



European Technical Approval ETA-13/0550

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung
Trade name

PediX Stützenfuß
PediX Post Base

Zulassungsinhaber
Holder of approval

E.u.r.o. Tec GmbH
Unter dem Hofe 5
58099 Hagen
DEUTSCHLAND

Zulassungsgegenstand
und Verwendungszweck
*Generic type and use
of construction product*

Stützenfuß als Verbindungsmittel in Holzkonstruktionen
Post base as fastener in timber constructions

Geltungsdauer:
Validity: vom
from
bis
to

26 June 2013
26 June 2018

Herstellwerk
Manufacturing plant

E.u.r.o. Tec GmbH
Unter dem Hofe 5
58099 Hagen
DEUTSCHLAND

Diese Zulassung umfasst
This Approval contains

37 Seiten einschließlich 26 Anhänge
37 pages including 26 annexes

I LEGAL BASES AND GENERAL CONDITIONS

- 1 This European technical approval is issued by Deutsches Institut für Bautechnik in accordance with:
 - Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products¹, modified by Council Directive 93/68/EEC² and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council³;
 - *Gesetz über das In-Verkehr-Bringen von und den freien Warenverkehr mit Bauprodukten zur Umsetzung der Richtlinie 89/106/EWG des Rates vom 21. Dezember 1988 zur Angleichung der Rechts- und Verwaltungsvorschriften der Mitgliedstaaten über Bauprodukte und anderer Rechtsakte der Europäischen Gemeinschaften (Bauproduktengesetz - BauPG) vom 28. April 1998⁴, as amended by Article 2 of the law of 8 November 2011⁵;*
 - Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC⁶;
 - Guideline for European technical approval of "Three-dimensionalnailing plates", ETAG 015.
- 2 Deutsches Institut für Bautechnik is authorized to check whether the provisions of this European technical approval are met. Checking may take place in the manufacturing plant. Nevertheless, the responsibility for the conformity of the products to the European technical approval and for their fitness for the intended use remains with the holder of the European technical approval.
- 3 This European technical approval is not to be transferred to manufacturers or agents of manufacturers other than those indicated on page 1, or manufacturing plants other than those indicated on page 1 of this European technical approval.
- 4 This European technical approval may be withdrawn by Deutsches Institut für Bautechnik, in particular pursuant to information by the Commission according to Article 5(1) of Council Directive 89/106/EEC.
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- 6 The European technical approval is issued by the approval body in its official language. This version corresponds fully to the version circulated within EOTA. Translations into other languages have to be designated as such.

¹ Official Journal of the European Communities L 40, 11 February 1989, p. 12
² Official Journal of the European Communities L 220, 30 August 1993, p. 1
³ Official Journal of the European Union L 284, 31 October 2003, p. 25
⁴ *Bundesgesetzblatt Teil I 1998*, p. 812
⁵ *Bundesgesetzblatt Teil I 2011*, p. 2178
⁶ Official Journal of the European Communities L 17, 20 January 1994, p. 34

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of the product and intended use

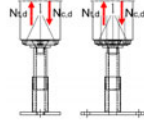
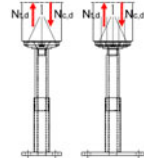
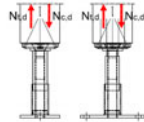
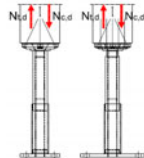
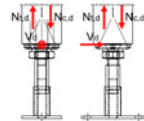
1.1 Definition of the construction product

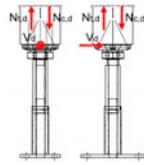
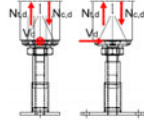
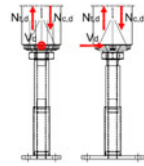
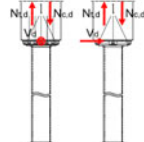

PediX post bases are single- or multi-component timber fasteners made from S235 galvanised steel sheet in accordance with EN 10346⁷, which are usually fastened to timber members with screws and to concrete members with anchor bolts or by embedding.

Connection to concrete members is achieved for the PediX HV B500 post base through embedding in concrete and for the PediX V 140+50, PediX V+ 140+50, PediX HV 140+50, PediX HV+ 140+50, PediX V 190+100, PediX V+ 190+100, PediX HV 190+100 and PediX HV+ 190+100 post bases using anchor bolts. For connection to the timber member PediX-VGS 5x80 mm or PediX-VGS- 5x80 mm-A2 full-thread screws are used.

Dimensions, hole pattern and steel grades are given in the annex.

Table 1 Overview of the different post bases and screws in the annex

No	Post bases / Screws	Description		Annex Page	Annex Page
1	PediX V 140+50	Height-adjustable post base for installation in concrete		12-13	31
2	PediX V 190+100	Height-adjustable post base for installation in concrete		14-15	32
3	PediX V+ 140+50	Height-adjustable post base for installation in concrete		16-17	32
4	PediX V+ 190+100	Height-adjustable post base for installation in concrete		18-19	32
5	PediX HV 140+50	Height-adjustable post base for installation in concrete		20-21	33

No	Post bases / Screws	Description		Annex Page	Annex Page
6	PediX HV 190+100	Height-adjustable post base for installation in concrete		22-23	34
7	PediX HV+ 140+50	Height-adjustable post base for installation in concrete		24-25	35
8	PediX HV+ 190+100	Height-adjustable post base for installation in concrete		26-27	36
9	PediX HV B500	Post base for anchoring in concrete		28-29	37
10	-PediX VGS Ø5x80 mm -PediX VGS Ø5x80 mm- A2	Fasteners for PediX post bases		30	-

1.2 Intended use

The post bases are used for structural timber-to-concrete connections in timber constructions where the requirements for "Mechanical resistance and stability" in the sense of the Essential Requirement 1 of Council Directive 89/106/EEC shall be fulfilled.

The structural behaviour of the construction elements and the support conditions shall correspond to the indications given in Annex B. The post bases may be used in service classes 1, 2 and 3 in accordance with EN 1995-1-1⁸ and for connections with static or quasi-static loading.

Fasteners with the designation "V" may only be loaded vertically (V) and those with the designation "HV" may be loaded horizontally (H) and vertically (V).

⁸

EN 1995-1-1:2004 + AC:2006 + A1:2008

Eurocode 5: Design of timber structures – Part 1-1: Common rules and rules for buildings

The timber members are made from solid timber, glued laminated timber or similarly glued wood-based members. Requirements applicable to the timber members are met by timber of strength class C24 or higher with a characteristic density $\rho_k \geq 350 \text{ kg/m}^3$. The following softwood materials are suitable for connections with PediX Post Bases:

- solid timber made from softwood in accordance with EN 338⁹ / EN 14081-1¹⁰,
- glued laminated timber in accordance with EN 1194¹¹ / EN 14080¹²,
- as well as similarly glued members with minimum dimensions of $w \times h = 10 \times 10 \text{ cm}^2$.

The Annex page 31 up to page 37 includes characteristic values of load-carrying capacities for connections with post bases for a characteristic density of 350 kg/m^3 . For wood with a density higher than 350 kg/m^3 higher load-carrying capacities are not to be considered.

For the concrete strength class C20/25 or higher is assumed unless otherwise stated in Annex B.

The design of the connections shall be carried out according to national provisions that apply at the installation site of the certified object in line with the partial safety factor format, e.g. in accordance with EN 1995-1-1 in conjunction with EN 1995-1-1/NA¹³.

The provisions made in this European technical approval are based on an assumed working life of the post bases of 50 years, provided that the post bases are subject to appropriate use and maintenance. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but shall be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

⁹	EN 338:2009	Structural timber - Strength classes
¹⁰	EN 14081-1:2005	Timber structures - Strength graded structural timber with rectangular cross section - Part 1: General requirements
¹¹	EN 1194:1999	Timber structures - Glued laminated timber - Strength classes and determination of characteristic values
¹²	EN 14080:2005	Timber structures - Glued laminated timber - Requirements
¹³	EN 1995-1-1:2010/NA	National Annex - Nationally determined parameters - Eurocode 5: Design of timber structures - Part 1-1: General - Common rules and rules for buildings

2 Characteristics of the product and methods of verification

2.1 Characteristics

ETAG paragraph	Characteristic	Assessment of the characteristic
6.1	Mechanical resistance and stability ^{*)}	
6.1.1	Load-carrying capacities	see annex page 31 up to page 37
6.1.2	Stiffness	no performance determined
6.1.3	Ductility in cyclic testing	no performance determined
6.2	Safety in case of fire	
	Reaction to fire	The post bases are made from steel classified as Euroclass A1 in accordance with EC decision 96/603/EC, amended by EC decision 2000/605/EC.
	Resistance to fire	Resistance to fire is determined for complete structural elements with any associated finishes, but not for single fasteners. Therefore no performance is determined for this essential requirement.
6.3	Hygiene, health and the environment	
6.3.1	Release of dangerous substances	no dangerous substances ^{**)}
6.4	Safety in use	not relevant
6.5	Protection against noise	not relevant
6.6	Energy economy and heat retention	not relevant
6.7	Aspects of Serviceability ^{***)}	
6.7.1	Durability	The post bases have sufficient durability and serviceability as far as they are used with timber types as defined in Eurocode 5 and they are used in service classes 1, 2 and 3. The allowable ambient atmospheric conditions in accordance with EN ISO 12944-2 ¹⁴ shall be considered.
6.7.2	Serviceability	
6.7.3	Identification of the product	See annex page 12 up to page 30

^{*)} See section 2.2 of this European technical approval.

^{**)} In accordance with <http://europa.eu.int/comm/enterprise/construction/internal/dangsub/dangmain.htm>. In addition to the specific clauses relating to dangerous substances contained in this European technical approval, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the EU Construction Products Directive, these requirements need also to be complied with, when and where they apply.

^{***)} See section 2.3 of this European technical approval.

¹⁴ EN ISO 12944-2:1998 Paints and varnishes - Corrosion protection of steel structures by protective paint systems - Part 2: Classification of environments

2.2 Mechanical resistance and stability

The load-carrying capacities of a connection with a PediX Post Base given in Annex page 31 up to page 37 are based on values for the screw connection and the steel sheet.

To calculate the design values, the characteristic load-carrying capacities given in Annex page 31 up to page 37 shall be divided by partial safety factors for the material property and multiplied by the coefficient k_{mod} for the screw connection and the timber components with regard to the load duration and the service class defined in EN 1995-1-1.

According to the standard EN 1990:2002 paragraph 6.3.5 the design value of the load-carrying capacity can be determined by reducing the values of the load-carrying capacity with the material-specific partial safety factors.

Thus, the characteristic values of the load-carrying capacity were determined for the failure of timber or wood-based material $F_{Rk,H}$ (reaching of the load-carrying capacity of screws subjected to shear) as well as for the steel sheet failure $F_{Rk,S}$ (reaching of the tensile or bending strength of the sheet metal or the bending strength of the base plate) and also for the failure of concrete $F_{Rk,C}$. The design value of the load-carrying capacity F_{Rd} is the minimum value as determined by the formula below.

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

Therefore, for timber or wood-based material failure the load duration class and the service class are taken into account. The various partial safety factors γ_M for steel and timber or wood-based material as well as γ_C for concrete are also taken into account.

Annex page 31 up to page 37 states values of the load-carrying capacities for vertical and/or horizontal loading directions. The values of the load-carrying capacities were determined by calculation assisted by testing according to the guideline ETAG 015. They are used for the design according to the national provisions applicable at the installation site in line with the partial safety factor format, e.g. in accordance with EN 1995-1-1 in conjunction with EN 1995-1-1/NA.

For ductility of a connection under cyclic loading no performance was determined. Therefore, the contribution of the connections to the structural behaviour under seismic load is not being assessed.

2.3 Aspects of durability

2.3.1 Corrosion protection

The steel components of the post base and their connections are hot-dip galvanised with a minimum contact length of 25 μm according to Z350 of EN 10346. This value meets the requirements for steel sheet of thicknesses $t > 5$ mm according to Table 4.1 of EN 1995-1-1 and hence the applicability in service classes 1 to 3. The allowable ambient atmospheric conditions in accordance with EN ISO 12944-2 shall be considered. These requirements shall be met for all components and fasteners such as threaded sleeves, countersunk head screws, threaded studs and nuts.

In service classes 1 and 2 use of coated full-thread screws made from carbon steel is foreseen for connecting the top plate to the timber member. EN 1995-1-1 does not place any requirements pertaining to corrosion protection on screws with $d > 4$ mm in service classes 1 and 2. Corrosion protection through use of a metallic coating is foreseen.

Use of full-thread screws made from stainless steel 1.4301 is foreseen for service class 3. The allowable ambient atmospheric conditions in accordance with EN ISO 12944-2 shall be considered. Due to the expected moisture load and the existing ratio of the screw head surface area to the top plate surface area in the joint region coating of the full-thread screws is foreseen to prevent bimetallic corrosion.

2.3.2 If preservative treatment of timber is used, national regulations shall apply. The effects of the wood preservative on corrosion resistance shall be taken into consideration.

3 Evaluation and attestation of conformity and CE marking

3.1 System of attestation of conformity

According to the Decision 97/638/EC of the European Commission¹⁵, system 2+ of the attestation of conformity applies.

This system of attestation of conformity is defined as follows:

System 2+: Declaration of conformity of the product by the manufacturer on the basis of:

(a) Tasks for the manufacturer:

- (1) initial type-testing of the product;
- (2) factory production control;
- (3) testing of samples taken at the factory in accordance with a prescribed test plan.

(b) Tasks for the approved body:

- (4) certification of factory production control on the basis of:
 - initial inspection of factory and of factory production control;
 - continuous surveillance, assessment and approval of factory production control.

Note: Approved bodies are also referred to as 'notified bodies'.

3.2 Responsibilities

3.2.1 Tasks for the manufacturer

3.2.1.1 Factory production control

The manufacturer shall exercise continuous internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall ensure that the product is in conformity with this European technical approval.

The manufacturer may only use raw materials stated in the technical documentation of this European technical approval.

The factory production control shall be in accordance with the "Control plan relating to the European technical approval ETA-13/0550 issued on 26 June 2013" which is part of the technical documentation of this European technical approval. The control plan is laid down in the context of the factory production control system operated by the manufacturer and deposited with Deutsches Institut für Bautechnik.¹⁶

The incoming raw materials shall be subject to controls and tests by the manufacturer before acceptance. Check of materials such as steel sheet shall include control of the inspection documents presented by suppliers (comparison with nominal values) by verifying dimensions and determining material properties, e.g. chemical composition, mechanical properties and zinc coating thickness.

The manufactured components shall be checked visually and for dimensional accuracy. The control plan includes details of the extent, type and frequency of testing and controls to be carried out within factory production control.

¹⁵ Official Journal of the European Communities L 268/36 of 01.10.1997

¹⁶ The control plan is a confidential part of the European technical approval and only handed over to the approved body involved in the procedure of attestation of conformity. See section 3.2.2.

The results of factory production control shall be recorded and evaluated in accordance with the provisions of the control plan. The records shall at least include the following information:

- designation of the product, basic materials and components,
- type of control or test,
- date of manufacture of the product and date of testing of the product or basic materials and components,
- result of control and testing and, if appropriate, comparison with requirements,
- signature of the person responsible for factory production control.

The records shall be presented to the approved body involved in the continuous surveillance and shall be presented to Deutsches Institut für Bautechnik on request.

3.2.1.2 Other tasks for the manufacturer

The manufacturer shall, on the basis of a contract, involve a body which is approved for the tasks referred to in section 3.1 for the post bases in order to undertake the actions laid down in section 3.2.2. For this purpose the control plan according to sections 3.2.1.1 and 3.2.2 shall be handed over to the approved body by the manufacturer.

For initial type-testing of the product the results of the tests performed as part of the assessment for the European technical approval may be used unless there are changes to the production line or plant. In such cases the necessary initial type-testing shall be agreed between Deutsches Institut für Bautechnik and the notified body.

The manufacturer shall make a declaration of conformity stating that the construction product is in conformity with the provisions of the European technical approval ETA-13/0550 issued on 26 June 2013.

3.2.2 Tasks for the approved body

The approved body shall perform the following tasks in accordance with the provisions of the control plan:

- initial inspection of factory and factory production control,
- continuous surveillance, assessment and approval of factory production control.

3.2.2.1 Initial inspection of factory and factory production control

The approved body shall ascertain that, in accordance with the control plan, the factory, in particular the staff and equipment, and the factory production control are suitable to ensure a continuous and orderly manufacturing of the post bases in accordance with this European technical approval.

3.2.2.2 Continuous surveillance

The approved body shall visit the factory at least twice a year for routine inspections. It shall be verified that the factory production control system and the specified manufacturing processes are maintained in accordance with the control plan.

3.2.2.3 Other tasks for the approved body

The approved body shall retain the essential points of its actions referred to above and state the results obtained and conclusions drawn in a written report.

The results of the continuous surveillance shall be made available on demand by the certification body to Deutsches Institut für Bautechnik.

The approved certification body involved by the manufacturer shall issue an EC certificate of conformity of the factory production control stating the conformity with the provisions of this European technical approval.

In cases where the provisions of the European technical approval and its control plan are no longer fulfilled the certification body shall withdraw the certificate of conformity and inform Deutsches Institut für Bautechnik without delay.

3.3 CE marking

The CE marking shall be affixed on every package containing post bases. The letters "CE" shall be followed by the identification number of the approved certification body and be accompanied by the following additional information:

- the name and address of the producer (legal entity responsible for the manufacture),
- the last two digits of the year in which the CE marking was affixed,
- the number of the EC certificate for the factory production control,
- the number of the European technical approval,
- the number of the guideline for the European technical approval (ETAG 015),
- the name and size of the product.

4 Assumptions under which the fitness of the product for the intended use was favourably assessed

4.1 Manufacturing

The post bases shall be manufactured in accordance with the provisions of the European technical approval using the manufacturing processes as identified in the inspection of the plant by the notified inspection body and laid down in the technical documentation.

This European technical approval was issued for the product on the basis of agreed data/information, which is deposited with Deutsches Institut für Bautechnik and identifies the product that has been assessed and judged. Changes to the product or manufacturing process, which could result in this deposited data/information being incorrect, shall be notified to Deutsches Institut für Bautechnik before the changes are introduced. Deutsches Institut für Bautechnik will decide whether or not such changes affect the approval and consequently the validity of the CE marking on the basis of the approval and if so whether further assessment or alterations to the approval shall be necessary.

4.2 Installation

The connection of timber and concrete members using post bases is considered to be suitable for the intended purpose provided that the following conditions are met:

- Screws, screw arrangement, alignment of post base

All holes in the top plate of the post base shall be supplied with screws. Only screws (with a coating if applicable) with the following properties may be used:

- geometry according to Annex 19,
- mechanical strengths: characteristic tensile capacity $f_{\text{tens},k} = 4.3$ kN; characteristic yield moment $M_{y,k} = 3.2$ Nm; characteristic torsional strength $F_{\text{tor},k} = 3.4$ Nm; ratio torsional strength to insertion moment $f_{\text{tor},k}/R_{\text{tor,mean}} \geq 1.5$.

Corresponding to the shear resistance the experimentally determined bending capacity applies under the condition that the horizontal force acts perpendicularly to the two screw rows of the connection, resulting in bending about the major axis of the connection such that 5 screws are subjected to tensile stress in the axial direction.

As shown in the free-body diagrams (see Annex page 31 up to page 37) the longitudinal direction of the base plate of the post base on the concrete shall also be parallel to the horizontal load. Horizontal loading of the post bases parallel to the screw rows is not permissible. In addition during assembly it shall be ensured that the M36 hex nut under the top plate is tightened to at least $M_{\text{preload}} \geq 250 \text{ Nm}$. To ensure a permanent preload the product manufacturer shall supplement the connection or the joint with suitable threadlocking measures.

- Wane

A wane is not permissible; the timber post's end face shall fully contact the top plate of the post base.

- Storage conditions

The construction elements connected by post bases shall be secured against rotation.

- Base plates

The base plate shall be connected to the supporting substructure by means of anchor bolts or through embedding in concrete. For the anchorage of the base plates of post base PediX HV and HV+ the minimum load-bearing capacity for tension (equations B5 / B6 Annex page 31) has to be taken into account depending on vertical and horizontal loads. The connection is not subject of this European technical approval. The national provisions valid at the installation site shall apply.

- Other requirements

Installation is carried out by qualified personnel under the direction of a supervisor. The qualified personnel shall be appropriately qualified for this work. Installation is in accordance with the manufacturer's technical literature.

The members shall have a thickness exceeding the penetration depth of the screws into the member.

5 Indications for the manufacturer

5.1 Packaging, transport and storage

The PediX Post Bases are packed in boxes bearing the manufacturer's name, product type, dimensions, quantity, date of manufacture and details of the delivery batch.

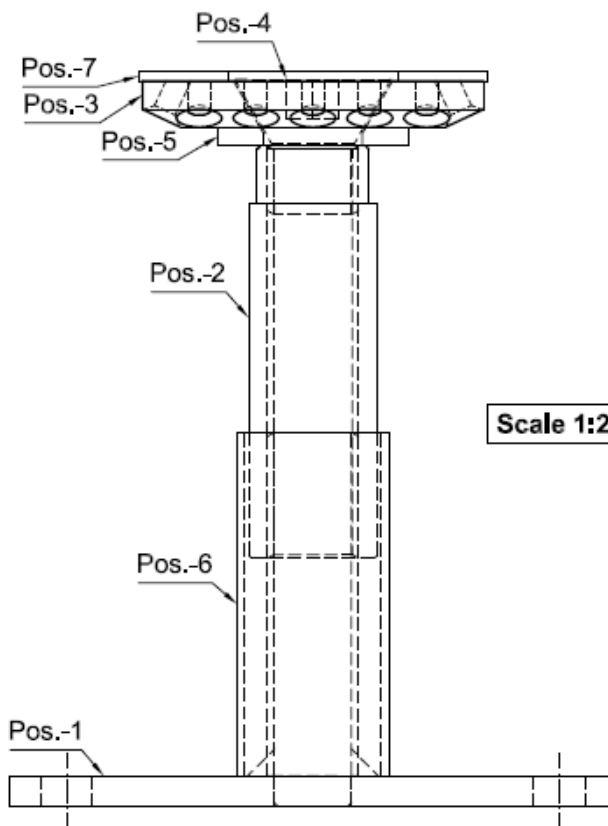
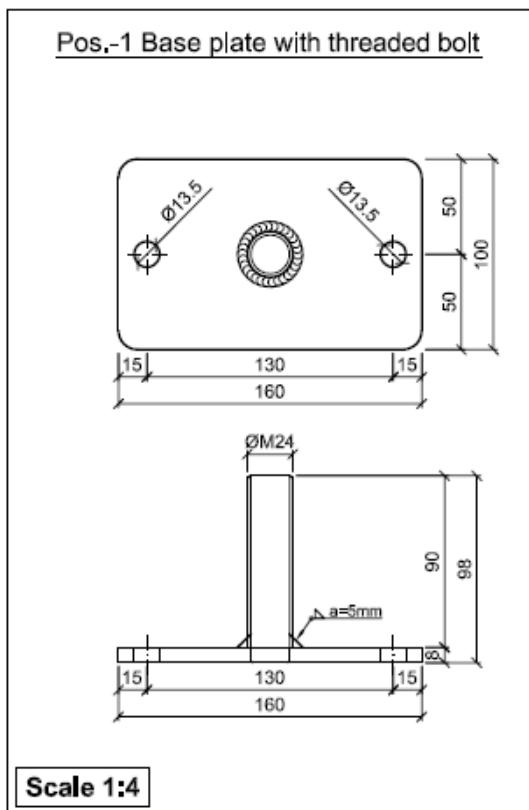
Regarding transport and storage PediX Post Bases shall be treated as conventional metal members.

5.2 Use, maintenance, repair

The assessment of the fitness for use is based on the assumption that maintenance is not required during the assumed working life. Should repair prove necessary, it is normal for the post base to be replaced.

Uwe Bender
Head of Department

beglaubigt:
Baumann



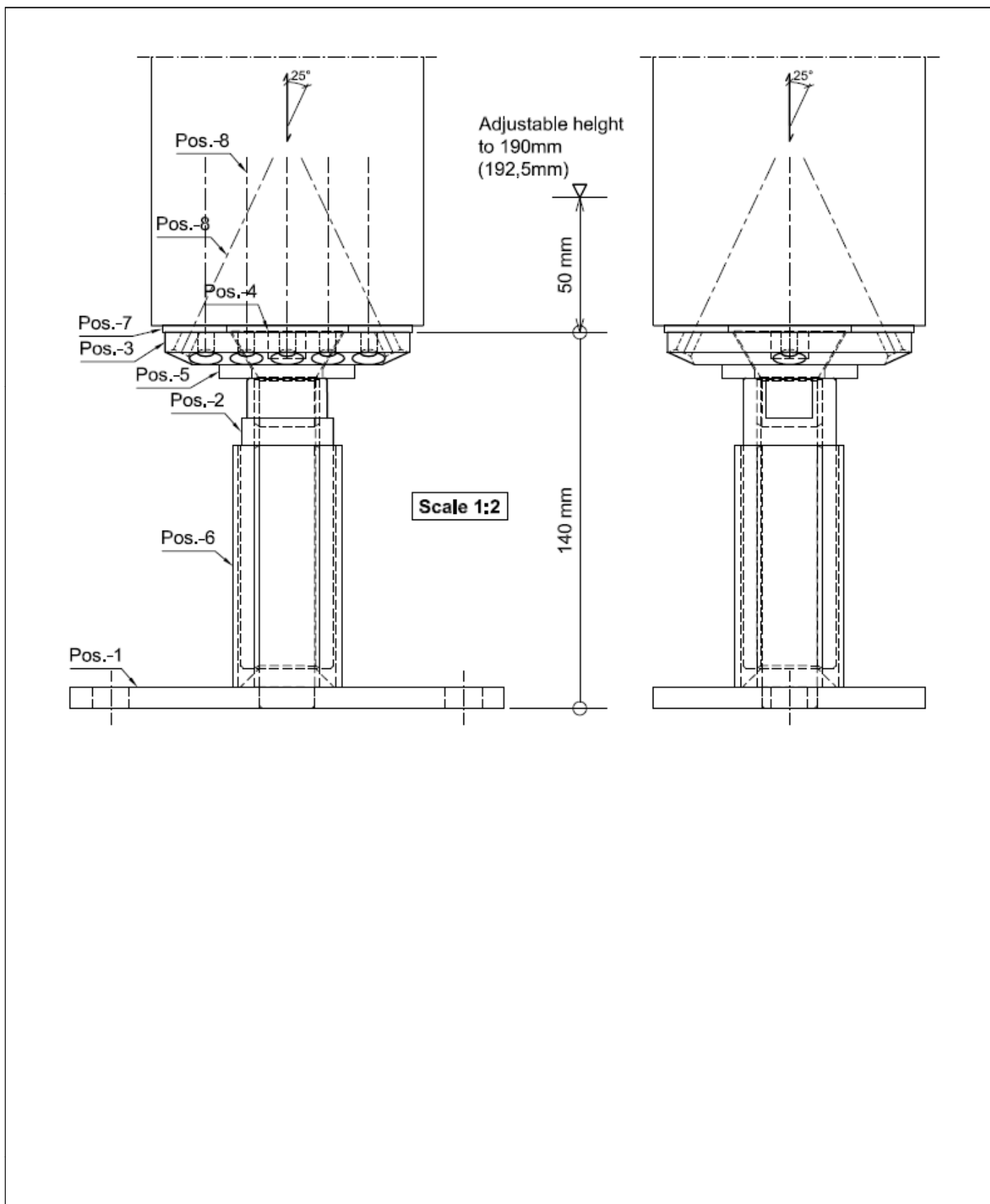
Post base PediX/STF V 140+50, hot-dip galvanized

Pos.-No.	Designation
1	Base plate 160x100x8 mm, S235; and threaded bolt M24, H= 90 mm, 5.6;
2	Threaded sleeve Ø34 mm, Inner thread M24, H= 108 mm, Wrench size 30, S235;
3	Head plate 90x90x12 mm, S235;
4	Countersunk head screw M24x35 mm, S235;
5	Steel plate 50/26/5 mm, S235;
6	Protection sleeve Ø40 mm, T= 2 mm, H= 90 mm, S235;
7	EPDM- seal
8	PediX- fully threaded screw Ø5x80 mm Carbon Steel-Special coated/ Stainless Steel A2-Special coated

PediX Post Base

Adjustable post base for embedding in concrete
PediX V 140+50
STF V 140+50

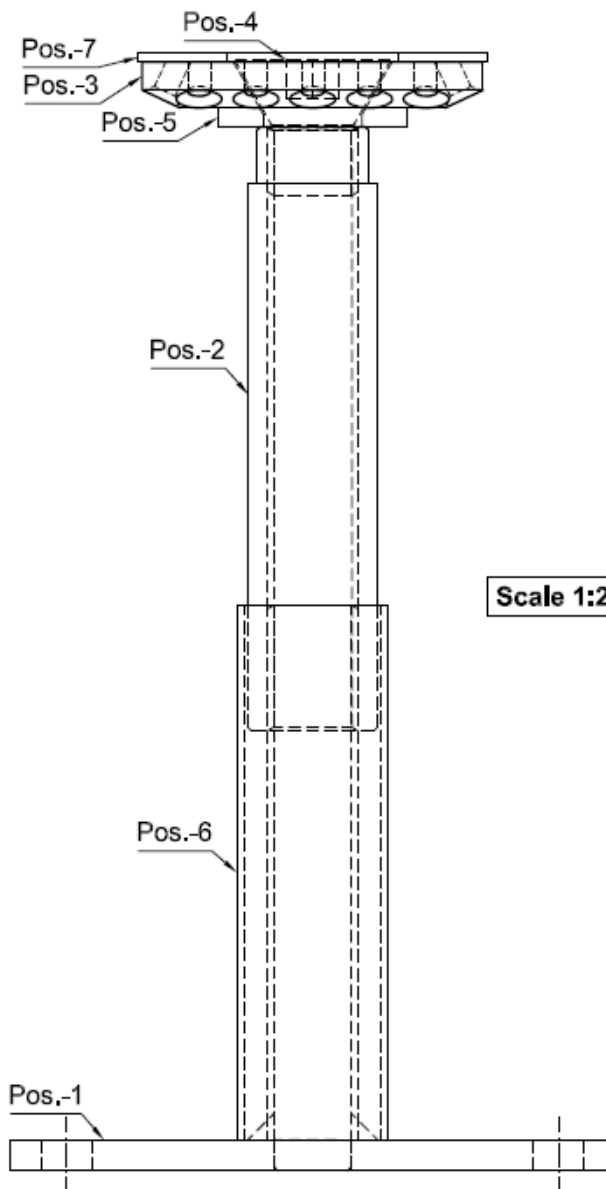
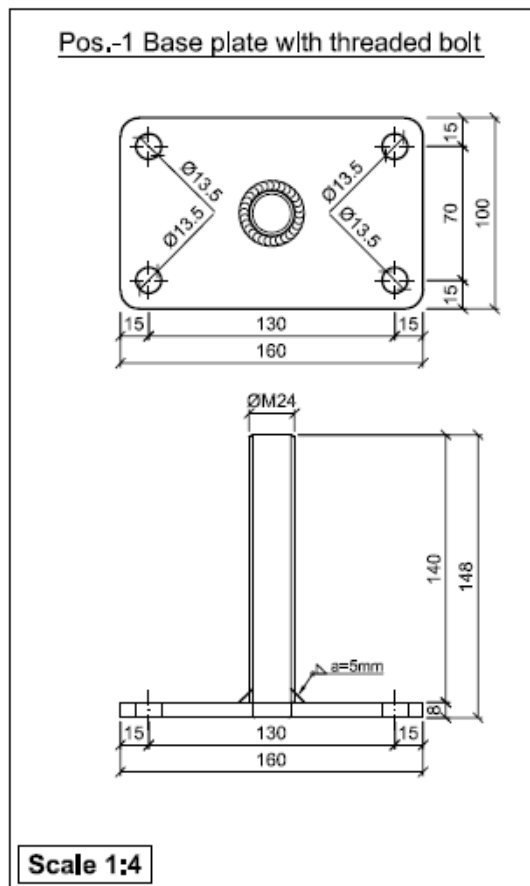
Annex A
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PediX Post Base

Adjustable post base for embedding in concrete
PediX V 140+50
STF V 140+50

Annex A
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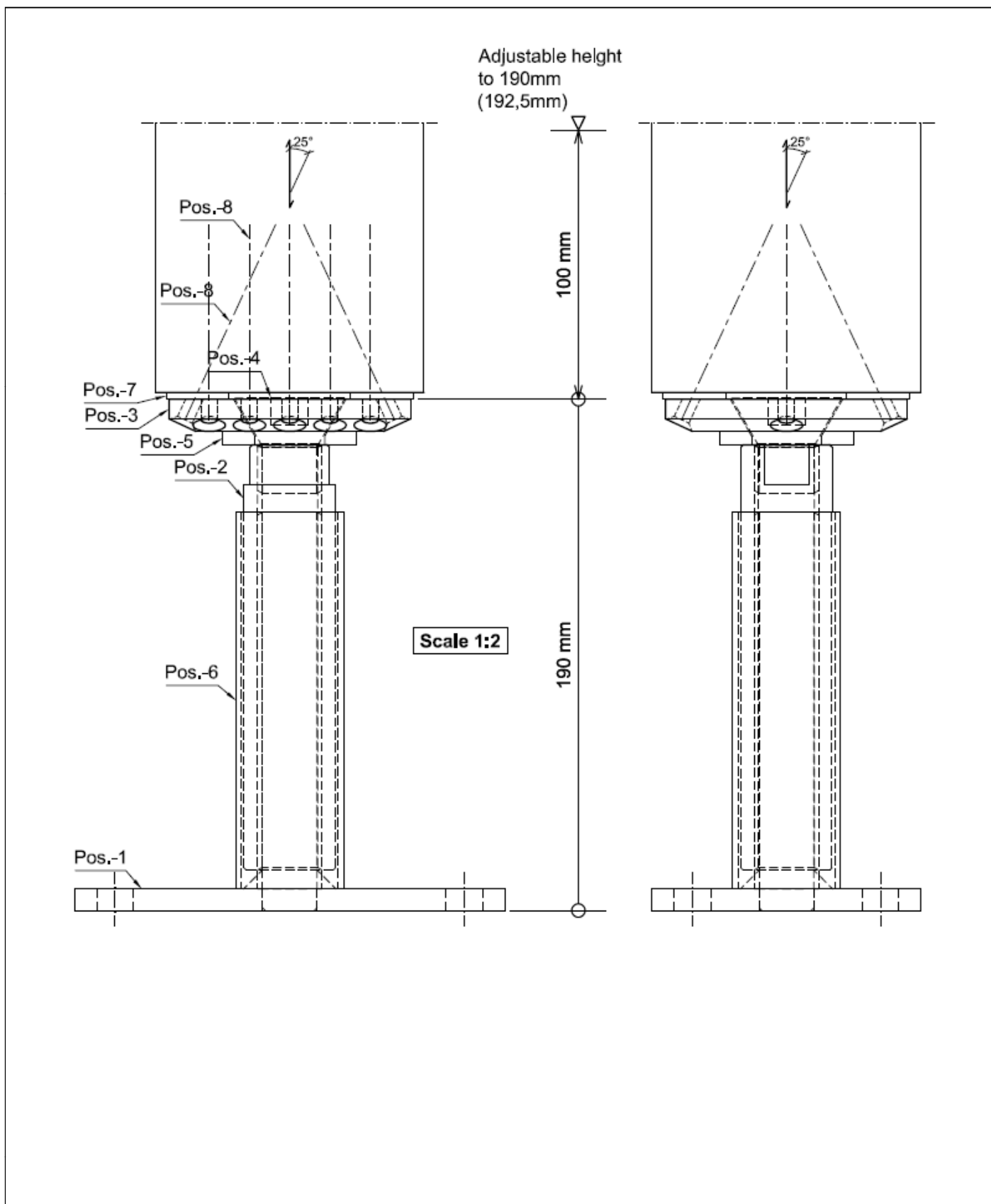


Post base PediX/STF V 190+100, hot-dip galvanized	
Pos.-No.	Designation
1	Base plate 160x100x8 mm, S235; and threaded bolt M24, H= 140 mm, 8.8;
2	Threaded sleeve Ø34 mm, Inner thread M24, H= 158 mm, Wrench size 30, S235;
3	Head plate 90x90x12 mm, S235;
4	Countersunk head screw M24x35, S235;
5	Steel plate 50/26/5 mm, S235;
6	Protection sleeve Ø40 mm, T= 2 mm, H= 140 mm, S235
7	EPDM- seal
8	PediX- fully threaded screw Ø5x80 mm Carbon Steel-Special coated/ Stainless Steel A2-Special coated

PediX Post Base

Adjustable post base for embedding in concrete
PediX V 190+100
STF V 190+100

Annex A
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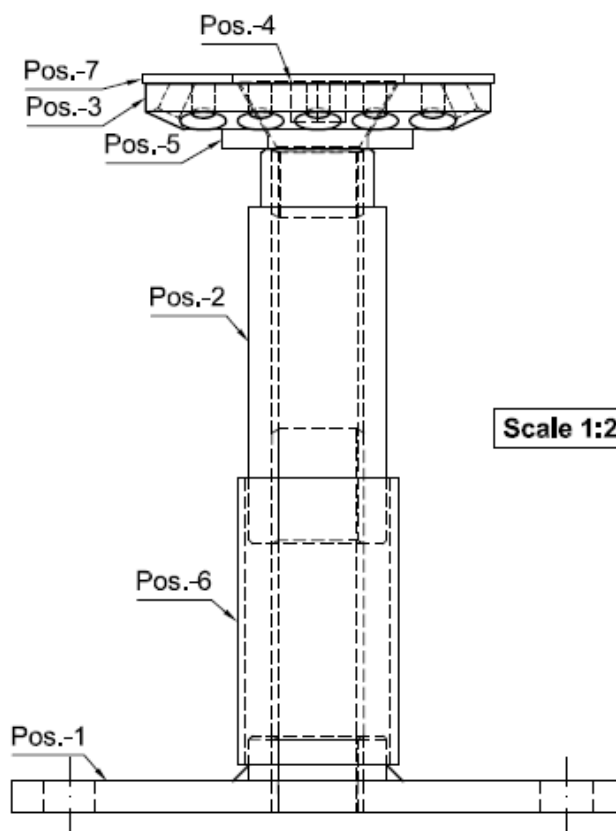
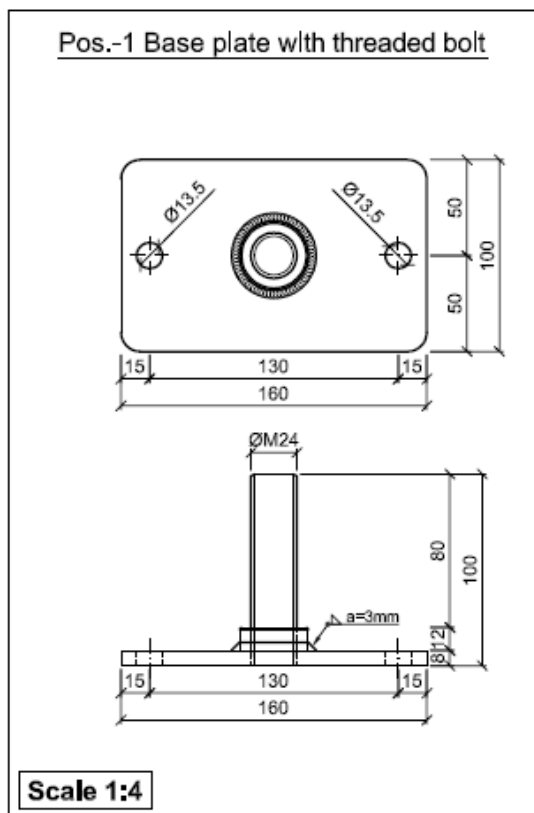


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PediX Post Base

Adjustable post base for embedding in concrete
PediX V 190+100
STF V 190+100

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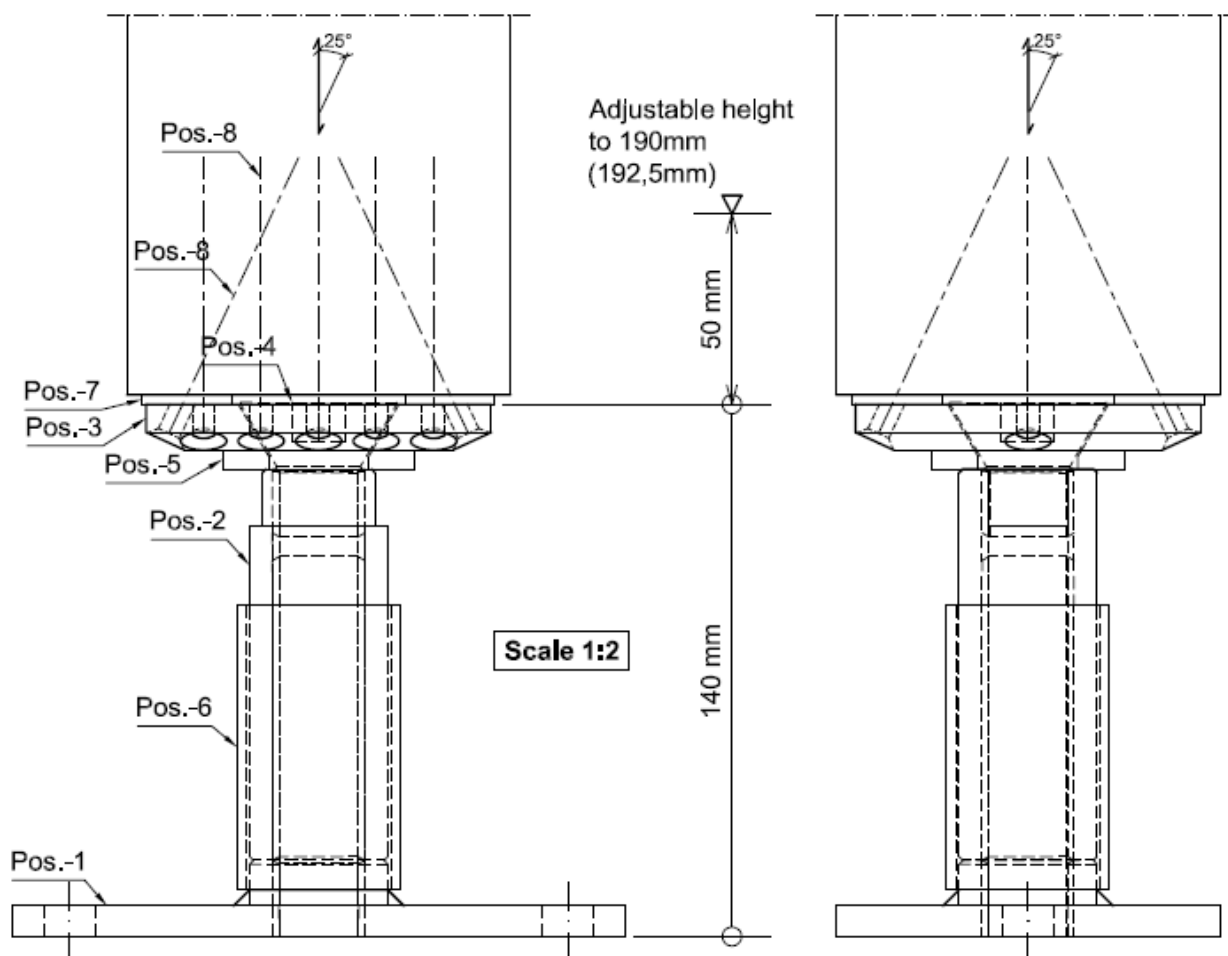


Post base PediX/STF V+ 140+50, hot-dip galvanized	
Pos.-No.	Designation
1	Base plate 160x100x8 mm, Threaded ring M24 Ø36x12 mm, S235; Threaded bolt M24, H= 80 mm, 8.8;
2	Threaded sleeve Ø36 mm, Inner thread M24, H= 103 mm, Wrench size 30, S235;
3	Head plate 90x90x12 mm, S235;
4	Countersunk head screw M24x35, S235;
5	Steel plate 50/26/5 mm, S235;
6	Protection sleeve Ø42,4 mm, T= 2,3 mm, H= 75 mm, S235;
7	EPDM- seal
8	PediX- fully threaded screw Ø5x80 mm Carbon Steel-Special coated/ Stainless Steel A2-Special coated

PediX Post Base

Adjustable post base for embedding in concrete
PediX V+ 140+50
STF V+ 140+50

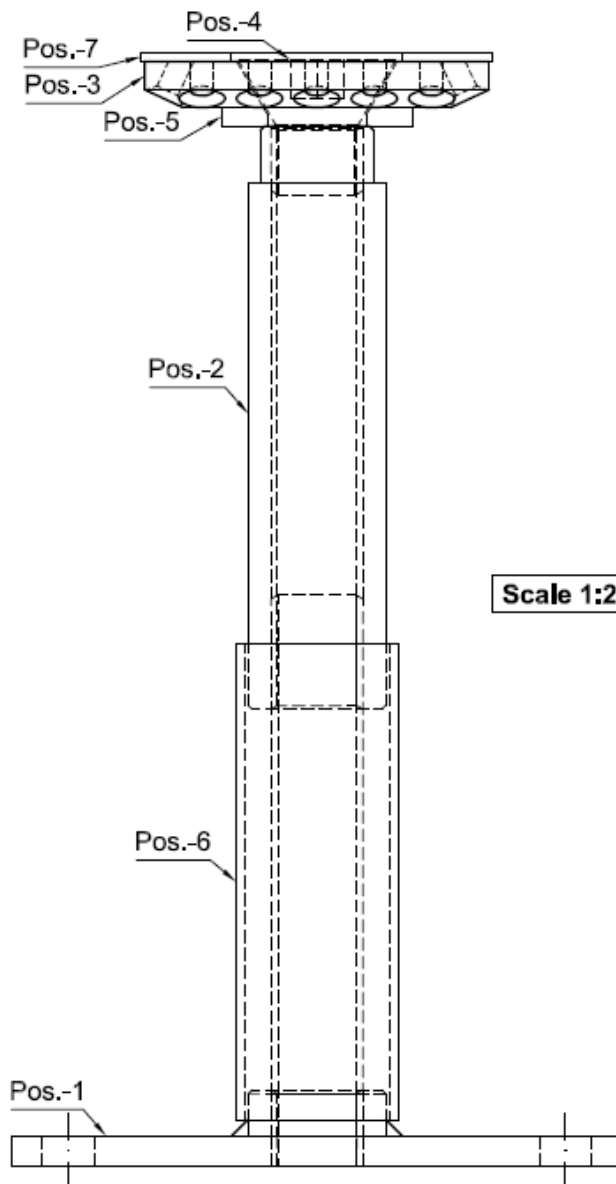
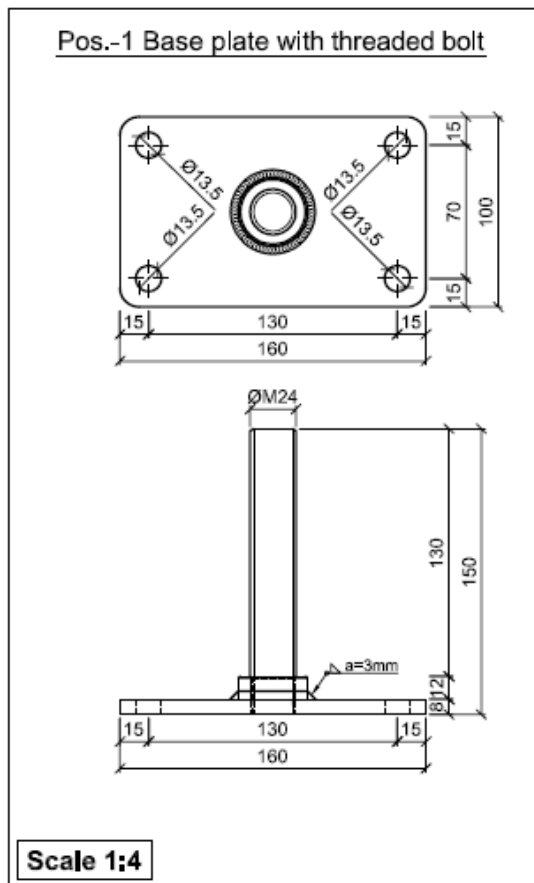
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PediX Post Base

Adjustable post base for embedding in concrete
PediX V+ 140+50
STF V+ 140+50

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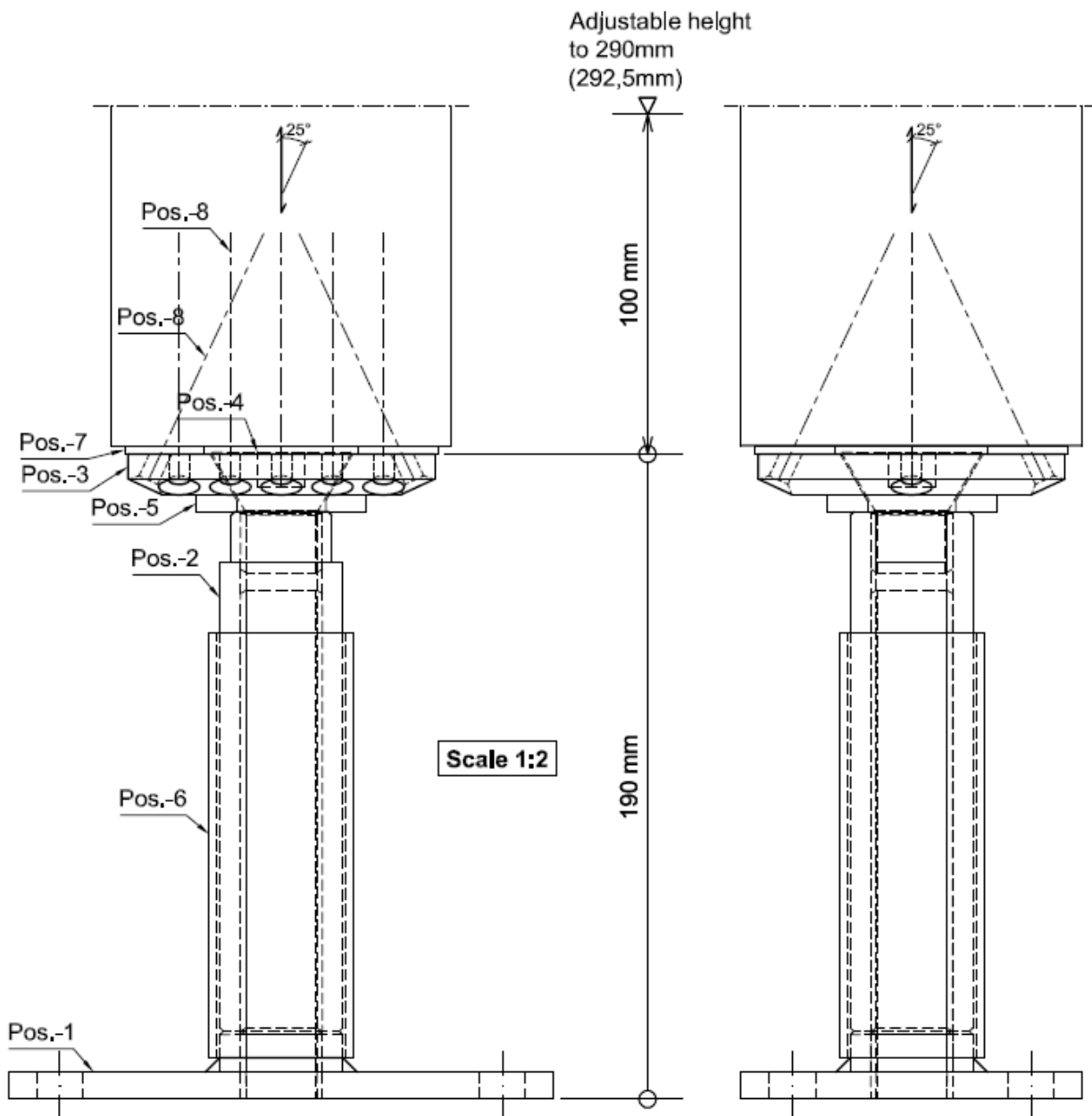


Post base PediX/STF V+ 190+100, hot-dip galvanized	
Pos.-No.	Designation
1	Base plate 160x100x8 mm, Threaded ring M24 Ø36x12 mm, S235; Threaded bolt M24, H= 130 mm, 8.8;
2	Threaded sleeve Ø34 mm, Inner thread M24, H= 153 mm, Wrench size 30, S235;
3	Head plate 90x90x12 mm, S235;
4	Countersunk head screw M24x35, S235;
5	Steel plate 50/26/5 mm, S235;
6	Protection sleeve Ø42,4 mm, T= 2,3 mm, H= 125 mm, S235;
7	EPDM- seal
8	PediX- fully threaded screw Ø5x80 mm Carbon Steel-Special coated/ Stainless Steel A2-Special coated

PediX Post Base

Adjustable post base for embedding in concrete
PediX V+ 190+100
STF V+ 190+100

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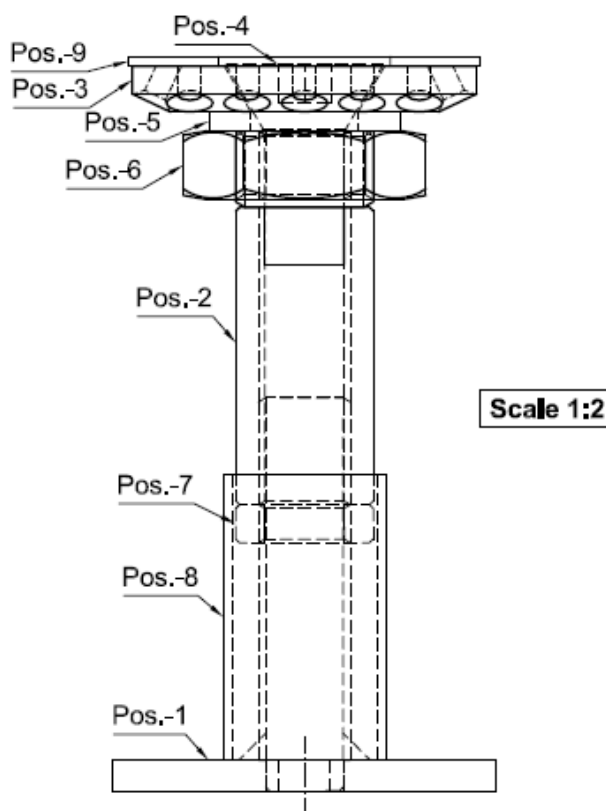
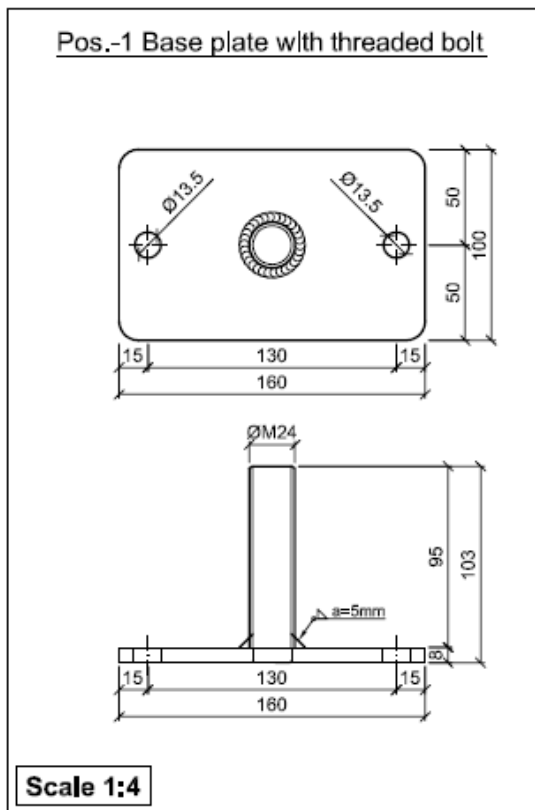


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PediX Post Base

Adjustable post base for embedding in concrete
PediX V+ 190+100
STF V+ 190+100

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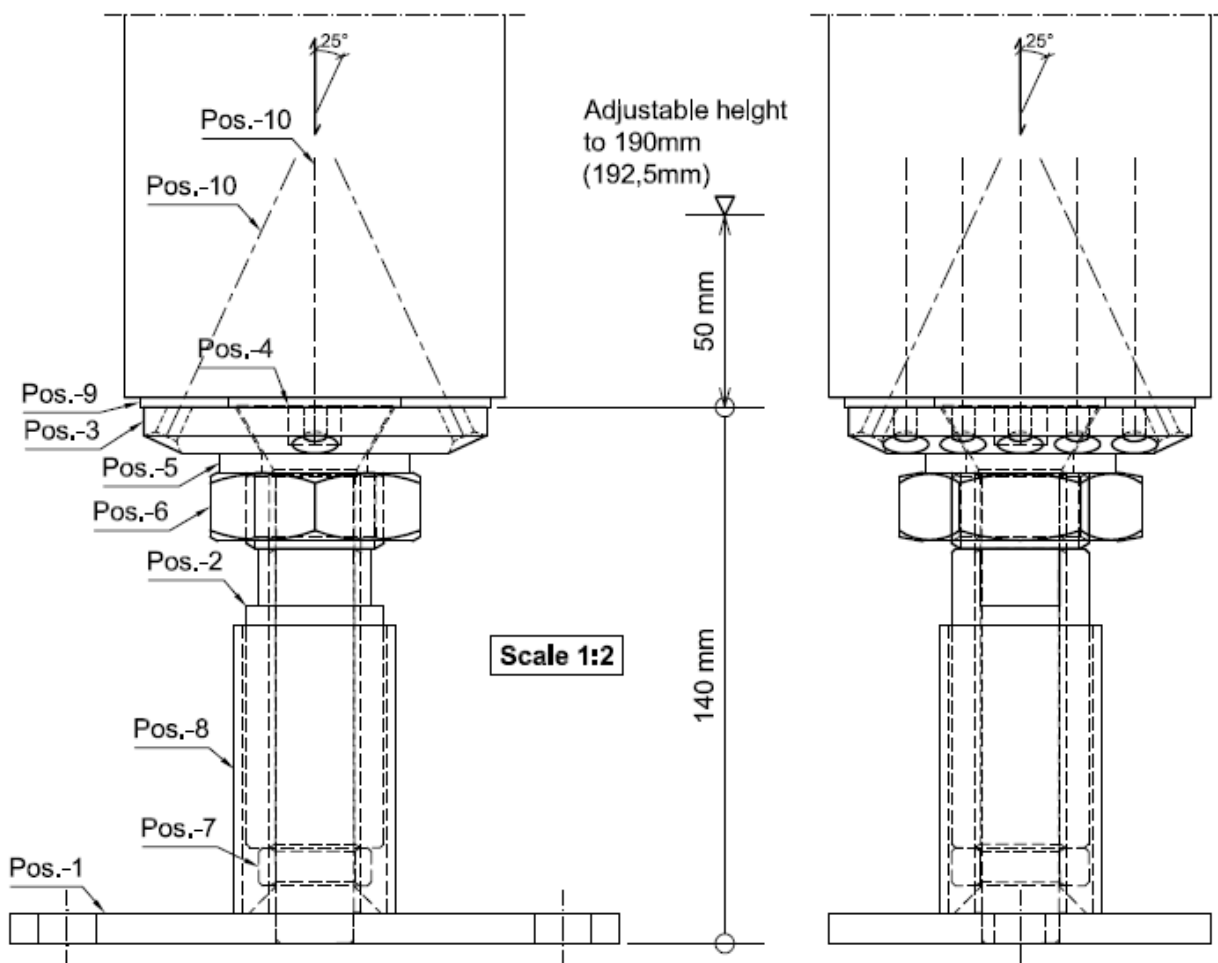


Post base PediX/STF HV 140+50, hot-dip galvanized	
Pos.-Nr.	Designation
1	Base plate 160x100x8 mm, S235; and threaded bolt M24; H= 95 mm, 5.6;
2	Threaded sleeve Ø36 mm, Inner thread M24, H= 98 mm; Wrench size 30, S235;
3	Head plate 90x90x12 mm, S235;
4	Countersunk head screw M24x35, S235;
5	Steel plate 50/28/5 mm, S235;
6	Lock nut M36, 4.6;
7	Threaded sleeve lock nut M24, H= 10 mm; Wrench size 30, S235;
8	Protection sleeve Ø42,4 mm, T= 2,3 mm, H= 75 mm, S235;
9	EPDM- seal
10	PediX- fully threaded screw Ø5x80 mm Carbon Steel-Special coated/ Stainless Steel A2-Special coated

PediX Post Base

Adjustable post base for embedding in concrete
PediX HV 140+50
STF HV 140+50

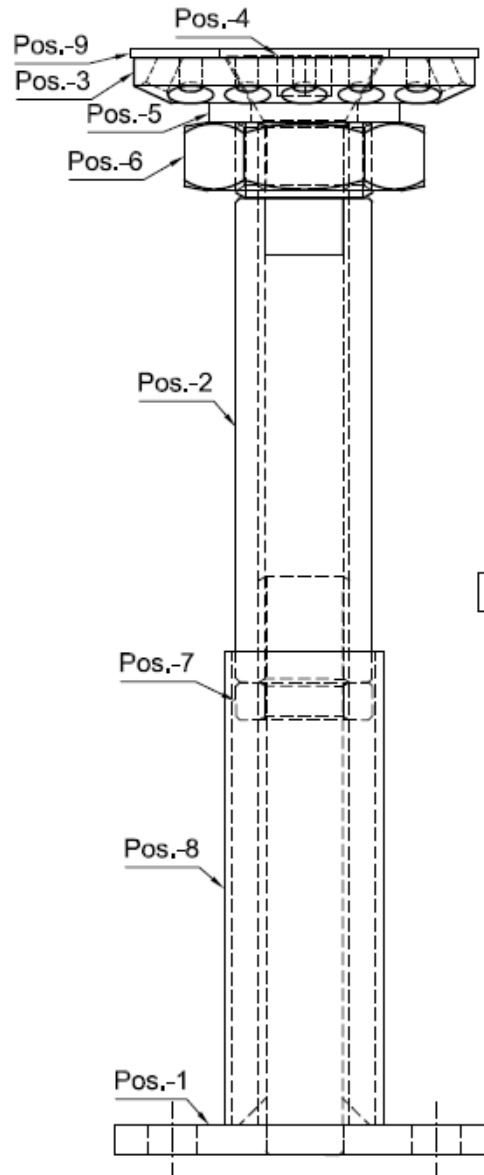
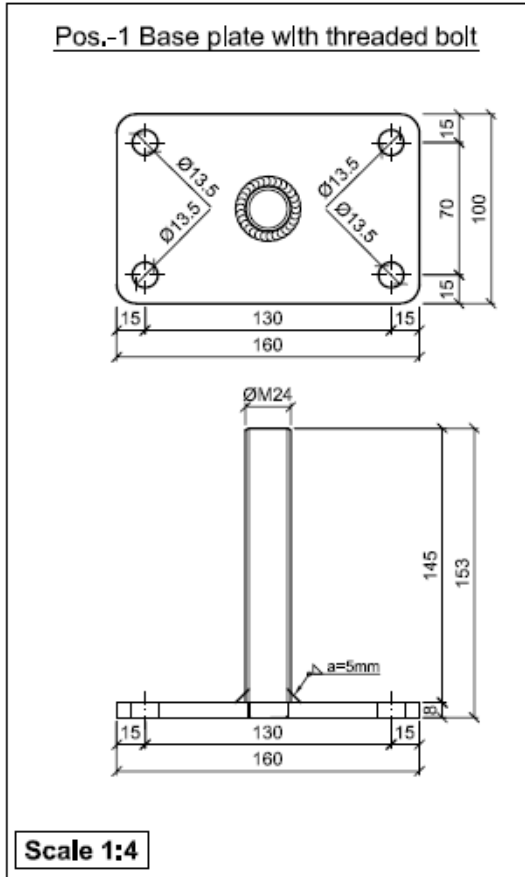
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PediX Post Base

Adjustable post base for embedding in concrete
PediX HV 140+50
STF HV 140+50

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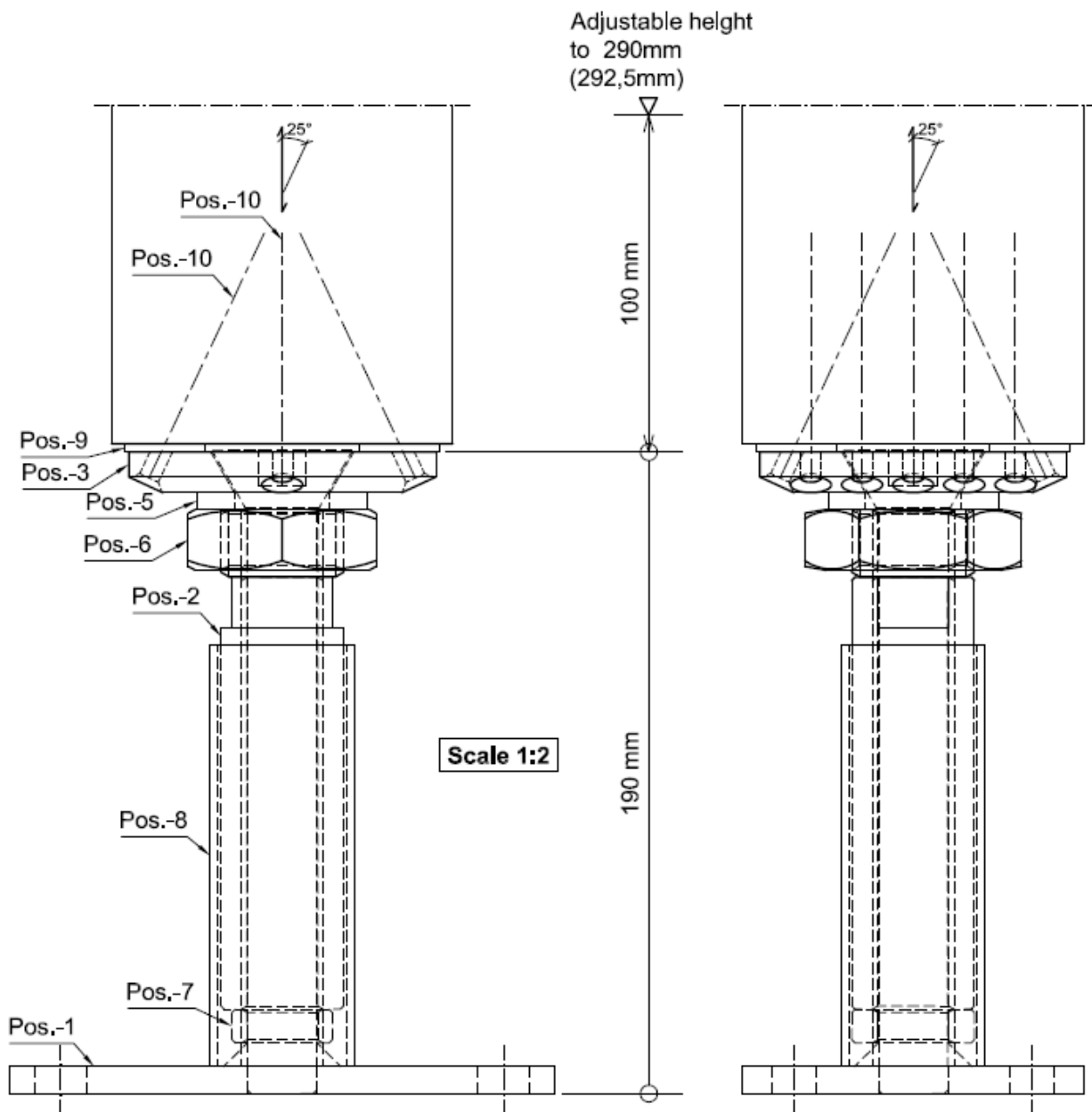
Post base PediX/STF HV 190+100, hot-dip galvanized

Pos.-No.	Designation
1	Base plate 160x100x8 mm, S235; and threaded bolt M24; H= 148 mm, 5.6;
2	Threaded sleeve Ø36 mm, Inner thread M24, H= 98 mm; Wrench size 30, S235;
3	Head plate 90x90x12 mm, S235;
4	Countersunk head screw M24x35, S235;
5	Steel plate 50/28/5 mm, S235;
6	Lock nut M36, 4.6;
7	Threaded sleeve lock nut M24, H= 10 mm; Wrench size 30, S235;
8	Protection sleeve Ø42,4, T= 2,3 mm, H= 125 mm, S235;
9	EPDM- seal
10	PediX- fully threaded screw Ø5x80 mm Carbon Steel-Special coated/ Stainless Steel A2-Special coated

PediX Post Base

Adjustable post base for embedding in concrete
PediX HV 190+100
STF HV 190+100

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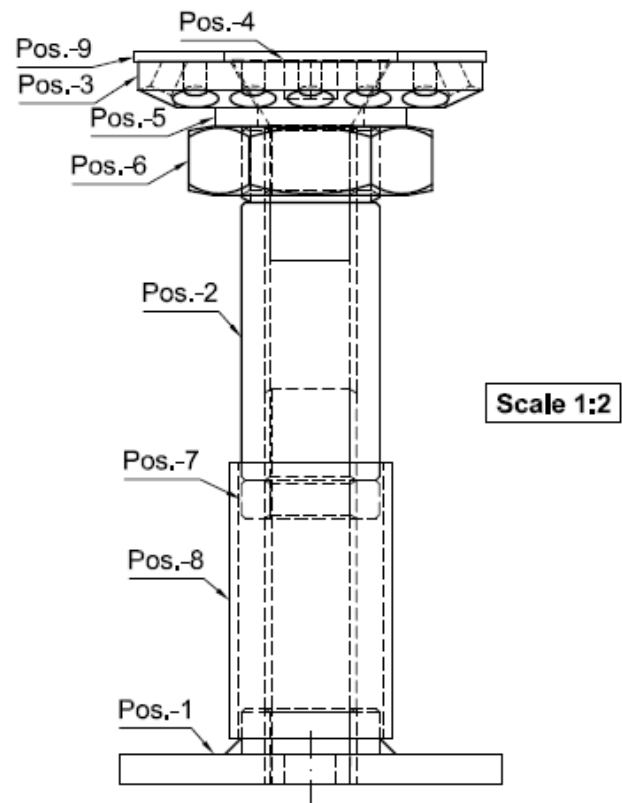
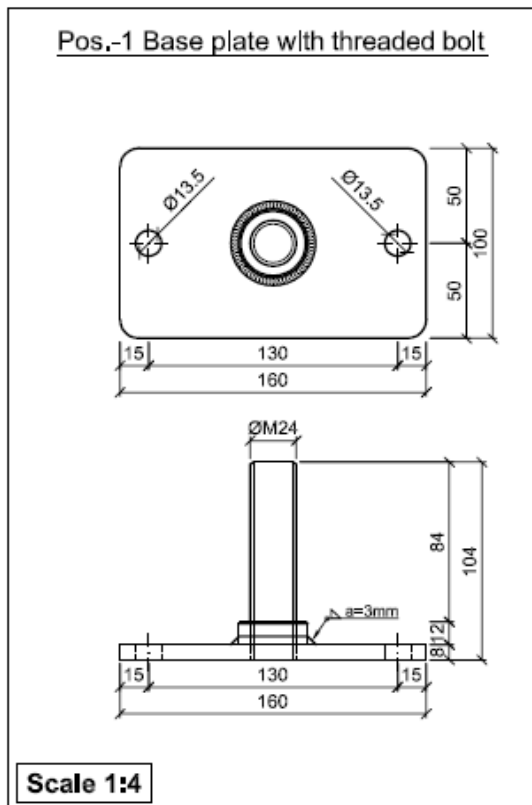


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PediX Post Base

Adjustable post base for embedding in concrete
PediX HV 190+100
STF HV 190+100

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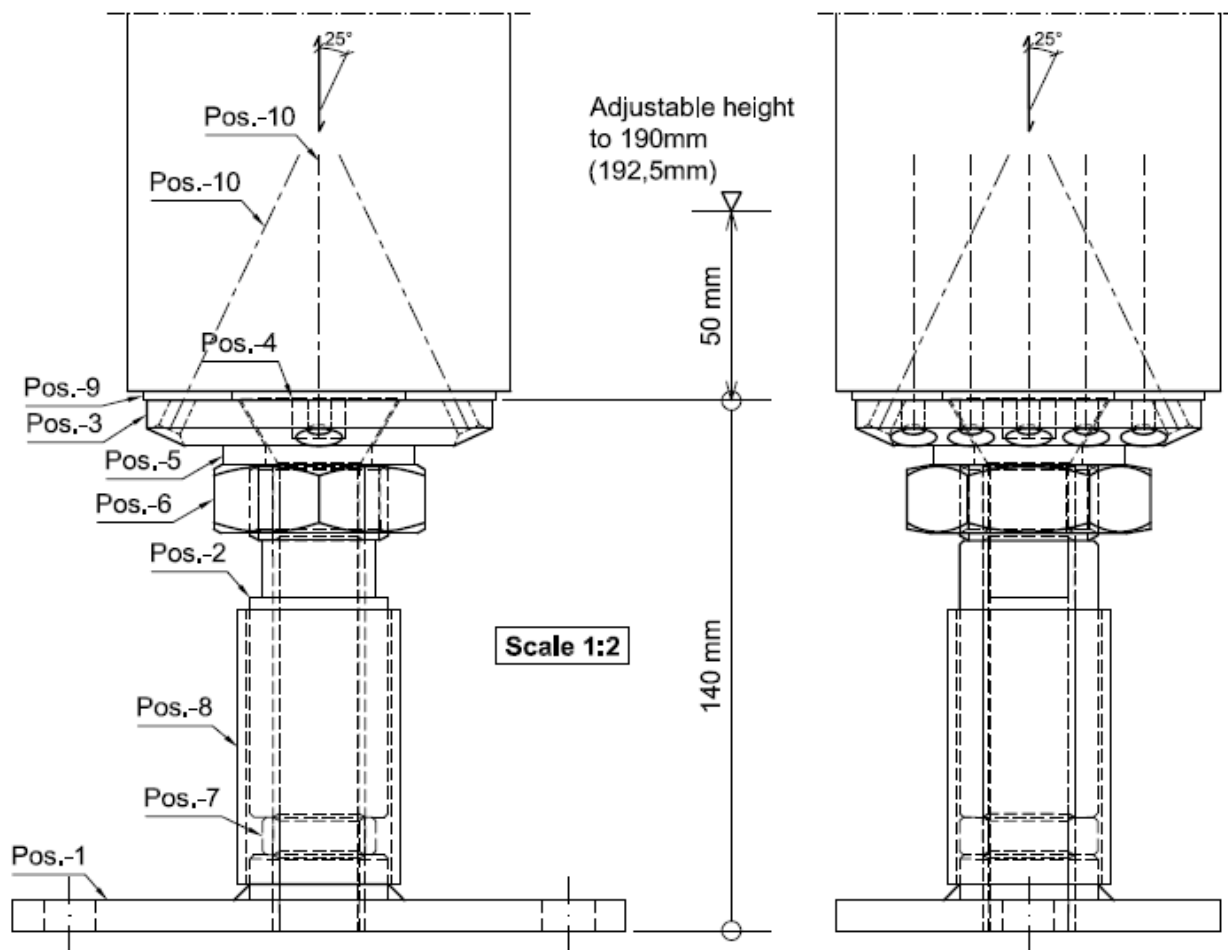
Post base PediX/STF HV+ 140+50, hot-dip galvanized

Pos.-No.	Designation
1	Base plate 160x100x8 mm, Threaded ring M24 Ø36x12 mm, S235; Threaded bolt M24, H= 84 mm, 8.8;
2	Threaded sleeve Ø36 mm, Inner thread M24, H= 93 mm; Wrench size 30, S235;
3	Head plate 90x90x12 mm, S235;
4	Countersunk head screw M24x35, S235;
5	Steel plate 50/28/5 mm, S235;
6	Lock nut M36, 4.6;
7	Threaded sleeve lock nut M24, H= 10 mm; Wrench size 30, S235;
8	Protection sleeve Ø42,4 mm, T= 2,3 mm, H= 72,5 mm, S235;
9	EPDM- seal
10	PediX- fully threaded screw Ø5x80 mm Carbon Steel-Special coated/ Stainless Steel A2-Special coated

PediX Post Base

Adjustable post base for embedding in concrete
PediX HV+ 140+50
STF HV+ 140+50

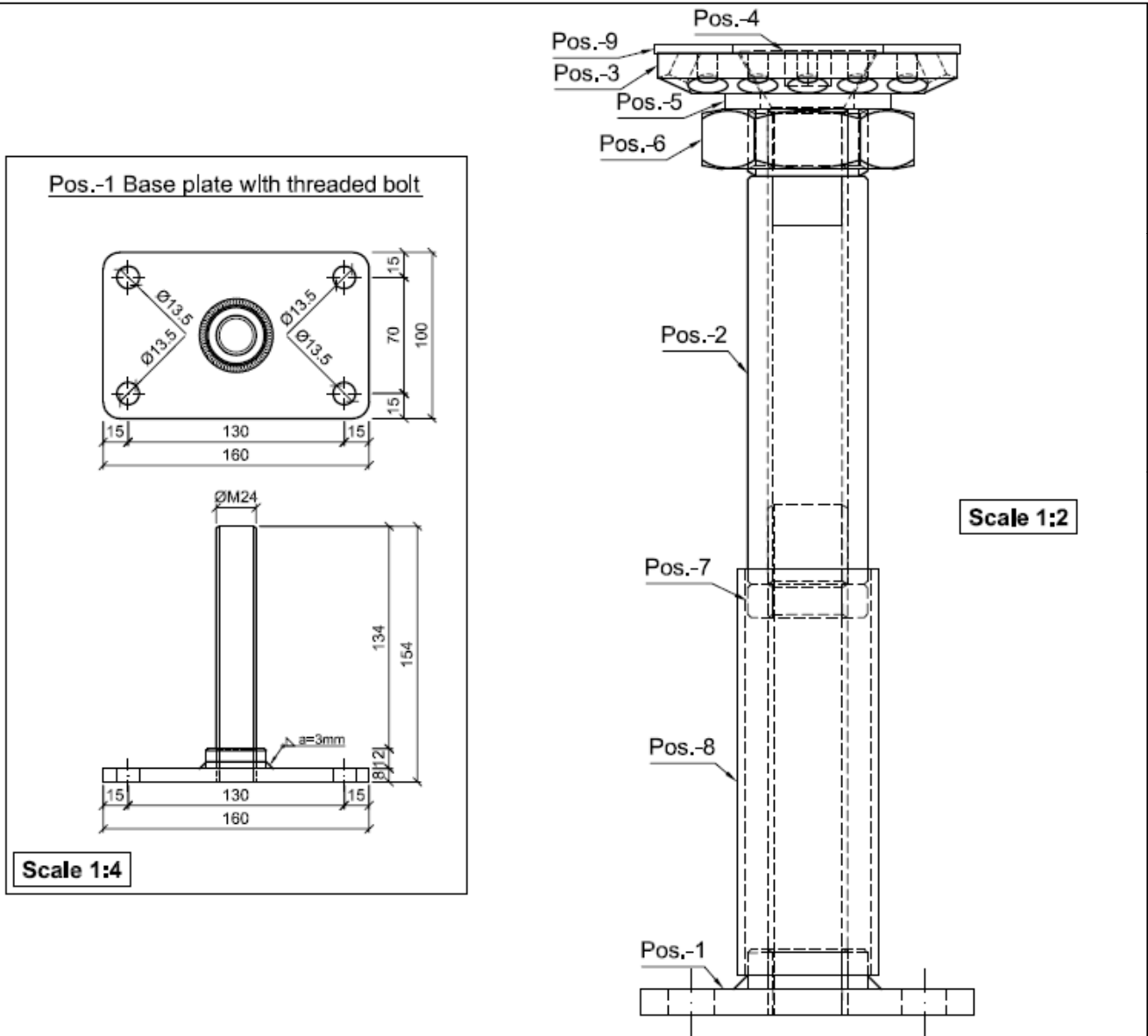
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PediX Post Base

Adjustable post base for embedding in concrete
PediX HV+ 140+50
STF HV+ 140+50

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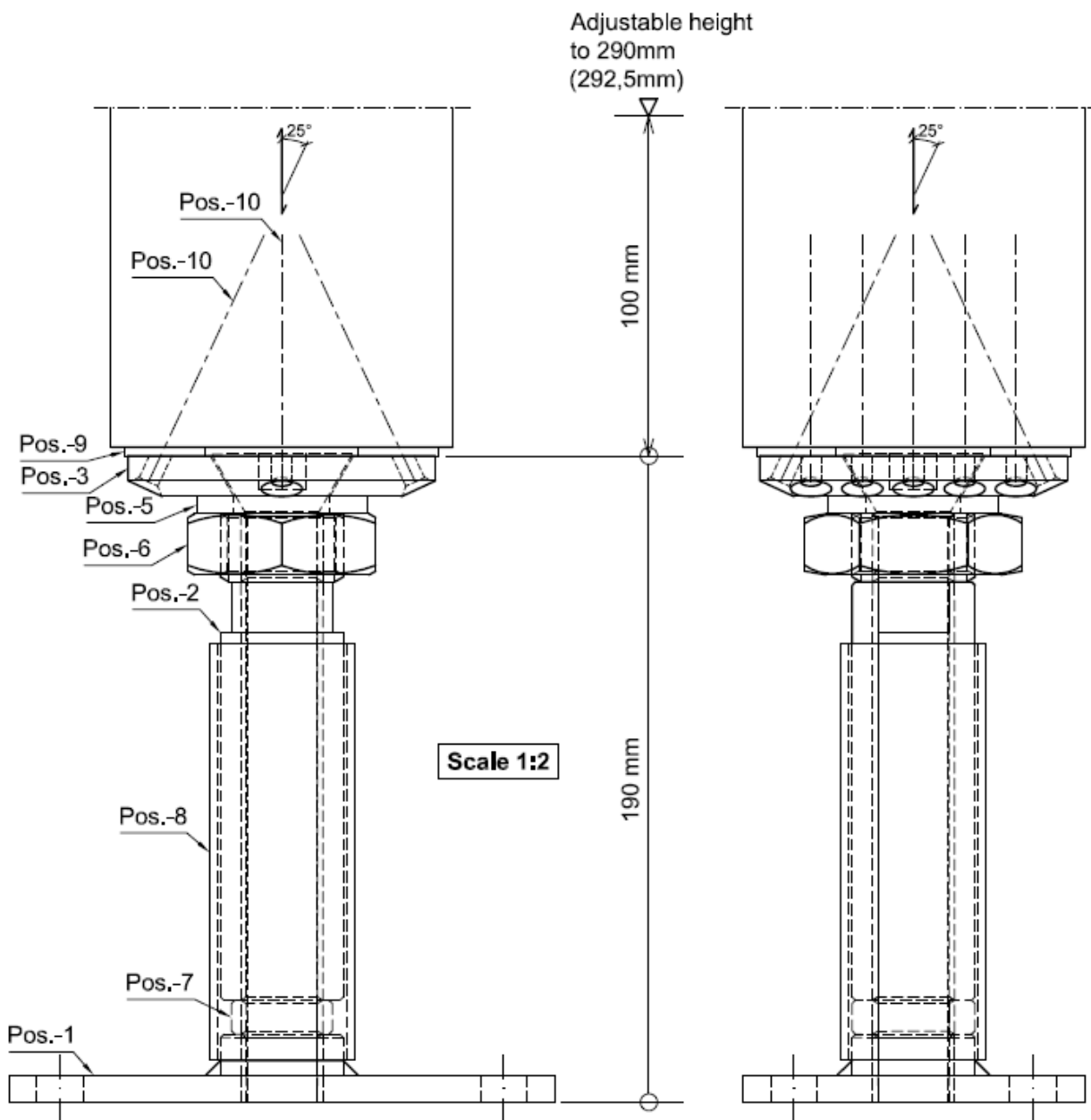
Post base PediX/STF HV+ 190+100, hot-dip galvanized

Pos.-No.	Designation
1	Base plate 160x100x8 mm, Threaded ring M24 Ø36x12 mm, S235; Threaded bolt M24, H= 134 mm, 8.8;
2	Threaded sleeve Ø36 mm, Inner thread M24, H= 143 mm; Wrench size 30, S235;
3	Head plate 90x90x12 mm, S235;
4	Countersunk head screw M24x35, S235;
5	Steel plate 50/28/5 mm, S235;
6	Lock nut M36, 4.6;
7	Threaded sleeve lock nut M24, H= 10 mm; Wrench size 30, S235;
8	Protection sleeve Ø42,4 mm, T= 2,3 mm, H= 122,5 mm, S235;
9	EPDM- seal
10	PediX- fully threaded screw Ø5x80 mm Carbon Steel-Special coated/ Stainless Steel A2-Special coated

PediX Post Base

Adjustable post base for embedding in concrete
PediX HV+ 190+100
STF HV+ 190+100

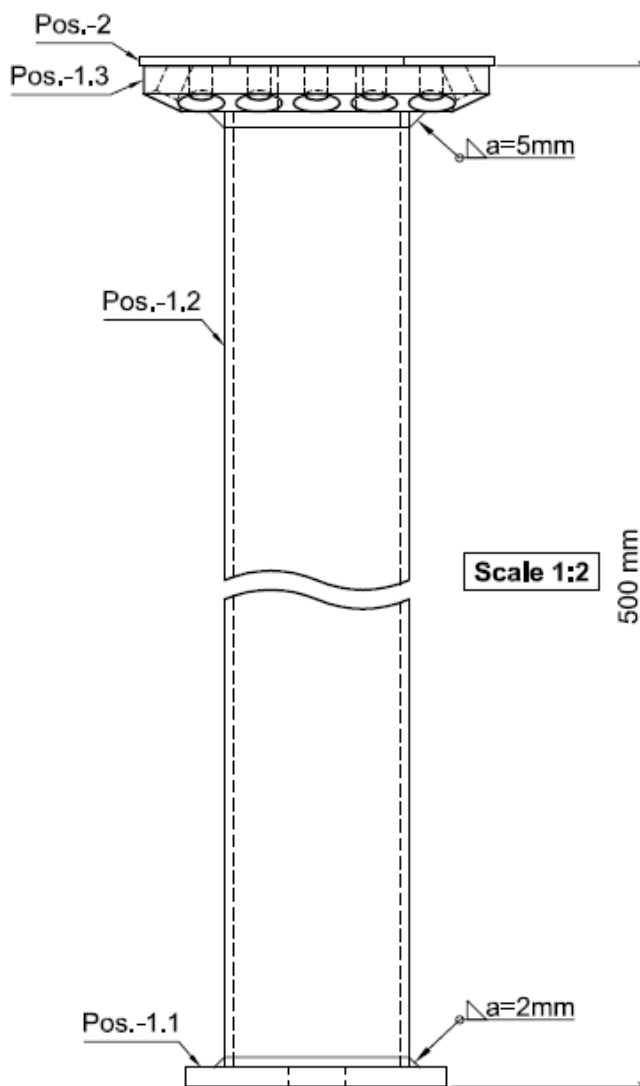
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PediX Post Base

Adjustable post base for embedding in concrete
PediX HV+ 190+100
STF HV+ 190+100

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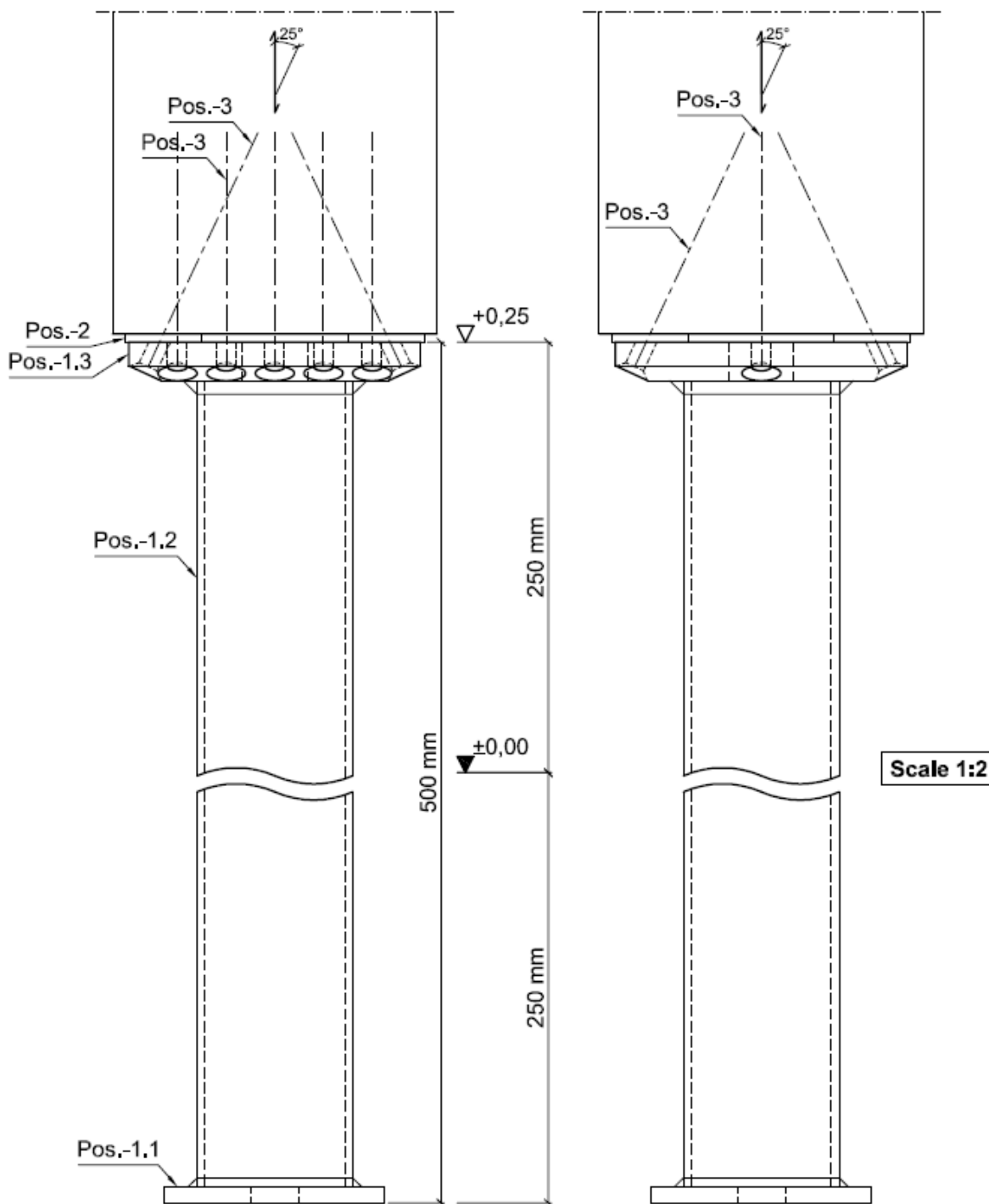
Post base Pedix/STF HV B500, hot-dip galvanized

Pos.-No.	Designation
1.1	Steel plate Ø68x15x5 mm, S235;
1.2	Steel tube Ø48 mm, T= 2,5 mm, H= 483 mm, S235;
1.3	Head plate 90x90x12 mm, S235;
2	EPDM seal
3	Pedix- fully threaded screw Ø5x80 mm Carbon Steel-Special coated/ Stainless Steel A2-Special coated

Pedix Post Base

Post base for embedding in concrete
Pedix HV B500
STF HV HV B500

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PediX Post Base

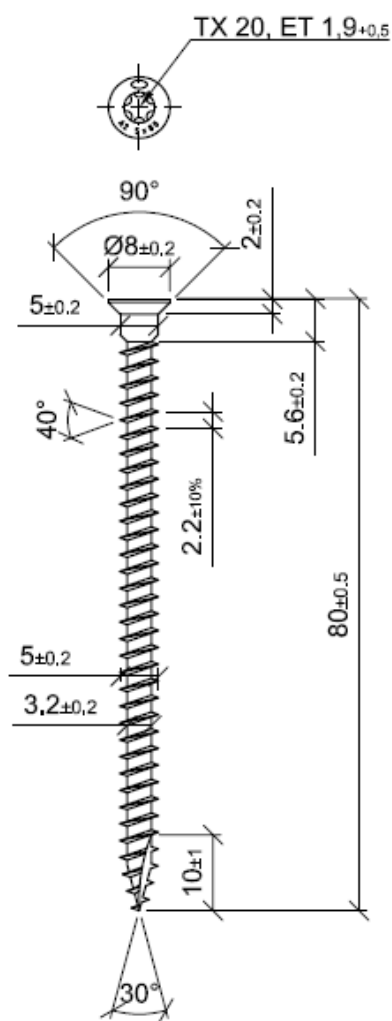
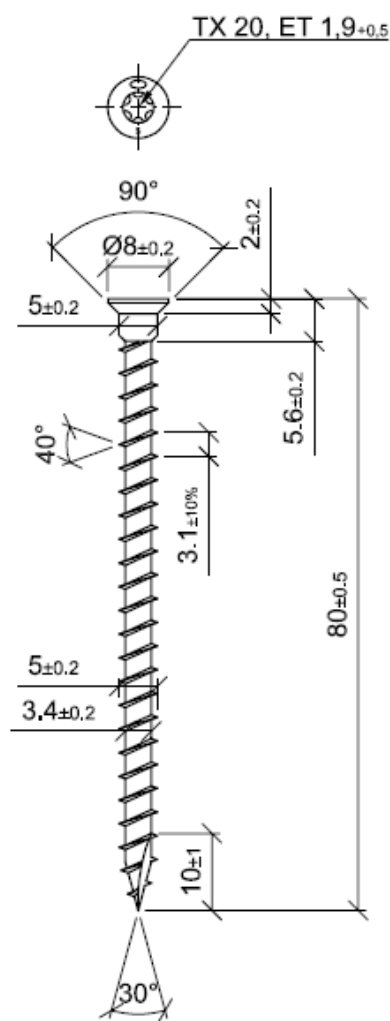
Post base for embedding in concrete
PediX HV B500
STF HV B500

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PediX- VGS Ø5x80mm

PediX- VGS Ø5x80mm-A2

Carbon steel: SAE 1018, SAE 1022, SAE 10B21; Special coated Austenitic stainless steel: 1.4301 (SAE 304); Special coated



Scale 1:1

PediX Post Base

Fasteners for Pedix/STF post base
PediX VGS Ø5x80 mm
PediX VGS Ø5x80 mm-A2

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Annex – Load-bearing capacity post base

The load bearing capacities for tension, compression and lateral force shall be calculated according to the national regulations with the partial safety factors according to equations B1, B2 and B3.

For Germany, the following partial safety factors shall apply:

- Timber $\gamma_M = 1.30$
- Steel $\gamma_{M0} = 1.00, \gamma_{M1} = 1.10, \gamma_{M2} = 1.25$
- Concrete $\gamma_C = 1.50$

Tensile stress
$$N_{t,d} = \min \left\{ \frac{k_{mod} \times N_{t,k, Timber}}{\gamma_M}, \frac{N_{t,k, Steel}}{\gamma_{M0}}, \frac{N_{t,k, Steel}}{\gamma_{M1}}, \frac{N_{t,k, Steel}}{\gamma_{M2}}, \frac{N_{t,k, Concrete}}{\gamma_C} \right\} \quad (B1)$$

Compressive stress
$$N_{c,d} = \min \left\{ \frac{k_{mod} \times N_{c,k, Timber}}{\gamma_M}, \frac{N_{c,k, Steel}}{\gamma_{M0}}, \frac{N_{c,k, Steel}}{\gamma_{M1}}, \frac{N_{c,k, Steel}}{\gamma_{M2}}, \frac{N_{c,k, Concrete}}{\gamma_C} \right\} \quad (B2)$$

Lateral force stress
$$V_d = \min \left\{ \frac{k_{mod} \times V_{k, Holz}}{\gamma_M}, \frac{V_{k, Stahl}}{\gamma_{M0}}, \frac{V_{k, Stahl}}{\gamma_{M1}}, \frac{V_{k, Stahl}}{\gamma_{M2}} \right\} \quad (B3)$$

With simultaneous loading by a vertical load N_d and a horizontal load V_d for the components threaded bolt, steel tube, head and foot plate and the connection shall be proven steel-timber, that

$$\frac{N_d}{N_{Rd}} + \frac{V_d}{V_{Rd}} \leq 1 \quad (B4)$$

For the connection of the post bases in the concrete when it is aligned along the foot plate is demonstrated to the horizontal loads that the load bearing capacity of an anchor bolt on tensile force when using the post base PediX/STF HV 140+50 und PediX/STF HV+ 140+50

at least
$$F_{B,Rd} = 0,76 \times V_d + 0,50 \times N_d \quad (B5)$$

and by using the post base PediX/STF HV 190+100 and PediX/STF HV+ 190+100

at least
$$F_{B,Rd} = 0,58 \times V_d + 0,25 \times N_d \quad (B6)$$

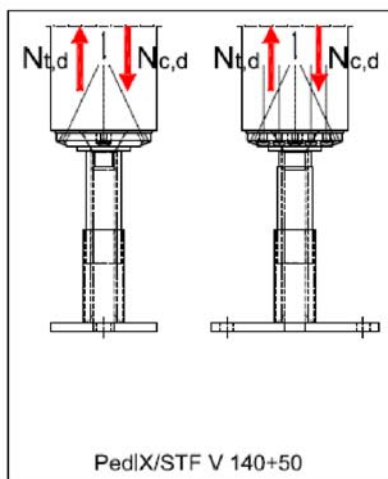


Table B-1: Characteristic values and corresponding partial safety factors (γ) for post base PediX/STF V 140+50

Post base	Tension $N_{t,k}$ [kN]	Compression $N_{c,k}$ [kN]
PediX V 140+50	9.2 (γ_{M0})	48 (γ_{M0})

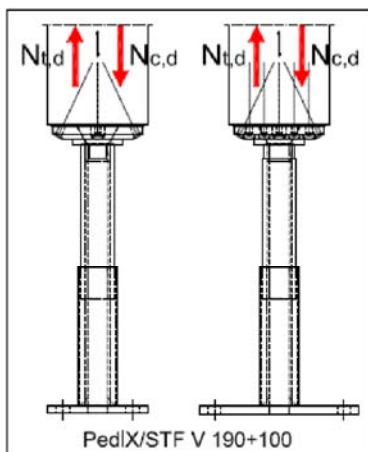


Table B-2: Characteristic values and corresponding partial safety factors (γ) for post base PedIX/STF V 190+100

Post base	Tension $N_{t,k}$ [kN]	Compression $N_{c,k}$ [kN]
PedIX V 190+100	9.2 (γ_{M0})	34 (γ_{M1})

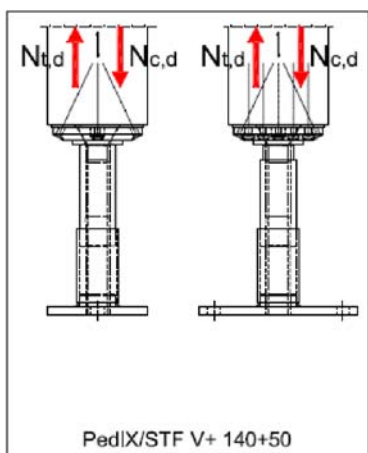


Table B-3: Characteristic values and corresponding partial safety factors (γ) for post base PedIX/STF V+ 140+50

Post base	Tension $N_{t,k}$ [kN]	Compression $N_{c,k}$ [kN]
PedIX V+ 140+50	9.2 (γ_{M0})	48 (γ_{M0})

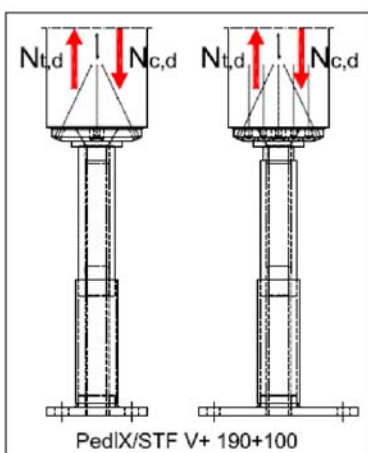


Table B-4: Characteristic values and corresponding partial safety factors (γ) for post base PedIX/STF V+ 190+100

Post base	Tension $N_{t,k}$ [kN]	Compression $N_{c,k}$ [kN]
PedIX V+ 190+100	9.2 (γ_{M0})	39 (γ_{M1})

PedIX Post Base

Characteristic values

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Table B-5: Characteristic values and corresponding partial safety factors (γ) for post base PediX/STF HV 140+50

Post base	Component / Connection	Tension $N_{t,k}$ [kN]	Compression $N_{c,k}$ [kN]	Lateral Force V_k [kN]
PediX HV 140+50	Connection steel-timber	46 (γ_M)	141 (γ_M)	5.7 (γ_M)
	Head plate	23 (γ_{M0})	48 (γ_{M0})	8.5 (γ_{M0})
	Threaded bolt	97 (γ_{M0})	57 (γ_{M1})	3.2 (γ_{M2})
	Base plate	9.2 (γ_{M0})	-	6.3 (γ_{M0})

The interaction condition according to equation B4 shall be observed.

Illustration B-1: Load-bearing capacities of the post base PediX/STF-HV 140+50 in interaction with tension and lateral forces with the adopted partial safety factors $\gamma_M=1.3$, $\gamma_{M0}=1.0$, $\gamma_{M1}=1.1$ and $\gamma_{M2}=1.25$.

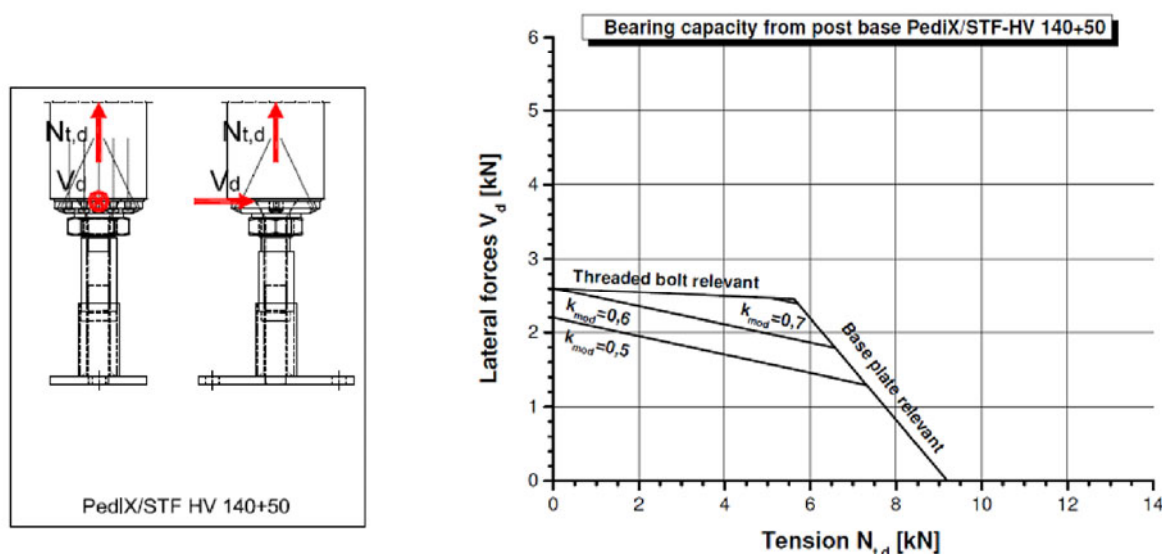
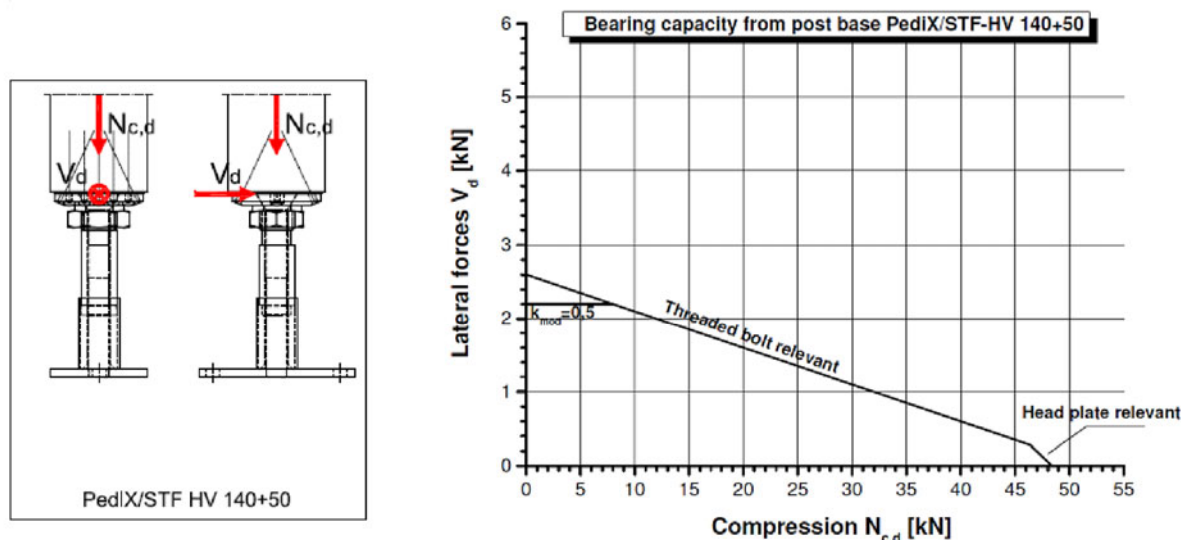


Illustration B-2: Bearing capacity from post base PediX/STF-HV 140+50 in interaction with compression and lateral forces with the adopted partial safety factors $\gamma_M=1.3$, $\gamma_{M0}=1.0$, $\gamma_{M1}=1.1$ and $\gamma_{M2}=1.25$.



PediX Post Base

Characteristic values

Annex B
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Table B-6: Characteristic values and corresponding partial safety factors (γ) for post base PediX/STF HV 190+100

Post base	Component / Connection	Tension	Compression	Lateral Force
		$N_{t,k}$ [kN]	$N_{c,k}$ [kN]	V_k [kN]
PediX HV 190+100	Connection steel-timber	46 (γ_M)	141 (γ_M)	4.8 (γ_M)
	Head plate	23 (γ_{M0})	48 (γ_{M0})	5.6 (γ_{M0})
	Threaded bolt	97 (γ_{M0})	34 (γ_{M1})	2.1 (γ_{M2})
	Base plate	9.2 (γ_{M0})	-	4.1 (γ_{M0})

The interaction condition according to equation B4 shall be observed.

Illustration B-3 Load-bearing capacities of the post base PediX/STF HV 190+100 in interaction with tension and lateral forces with the adopted partial safety factors $\gamma_M = 1.3$, $\gamma_{M0} = 1.0$, $\gamma_{M1} = 1.1$ and $\gamma_{M2} = 1.25$.

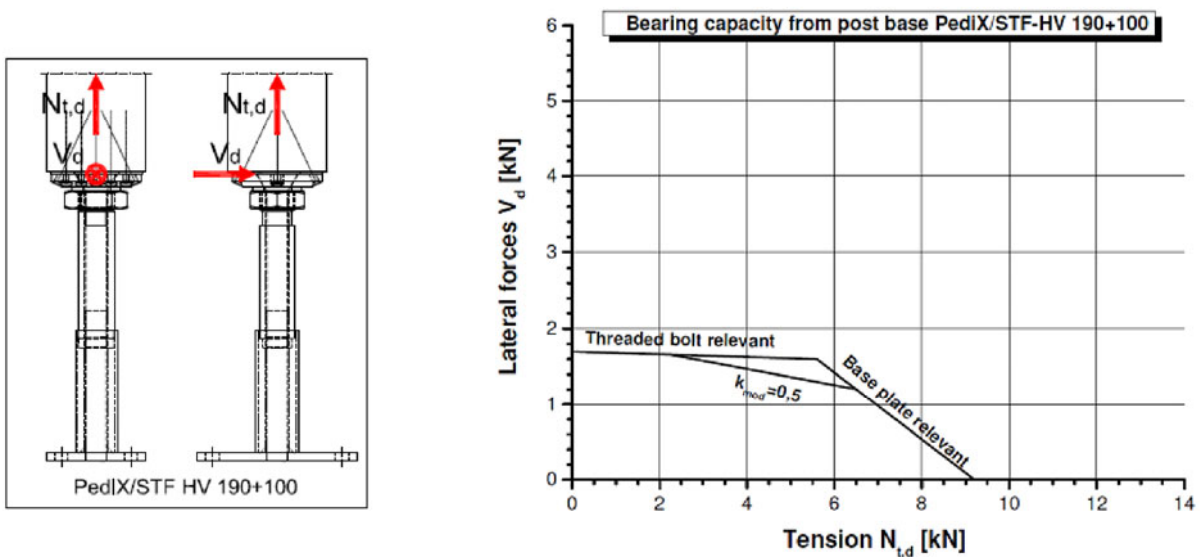
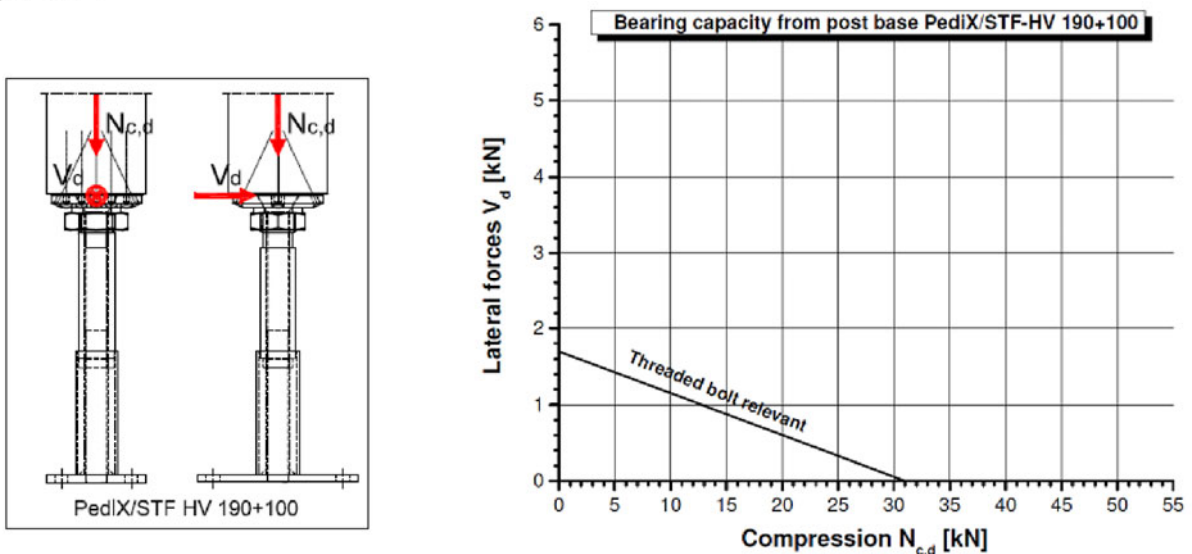


Illustration B-4: Load-bearing capacities of the post base PediX/STF HV 190+100 in interaction with compression and lateral forces with the adopted partial safety factors $\gamma_M = 1.3$, $\gamma_{M0} = 1.0$, $\gamma_{M1} = 1.1$ and $\gamma_{M2} = 1.25$.



PediX Post Base

Characteristic values

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Table B-7: Characteristic values and corresponding partial safety factors (γ) for post base PediX/STF HV+ 140+50

Post base	Component / Connection	Tension $N_{t,k}$ [kN]	Compression $N_{c,k}$ [kN]	Lateral Force V_k [kN]
PediX HV+ 140+50	Connection steel-timber	46 (γ_M)	141 (γ_M)	5.7 (γ_M)
	Head plate	23 (γ_{M0})	48 (γ_{M0})	8.5 (γ_{M0})
	Threaded bolt	207 (γ_{M0})	77 (γ_{M1})	6.9 (γ_{M2})
	Base plate	9.2 (γ_{M0})	-	6.0 (γ_{M0})

The interaction condition according to equation B4 shall be observed.

Illustration B-5: Load-bearing capacities of the post base PediX/STF HV+ 140+50 in interaction with tension and lateral forces with the adopted partial safety factors $\gamma_M=1.3$, $\gamma_{M0}=1.0$, $\gamma_{M1}=1.1$ and $\gamma_{M2}=1.25$.

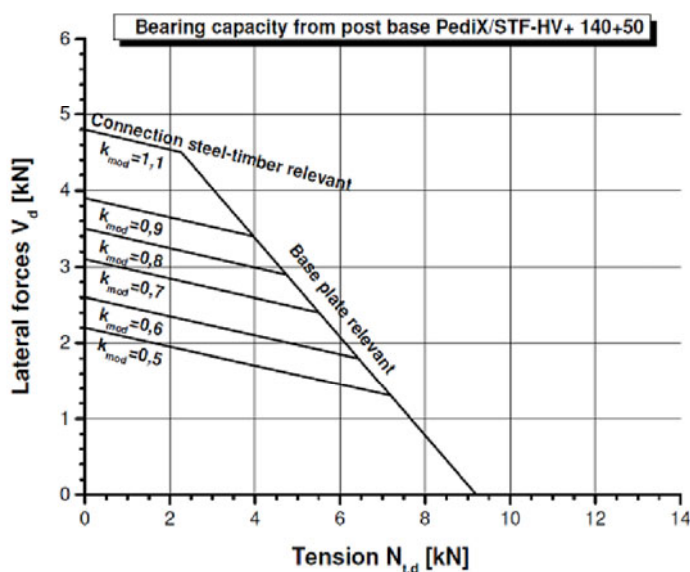
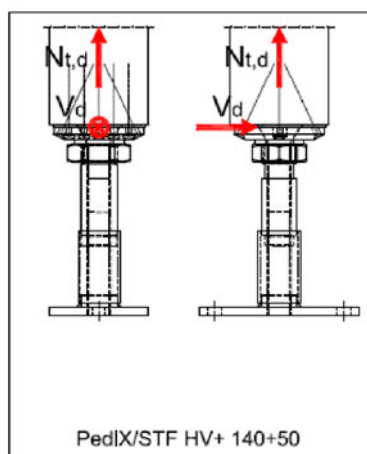
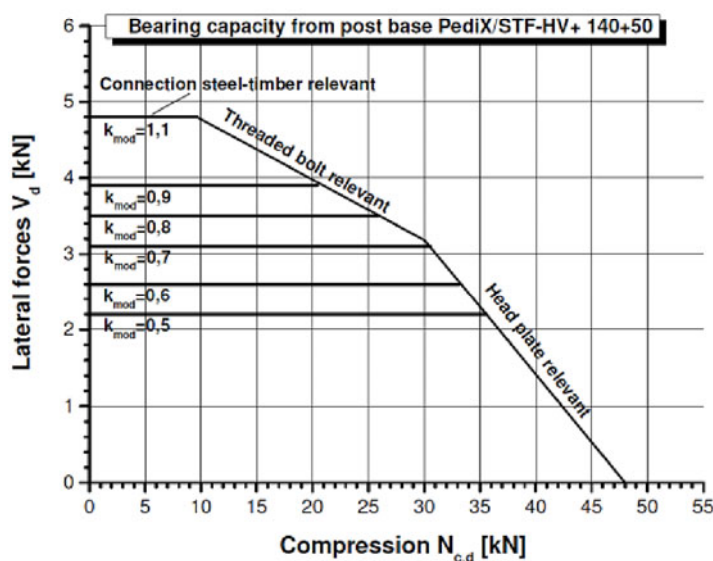
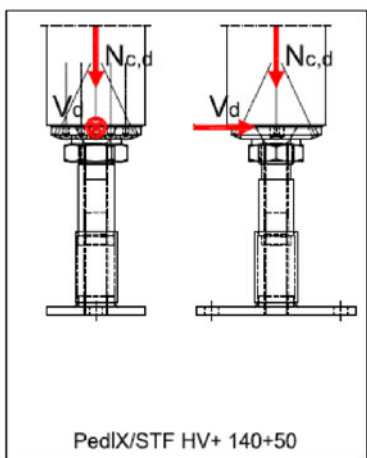


Illustration B-6: Bearing capacity from post base PediX/STF HV+ 140+50 in interaction with compression and lateral forces with $\gamma_{M2}=1.25$.



PediX Post Base

Characteristic values

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**Table B-8: Characteristic values and corresponding partial safety factors (γ) for post base
PediX/STF HV+ 190+100**

Post base	Component / Connection	Tension $N_{t,k}$ [kN]	Compression $N_{c,k}$ [kN]	Lateral Force V_k [kN]
PediX HV+ 190+100	Connection steel-timber	46 (γ_M)	141 (γ_M)	4.8 (γ_M)
	Head plate	23 (γ_{M0})	48 (γ_{M0})	5.6 (γ_{M0})
	Threaded bolt	207 (γ_{M0})	39 (γ_{M1})	4.5 (γ_{M2})
	Base plate	9.2 (γ_{M0})	-	3.9 (γ_{M0})

The interaction condition according to equation B4 shall be observed.

Illustration B-7: Load-bearing capacities of the post base PediX/STF HV+ 190+100 in interaction with tension and lateral forces with the adopted partial safety factors $\gamma_M=1.3$, $\gamma_{M0}=1.0$, $\gamma_{M1}=1.1$ and $\gamma_{M2}=1.25$.

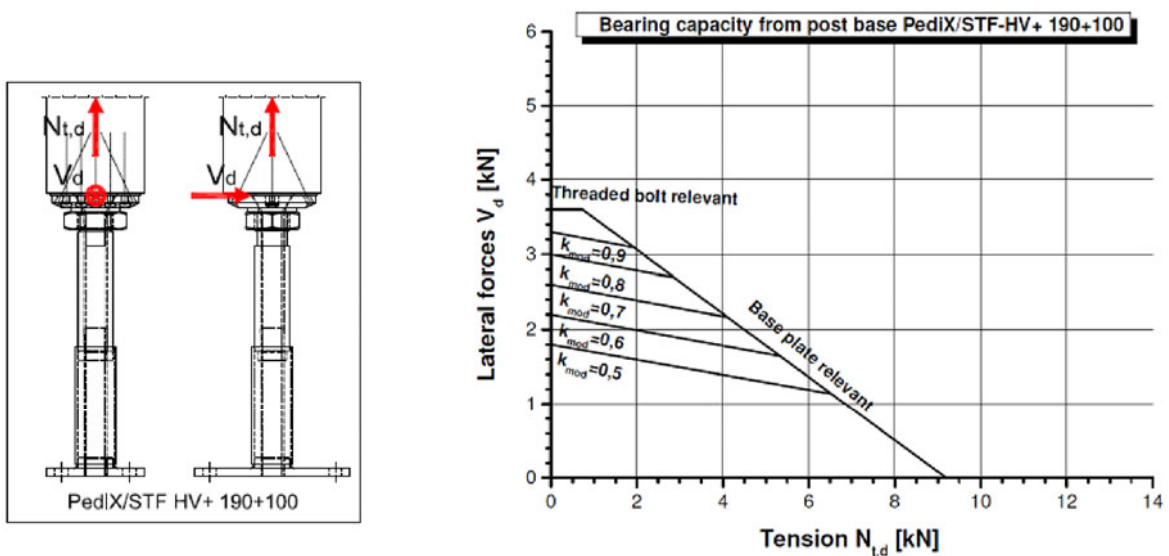
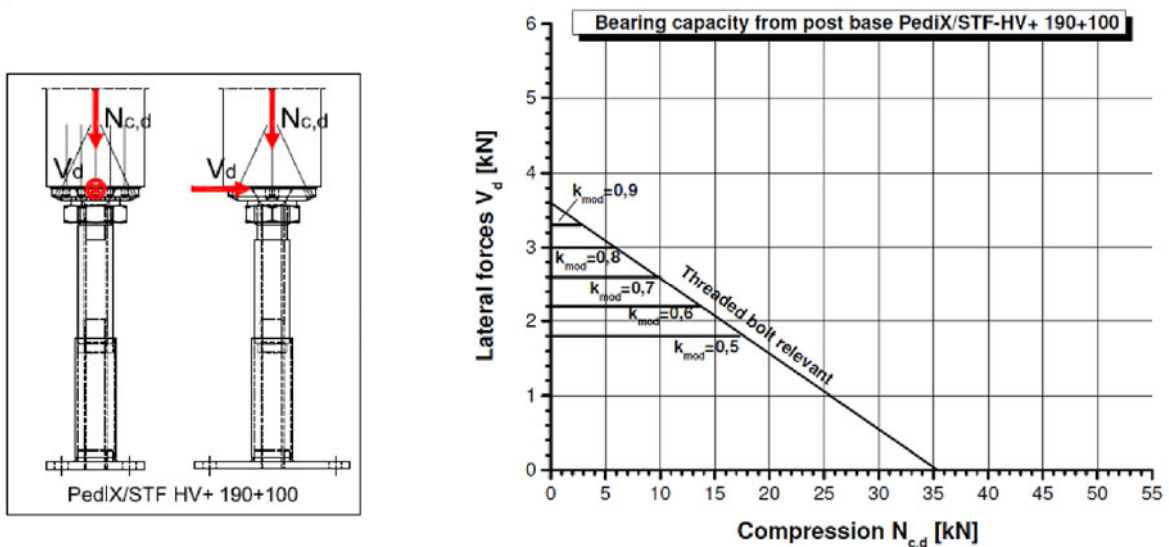


Illustration B-8: Load-bearing capacities of the post base PediX/STF HV+ 190+100 in interaction with compression and lateral forces with the adopted partial safety factors $\gamma_M=1.3$, $\gamma_{M0}=1.0$, $\gamma_{M1}=1.1$ and $\gamma_{M2}=1.25$.



PediX Post Base

Characteristic values

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Table B-9: Characteristic values and corresponding partial safety factors (γ) for post base PediX/STF HV B500

Post base	Component / Connection	Tension $N_{t,k}$ [kN]	Compression $N_{c,k}$ [kN]	Lateral Force V_k [kN]
PediX HV B500	Connection steel-timber	46 (γ_M)	170 (γ_M)	8.4 (γ_M)
	Steel tube	84 (γ_{M0})	81 (γ_{M1})	4.6 (γ_{M0})
	Concrete	36 (γ_C)	72 (γ_C)	-

The interaction condition according to equation B4 shall be observed.

Illustration B-9: Load-bearing capacities of the post base PediX/STF HV B500 in interaction with tension and lateral forces with the adopted partial safety factors $\gamma_M = 1.3$, $\gamma_{M0} = 1.0$, $\gamma_{M1} = 1.1$ and $\gamma_C = 1.50$.

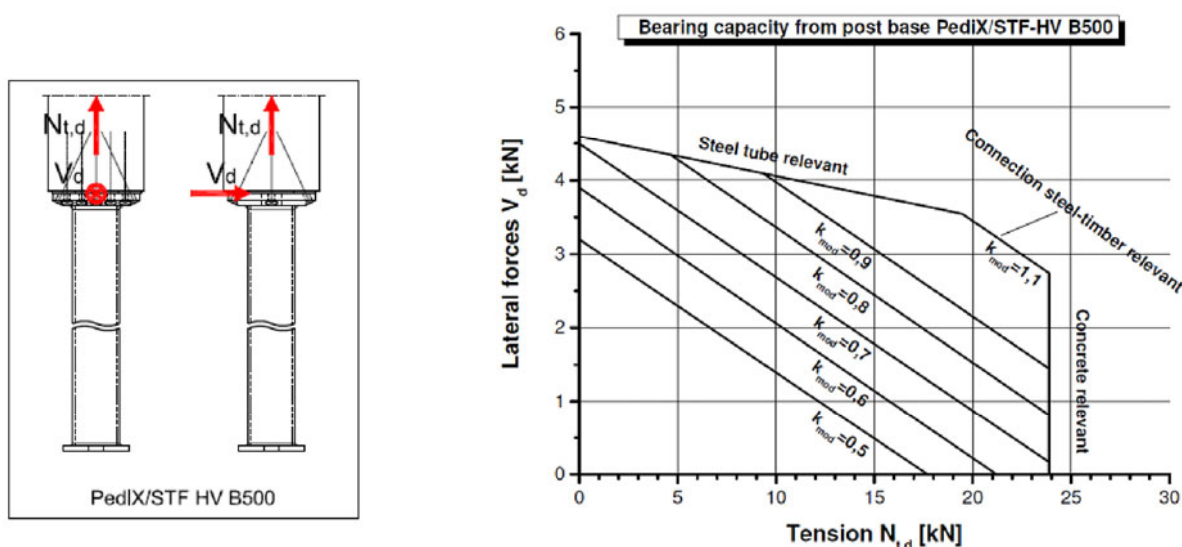
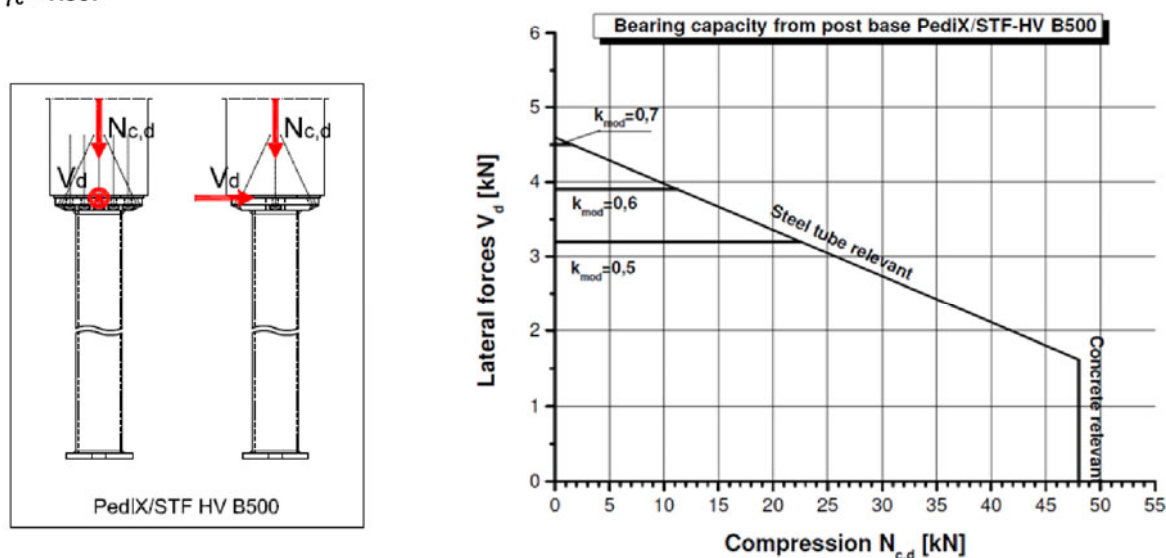


Illustration B-10 Load-bearing capacities of the post base PediX/STF HV B500 in interaction with compression and lateral forces with the adopted partial safety factors $\gamma_M = 1.3$, $\gamma_{M0} = 1.0$, $\gamma_{M1} = 1.1$ and $\gamma_C = 1.50$.



PediX Post Base

Characteristic values

Annex B
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