the decisive failure type is noted as a lower-case abbreviation under the design load-bearing capacity.



Explanation of the installation and manufacturing variations of the post bases

Designation	Definition
Screw 10/120	Fastening of the timber column with screws 10/120 to the upper plate of the post base
Screw 10/160	Fastening of the timber column with screws 10/160 to the upper plate of the post base
„Normal“ base plate	Version of the post base with a base plate with the dimensions 100 mm x 160 mm
„Long“ base plate	Version of the post base with a base plate with the dimensions 100 mm x 220 mm
articulated	Articulated bearing of the post base, e.g. with small point foundations
fixed	Fixed bearing of the post base, e.g. with stable point foundations and base plates
without LTR	Installation of the column without lateral tensile reinforcement
with LTR	Installation of the column with lateral tensile reinforcement: Screws ≥ 6 / 120, laterally in the lower part of the column, 4 per side (see following figure: typical installation)

Typical installation of the post base



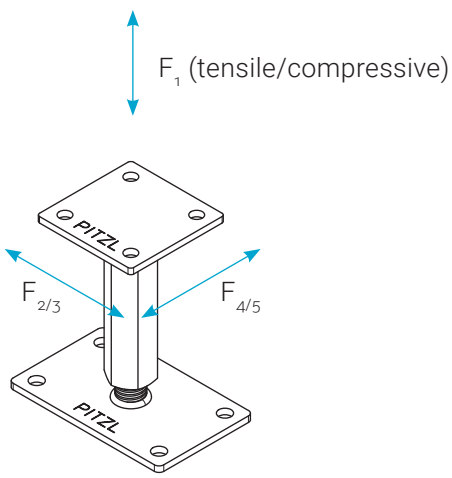
For minimum dimensions of the post bases, see table on pages 8 - 10

Fasteners for reinforcement against lateral tensile stress in direction $F_{2/3}$ and $F_{4/5}$; Embedment depths left/right of internal steel plate 50% in each case

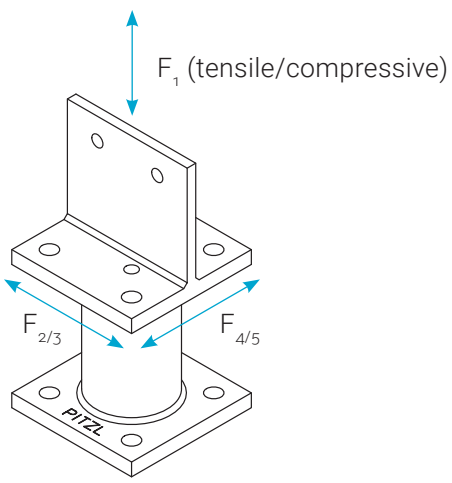
Type post base 11008.7190: min w x h = 160 mm x 160 mm

here: 4 full-thread screws with washer-head 10 x 120 mm

Definition of the forces



Post bases without slotted plate on the upper plate



Post bases with slotted plate on the upper plate

F_1: Axial force (tensile or compressive)

F_2 and F_3: Horizontal force, parallel to the inner plate of the post base or to the longer side of the lower plate

F_4 and F_5: Horizontal force, at a right angle to the inner plate of the post base or to the longer side of the lower plate

Determination of k_{mod}

The k_{mod} value depends of the service class and the load action duration
(see also Chapter 2 Dimensioning concept).
Thanks to the ZiNiP coating, Pitzl post bases also have an approval in the service class 3.

Tensile stresses are only allowed for actions with the load action duration „short" or „very short"!

For solid timber and glulam, the following values for k_{mod} apply according to the service class and load action duration:

Classes of the load action duration (CLAD) and respective examples of actions	Service classes 1 and 2 Heated interior rooms and roofed-over open support structures	Service class 3 Components exposed to the weather
Constant - constant loads only	0,6	0,5
Long - Store rooms	0,7	0,55
Morate - Living and common rooms - Snow at an altitude > 1000 m above sea level	0,8	0,65
Short - Balconies, - Snow at an altitude < 1000 m above sea level - Wind	0,9	0,7
Very short	1,1	0,9

Simplified rule:
If the load on the post base is generated by wind or snow, the following applies:

- for service class 1 and 2: $k_{mod} = 0,9$
- for service class 3: $k_{mod} = 0,7$

3.2 Plug-in system Z

Post bases 10529.1_90 / 10529.1_93

10529			k_{mod}				
			0,6	0,7	0,8	0,9	1,1
Compression	10529.1090		64,62 Timber pressure	75,38 Timber pressure	86,15 Timber pressure	96,92 Timber pressure	118,46 Timber pressure
	10529.1990		64,62 Timber pressure	75,38 Timber pressure	86,15 Timber pressure	96,92 Timber pressure	109,27 Steel m1
	10529.1093		104,31 Timber pressure	121,69 Timber pressure	139,08 Timber pressure	156,46 Timber pressure	191,23 Timber pressure
	10529.1993		104,31 Timber pressure	121,69 Timber pressure	139,08 Timber pressure	156,46 Timber pressure	183,82 Steel m1
Tensile	following: 10529.1090 10529.1990	Screws 10/120	13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,77 ScrTim	25,38 ScrTim
		Screws 10/160	23,08 ScrTim	26,92 ScrTim	30,77 ScrTim	34,62 ScrTim	36,90 Steel m0
	following: 10529.1093 10529.1993	Screws 10/120	13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,77 ScrTim	25,38 ScrTim
		Screws 10/160	23,08 ScrTim	26,92 ScrTim	30,77 ScrTim	34,62 ScrTim	42,31 ScrTim
F_2 or F_3 and F_4 or F_5	10529.1090	articulated	2,58 ScrTim	3,02 ScrTim	3,45 ScrTim	3,88 ScrTim	4,74 ScrTim
		fixed	5,77 ScrTim	6,73 ScrTim	7,69 ScrTim	8,65 ScrTim	10,58 ScrTim
	10529.1990	articulated	0,78 ScrTim	0,92 ScrTim	1,05 ScrTim	1,18 ScrTim	1,44 ScrTim
		fixed	1,80 ScrTim	2,10 ScrTim	2,40 ScrTim	2,70 ScrTim	3,30 ScrTim
	10529.1093	articulated	3,37 ScrTim	3,93 ScrTim	4,49 ScrTim	5,05 ScrTim	6,18 ScrTim
		fixed	6,14 ScrTim	7,16 ScrTim	8,18 ScrTim	9,21 ScrTim	11,25 ScrTim
	10529.1993	articulated	0,88 ScrTim	1,02 ScrTim	1,17 ScrTim	1,32 ScrTim	1,61 ScrTim
		fixed	1,89 ScrTim	2,21 ScrTim	2,52 ScrTim	2,84 ScrTim	3,47 ScrTim

3.3 System 10930/10931

Post bases 10930.1_00

10930.1_00				k_{mod}				
				0,6	0,7	0,8	0,9	1,1
Compression	10930.1000			50,77 Timber pressure	59,23 Timber pressure	67,69 Timber pressure	68,36 Steel m1	
	10930.1100			50,77 Timber pressure	59,23 Timber pressure	64,73 Steel m1		
	10930.1200			50,77 Timber pressure	56,09 Steel m1			
	10930.1300			50,77 Timber pressure	52,00 Steel m1			
	10930.1600			50,77 Timber pressure	59,23 Timber pressure	67,69 Timber pressure	76,15 Timber pressure	79,91 Steel m1
Tensile	All	Screws 10/120 or 10/160	„Normal“ base plate	13,20 Steel m0				
			„Long“ base plate	7,92 Steel m2				
F_2 or F_3	10930.1000			1,28 Steel m2				
	10930.1100			1,20 Steel m2				
	10930.1200			0,96 Steel m2				
	10930.1300			0,88 Steel m2				
	10930.1600			1,84 Steel m2				
F_4 or F_5	10930.1000	„Normal“ base plate		1,28 Steel m2				
		„Long“ base plate		0,96 Steel m0				
	10930.1100	„Normal“ base plate		1,20 Steel m2				
		„Long“ base plate		0,84 Steel m0				
	10930.1200	„Normal“ base plate		0,96 Steel m2				
		„Long“ base plate		0,72 Steel m0				
	10930.1300	„Normal“ base plate		0,88 Steel m2				
		„Long“ base plate		0,66 Steel m0				
	10930.1600	„Normal“ base plate		1,84 Steel m2				
		„Long“ base plate		1,32 Steel m0				

Post bases 10931.1_00

10931.1_00				k_{mod}				
				0,6	0,7	0,8	0,9	1,1
Compression	10931.1000			50,77 Timber pressure	59,23 Timber pressure	67,69 Timber pressure	68,36 Steel m1	
	10931.1100			50,77 Timber pressure	59,23 Timber pressure	64,73 Steel m1		
	10931.1200			50,77 Timber pressure	56,09 Steel m1			
	10931.1300			50,77 Timber pressure	52,00 Steel m1			
	10931.1600			50,77 Timber pressure	59,23 Timber pressure	67,69 Timber pressure	76,15 Timber pressure	79,91 Steel m1
Tensile	All	Screws 10/120 or 10/160	„Normal“ base plate	13,20 Steel m0				
			„Long“ base plate	7,92 Steel m2				
F_2 or F_3	10931.1000			1,28 Steel m2				
	10931.1100			1,20 Steel m2				
	10931.1200			0,96 Steel m2				
	10931.1300			0,88 Steel m2				
	10931.1600			1,84 Steel m2				
F_4 or F_5	10931.1000	„Normal“ base plate		1,28 Steel m2				
		„Long“ base plate		0,96 Steel m0				
	10931.1100	„Normal“ base plate		1,20 Steel m2				
		„Long“ base plate		0,84 Steel m0				
	10931.1200	„Normal“ base plate		0,96 Steel m2				
		„Long“ base plate		0,72 Steel m0				
	10931.1300	„Normal“ base plate		0,88 Steel m2				
		„Long“ base plate		0,66 Steel m0				
	10931.1600	„Normal“ base plate		1,84 Steel m2				
		„Long“ base plate		1,32 Steel m0				

3.4 Right/left thread

Post bases 10920.1_00 / 10920.1003

10920.1_00				k_{mod}				
				0,6	0,7	0,8	0,9	1,1
Compression	10920.1000			55,38 Timber pressure	64,62 Timber pressure	73,85 Timber pressure	79,45 Steel m1	
	10920.1100			55,38 Timber pressure	64,62 Timber pressure	73,85 Timber pressure	76,18 Steel m1	
	10920.1200			55,38 Timber pressure	64,62 Timber pressure	67,82 Steel m1		
	10920.1300			55,38 Timber pressure	63,45 Steel m1			
	10920.1400			53,18 Steel m1				
	10920.1003			73,15 Timber pressure	85,35 Timber pressure	97,54 Timber pressure	109,73 Timber pressure	134,12 Timber pressure
Tensile	10920.1003	Screws 10/120	„Normal“ base plate	13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,60 Steel m0	
			„Long“ base plate	12,36 Steel m2				
		Screws 10/160	„Normal“ base plate	20,60 Steel m0				
			„Long“ base plate	12,36 Steel m2				
	Others	Screws 10/120	„Normal“ base plate	7,40 Steel m0				
			„Long“ base plate	4,44 Steel m2				
		Screws 10/160	„Normal“ base plate	7,40 Steel m0				
			„Long“ base plate	4,44 Steel m2				
F_2 or F_3	10920.1000			1,76 Steel m2				
	10920.1100			1,6 Steel m2				
	10920.1200			1,28 Steel m2				
	10920.1300			1,12 Steel m2				
	10920.1400			0,96 Steel m2				
	10920.1003			3,04 Steel m2				
F_4 or F_5	10920.1000	„Normal“ base plate		1,20 Steel m0				
		„Long“ base plate		0,72 Steel m0				
	10920.1100	„Normal“ base plate		1,10 Steel m0				
		„Long“ base plate		0,66 Steel m0				
	10920.1200	„Normal“ base plate		0,90 Steel m0				
		„Long“ base plate		0,54 Steel m0				
	10920.1300	„Normal“ base plate		0,80 Steel m0				
		„Long“ base plate		0,48 Steel m0				
	10920.1400	„Normal“ base plate		0,60 Steel m0				
		„Long“ base plate		0,36 Steel m0				
	10920.1003	„Normal“ base plate		3,30 Steel m0				
		„Long“ base plate		1,98 Steel m0				

Post bases 10920.1_90

10920.1_90			k_{mod}				
			0,6	0,7	0,8	0,9	1,1
Compression	10920.1090		55,38 Timber pressure	64,62 Timber pressure	73,85 Timber pressure	83,08 Timber pressure	101,54 Timber pressure
	10920.1190		55,38 Timber pressure	64,62 Timber pressure	73,85 Timber pressure	83,08 Timber pressure	92,64 Steel m1
	10920.1290		55,38 Timber pressure	64,62 Timber pressure	73,85 Timber pressure	83,08 Timber pressure	84,00 Steel m1
	10920.1390		55,38 Timber pressure	64,62 Timber pressure	73,85 Timber pressure	77,45 Steel m1	
	10920.1490		55,38 Timber pressure	64,62 Timber pressure	68,91 Steel m1		
Tensile	All	Screws 10/120	13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,76 Steel m0	
		Screws 10/160	20,76 Steel m0				
F_2 or F_3 and F_4 or F_5	10920.1090	articulated	1,98 ScrTim	2,32 ScrTim	2,65 ScrTim	2,98 ScrTim	3,64 ScrTim
		fixed	6,74 ScrTim	7,86 ScrTim	8,98 ScrTim	10,11 ScrTim	12,35 ScrTim
	10920.1190	articulated	1,34 ScrTim	1,56 ScrTim	1,78 ScrTim	2,01 ScrTim	2,45 ScrTim
		fixed	4,94 ScrTim	5,76 ScrTim	6,58 ScrTim	7,41 ScrTim	9,05 ScrTim
	10920.1290	articulated	1,02 ScrTim	1,18 ScrTim	1,35 ScrTim	1,52 ScrTim	1,86 ScrTim
		fixed	3,14 ScrTim	3,66 ScrTim	4,18 ScrTim	4,71 ScrTim	5,75 ScrTim
	10920.1390	articulated	0,65 ScrTim	0,75 ScrTim	0,86 ScrTim	0,97 ScrTim	1,18 ScrTim
		fixed	1,98 ScrTim	2,32 ScrTim	2,65 ScrTim	2,98 ScrTim	3,64 ScrTim
	10920.1490	articulated	0,42 ScrTim	0,48 ScrTim	0,55 ScrTim	0,62 ScrTim	0,76 ScrTim
		fixed	0,83 ScrTim	0,97 ScrTim	1,11 ScrTim	1,25 ScrTim	1,52 ScrTim

Post bases 10921.1_00

10921.1_00			k_{mod}				
			0,6	0,7	0,8	0,9	1,1
Compression	10921.1000		46,15 Timber pressure	53,85 Timber pressure	54,88 Steel m2		
	10921.1100		46,15 Timber pressure	53,85 Timber pressure	54,88 Steel m2		
	10921.1200		46,15 Timber pressure	53,85 Timber pressure	54,88 Steel m2		
	10921.1300		46,15 Timber pressure	53,85 Timber pressure	54,88 Steel m2		
	10921.1400		46,15 Timber pressure	53,18 Steel m1			
	10921.1600		46,15 Timber pressure	53,85 Timber pressure	54,88 Steel m2		
Tensile	All	„Normal“ base plate	7,40 Steel m0				
		„Long“ base plate	4,44 Steel m2				
F_2 or F_3	10921.1000		1,76 Steel m2				
	10921.1100		1,60 Steel m2				
	10921.1200		1,28 Steel m2				
	10921.1300		1,12 Steel m2				
	10921.1400		0,96 Steel m2				
	10921.1600		4,00 Steel m2				
F_4 or F_5	10921.1000	„Normal“ base plate	1,20 Steel m0				
		„Long“ base plate	0,72 Steel m0				
	10921.1100	„Normal“ base plate	1,10 Steel m0				
		„Long“ base plate	0,66 Steel m0				
	10921.1200	„Normal“ base plate	0,90 Steel m0				
		„Long“ base plate	0,54 Steel m0				
	10921.1300	„Normal“ base plate	0,80 Steel m0				
		„Long“ base plate	0,48 Steel m0				
	10921.1400	„Normal“ base plate	0,60 Steel m0				
		„Long“ base plate	0,36 Steel m0				
	10921.1600	„Normal“ base plate	2,80 Steel m0				
		„Long“ base plate	1,68 Steel m0				

3.5 Stainless steel

Post bases 10952.1000

10952.1000			k_{mod}				
			0,6	0,7	0,8	0,9	1,1
Compression	10952.1000		41,54 Timber pressure	48,46 Timber pressure	55,38 Timber pressure	62,31 Timber pressure	67,04 Steel m2
Tensile	10952.1000	Screws 10/120	11,80 Steel m0				
		Screws 10/160	11,80 Steel m0				
F_2 or F_3	10952.1000		2,50 Steel m0				
F_4 or F_5	10952.1000	„Normal“ base plate	2,50 Steel m0				
		„Long“ base plate	1,50 Steel m0				

3.6 Inclinable

Post bases 94000.0106

94000.0106			k_{mod}				
			0,6	0,7	0,8	0,9	1,1
Compression	94000.0106		Depending on the dimensions of the upper plate and maximally 41.3				
Tensile	94000.0106	Screws 10/120	13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,77 ScrTim	25,38 ScrTim
		Screws 10/160	23,08 ScrTim	25,60 Steel m0			
F_2 or F_3 and F_4 or F_5	94000.0106		Dependent on the type of upper plate				

Please observe the maximum adjustment height of 215 mm.

3.7 Heavy-duty version

Post bases 11016.1_00

11016.1_00		Adjustment range a | Type		k_{mod}				
				0,6	0,7	0,8	0,9	1,1
Compression	11016.1200	≤ 250		73,48 Timber pressure	85,72 Timber pressure	97,97 Timber pressure	110,22 Timber pressure	128,64 Steel m1
		≤ 125		73,85 Timber pressure	86,15 Timber pressure	98,46 Timber pressure	110,77 Timber pressure	135,38 Timber pressure
	11016.1300	≤ 330		73,85 Timber pressure	86,15 Timber pressure	98,46 Timber pressure	110,77 Timber pressure	115,09 Steel m1
		≤ 165		73,85 Timber pressure	86,15 Timber pressure	98,46 Timber pressure	110,77 Timber pressure	135,38 Timber pressure
	11016.1500	≤ 500		73,85 Timber pressure	84,45 Steel m1			
		≤ 250		73,85 Timber pressure	86,15 Timber pressure	98,46 Timber pressure	110,77 Timber pressure	128,64 Steel m1
Tensile (Screws 10/120)	All	Welded nut	„Normal" base plate	13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,60 Steel m0	
			„Long" base plate	12,36 Steel m2				
		Tension plate	„Normal" base plate	4,02 ScrTim	4,68 ScrTim	5,35 ScrTim	6,02 ScrTim	7,36 ScrTim
			„Long" base plate	- -				
F_2 or F_3	11016.1200	≤ 250		2,64 Steel m2				
		≤ 125		5,28 Steel m2				
	11016.1300	≤ 330		2,00 Steel m2				
		≤ 165		4,00 Steel m2				
	11016.1500	≤ 500		1,36 Steel m2				
		≤ 250		2,64 Steel m2				
F_4 or F_5	11016.1200	„Normal" base plate	≤ 250	2,80 Steel m0				
			≤ 125	5,60 Steel m0				
		„Long" base plate	≤ 250	1,68 Steel m0				
			≤ 125	3,36 Steel m0				
	11016.1300	„Normal" base plate	≤ 330	2,10 Steel m0				
			≤ 165	4,30 Steel m0				
		„Long" base plate	≤ 330	1,26 Steel m0				
			≤ 165	2,58 Steel m0				
	11016.1500	„Normal" base plate	≤ 500	1,40 Steel m0				
			≤ 250	2,80 Steel m0				
		„Long" base plate	≤ 500	0,84 Steel m0				
			≤ 250	1,68 Steel m0				

Post bases 10920.1_93

10920.1_93			k_{mod}				
			0,6	0,7	0,8	0,9	1,1
Compression	10920.1093		78,00 Timber pressure	91,00 Timber pressure	104,00 Timber pressure	117,00 Timber pressure	143,00 Timber pressure
	10920.1193		78,00 Timber pressure	91,00 Timber pressure	104,00 Timber pressure	117,00 Timber pressure	143,00 Timber pressure
	10920.1293		78,00 Timber pressure	91,00 Timber pressure	104,00 Timber pressure	117,00 Timber pressure	143,00 Timber pressure
	10920.1393		78,00 Timber pressure	91,00 Timber pressure	104,00 Timber pressure	117,00 Timber pressure	142,82 Steel m1
	10920.1493		78,00 Timber pressure	91,00 Timber pressure	104,00 Timber pressure	117,00 Timber pressure	140,00 Steel m1
Tensile	All	Screws 10/120	13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,77 ScrTim	25,38 ScrTim
		Screws 10/160	23,08 ScrTim	26,92 ScrTim	30,77 ScrTim	34,62 ScrTim	42,31 ScrTim
F_2 or F_3 and F_4 or F_5	10920.1093	articulated	2,03 ScrTim	2,37 ScrTim	2,71 ScrTim	3,05 ScrTim	3,72 ScrTim
		fixed	6,74 ScrTim	7,86 ScrTim	8,98 ScrTim	10,11 ScrTim	12,35 ScrTim
	10920.1193	articulated	1,48 ScrTim	1,72 ScrTim	1,97 ScrTim	2,22 ScrTim	2,71 ScrTim
		fixed	5,03 ScrTim	5,87 ScrTim	6,71 ScrTim	7,55 ScrTim	9,22 ScrTim
	10920.1293	articulated	1,06 ScrTim	1,24 ScrTim	1,42 ScrTim	1,59 ScrTim	1,95 ScrTim
		fixed	3,32 ScrTim	3,88 ScrTim	4,43 ScrTim	4,98 ScrTim	6,09 ScrTim
	10920.1393	articulated	0,74 ScrTim	0,86 ScrTim	0,98 ScrTim	1,11 ScrTim	1,35 ScrTim
		fixed	2,12 ScrTim	2,48 ScrTim	2,83 ScrTim	3,18 ScrTim	3,89 ScrTim
	10920.1493	articulated	0,51 ScrTim	0,59 ScrTim	0,68 ScrTim	0,76 ScrTim	0,93 ScrTim
		fixed	0,92 ScrTim	1,08 ScrTim	1,23 ScrTim	1,38 ScrTim	1,69 ScrTim

Pfostenträger 10921.1003 / 10921.1104 / 10921.1_06

10921.1_0_				k_{mod}				
				0,6	0,7	0,8	0,9	1,1
Compression	10921.1003			60,51 Timber pressure	70,59 Timber pressure	80,68 Timber pressure	90,76 Timber pressure	97,90 Steel m0
	10921.1006			85,71 Timber pressure	99,99 Timber pressure	114,28 Timber pressure	128,56 Timber pressure	149,27 Steel m1
	10921.1106			85,71 Timber pressure	99,99 Timber pressure	114,28 Timber pressure	128,56 Timber pressure	134,18 Steel m1
	10921.1206			85,71 Timber pressure	99,99 Timber pressure	114,28 Timber pressure	124,55 Steel m1	
	10921.1306			85,71 Timber pressure	99,99 Timber pressure	114,28 Timber pressure	119,45 Steel m1	
	10921.1406			85,71 Timber pressure	99,99 Timber pressure	107,09 Steel m1		
	10921.1104			48,46 Timber pressure	56,54 Timber pressure	64,62 Timber pressure	68,60 Steel m0	
Tensile	10921.1003	Screws 10/120	„Normal“ base plate	13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,60 Steel m0	
			„Long“ base plate	12,36 Steel m2				
		Screws 10/160	„Normal“ base plate	20,60 Steel m0				
			„Long“ base plate	12,36 Steel m2				
	10921.1104	Screws 10/120 or 10/160	„Normal“ base plate	7,40 Steel m0				
			„Long“ base plate	4,44 Steel m2				
	Sonst	Screws 10/120	„Normal“ base plate	13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,77 ScrTim	25,38 ScrTim
		Screws 10/160	„Long“ base plate	23,08 ScrTim	26,92 ScrTim	30,77 ScrTim	34,62 ScrTim	42,31 ScrTim
F_2 or F_3	10921.1003			3,04 Steel m2				
	10921.1006			3,12 Steel m2				
	10921.1106			2,80 Steel m2				
	10921.1206			2,24 Steel m2				
	10921.1306			2,08 Steel m2				
	10921.1406			1,68 Steel m2				
	10921.1104			1,44 Steel m2				
F_4 or F_5	10921.1003	„Normal“ base plate		3,30 Steel m0				
		„Long“ base plate		1,98 Steel m0				
	10921.1006	„Normal“ base plate		4,62 ScrTim	4,90 Steel m0			
	10921.1106	„Normal“ base plate		4,20 Steel m0				
	10921.1206	„Normal“ base plate		3,30 Steel m0				
	10921.1306	„Normal“ base plate		3,00 Steel m0				
	10921.1406	„Normal“ base plate		2,50 Steel m0				
	10921.1104	„Long“ base plate		1,00 Steel m0				
		„Normal“ base plate		0,60 Steel m0				

Pfostenträger 10930.1003 / 10930.1_06

10930.1_0_				k_{mod}				
				0,6	0,7	0,8	0,9	1,1
Compression	10930.1003			58,06 Timber pressure	67,74 Timber pressure	77,42 Timber pressure	87,09 Timber pressure	106,45 Timber pressure
	10930.1006			77,82 Timber pressure	90,78 Timber pressure	103,75 Timber pressure	116,72 Timber pressure	140,55 Steel m1
	10930.1106			77,82 Timber pressure	90,78 Timber pressure	103,75 Timber pressure	116,72 Timber pressure	127,55 Steel m1
	10930.1206			77,82 Timber pressure	90,78 Timber pressure	103,75 Timber pressure	116,72 Timber pressure	117,45 Steel m1
	10930.1306			77,82 Timber pressure	90,78 Timber pressure	103,75 Timber pressure	112,09 Steel m1	
Tensile	10930.1003	Screws 10/120	„Normal“ base plate	13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,60 Steel m0	
			„Long“ base plate	12,36 Steel m2				
		Screws 10/160	„Normal“ base plate	20,60 Steel m0				
			„Long“ base plate	12,36 Steel m2				
	Sonst	Screws 10/120		13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,77 ScrTim	25,38 ScrTim
		Screws 10/160		23,08 ScrTim	26,92 ScrTim	30,77 ScrTim	34,62 ScrTim	42,31 ScrTim
F_2 or F_3	10930.1003			2,24 Steel m2				
	10930.1006			2,48 Steel m2				
	10930.1106			2,00 Steel m2				
	10930.1206			1,68 Steel m2				
	10930.1306			1,52 Steel m2				
F_4 or F_5	10930.1003	„Normal“ base plate		3,20 Steel m0				
		„Long“ base plate		1,92 Steel m0				
	10930.1006	„Normal“ base plate		3,37 ScrTim	3,70 Steel m0			
	10930.1106	„Normal“ base plate		2,80 Steel m0				
	10930.1206	„Normal“ base plate		2,40 Steel m0				
	10930.1306	„Normal“ base plate		2,20 Steel m0				

Post bases 10931.1_03 / 10931.1_06

10931.1_0_				k_{mod}				
				0,6	0,7	0,8	0,9	1,1
Compression	10931.1003			58,06 Timber pressure	67,74 Timber pressure	77,42 Timber pressure	87,09 Timber pressure	106,45 Timber pressure
	10931.1006			77,82 Timber pressure	90,78 Timber pressure	103,75 Timber pressure	116,72 Timber pressure	140,55 Steel m1
	10931.1106			77,82 Timber pressure	90,78 Timber pressure	103,75 Timber pressure	116,72 Timber pressure	127,55 Steel m1
	10931.1206			77,82 Timber pressure	90,78 Timber pressure	103,75 Timber pressure	116,72 Timber pressure	117,45 Steel m1
	10931.1306			77,82 Timber pressure	90,78 Timber pressure	103,75 Timber pressure	112,09 Steel m1	
Tensile	10931.1003	Screws 10/120	„Normal“ base plate	13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,60 Steel m0	
			„Long“ base plate	12,36 Steel m2				
		Screws 10/160	„Normal“ base plate	20,60 Steel m0				
			„Long“ base plate	12,36 Steel m2				
	Others	Screws 10/120		13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,77 ScrTim	25,38 ScrTim
		Screws 10/160		23,08 ScrTim	26,92 ScrTim	30,77 ScrTim	34,62 ScrTim	42,31 ScrTim
F_2 or F_3	10931.1003			2,24 Steel m2				
	10931.1006			2,48 Steel m2				
	10931.1106			2,00 Steel m2				
	10931.1206			1,68 Steel m2				
	10931.1306			1,52 Steel m2				
F_4 or F_5	10931.1003	„Normal“ base plate		2,24 Steel m2				
		„Long“ base plate		1,50 Steel m0				
	10931.1006			2,48 Steel m2				
	10931.1106			2,00 Steel m2				
	10931.1206			1,68 Steel m2				
	10931.1306			1,52 Steel m2				

Post bases 11008.___0

11008				k_{mod}				
				0,6	0,7	0,8	0,9	1,1
Compression	11008.1160			184,62 Timber pressure	215,38 Timber pressure	246,15 Timber pressure	276,92 Timber pressure	338,46 Timber pressure
	11008.1250			176,08 Timber pressure	205,42 Timber pressure	234,77 Timber pressure	264,12 Timber pressure	279,30 Steel m0
	11008.2160			173,54 Timber pressure	202,46 Timber pressure	231,38 Timber pressure	260,31 Timber pressure	318,15 Timber pressure
	11008.2250			173,54 Timber pressure	202,46 Timber pressure	231,38 Timber pressure	260,31 Timber pressure	318,15 Timber pressure
	11008.7190			237,69 Timber pressure	277,31 Timber pressure	316,92 Timber pressure	356,54 Timber pressure	435,77 Timber pressure
	11008.8190			237,69 Timber pressure	277,31 Timber pressure	316,92 Timber pressure	356,54 Timber pressure	435,77 Timber pressure
	11008.6150			120,00 Timber pressure	140,00 Timber pressure	160,00 Timber pressure	180,00 Timber pressure	220,00 Timber pressure
	11008.6200			120,00 Timber pressure	140,00 Timber pressure	160,00 Timber pressure	180,00 Timber pressure	220,00 Timber pressure
	11008.6250			120,00 Timber pressure	140,00 Timber pressure	160,00 Timber pressure	180,00 Timber pressure	218,55 Steel m1
Tensile	All	Screws 10/120		13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,77 ScrTim	25,38 ScrTim
		Screws 10/160		23,08 ScrTim	26,92 ScrTim	30,77 ScrTim	34,62 ScrTim	42,31 ScrTim
F_2 or F_3	11008.1160	articulated	without LTR	4,62 ScrTim	5,38 ScrTim	6,15 ScrTim	6,92 ScrTim	8,46 ScrTim
		fixed	without LTR	4,62 ScrTim	5,38 ScrTim	6,15 ScrTim	6,92 ScrTim	8,46 ScrTim
	11008.1250	articulated	without LTR	4,62 ScrTim	5,38 ScrTim	6,15 ScrTim	6,92 ScrTim	8,46 ScrTim
		fixed	without LTR	4,62 ScrTim	5,38 ScrTim	6,15 ScrTim	6,92 ScrTim	8,46 ScrTim
	11008.2160	articulated	without LTR	4,62 ScrTim	5,38 ScrTim	6,15 ScrTim	6,92 ScrTim	8,46 ScrTim
			with LTR	6,00 ScrTim	7,00 ScrTim	8,00 ScrTim	9,00 ScrTim	11,00 ScrTim
		fixed	without LTR	4,62 ScrTim	5,38 ScrTim	6,15 ScrTim	6,92 ScrTim	8,46 ScrTim
			with LTR	6,00 ScrTim	7,00 ScrTim	8,00 ScrTim	9,00 ScrTim	11,00 ScrTim
	11008.2250	articulated	without LTR	4,62 ScrTim	5,38 ScrTim	6,15 ScrTim	6,92 ScrTim	8,46 ScrTim
			with LTR	6,00 ScrTim	7,00 ScrTim	8,00 ScrTim	9,00 ScrTim	11,00 ScrTim
		fixed	without LTR	4,62 ScrTim	5,38 ScrTim	6,15 ScrTim	6,92 ScrTim	8,46 ScrTim
			with LTR	6,00 ScrTim	7,00 ScrTim	8,00 ScrTim	9,00 ScrTim	11,00 ScrTim
	11008.7190	articulated	with LTR	3,74 ScrTim	4,36 ScrTim	4,98 ScrTim	5,61 ScrTim	6,85 ScrTim
		fixed	with LTR	8,40 ScrTim	9,80 ScrTim	11,20 ScrTim	12,60 ScrTim	15,40 ScrTim
	11008.8190	articulated	with LTR	3,74 ScrTim	4,36 ScrTim	4,98 ScrTim	5,61 ScrTim	6,85 ScrTim
		fixed	with LTR	6,69 ScrTim	7,81 ScrTim	8,92 ScrTim	10,04 ScrTim	12,27 ScrTim
	11008.6150	articulated	without LTR	2,68 ScrTim	3,12 ScrTim	3,57 ScrTim	4,02 ScrTim	4,91 ScrTim
		fixed	without LTR	7,52 ScrTim	8,78 ScrTim	10,03 ScrTim	11,28 ScrTim	13,79 ScrTim

11008				k_{mod}				
				0,6	0,7	0,8	0,9	1,1
F_2 or F_3	11008.6200	articulated	without LTR	2,17 ScrTim	2,53 ScrTim	2,89 ScrTim	3,25 ScrTim	3,98 ScrTim
		fixed	without LTR	6,09 ScrTim	7,11 ScrTim	8,12 ScrTim	9,14 ScrTim	11,17 ScrTim
	11008.6250	articulated	without LTR	1,66 ScrTim	1,94 ScrTim	2,22 ScrTim	2,49 ScrTim	3,05 ScrTim
		fixed	without LTR	4,71 ScrTim	5,49 ScrTim	6,28 ScrTim	7,06 ScrTim	8,63 ScrTim
F_4 or F_5	11008.1160	articulated	without LTR	4,62 ScrTim	5,38 ScrTim	6,15 ScrTim	6,92 ScrTim	8,46 ScrTim
		fixed	without LTR	4,62 ScrTim	5,38 ScrTim	6,15 ScrTim	6,92 ScrTim	8,46 ScrTim
	11008.1250	articulated	without LTR	4,62 ScrTim	5,38 ScrTim	6,15 ScrTim	6,92 ScrTim	8,46 ScrTim
		fixed	without LTR	4,62 ScrTim	5,38 ScrTim	6,15 ScrTim	6,92 ScrTim	8,46 ScrTim
	11008.2160	articulated	without LTR	2,08 ScrTim	2,42 ScrTim	2,77 ScrTim	3,12 ScrTim	3,81 ScrTim
			with LTR	5,08 ScrTim	5,92 ScrTim	6,77 ScrTim	7,62 ScrTim	9,31 ScrTim
		fixed	without LTR	2,08 ScrTim	2,42 ScrTim	2,77 ScrTim	3,12 ScrTim	3,81 ScrTim
			with LTR	5,08 ScrTim	5,92 ScrTim	6,77 ScrTim	7,62 ScrTim	9,31 ScrTim
	11008.2250	articulated	without LTR	2,08 ScrTim	2,42 ScrTim	2,77 ScrTim	3,12 ScrTim	3,81 ScrTim
			with LTR	5,08 ScrTim	5,92 ScrTim	6,77 ScrTim	7,62 ScrTim	9,31 ScrTim
		fixed	without LTR	2,08 ScrTim	2,42 ScrTim	2,77 ScrTim	3,12 ScrTim	3,81 ScrTim
			with LTR	5,08 ScrTim	5,92 ScrTim	6,77 ScrTim	7,62 ScrTim	9,31 ScrTim
	11008.7190	articulated	with LTR	3,74 ScrTim	4,36 ScrTim	4,98 ScrTim	5,61 ScrTim	6,85 ScrTim
		fixed	with LTR	8,40 ScrTim	9,80 ScrTim	11,20 ScrTim	12,60 ScrTim	15,40 ScrTim
	11008.8190	articulated	with LTR	3,74 ScrTim	4,36 ScrTim	4,98 ScrTim	5,61 ScrTim	6,85 ScrTim
		fixed	with LTR	6,69 ScrTim	7,81 ScrTim	8,92 ScrTim	10,04 ScrTim	12,27 ScrTim
	11008.6150	articulated	without LTR	2,68 ScrTim	3,12 ScrTim	3,57 ScrTim	4,02 ScrTim	4,91 ScrTim
		fixed	without LTR	7,52 ScrTim	8,78 ScrTim	10,03 ScrTim	11,28 ScrTim	13,79 ScrTim
	11008.6200	articulated	without LTR	2,17 ScrTim	2,53 ScrTim	2,89 ScrTim	3,25 ScrTim	3,98 ScrTim
		fixed	without LTR	6,09 ScrTim	7,11 ScrTim	8,12 ScrTim	9,14 ScrTim	11,17 ScrTim
	11008.6250	articulated	without LTR	1,66 ScrTim	1,94 ScrTim	2,22 ScrTim	2,49 ScrTim	3,05 ScrTim
		fixed	without LTR	4,71 ScrTim	5,49 ScrTim	6,28 ScrTim	7,06 ScrTim	8,63 ScrTim

3.8 Threaded rods

Post bases 11013.1__0

11013		Adjustment range a		k_{mod}				
				0,6	0,7	0,8	0,9	1,1
Compression	11013.1100	≤ 150		46,15 Timber pressure	53,85 Timber pressure	61,54 Timber pressure	69,23 Timber pressure	84,62 Timber pressure
	11013.1180	≤ 150		30,00 Timber pressure	35,00 Timber pressure	40,00 Timber pressure	45,00 Timber pressure	55,00 Timber pressure
	11013.0200	≤ 250		46,15 Timber pressure	53,85 Timber pressure	61,54 Timber pressure	69,23 Timber pressure	73,45 Steel m1
		≤ 125		46,15 Timber pressure	53,85 Timber pressure	61,54 Timber pressure	69,23 Timber pressure	84,62 Timber pressure
	11013.0280	≤ 250		30,00 Timber pressure	35,00 Timber pressure	40,00 Timber pressure	45,00 Timber pressure	55,00 Timber pressure
	11013.1200	≤ 250		46,15 Timber pressure	53,85 Timber pressure	61,54 Timber pressure	69,23 Timber pressure	80,73 Steel m1
		≤ 125		46,15 Timber pressure	53,85 Timber pressure	61,54 Timber pressure	69,23 Timber pressure	84,62 Timber pressure
	11013.1300	≤ 330		46,15 Timber pressure	53,85 Timber pressure	61,54 Timber pressure	62,00 Steel m1	
		≤ 165		46,15 Timber pressure	53,85 Timber pressure	61,54 Timber pressure	69,23 Timber pressure	84,45 Steel m1
	11013.1500	≤ 500		39,91 Steel m1				
		≤ 250		46,15 Timber pressure	53,85 Timber pressure	61,54 Timber pressure	69,23 Timber pressure	73,45 Steel m1
	11013.1280	≤ 250		30,00 Timber pressure	35,00 Timber pressure	40,00 Timber pressure	45,00 Timber pressure	55,00 Timber pressure
	11013.1380	≤ 330		30,00 Timber pressure	35,00 Timber pressure	40,00 Timber pressure	45,00 Timber pressure	55,00 Timber pressure
	11013.1580	≤ 500		30,00 Timber pressure	35,00 Timber pressure	39,91 Steel m1		
		≤ 250		30,00 Timber pressure	35,00 Timber pressure	40,00 Timber pressure	45,00 Timber pressure	55,00 Timber pressure
Tensile	following: 11013.1100 11013.1180 11013.1200 11013.1300 11013.1500 11013.1280 11013.1380 11013.1580	Welded nut	„Normal“ base plate	7,40 Steel m0				
			„Long“ base plate	4,44 Steel m2				
		Tension plate		3,60 Steel m0				
	following: 11013.0200 11013.0280	welded nut	„Normal“ base plate	16,80 Steel m0				
		Tension plate	„Long“ base plate	3,60 Steel m0				
F_2 or F_3	11013.1100	≤ 150		2,80 Steel m0				
		≤ 75		4,62 ScrTim	5,38 ScrTim	5,60 Steel m0		
	11013.1180	≤ 150		2,80 Steel m0				
		≤ 75		3,18 ScrTim	3,72 ScrTim	4,25 ScrTim	4,78 ScrTim	5,60 Steel m0
	following: 11013.0200 11013.1200	≤ 250		1,68 Steel m2				
		≤ 125		3,36 Steel m2				

11013		Adjustment range a		k_{mod}				
				0,6	0,7	0,8	0,9	1,1
F_2 or F_3	following: 11013.0280 11013.1280	≤ 250		1,68 Steel m2				
		≤ 125		3,18 ScrTim	3,36 Steel m2			
	following: 11013.1300 11013.1380	≤ 330		1,28 Steel m2				
		≤ 165		2,56 Steel m2				
	following: 11013.1500 11013.1580	≤ 500		0,80 Steel m0				
		≤ 250		1,68 Steel m2				
F_4 or F_5	11013.1100	„Normal“ base plate	≤ 150	1,70 Steel m0				
			≤ 75	3,40 Steel m0				
		„Long“ base plate	≤ 150	1,02 Steel m0				
			≤ 75	2,04 Steel m0				
	11013.1180	„Normal“ base plate	≤ 150	1,70 Steel m0				
			≤ 75	3,18 ScrTim	3,40 Steel m0			
		„Long“ base plate	≤ 150	1,02 Steel m0				
			≤ 75	2,04 Steel m0				
	11013.0200	≤ 250		1,80 Steel m0				
		≤ 125		3,40 Steel m0				
	11013.0280	≤ 250		1,80 Steel m0				
		≤ 125		3,18 ScrTim	3,40 Steel m0			
	following: 11013.1200 11013.1280	„Normal“ base plate	≤ 250	1,00 Steel m0				
			≤ 125	2,00 Steel m0				
		„Long“ base plate	≤ 250	0,60 Steel m0				
			≤ 125	1,20 Steel m0				
	following: 11013.1300 11013.1380	„Normal“ base plate	≤ 330	0,80 Steel m0				
			≤ 165	1,50 Steel m0				
		„Long“ base plate	≤ 330	0,48 Steel m0				
			≤ 165	0,90 Steel m0				
	following: 11013.1500 11013.1580	„Normal“ base plate	≤ 500	0,50 Steel m0				
			≤ 250	1,00 Steel m0				
		„Long“ base plate	≤ 500	0,30 Steel m0				
			≤ 250	0,60 Steel m0				

3.9 Rigid version hot dip galvanised

Post bases 1100_.0000

1100_.0000			k_{mod}				
			0,6	0,7	0,8	0,9	1,1
Compression	11001.0000		46,15 Timber pressure	53,85 Timber pressure	61,54 Timber pressure	69,23 Timber pressure	84,55 Steel m1
	11003.0000		46,15 Timber pressure	53,85 Timber pressure	61,54 Timber pressure	69,23 Timber pressure	84,55 Steel m1
	11005.0000		46,15 Timber pressure	53,85 Timber pressure	61,54 Timber pressure	69,23 Timber pressure	84,55 Steel m1
	11007.0000		46,15 Timber pressure	53,85 Timber pressure	61,54 Timber pressure	69,23 Timber pressure	84,55 Steel m1
Tensile	11001.0000	Screws 10/120	13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,77 ScrTim	25,38 ScrTim
		Screws 10/160	23,08 ScrTim	26,92 ScrTim	30,40 Steel m0		
	11003.0000	Screws 10/120	13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,77 ScrTim	25,38 ScrTim
		Screws 10/160	23,08 ScrTim	26,92 ScrTim	30,40 Steel m0		
	11005.0000	Screws 10/120	13,85 ScrTim	16,15 ScrTim	16,60 Steel m0		
		Screws 10/160	16,60 Steel m0				
	11007.0000	Screws 10/120	13,85 ScrTim	16,15 ScrTim	16,60 Steel m0		
		Screws 10/160	16,60 Steel m0				
F_2 or F_3	11001.0000		3,50 Steel m0				
	11003.0000		2,20 Steel m0				
	11005.0000		3,20 Steel m0				
	11007.0000		2,20 Steel m0				
F_4 or F_5	11001.0000		3,50 Steel m0				
	11003.0000		2,72 ScrTim	3,18 ScrTim	3,20 Steel m0		
	11005.0000		3,20 Steel m0				
	11007.0000		3,10 Steel m0				

3.10 For embedding in concrete

Post bases 10934.__0_

10934			k_{mod}				
			0,6	0,7	0,8	0,9	1,1
Compression	10934.2303		56,68 Timber pressure	66,12 Timber pressure	75,57 Timber pressure	85,02 Timber pressure	103,91 Timber pressure
	10934.2402		50,77 Timber pressure	59,23 Timber pressure	67,69 Timber pressure	76,15 Timber pressure	93,08 Timber pressure
	10934.2403		50,77 Timber pressure	59,23 Timber pressure	67,69 Timber pressure	76,15 Timber pressure	93,08 Timber pressure
	10934.3402		50,77 Timber pressure	59,23 Timber pressure	67,69 Timber pressure	76,15 Timber pressure	90,80 Steel m0
	10934.3303		56,68 Timber pressure	66,12 Timber pressure	75,57 Timber pressure	85,02 Timber pressure	103,91 Timber pressure
	10934.3403		50,77 Timber pressure	59,23 Timber pressure	67,69 Timber pressure	76,15 Timber pressure	90,80 Steel m0
	10934.2302		56,68 Timber pressure	66,12 Timber pressure	75,57 Timber pressure	85,02 Timber pressure	103,91 Timber pressure
	10934.3302		56,68 Timber pressure	66,12 Timber pressure	75,57 Timber pressure	85,02 Timber pressure	103,91 Timber pressure
Tensile	All	Screws 10/120	13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,77 ScrTim	25,38 ScrTim
		Screws 10/160	23,08 ScrTim	26,92 ScrTim	30,77 ScrTim	34,62 ScrTim	42,31 ScrTim
F_2 or F_3 and F_4 or F_5	10934.2303		4,62 ScrTim	4,70 Steel m0			
	10934.2402		2,40 Steel m0				
	10934.2403		2,40 Steel m0				
	10934.3402		1,50 Steel m0				
	10934.3303		2,90 Steel m0				
	10934.3403		1,50 Steel m0				
	10934.2302		3,37 ScrTim	3,93 ScrTim	4,49 ScrTim	4,70 Steel m0	
	10934.3302		2,90 Steel m0				

Post bases 10950.70__

10950.70__			k_{mod}				
			0,6	0,7	0,8	0,9	1,1
Compression	All		46,15 Timber pressure	53,85 Timber pressure	61,54 Timber pressure	69,23 Timber pressure	84,62 Timber pressure
Tensile	All	Screws 10/120	13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,77 ScrTim	25,38 ScrTim
		Screws 10/160	23,08 ScrTim	26,92 ScrTim	30,77 ScrTim	34,62 ScrTim	42,31 ScrTim
F_2 or F_3 and F_4 or F_5	10950.7041		4,62 ScrTim	5,38 ScrTim	6,15 ScrTim	6,20 Steel m0	
	10950.7042		3,37 ScrTim	3,93 ScrTim	4,49 ScrTim	5,05 ScrTim	6,18 ScrTim
	10950.7043		4,62 ScrTim	5,38 ScrTim	6,15 ScrTim	6,20 Steel m0	
	10950.7051		4,40 Steel m0				
	10950.7052		3,37 ScrTim	3,93 ScrTim	4,40 Steel m0		
	10950.7053		4,40 Steel m0				

3.11 2-part

Post bases 10950.14__

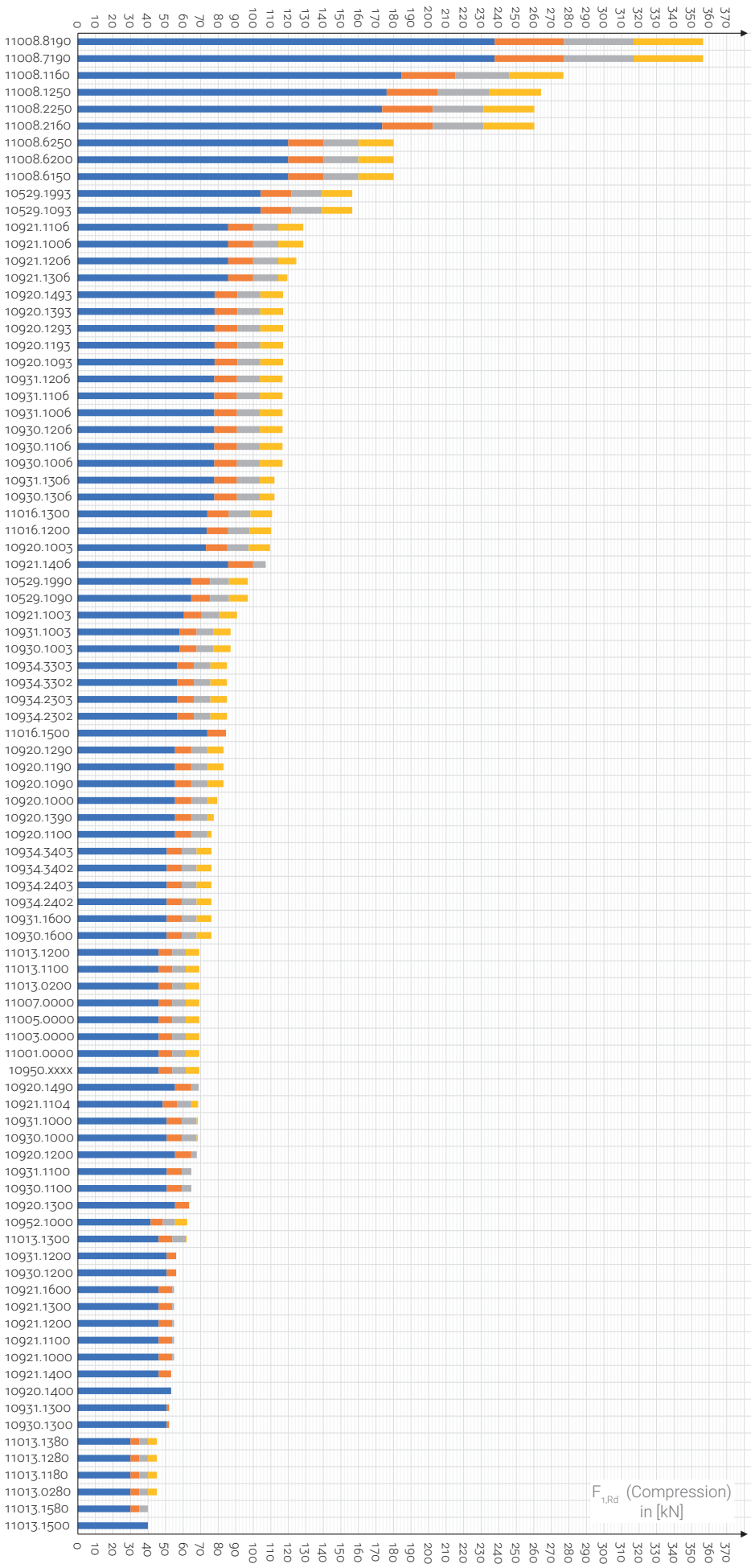
10950.14__			k_{mod}				
			0,6	0,7	0,8	0,9	1,1
Tensile	All		46,15 Timber pressure	53,85 Timber pressure	61,54 Timber pressure	69,23 Timber pressure	84,62 Timber pressure
Compression	All	Screws 10/120	13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,77 ScrTim	25,38 ScrTim
		Screws 10/160	23,08 ScrTim	26,92 ScrTim	30,77 ScrTim	34,62 ScrTim	41,80 Steel m0
F_2 or F_3 and F_4 or F_5	10950.1411		4,62 ScrTim	5,38 ScrTim	6,15 ScrTim	6,92 ScrTim	7,30 Steel m0
	10950.1412		3,37 ScrTim	3,93 ScrTim	4,49 ScrTim	5,05 ScrTim	6,18 ScrTim
	10950.1413		4,62 ScrTim	5,38 ScrTim	6,15 ScrTim	6,92 ScrTim	7,30 Steel m0
	10950.1421		4,62 ScrTim	5,38 ScrTim	5,60 Steel m0		
	10950.1422		3,37 ScrTim	3,93 ScrTim	4,49 ScrTim	5,05 ScrTim	5,60 Steel m0
	10950.1423		4,62 ScrTim	5,38 ScrTim	5,60 Steel m0		
	10950.1431		4,50 Steel m0				
	10950.1432		3,37 ScrTim	3,93 ScrTim	4,49 ScrTim	4,50 Steel m0	
	10950.1433		4,50 Steel m0				

Post bases 10950.16__

10950.16__				k_{mod}				
				0,6	0,7	0,8	0,9	1,1
Compression	All			46,15 Timber pressure	53,85 Timber pressure	61,54 Timber pressure	69,23 Timber pressure	84,62 Timber pressure
Tensile	All	Screws 10/120	„Normal“ base plate	13,85 ScrTim	16,15 ScrTim	18,46 ScrTim	20,77 ScrTim	25,38 ScrTim
			„Long“ base plate	13,85 ScrTim	15,36 Steel m2			
		Screws 10/160	„Normal“ base plate	23,08 ScrTim	25,60 Steel m0			
			„Long“ base plate	15,36 Steel m2				
F_2 or F_3	10950.1611			4,62 ScrTim	5,38 ScrTim	6,15 ScrTim	6,40 Steel m0	
	10950.1612			3,37 ScrTim	3,93 ScrTim	4,49 ScrTim	5,05 ScrTim	6,18 ScrTim
	10950.1613			4,62 ScrTim	5,38 ScrTim	6,15 ScrTim	6,40 Steel m0	
	10950.1621			4,62 ScrTim	4,90 Steel m0			
	10950.1622			3,37 ScrTim	3,93 ScrTim	4,49 ScrTim	4,90 Steel m0	
	10950.1623			4,62 ScrTim	4,90 Steel m0			
	10950.1631			3,90 Steel m0				
	10950.1632			3,37 ScrTim	3,90 Steel m0			
	10950.1633			3,90 Steel m0				
F_4 or F_5	10950.1611	„Normal“ base plate		3,80 Steel m0				
		„Long“ base plate		2,28 Steel m0				
	10950.1612	„Normal“ base plate		3,37 ScrTim	3,80 Steel m0			
		„Long“ base plate		2,28 Steel m0				
	10950.1613	„Normal“ base plate		3,80 Steel m0				
		„Long“ base plate		2,28 Steel m0				
	10950.1621	„Normal“ base plate		3,00 Steel m0				
		„Long“ base plate		1,80 Steel m0				
	10950.1622	„Normal“ base plate		3,00 Steel m0				
		„Long“ base plate		1,80 Steel m0				
	10950.1623	„Normal“ base plate		3,00 Steel m0				
		„Long“ base plate		1,80 Steel m0				
	10950.1631	„Normal“ base plate		2,30 Steel m0				
		„Long“ base plate		1,38 Steel m0				
	10950.1632	„Normal“ base plate		2,30 Steel m0				
		„Long“ base plate		1,38 Steel m0				
	10950.1633	„Normal“ base plate		2,30 Steel m0				
		„Long“ base plate		1,38 Steel m0				

3.12 Overview of the design load-bearing capacities under compressive stress

Design load-bearing capacity for compressive stress depending on k_{mod} value: 0,6 0,7 0,8 0,9



k_{mod}				Art-No.
0,6	0,7	0,8	0,9	
237,7	277,3	316,9	356,5	11008.8190
237,7	277,3	316,9	356,5	11008.7190
184,6	215,4	246,2	276,9	11008.1160
176,1	205,4	234,8	264,1	11008.1250
173,5	202,5	231,4	260,3	11008.2250
173,5	202,5	231,4	260,3	11008.2160
120,0	140,0	160,0	180,0	11008.6250
120,0	140,0	160,0	180,0	11008.6200
120,0	140,0	160,0	180,0	11008.6150
104,3	121,7	139,1	156,5	10529.1993
104,3	121,7	139,1	156,5	10529.1093
85,7	100,0	114,3	128,6	10921.1106
85,7	100,0	114,3	128,6	10921.1006
85,7	100,0	114,3	124,5	10921.1206
85,7	100,0	114,3	119,5	10921.1306
78,0	91,0	104,0	117,0	10920.1493
78,0	91,0	104,0	117,0	10920.1393
78,0	91,0	104,0	117,0	10920.1293
78,0	91,0	104,0	117,0	10920.1193
78,0	91,0	104,0	117,0	10920.1093
77,8	90,8	103,8	116,7	10931.1206
77,8	90,8	103,8	116,7	10931.1106
77,8	90,8	103,8	116,7	10931.1006
77,8	90,8	103,8	116,7	10930.1206
77,8	90,8	103,8	116,7	10930.1106
77,8	90,8	103,8	116,7	10930.1006
77,8	90,8	103,8	112,1	10931.1306
77,8	90,8	103,8	112,1	10930.1306
73,8	86,2	98,5	110,8	11016.1300
73,5	85,7	98,0	110,2	11016.1200
73,1	85,2	97,4	109,6	10920.1003
85,7	100,0	107,1	107,1	10921.1406
64,6	75,4	86,2	96,9	10529.1990
64,6	75,4	86,2	96,9	10529.1090
60,5	70,6	80,7	90,8	10921.1003
58,1	67,7	77,4	87,1	10931.1003
58,1	67,7	77,4	87,1	10930.1003
56,7	66,1	75,6	85,0	10934.3303
56,7	66,1	75,6	85,0	10934.3302
56,7	66,1	75,6	85,0	10934.2303
56,7	66,1	75,6	85,0	10934.2302
73,8	84,5	84,5	84,5	11016.1500
55,4	64,6	73,8	83,1	10920.1290
55,4	64,6	73,8	83,1	10920.1190
55,4	64,6	73,8	83,1	10920.1090
55,4	64,6	73,8	79,5	10920.1000
55,4	64,6	73,8	77,5	10920.1390
55,4	64,6	73,8	76,2	10920.1100
50,8	59,2	67,7	76,2	10934.3403
50,8	59,2	67,7	76,2	10934.3402
50,8	59,2	67,7	76,2	10934.2403
50,8	59,2	67,7	76,2	10934.2402
50,8	59,2	67,7	76,2	10931.1600
50,8	59,2	67,7	76,2	10930.1600
46,2	53,8	61,5	69,2	11013.1200
46,2	53,8	61,5	69,2	11013.1100
46,2	53,8	61,5	69,2	11013.0200
46,2	53,8	61,5	69,2	11007.0000
46,2	53,8	61,5	69,2	11005.0000
46,2	53,8	61,5	69,2	11003.0000
46,2	53,8	61,5	69,2	11001.0000
46,2	53,8	61,5	69,2	10950.xxxx
55,4	64,6	68,9	68,9	10920.1490
48,5	56,5	64,6	68,6	10921.1104
50,8	59,2	67,7	68,4	10931.1000
50,8	59,2	67,7	68,4	10930.1000
55,4	64,6	67,8	67,8	10920.1200
50,8	59,2	64,7	64,7	10931.1100
50,8	59,2	64,7	64,7	10930.1100
55,4	63,5	63,5	63,5	10920.1300
41,5	48,5	55,4	62,3	10952.1000
46,2	53,8	61,5	62,0	11013.1300
50,8	56,1	56,1	56,1	10931.1200
50,8	56,1	56,1	56,1	10930.1200
46,2	53,8	54,9	54,9	10921.1600
46,2	53,8	54,9	54,9	10921.1300
46,2	53,8	54,9	54,9	10921.1200
46,2	53,8	54,9	54,9	10921.1100
46,2	53,8	54,9	54,9	10921.1000
46,2	53,2	53,2	53,2	10921.1400
53,2	53,2	53,2	53,2	10920.1400
50,8	52,0	52,0	52,0	10931.1300
50,8	52,0	52,0	52,0	10930.1300
30,0	35,0	40,0	45,0	11013.1380
30,0	35,0	40,0	45,0	11013.1280
30,0	35,0	40,0	45,0	11013.1180
30,0	35,0	40,0	45,0	11013.0280
30,0	35,0	39,9	39,9	11013.1580
39,9	39,9	39,9	39,9	11013.1500

B/ Characteristic values

Pitzl post bases are to be dimensioned in accordance with the applicable standards in timber and steel construction Eurocode 5 and Eurocode 3 or a similar national code. The characteristic values of the load-bearing capacity are to be reduced by the appropriate factors. The characteristic values of the load are to be increased by the appropriate factors. (see dimensioning concept, p. 11-13)

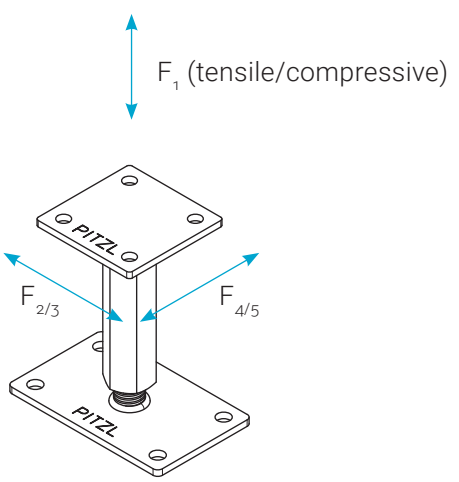
Characteristic values of the post bases

Determination of the characteristic load-bearing capacities

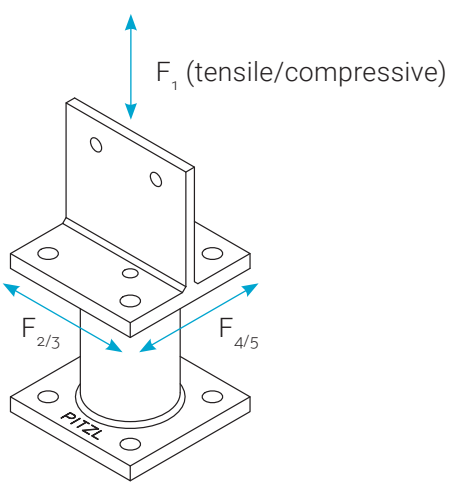
The characteristic properties of the post bases were determined through a combination of calculations according to Eurocode 3 and Eurocode 5 and from test results.

The characteristic values of the load-bearing capacity of the connection unit, which consists of screws and threaded rods or tubes, were determined using test results from the Karlsruhe Institute of Technology.

Definition of the forces



Post bases without slotted plate on the upper plate



Post bases with slotted plate on the upper plate

F_1: Axial force (tensile or compressive)

F_2 and F_3: Horizontal force, parallel to the inner plate of the post base or to the longer side of the lower plate

F_4 and F_5: Horizontal force, at a right angle to the inner plate of the post base or to the longer side of the lower plate

Explanation of the installation and manufacturing variations of the post bases

Designation	Definition
Screw 10/120	Fastening of the timber column with screws 10/120 to the upper plate of the post base
Screw 10/160	Fastening of the timber column with screws 10/160 to the upper plate of the post base
„Normal“ base plate	Version of the post base with a base plate with the dimensions 100 mm x 160 mm
„Long“ base plate	Version of the post base with a base plate with the dimensions 100 mm x 220 mm
articulated	Articulated bearing of the post base, e.g. with small point foundations
fixed	Fixed bearing of the post base, e.g. with stable point foundations and base plates
without LTR	Installation of the column without lateral tensile reinforcement
with LTR	Installation of the column with lateral tensile reinforcement: Screws ≥ 6 / 120, laterally in the lower part of the column, 4 per side (see following figure: typical installation)

Interpolation for adjustment heights between the maximum and minimum adjustment

For adjustment heights between the maximum and minimum adjustment, the load-bearing capacities may be determined by linear interpolation. An increase in the load-bearing capacity is only achieved when steel failure is decisive, since the timber load-bearing capacity is not dependent on the adjustment height.

Note

The compressive load capacity of the following post bases with moderate, short and very short CLAD can be increased by these methods: 11013.1500, 11016.1500, 10921.1400, 10921.1406, 10930.1300, 10931.1300

The additional post bases for which an increase in the compressive load capacity is possible with short or very short CLAD are the following: 10930.1200, 10921.1206, 10921.1306, 11013.1300

11001 - 11007	$F_{1,Rk}$ (Compression) [kN]				$F_{1,Rk}$ (Tensile) [kN]					$F_{2,Rk}$ or $F_{3,Rk}$ [kN]			$F_{4,Rk}$ or $F_{5,Rk}$ [kN]			
	Timber	Steel			Screw|Timber		Steel			Scr|Tim	Steel		Scr|Tim	Steel		
Art-No.	k_{mod}/γ_m	γ_{M0}	γ_{M1}	γ_{M2}	$k_{mod}/\gamma_{m,Ver}$		γ_{M0}		γ_{M2}	$k_{mod}/\gamma_{m,Ver}$	γ_{M0}	γ_{M2}	$k_{mod}/\gamma_{m,Ver}$	γ_{M0}		γ_{M2}
					Screws		Base plate							Base plate		
					10/120	10/160	„normal“	„long“						„normal“	„long“	
11001.0000	100,0	-	93,0	-	30,0	50,0	30,4	-	-	10,0	3,5	-	10,0	3,5	-	-
11003.0000	100,0	-	93,0	-	30,0	50,0	30,4	-	-	12,6	2,2	-	5,9	3,2	-	-
11005.0000	100,0	-	93,0	-	30,0	50,0	16,6	-	-	10,0	3,2	-	10,0	3,2	-	-
11007.0000	100,0	-	93,0	-	30,0	50,0	16,6	-	-	10,0	2,2	-	10,0	3,1	-	-

11008	$F_{1,Rk}$ (Compression) [kN]				$F_{1,Rk}$ (Tensile) [kN]					$F_{2,Rk}$ or $F_{3,Rk}$ [kN]				$F_{4,Rk}$ or $F_{5,Rk}$ [kN]			
	Timber	Steel			Screw|Timber		Steel			Screw|Timber				Screw|Timber			
Art-No.	k_{mod}/γ_m	γ_{M0}	γ_{M1}	γ_{M2}	$k_{mod}/\gamma_{m,Ver}$		γ_{M0}		γ_{M2}	$k_{mod}/\gamma_{m,Ver}$				$k_{mod}/\gamma_{m,Ver}$			
					Screws		Base plate			articulated		fixed		articulated		fixed	
					10/120	10/160	„normal“	„long“		without LTR	with LTR	without LTR	with LTR	without LTR	with LTR	without LTR	with LTR
11008.1160	400,0	-	456,0	-	30,0	50,0	160,2	-	-	10,0	-	10,0	-	10,0	-	10,0	-
11008.1250	381,5	279,3	-	-	30,0	50,0	160,2	-	-	10,0	-	10,0	-	10,0	-	10,0	-
11008.2160	376,0	-	438,0	-	30,0	50,0	160,2	-	-	10,0	13,0	10,0	13,0	4,5	11,0	4,5	11,0
11008.2250	376,0	-	350,0	-	30,0	50,0	160,2	-	-	10,0	13,0	10,0	13,0	4,5	11,0	4,5	11,0
11008.7190	515,0	516,9	-	-	30,0	50,0	90,9	-	-	-	8,1	-	18,2	-	8,1	-	18,2
11008.8190	515,0	516,9	-	-	30,0	50,0	72,4	-	-	-	8,1	-	14,5	-	8,1	-	14,5
11008.6150	260,0	260,8	-	-	30,0	50,0	69,6	-	-	5,8	-	16,3	-	5,8	-	16,3	-
11008.6200	260,0	-	244,4	-	30,0	50,0	69,6	-	-	4,7	-	13,2	-	4,7	-	13,2	-
11008.6250	260,0	-	240,4	-	30,0	50,0	69,6	-	-	3,6	-	10,2	-	3,6	-	10,2	-

11013			$F_{1,Rk}$ (Compression) [kN]				$F_{1,Rk}$ (Tensile) [kN]					$F_{2,Rk}$ or $F_{3,Rk}$ [kN]			$F_{4,Rk}$ or $F_{5,Rk}$ [kN]			
			Timber	Steel			Screw|Timber		Steel			Scr|Tim	Steel		Scr|Tim	Steel		
Art-No.	Adjustment range [mm] a	Welded nut / Tension plate	k_{mod}/ γ_m	γ_{Mo}	γ_{M1}	γ_{M2}	k_{mod}/ $\gamma_{m,Ver}$		γ_{Mo}		γ_{M2}	k_{mod}/ $\gamma_{m,Ver}$	γ_{Mo}	γ_{M2}	k_{mod}/ $\gamma_{m,Ver}$	γ_{Mo}		γ_{M2}
							Screws		Base plate							Base plate		
							10/120	10/160	„normal“	„long“						„normal“	„long“	
11013.1100	≤ 150	Welded nut	100,0	-	94,9	-	30,0	-	7,4	4,4	-	10,0	2,8	3,5	10,0	1,7	1,0	3,5
		Tension plate	100,0	-	94,9	-	8,7	-	3,6	-	4,5	10,0	2,8	3,5	10,0	1,7	1,0	3,5
	≤ 75	Welded nut	100,0	-	103,8	-	30,0	-	7,4	4,4	-	10,0	5,6	7,0	10,0	3,4	2,0	7,0
		Tension plate	100,0	-	103,8	-	8,7	-	3,6	-	4,5	10,0	5,6	7,0	10,0	3,4	2,0	7,0
11013.1180	≤ 150	Welded nut	65,0	-	94,9	-	30,0	-	7,4	4,4	-	6,9	2,8	3,5	6,9	1,7	1,0	3,5
		Tension plate	65,0	-	94,9	-	8,7	-	3,6	-	4,5	6,9	2,8	3,5	6,9	1,7	1,0	3,5
	≤ 75	Welded nut	65,0	-	103,8	-	30,0	-	7,4	4,4	-	6,9	5,6	7,0	6,9	3,4	2,0	7,0
		Tension plate	65,0	-	103,8	-	8,7	-	3,6	-	4,5	6,9	5,6	7,0	6,9	3,4	2,0	7,0
11013.0200	≤ 250	Welded nut	100,0	-	80,8	-	30,0	-	16,8	-	-	10,0	1,8	2,1	10,0	1,8	-	2,1
		Tension plate	100,0	-	80,8	-	8,7	-	3,6	-	4,5	10,0	1,8	2,1	10,0	1,8	-	2,1
	≤ 125	Welded nut	100,0	-	98,2	-	30,0	-	16,8	-	-	10,0	3,4	4,2	10,0	3,4	-	4,2
		Tension plate	100,0	-	98,2	-	8,7	-	3,6	-	4,5	10,0	3,4	4,2	10,0	3,4	-	4,2
11013.0280	≤ 250	Welded nut	65,0	-	80,8	-	30,0	-	16,8	-	-	6,9	1,8	2,1	6,9	1,8	-	2,1
		Tension plate	65,0	-	80,8	-	8,7	-	3,6	-	4,5	6,9	1,8	2,1	6,9	1,8	-	2,1
	≤ 125	Welded nut	65,0	-	98,2	-	30,0	-	16,8	-	-	6,9	3,4	4,2	6,9	3,4	-	4,2
		Tension plate	65,0	-	98,2	-	8,7	-	3,6	-	4,5	6,9	3,4	4,2	6,9	3,4	-	4,2
11013.1200	≤ 250	Welded nut	100,0	-	88,8	-	30,0	-	7,4	4,4	-	10,0	1,7	2,1	10,0	1,0	0,6	2,1
		Tension plate	100,0	-	88,8	-	8,7	-	3,6	-	4,5	10,0	1,7	2,1	10,0	1,0	0,6	2,1
	≤ 125	Welded nut	100,0	-	98,8	-	30,0	-	7,4	4,4	-	10,0	3,4	4,2	10,0	2,0	1,2	4,2
		Tension plate	100,0	-	98,8	-	8,7	-	3,6	-	4,5	10,0	3,4	4,2	10,0	2,0	1,2	4,2
11013.1280	≤ 250	Welded nut	65,0	-	80,8	-	30,0	-	7,4	4,4	-	6,9	1,7	2,1	6,9	1,0	0,6	2,1
		Tension plate	65,0	-	80,8	-	8,7	-	3,6	-	4,5	6,9	1,7	2,1	6,9	1,0	0,6	2,1
	≤ 125	Welded nut	65,0	-	98,2	-	30,0	-	7,4	4,4	-	6,9	3,4	4,2	6,9	2,0	1,2	4,2
		Tension plate	65,0	-	98,2	-	8,7	-	3,6	-	4,5	6,9	3,4	4,2	6,9	2,0	1,2	4,2
11013.1300	≤ 330	Welded nut	100,0	-	68,2	-	30,0	-	7,4	4,4	-	10,0	1,3	1,6	10,0	0,8	0,5	1,6
		Tension plate	100,0	-	68,2	-	8,7	-	3,6	-	4,5	10,0	1,3	1,6	10,0	0,8	0,5	1,6
	≤ 165	Welded nut	100,0	-	92,9	-	30,0	-	7,4	4,4	-	10,0	2,6	3,2	10,0	1,5	0,9	3,2
		Tension plate	100,0	-	92,9	-	8,7	-	3,6	-	4,5	10,0	2,6	3,2	10,0	1,5	0,9	3,2
11013.1380	≤ 330	Welded nut	65,0	-	68,2	-	30,0	-	7,4	4,4	-	6,9	1,3	1,6	6,9	0,8	0,5	1,6
		Tension plate	65,0	-	68,2	-	8,7	-	3,6	-	4,5	6,9	1,3	1,6	6,9	0,8	0,5	1,6
	≤ 165	Welded nut	65,0	-	92,9	-	30,0	-	7,4	4,4	-	6,9	2,6	3,2	6,9	1,5	0,9	3,2
		Tension plate	65,0	-	92,9	-	8,7	-	3,6	-	4,5	6,9	2,6	3,2	6,9	1,5	0,9	3,2
11013.1500	≤ 500	Welded nut	100,0	-	43,9	-	30,0	-	7,4	4,4	-	10,0	0,8	1,1	10,0	0,5	0,3	1,1
		Tension plate	100,0	-	43,9	-	8,7	-	3,6	-	4,5	10,0	0,8	1,1	10,0	0,5	0,3	1,1
	≤ 250	Welded nut	100,0	-	80,8	-	30,0	-	7,4	4,4	-	10,0	1,7	2,1	10,0	1,0	0,6	2,1
		Tension plate	100,0	-	80,8	-	8,7	-	3,6	-	4,5	10,0	1,7	2,1	10,0	1,0	0,6	2,1
11013.1580	≤ 500	Welded nut	65,0	-	43,9	-	30,0	-	7,4	4,4	-	6,9	0,8	1,1	6,9	0,5	0,3	1,1
		Tension plate	65,0	-	43,9	-	8,7	-	3,6	-	4,5	6,9	0,8	1,1	6,9	0,5	0,3	1,1
	≤ 250	Welded nut	65,0	-	80,8	-	30,0	-	7,4	4,4	-	6,9	1,7	2,1	6,9	1,0	0,6	2,1
		Tension plate	65,0	-	80,8	-	8,7	-	3,6	-	4,5	6,9	1,7	2,1	6,9	1,0	0,6	2,1

11016			$F_{1,Rk}$ (Compression) [kN]				$F_{1,Rk}$ (Tensile) [kN]					$F_{2,Rk}$ or $F_{3,Rk}$ [kN]			$F_{4,Rk}$ or $F_{5,Rk}$ [kN]			
			Timber	Steel			Screw|Timber		Steel			Scr|Tim	Steel		Scr|Tim	Steel		
Art-No.	Adjustment range [mm] a	Welded nut / Tension plate	k_{mod}/γ_m	γ_{M0}	γ_{M1}	γ_{M2}	$k_{mod}/\gamma_{m,Ver}$		γ_{M0}		γ_{M2}	$k_{mod}/\gamma_{m,Ver}$	γ_{M0}	γ_{M2}	$k_{mod}/\gamma_{m,Ver}$	γ_{M0}		γ_{M2}
							Screws		Base plate							Base plate		
							10/120	10/160	„normal“	„long“						„normal“	„long“	
11016.1200	≤ 250	Welded nut	159,2	-	141,5	-	30,0	-	20,6	12,4	-	13,1	3,6	3,3	13,1	2,8	1,7	3,3
		Tension plate	159,2	-	141,5	-	8,7	-	7,9	-	9,4	13,1	3,6	3,3	13,1	2,8	1,7	3,3
	≤ 125	Welded nut	160,0	-	162,6	-	30,0	-	20,6	12,4	-	13,1	9,4	6,6	13,1	5,6	3,4	6,6
		Tension plate	160,0	-	162,6	-	8,7	-	7,9	-	9,4	13,1	9,4	6,6	13,1	5,6	3,4	6,6
11016.1300	≤ 330	Welded nut	160,0	-	126,6	-	30,0	-	20,6	12,4	-	13,1	2,7	2,5	13,1	2,1	1,3	2,5
		Tension plate	160,0	-	126,6	-	8,7	-	7,9	-	9,4	13,1	2,7	2,5	13,1	2,1	1,3	2,5
	≤ 165	Welded nut	160,0	-	156,0	-	30,0	-	20,6	12,4	-	13,1	5,5	5,0	13,1	4,3	2,6	5,0
		Tension plate	160,0	-	156,0	-	8,7	-	7,9	-	9,4	13,1	5,5	5,0	13,1	4,3	2,6	5,0
11016.1500	≤ 500	Welded nut	160,0	-	92,9	-	30,0	-	20,6	12,4	-	13,1	1,8	1,7	13,1	1,4	0,8	1,7
		Tension plate	160,0	-	92,9	-	8,7	-	7,9	-	9,4	13,1	1,8	1,7	13,1	1,4	0,8	1,7
	≤ 250	Welded nut	160,0	-	141,5	-	30,0	-	20,6	12,4	-	13,1	3,6	3,3	13,1	2,8	1,7	3,3
		Tension plate	160,0	-	141,5	-	8,7	-	7,9	-	9,4	13,1	3,6	3,3	13,1	2,8	1,7	3,3

10529	$F_{1,Rk}$ (Compression) [kN]				$F_{1,Rk}$ (Tensile) [kN]					$F_{2,Rk}$ or $F_{3,Rk}$ [kN]				$F_{4,Rk}$ or $F_{5,Rk}$ [kN]			
	Timber	Steel			Screw|Timber		Steel			Screw|Timber				Screw|Timber			
Art-No.	k_{mod}/γ_M	γ_{M0}	γ_{M1}	γ_{M2}	$k_{mod}/\gamma_{m,Ver}$		γ_{M0}		γ_{M2}	$k_{mod}/\gamma_{m,Ver}$				$k_{mod}/\gamma_{m,Ver}$			
					Screws		Base plate			articulated		fixed		articulated		fixed	
					10/120	10/160	„normal“	„long“		without LTR	with LTR	without LTR	with LTR	without LTR	with LTR	without LTR	with LTR
10529.1090	140,0	140,8	-	-	30,0	50,0	36,9	22,1	-	5,6	-	12,5	-	5,6	-	12,5	-
10529.1990	140,0	-	120,2	-	30,0	50,0	36,9	22,1	-	1,7	-	3,9	-	1,7	-	3,9	-
10529.1093	226,0	226,3	-	-	30,0	50,0	97,7	58,6	-	7,3	-	13,3	-	7,3	-	13,3	-
10529.1993	226,0	-	202,2	-	30,0	50,0	97,7	58,6	-	1,9	-	4,1	-	1,9	-	4,1	-

10920.1_0_		$F_{1,Rk}$ (Compression) [kN]				$F_{1,Rk}$ (Tensile) [kN]					$F_{2,Rk}$ or $F_{3,Rk}$ [kN]			$F_{4,Rk}$ or $F_{5,Rk}$ [kN]			
		Timber	Steel			Screw|Timber		Steel			Scr|Tim	Steel		Scr|Tim	Steel		
Art-No.	Adjust-ment range	k_{mod}/γ_m	γ_{M0}	γ_{M1}	γ_{M2}	$k_{mod}/\gamma_{m,Ver}$		γ_{M0}		γ_{M2}	$k_{mod}/\gamma_{m,Ver}$	γ_{M0}	γ_{M2}	$k_{mod}/\gamma_{m,Ver}$	γ_{M0}		γ_{M2}
						Screws		Base plate							Base plate		
						10/120	10/160	„normal“	„long“						„normal“	„long“	
10920.1000	max	120,0	-	87,4	-	30,0	50,0	7,4	4,4	-	11,0	2,1	2,2	11,0	1,2	0,7	-
	min			96,2								3,0	3,2		1,8	1,1	-
10920.1100	max	120,0	-	83,8	-	30,0	50,0	7,4	4,4	-	11,0	1,8	2,0	11,0	1,1	0,7	-
	min			92,9								2,6	2,7		1,5	0,9	-
10920.1200	max	120,0	-	74,6	-	30,0	50,0	7,4	4,4	-	11,0	1,5	1,6	11,0	0,9	0,5	-
	min			84,5								1,9	2,0		1,1	0,7	-
10920.1300	max	120,0	-	69,8	-	30,0	50,0	7,4	4,4	-	11,0	1,3	1,4	11,0	0,8	0,5	-
	min			80,0								1,7	1,8		0,9	0,5	-
10920.1400	max	120,0	-	58,5	-	30,0	50,0	7,4	4,4	-	11,0	1,1	1,2	11,0	0,6	0,4	-
	min			69,0								1,4	1,4		0,8	0,5	-
10920.1003	max	158,5	-	148,5	-	30,0	50,0	20,6	12,4	-	13,1	4,3	3,8	13,1	3,3	2,0	3,8
	min			158,5								6,0	5,4		4,7	2,8	5,4

10920.1_90	$F_{1,Rk}$ (Compression) [kN]				$F_{1,Rk}$ (Tensile) [kN]					$F_{2,Rk}$ or $F_{3,Rk}$ [kN]				$F_{4,Rk}$ or $F_{5,Rk}$ [kN]			
	Timber	Steel			Screw|Timber		Steel			Screw|Timber				Screw|Timber			
Art-No.	k_{mod}/γ_m	γ_{M0}	γ_{M1}	γ_{M2}	$k_{mod}/\gamma_{m,Ver}$		γ_{M0}		γ_{M2}	$k_{mod}/\gamma_{m,Ver}$				$k_{mod}/\gamma_{m,Ver}$			
					Screws		Base plate			articulated		fixed		articulated		fixed	
					10/120	10/160	„normal“	„long“		without LTR	with LTR	without LTR	with LTR	without LTR	with LTR	without LTR	with LTR
10920.1090	120,0	120,6	-	-	30,0	50,0	20,8	-	-	4,3	-	14,6	-	4,3	-	14,6	-
10920.1190	120,0	-	101,9	-	30,0	50,0	20,8	-	-	2,9	-	10,7	-	2,9	-	10,7	-
10920.1290	120,0	-	92,4	-	30,0	50,0	20,8	-	-	2,2	-	6,8	-	2,2	-	6,8	-
10920.1390	120,0	-	85,2	-	30,0	50,0	20,8	-	-	1,4	-	4,3	-	1,4	-	4,3	-
10920.1490	120,0	-	75,8	-	30,0	50,0	20,8	-	-	0,9	-	1,8	-	0,9	-	1,8	-

10920.1_93	$F_{1,Rk}$ (Compression) [kN]				$F_{1,Rk}$ (Tensile) [kN]					$F_{2,Rk}$ or $F_{3,Rk}$ [kN]				$F_{4,Rk}$ or $F_{5,Rk}$ [kN]			
	Timber	Steel			Screw|Timber		Steel			Screw|Timber				Screw|Timber			
Art-No.	k_{mod}/γ_m	γ_{M0}	γ_{M1}	γ_{M2}	$k_{mod}/\gamma_{m,Ver}$		γ_{M0}		γ_{M2}	$k_{mod}/\gamma_{m,Ver}$				$k_{mod}/\gamma_{m,Ver}$			
					Screws		Base plate			articulated		fixed		articulated		fixed	
					10/120	10/160	„normal“	„long“		without LTR	with LTR	without LTR	with LTR	without LTR	with LTR	without LTR	with LTR
10920.1093	169,0	169,2	-	-	30,0	50,0	58,1	-	-	4,4	-	14,6	-	4,4	-	14,6	-
10920.1193	169,0	-	165,4	-	30,0	50,0	58,1	-	-	3,2	-	10,9	-	3,2	-	10,9	-
10920.1293	169,0	-	160,3	-	30,0	50,0	58,1	-	-	2,3	-	7,2	-	2,3	-	7,2	-
10920.1393	169,0	-	157,1	-	30,0	50,0	58,1	-	-	1,6	-	4,6	-	1,6	-	4,6	-
10920.1493	169,0	-	154,0	-	30,0	50,0	58,1	-	-	1,1	-	2,0	-	1,1	-	2,0	-

10921.1_00		$F_{1,Rk}$ (Compression) [kN]				$F_{1,Rk}$ (Tensile) [kN]					$F_{2,Rk}$ or $F_{3,Rk}$ [kN]			$F_{4,Rk}$ or $F_{5,Rk}$ [kN]			
		Timber	Steel			Screw|Timber		Steel			Scr|Tim	Steel		Scr|Tim	Steel		
Art-No.	Verstell-höhe	k_{mod}/γ_m	γ_{M0}	γ_{M1}	γ_{M2}	$k_{mod}/\gamma_{m,Ver}$		γ_{M0}		γ_{M2}	$k_{mod}/\gamma_{m,Ver}$	γ_{M0}	γ_{M2}	$k_{mod}/\gamma_{m,Ver}$	γ_{M0}		γ_{M2}
						Screws		Base plate							Base plate		
						10/120	10/160	„normal“	„long“						„normal“	„long“	
10921.1000	max	100,0	-	87,4	68,6	30,0	50,0	7,4	4,4	-	10,0	2,1	2,2	10,0	1,2	0,7	-
	min			96,2								3,0	3,2		1,8	1,1	-
10921.1100	max	100,0	-	83,8	68,6	30,0	50,0	7,4	4,4	-	10,0	1,8	2,0	10,0	1,1	0,7	-
	min			92,9								2,6	2,7		1,5	0,9	-
10921.1200	max	100,0	-	74,6	68,6	30,0	50,0	7,4	4,4	-	10,0	1,5	1,6	10,0	0,9	0,5	-
	min			84,5								1,9	2,0		1,1	0,7	-
10921.1300	max	100,0	-	69,8	68,6	30,0	50,0	7,4	4,4	-	10,0	1,3	1,4	10,0	0,8	0,5	-
	min			80,0								1,7	1,8		0,9	0,5	-
10921.1400	max	100,0	-	58,5	68,6	30,0	50,0	7,4	4,4	-	10,0	1,1	1,2	10,0	0,6	0,4	-
	min			69,0								1,4	1,4		0,8	0,5	-
10921.1600	max	100,0	-	102,7	68,6	30,0	50,0	7,4	4,4	-	10,0	4,7	5,0	10,0	2,8	1,7	-
	min			103,8								5,3	5,6		3,2	1,9	-

10921.1_0_		$F_{1,Rk}$ (Compression) [kN]				$F_{1,Rk}$ (Tensile) [kN]					$F_{2,Rk}$ or $F_{3,Rk}$ [kN]			$F_{4,Rk}$ or $F_{5,Rk}$ [kN]			
		Timber	Steel			Screw|Timber		Steel			Scr|Tim	Steel		Scr|Tim	Steel		
Art-No.	Adjust-ment range	k_{mod}/ γ_m	γ_{M0}	γ_{M1}	γ_{M2}	k_{mod}/ $\gamma_{m,Ver}$		γ_{M0}		γ_{M2}	k_{mod}/ $\gamma_{m,Ver}$	γ_{M0}	γ_{M2}	k_{mod}/ $\gamma_{m,Ver}$	γ_{M0}		γ_{M2}
						Screws		Base plate							Base plate		
						10/120	10/160	„normal“	„long“						„normal“	„long“	
10921.1003	max	131,1	97,9	148,5	-	30,0	50,0	20,6	12,4	-	10,0	4,3	3,8	10,0	3,3	2,0	3,8
	min			158,8								6,0	5,4		4,7	2,8	5,4
10921.1006	max	185,7	171,4	164,2	-	30,0	50,0	-	-	-	10,0	4,9	3,9	10,0	4,9	-	3,9
	min			175,3								7,0	5,4		7,0	-	5,4
10921.1106	max	185,7	171,4	147,6	-	30,0	50,0	-	-	-	10,0	4,2	3,5	10,0	4,2	-	3,5
	min			157,7								5,5	4,7		5,5	-	4,7
10921.1206	max	185,7	171,4	137,0	-	30,0	50,0	-	-	-	10,0	3,3	2,8	10,0	3,3	-	2,8
	min			147,6								4,2	3,5		4,2	-	3,5
10921.1306	max	185,7	171,4	131,4	-	30,0	50,0	-	-	-	10,0	3,0	2,6	10,0	3,0	-	2,6
	min			142,4								3,7	3,1		3,7	-	3,1
10921.1406	max	185,7	171,4	117,8	-	30,0	50,0	-	-	-	10,0	2,5	2,1	10,0	2,5	-	2,1
	min			129,5								3,0	2,5		3,0	-	2,5
10921.1104	max	105,0	68,6	80,8	-	30,0	50,0	7,4	4,4	-	10,0	1,7	1,8	10,0	1,0	0,6	-
	min			90,2								2,3	2,4		1,4	0,8	-

10930.1_00		$F_{1,Rk}$ (Compression) [kN]				$F_{1,Rk}$ (Tensile) [kN]					$F_{2,Rk}$ or $F_{3,Rk}$ [kN]			$F_{4,Rk}$ or $F_{5,Rk}$ [kN]			
		Timber	Steel			Screw|Timber		Steel			Scr|Tim	Steel		Scr|Tim	Steel		
Art-No.	Adjust-ment range	k_{mod}/ γ_m	γ_{M0}	γ_{M1}	γ_{M2}	k_{mod}/ $\gamma_{m,Ver}$		γ_{M0}		γ_{M2}	k_{mod}/ $\gamma_{m,Ver}$	γ_{M0}	γ_{M2}	k_{mod}/ $\gamma_{m,Ver}$	γ_{M0}		γ_{M2}
						Screws		Base plate							Base plate		
						10/120	10/160	„normal“	„long“						„normal“	„long“	
10930.1000	max	110,0	-	75,2	-	30,0	50,0	13,2	7,9	-	7,3	1,6	1,6	7,3	1,6	1,0	1,6
	min			92,0								2,6	2,6		2,6	1,6	2,6
10930.1100	max	110,0	-	71,2	-	30,0	50,0	13,2	7,9	-	7,3	1,4	1,5	7,3	1,4	0,8	1,5
	min			88,6								2,3	2,3		2,3	1,4	2,3
10930.1200	max	110,0	-	61,7	-	30,0	50,0	13,2	7,9	-	7,3	1,2	1,2	7,3	1,2	0,7	1,2
	min			79,8								1,8	1,8		1,8	1,1	1,8
10930.1300	max	110,0	-	57,2	-	30,0	50,0	13,2	7,9	-	7,3	1,1	1,1	7,3	1,1	0,7	1,1
	min			75,2								1,6	1,6		1,6	1,0	1,6
10930.1600	max	110,0	-	87,9	-	30,0	50,0	13,2	7,9	-	7,3	2,2	2,3	7,3	2,2	1,3	2,3
	min			99,9								4,1	4,0		4,1	2,5	4,0

10930.1_0_		$F_{1,Rk}$ (Compression) [kN]				$F_{1,Rk}$ (Tensile) [kN]					$F_{2,Rk}$ or $F_{3,Rk}$ [kN]			$F_{4,Rk}$ or $F_{5,Rk}$ [kN]			
		Timber	Steel			Screw|Timber		Steel			Scr|Tim	Steel		Scr|Tim	Steel		
Art-No.	Verstell-höhe	k_{mod}/γ_m	γ_{M0}	γ_{M1}	γ_{M2}	$k_{mod}/\gamma_{m,Ver}$		γ_{M0}		γ_{M2}	$k_{mod}/\gamma_{m,Ver}$	γ_{M0}	γ_{M2}	$k_{mod}/\gamma_{m,Ver}$	γ_{M0}		γ_{M2}
						Screws		Base plate							Base plate		
						10/120	10/160	„normal“	„long“						„normal“	„long“	
10930.1003	max	125,8	-	154,6	-	30,0	50,0	20,6	12,4	-	7,3	3,2	2,8	7,3	2,5	1,9	2,8
	min			172,2								4,6	4,1		3,6	2,2	4,1
10930.1006	max	168,6	-	154,6	-	30,0	50,0	-	-	-	7,3	3,7	3,1	7,3	3,7	-	3,1
	min			172,2								5,5	5,6		5,5	-	5,6
10930.1106	max	168,6	-	140,3	-	30,0	50,0	-	-	-	7,3	2,8	2,5	7,3	2,8	-	2,5
	min			156,5								3,9	3,5		3,9	-	3,5
10930.1206	max	168,6	-	129,2	-	30,0	50,0	-	-	-	7,3	2,4	2,1	7,3	2,4	-	2,1
	min			146,4								3,1	2,8		3,1	-	2,8
10930.1306	max	168,6	-	123,3	-	30,0	50,0	-	-	-	7,3	2,2	1,9	7,3	2,2	-	1,9
	min			-								2,8	2,5		2,8	-	2,5

10931.1_00		$F_{1,Rk}$ (Compression) [kN]				$F_{1,Rk}$ (Tensile) [kN]					$F_{2,Rk}$ or $F_{3,Rk}$ [kN]			$F_{4,Rk}$ or $F_{5,Rk}$ [kN]			
		Timber	Steel			Screw|Timber		Steel			Scr|Tim	Steel		Scr|Tim	Steel		
Art-No.	Verstell-höhe	k_{mod}/γ_m	γ_{M0}	γ_{M1}	γ_{M2}	$k_{mod}/\gamma_{m,Ver}$		γ_{M0}		γ_{M2}	$k_{mod}/\gamma_{m,Ver}$	γ_{M0}	γ_{M2}	$k_{mod}/\gamma_{m,Ver}$	γ_{M0}		γ_{M2}
						Screws		Base plate							Base plate		
						10/120	10/160	„normal“	„long“						„normal“	„long“	
10931.1000	max	110,0	-	75,2	-	30,0	50,0	13,2	7,9	-	10,0	1,6	1,6	10,0	1,6	1,0	1,6
	min			92,0								2,6	2,6		2,6	1,6	2,6
10931.1100	max	110,0	-	71,2	-	30,0	50,0	13,2	7,9	-	10,0	1,4	1,5	10,0	1,4	0,8	1,5
	min			88,6								2,3	2,3		2,3	1,4	2,3
10931.1200	max	110,0	-	61,7	-	30,0	50,0	13,2	7,9	-	10,0	1,2	1,2	10,0	1,2	0,7	1,2
	min			79,8								1,8	1,8		1,8	1,1	1,8
10931.1300	max	110,0	-	57,2	-	30,0	50,0	13,2	7,9	-	10,0	1,1	1,1	10,0	1,1	0,7	1,1
	min			75,2								1,6	1,6		1,6	1,0	1,6
10931.1600	max	110,0	-	87,9	-	30,0	50,0	13,2	7,9	-	10,0	2,2	2,3	10,0	2,2	1,3	2,3
	min			99,9								4,1	4,0		4,1	2,5	4,0

10931.1_0_		$F_{1,Rk}$ (Compression) [kN]				$F_{1,Rk}$ (Tensile) [kN]					$F_{2,Rk}$ or $F_{3,Rk}$ [kN]			$F_{4,Rk}$ or $F_{5,Rk}$ [kN]			
		Timber	Steel			Screw|Timber		Steel			Scr|Tim	Steel		Scr|Tim	Steel		
Art-No.	Verstell-höhe	k_{mod}/γ_m	γ_{M0}	γ_{M1}	γ_{M2}	$k_{mod}/\gamma_{m,Ver}$		γ_{M0}		γ_{M2}	$k_{mod}/\gamma_{m,Ver}$	γ_{M0}	γ_{M2}	$k_{mod}/\gamma_{m,Ver}$	γ_{M0}		γ_{M2}
						Screws		Base plate							Base plate		
						10/120	10/160	„normal“	„long“						„normal“	„long“	
10931.1003	max	125,8	-	154,6	-	30,0	50,0	20,6	12,4	-	10,0	3,2	2,8	10,0	2,5	1,5	2,8
	min			172,2								4,6	4,1		3,6	2,2	4,1
10931.1006	max	168,6	-	154,6	-	30,0	50,0	-	-	-	10,0	3,7	3,1	10,0	3,7	-	3,1
	min			172,2								5,5	5,6		5,5	-	5,6
10931.1106	max	168,6	-	140,3	-	30,0	50,0	-	-	-	10,0	2,8	2,5	10,0	2,8	-	2,5
	min			156,5								3,9	3,5		3,9	-	3,5
10931.1206	max	168,6	-	129,2	-	30,0	50,0	-	-	-	10,0	2,4	2,1	10,0	2,4	-	2,1
	min			146,4								3,1	2,8		3,1	-	2,8
10931.1306	max	168,6	-	123,3	-	30,0	50,0	-	-	-	10,0	2,2	1,9	10,0	2,2	-	1,9
	min			-								2,8	2,5		2,8	-	2,5

10934	$F_{1,Rk}$ (Compression) [kN]				$F_{1,Rk}$ (Tensile) [kN]					$F_{2,Rk}$ or $F_{3,Rk}$ [kN]			$F_{4,Rk}$ or $F_{5,Rk}$ [kN]			
	Timber	Steel			Screw|Timber		Steel			Scr|Tim	Steel		Scr|Tim	Steel		
Art-No.	k_{mod}/ γ_m	γ_{Mo}	γ_{M1}	γ_{M2}	k_{mod}/ $\gamma_{m,Ver}$		γ_{Mo}		γ_{M2}	k_{mod}/ $\gamma_{m,Ver}$	γ_{Mo}	γ_{M2}	k_{mod}/ $\gamma_{m,Ver}$	γ_{Mo}		γ_{M2}
					Screws		Base plate							Base plate		
					10/120	10/160	„normal“	„long“						„normal“	„long“	
10934.2303	122,8	166,1	-	-	30,0	50,0	-	-	88,1	10,0	4,7	-	10,0	4,7	-	-
10934.2402	110,0	101,4	-	-	30,0	50,0	103,8	-	88,1	7,3	2,4	-	7,3	2,4	-	-
10934.2403	110,0	101,4	-	-	30,0	50,0	103,8	-	88,1	10,0	2,4	-	10,0	2,4	-	-
10934.3402	110,0	90,8	-	-	30,0	50,0	103,8	-	88,1	7,3	1,5	-	7,3	1,5	-	-
10934.3303	122,8	153,5	-	-	30,0	50,0	-	-	88,1	10,0	2,9	-	10,0	2,9	-	-
10934.3403	110,0	90,8	-	-	30,0	50,0	103,8	-	88,1	10,0	1,5	-	10,0	1,5	-	-
10934.2302	122,8	166,1	-	-	30,0	50,0	-	-	88,1	7,3	4,7	-	7,3	4,7	-	-
10934.3302	122,8	153,5	-	-	30,0	50,0	-	-	88,1	7,3	2,9	-	7,3	2,9	-	-

10950	$F_{1,Rk}$ (Compression) [kN]				$F_{1,Rk}$ (Tensile) [kN]					$F_{2,Rk}$ or $F_{3,Rk}$ [kN]			$F_{4,Rk}$ or $F_{5,Rk}$ [kN]			
	Timber	Steel			Screw|Timber		Steel			Scr|Tim	Steel		Scr|Tim	Steel		
Art-No.	k_{mod}/ γ_m	γ_{Mo}	γ_{M1}	γ_{M2}	k_{mod}/ $\gamma_{m,Ver}$		γ_{Mo}		γ_{M2}	k_{mod}/ $\gamma_{m,Ver}$	γ_{Mo}	γ_{M2}	k_{mod}/ $\gamma_{m,Ver}$	γ_{Mo}		γ_{M2}
					Screws		Base plate							Base plate		
					10/120	10/160	„normal“	„long“						„normal“	„long“	
10950.7041	100,0	106,5	-	-	30,0	50,0	106,5	-	86,7	10,0	6,2	-	10,0	6,2	-	-
10950.7042	100,0	106,5	-	-	30,0	50,0	106,5	-	86,7	7,3	6,2	-	7,3	6,2	-	-
10950.7043	100,0	106,5	-	-	30,0	50,0	106,5	-	86,7	10,0	6,2	-	10,0	6,2	-	-
10950.7051	100,0	106,5	-	-	30,0	50,0	106,5	-	86,7	10,0	4,4	-	10,0	4,4	-	-
10950.7052	100,0	106,5	-	-	30,0	50,0	106,5	-	86,7	7,3	4,4	-	7,3	4,4	-	-
10950.7053	100,0	106,5	-	-	30,0	50,0	106,5	-	86,7	10,0	4,4	-	10,0	4,4	-	-
10950.1411	100,0	106,5	-	-	30,0	50,0	41,8	-	-	10,0	7,3	-	10,0	7,3	-	-
10950.1412	100,0	106,5	-	-	30,0	50,0	41,8	-	-	7,3	7,3	-	7,3	7,3	-	-
10950.1413	100,0	106,5	-	-	30,0	50,0	41,8	-	-	10,0	7,3	-	10,0	7,3	-	-
10950.1421	100,0	106,5	-	-	30,0	50,0	41,8	-	-	10,0	5,6	-	10,0	5,6	-	-
10950.1422	100,0	106,5	-	-	30,0	50,0	41,8	-	-	7,3	5,6	-	7,3	5,6	-	-
10950.1423	100,0	106,5	-	-	30,0	50,0	41,8	-	-	10,0	5,6	-	10,0	5,6	-	-
10950.1431	100,0	106,5	-	-	30,0	50,0	41,8	-	-	10,0	4,5	-	10,0	4,5	-	-
10950.1432	100,0	106,5	-	-	30,0	50,0	41,8	-	-	7,3	4,5	-	7,3	4,5	-	-
10950.1433	100,0	106,5	-	-	30,0	50,0	41,8	-	-	10,0	4,5	-	10,0	4,5	-	-
10950.1611	100,0	106,5	-	-	30,0	50,0	25,6	15,4	-	10,0	6,4	-	10,0	3,8	2,3	-
10950.1612	100,0	106,5	-	-	30,0	50,0	25,6	15,4	-	7,3	6,4	-	7,3	3,8	2,3	-
10950.1613	100,0	106,5	-	-	30,0	50,0	25,6	15,4	-	10,0	6,4	-	10,0	3,8	2,3	-
10950.1621	100,0	106,5	-	-	30,0	50,0	25,6	15,4	-	10,0	4,9	-	10,0	3,0	1,8	-
10950.1622	100,0	106,5	-	-	30,0	50,0	25,6	15,4	-	7,3	4,9	-	7,3	3,0	1,8	-
10950.1623	100,0	106,5	-	-	30,0	50,0	25,6	15,4	-	10,0	4,9	-	10,0	3,0	1,8	-
10950.1631	100,0	106,5	-	-	30,0	50,0	25,6	15,4	-	10,0	3,9	-	10,0	2,3	1,4	-
10950.1632	100,0	106,5	-	-	30,0	50,0	25,6	15,4	-	7,3	3,9	-	7,3	2,3	1,4	-
10950.1633	100,0	106,5	-	-	30,0	50,0	25,6	15,4	-	10,0	3,9	-	10,0	2,3	1,4	-

10952	$F_{1,Rk}$ (Compression) [kN]				$F_{1,Rk}$ (Tensile) [kN]					$F_{2,Rk}$ or $F_{3,Rk}$ [kN]			$F_{4,Rk}$ or $F_{5,Rk}$ [kN]			
	Timber	Steel			Screw|Timber		Steel			Scr|Tim	Steel		Scr|Tim	Steel		
Art-No.	k_{mod}/ γ_m	γ_{Mo}	γ_{M1}	γ_{M2}	k_{mod}/ $\gamma_{m,Ver}$		γ_{Mo}		γ_{M2}	k_{mod}/ $\gamma_{m,Ver}$	γ_{Mo}	γ_{M2}	k_{mod}/ $\gamma_{m,Ver}$	γ_{Mo}		γ_{M2}
					Screws		Base plate							Base plate		
					10/120	10/160	„normal“	„long“						„normal“	„long“	
10952.1000	90,0	-	118,7	83,8	30,0	50,0	11,8	-	-	10,0	2,5	-	10,0	2,5	1,5	-

C/ Calculation example

Example 1: Ground-floor hall

Which service class?	The hall is roofed over and the post base is not exposed to the weather: **Service class 2**
Which load action duration and k_{mod} values apply to the different stresses?	For compressive stress: Decisive action is snow: **CLAD = short** For tensile stress: Decisive action is wind: **CLAD = short** For shear force stress: Decisive action is wind: **CLAD = short**
Determination of the k_{mod} values	For compressive stress: Service class 2, CLAD = short **k_{mod} = 0,9** For tensile stress: Service class 2, CLAD = short **k_{mod} = 0,9** For shear force stress: Service class 2, CLAD = short **k_{mod} = 0,9**
Which design load-bearing capacities can you apply in this case for the post base of the type 10529.1090?	See design load-bearing capacity table for the **Type 10529**
Compressive:	k_{mod} = 0,9 $F_{1,c,Rd}$ = **96,92 kN**
Tensile:	k_{mod} = 0,9 Fastening of the column with 10/160 screws: $F_{1,t,Rd}$ = **34,62 kN**
Shear force parallel to the long side of the base plate:	k_{mod} = 0,9 Fastening to a base plate: Fixed bearing $F_{2/3,Rd}$ = **8,65 kN**
Shear force perpendicular to the long side of the base plate:	k_{mod} = 0,9 Fastening to a base plate: Fixed bearing $F_{4/5,Rd}$ = **8,65 kN**

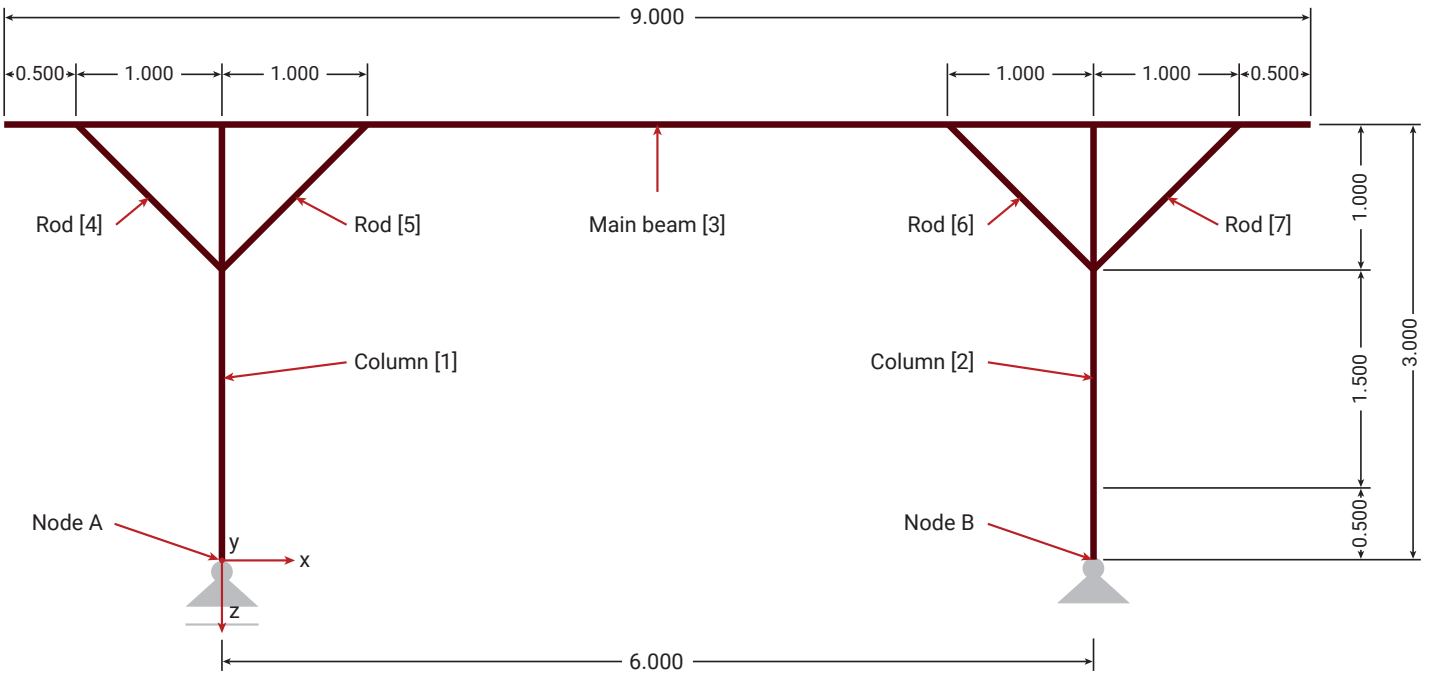
Example 2: Open carport without large roof overhang

Which service class?	Due to the short roof overhang, the post base is exposed to the weather: **Service class 3**
Which load action duration?	For compressive stress: Decisive action is snow: **CLAD = short** For tensile stress: Decisive action is wind: **CLAD = short** For shear force stress: Decisive action is wind: **CLAD = short**
Determination of the k_{mod} values	For compressive stress: Service class 3, CLAD = short **k_{mod} = 0,7** For tensile stress: Service class 3, CLAD = short **k_{mod} = 0,7** For shear force stress: Service class 3, CLAD = short **k_{mod} = 0,7**
Which design load-bearing capacities can you apply in this case for the post base of the type 10920.1293?	See design load-bearing capacity table for the **Type 10920.1_93**
Compressive:	k_{mod} = 0,7 $F_{1,c,Rd}$ = **91,00 kN**
Tensile:	k_{mod} = 0,7 Fastening of the column with 10/120 screws: $F_{1,t,Rd}$ = **16,15 kN**
Shear force parallel to the long side of the base plate:	k_{mod} = 0,7 Fastening to a stable point foundation: Fixed bearing $F_{2/3,Rd}$ = **3,88 kN**
Shear force perpendicular to the long side of the base plate:	k_{mod} = 0,7 Fastening to a stable point foundation: Fixed bearing $F_{4/5,Rd}$ = **3,88 kN**

Complex example: dimensioning of a support foot on a carport

Data

Post bases:	11008.1160	
Building material:	Glulam GL 24h	γ_m = 1,25
Columns [1];[2]:	GL 24h	w/h = 160/320 mm
Main beams [3]:	GL 24h	w/h = 140/360 mm
Rods [4];[5];[6];[7]:	GL 24h	w/h = 140/100 mm
Span width:		l = 6,00m
Influence width:		e = 2,00m
Actions:	Constant actions	g_k = 0,30 kN/m
	Snow (Innsbruck; 573 m above sea level)	s_k = 2,1 kN/m²
	Wind (Innsbruck)	w_k = 0,46 kN/m²
	Extraordinary load (Impact)	A_d = 8,00 kN
Service class: 2	CLAD: short	k_{mod} = 0,9
	very short	k_{mod} = 1,1



Determination of the loads

Corrugated sheet:	0,05 kN/m²
Snow:	2,1 kN/m²
GL 24h:	3,7 kN/m³
Wind:	0,46 kN/m²

$$g_k = \left(\frac{3{,}7\,kN/m^3 \cdot 0{,}2\,m \cdot 0{,}14\,m \cdot 2\,m}{1{,}2\,m}\right) + (0{,}05\,kN/m^2 \cdot 2\,m) = 0{,}3\,kN/m$$

$$s_k = 2{,}1\,kN/m^2 \cdot 2\,m = 4{,}2\,kN/m$$

$$W_k = 0{,}46\,kN/m^2 \cdot 3\,m \cdot 2\,m = 2{,}76kN$$

Determination of the extraordinary impact load

According to EN 1991-1-1, Annex B

$$F = \frac{m \cdot v^2}{2 \cdot (\delta_c + \delta_b)} = \frac{1200\,kg \cdot 1{,}39^2\,m/s}{2 \cdot 150\,mm} \approx 8\,kN$$

Design values of the action

Action combination 1: (Snow as leading action)

$$q_{d,1} = \left(\gamma_G \cdot g_k + \gamma_Q \cdot s_k + \gamma_Q \cdot \Psi_{0,s} \cdot s_k\right)$$

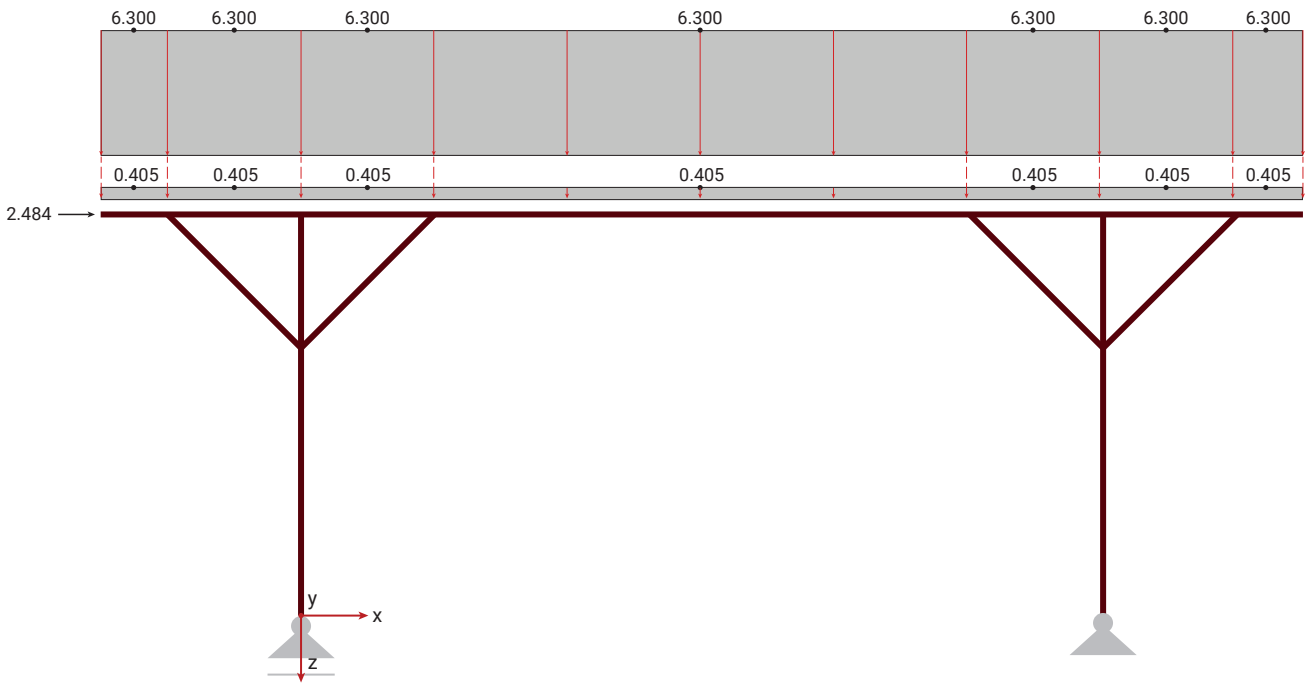
Action combination 2: (Wind as leading action)

$$q_{d,2} = \left(\gamma_G \cdot g_k + \gamma_Q \cdot w_k + \gamma_Q \cdot \Psi_{0,s} \cdot s_k\right)$$

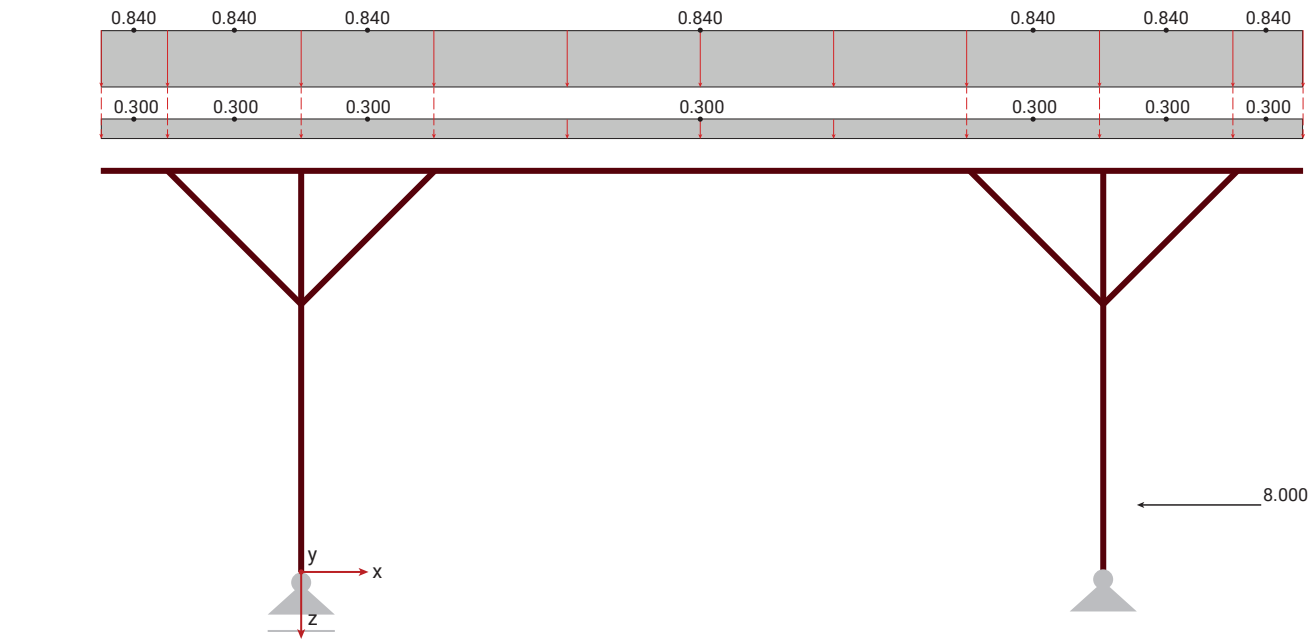
Action combination 3: (Extraordinary action)

$$q_{d,3} = \left(G_k + A_d + \Psi_{1,s} \cdot s_k\right)$$

Action combination 2 with R-rod



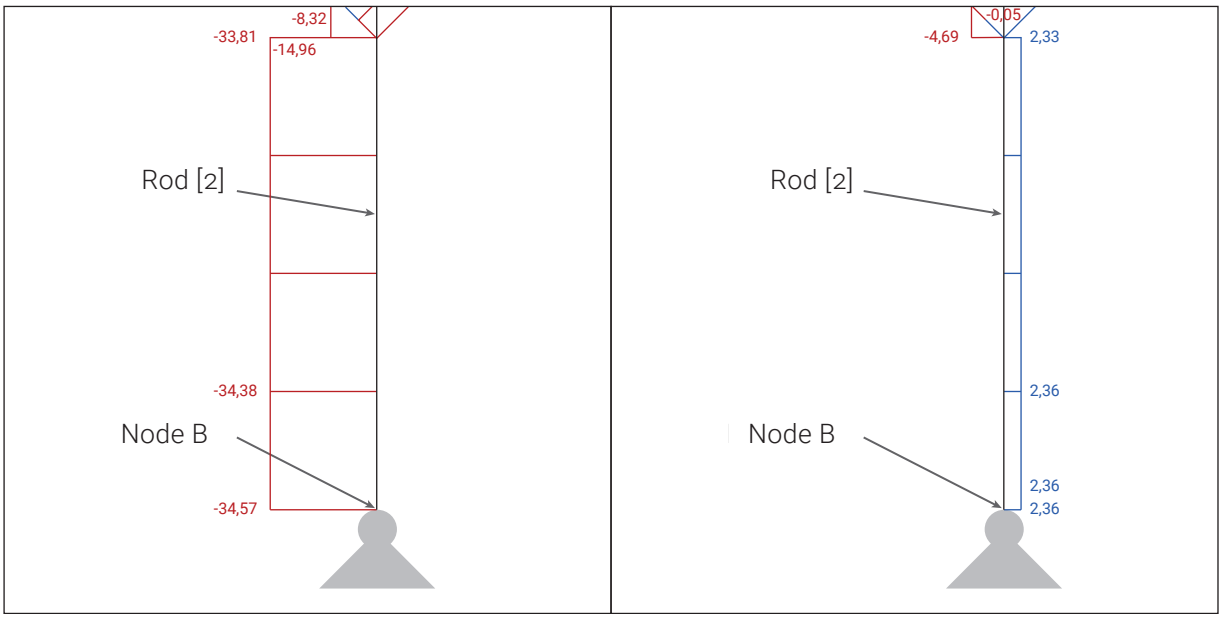
Action combination 3 with R-rod



Action effects according to R-rod for the decisive forces in node B for the action combination 2

N_{ED} = 34,57 kN (Compression)

V_{ED} = 2,36 kN



Verification of the support foot according to action combination 2

Post base: 11008.1160

k_{mod} = 0,9 γ_m = 1,25 γ_{mC} = 1,30

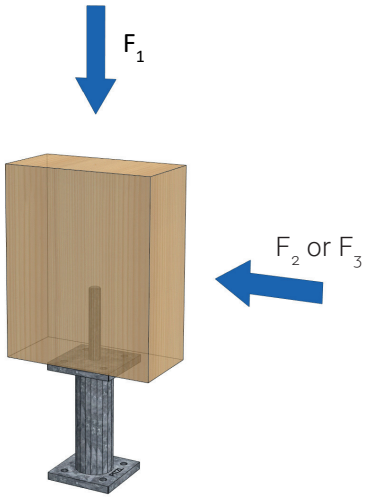
$F_{1,Rk}$ = 400 kN $F_{2,Rk}$ or $F_{3,Rk}$ = 10 kN

N_{Ed} = 34,57 kN (Compression) V_{Ed} = 2,36 kN

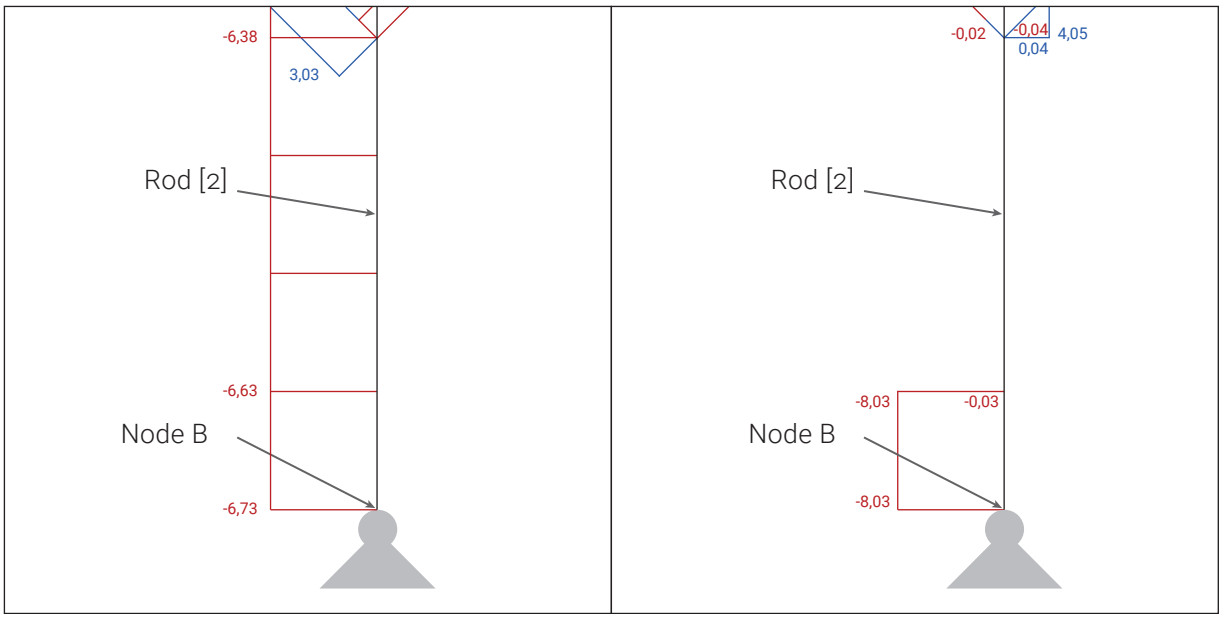
$$F_{1,d} = \frac{k_{mod} \cdot F_{1,Rk}}{\gamma_m} = \frac{0{,}9 \cdot 400}{1{,}25} = 288{,}0\ kN$$

$$F_{2,d}\ oder\ F_{3,d} = \frac{k_{mod} \cdot F_{2,Rk}\ oder\ F_{3,Rk}}{\gamma_{mc}} = \frac{0{,}9 \cdot 10}{1{,}30} = 6{,}92\ kN$$

$$\frac{N_{Ed}}{F_{1,d}} + \frac{V_{Ed}}{F_{2,d}\ oder\ F_{3,d}} = \frac{34{,}57}{288{,}0} + \frac{2{,}36}{6{,}92} = 0{,}46 < 1{,}00$$



Verification of the support foot according to action combination 3
N_{ED} = 6,73 kN (Compression)
V_{ED} = 8,03 kN



Verification of the support foot according to action combination 3
Post base: 11008.1160

k_{mod} = 1,1 γ_m = 1,25 γ_{mC} = 1,30

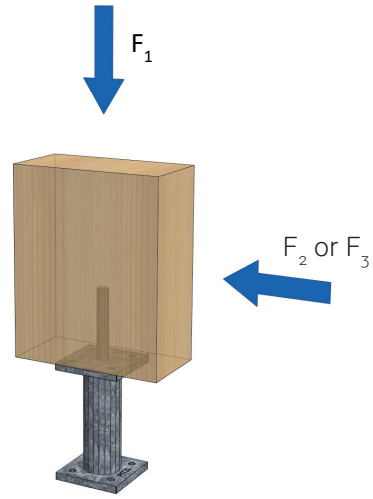
$F_{1,Rk}$ = 400 kN $F_{2,Rk}$ or $F_{3,Rk}$ = 10 kN

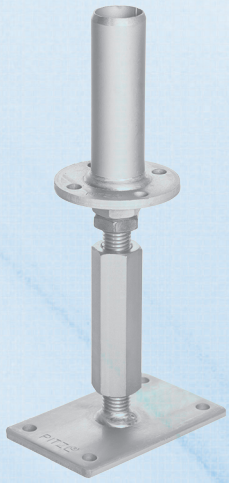
N_{Ed} = 6,73 kN (Compression) V_{Ed} = 8,03 kN

$$F_{1,d} = \frac{k_{mod} \cdot F_{1,Rk}}{\gamma_m} = \frac{1{,}1 \cdot 400}{1{,}25} = 352{,}0\ kN$$

$$F_{2,d}\ oder\ F_{3,d} = \frac{k_{mod} \cdot F_{2,Rk}\ oder\ F_{3,Rk}}{\gamma_{mc}} = \frac{1{,}1 \cdot 10}{1{,}30} = 8{,}46\ kN$$

$$\frac{N_{Ed}}{F_{1,d}} + \frac{V_{Ed}}{F_{2,d}\ oder\ F_{3,d}} = \frac{6{,}73}{352{,}0} + \frac{8{,}03}{8{,}46} = 0{,}97 < 1{,}00$$





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