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Authorised and notified according  
to Article 29 of the Regulation (EU)  
No 305/2011 of the European  
Parliament and of the Council of 9  
March 2011

MEMBER OF EOTA



## European Technical Assessment ETA-10/0422 of 2024/06/11

### I General Part

**Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: ETA-Danmark A/S**

**Trade name of the  
construction product:**

Rotho Blaas GmbH/srl post bases type F10, F20, F30, F40, F50, F60, F70, FD10, FD20, FD30, FD40, FD50, FD60, M10, M20, M30, M50, M60, M70, P10, P20, R10, R20, R30, R40, R50, R60, R70, R80, R90, S10, S20, S30, S40, S50, FI10, FI50, RI40, MI20 and XS10

**Product family to which the  
above construction product  
belongs:**

Three-dimensional nailing plate (Post bases for the support of timber columns and posts as load-bearing elements)

**Manufacturer:**

ROTHO BLAAS SRL  
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IT-38040 Cortaccia (BZ)  
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**Manufacturing plant:**

ROTHO BLAAS SRL  
Manufacturing Plants: 1P, 2P

**This European Technical  
Assessment contains:**

98 pages including 2 annexes which form an integral part of the document

**This European Technical  
Assessment is issued in  
accordance with Regulation  
(EU) No 305/2011, on the  
basis of:**

EAD 130186-00-0603 for Three-dimensional nailing plates

**This version replaces:**

The ETA with the same number issued on 2019-11-16

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## II SPECIFIC PART OF THE EUROPEAN TECHNICAL ASSESSMENT

### 1 Technical description of product

The Rotho Blaas post bases are made of 2.0 mm to 16.0 mm thick steel plates in combination with steel tubes or threaded rods. The post bases are produced of steel grade S235JR according to EN 10025-2 with a minimum characteristic yield strength of  $R_{eH} = 235$  N/mm<sup>2</sup> and a minimum characteristic tensile strength of  $R_m = 360$  N/mm<sup>2</sup> or of steel grade S355JR according to EN 10025-2 with a minimum characteristic yield strength of  $R_{eH} = 355$  N/mm<sup>2</sup> and a minimum characteristic tensile strength of  $R_m = 510$  N/mm<sup>2</sup> or of stainless steel according to EN 10088-3 with at least minimum characteristic yield strength of  $R_{p0.2} = 235$  N/mm<sup>2</sup> and minimum characteristic tensile strength of  $R_m = 500$  N/mm<sup>2</sup>. The threaded rods correspond to property class 4.8 according to EN ISO 898-1.

For the connections with metal fasteners bolts  $\varnothing 10$  mm and  $\varnothing 12$  mm and dowels  $\varnothing 12$  mm according to EN 14592 and self-tapping dowels SBD  $\varnothing 7.5$  mm according to EN 14592, screws HBS Plate  $\varnothing 6$  mm and  $\varnothing 8$  mm and fully threaded screws  $\varnothing 7.0$  mm according to ETA-11/0030 are used. The screws shall be driven without pre-drilling or after pre-drilling according to the ETA-11/0030. The outer diameter for washers of bolts shall be not less than  $3 \cdot d_B$ , where  $d_B$  is the diameter of the bolts. The thickness shall be not less than  $0,3 \cdot d_B$ .

For anchorage in the foundation reinforcement bars or steel profiles are used, as well as metal anchors. Dimensions are shown in Annex A and B.

### 2 Specification of the intended use in accordance with the applicable European Assessment document (hereinafter EAD)

The intended use of the post bases is the support of timber columns and posts as load-bearing elements, where requirements for mechanical resistance and stability and safety in use in the sense of the basic requirements for construction works 1 and 4 of Regulation (EU) 305/2011 shall be fulfilled.

The static and kinematical behaviour of the timber members or the supports shall be as described in Annex B.

The timber posts may be of solid timber of strength class C20 or better according to EN 338 or of glued laminated timber according to EN 14080. Minimum dimensions for the post have to be considered (Annex A). The cross-section of the timber column shall be positioned centrically and with the end grain plane on the base plate. Post bases type M20, M50 and F70 have a clearance between the end grain of the timber post and the base plate or ground plate, respectively, due to the geometry of the post bases. In order to avoid fungal attack due to permanent high moisture content, the end grain of timber posts with contact or only a very small distance to the foundation (post bases type F10, F20, F30, F40, F70, FD30, FD50, FD60, M30, M70 and XS10) should be protected from humidity by other means.

The maximum distance between the foundation and the base plates' lower edge of the post base shall in general be 100 mm. The maximum distance between the foundation and the base plates' lower edge plate of the post base is given in Annex A, table A.1 (distance a). For post bases type P10, P20, R20, R30, R40; R50, R60; R80, R90, S10, S20, S30, S50 and RI40 larger distances are allowed.

Annex B states the load-carrying capacities of the post bases for solid timber of strength class C24 according to EN 338. Thus, when solid timber of strength class C20 is used, the characteristic load-carrying capacities of timber should be reduced by a factor of 0,9.

For timber or wood base material with higher characteristic density than 350 kg/m<sup>3</sup> the load-carrying capacities shall taken as that for 350 kg/m<sup>3</sup> unless detailed analyses are conducted. The design of the connections shall be in accordance with Eurocode 3 and Eurocode 5 or a similar national code. The anchorage of the post base in the foundation (except for type M70) and imperfections exceeding the assumptions in Eurocode 5, 5.4.4 are not part of this ETA.

The post bases are for use in timber structures subject to service classes 1, 2 and 3 of Eurocode 5 and for connections subject to static or quasi-static loading. In service class 1 and 2 the corrosion protection is given according to EN1995-1-1, or by equivalent measures.

In service class 3 the corrosion protection is given according to EN1995-1-1 or by stainless steel or zinc coating with minimum thickness of 55  $\mu$ m according to EN ISO 1461, or by equivalent measures. Alternatively, a Zn-Al flake coating with minimum thickness 8  $\mu$ m (DAC8 also called Dac Coat) can be used as corrosion protection in service class 3.

The metal fasteners must also be of stainless steel or have a coating for the intended use in service class 3 of EN 1995-1-1.

The assumed intended working life of the post bases for the intended use is 50 years, provided that they are subject to appropriate use and maintenance.

The information on the working life should not be regarded as a guarantee provided by the manufacturer or ETA Danmark. An “assumed intended working life” means that it is expected that, when this working life has elapsed, the real working life may be, in normal use conditions, considerably longer without major degradation affecting the basic requirements for construction works.

3 Performance of the product and references to the methods used for its assessment

| Characteristic                                                       | Assessment of characteristic                                                                                                                                                                                                               |
|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>3.1 Mechanical resistance and stability (BWR 1)*)</b>             |                                                                                                                                                                                                                                            |
| Joint Strength - Characteristic load-carrying capacity               | See Annex B                                                                                                                                                                                                                                |
| Joint Stiffness                                                      | See Annex B                                                                                                                                                                                                                                |
| Joint ductility                                                      | No performance assessed                                                                                                                                                                                                                    |
| Resistance to seismic actions                                        | No performance assessed                                                                                                                                                                                                                    |
| Resistance to corrosion and deterioration                            | See section 3.6                                                                                                                                                                                                                            |
| <b>3.2 Safety in case of fire (BWR 2)</b>                            |                                                                                                                                                                                                                                            |
| Reaction to fire                                                     | The post bases are made from steel classified as <b>Euroclass A1</b> in accordance with EN 13501-1 and Commission Delegated Regulation 2016/364                                                                                            |
| Resistance to fire                                                   | No performance assessed                                                                                                                                                                                                                    |
| <b>3.3 General aspects related to the performance of the product</b> |                                                                                                                                                                                                                                            |
|                                                                      | The post bases have been assessed as having satisfactory durability and serviceability when used in timber structures using the timber species described in Eurocode 5 and subject to the conditions defined by service classes 1, 2 and 3 |

\*) See additional information in section 3.4 – 3.7.

### 3.4 Methods of verification

The characteristic load-carrying capacities are based on the characteristic values of the connections with metal fasteners, the steel plates, the timber post and the foundation (only for type M70).

In the case of timber failure or failure of the metal fasteners, the design values shall be calculated according to EN 1995-1-1 by dividing the characteristic values of the load-carrying capacities by different partial factors for the strength properties, and in addition multiplied with the coefficient  $k_{mod}$ .

In the case of steel failure, the design value shall be calculated according to EN 1993-1-1 by reducing the characteristic values of the load-carrying capacity with different partial factors.

In the case of foundation failure, the design value shall be calculated according to EN 1997-1 by reducing the characteristic values of the load-carrying capacity with different partial factors.

The design value of the load-carrying capacity is the smaller value of all load-carrying capacities:

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

Therefore, for timber failure or failure of the metal fasteners the load duration class and the service class are included. The different partial factors for steel  $\gamma_{Mi,S}$ , timber  $\gamma_{M,T}$ , connections  $\gamma_{M,C}$  or foundation  $\gamma_{Ri,B}$  failure, respectively, have to be correctly taken into account.

### 3.5 Mechanical resistance and stability

See Annex B for the characteristic load-carrying capacity in the different directions  $F_1$  to  $F_5$  and  $M_2$  to  $M_5$  for solid timber of strength class C24 according to EN 338. Solid timber of strength class C20 may be included by a reducing factor of 0,9 for the characteristic load-carrying capacity of timber. Using the load-carrying capacities of the post bases, the specifications in Annex A must be fulfilled. The end grain of the timber post must in general be plane on the base plate of the post base. Post bases type M20, M50 and F70 have a clearance between the end grain of the timber post and the base plate or foot plate, respectively, due to the geometry of the post bases.

The characteristic capacities of the post bases are assessed by calculation according to Eurocode 3 and Eurocode 5. They should be used for designs in accordance with Eurocode 3 and Eurocode 5 or a similar national code. For post base type M70 the characteristic capacities of the foundation are determined by calculation according to Eurocode 7 on condition that following soil characteristics are provided: bulk density

$\gamma=18 \text{ kN/m}^3$ , angle of shearing resistance  $\varphi=30^\circ$ , cohesion  $c=5 \text{ kN/m}^2$ . The characteristic capacities of post bases type R10 and R30 were assessed by using test results of Holzforschung Austria.

For timber or wood base material with higher characteristic density than  $350 \text{ kg/m}^3$  the load-carrying capacities shall taken as that for  $350 \text{ kg/m}^3$  unless detailed analyses are conducted

No performance has been assessed in relation to ductility of a joint under cyclic testing. The contribution to the performance of structures in seismic zones, therefore, has not been assessed.

No performance has been assessed in relation to the joint's stiffness properties - to be used for the analysis of the serviceability limit state.

No performance has been determined in relation to the anchorage of the post bases in the foundation (except for type M70). It must be checked by the designer of the structure to ensure it is not less than the post base capacity and, if necessary, the post base capacity reduced accordingly. Therefore, the specifications for the lever arms  $e_{F2/F3}$  (for load case  $F_2 / F_3$ ) and  $e_{F4/F5}$  (for load case  $F_4 / F_5$ ) in annex A have to be considered. The lever arm is the distance between the top edge of the foundation and the load.

### 3.6 Aspects related to the performance of the product

#### 3.6.1 Corrosion protection in service class 1 and 2.

The corrosion protection is given according to EN1995-1-1, or by equivalent measures.

The requirement is fulfilled also by post bases with a corrosion protection FeZn12c or hot dip galvanized of approximately  $55 \mu\text{m}$  according to EN ISO 1461, or by equivalent measures. See section II.1 for characteristics of the steel.

#### 3.6.2. Corrosion protection in service class 3

In service class 3 the corrosion protection is given according to EN1995-1-1, or by equivalent measure.

The requirement is fulfilled by post bases with a corrosion protection stainless steel according to EN 10088-3 or hot-dip galvanized of approximately  $55 \mu\text{m}$  according to EN ISO 1461, or by equivalent measures. Alternatively, a Zn-Al flake coating with minimum thickness  $8 \mu\text{m}$  (DAC8 also called Dac Coat) can be used as corrosion protection in service class 3. See section II.1 for characteristics of the steel.

### 3.7 General aspects related to the fitness for use of the product

Rotho Blaas post bases are manufactured in accordance with the provisions of this European Technical Assessment using the manufacturing processes as identified in the inspection of the plant by the notified inspection body and laid down in the technical documentation.

- The timber post
  - shall be restrained against rotation, and supported at the lower and upper end
  - shall be strength class C20 according to EN 338 or better
  - shall be free from wane in the post base
  - must fulfil the requirements regarding minimum dimensions (see Annex A)
  - end grain must in general be plane on the base plate of the post base; post bases type M20, M50 and F70 have a clearance between the end grain of the timber post and the base plate or foot plate, respectively, due to the geometry of the post bases.
- The actual end bearing capacity of the timber member to be used in conjunction with the post base is checked by the designer of the structure to ensure it is not less than the post base capacity and, if necessary, the post base capacity reduced accordingly.
- To provide for constructive wood preservation, appropriate measures should be taken to protect the end grain of timber posts with contact or little distance to the foundation (post bases type F10, F20, F30, F40, F70, FD30, FD50, FD60, M30, M70 and XS10).
- There are no specific requirements relating to preparation of the timber members.
- The maximum distance between the foundation and the base plates' lower edge of the post base shall in general be 100 mm. For post bases type P10, P20, R20, R30, R40; R50, R60; R80, R90, S10, S20, S30, S50 and RI40 larger distances are allowed.
- In case of post base type M70 the characteristic capacities of the foundation are determined by calculation according to Eurocode 7 on condition that following soil characteristics are provided: bulk density  $\gamma = 18 \text{ kN/m}^3$ , angle of shearing resistance  $\phi = 30^\circ$ , cohesion  $c = 5 \text{ kN/m}^2$ .
- The anchorage of the post base in the foundation – except for post base type M70 - is not part of this ETA. It must be checked by the designer of the structure to ensure it is not less than the post base capacity and, if necessary, the post base capacity reduced accordingly. Therefore, the specifications for the lever arms  $e_{F2/F3}$  (for load case  $F_2 / F_3$ ) and

$e_{F4/F5}$  (for load case  $F_4 / F_5$ ) in Annex A have to be considered. The lever arm is the distance between the top edge of the foundation and the load.

- Due to the design of the post bases F70 and XS10, the wood cross-sections are sensitive to splitting under horizontal or moment load. Above the inner steel plates, fully threaded screws against splitting should be arranged in case of horizontal or moment load (2 per direction).

#### **4 Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base**

##### **4.1 AVCP system**

According to the decision 97/638/EC of the European Commission<sup>1</sup>, as amended, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) is 2+.

#### **5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD**

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at ETA-Danmark prior to CE marking.

Issued in Copenhagen on 2024-06-11 by



Thomas Bruun  
Managing Director, ETA-Danmark



**Annex A**  
**Product details and definitions**

**Table A.1:** Specifications of the post bases

| Post base         |          |                                | Quantity | Metal Fasteners                           | Post<br>[mm]          | Distances<br>[mm] |        |        |
|-------------------|----------|--------------------------------|----------|-------------------------------------------|-----------------------|-------------------|--------|--------|
| Type              | Art.-No. | Configuration                  |          |                                           | min b/h               | max. a            | ef2/F3 | ef4/F5 |
| F10               | F10_1    | -                              | 1        | 2x HBS PLATE ø8x60mm                      | 71/71                 | -                 | 77     | 77     |
|                   | F10_2    | -                              | 1        | 4x HBS PLATE ø8x40mm                      | 91/91                 | -                 | 77     | 77     |
| F20               | F20_1    | -                              | 1        | 4x HBS PLATE ø8x40mm                      | ø81                   | -                 | 77     | 77     |
|                   | F20_2    | -                              | 1        |                                           | ø101                  | -                 | 77     | 77     |
|                   | F20_3    | -                              | 1        | 4x HBS PLATE ø8x60mm                      | ø121                  | -                 | 77     | 77     |
|                   | F20_4    | -                              | 1        |                                           | ø141                  | -                 | 77     | 77     |
| F30               | F30_1    | -                              | 1        | 4x HBS PLATE ø8x60mm                      | 71/71                 | -                 | 122    | 122    |
|                   | F30_2    | -                              | 1        | 4x HBS PLATE ø8x40mm                      | 91/91                 | -                 | 122    | 122    |
| F40               | F40_1    | -                              | 1        | 4x HBS PLATE ø8x60mm                      | 71/71                 | -                 | 122    | 122    |
|                   | F40_2    | -                              | 1        | 4x HBS PLATE ø8x40mm                      | 91/91                 | -                 | 122    | 122    |
| F50               | F50_1    | -                              | 1        | 4x HBS PLATE ø8x60mm                      | 101/101               | -                 | 83     | 83     |
|                   | F50_2    | -                              | 1        |                                           | 121/121               | -                 | 83     | 83     |
|                   | F50_3    | -                              | 1        |                                           | 141/141               | -                 | 83     | 83     |
|                   | F50_4    | -                              | 1        |                                           | 161/161               | -                 | 108    | 108    |
|                   | F50_5    | -                              | 1        |                                           | 181/181               | -                 | 108    | 108    |
|                   | F50_6    | -                              | 1        |                                           | 201/201               | -                 | 108    | 108    |
| F60               | F60_1    | -                              | 1        | 4x HBS PLATE ø8x60mm                      | 121/120               | -                 | 119    | 84     |
|                   | F60_2    | -                              | 1        |                                           | 141/140               | -                 | 119    | 84     |
|                   | F60_3    | -                              | 1        |                                           | 161/160               | -                 | 119    | 109    |
|                   | F60_4    | -                              | 1        |                                           | 201/200               | -                 | 119    | 109    |
|                   | F60_5    | -                              | 1        |                                           | 161/160               | -                 | 119    | 84     |
|                   | F60_6    | -                              | 1        |                                           | 201/200               | -                 | 119    | 84     |
| F70 <sup>1)</sup> | F70_1    | F70_1-4SBD<br>75 100           | 1        | 4x SBD ø7,5x75mm                          | 100/100 <sup>3)</sup> | 21 <sup>2)</sup>  | 136    | 33     |
|                   |          | F70_1-4SBDS<br>95 100          | 1        | 4x SBDS ø7,5x95mm                         | 100/100 <sup>3)</sup> | 21 <sup>2)</sup>  | 136    | 33     |
|                   |          | F70_1-2STA80/<br>BOLT120 100   | 1        | 2x SD ø12,0x80mm or<br>2x Bo M12x120mm    | 100/100 <sup>3)</sup> | 21 <sup>2)</sup>  | 136    | 33     |
|                   | F70_2    | F70_2-6SBD<br>95 120           | 1        | 6x SBD ø7,5x95mm                          | 120/120 <sup>4)</sup> | 21 <sup>2)</sup>  | 146    | 38     |
|                   |          | F70_2-6SBDS<br>95 120          | 1        | 6x SBDS ø7,5x95mm                         | 120/120 <sup>4)</sup> | 21 <sup>2)</sup>  | 146    | 38     |
|                   |          | F70_2-4STA120/<br>BOLT160 140  | 1        | 4x SD ø12,0x120mm or<br>4x Bo M12x160mm   | 140/140 <sup>5)</sup> | 21 <sup>2)</sup>  | 146    | 38     |
|                   | F70_3    | F70_3-8SBD<br>115 160          | 1        | 8x SBD ø7,5x115mm                         | 160/160 <sup>6)</sup> | 23 <sup>2)</sup>  | 203    | 43     |
|                   |          | F70_3-8SBDS<br>115 160         | 1        | 8x SBDS ø7,5x115mm                        | 160/160 <sup>6)</sup> | 23 <sup>2)</sup>  | 203    | 43     |
|                   |          | F70_3-6STA140/<br>BOLT180 160  | 1        | 6x SD ø12,0x140mm or<br>6x Bo M12x180mm   | 160/160 <sup>6)</sup> | 23 <sup>2)</sup>  | 210    | 43     |
|                   | F70_4    | F70_4-12SBD<br>160             | 1        | 12x SBD ø7,5x155mm                        | 200/160 <sup>6)</sup> | 40 <sup>2)</sup>  | 253    | -      |
|                   |          | F70_4-12SBDS<br>160            | 1        | 12x SBDS ø7,5x155mm                       | 200/160 <sup>6)</sup> | 40 <sup>2)</sup>  | 253    | -      |
|                   |          | F70_4-8STA160/<br>BOLT180 160  | 1        | 6x SD ø12,0x160mm or<br>6x Bo M12x180mm   | 200/160 <sup>6)</sup> | 40 <sup>2)</sup>  | 253    | -      |
|                   | F70_5    | F70_5-16SBD<br>175             | 1        | 16x SBD ø7,5x175mm                        | 200/240 <sup>6)</sup> | 40 <sup>2)</sup>  | 253    | -      |
|                   |          | F70_5-16SBDS<br>175            | 1        | 16x SBDS ø7,5x175mm                       | 200/240 <sup>6)</sup> | 40 <sup>2)</sup>  | 253    | -      |
|                   |          | F70_4-12STA180<br>/BOLT220 200 | 1        | 12x SD ø12,0x200mm or<br>12x Bo M12x220mm | 200/240 <sup>6)</sup> | 40 <sup>2)</sup>  | 253    | -      |
| FD10              | FD10_1   | -                              | 2        | 4x HBS PLATE ø8x60mm                      | 121/120               | -                 | 108    | 40     |
|                   | FD10_2   | -                              | 2        |                                           | 141/131               | -                 | 108    | 40     |
|                   | FD10_3   | -                              | 2        |                                           | 161/151               | -                 | 108    | 40     |
|                   | FD10_4   | -                              | 2        |                                           | 181/171               | -                 | 108    | 40     |
|                   | FD10_5   | -                              | 2        |                                           | 201/191               | -                 | 108    | 40     |

| Post base          |           |               | Quantity | Metal Fasteners                                                                      | Post<br>[mm]    | Distances<br>[mm] |        |        |
|--------------------|-----------|---------------|----------|--------------------------------------------------------------------------------------|-----------------|-------------------|--------|--------|
| Type               | Art.-No.  | Configuration |          |                                                                                      | min b/h         | max. a            | eF2/F3 | eF4/F5 |
| FD20               | FD20_1    | -             | 2        | 4x HBS PLATE ø8x60mm                                                                 | 121/76          | -                 | 94     | 41     |
|                    | FD20_2    | -             | 2        |                                                                                      | 141/92          | -                 | 94     | 41     |
|                    | FD20_3    | -             | 2        |                                                                                      | 161/106         | -                 | 94     | 41     |
|                    | FD20_4    | -             | 2        |                                                                                      | 201/140         | -                 | 94     | 41     |
| FD30               | FD30_1    | -             | 2        | 4x HBS PLATE ø8x40mm                                                                 | 80/120          | -                 | -      | 38     |
|                    | FD30_2    | -             | 2        |                                                                                      | 80/120          | -                 | -      | 38     |
| FD30<br>internal   | FD30_1    | -             | 2        | 2x Bo M10mm                                                                          | 80/120          | -                 | -      | 38     |
|                    | FD30_2    | -             | 2        | 2x Bo M10mm                                                                          | 80/120          | -                 | -      | 38     |
| FD40               | FD40_1    | -             | 2        | 4x HBS PLATE ø8x40mm                                                                 | 80/120          | -                 | -      | 46     |
|                    | FD40_2    | -             | 2        |                                                                                      | 80/120          | -                 | -      | 46     |
| FD40<br>internal   | FD40_1    | -             | 2        | 2x Bo M10mm                                                                          | 80/120          | -                 | -      | 43     |
|                    | FD40_2    | -             | 2        | 2x Bo M10mm                                                                          | 80/120          | -                 | -      | 43     |
| FD50               | FD50_1    | -             | 2 / 4    | 4x HBS PLATE ø8x60mm                                                                 | 82/82           | -                 | -      | -      |
|                    | FD50_2    | -             | 2 / 4    |                                                                                      | 127/127         | -                 | 90     | 90     |
| FD60               | FD60_1    | -             | 2 / 4    | 4x HBS PLATE ø8x60mm                                                                 | 82/82           | -                 | -      | -      |
|                    | FD60_2    | -             | 2 / 4    |                                                                                      | 112/112         | -                 | 89     | 89     |
| M10                | M10_1     | -             | 1        | 4x HBS PLATE ø8x40mm                                                                 | 71/71           | -                 | 45     | 14     |
|                    | M10_2     | -             | 1        | 2x HBS PLATE ø8x60mm                                                                 | 91/91           | -                 | 45     | 14     |
| M20                | M20_1     | -             | 1        | 5x HBS PLATE ø8x60mm                                                                 | 71/114          | -                 | 139    | 72     |
|                    | M20_2     | -             | 1        |                                                                                      | 91/114          | -                 | 139    | 72     |
|                    | M20_3     | -             | 1        |                                                                                      | 101/114         | -                 | 139    | 72     |
|                    | M20_4     | -             | 1        | 6x HBS PLATE ø8x60mm                                                                 | 121/114         | -                 | 139    | 72     |
| M30                | M30_1     | -             | 1        | 2x HBS PLATE ø8x60mm                                                                 | 71/80           | -                 | 185    | 30     |
|                    | M30_2     | -             | 1        | 4x HBS PLATE ø8x40mm                                                                 | 81/80           | -                 | 185    | 30     |
|                    | M30_3     | -             | 1        |                                                                                      | 91/80           | -                 | 185    | 30     |
|                    | M30_4     | -             | 1        |                                                                                      | 101/80          | -                 | 185    | 30     |
|                    | M30_5     | -             | 1        | 4x HBS PLATE ø8x60mm                                                                 | 121/80          | -                 | 185    | 30     |
| M50                | M50_1     | -             | 1        | 5x HBS PLATE ø8x60mm                                                                 | 71/114          | 100               | 235    | 77     |
|                    | M50_2     | -             | 1        |                                                                                      | 91/114          | 100               | 235    | 77     |
|                    | M50_3     | -             | 1        |                                                                                      | 101/114         | 100               | 235    | 77     |
|                    | M50_4     | -             | 1        | 6x HBS PLATE ø8x60mm                                                                 | 121/114         | 100               | 235    | 77     |
| M60                | M60_1     | -             | 1        | 4x Bo M10mm                                                                          | 80/120          | 100               | 218    | 30     |
| M70                | M70_1     | -             | 1        | 2x HBS PLATE ø8x60mm                                                                 | 71/71           | -                 | -      | -      |
|                    | M70_2     | -             | 1        | 4x HBS PLATE ø8x40mm                                                                 | 91/91           | -                 | -      | -      |
|                    | M70_3     | -             | 1        |                                                                                      | ø81             | -                 | -      | -      |
|                    | M70_4     | -             | 1        |                                                                                      | ø101            | -                 | -      | -      |
| P10 <sup>10)</sup> | P10_1     | -             | 1        | 4x HBS PLATE ø8x80mm                                                                 | 100/100<br>ø100 | 150               | -      | -      |
|                    | P10_2     | -             | 1        |                                                                                      | 100/100<br>ø100 | 250               | -      | -      |
|                    | P10_1 Alt | -             | 1        |                                                                                      | 100/100<br>ø100 | 150               | -      | -      |
|                    | P10_2 Alt | -             | 1        |                                                                                      | 100/100<br>ø100 | 250               | -      | -      |
| P20 <sup>10)</sup> | P20_1     | -             | 1        | 4x HBS PLATE ø8x80mm                                                                 | 100/100         | 218               | -      | -      |
|                    | P20_2     | -             | 1        |                                                                                      | 100/100         | 318               | -      | -      |
| R10                | R10_1     | -             | 1        | 4x HBS PLATE ø6x90mm                                                                 | 80/80           | 136               | -      | -      |
|                    | R10_2     | -             | 1        | 4x HBS PLATE ø8x100mm                                                                | 100/100         | 209               | -      | -      |
|                    | R10_3     | -             | 1        | 4x HBS PLATE ø8x100mm                                                                | 140/140         | 257               | -      | -      |
| R10                | R10_1M    | -             | 1        | 4x HBS PLATE EVO ø6;<br>HBS ø8+HUS; VGS ø9/<br>VGS EVO ø9 +HUS EVO                   | 80/80           | 133               | -      | -      |
|                    | R10_2L    | -             | 1        | 4x HBS PLATE ø8/HBS<br>PLATE EVO ø8; HBS<br>ø10+HUS; VGS ø11+HUS/<br>VGS EVO ø11+HUS | 100/100         | 232               | -      | -      |
|                    | R10_2XL   | -             | 1        |                                                                                      | 100/100         | 332               | -      | -      |
|                    | R10_3L    | -             | 1        |                                                                                      | 140/140         | 232               | -      | -      |
|                    | R10_3XL   | -             | 1        |                                                                                      | 140/140         | 260               | -      | -      |
| R20                | R20_1     | -             | 1        | 4x HBS PLATE ø6x90mm                                                                 | 80/80           | 136               | -      | -      |
|                    | R20_2     | -             | 1        | 4x HBS PLATE ø8x100mm                                                                | 100/100         | 209               | -      | -      |
|                    | R20_3     | -             | 1        | 4x HBS PLATE ø8x100mm                                                                | 140/140         | 257               | -      | -      |

| Post base |           |                                | Quantity | Metal Fasteners                                                                      | Post<br>[mm] | Distances<br>[mm] |        |        |
|-----------|-----------|--------------------------------|----------|--------------------------------------------------------------------------------------|--------------|-------------------|--------|--------|
| Type      | Art.-No.  | Configuration                  |          |                                                                                      | min b/h      | max. a            | eF2/F3 | eF4/F5 |
| R20       | R20_1M    | -                              | 1        | 4x HBS PLATE EVO ø6;<br>HBS ø8+HUS; VGS ø9/<br>VGS EVO ø9 +HUS EVO                   | 80/80        | 133               | -      | -      |
|           | R20_2L    | -                              | 1        | 4x HBS PLATE ø8/HBS<br>PLATE EVO ø8; HBS<br>ø10+HUS; VGS ø11+HUS/<br>VGS EVO ø11+HUS | 100/100      | 232               | -      | -      |
|           | R20_2XL   | -                              | 1        |                                                                                      | 100/100      | 332               | -      | -      |
|           | R20_3L    | -                              | 1        |                                                                                      | 140/140      | 232               | -      | -      |
|           | R20_3XL   | -                              | 1        |                                                                                      | 140/140      | 260               | -      | -      |
| R30       | R30_1     | -                              | 1        | 8x full thread ø6x60mm                                                               | 120/120      | 155               | -      | -      |
|           | R30_2     | -                              | 1        | 16x full thread ø6x90mm                                                              | 160/160      | 215               | -      | -      |
|           | R30_1     | with Disc Flat 80              | 1        | 10 x full thread screws<br>ø7x60mm                                                   | 120          | 150               | -      | -      |
|           | R30_2     | with Disc Flat 120             | 1        | 18 x full thread screws<br>ø7x80mm                                                   | 160          | 210               | -      | -      |
|           | R30_1     | with Disc<br>Flat Stainless 80 | 1        | 10 x partial thread screws<br>ø6x80mm                                                | 150          | 150               | -      | -      |
| R40       | R40_1     | -                              | 1        | 4x HBS PLATE                                                                         | 70/70        | 105               | -      | -      |
|           | R40_2     | -                              | 1        |                                                                                      | 80/80        | 97                | -      | -      |
|           | R40_3     | -                              | 1        |                                                                                      | 100/100      | 150               | -      | -      |
|           | R40_4     | -                              | 1        |                                                                                      | 100/100      | 250               | -      | -      |
| R50       | R50_1     | -                              | 1        | 2x HBS PLATE                                                                         | 100/100      | 277               | -      | -      |
|           | R50_2     | -                              | 1        |                                                                                      | 100/100      | 202               | -      | -      |
| R60       | R60_1     | -                              | 1        | 4x HBS PLATE                                                                         | 100/100      | 194               | -      | -      |
|           | R60_1M    | -                              | 1        | 4x HBS PLATE EVO ø6;<br>HBS ø8+HUS; VGS ø9/<br>VGS EVO ø9 +HUS EVO                   | 100/100      | 175               | -      | -      |
|           | R60_2L    | -                              | 1        | 4x HBS PLATE ø8/HBS<br>PLATE EVO ø8; HBS<br>ø10+HUS; VGS ø11+HUS/<br>VGS EVO ø11+HUS | 100/100      | 235               | -      | -      |
| R70       | R70_1     | -                              | 1        | 4x HBS PLATE                                                                         | 100/100      | 100               | -      | -      |
|           | R70_2     | -                              | 1        |                                                                                      | 140/140      | 100               | -      | -      |
|           | R70_3     | -                              | 1        |                                                                                      | 100/100      | 100               | -      | -      |
| R80       | R80_1     | R80_1                          | 1        | 2-4x HBS PLATE                                                                       | 80/80        | 195               | -      | -      |
| R90       | R90_1     | R90_1                          | 1        | 4x HBS PLATE                                                                         | 100/100      | 164               | -      | -      |
| S10       | S10_1     | S10_1                          | 1        | 4x HBS PLATE                                                                         | ø140         | 118               | -      | -      |
|           | S10_2     | S10_2                          | 1        |                                                                                      | ø140         | 153               | -      | -      |
| S20       | S20_1     | S20_1                          | 1        | 2x HBS PLATE                                                                         | 100/100      | 118               | -      | -      |
|           | S20_2     | S20_2                          | 1        |                                                                                      | 100/100      | 153               | -      | -      |
| S30       | S30_1     | S30_1                          | 1        | 4x HBS PLATE                                                                         | 100/100      | 166               | -      | -      |
|           | S30_2     | S30_2                          | 1        |                                                                                      | 140/140      | 168               | -      | -      |
|           | S30_3     | S30_3                          | 1        |                                                                                      | 100/100      | 166               | -      | -      |
|           | S30_4     | S30_4                          | 1        |                                                                                      | 140/140      | 168               | -      | -      |
| S40       | S40_1     | S40_1                          | 1        | 5x HBS PLATE                                                                         | 71/98        | -                 | 86     | -      |
|           | S40_2     | S40_2                          | 1        |                                                                                      | 91/98        | -                 | 86     | -      |
| S50       | S50_1     | -                              | 1        | 4x HBS PLATE ø8/HBS<br>PLATE EVO ø8; HBS<br>ø10+HUS; VGS ø11+HUS/<br>VGS EVO ø11+HUS | 120x120      | 132               | -      | -      |
|           | S50_2     | -                              | 1        |                                                                                      | 120x120      | 192               | -      | -      |
|           | S50_3     | -                              | 1        |                                                                                      | 160x160      | 196               | -      | -      |
|           | S50_4     | -                              | 1        |                                                                                      | 160x160      | 256               | -      | -      |
|           | S50_1 Alt | -                              | 1        | 4x HBS PLATE ø8/HBS<br>PLATE EVO ø8; HBS<br>ø10+HUS; VGS ø11+HUS/<br>VGS EVO ø11+HUS | 120x120      | 132               | -      | -      |
|           | S50_2 Alt | -                              | 1        |                                                                                      | 120x120      | 192               | -      | -      |
|           | S50_3 Alt | -                              | 1        |                                                                                      | 160x160      | 196               | -      | -      |
|           | S50_4 Alt | -                              | 1        |                                                                                      | 160x160      | 256               | -      | -      |
| FI10      | FI10_1    | -                              | 1        | 2x HBS PLATE                                                                         | 71/71        | -                 | 107    | 77     |
|           | FI10_2    | -                              | 1        |                                                                                      | 91/91        | -                 | 107    | 77     |
| FI50      | FI50_1    | -                              | 1        | 4x HBS PLATE                                                                         | 101/101      | -                 | 83     | 83     |
|           | FI50_2    | -                              | 1        |                                                                                      | 121/121      | -                 | 83     | 83     |
|           | FI50_3    | -                              | 1        |                                                                                      | 141/141      | -                 | 83     | 83     |
|           | FI50_4    | -                              | 1        |                                                                                      | 161/161      | -                 | 108    | 108    |
|           | FI50_6    | -                              | 1        |                                                                                      | 201/201      | -                 | 108    | 108    |
| RI40      | RI40_3    | -                              | 1        | 4x HBS PLATE                                                                         | 100/100      | 150               | -      | -      |
|           | RI40_4    | -                              | 1        |                                                                                      | 100/100      | 250               | -      | -      |

| Post base |          |                             | Quantity | Metal Fasteners    | Post<br>[mm]          | Distances<br>[mm] |        |        |
|-----------|----------|-----------------------------|----------|--------------------|-----------------------|-------------------|--------|--------|
| Type      | Art.-No. | Configuration               |          |                    | min b/h               | max. a            | eF2/F3 | eF4/F5 |
| MI20      | MI20_1   | -                           | 1        | 5x HBS PLATE       | 71/114                | -                 | 139    | 72     |
|           | MI20_2   | -                           | 1        |                    | 91/114                | -                 | 139    | 72     |
|           | MI20_3   | -                           | 1        |                    | 101/114               | -                 | 139    | 72     |
|           | MI20_4   | -                           | 1        | 6x HBS PLATE       | 121/114               | -                 | 139    | 72     |
| XS10      | XS10_1   | XS10_1-16SBD<br>115_160     | 1        | 16x SBD ø7,5x115mm | 160x160 <sup>8)</sup> | 40                | 250    | 250    |
|           |          | XS10_1-16SBD<br>95_140      | 1        | 16x SBD ø7,5x95mm  | 140x140 <sup>7)</sup> | 40                | 232    | 232    |
|           |          | XS10_1-16SBD<br>115_140     | 1        | 16x SBD ø7,5x115mm | 140x140 <sup>7)</sup> | 40                | 232    | 232    |
|           |          | XS10_1-16SBD<br>135_160     | 1        | 16x SBD ø7,5x135mm | 160x160 <sup>8)</sup> | 40                | 232    | 232    |
|           |          | XS10_1-<br>8STA120_160      | 1        | 8x SD ø12,0x120mm  | 160x160 <sup>8)</sup> | 40                | 230    | 230    |
|           | XS10_2   | XS10_2-16SBD<br>115_160     | 1        | 16x SBD ø7,5x115mm | 160x160 <sup>8)</sup> | 42                | 252    | 252    |
|           |          | XS10_2-16SBD<br>115_160 Alt | 1        | 16x SBD ø7,5x115mm | 160x160 <sup>8)</sup> | 42                | 235    | 235    |
|           |          | XS10_2-16SBD<br>135_160     | 1        | 16x SBD ø7,5x135mm | 160x160 <sup>8)</sup> | 42                | 235    | 235    |
|           |          | XS10_2-16SBD<br>155_200     | 1        | 16x SBD ø7,5x155mm | 200x200 <sup>9)</sup> | 42                | 235    | 235    |
|           |          | XS10_2-<br>8STA120_160      | 1        | 8x SD ø12,0x120mm  | 160x160 <sup>8)</sup> | 42                | 227    | 227    |
|           |          | XS10_2-12STA<br>120_160     | 1        | 12x SD ø12,0x120mm | 160x160 <sup>8)</sup> | 42                | 227    | 227    |
|           |          | XS10_2-<br>8STA120_200      | 1        | 8x SD ø12,0x120mm  | 200x200 <sup>9)</sup> | 42                | 227    | 227    |
|           |          | XS10_2-12STA<br>160_200     | 1        | 12x SD ø12,0x120mm | 200x200 <sup>9)</sup> | 42                | 227    | 227    |

<sup>1)</sup> Pre-holes on the inner steel plate are optional (in case of bolts or dowels)

<sup>2)</sup> Maximum distance between the top edge of the foundation and the end grain of the post.

<sup>3)</sup> Tensile reinforcement perpendicular to the grain, loaded by force  $F_{4/5}$ : 2x fully threaded screws ø7.0x100mm and above the inner steel plate

<sup>4)</sup> Tensile reinforcement perpendicular to the grain, loaded by force  $F_{4/5}$ : 2x fully threaded screws ø7.0x120mm and above the inner steel plate

<sup>5)</sup> Tensile reinforcement perpendicular to the grain, loaded by force  $F_{4/5}$ : 2x fully threaded screws ø7.0x140mm and above the inner steel plate

<sup>6)</sup> Tensile reinforcement perpendicular to the grain, loaded by force  $F_{4/5}$ : 2x fully threaded screws ø7.0x160mm and above the inner steel plate

<sup>7)</sup> Tensile reinforcement perpendicular to the grain, loaded by force  $F_{2/3}$  or  $F_{4/5}$  or moment  $M_{2/3}$  or  $M_{4/5}$ : 4x fully threaded screws ø7.0x140mm; 2x fully threaded screws installed parallel to the each load direction and above the inner steel plate

<sup>8)</sup> Tensile reinforcement perpendicular to the grain loaded by force  $F_{2/3}$  or  $F_{4/5}$  or moment  $M_{2/3}$  or  $M_{4/5}$ : 4x fully threaded screws ø7.0x160mm; 2x fully threaded screws installed parallel to the each load direction and above the inner steel plate

<sup>9)</sup> Tensile reinforcement perpendicular to the grain loaded by force  $F_{2/3}$  or  $F_{4/5}$  or moment  $M_{2/3}$  or  $M_{4/5}$ : 4x fully threaded screws ø7.0x200mm; 2x fully threaded screws installed parallel to the each load direction and above the inner steel plate

<sup>10)</sup> Encased in concrete

**Table A.2:** Specifications of the metal fasteners according to EN 14592 or ETA

| Fastener type                                                                                                                                                                                                                | Size (mm)   |                           |            | Material                                                                                                                                 | Finish                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
|                                                                                                                                                                                                                              | Diameter    | Length                    | Thickness  |                                                                                                                                          |                                   |
| Screws<br>HBS PLATE                                                                                                                                                                                                          | 8 mm        | 40/60/80/100/<br>160 mm   |            | ETA-11/0030                                                                                                                              | Galvanic<br>zinc / EVO<br>coating |
| Screws<br>HBS PLATE                                                                                                                                                                                                          | 6 mm        | 90 mm                     |            | ETA-11/0030                                                                                                                              | Galvanic<br>zinc / EVO<br>coating |
| Partially<br>threaded screws                                                                                                                                                                                                 | 6 mm        | 80 mm                     |            | ETA-11/0030 or EN 14592                                                                                                                  | Stainless<br>steel                |
| Fully threaded<br>screws                                                                                                                                                                                                     | 7 mm        | 60-80 mm                  |            | ETA-11/0030 or EN 14592                                                                                                                  | Galvanic<br>zinc / EVO<br>coating |
| Fully threaded<br>screws                                                                                                                                                                                                     | 7 mm        | 100/120/140/160/200<br>mm |            | ETA-11/0030                                                                                                                              | Galvanic<br>zinc / EVO<br>coating |
| Bolts                                                                                                                                                                                                                        | 10/12<br>mm |                           |            | Min 4.6 according to EN ISO<br>4016 or EN ISO 4017 or EN ISO<br>4018 or EN ISO 898 or<br>EN 14592                                        | Galvanic<br>zinc coating          |
| Dowels                                                                                                                                                                                                                       | 12 mm       |                           |            | S235 according to EN 10025-2<br>and EN 14592                                                                                             | Galvanic<br>zinc coating          |
| Self-tapping<br>dowels SBD                                                                                                                                                                                                   | 7.5 mm      |                           |            | $f_{u,k} \geq 742 \text{ N/mm}^2$ ,<br>$M_{y,Rk} = 42.000 \text{ Nmm}$<br>according to specification of the<br>manufacturer and EN 14592 | Galvanic<br>zinc coating          |
| Self-tapping<br>dowels SBDS                                                                                                                                                                                                  | 7.5 mm      |                           |            | $M_{y,Rk} = 75.000 \text{ Nmm}$<br>according to specification of the<br>manufacturer and EN 14592                                        | Galvanic<br>zinc coating          |
| Washers                                                                                                                                                                                                                      | 30/36<br>mm |                           | 3,0/3,6 mm | according to EN ISO 7091 or EN<br>ISO 7093 or EN ISO 7094                                                                                | Galvanic<br>zinc coating          |
| HUS Washers                                                                                                                                                                                                                  | 8/10 mm     |                           | 5,5/6,5 mm | according to ETA-11/0030                                                                                                                 | Galvanic<br>zinc / EVO<br>coating |
| The load-carrying-capacities of the metal fasteners were calculated according to Eurocode 5 for lateral loads. The contribution to the load-carrying capacity due to the rope effect was considered according to Eurocode 5. |             |                           |            |                                                                                                                                          |                                   |

**Annex B****Characteristic load-carrying capacities****Table B.1:** Characteristic load-carrying capacities (forces) for post bases in kN

| Post base |          |                           | F <sub>1,c,Rk</sub><br>(Compression) |       |      | F <sub>1,t,Rk</sub><br>(Tension) |                  |   | F <sub>2/3,Rk</sub><br>(Horizontal) |       |                  |        | F <sub>4/5,Rk</sub><br>(Horizontal) |   |                  |                  |
|-----------|----------|---------------------------|--------------------------------------|-------|------|----------------------------------|------------------|---|-------------------------------------|-------|------------------|--------|-------------------------------------|---|------------------|------------------|
| Type      | Art.-No. | Configuration             | Timber                               | Steel |      | Timber                           | Steel            |   | Timber                              | Steel |                  | Timber | Steel                               |   |                  |                  |
| F10       | F10_1    | -                         | 50,8                                 | -     | -    | 6,2                              | 4,3              | - | 5,0                                 | -     | 4,5              | -      | 7,6                                 | - | 9,5              | -                |
|           | F10_2    | -                         | 84,8                                 | -     | -    | 8,2                              | 3,8              | - | 9,9                                 | -     | 4,7              | -      | 13,3                                | - | 10,2             | -                |
|           |          | -                         | γ <sub>M,T</sub>                     | -     | -    | γ <sub>M,C</sub>                 | γ <sub>M,0</sub> | - | γ <sub>M,C</sub>                    | -     | γ <sub>M,0</sub> | -      | γ <sub>M,T</sub>                    | - | γ <sub>M,0</sub> | -                |
| F20       | F20_1    | -                         | 17,2                                 | -     | -    | 7,4                              | 4,1              | - | 6,5                                 | -     | 2,4              | -      | 8,1                                 | - | 3,1              | -                |
|           | F20_2    | -                         | 62,5                                 | -     | -    | 7,4                              | 8,8              | - | 3,2                                 | -     | 6,6              | -      | 12,8                                | - | 8,4              | -                |
|           | F20_3    | -                         | 99,1                                 | -     | -    | 11,0                             | 10,0             | - | 9,9                                 | -     | 8,9              | -      | 18,4                                | - | 11,4             | -                |
|           | F20_4    | -                         | 142                                  | -     | -    | 11,0                             | 11,1             | - | 9,9                                 | -     | 11,5             | -      | 25,3                                | - | 14,7             | -                |
|           |          | -                         | γ <sub>M,T</sub>                     | -     | -    | γ <sub>M,C</sub>                 | γ <sub>M,0</sub> | - | γ <sub>M,C</sub>                    | -     | γ <sub>M,0</sub> | -      | γ <sub>M,T</sub>                    | - | γ <sub>M,0</sub> | -                |
| F30       | F30_1    | -                         | 50,8                                 | -     | -    | 7,1                              | 6,5              | - | 7,6                                 | -     | 2,9              | -      | 7,6                                 | - | 2,9              | -                |
|           | F30_2    | -                         | 84,8                                 | -     | -    | 9,5                              | 13,0             | - | 7,6                                 | -     | 2,9              | -      | 7,6                                 | - | 2,9              | -                |
|           |          | -                         | γ <sub>M,T</sub>                     | -     | -    | γ <sub>M,C</sub>                 | γ <sub>M,0</sub> | - | γ <sub>M,T</sub>                    | -     | γ <sub>M,0</sub> | -      | γ <sub>M,T</sub>                    | - | γ <sub>M,0</sub> | -                |
| F40       | F40_1    | -                         | 50,8                                 | -     | -    | 7,1                              | 7,7              | - | 7,6                                 | -     | 5,4              | -      | 7,6                                 | - | 5,4              | -                |
|           | F40_2    | -                         | 84,8                                 | -     | -    | 9,5                              | 21,8             | - | 13,3                                | -     | 7,9              | -      | 13,3                                | - | 7,9              | -                |
|           |          | -                         | γ <sub>M,T</sub>                     | -     | -    | γ <sub>M,C</sub>                 | γ <sub>M,0</sub> | - | γ <sub>M,T</sub>                    | -     | γ <sub>M,0</sub> | -      | γ <sub>M,T</sub>                    | - | γ <sub>M,0</sub> | -                |
| F50       | F50_1    | -                         | 29,4                                 | 29,1  | -    | 7,1                              | -                | - | 17,2                                | -     | 9,0              | -      | 17,2                                | - | 9,0              | -                |
|           | F50_2    | -                         | 33,6                                 | 33,3  | -    | 7,1                              | 11,5             | - | 17,2                                | -     | 8,7              | -      | 17,2                                | - | 8,7              | -                |
|           | F50_3    | -                         | 42,0                                 | 41,6  | -    | 7,1                              | -                | - | 17,2                                | -     | 11,9             | -      | 17,2                                | - | 11,9             | -                |
|           | F50_4    | -                         | 42,0                                 | 41,6  | -    | 7,1                              | 13,8             | - | 20,4                                | -     | 10,6             | -      | 20,4                                | - | 10,6             | -                |
|           | F50_5    | -                         | 42,0                                 | 41,6  | -    | 7,1                              | 16,1             | - | 20,4                                | -     | 13,9             | -      | 20,4                                | - | 13,9             | -                |
|           | F50_6    | -                         | 46,2                                 | 45,7  | -    | 7,1                              | 17,3             | - | 21,0                                | -     | 14,4             | -      | 21,0                                | - | 14,4             | -                |
|           |          | -                         | γ <sub>M,T</sub>                     | -     | -    | γ <sub>M,C</sub>                 | γ <sub>M,0</sub> | - | γ <sub>M,T</sub>                    | -     | γ <sub>M,0</sub> | -      | γ <sub>M,T</sub>                    | - | γ <sub>M,0</sub> | -                |
| F60       | F60_1    | -                         | 33,6                                 | 32,7  | -    | 7,0                              | 34,2             | - | 17,3                                | -     | 11,7             | -      | 8,7                                 | - | -                | 6,8              |
|           | F60_2    | -                         | 37,8                                 | 36,8  | -    | 7,0                              | 37,6             | - | 20,6                                | -     | 15,0             | -      | 10,2                                | - | -                | 6,8              |
|           | F60_3    | -                         | 42,0                                 | 40,8  | -    | 7,0                              | 41,0             | - | 22,6                                | -     | 16,5             | -      | 11,3                                | - | 15,2             | -                |
|           | F60_4    | -                         | 54,6                                 | 53,1  | -    | 7,0                              | 24,1             | - | 22,6                                | -     | 16,5             | -      | 11,3                                | - | 13,0             | -                |
|           | F60_5    | -                         | 42,0                                 | 40,8  | -    | 7,0                              | 41,0             | - | 32,9                                | -     | 23,3             | -      | 11,3                                | - | -                | 15,6             |
|           | F60_6    | -                         | 54,6                                 | 54,4  | -    | 7,0                              | 24,1             | - | 32,9                                | -     | 23,3             | -      | 11,3                                | - | 18,4             | -                |
|           |          | -                         | γ <sub>M,T</sub>                     | -     | -    | γ <sub>M,C</sub>                 | γ <sub>M,0</sub> | - | γ <sub>M,T</sub>                    | -     | γ <sub>M,0</sub> | -      | γ <sub>M,T</sub>                    | - | γ <sub>M,0</sub> | γ <sub>M,2</sub> |
| F70       | F70_1    | F70_1-4SBD75 100          | 29,6                                 | -     | 32,7 | 17,9                             | 18,3             | - | 13,3                                | 14,0  | 3,44             | -      | 1,79                                | - | 2,49             | -                |
|           |          | F70_1-4SBDS95 100         | 29,6                                 | -     | 32,7 | 17,9                             | 18,3             | - | 13,3                                | 14,0  | 3,44             | -      | 1,79                                | - | 2,49             | -                |
|           |          | F70_1-2STA80/BOLT120 100  | 21,1                                 | -     | 32,7 | 14,3                             | 18,3             | - | 13,2                                | 10,9  | 3,44             | -      | 1,86                                | - | 2,49             | -                |
|           | F70_2    | F70_2-6SBD95 120          | 52,6                                 | -     | 67,8 | 52,6                             | 15,7             | - | 18,2                                | 45,0  | 3,83             | -      | 2,02                                | - | 6,12             | -                |
|           |          | F70_2-6SBDS95 120         | 59,7                                 | -     | 67,8 | 59,7                             | 15,7             | - | 18,2                                | 54,4  | 3,83             | -      | 2,02                                | - | 6,12             | -                |
|           |          | F70_2-4STA120/BOLT160 140 | 55,7                                 | -     | 67,8 | 55,7                             | 15,7             | - | 25,5                                | 50,5  | 3,83             | -      | 2,95                                | - | 6,12             | -                |
|           | F70_3    | F70_3-8SBD115 160         | 87,7                                 | -     | 103  | 87,7                             | 25,7             | - | 36,3                                | 65,2  | 6,45             | -      | 3,07                                | - | 13,5             | -                |
|           |          | F70_3-8SBDS115 160        | 94,8                                 | -     | 103  | 94,8                             | 25,7             | - | 36,3                                | 74,5  | 6,45             | -      | 3,07                                | - | 13,5             | -                |
|           |          | F70_3-6STA140/BOLT180 160 | 104                                  | -     | 103  | 104                              | 25,7             | - | 34,0                                | 82,1  | 6,24             | -      | 2,88                                | - | 13,5             | -                |

| Post base          |                    |                                | F <sub>1,c,Rk</sub><br>(Compression) |                  |                  | F <sub>1,t,Rk</sub><br>(Tension) |                  |                  | F <sub>2/3,Rk</sub><br>(Horizontal) |                  |                  |                  | F <sub>4/5,Rk</sub><br>(Horizontal) |   |                  |                  |  |
|--------------------|--------------------|--------------------------------|--------------------------------------|------------------|------------------|----------------------------------|------------------|------------------|-------------------------------------|------------------|------------------|------------------|-------------------------------------|---|------------------|------------------|--|
| Type               | Art.-No.           | Configuration                  | Timber                               | Steel            |                  | Timber                           | Steel            |                  | Timber                              | Steel            |                  | Timber           | Steel                               |   | Timber           | Steel            |  |
|                    | F70_4              | F70_4-12SBD 160                | 123                                  | -                | 246              | 123                              | 172              | -                | 44,0                                | 119              | 25,9             | -                | -                                   | - | -                | -                |  |
|                    |                    | F70_4-12SBDS 155               | 130                                  | -                | 246              | 130                              | 172              | -                | 44,0                                | 127              | 25,9             | -                | -                                   | - | -                | -                |  |
|                    |                    | F70_4-8STA160/<br>BOLT180 160- | 115                                  | -                | 246              | 115                              | 172              | -                | 42,9                                | 121              | 25,9             | -                | -                                   | - | -                | -                |  |
|                    | F70_5              | F70_5--16SBD 175               | 164                                  | -                | 307              | 164                              | 237              | -                | 65,7                                | 175              | 45,1             | -                | -                                   | - | -                | -                |  |
|                    |                    | F70_5--16SBDS 175              | 190                                  | -                | 307              | 190                              | 237              | -                | 65,7                                | 181              | 45,1             | -                | -                                   | - | -                | -                |  |
|                    |                    | F70_4-12STA180<br>/BOLT220 200 | 173                                  | -                | 307              | 173                              | 237              | -                | 62,3                                | 198              | 45,1             | -                | -                                   | - | -                | -                |  |
|                    |                    | -                              | γ <sub>M,C</sub>                     | -                | γ <sub>M,1</sub> | γ <sub>M,C</sub>                 | γ <sub>M,0</sub> | -                | γ <sub>M,T</sub>                    | γ <sub>M,C</sub> | γ <sub>M,0</sub> | -                | γ <sub>M,T</sub>                    | - | γ <sub>M,0</sub> | -                |  |
| FD10               | FD10_1             | -                              | 33,6                                 | 33,5             | -                | 7,1                              | 4,7              | -                | 20,9                                | -                | 2,6              | -                | 10,2                                | - | 10,4             | -                |  |
|                    | FD10_2             | -                              | 37,8                                 | 37,6             | -                | 7,1                              | 5,0              | -                | 24,4                                | -                | 3,3              | -                | 11,5                                | - | 11,4             | -                |  |
|                    | FD10_3             | -                              | 42,0                                 | 41,8             | -                | 7,1                              | 5,6              | -                | 24,4                                | -                | 4,1              | -                | 12,7                                | - | 12,5             | -                |  |
|                    | FD10_4             | -                              | 46,2                                 | 46,0             | -                | 7,1                              | 6,1              | -                | 24,4                                | -                | 5,0              | -                | 14,0                                | - | 13,5             | -                |  |
|                    | FD10_5             | -                              | 54,6                                 | 54,4             | -                | 7,1                              | 6,0              | -                | 24,4                                | -                | 6,0              | -                | 15,3                                | - | 14,0             | -                |  |
|                    |                    | -                              | γ <sub>M,T</sub>                     | γ <sub>M,0</sub> | -                | γ <sub>M,C</sub>                 | γ <sub>M,0</sub> | -                | γ <sub>M,T</sub>                    | -                | γ <sub>M,0</sub> | -                | γ <sub>M,T</sub>                    | - | γ <sub>M,0</sub> | -                |  |
| FD20               | FD20_1             | -                              | 33,6                                 | 33,5             | -                | 7,0                              | 11,8             | -                | 22,9                                | -                | 3,7              | -                | 16,1                                | - | 19,4             | -                |  |
|                    | FD20_2             | -                              | 37,8                                 | 37,6             | -                | 7,0                              | 13,3             | -                | 31,6                                | -                | 4,7              | -                | 17,7                                | - | 21,4             | -                |  |
|                    | FD20_3             | -                              | 42,0                                 | 41,8             | -                | 7,0                              | 14,6             | -                | 32,9                                | -                | 5,9              | -                | 19,3                                | - | 23,3             | -                |  |
|                    | FD20_4             | -                              | 54,6                                 | 54,4             | -                | 7,0                              | 17,0             | -                | 27,5                                | -                | 2,6              | -                | 17,0                                | - | 27,2             | -                |  |
|                    |                    | -                              | γ <sub>M,T</sub>                     | γ <sub>M,0</sub> | -                | γ <sub>M,C</sub>                 | γ <sub>M,0</sub> | -                | γ <sub>M,T</sub>                    | -                | γ <sub>M,0</sub> | -                | γ <sub>M,T</sub>                    | - | γ <sub>M,0</sub> | -                |  |
| FD30               | FD30_1             | -                              | 77,6                                 | 71,9             | -                | 7,0                              | 4,7              | -                | -                                   | -                | -                | -                | 9,3                                 | - | 3,2              | -                |  |
|                    | FD30_2             | -                              | 115                                  | 95,9             | -                | 7,3                              | 3,6              | -                | -                                   | -                | -                | -                | 9,0                                 | - | 4,0              | -                |  |
|                    |                    | -                              | γ <sub>M,T</sub>                     | γ <sub>M,0</sub> | -                | γ <sub>M,C</sub>                 | γ <sub>M,0</sub> | -                | -                                   | -                | -                | -                | γ <sub>M,T</sub>                    | - | γ <sub>M,0</sub> | -                |  |
| FD30 internal      | FD30_1             | -                              | 77,6                                 | 12,5             | -                | 13,5                             | 4,7              | -                | -                                   | -                | -                | -                | 2,1                                 | - | 3,2              | -                |  |
|                    | FD30_2             | -                              | 115                                  | 16,7             | -                | 13,5                             | 3,6              | -                | -                                   | -                | -                | -                | 2,6                                 | - | 4,0              | -                |  |
|                    |                    | -                              | γ <sub>M,T</sub>                     | γ <sub>M,0</sub> | -                | γ <sub>M,C</sub>                 | γ <sub>M,0</sub> | -                | -                                   | -                | -                | -                | γ <sub>M,T</sub>                    | - | γ <sub>M,0</sub> | -                |  |
|                    |                    | -                              | 7,0                                  | 6,3              | -                | 4,5                              | 6,3              | -                | -                                   | -                | -                | -                | 8,2                                 | - | 5,0              | -                |  |
| FD40               | FD40_2             | -                              | 7,3                                  | 8,4              | -                | 9,0                              | 8,4              | -                | -                                   | -                | -                | -                | 8,6                                 | - | 6,5              | -                |  |
|                    |                    | -                              | γ <sub>M,C</sub>                     | γ <sub>M,0</sub> | -                | γ <sub>M,C</sub>                 | γ <sub>M,0</sub> | -                | -                                   | -                | -                | -                | γ <sub>M,T</sub>                    | - | γ <sub>M,0</sub> | -                |  |
|                    | FD40_1             | -                              | 19,8                                 | 12,5             | -                | 13,5                             | 6,3              | -                | -                                   | -                | -                | -                | 2,1                                 | - | 5,1              | -                |  |
| FD40 internal      | FD40_2             | -                              | 20,7                                 | 16,7             | -                | 13,5                             | 8,4              | -                | -                                   | -                | -                | -                | 2,6                                 | - | 5,2              | -                |  |
|                    |                    | -                              | γ <sub>M,C</sub>                     | γ <sub>M,0</sub> | -                | γ <sub>M,C</sub>                 | γ <sub>M,0</sub> | -                | -                                   | -                | -                | -                | γ <sub>M,T</sub>                    | - | γ <sub>M,0</sub> | -                |  |
|                    | FD50 <sup>1)</sup> | FD50_1                         | -                                    | 69,4             | -                | -                                | -                | -                | -                                   | -                | -                | -                | -                                   | - | -                | -                |  |
| FD50 <sup>1)</sup> | FD50_2             | -                              | 203                                  | -                | -                | 7,8                              | 10,0             | -                | -                                   | -                | -                | -                | -                                   | - | -                | -                |  |
|                    |                    | -                              | γ <sub>M,T</sub>                     | -                | -                | γ <sub>M,C</sub>                 | γ <sub>M,0</sub> | -                | -                                   | -                | -                | -                | -                                   | - | -                | -                |  |
|                    | FD60 <sup>2)</sup> | FD60_1                         | -                                    | 75,6             | -                | -                                | -                | -                | -                                   | -                | -                | -                | -                                   | - | -                | -                |  |
|                    | FD60_2             | -                              | 263                                  | -                | -                | 7,8                              | 17,7             | -                | -                                   | -                | -                | -                | -                                   | - | -                | -                |  |
|                    |                    | -                              | γ <sub>M,T</sub>                     | -                | -                | γ <sub>M,C</sub>                 | γ <sub>M,0</sub> | -                | -                                   | -                | -                | -                | -                                   | - | -                | -                |  |
| M10                | M10_1              | -                              | 6,1                                  | 14,0             | -                | 3,5                              | 10,0             | -                | 7,6                                 | -                | 5,9              | -                | 7,6                                 | - | -                | 5,8              |  |
|                    | M10_2              | -                              | 12,2                                 | 14,4             | -                | 7,1                              | 11,5             | -                | 13,0                                | -                | 5,9              | -                | 13,0                                | - | -                | 5,4              |  |
|                    |                    | -                              | γ <sub>M,C</sub>                     | γ <sub>M,1</sub> | -                | γ <sub>M,C</sub>                 | γ <sub>M,1</sub> | -                | γ <sub>M,T</sub>                    | -                | γ <sub>M,0</sub> | -                | γ <sub>M,T</sub>                    | - | -                | γ <sub>M,2</sub> |  |
| M20                | M20_1              | -                              | 7,4                                  | -                | 8,1              | 7,4                              | 7,8              | 8,1              | 5,5                                 | -                | 1,5              | -                | 8,2                                 | - | 3,0              | -                |  |
|                    | M20_2              | -                              | 7,4                                  | -                | 8,1              | 7,4                              | 5,4              | 8,1              | 5,5                                 | -                | 1,5              | -                | 8,2                                 | - | 3,0              | -                |  |
|                    | M20_3              | -                              | 7,4                                  | -                | 8,1              | 7,4                              | 4,7              | 8,1              | 5,5                                 | -                | 1,5              | -                | 8,2                                 | - | 3,0              | -                |  |
|                    | M20_4              | -                              | 7,4                                  | -                | 8,1              | 7,4                              | 3,8              | 8,1              | 5,5                                 | -                | 1,5              | -                | 8,2                                 | - | 3,0              | -                |  |
|                    |                    | -                              | γ <sub>M,C</sub>                     | -                | γ <sub>M,2</sub> | γ <sub>M,C</sub>                 | γ <sub>M,0</sub> | γ <sub>M,2</sub> | γ <sub>M,C</sub>                    | -                | γ <sub>M,0</sub> | -                | γ <sub>M,C</sub>                    | - | γ <sub>M,0</sub> | -                |  |
| M30                | M30_1              | -                              | 89,2                                 | -                | -                | 3,7                              | 12,9             | -                | 2,7                                 | -                | 1,2              | -                | 8,5                                 | - | 5,9              | -                |  |
|                    | M30_2              | -                              | 101                                  | -                | -                | 5,1                              | 21,8             | -                | 3,7                                 | -                | 1,2              | -                | 9,7                                 | - | 5,6              | -                |  |
|                    | M30_3              | -                              | 114                                  | -                | -                | 5,1                              | 21,8             | -                | 3,7                                 | -                | 1,2              | -                | 10,9                                | - | 5,6              | -                |  |
|                    | M30_4              | -                              | 127                                  | -                | -                | 5,1                              | 21,8             | -                | 3,7                                 | -                | 1,2              | -                | 12,1                                | - | 5,6              | -                |  |
|                    | M30_5              | -                              | 152                                  | -                | -                | 7,4                              | 21,8             | -                | 5,5                                 | -                | 1,2              | -                | 14,0                                | - | 5,9              | -                |  |
|                    |                    | -                              | γ <sub>M,T</sub>                     | -                | -                | γ <sub>M,C</sub>                 | γ <sub>M,0</sub> | -                | γ <sub>M,C</sub>                    | -                | γ <sub>M,0</sub> | -                | γ <sub>M,T</sub>                    | - | γ <sub>M,0</sub> | -                |  |
| M50                | M50_1              | -                              | 7,4                                  | 7,8              | 8,5              | 7,8                              | 7,8              | -                | 5,5                                 | -                | 1,8              | 2,7              | 8,6                                 | - | 3,3              | -                |  |
|                    | M50_2              | -                              | 7,4                                  | 5,5              | 8,5              | 7,8                              | 5,5              | -                | 5,5                                 | -                | 1,8              | 2,7              | 8,6                                 | - | 3,3              | -                |  |
|                    | M50_3              | -                              | 7,4                                  | 4,8              | 8,5              | 7,8                              | 4,8              | -                | 5,5                                 | -                | 1,6              | 2,7              | 8,6                                 | - | 3,3              | -                |  |
|                    | M50_4              | -                              | 7,4                                  | 3,8              | 8,5              | 7,8                              | 3,8              | -                | 5,5                                 | -                | 1,2              | 2,7              | 8,6                                 | - | 3,3              | -                |  |
|                    |                    | -                              | γ <sub>M,C</sub>                     | γ <sub>M,0</sub> | γ <sub>M,2</sub> | γ <sub>M,C</sub>                 | γ <sub>M,0</sub> | -                | γ <sub>M,C</sub>                    | -                | γ <sub>M,0</sub> | γ <sub>M,2</sub> | γ <sub>M,C</sub>                    | - | γ <sub>M,0</sub> | -                |  |

| Post base |           |                              | F <sub>1,c,Rk</sub><br>(Compression) |                  |                  | F <sub>1,t,Rk</sub><br>(Tension)           |                  |                  | F <sub>2/3,Rk</sub><br>(Horizontal)       |                  |                  | F <sub>4/5,Rk</sub><br>(Horizontal) |                                           |                  |                  |                  |
|-----------|-----------|------------------------------|--------------------------------------|------------------|------------------|--------------------------------------------|------------------|------------------|-------------------------------------------|------------------|------------------|-------------------------------------|-------------------------------------------|------------------|------------------|------------------|
| Type      | Art.-No.  | Configuration                | Timber                               | Steel            |                  | Timber                                     | Steel            |                  | Timber                                    | Steel            |                  | Timber                              | Steel                                     |                  |                  |                  |
| M60       | M60_1     | -                            | 51,0                                 | 55,1             | -                | 26,4                                       | -                | 65,3             | 11,8                                      | -                | 2,8              | 3,6                                 | 2,2                                       | -                | 5,7              | -                |
|           |           | -                            | γ <sub>M,T</sub>                     | γ <sub>M,0</sub> | -                | γ <sub>M,C</sub>                           | -                | γ <sub>M,2</sub> | γ <sub>M,T</sub>                          | -                | γ <sub>M,0</sub> | γ <sub>M,2</sub>                    | γ <sub>M,T</sub>                          | -                | γ <sub>M,0</sub> | -                |
|           |           |                              |                                      |                  |                  |                                            |                  |                  |                                           |                  |                  |                                     |                                           |                  |                  |                  |
| Type      | Art.-No.  | Configuration                | Timber                               | Steel            | Foun.            | Timber                                     | Steel            | Foun.            | Timber                                    | Steel            | Foun.            | Timber                              | Steel                                     | Foun.            |                  |                  |
| M70       | M70_1     | -                            | 6,1                                  | 12,1             | 1,6              | -                                          | -                | -                | 7,6                                       | -                | 7,6              | 5,2                                 | 7,6                                       | -                | 7,6              | 5,2              |
|           | M70_2     | -                            | 8,6                                  | 9,4              | 3,0              | -                                          | -                | -                | 10,1                                      | -                | 6,7              | 9,9                                 | 10,1                                      | -                | 6,7              | 9,9              |
|           | M70_3     | -                            | 8,1                                  | -                | 2,3              | -                                          | -                | -                | 8,1                                       | -                | 6,5              | 3,3                                 | 8,1                                       | -                | 6,5              | 3,3              |
|           | M70_4     | -                            | 8,1                                  | -                | 3,1              | -                                          | -                | -                | 10,3                                      | -                | 6,9              | 3,8                                 | 10,3                                      | -                | 6,9              | 3,8              |
|           |           | -                            | γ <sub>M,C</sub>                     | γ <sub>M,2</sub> | γ <sub>R,v</sub> | -                                          | -                | -                | -                                         | γ <sub>M,T</sub> | -                | γ <sub>M,0</sub>                    | γ <sub>R,c</sub>                          | γ <sub>M,T</sub> | -                | γ <sub>M,0</sub> |
|           |           |                              |                                      |                  |                  |                                            |                  |                  |                                           |                  |                  |                                     |                                           |                  |                  |                  |
| Type      | Art.-No.  | Configuration                | Timber                               | Steel            |                  | Timber                                     | Steel            |                  | Timber                                    | Steel            |                  | Timber                              | Steel                                     |                  |                  |                  |
| P10       | P10_1     | -                            | 109                                  | 125              | 107              | n <sub>screw</sub> ·<br>F <sub>ax,Rk</sub> | 17,7             | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | P10_2     | -                            | 109                                  | 125              | 99,3             |                                            | 17,7             | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | P10_1 Alt | -                            | 98,6                                 | 78,7             | 107              |                                            | 17,7             | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | P10_2 Alt | -                            | 98,6                                 | 78,7             | 99,3             |                                            | 17,7             | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           |           | -                            | γ <sub>M,T</sub>                     | γ <sub>M,0</sub> | γ <sub>M,1</sub> | γ <sub>M,C</sub>                           | γ <sub>M,0</sub> | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
| P20       | P20_1     | -                            | 93,7                                 | 59,5             | 106              | -                                          | -                | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | P20_2     | -                            | 93,7                                 | 59,5             | 106              | -                                          | -                | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           |           | -                            | γ <sub>M,T</sub>                     | γ <sub>M,0</sub> | γ <sub>M,1</sub> | -                                          | -                | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
| R10       | R10_1     | -                            | 71,2                                 | -                | 48,3             | -                                          | -                | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | R10_2     | -                            | 111                                  | -                | 75,4             | -                                          | -                | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | R10_3     | -                            | 222                                  | -                | 108              | -                                          | -                | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | R10_1M    | -                            | 128                                  | 66,0             | 66,0             | n <sub>screw</sub> ·<br>F <sub>ax,Rk</sub> | 11,6             | -                | n <sub>screw</sub> ·<br>F <sub>v,Rk</sub> | -                | 1,57             | -                                   | n <sub>screw</sub> ·<br>F <sub>v,Rk</sub> | -                | 1,57             | -                |
|           | R10_2L    | -                            | 201                                  | 98,4             | 98,4             |                                            | 10,6             | -                |                                           | -                | 2,11             | -                                   |                                           | -                | 2,11             | -                |
|           | R10_2XL   | -                            | 201                                  | 71,8             | 71,8             |                                            | 10,6             | -                |                                           | -                | 1,30             | -                                   |                                           | -                | 1,30             | -                |
|           | R10_3L    | -                            | 403                                  | 107              | 107              |                                            | 17,7             | -                |                                           | -                | 2,50             | -                                   |                                           | -                | 2,50             | -                |
|           | R10_3XL   | -                            | 403                                  | 107              | 107              |                                            | 17,7             | -                |                                           | -                | 1,69             | -                                   |                                           | -                | 1,69             | -                |
|           |           | -                            | γ <sub>M,T</sub>                     | γ <sub>M,0</sub> | γ <sub>M,1</sub> | γ <sub>M,C</sub>                           | γ <sub>M,0</sub> | -                | γ <sub>M,C</sub>                          | -                | γ <sub>M,0</sub> | -                                   | γ <sub>M,C</sub>                          | -                | γ <sub>M,0</sub> | -                |
| R20       | R20_1     | -                            | 55,8                                 | -                | 48,3             | -                                          | -                | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | R20_2     | -                            | 90,4                                 | -                | 75,4             | -                                          | -                | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | R20_3     | -                            | 189                                  | -                | 108              | -                                          | -                | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | R20_1M    | -                            | 122                                  | 66,3             | 66,3             | n <sub>screw</sub> ·<br>F <sub>ax,Rk</sub> | 11,6             | -                | n <sub>screw</sub> ·<br>F <sub>v,Rk</sub> | -                | 1,57             | -                                   | n <sub>screw</sub> ·<br>F <sub>v,Rk</sub> | -                | 1,57             | -                |
|           | R20_2L    | -                            | 192                                  | 98,4             | 98,4             |                                            | 10,6             | -                |                                           | -                | 2,11             | -                                   |                                           | -                | 2,11             | -                |
|           | R20_2XL   | -                            | 192                                  | 71,8             | 71,8             |                                            | 10,6             | -                |                                           | -                | 1,30             | -                                   |                                           | -                | 1,30             | -                |
|           | R20_3L    | -                            | 391                                  | 119              | 119              |                                            | 17,7             | -                |                                           | -                | 2,50             | -                                   |                                           | -                | 2,50             | -                |
|           | R20_3XL   | -                            | 391                                  | 119              | 119              |                                            | 17,7             | -                |                                           | -                | 1,76             | -                                   |                                           | -                | 1,76             | -                |
|           |           | -                            | γ <sub>M,T</sub>                     | γ <sub>M,0</sub> | γ <sub>M,1</sub> | γ <sub>M,C</sub>                           | γ <sub>M,0</sub> | -                | γ <sub>M,C</sub>                          | -                | γ <sub>M,0</sub> | -                                   | γ <sub>M,C</sub>                          | -                | γ <sub>M,0</sub> | -                |
| R30       | R30_1     | -                            | -                                    | -                | 48,3             | 18,7                                       | 24,3             | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | R30_2     | -                            | -                                    | -                | 75,4             | 62,4                                       | 36,4             | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | R30_1     | With Disc Flat 80            | -                                    | -                | 48,3             | 24,2                                       | 24,3             | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | R30_2     | With Disc Flat 120           | -                                    | -                | 75,4             | 65,5                                       | 36,4             | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | R30_1     | With stainless Disc Flat 80  | -                                    | -                | 48,3             | 22,0                                       | 24,3             | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | R30_2     | With stainless Disc Flat 120 | -                                    | -                | 75,4             | 41,8                                       | 36,4             | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           |           | -                            | -                                    | -                | γ <sub>M,1</sub> | γ <sub>M,C</sub>                           | γ <sub>M,0</sub> | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
| R40       | R40_1     | -                            | 50,7                                 | 23,3             | 39,6             | -                                          | -                | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | R40_2     | -                            | 64,0                                 | 38,1             | 100              | -                                          | -                | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | R40_3     | -                            | 99,9                                 | 41,9             | 57,1             | -                                          | -                | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | R40_4     | -                            | 100                                  | 50,7             | 65,3             | -                                          | -                | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           |           | -                            | γ <sub>M,T</sub>                     | γ <sub>M,0</sub> | γ <sub>M,1</sub> | -                                          | -                | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
| R50       | R50_1     | -                            | 56,5                                 | 50,7             | 88,7             | -                                          | -                | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | R50_2     | -                            | 56,5                                 | 50,7             | 92,0             | -                                          | -                | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | -         | γ <sub>M,T</sub>             | γ <sub>M,0</sub>                     | γ <sub>M,1</sub> | -                | -                                          | -                | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
| R60       | R60_1     | -                            | 117                                  | 66,9             | 66,4             | -                                          | -                | -                | -                                         | -                | -                | -                                   | -                                         | -                | -                | -                |
|           | R60_1M    | -                            | 126                                  | 38,6             | 38,6             | n <sub>screw</sub> ·<br>F <sub>ax,Rk</sub> | 13,2             | -                | n <sub>screw</sub> ·<br>F <sub>v,Rk</sub> | -                | 2,42             | 2,99                                | n <sub>screw</sub> ·<br>F <sub>v,Rk</sub> | -                | 2,42             | 2,99             |
|           | R60_2L    | -                            | 202                                  | 62,3             | 62,3             |                                            | 11,9             | -                |                                           | -                | 1,98             | 3,36                                |                                           | -                | 1,98             | 3,36             |
|           |           | -                            | γ <sub>M,T</sub>                     | γ <sub>M,1</sub> | γ <sub>M,2</sub> | γ <sub>M,C</sub>                           | γ <sub>M,0</sub> | -                | γ <sub>M,C</sub>                          | -                | γ <sub>M,0</sub> | γ <sub>M,2</sub>                    | γ <sub>M,C</sub>                          | -                | γ <sub>M,0</sub> | γ <sub>M,2</sub> |



| Post base |           |                  | F <sub>1,c,Rk</sub><br>(Compression) |                  |                  | F <sub>1,t,Rk</sub><br>(Tension)           |                  |                  | F <sub>2/3,Rk</sub><br>(Horizontal)       |                  |                  |                  | F <sub>4/5,Rk</sub><br>(Horizontal)       |                  |                  |   |
|-----------|-----------|------------------|--------------------------------------|------------------|------------------|--------------------------------------------|------------------|------------------|-------------------------------------------|------------------|------------------|------------------|-------------------------------------------|------------------|------------------|---|
| Type      | Art.-No.  | Configuration    | Timber                               | Steel            |                  | Timber                                     | Steel            |                  | Timber                                    | Steel            |                  |                  | Timber                                    | Steel            |                  |   |
| R70       | R70_1     | -                | 108                                  | 66,9             | 66,4             | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
|           | R70_2     | -                | 210                                  | 79,5             | 99,8             | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
|           | R70_3     | -                | 106                                  | 54,0             | 39,6             | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
|           |           | -                | γ <sub>M,T</sub>                     | γ <sub>M,0</sub> | γ <sub>M,1</sub> | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
| R80       | R80_1     | -                | 125                                  | 69,7             | 107              | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
|           |           | -                | γ <sub>M,T</sub>                     | γ <sub>M,0</sub> | γ <sub>M,1</sub> | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
| R90       | R90_1     | -                | 71,6                                 | 42,6             | 39,7             | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
|           |           | -                | γ <sub>M,T</sub>                     | γ <sub>M,0</sub> | γ <sub>M,1</sub> | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
| S10       | S10_1     | -                | 88,3                                 | 49,2             | -                | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
|           | S10_2     | -                | 88,3                                 | 49,2             | -                | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
|           |           | -                | γ <sub>M,T</sub>                     | γ <sub>M,0</sub> | -                | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
| S20       | S20_1     | -                | 88,3                                 | 49,2             | -                | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
|           | S20_2     | -                | 88,3                                 | 49,2             | -                | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
|           |           | -                | γ <sub>M,T</sub>                     | γ <sub>M,0</sub> | -                | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
| S30       | S30_1     | -                | 104                                  | 100              | -                | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
|           | S30_2     | -                | 214                                  | 212              | -                | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
|           | S30_3     | -                | 104                                  | 100              | -                | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
|           | S30_4     | -                | 214                                  | 212              | -                | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
|           |           | -                | γ <sub>M,T</sub>                     | γ <sub>M,0</sub> | -                | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
|           |           |                  |                                      |                  |                  |                                            |                  |                  |                                           |                  |                  |                  |                                           |                  |                  |   |
| Type      | Dimension | Angle            | Timber                               | Steel            |                  | Timber                                     | Steel            |                  | Timber                                    | Steel            |                  |                  | Timber                                    | Steel            |                  |   |
| S40       | S40_1     | 0°               | 7,4                                  | 6,6              | 8,5              | 7,4                                        | 6,6              | 8,5              | 5,5                                       | -                | 2,1              | 5,5              | -                                         | -                | -                | - |
|           |           | 15°              | 7,4                                  | 3,5              | 8,1              | 7,4                                        | 3,5              | 8,1              | 5,5                                       | -                | 1,9              | 5,0              | -                                         | -                | -                | - |
|           |           | 30°              | 7,4                                  | 2,5              | 6,1              | 7,4                                        | 2,5              | 6,1              | 5,5                                       | -                | 1,9              | 4,9              | -                                         | -                | -                | - |
|           |           | 45°              | 7,4                                  | 2,1              | 5,2              | 7,4                                        | 2,1              | 5,2              | 5,5                                       | -                | 2,1              | 5,2              | -                                         | -                | -                | - |
|           |           | 60°              | 7,4                                  | 1,9              | 4,9              | 7,4                                        | 1,9              | 4,9              | 5,5                                       | -                | 2,5              | 6,1              | -                                         | -                | -                | - |
|           | S40_2     | 0°               | 7,4                                  | 6,6              | 8,5              | 7,4                                        | 6,6              | 8,5              | 5,5                                       | -                | 2,1              | 5,5              | -                                         | -                | -                | - |
|           |           | 15°              | 7,4                                  | 3,5              | 8,1              | 7,4                                        | 3,5              | 8,1              | 5,5                                       | -                | 1,9              | 5,0              | -                                         | -                | -                | - |
|           |           | 30°              | 7,4                                  | 2,5              | 6,1              | 7,4                                        | 2,5              | 6,1              | 5,5                                       | -                | 1,9              | 4,9              | -                                         | -                | -                | - |
|           |           | 45°              | 7,4                                  | 2,1              | 5,2              | 7,4                                        | 2,1              | 5,2              | 5,5                                       | -                | 2,1              | 5,2              | -                                         | -                | -                | - |
|           |           | 60°              | 7,4                                  | 1,9              | 4,9              | 7,4                                        | 1,9              | 4,9              | 5,5                                       | -                | 2,5              | 6,1              | -                                         | -                | -                | - |
|           |           |                  | γ <sub>M,C</sub>                     | γ <sub>M,0</sub> | γ <sub>M,2</sub> | γ <sub>M,C</sub>                           | γ <sub>M,0</sub> | γ <sub>M,2</sub> | γ <sub>M,C</sub>                          | -                | γ <sub>M,0</sub> | γ <sub>M,2</sub> | -                                         | -                | -                |   |
|           |           |                  |                                      |                  |                  |                                            |                  |                  |                                           |                  |                  |                  |                                           |                  |                  |   |
| Type      | Art.-No.  | Configuration    | Timber                               | Steel            |                  | Timber                                     | Steel            |                  | Timber                                    | Steel            |                  |                  | Timber                                    | Steel            |                  |   |
| S50       | S50_1     | -                | 200                                  | 157              | 277              | n <sub>screw</sub><br>· F <sub>ax,Rk</sub> | 61,0             | -                | n <sub>screw</sub><br>· F <sub>v,Rk</sub> | -                | 94,6             | -                | n <sub>screw</sub><br>· F <sub>v,Rk</sub> | -                | 94,6             | - |
|           | S50_2     | -                | 200                                  | 157              | 277              |                                            | 61,0             | -                |                                           | -                | 66,0             | -                |                                           | -                | 66,0             | - |
|           | S50_3     | -                | 334                                  | 268              | 351              |                                            | 94,4             | -                |                                           | -                | 101              | -                |                                           | -                | 101              | - |
|           | S50_4     | -                | 334                                  | 268              | 351              |                                            | 94,4             | -                |                                           | -                | 77,7             | -                |                                           | -                | 77,7             | - |
|           | S50_1 Alt | -                | 193                                  | 127              | 277              | n <sub>screw</sub><br>· F <sub>ax,Rk</sub> | 61,0             | -                | n <sub>screw</sub><br>· F <sub>v,Rk</sub> | -                | 94,6             | -                | n <sub>screw</sub><br>· F <sub>v,Rk</sub> | -                | 94,6             | - |
|           | S50_2 Alt | -                | 193                                  | 127              | 277              |                                            | 61,0             | -                |                                           | -                | 66,0             | -                |                                           | -                | 66,0             | - |
|           | S50_3 Alt | -                | 324                                  | 247              | 351              |                                            | 94,4             | -                |                                           | -                | 101              | -                |                                           | -                | 101              | - |
|           | S50_4 Alt | -                | 324                                  | 247              | 351              |                                            | 94,4             | -                |                                           | -                | 77,7             | -                |                                           | -                | 77,7             | - |
|           | -         | γ <sub>M,T</sub> | γ <sub>M,0</sub>                     | γ <sub>M,1</sub> | γ <sub>M,C</sub> | γ <sub>M,0</sub>                           | -                | γ <sub>M,C</sub> | -                                         | γ <sub>M,0</sub> | -                | γ <sub>M,C</sub> | -                                         | γ <sub>M,0</sub> | -                |   |
| FI10      | FI10_1    | -                | 50,8                                 | -                | -                | 3,5                                        | 3,5              | -                | 5,0                                       | -                | 3,0              | -                | 7,6                                       | -                | 7,7              | - |
|           | FI10_2    | -                | 84,8                                 | -                | -                | 3,5                                        | 3,1              | -                | 5,0                                       | -                | 3,7              | -                | 13,0                                      | -                | 9,1              | - |
|           |           | -                | γ <sub>M,T</sub>                     | -                | -                | γ <sub>M,C</sub>                           | γ <sub>M,0</sub> | -                | γ <sub>M,C</sub>                          | -                | γ <sub>M,0</sub> | -                | γ <sub>M,T</sub>                          | -                | γ <sub>M,0</sub> | - |
| FI50      | FI50_1    | -                | 29,4                                 | 24,0             | -                | -                                          | -                | -                | 15,5                                      | -                | 7,3              | -                | 15,5                                      | -                | 7,3              | - |
|           | FI50_2    | -                | 33,6                                 | 26,7             | -                | 7,2                                        | 9,3              | -                | 15,5                                      | -                | 7,0              | -                | 15,5                                      | -                | 7,0              | - |
|           | FI50_3    | -                | 42,0                                 | 33,3             | -                | 7,2                                        | -                | -                | 15,5                                      | -                | 10,7             | -                | 15,5                                      | -                | 10,7             | - |
|           | FI50_4    | -                | 42,0                                 | 33,3             | -                | 7,2                                        | 11,2             | -                | 18,4                                      | -                | 8,6              | -                | 18,4                                      | -                | 8,6              | - |
|           | FI50_6    | -                | 46,2                                 | 36,7             | -                | 7,2                                        | 14,0             | -                | 18,9                                      | -                | 13,0             | -                | 18,9                                      | -                | 13,0             | - |
|           |           | -                | γ <sub>M,T</sub>                     | γ <sub>M,0</sub> | -                | γ <sub>M,C</sub>                           | γ <sub>M,0</sub> | -                | γ <sub>M,T</sub>                          | -                | γ <sub>M,0</sub> | -                | γ <sub>M,T</sub>                          | -                | γ <sub>M,0</sub> | - |
| RI40      | RI40_3    | -                | 99,9                                 | 38,8             | 47,8             | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
|           | RI40_4    | -                | 100                                  | 47,1             | 57,0             | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
|           |           | -                | γ <sub>M,T</sub>                     | γ <sub>M,0</sub> | γ <sub>M,1</sub> | -                                          | -                | -                | -                                         | -                | -                | -                | -                                         | -                | -                |   |
| MI20      | MI20_1    | -                | 7,4                                  | -                | 11,2             | 7,4                                        | 6,3              | -                | 5,5                                       | -                | 1,2              | -                | 8,2                                       | -                | 2,4              | - |
|           | MI20_2    | -                | 7,4                                  | -                | 8,1              | 7,4                                        | 4,4              | -                | 5,5                                       | -                | 1,2              | -                | 8,2                                       | -                | 2,4              | - |
|           | MI20_3    | -                | 7,4                                  | -                | 8,1              | 7,4                                        | 3,8              | -                | 5,5                                       | -                | 1,2              | -                | 8,2                                       | -                | 2,4              | - |
|           | MI20_4    | -                | 7,4                                  | -                | 8,1              | 7,4                                        | 3,0              | -                | 5,5                                       | -                | 1,2              | -                | 8,2                                       | -                | 2,4              | - |
|           |           | -                | γ <sub>M,C</sub>                     | -                | γ <sub>M,2</sub> | γ <sub>M,C</sub>                           | γ <sub>M,0</sub> | -                | γ <sub>M,C</sub>                          | -                | γ <sub>M,0</sub> | -                | γ <sub>M,C</sub>                          | -                | γ <sub>M,0</sub> | - |

| Post base |          |                         | F <sub>1,c,Rk</sub><br>(Compression) |       |                  | F <sub>1,t,Rk</sub><br>(Tension) |                  |   | F <sub>2/3,Rk</sub><br>(Horizontal) |                  |                  |   | F <sub>4/5,Rk</sub><br>(Horizontal) |                  |                  |   |
|-----------|----------|-------------------------|--------------------------------------|-------|------------------|----------------------------------|------------------|---|-------------------------------------|------------------|------------------|---|-------------------------------------|------------------|------------------|---|
| Type      | Art.-No. | Configuration           | Timber                               | Steel |                  | Timber                           | Steel            |   | Timber                              | Steel            |                  |   | Timber                              | Steel            |                  |   |
| XS10      | XS10_1   | XS10_1-16SBD115_160     | 122                                  | -     | 225              | 87,8                             | 32,6             | - | 32,9                                | 34,7             | 3,68             | - | 32,9                                | 34,7             | 3,68             | - |
|           |          | XS10_1-16SBD115_160     |                                      | -     | 225              |                                  | 32,6             | - |                                     | 34,7             | 3,68             | - |                                     | 34,7             | 3,68             | - |
|           |          | XS10_1-16SBD95_140      | 118                                  | -     | 225              | 96,9                             | 32,6             | - | 45,0                                | 25,7             | 3,97             | - | 45,0                                | 25,7             | 3,97             | - |
|           |          | XS10_1-16SBD95_140      | 134                                  | -     | 225              | 110                              | 32,6             | - | 54,4                                | 25,7             | 3,97             | - | 54,4                                | 25,7             | 3,97             | - |
|           |          | XS10_1-16SBD115_140     | 133                                  | -     | 225              | 109                              | 32,6             | - | 49,3                                | 25,7             | 3,97             | - | 49,3                                | 25,7             | 3,97             | - |
|           |          | XS10_1-16SBD115_140     | 143                                  | -     | 225              | 117                              | 32,6             | - | 56,2                                | 25,7             | 3,97             | - | 56,2                                | 25,7             | 3,97             | - |
|           |          | XS10_1-16SBD135_160     | 149                                  | -     | 225              | 122                              | 32,6             | - | 54,3                                | 34,7             | 3,97             | - | 54,3                                | 34,7             | 3,97             | - |
|           |          | XS10_1-16SBD135_160     | 154                                  | -     | 225              | 127                              | 32,6             | - | 59,3                                | 34,7             | 3,97             | - | 59,3                                | 34,7             | 3,97             | - |
|           |          | XS10_1-8STA120_160      | 125                                  | -     | 225              | 125                              | 32,6             | - | 23,8                                | 16,2             | 4,01             | - | 23,8                                | 16,2             | 4,01             | - |
|           | XS10_2   | XS10_2-16SBD115_160     | 116                                  | -     | 464              | 86,7                             | 59,0             | - | 32,6                                | 33,8             | 7,45             | - | 32,6                                | 33,8             | 7,45             | - |
|           |          | XS10_2-16SBD115_160     | 125                                  | -     | 464              | 93,7                             | 59,0             | - | 55,9                                | 33,8             | 7,45             | - | 55,9                                | 33,8             | 7,45             | - |
|           |          | XS10_2-16SBD115_160 Alt | 175                                  | -     | 464              | 132                              | 59,0             | - | 48,9                                | 33,8             | 7,99             | - | 48,9                                | 33,8             | 7,99             | - |
|           |          | XS10_2-16SBD115_160 Alt | 190                                  | -     | 464              | 142                              | 59,0             | - | 55,9                                | 33,8             | 7,99             | - | 55,9                                | 33,8             | 7,99             | - |
|           |          | XS10_2-16SBD135_160     | 197                                  | -     | 464              | 148                              | 59,0             | - | 53,8                                | 33,8             | 7,99             | - | 53,8                                | 33,8             | 7,99             | - |
|           |          | XS10_2-16SBD135_160     | 205                                  | -     | 464              | 154                              | 59,0             | - | 58,9                                | 33,8             | 7,99             | - | 58,9                                | 33,8             | 7,99             | - |
|           |          | XS10_2-16SBD155_200     | 213                                  | -     | 464              | 160                              | 59,0             | - | 59,2                                | 55,4             | 7,99             | - | 59,2                                | 55,4             | 7,99             | - |
|           |          | XS10_2-16SBD155_200     | 224                                  | -     | 464              | 168                              | 59,0             | - | 62,9                                | 49,2             | 7,99             | - | 62,9                                | 49,2             | 7,99             | - |
|           |          | XS10_2-8STA120_160      | 112                                  | -     | 464              | 112                              | 59,0             | - | 22,8                                | 15,8             | 8,29             | - | 22,8                                | 15,8             | 8,29             | - |
|           |          | XS10_2-12STA120_160     | 151                                  | -     | 464              | 151                              | 59,0             | - | 150                                 | 27,3             | 8,29             | - | 150                                 | 27,3             | 8,29             | - |
|           |          | XS10_2-8STA120_200      | 124                                  | -     | 464              | 124                              | 59,0             | - | 50,0                                | 51,3             | 8,29             | - | 50,0                                | 51,3             | 8,29             | - |
|           |          | XS10_2-12STA160_200     | 182                                  | -     | 464              | 182                              | 59,0             | - | 180                                 | 51,3             | 8,29             | - | 180                                 | 51,3             | 8,29             | - |
|           |          |                         | γ <sub>M,C</sub>                     | -     | γ <sub>M,1</sub> | γ <sub>M,C</sub>                 | γ <sub>M,0</sub> | - | γ <sub>M,C</sub>                    | γ <sub>M,T</sub> | γ <sub>M,0</sub> | - | γ <sub>M,C</sub>                    | γ <sub>M,T</sub> | γ <sub>M,0</sub> | - |

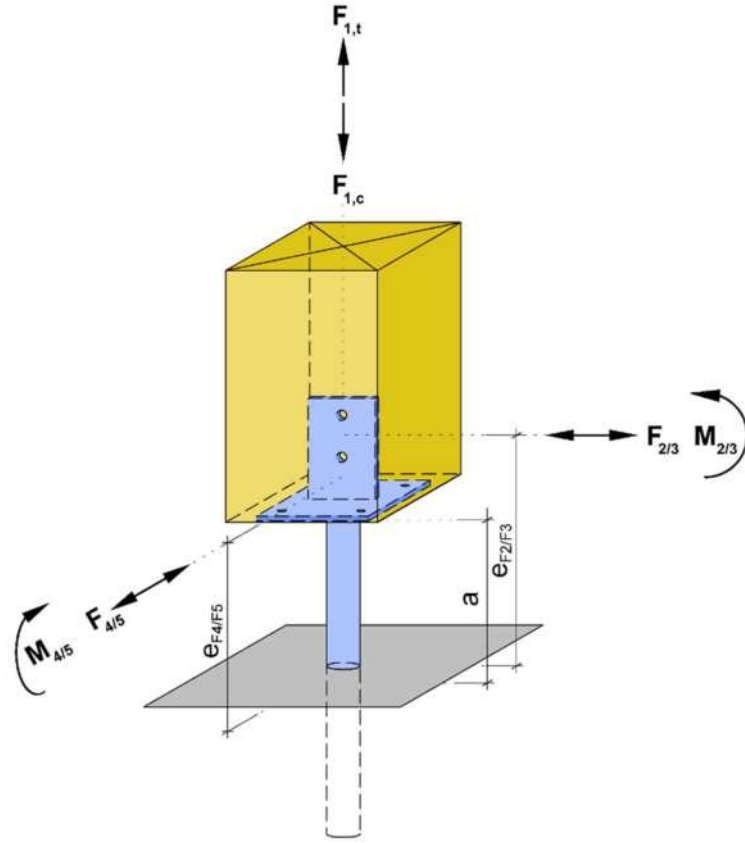
<sup>1)</sup> When 4 post bases are used, the characteristic load-carrying capacities may be increased by a factor of 2,0.

<sup>2)</sup> When 4 post bases are used, the characteristic load-carrying capacities for F<sub>1</sub> (Tension), F<sub>23</sub> and F<sub>45</sub> may be increased by a factor of 2,0.

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**Table B.2:** Characteristic load-carrying capacities (moments) for post bases in kNm and rotational stiffness values in kNm/rad

| Post base |          |                            | $M_{2/3,Rk}$<br>(Moment) |                | $K_{2/3ser}$<br>(Moment) | $M_{4/5,Rk}$<br>(Moment) |                | $K_{4/5ser}$<br>(Moment) |
|-----------|----------|----------------------------|--------------------------|----------------|--------------------------|--------------------------|----------------|--------------------------|
| Type      | Art.-No. | Configuration              | Timber                   | Steel          |                          | Timber                   | Steel          |                          |
| F70       | F70_1    | F70_1-4SBD75_100           | 1,08                     | 0,46           | -                        | -                        | -              | -                        |
|           |          | F70_1-2STA80/BOLT120_100   | -                        | -              | -                        | -                        | -              | -                        |
|           | F70_2    | F70_2-6SBD95_120           | 1,98                     | 2,01           | 60                       | -                        | -              | -                        |
|           |          | F70_2-4STA120/BOLT160_140  | 2,46                     | 2,01           | 50                       | -                        | -              | -                        |
|           | F70_3    | F70_3-8SBD115_160          | 4,22                     | 3,50           | 190                      | -                        | -              | -                        |
|           |          | F70_3-6STA140/BOLT180_160  | 4,88                     | 3,50           | 190                      | -                        | -              | -                        |
|           | F70_4    | F70_4-12SBD 160            | 11,3                     | 6,53           | 640                      | -                        | -              | -                        |
|           |          | F70_4-8STA160/BOLT180_160  | 10,6                     | 6,53           | 580                      | -                        | -              | -                        |
|           | F70_5    | F70_5-16SBD 175            | 17,2                     | 11,4           | 900                      | -                        | -              | -                        |
|           |          | F70_4-12STA180/BOLT220_200 | 18,0                     | 11,4           | 700                      | -                        | -              | -                        |
|           |          |                            | $\gamma_{M,C}$           | $\gamma_{M,0}$ | -                        | $\gamma_{M,C}$           | $\gamma_{M,0}$ | -                        |
| XS10      | XS10_1   | XS10_1-16SBD115_160        | 3,08                     | 5,93           | 55                       | 3,08                     | 5,93           | 55                       |
|           |          | XS10_1-16SBD95_140         | 2,75                     | 5,93           | 55                       | 2,75                     | 5,93           | 55                       |
|           |          | XS10_1-16SBD115_140        | 3,03                     | 5,93           | 55                       | 3,03                     | 5,93           | 55                       |
|           |          | XS10_1-16SBD135_160        | 3,34                     | 5,93           | 55                       | 3,34                     | 5,93           | 55                       |
|           |          | XS10_1-16SBD195_200        | 5,93                     | 5,93           | 55                       | 5,93                     | 5,93           | 55                       |
|           |          | XS10_1-8STA120_160         | 2,09                     | 5,93           | 140                      | 2,09                     | 5,93           | 140                      |
|           | XS10_2   | XS10_2-16SBD115_160        | 3,03                     | 11,5           | 350                      | 3,03                     | 11,5           | 350                      |
|           |          | XS10_2-16SBD115_160 Alt    | 3,01                     | 11,5           | 350                      | 3,01                     | 11,5           | 350                      |
|           |          | XS10_2-16SBD135_160        | 3,33                     | 11,5           | 350                      | 3,33                     | 11,5           | 350                      |
|           |          | XS10_2-16SBD155_200        | 3,68                     | 11,5           | 350                      | 3,68                     | 11,5           | 350                      |
|           |          | XS10_2-16SBD195_200        | 11,5                     | 11,5           | 350                      | 11,5                     | 11,5           | 350                      |
|           |          | XS10_2-8STA120_160         | 1,74                     | 11,5           | 130                      | 1,74                     | 11,5           | 130                      |
|           |          | XS10_2-12STA120_160        | 4,19                     | 11,5           | 160                      | 4,19                     | 11,5           | 160                      |
|           |          | XS10_2-8STA120_200         | 4,65                     | 11,5           | 130                      | 4,65                     | 11,5           | 130                      |
|           |          | XS10_2-12STA160_200        | 6,74                     | 11,5           | 160                      | 6,74                     | 11,5           | 160                      |
|           |          |                            | $\gamma_{M,C}$           | $\gamma_{M,0}$ | -                        | $\gamma_{M,C}$           | $\gamma_{M,0}$ | -                        |

### Definitions of forces, their directions and eccentricity



#### Acting forces and moments

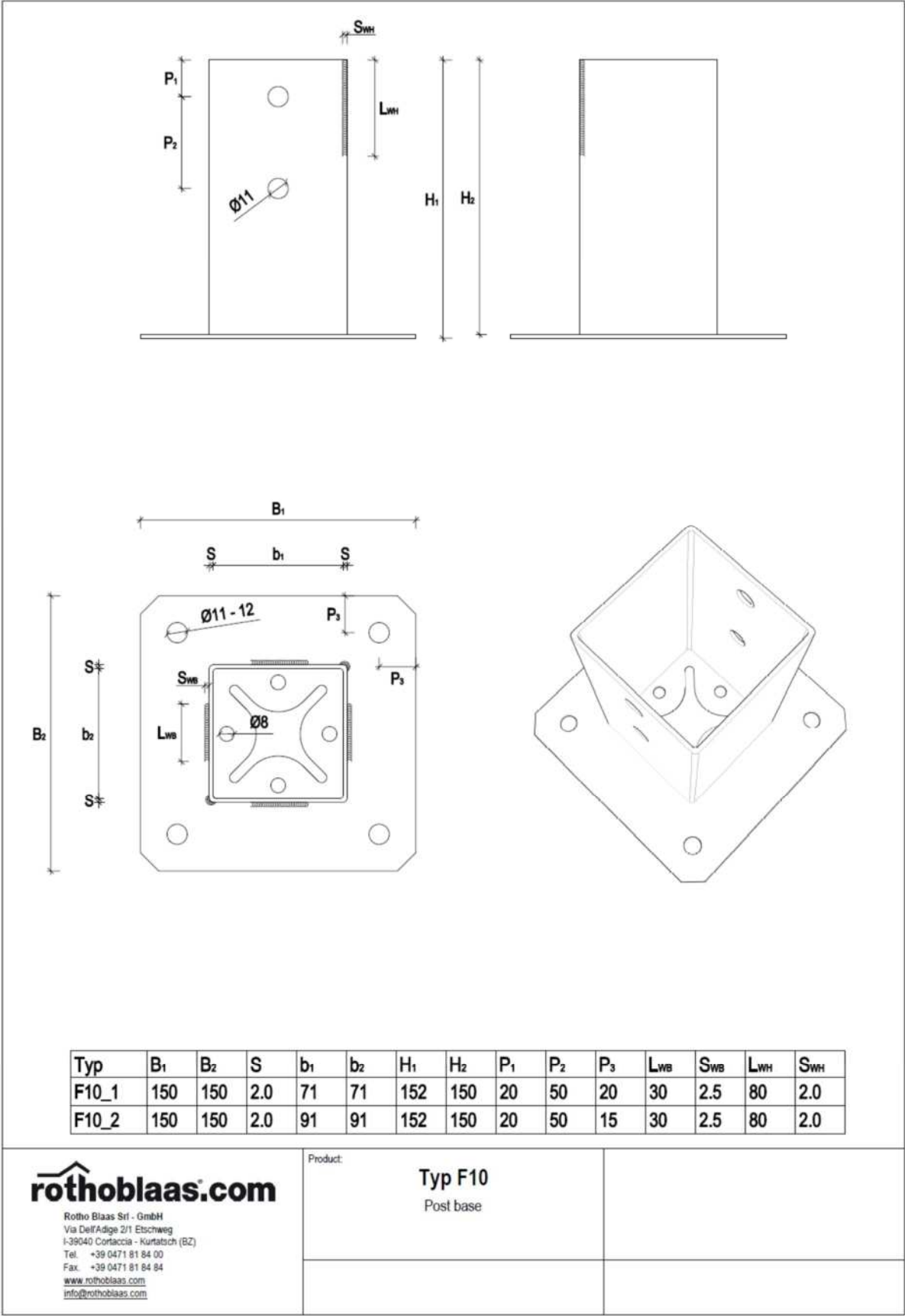
- $F_1$  axial force (tension or compression) acting along the central axis of the joint
- $F_2$  and  $F_3$  horizontal force parallel to the inner steel plate of the post base acting with the lever arm  $e_{F2/F3}$  above the foundation
- $F_4$  and  $F_5$  horizontal force perpendicular to the inner steel plate of the post base acting with the lever arm  $e_{F4/F5}$  above the foundation
- $M_2$  and  $M_3$  moment parallel to the inner steel plate of the post base
- $M_4$  and  $M_5$  moment perpendicular to the inner steel plate of the post base

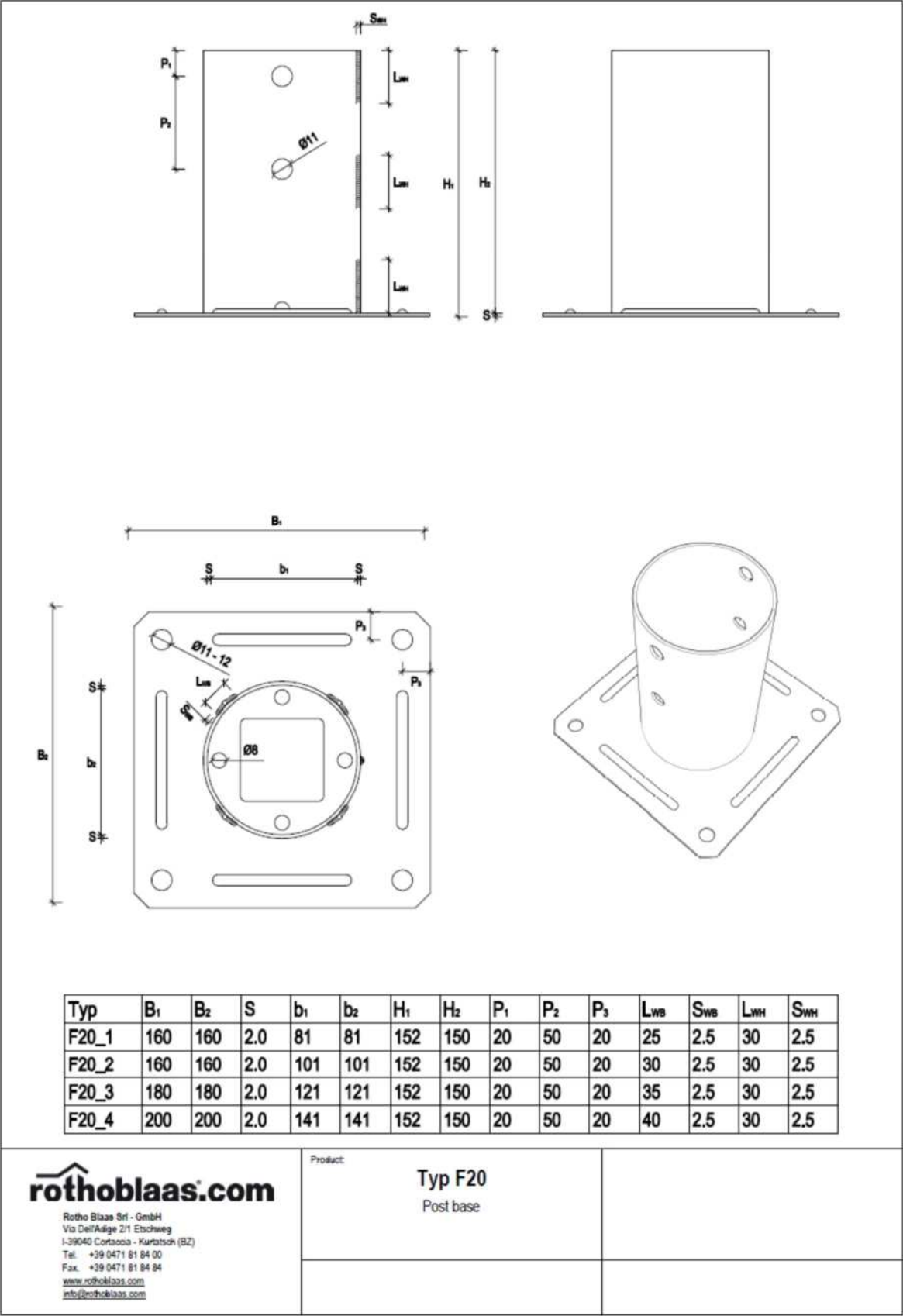
#### Combined forces

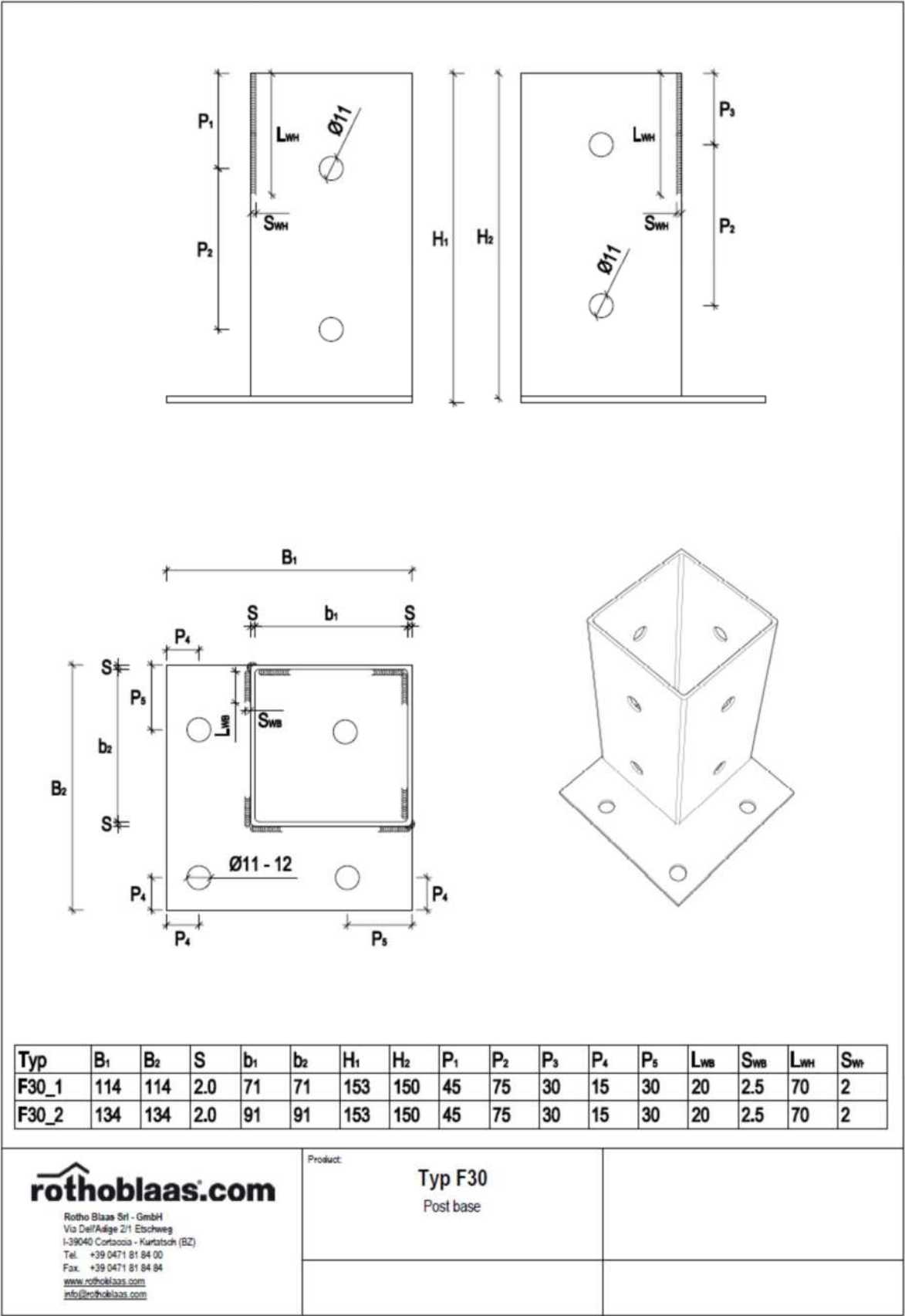
If the forces  $F_1$ ,  $F_2 / F_3$  and  $F_4 / F_5$  and moments  $M_2 / M_3$  and  $M_4 / M_5$  act at the same time, the following inequality shall be fulfilled:

$$\sum \frac{E_{i,d}}{R_{i,d}} = \left( \frac{F_{1,t,Ed}}{F_{1,t,Rd}} \right) + \left( \frac{F_{1,c,Ed}}{F_{1,c,Rd}} \right) + \left( \frac{F_{2/3,Ed}}{F_{2/3,Rd}} \right) + \left( \frac{F_{4/5,Ed}}{F_{4/5,Rd}} \right) + \left( \frac{M_{2/3,Ed}}{M_{2/3,Rd}} \right) + \left( \frac{M_{4/5,Ed}}{M_{4/5,Rd}} \right) \leq 1$$

The forces  $F_2$  and  $F_3$  or  $F_4$  and  $F_5$  are forces with opposite direction. Therefore, only one force  $F_2$  or  $F_3$ , and  $F_4$  or  $F_5$ , respectively, is able to act simultaneously with  $F_1$ . This applies analogously to the moments.





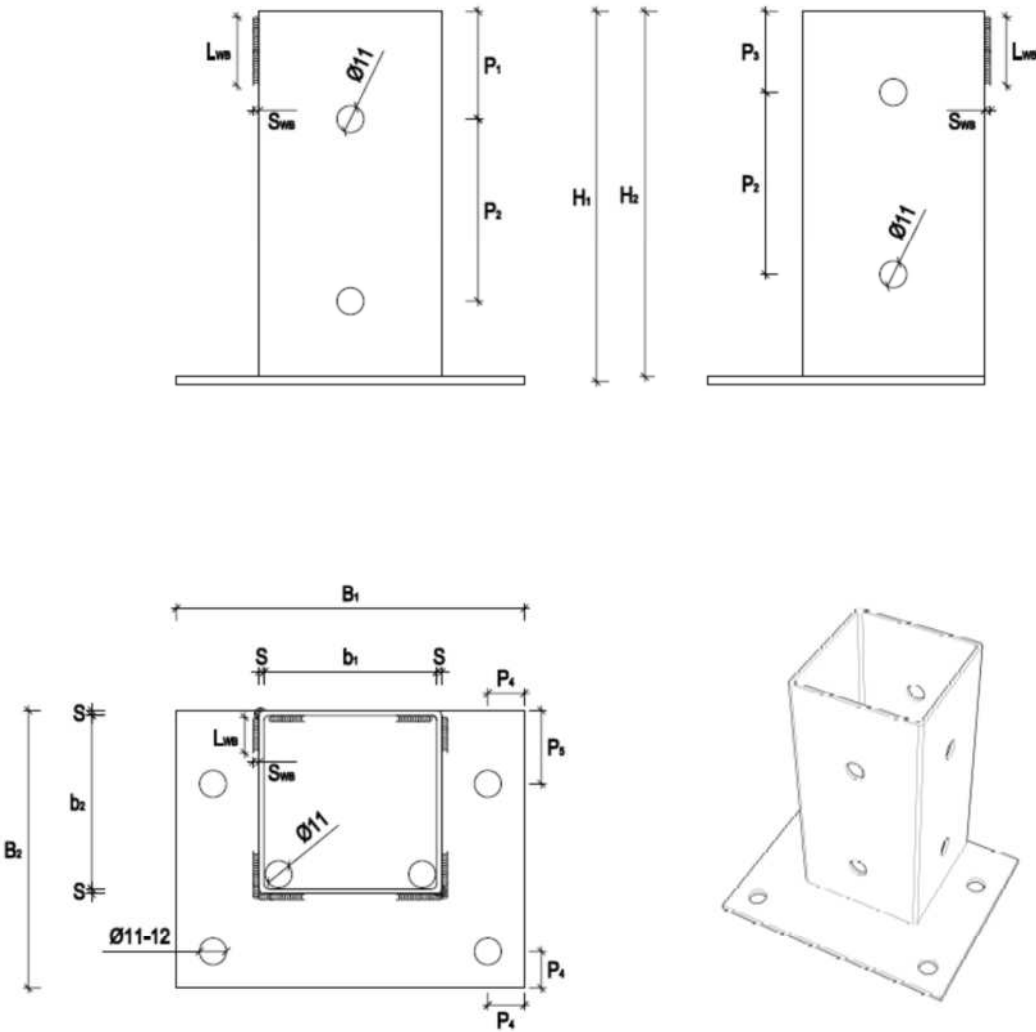


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Product:

**Typ F30**  
Post base



| Typ   | B <sub>1</sub> | B <sub>2</sub> | S | b <sub>1</sub> | b <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | P <sub>1</sub> | P <sub>2</sub> | P <sub>3</sub> | P <sub>4</sub> | P <sub>5</sub> | L <sub>WB</sub> | S <sub>WB</sub> | L <sub>WH</sub> | S <sub>W</sub> |
|-------|----------------|----------------|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|----------------|
| F40_1 | 143            | 114            | 2 | 71             | 71             | 153            | 150            | 45             | 75             | 30             | 15             | 30             | 20              | 2.5             | 70              | 2.5            |
| F40_2 | 163            | 134            | 2 | 91             | 91             | 153            | 150            | 45             | 75             | 30             | 15             | 30             | 20              | 2.5             | 70              | 2.5            |

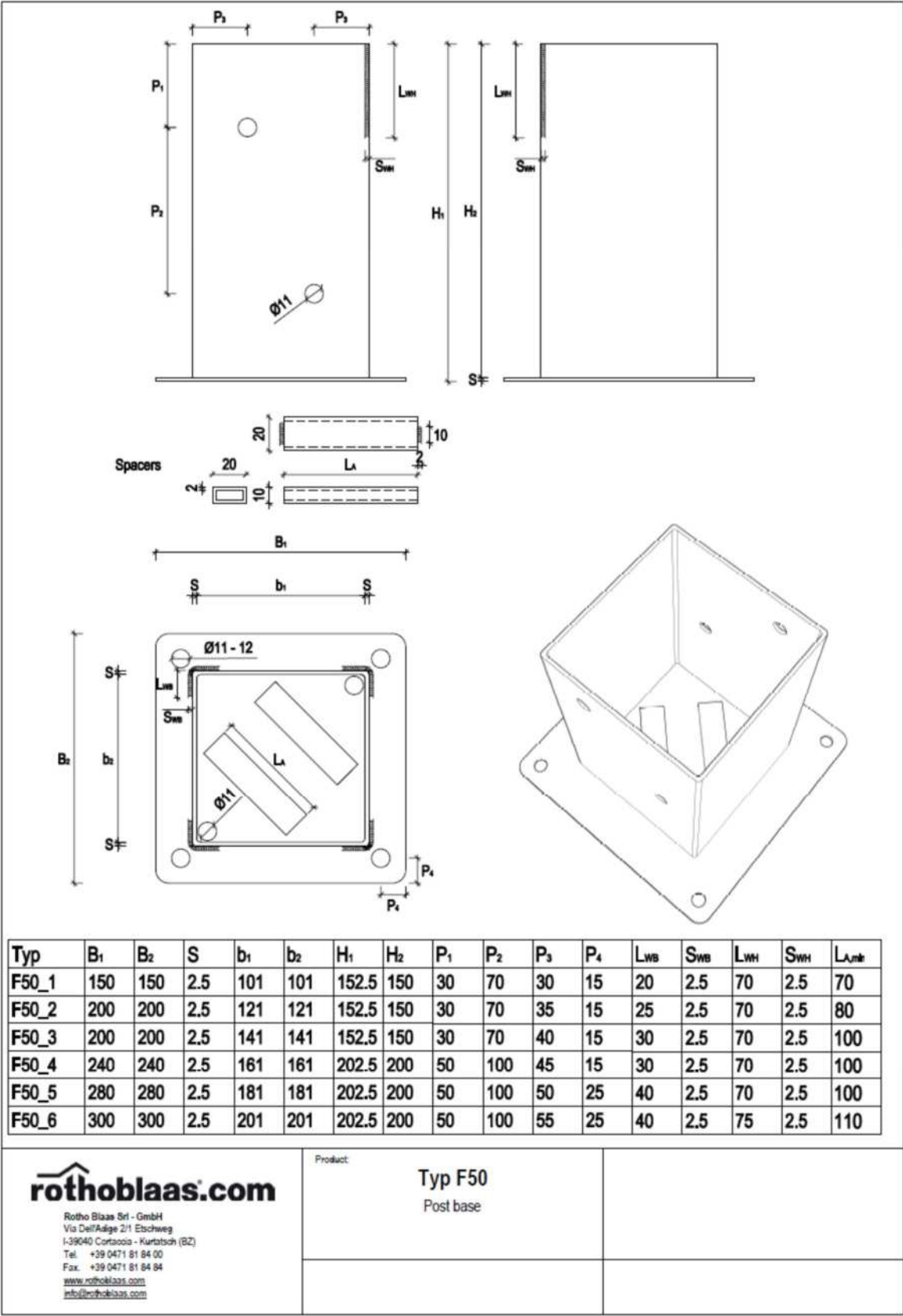
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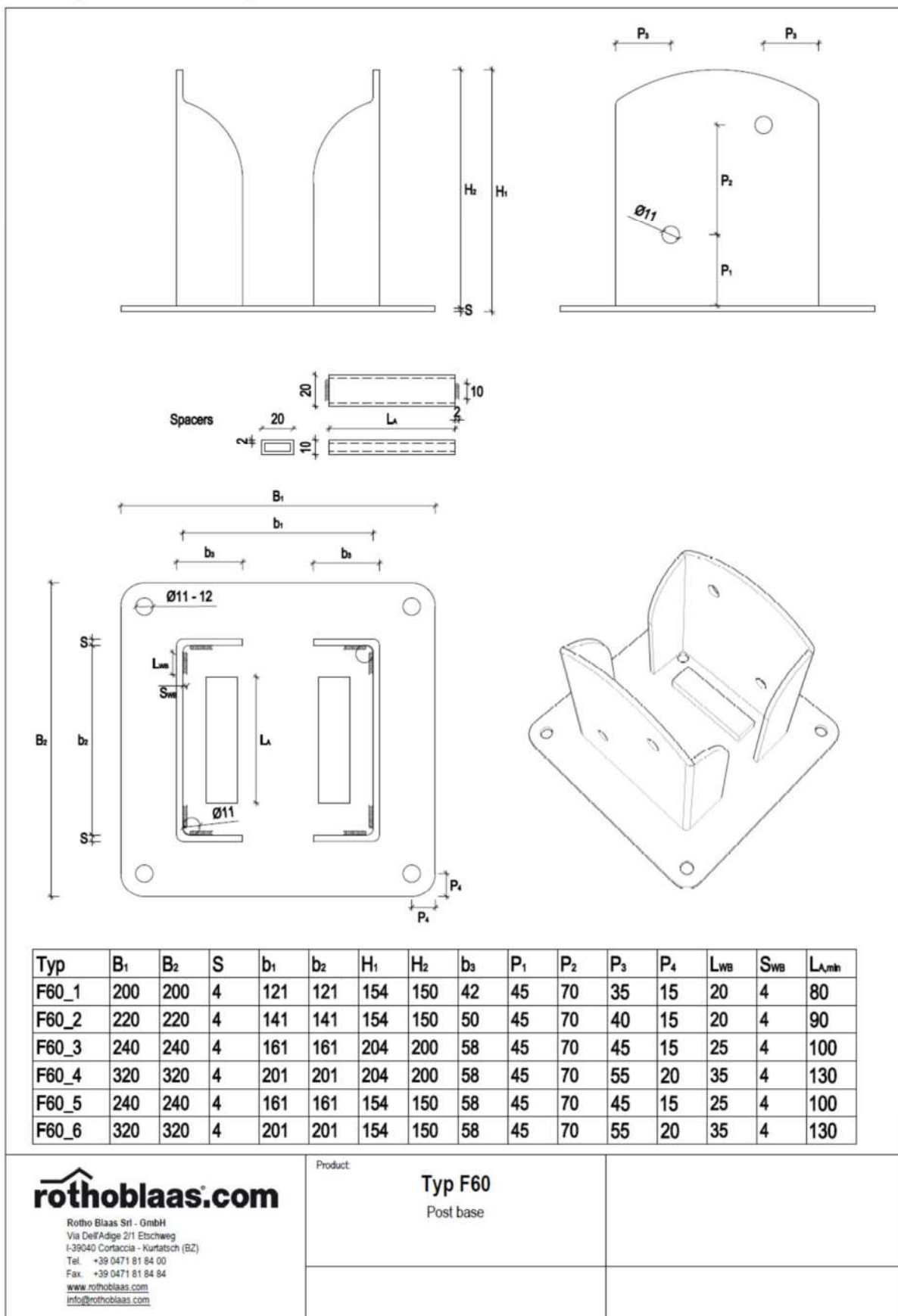
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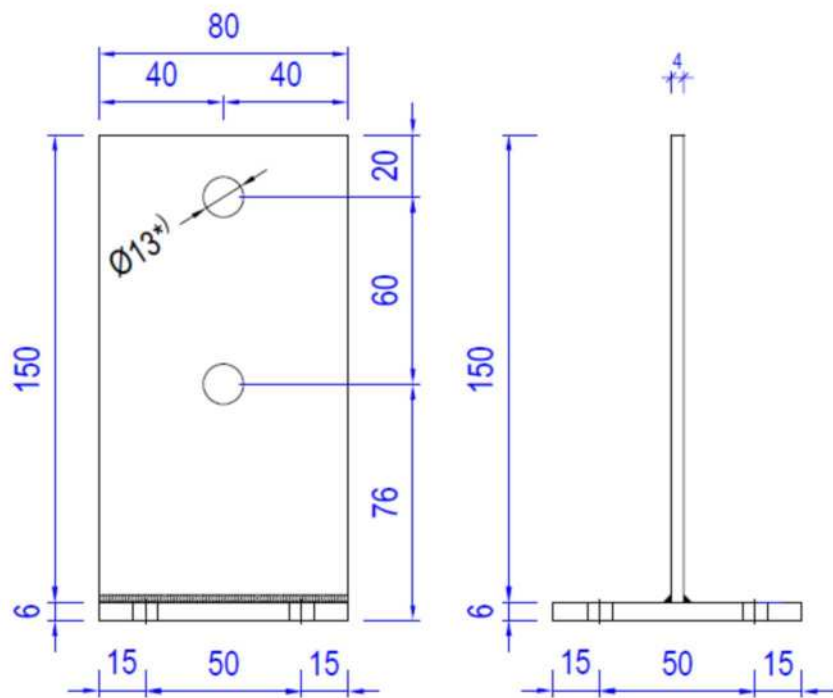
Product:

**Typ F40**  
Post base

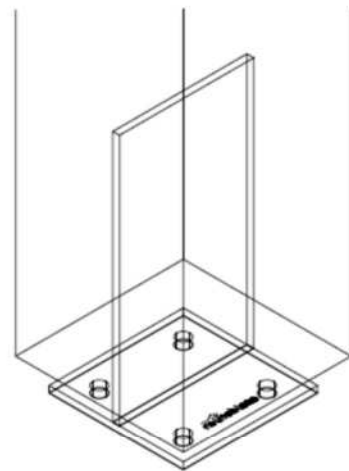
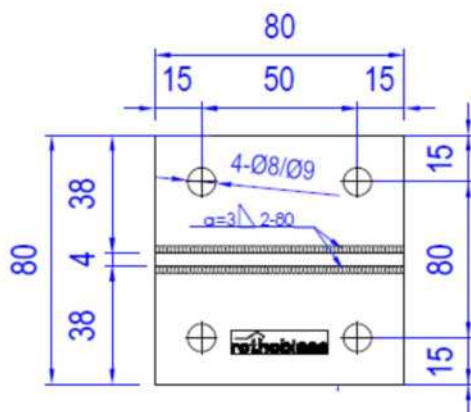








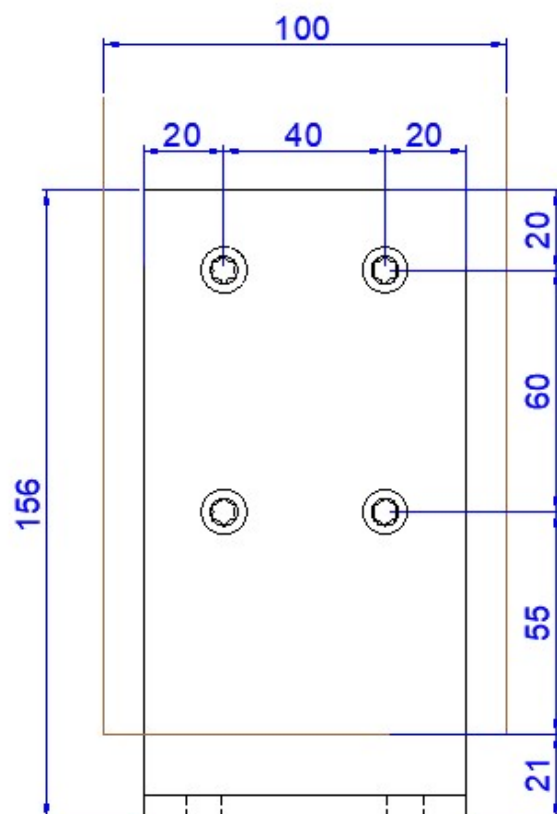
\*) Holes Ø13 mm on vertical flange are optional



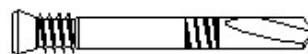
All dimension in mm

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**4 self-tapping dowels  $\varnothing 7,5 \times 75$**   
**Post MIN 100x100**



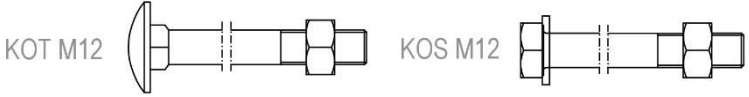
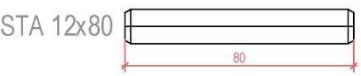
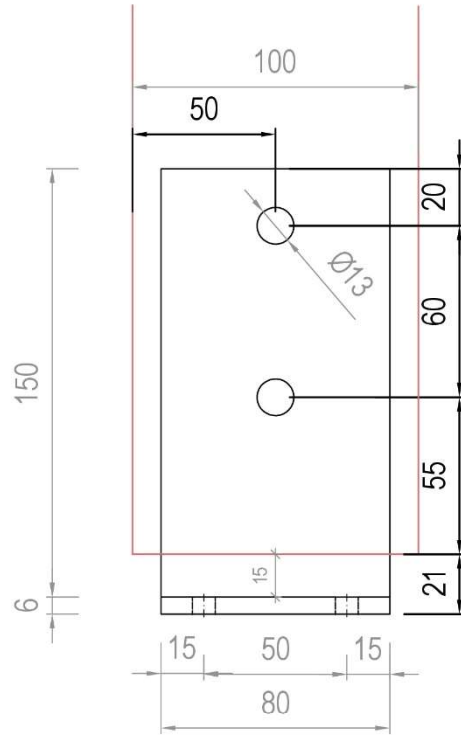
**SBD/SBDS - 7.5x75**



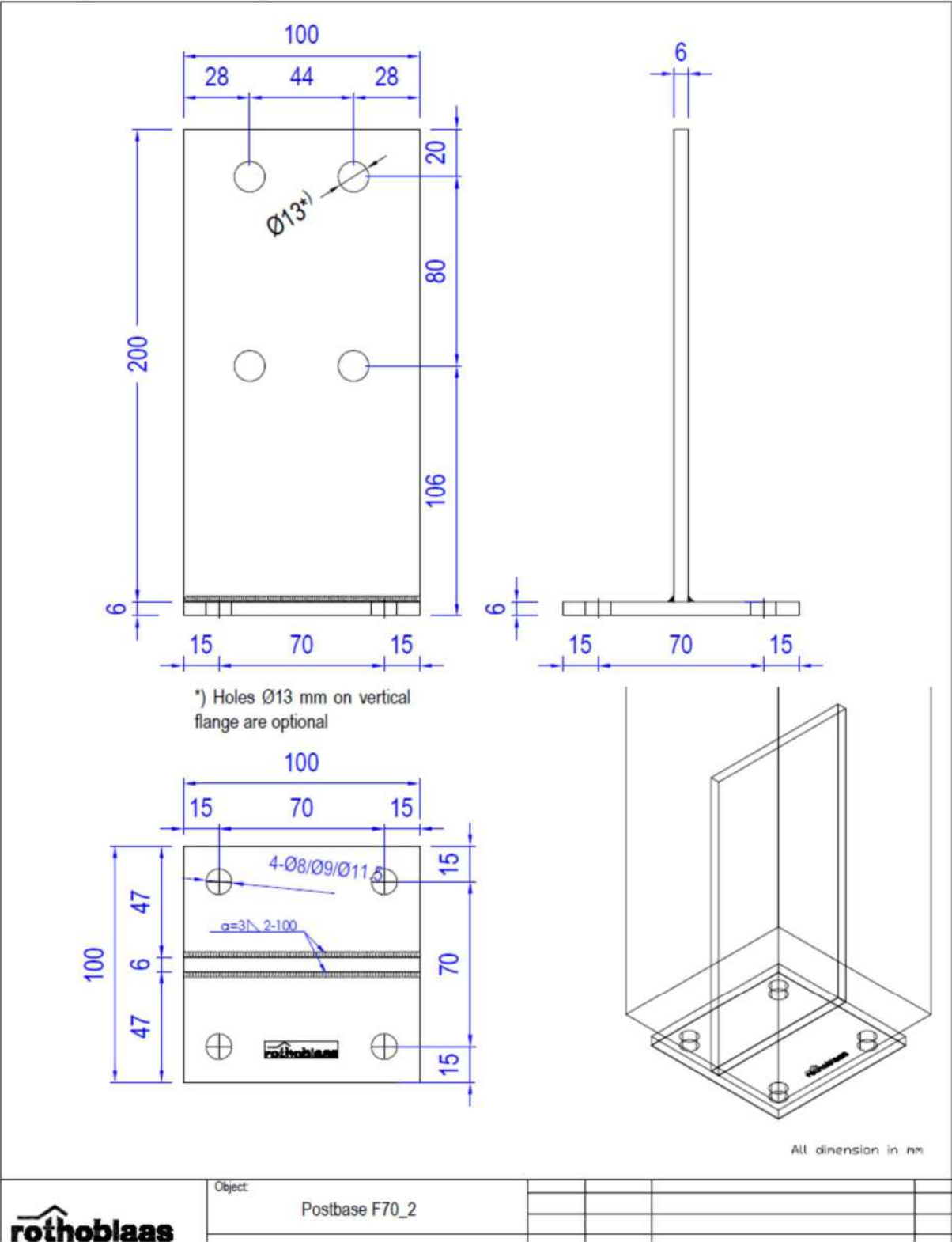
Object: Postbase F70\_1

Configuration: F70\_1-4SBD75\_100 / F70\_1-4SBDS75\_100

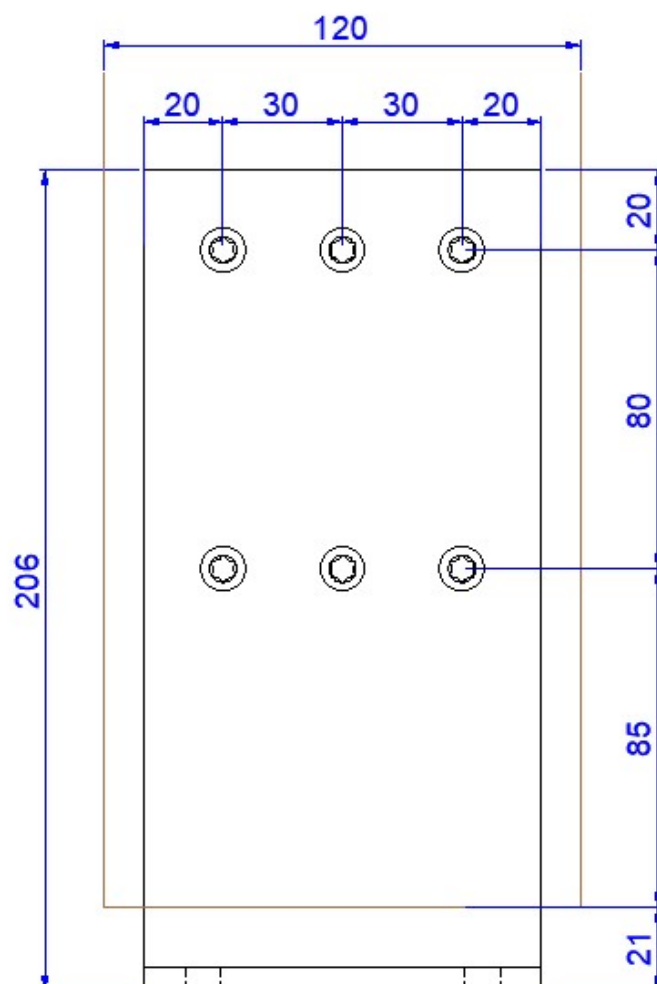
2 smooth dowels STA Ø12 x 80  
or 2 bolts M12 x 120  
Post MIN 100x100 mm



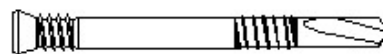
Object: Postbase F70\_1  
Configuration: F70\_1-2STA80/BOLT120\_100



**6 self-tapping dowels  $\varnothing 7,5 \times 95$**   
**Post MIN 120x120**

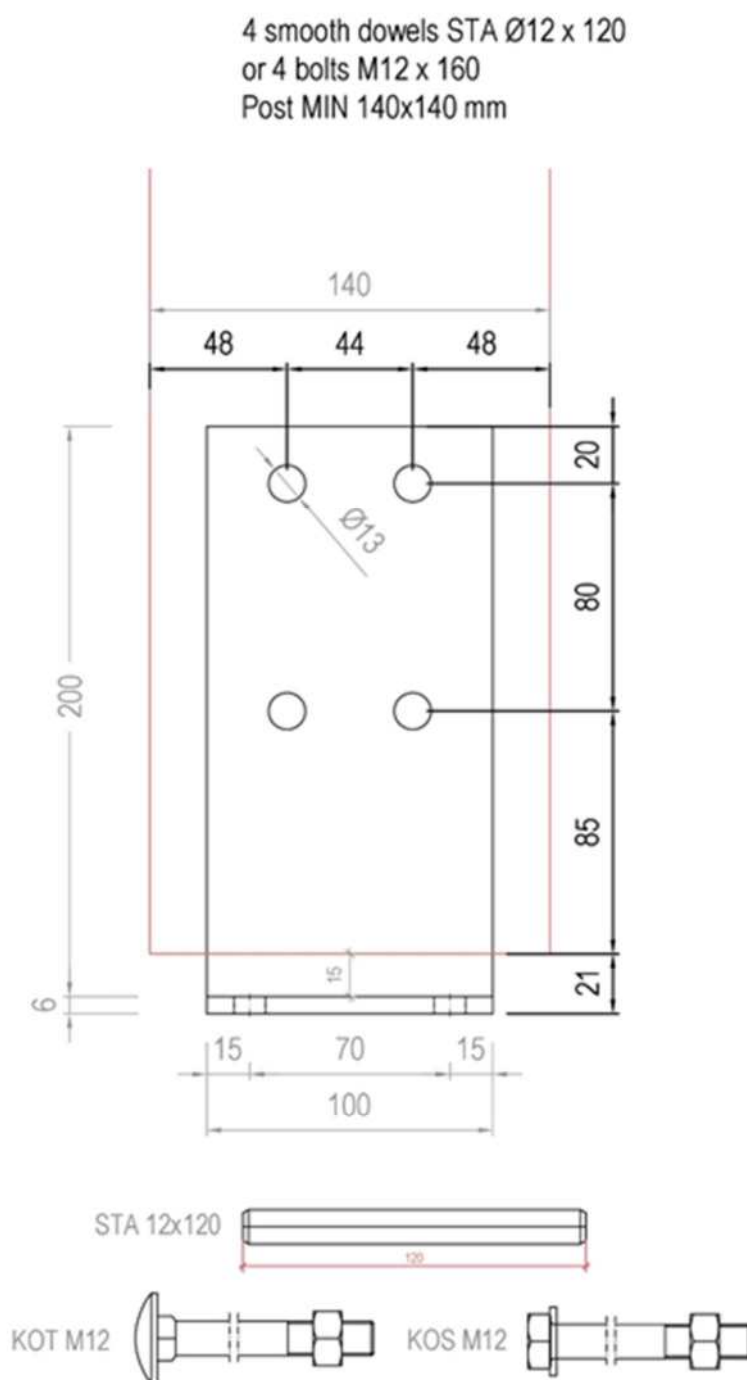


**SBD/SBDS - 7.5x95**



Object: Postbase F70\_2

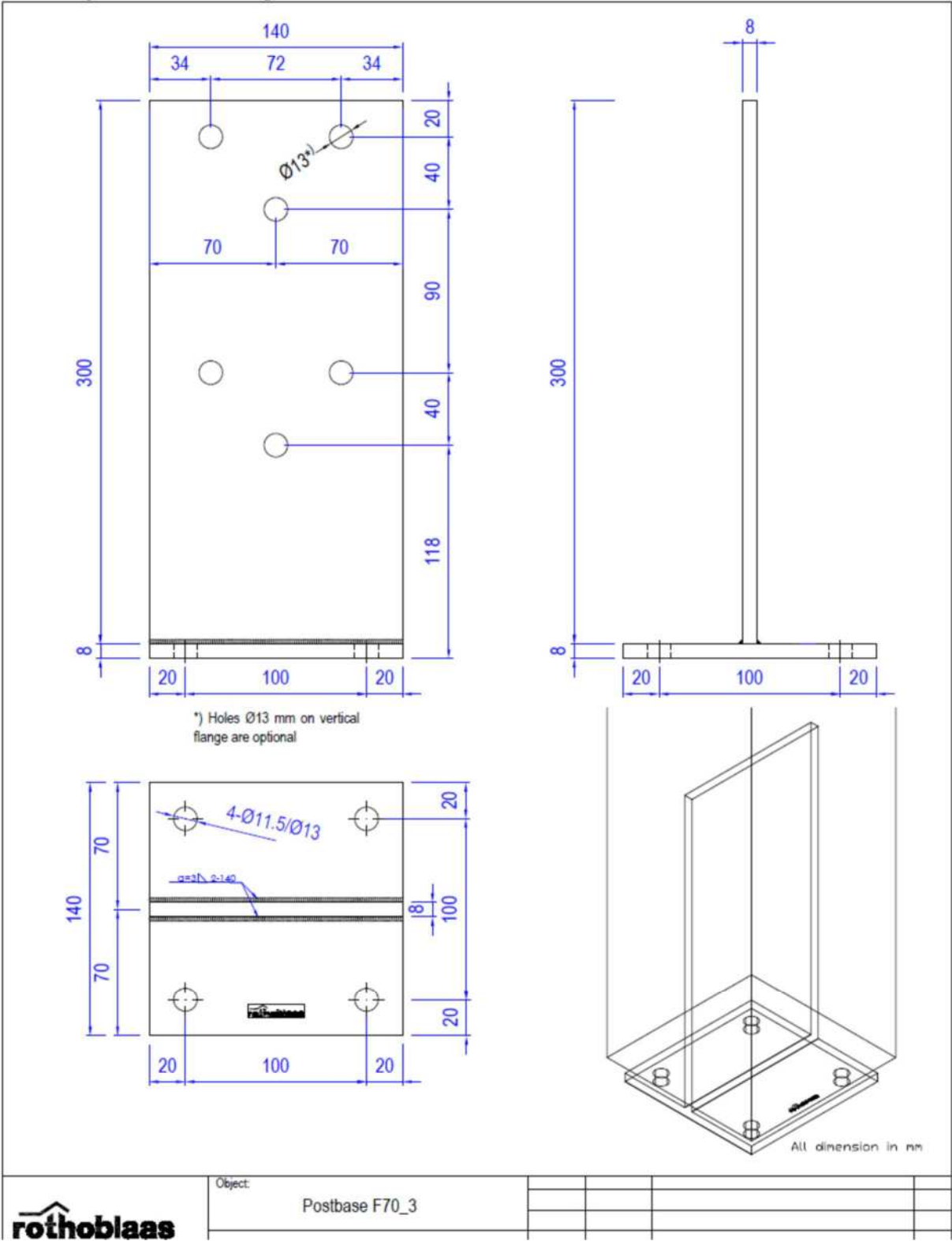
Configuration: F70\_2-6SBD95\_120 / F70\_2-6SBDS95\_120



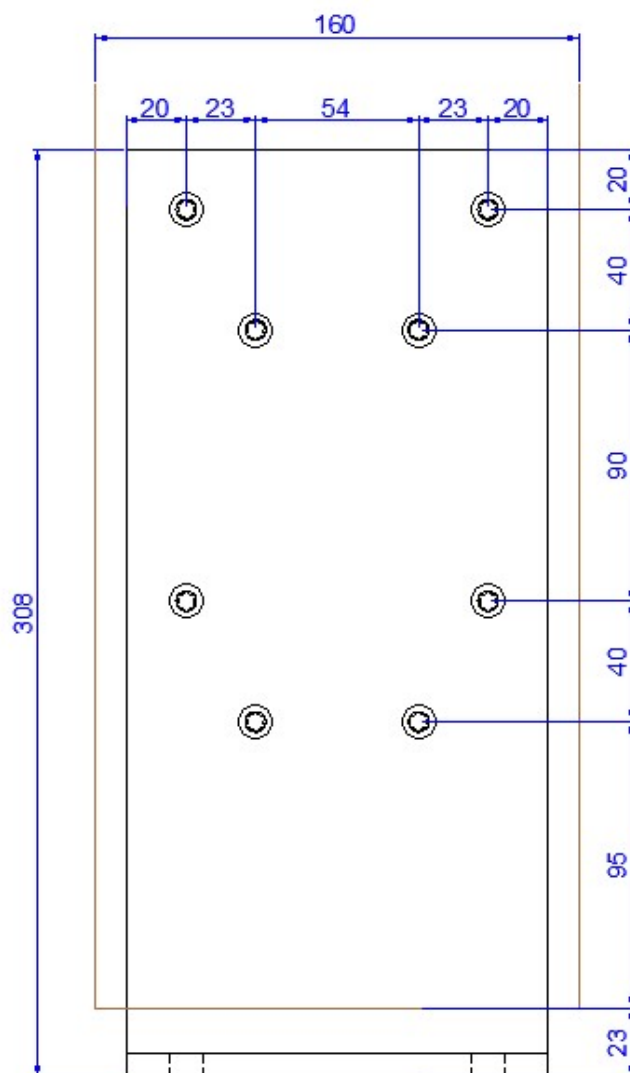
Object: Postbase F70\_2

Configuration: F70\_2-4STA120/BOLT160\_140

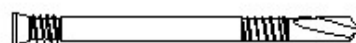




**8 self-tapping dowels  $\varnothing 7,5 \times 115$**   
**Post MIN 160x160**



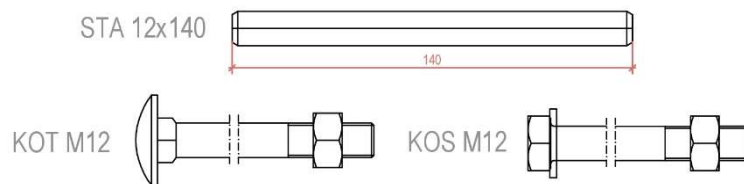
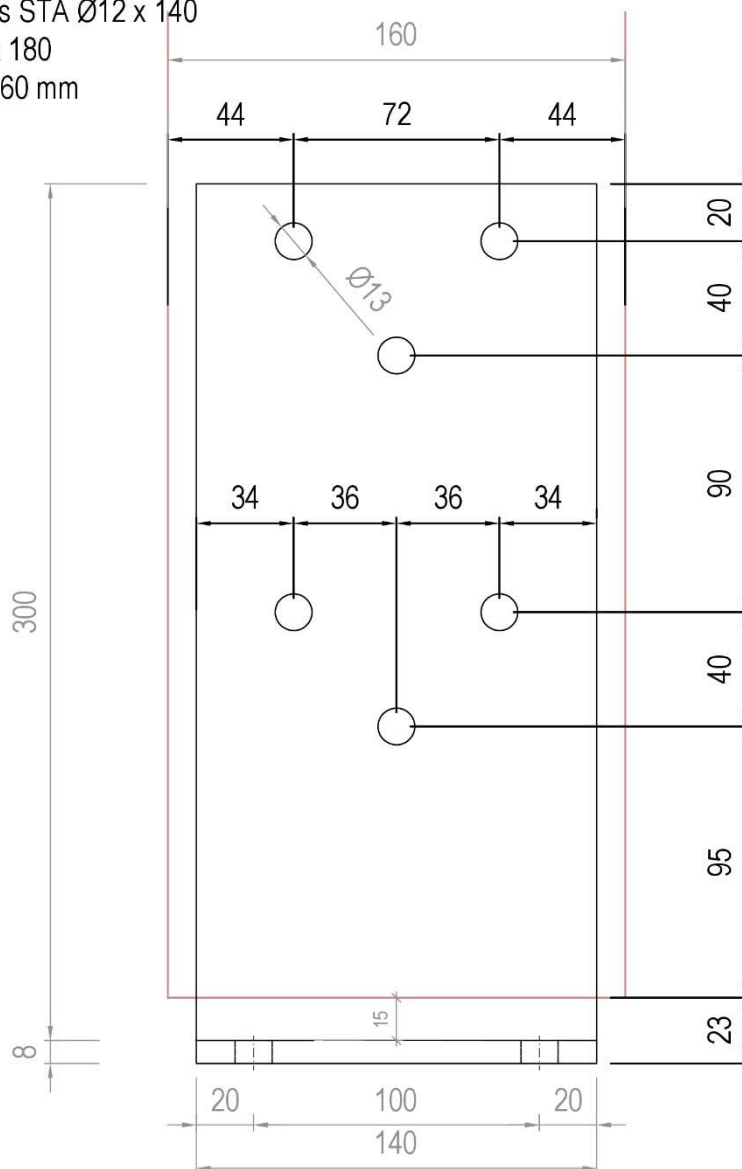
**SBD/SBDS - 7.5x115**



Object: Postbase F70\_3

Configuration: F70\_3-8SBD115\_160 / F70\_3-8SBDS115\_160

6 smooth dowels STA Ø12 x 140  
or 6 bolts M12 x 180  
Post MIN 160x160 mm

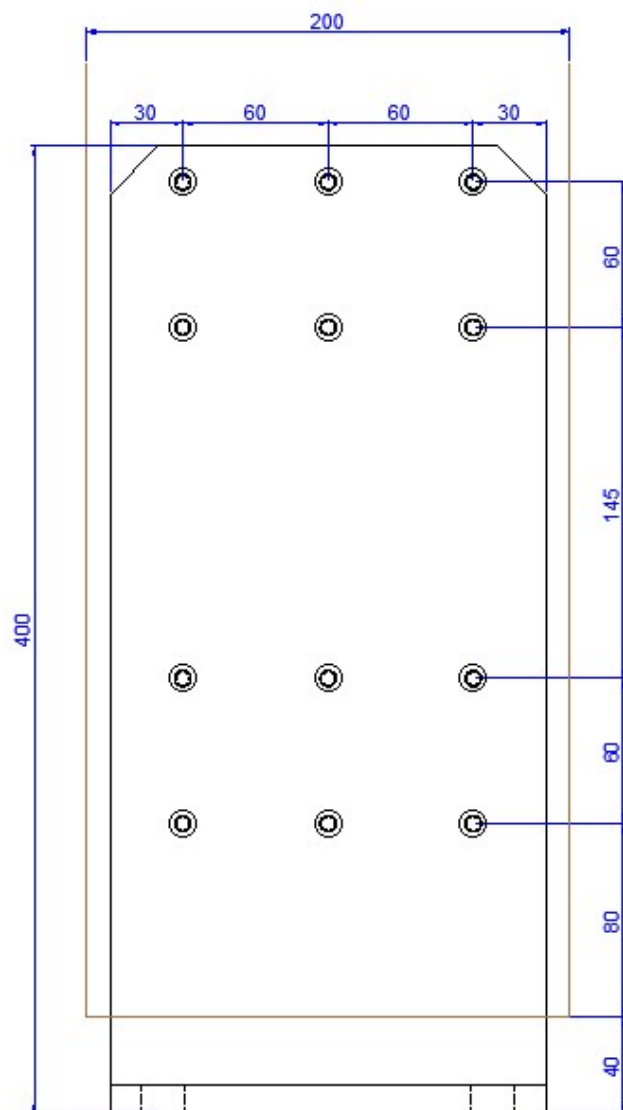


Object: Postbase F70\_3

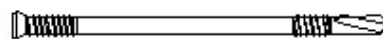
Configuration: F70\_3-6STA140/BOLT180\_160



**12 self-tapping dowels  $\varnothing 7,5 \times 155$**   
**Post MIN 160x200**

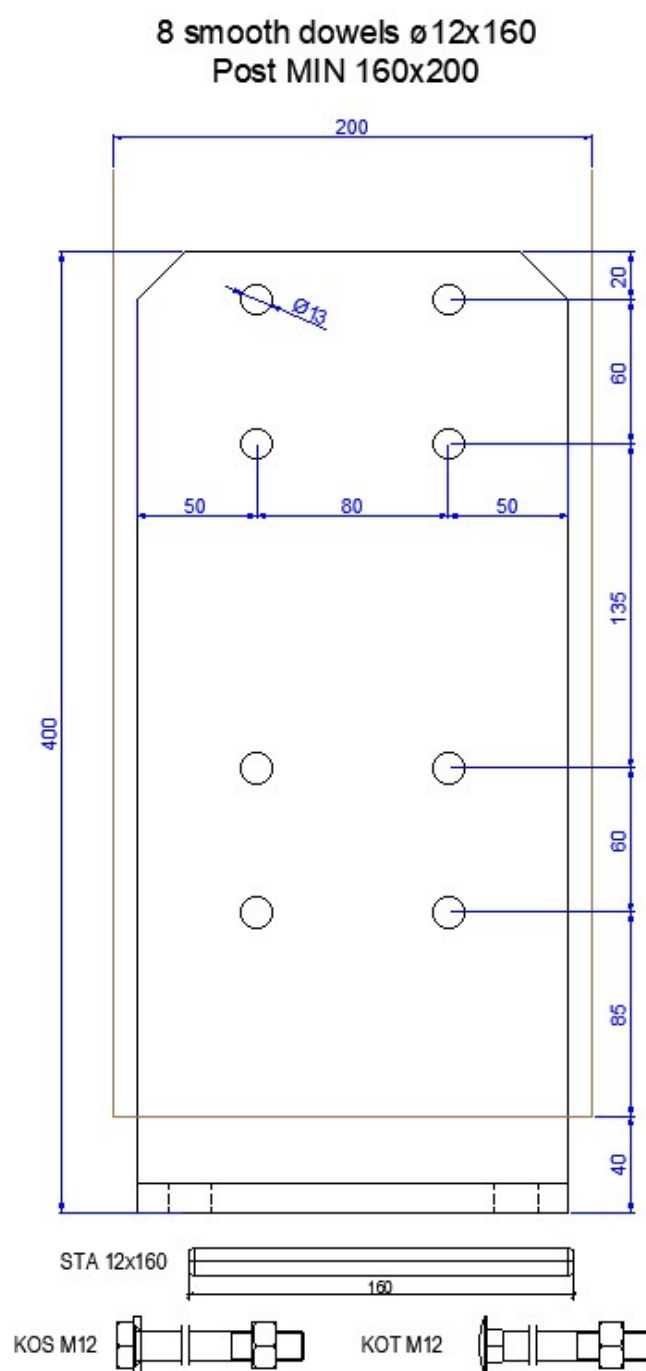


**SBD/SBDS - 7.5x155**



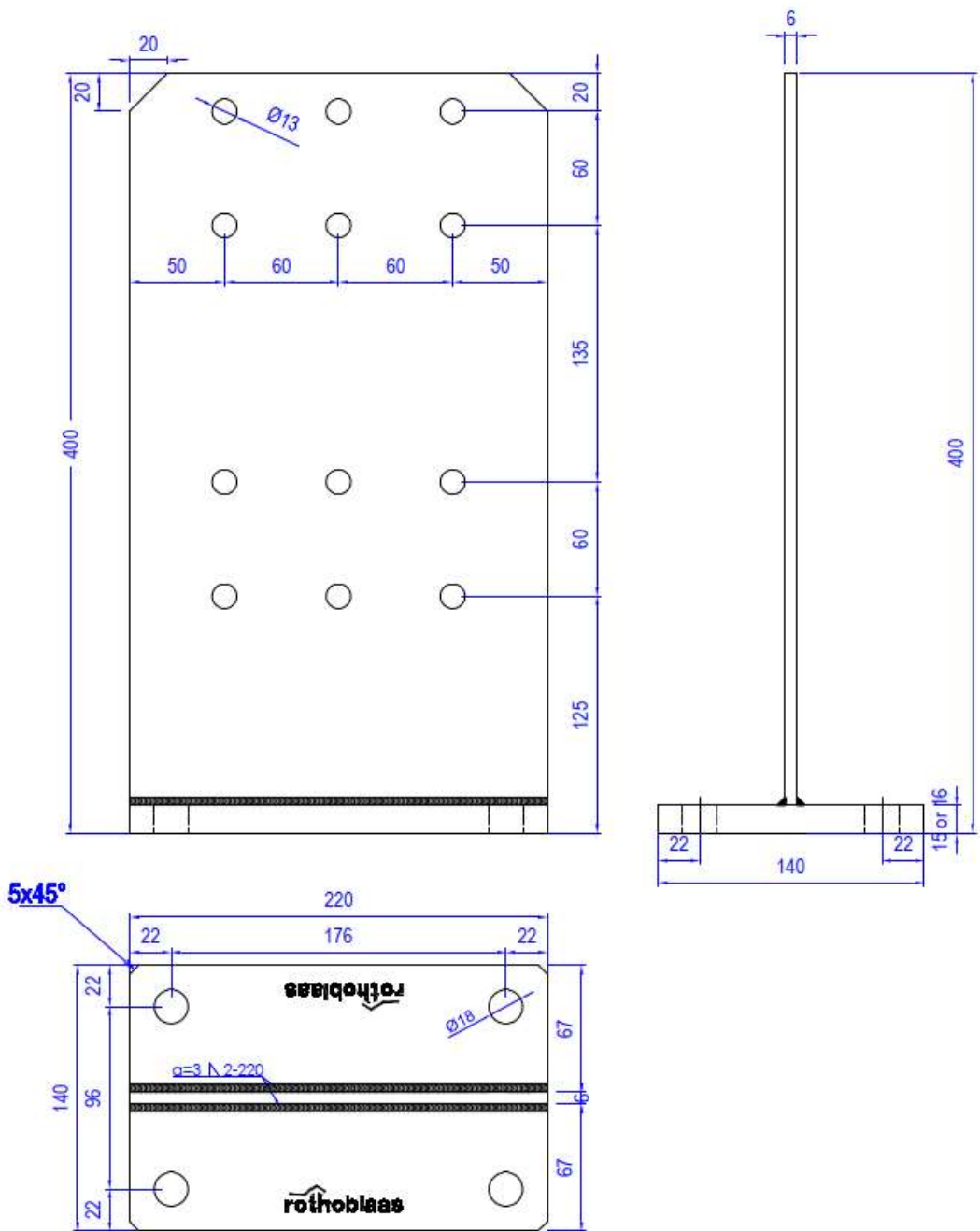
Object: Postbase F70\_4

Configuration: F70\_4-12SBD155 / F70\_4-12SBDS155



Object: Postbase F70\_4

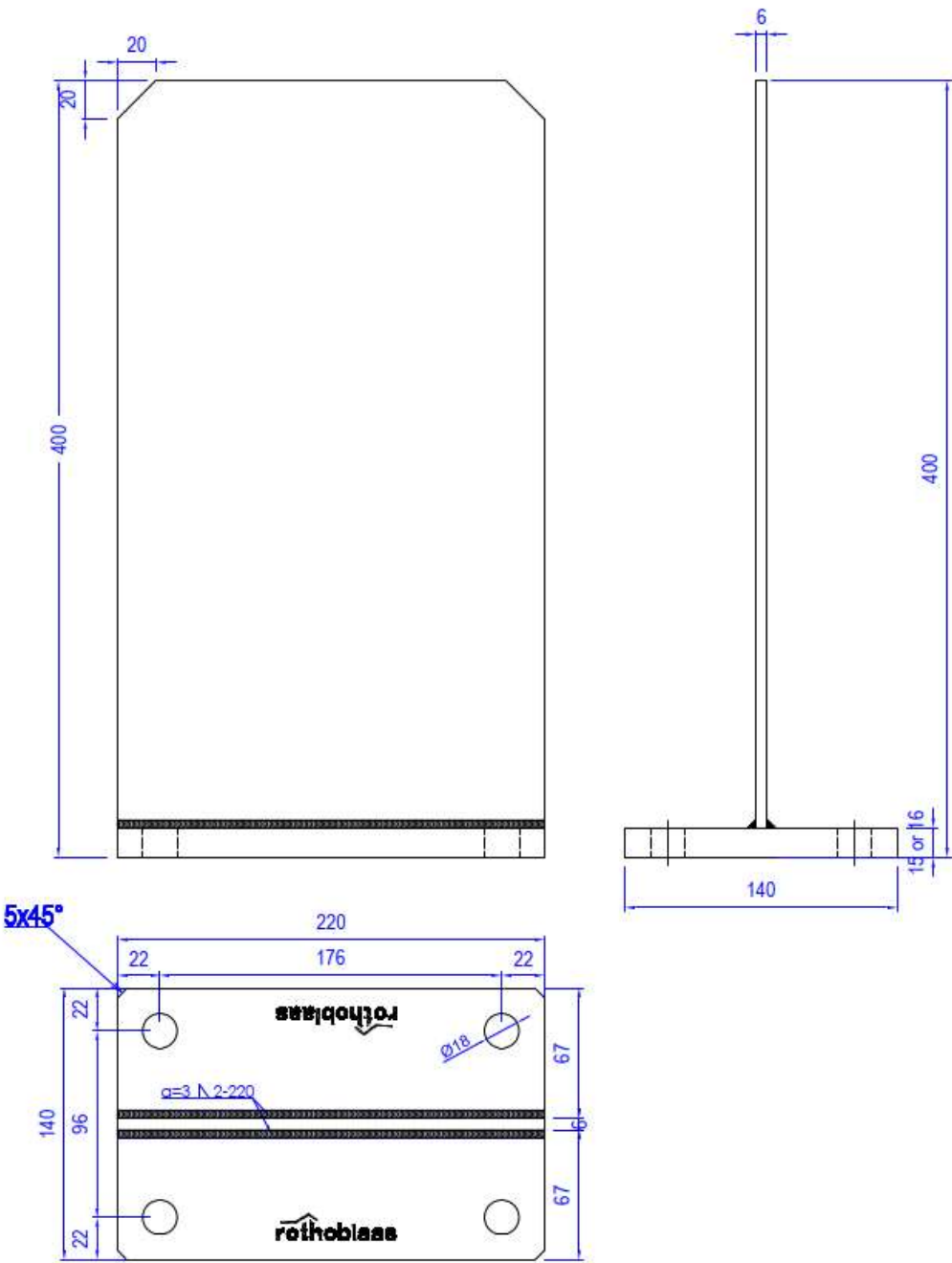
Configuration: F70\_4-8STA160 / BOLT180\_160



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Object: Postbase F70\_5



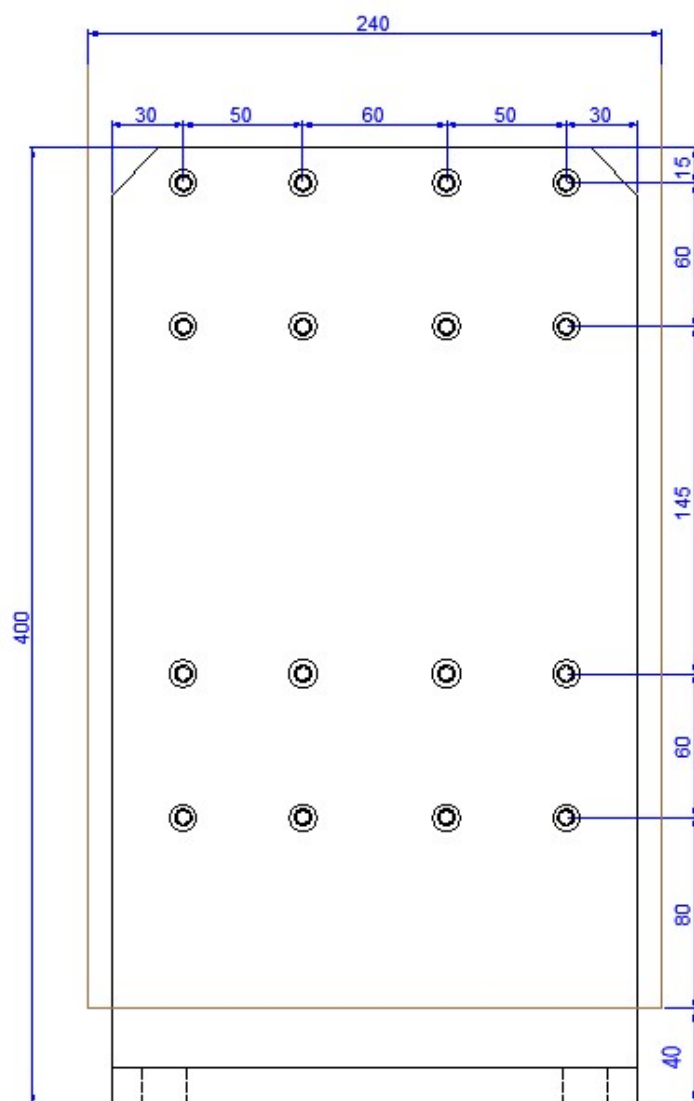
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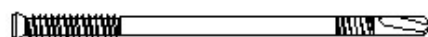
Object: Postbase F70\_5



**16 self-tapping dowels  $\varnothing 7,5 \times 175$**   
**Post MIN 200x240**

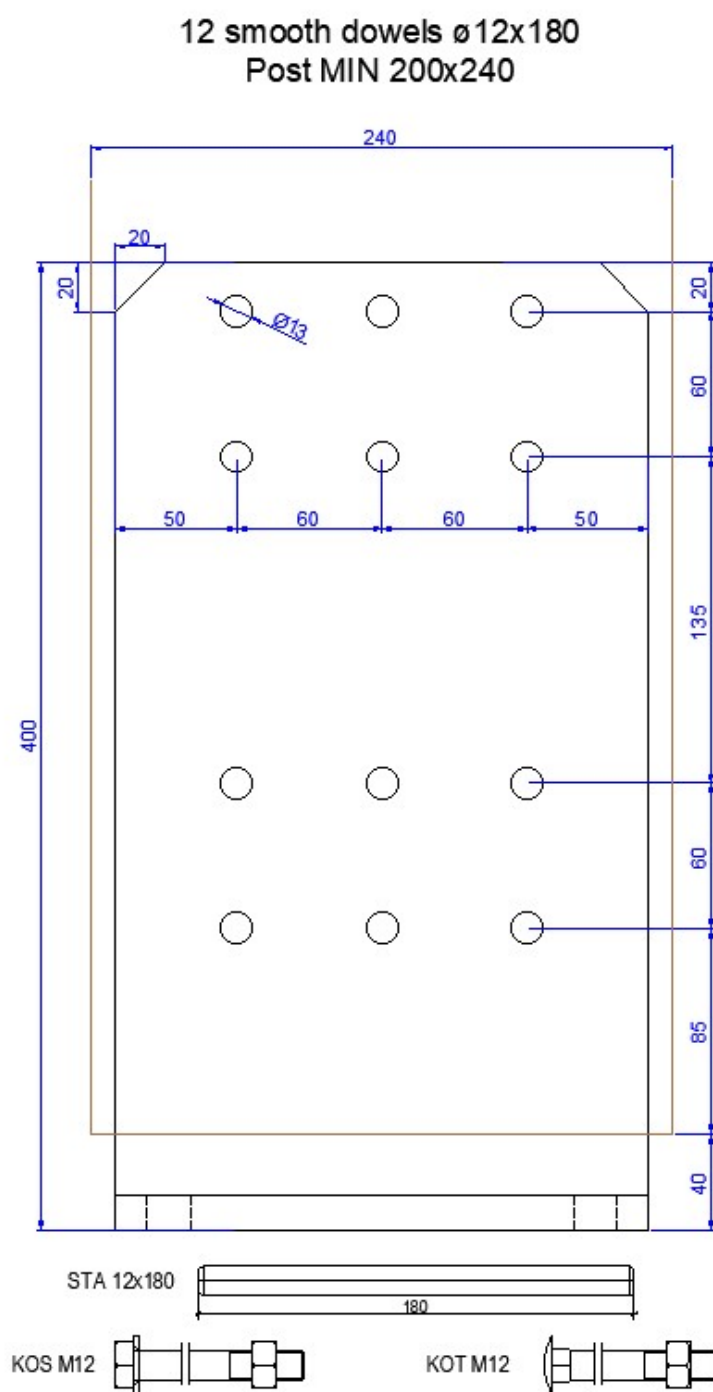


**SBD/SBDS - 7.5x175**



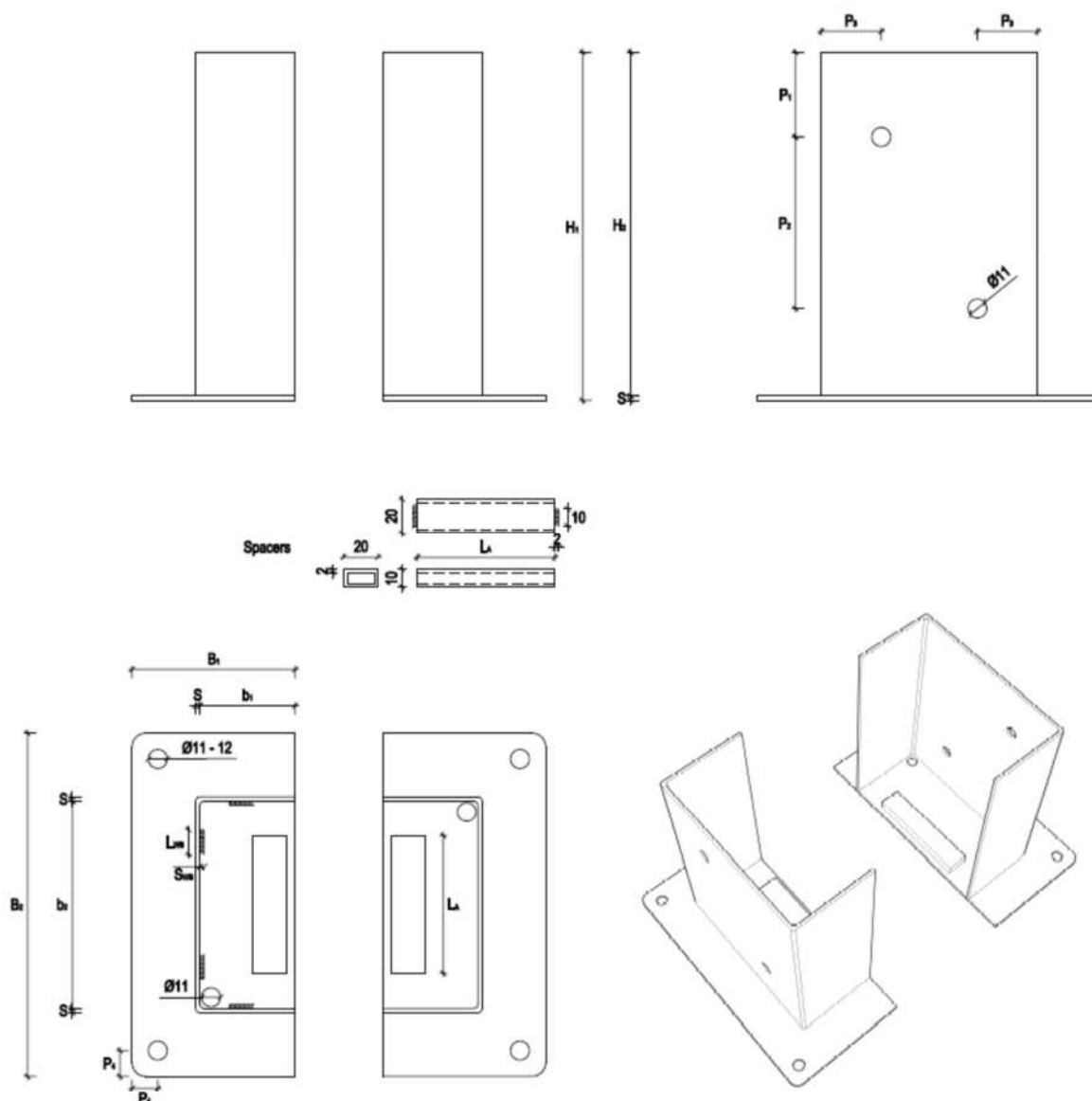
Object: Postbase F70\_5

Configuration: F70\_5-16SBD175 / F70\_5-16SBDS175



Object: Postbase F70\_5

Configuration: F70\_5-12STA180 / BOLT220\_200



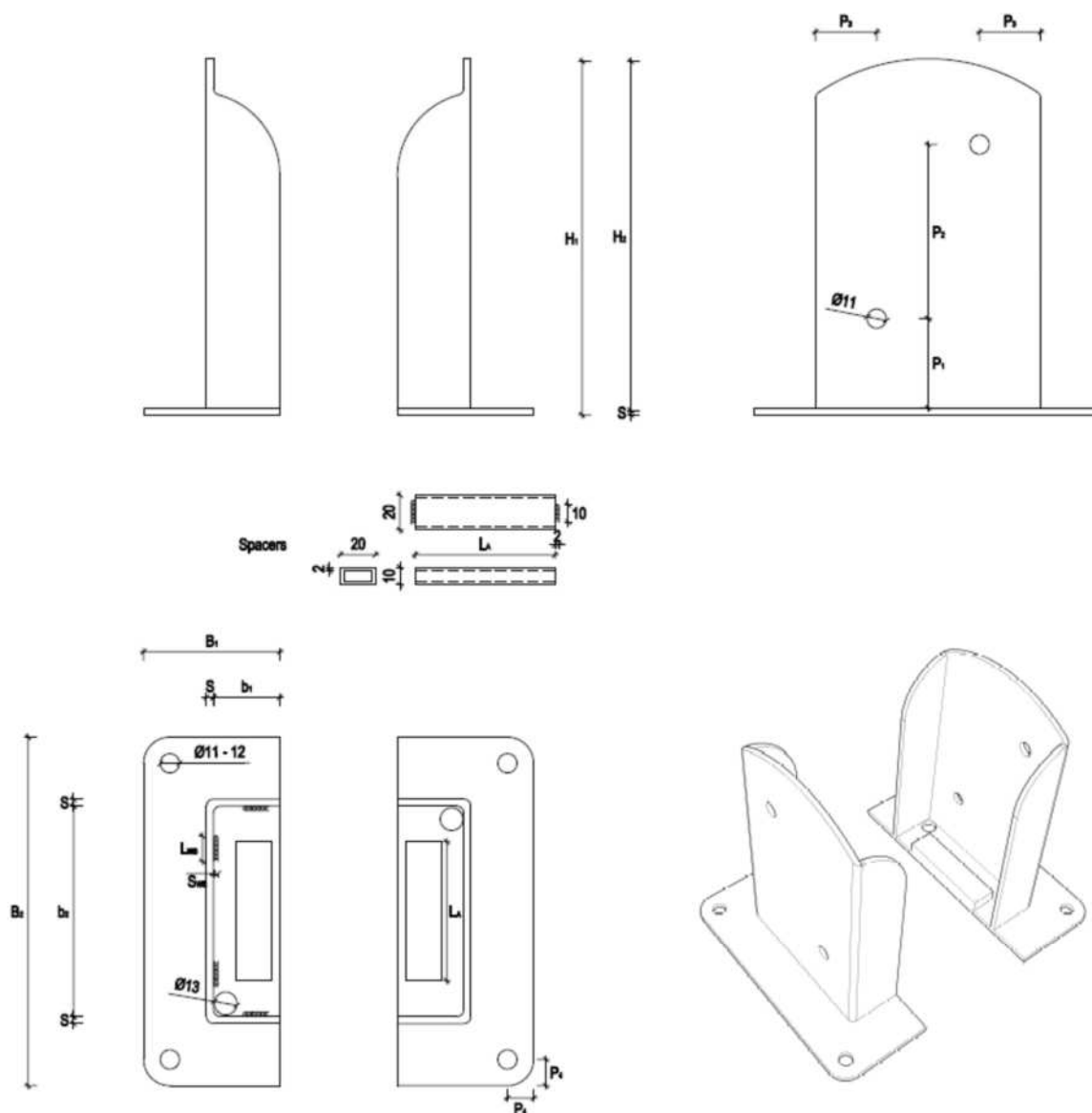
| Typ    | B <sub>1</sub> | B <sub>2</sub> | S   | b <sub>1</sub> | b <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | P <sub>1</sub> | P <sub>2</sub> | P <sub>3</sub> | P <sub>4</sub> | L <sub>WB</sub> | S <sub>WB</sub> | L <sub>unh</sub> |
|--------|----------------|----------------|-----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|------------------|
| FD10_1 | 95             | 200            | 2.5 | 55.5           | 121            | 202.5          | 200            | 50             | 100            | 35             | 15             | 25              | 2.5             | 80               |
| FD10_2 | 105            | 220            | 2.5 | 65.5           | 141            | 202.5          | 200            | 50             | 100            | 40             | 15             | 25              | 2.5             | 90               |
| FD10_3 | 115            | 240            | 2.5 | 75.5           | 161            | 202.5          | 200            | 50             | 100            | 45             | 15             | 30              | 2.5             | 100              |
| FD10_4 | 125            | 260            | 2.5 | 85.5           | 181            | 202.5          | 200            | 50             | 100            | 50             | 15             | 30              | 2.5             | 110              |
| FD10_5 | 135            | 280            | 2.5 | 95.5           | 201            | 202.5          | 200            | 50             | 100            | 55             | 15             | 35              | 2.5             | 130              |

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Product:

**Typ FD10**  
Post base



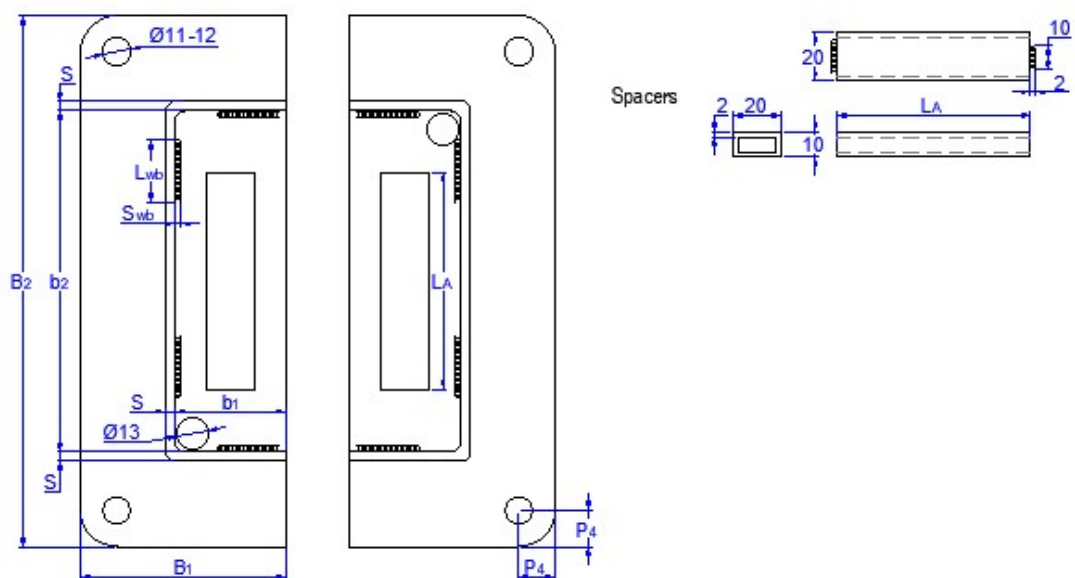
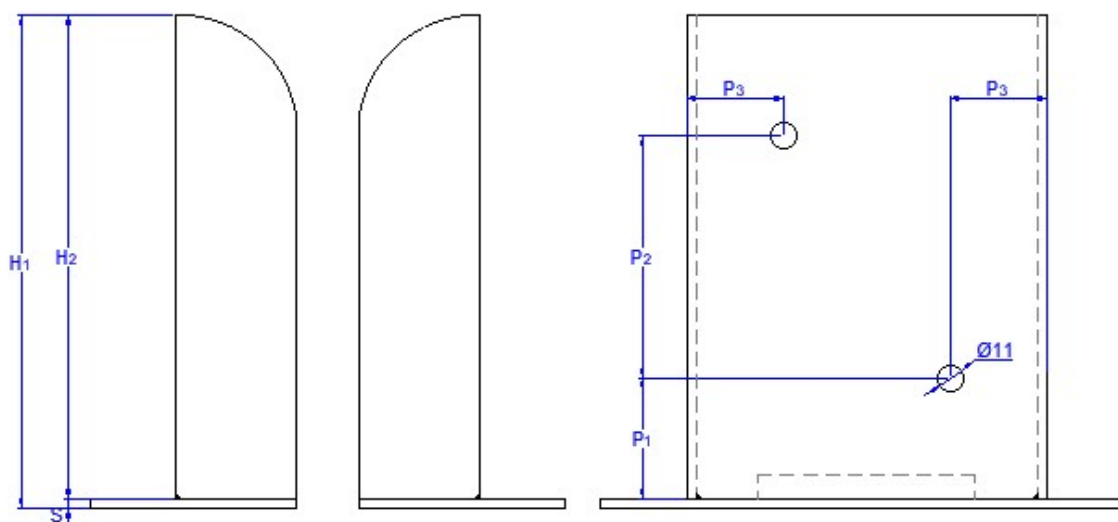
| Typ    | B <sub>1</sub> | B <sub>2</sub> | S | b <sub>1</sub> | b <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | P <sub>1</sub> | P <sub>2</sub> | P <sub>3</sub> | P <sub>4</sub> | L <sub>WB</sub> | S <sub>WB</sub> | L <sub>Amin</sub> |
|--------|----------------|----------------|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-------------------|
| FD20_1 | 78             | 200            | 4 | 38             | 121            | 204            | 200            | 50             | 100            | 35             | 15             | 20              | 4               | 80                |
| FD20_2 | 85             | 220            | 4 | 46             | 141            | 204            | 200            | 50             | 100            | 40             | 15             | 25              | 4               | 90                |
| FD20_3 | 92             | 240            | 4 | 54             | 161            | 204            | 200            | 50             | 100            | 45             | 15             | 30              | 4               | 100               |
| FD20_4 | 105            | 280            | 4 | 66             | 201            | 204            | 200            | 50             | 100            | 55             | 15             | 35              | 4               | 130               |

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Product:

**Typ FD20**  
Post base

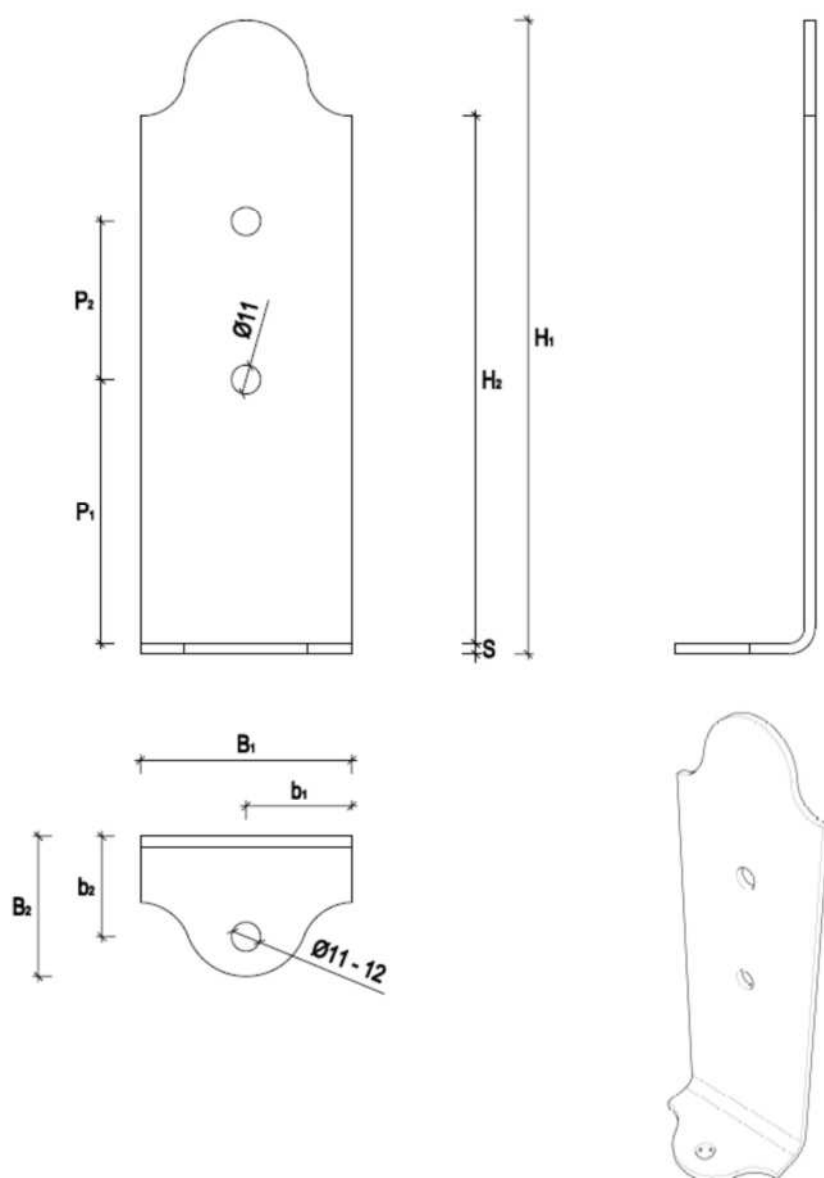


|            | B <sub>1</sub> | B <sub>2</sub> | S | b <sub>1</sub> | b <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | P <sub>1</sub> | P <sub>2</sub> | P <sub>3</sub> | P <sub>4</sub> | L <sub>wb</sub> | S <sub>wb</sub> | L <sub>A, min</sub> |
|------------|----------------|----------------|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|---------------------|
| FD20_1 Alt | 78             | 200            | 4 | 38             | 121            | 204            | 200            | 50             | 100            | 35             | 15             | 20              | 4               | 80                  |
| FD20_2 Alt | 85             | 220            | 4 | 46             | 141            | 204            | 200            | 50             | 100            | 40             | 15             | 25              | 4               | 90                  |
| FD20_3 Alt | 92             | 240            | 4 | 54             | 161            | 204            | 200            | 50             | 100            | 45             | 15             | 30              | 4               | 100                 |
| FD20_4 Alt | 105            | 280            | 4 | 66             | 201            | 204            | 200            | 50             | 100            | 55             | 15             | 35              | 4               | 130                 |

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Objekt: Postbase FD20\_Alt



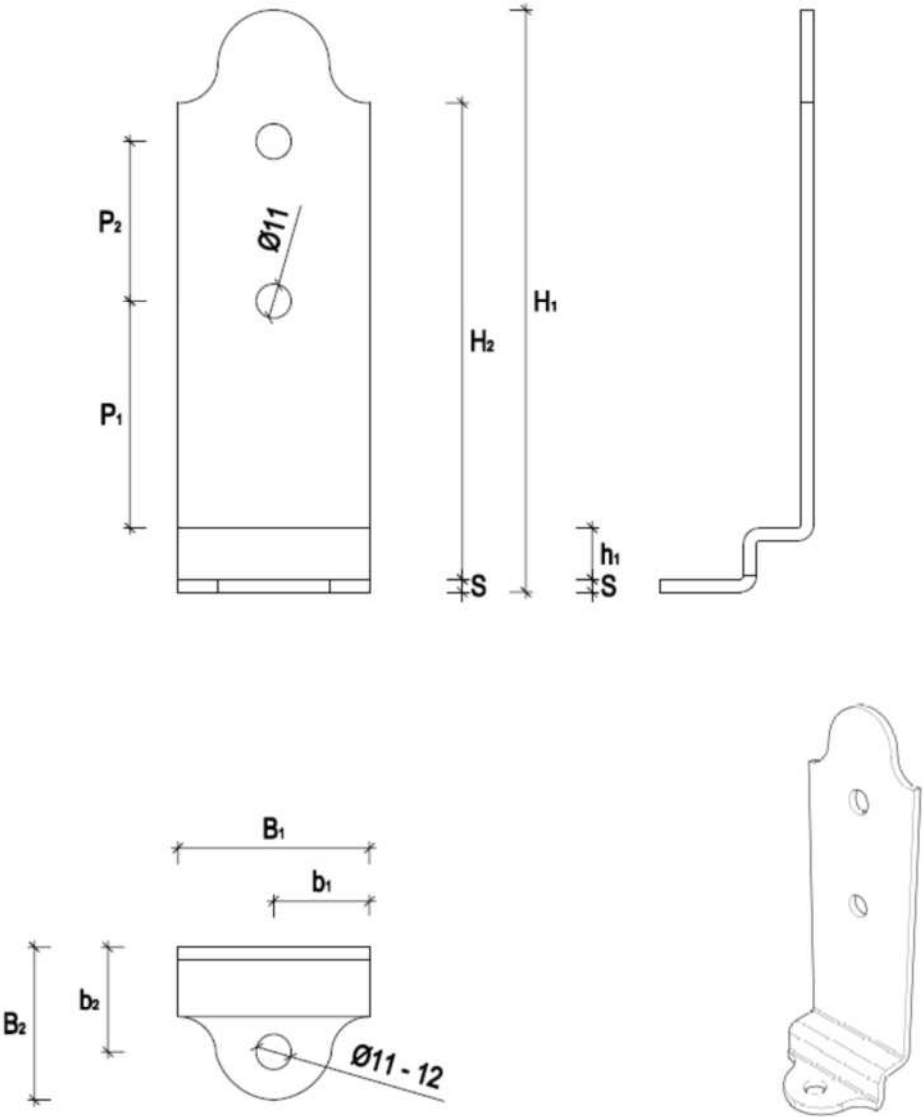
| Typ    | B <sub>1</sub> | B <sub>2</sub> | S   | b <sub>1</sub> | b <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | P <sub>1</sub> | P <sub>2</sub> |
|--------|----------------|----------------|-----|----------------|----------------|----------------|----------------|----------------|----------------|
| FD30_1 | 60             | 50             | 4.0 | 30             | 30             | 180            | 150            | 85             | 50             |
| FD30_2 | 80             | 50             | 4.0 | 40             | 38             | 240            | 200            | 100            | 60             |

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Product:

Typ FD30  
Post base



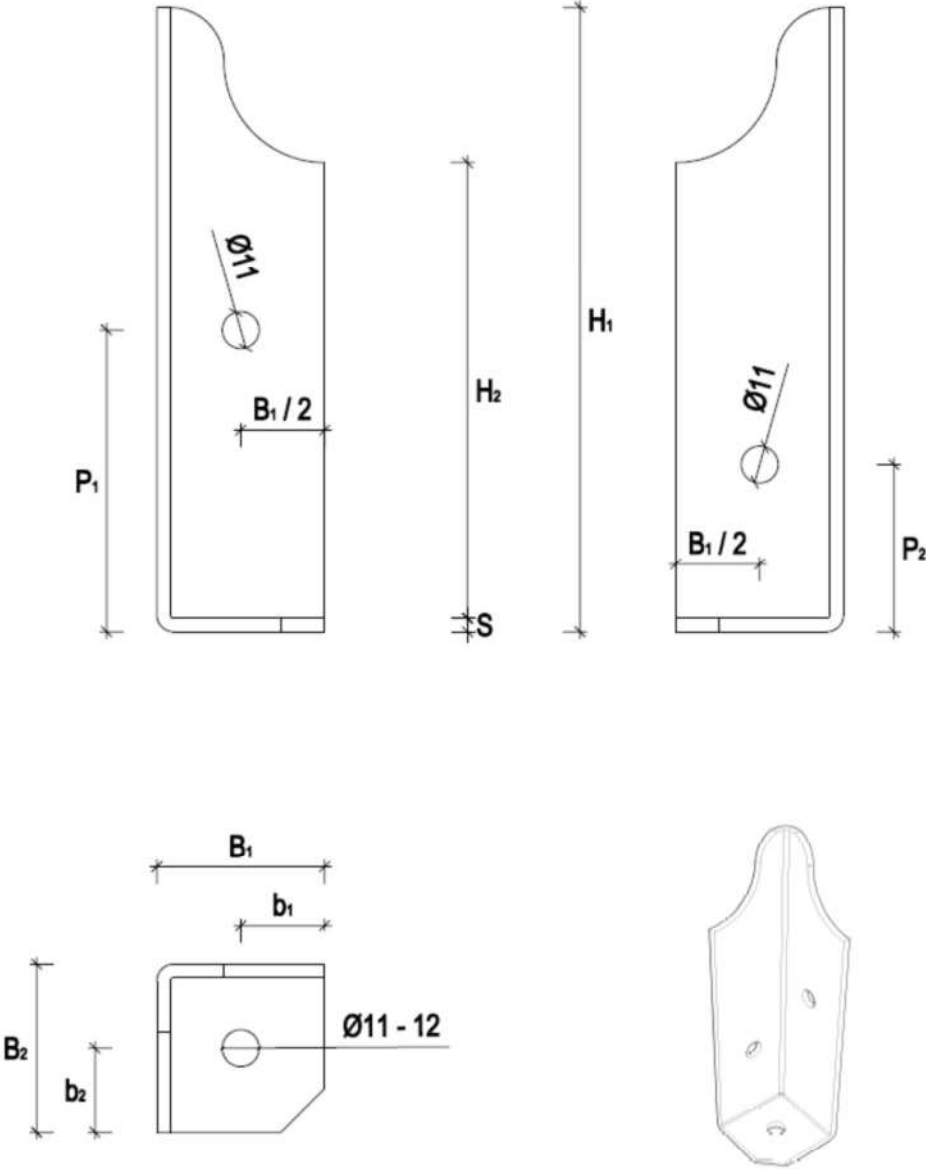
| Typ    | B <sub>1</sub> | B <sub>2</sub> | S   | b <sub>1</sub> | b <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | h <sub>1</sub> | P <sub>1</sub> | P <sub>2</sub> |
|--------|----------------|----------------|-----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| FD40_1 | 60             | 50             | 4.0 | 30             | 33             | 180            | 150            | 16             | 70             | 50             |
| FD40_2 | 80             | 60             | 4.0 | 40             | 40             | 240            | 200            | 16             | 85             | 60             |

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Product:

**Typ FD40**  
Post base



| Typ    | B <sub>1</sub> | B <sub>2</sub> | S   | b <sub>1</sub> | b <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | P <sub>1</sub> | P <sub>2</sub> |
|--------|----------------|----------------|-----|----------------|----------------|----------------|----------------|----------------|----------------|
| FD50_1 | 50             | 50             | 4.0 | 25             | 25             | 185            | 136            | 90             | 50             |
| FD50_2 | 80             | 80             | 4.0 | 40             | 40             | 220            | 140            | 90             | 50             |

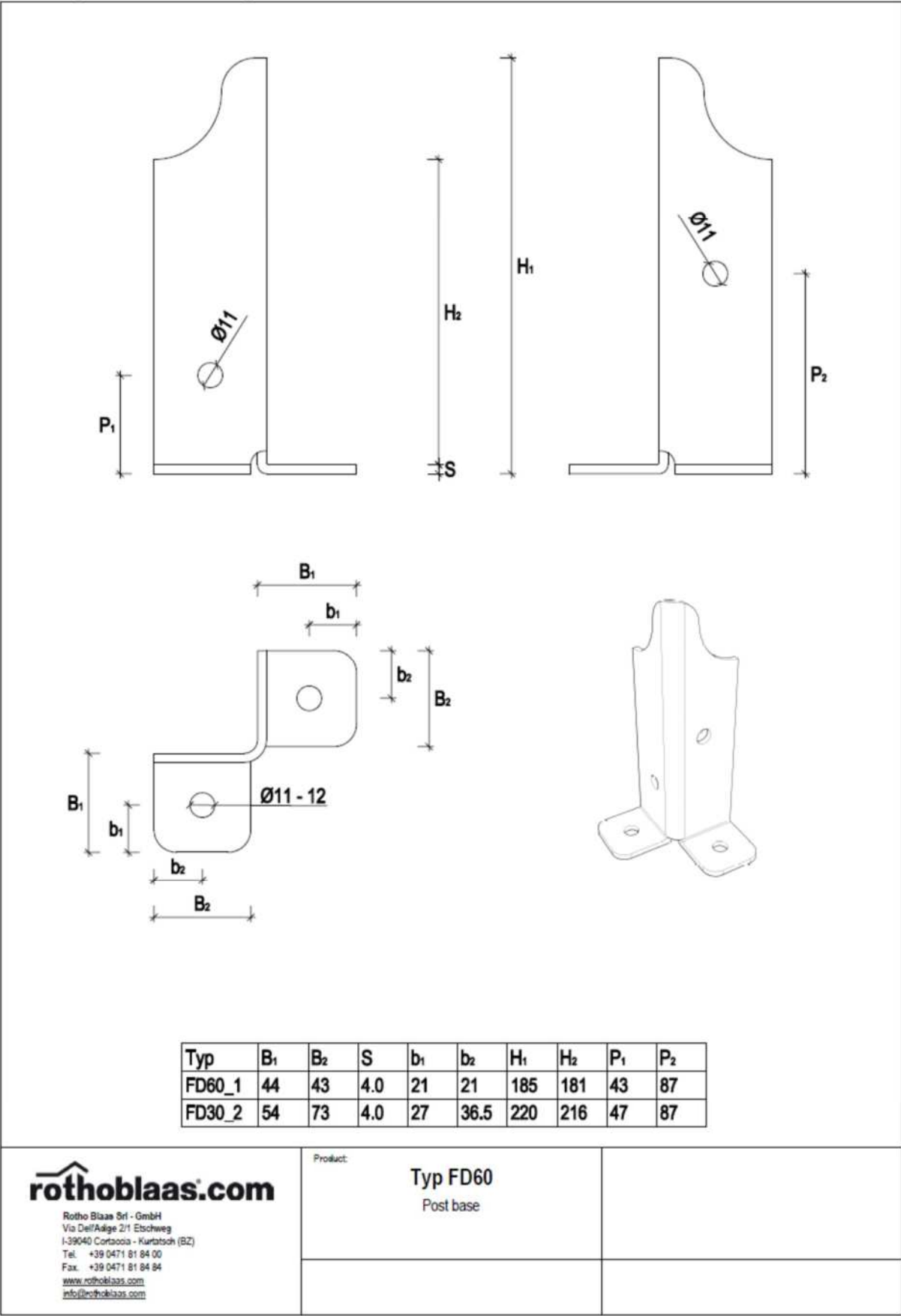
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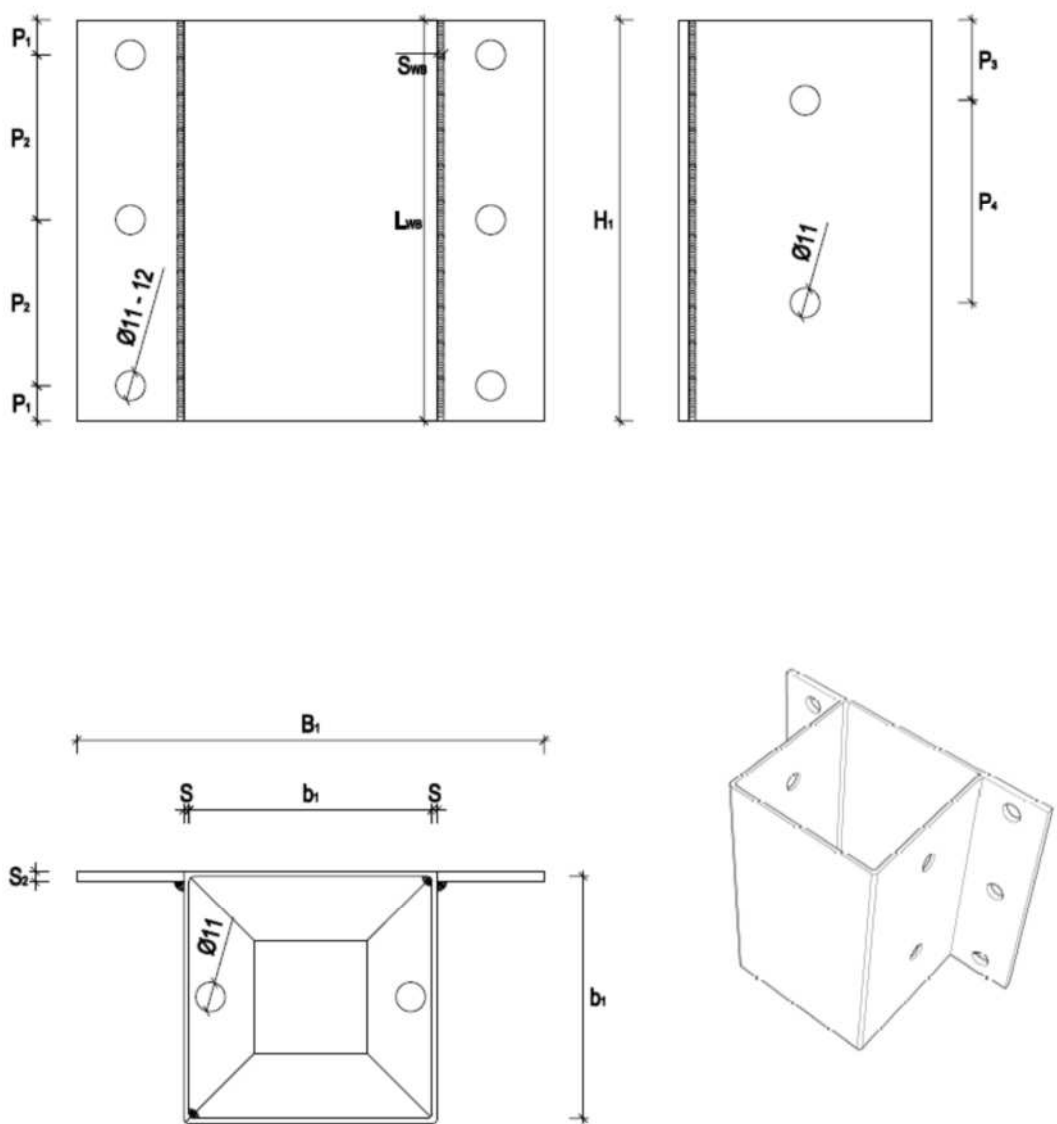
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Product:

**Typ FD50**  
Post base







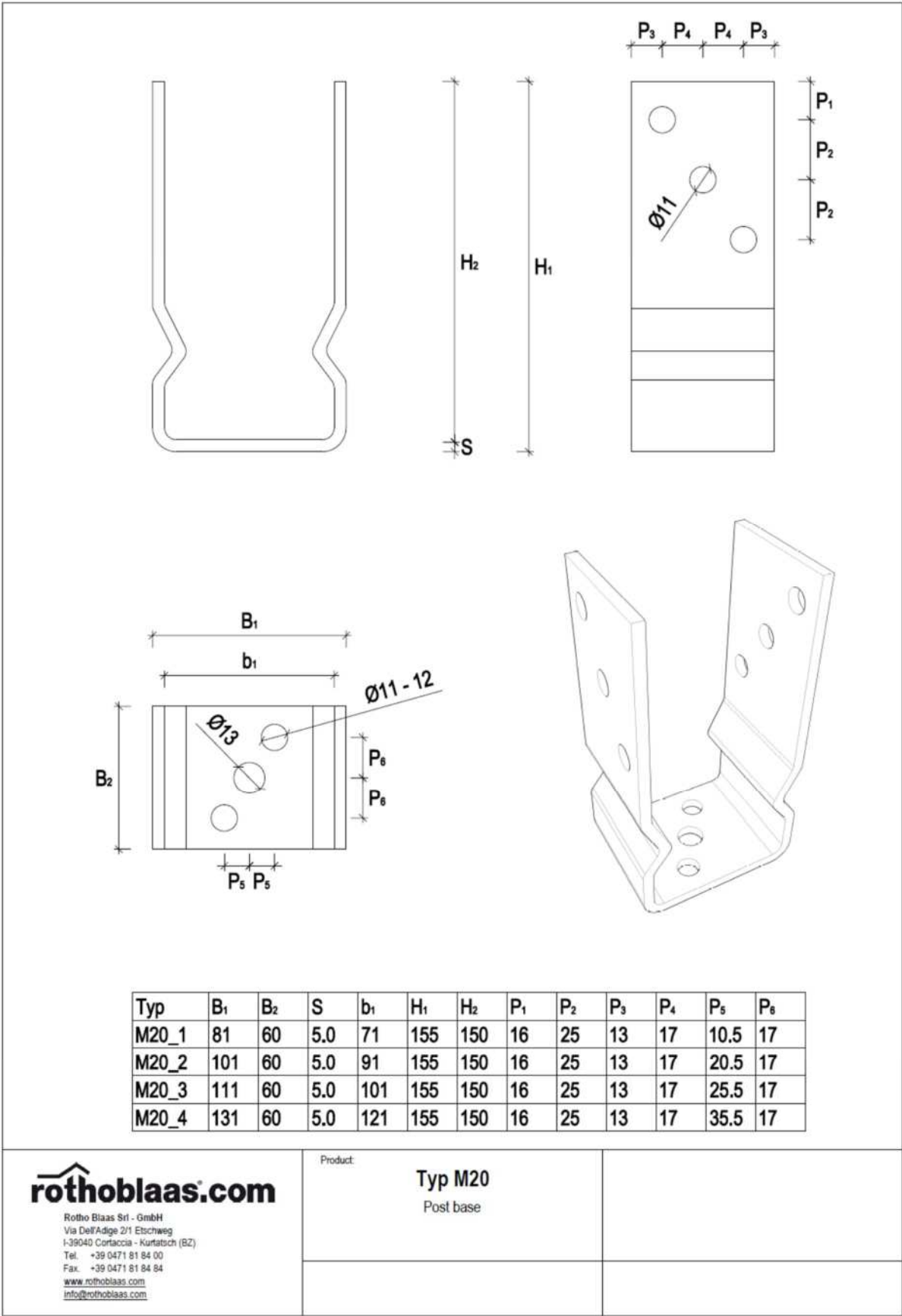
| Typ   | B <sub>1</sub> | B <sub>2</sub> | S | b <sub>1</sub> | S <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | P <sub>1</sub> | P <sub>2</sub> | P <sub>3</sub> | P <sub>4</sub> | L <sub>WB</sub> | S <sub>WB</sub> | L <sub>WH</sub> | S <sub>WH</sub> |
|-------|----------------|----------------|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|
| M10_1 | 151            | -              | 2 | 71             | 4              | 150            | -              | 15             | 60             | 30             | 75             | 150             | 2.5             | -               | -               |
| M10_2 | 175            | -              | 2 | 91             | 4              | 150            | -              | 15             | 60             | 30             | 75             | 150             | 2.5             | -               | -               |

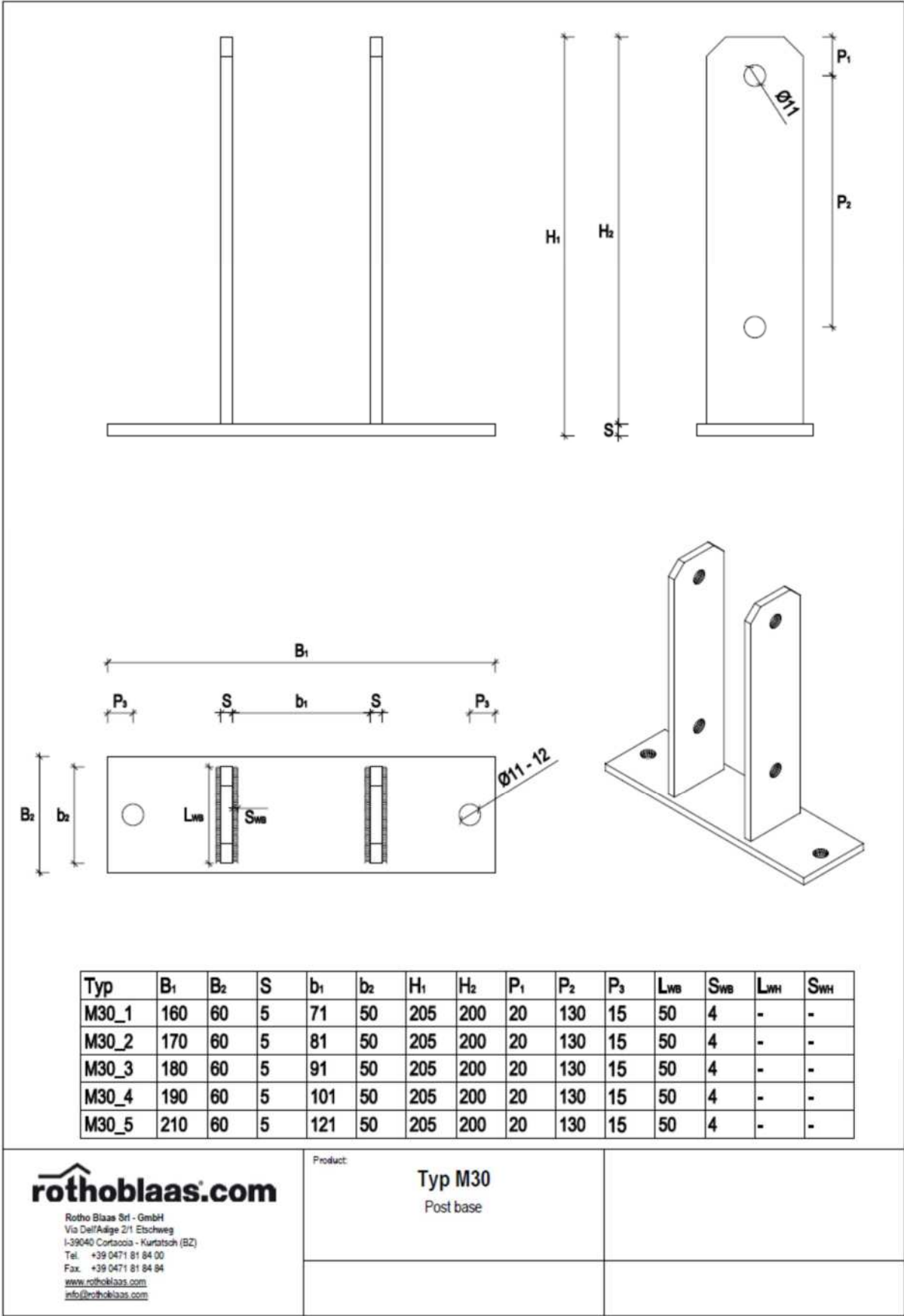
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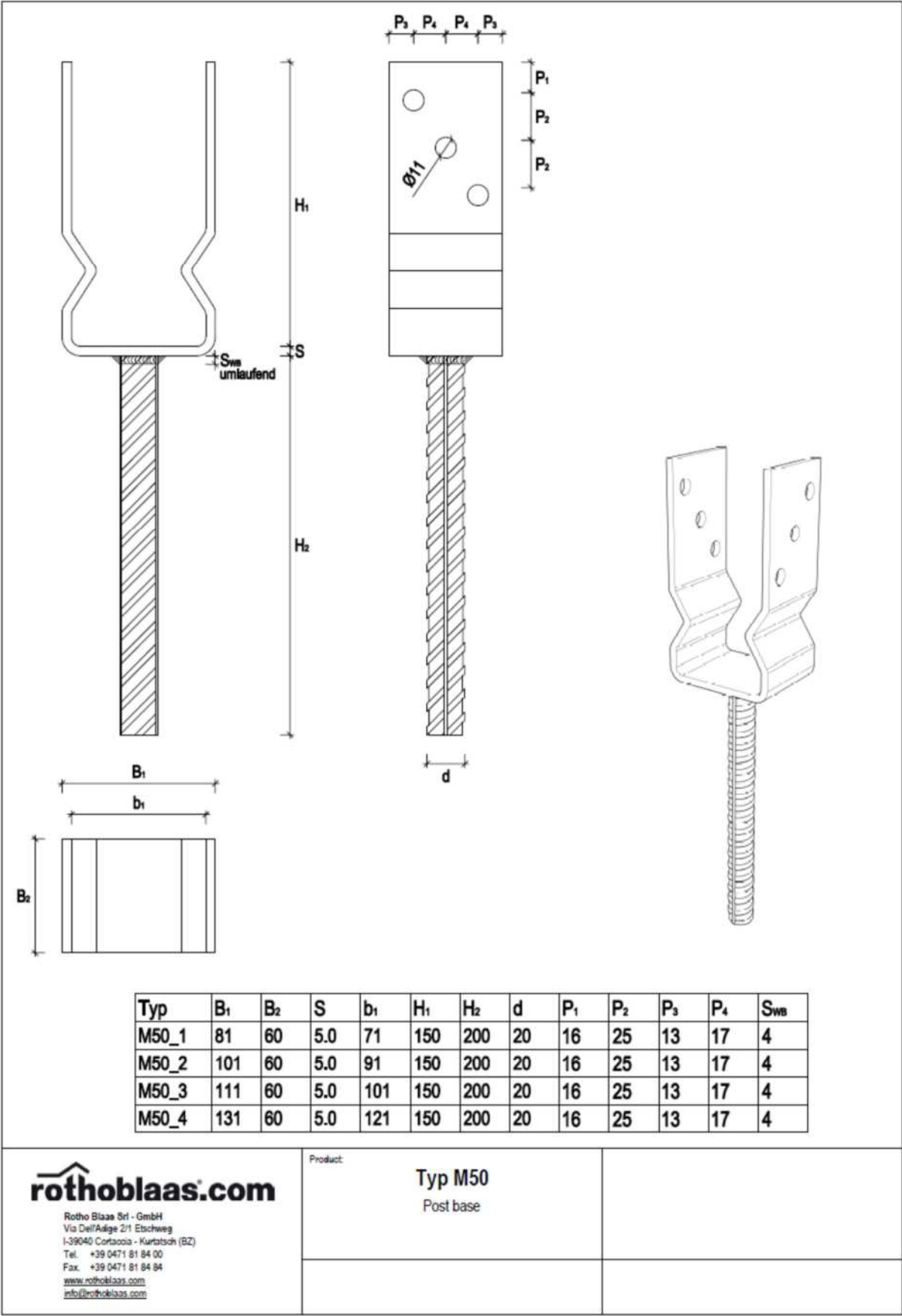
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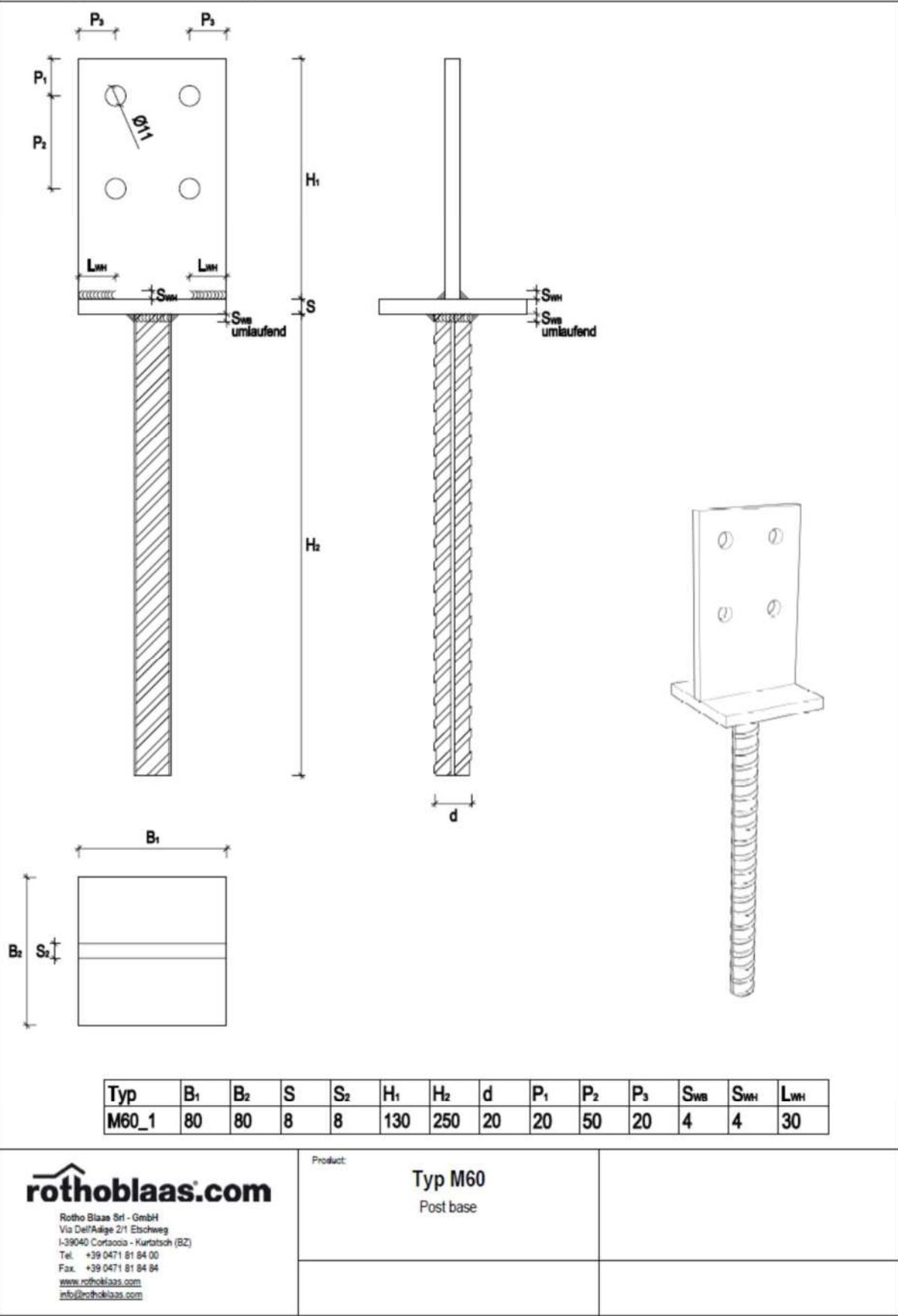
Product

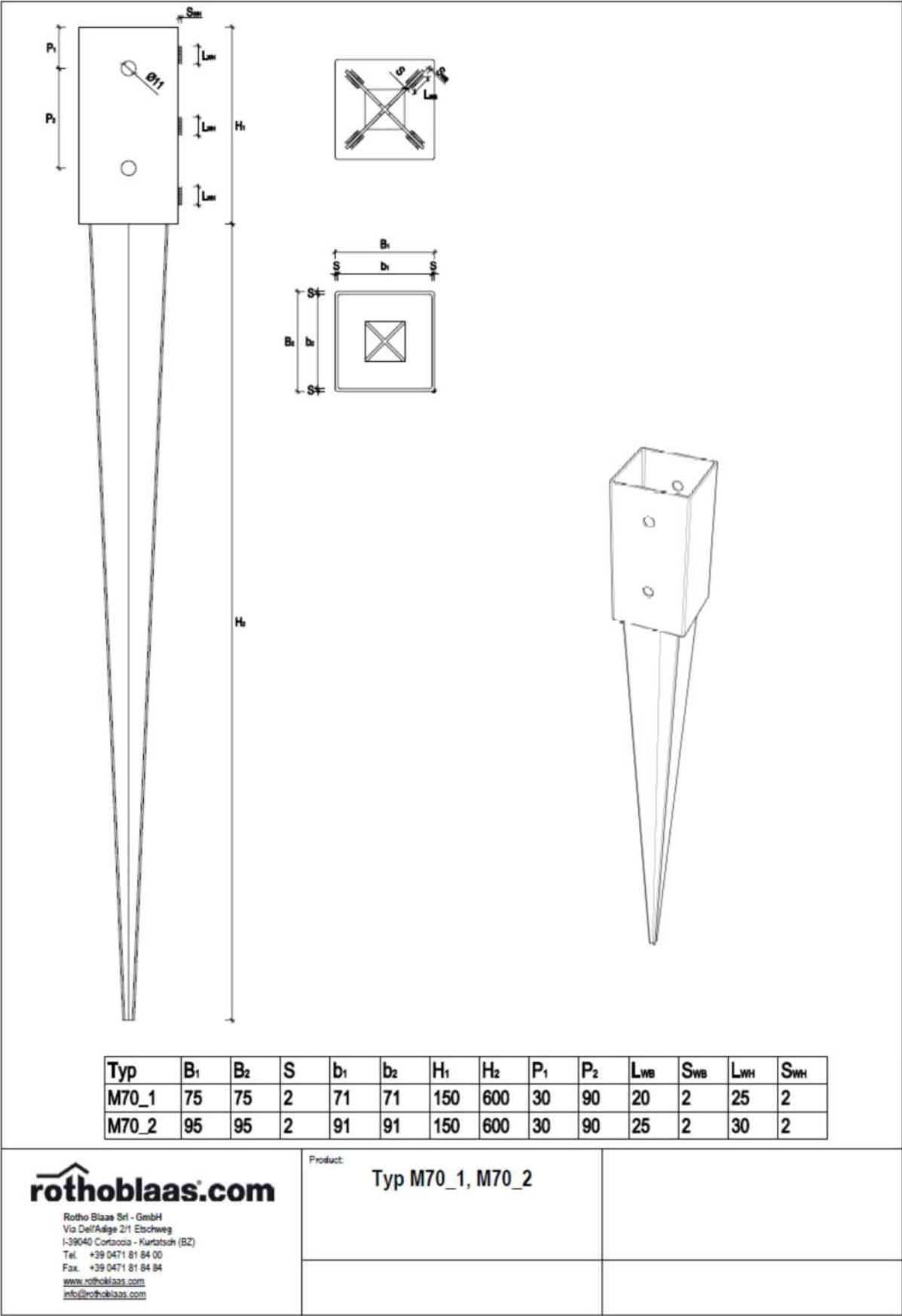
Typ M10  
Post base

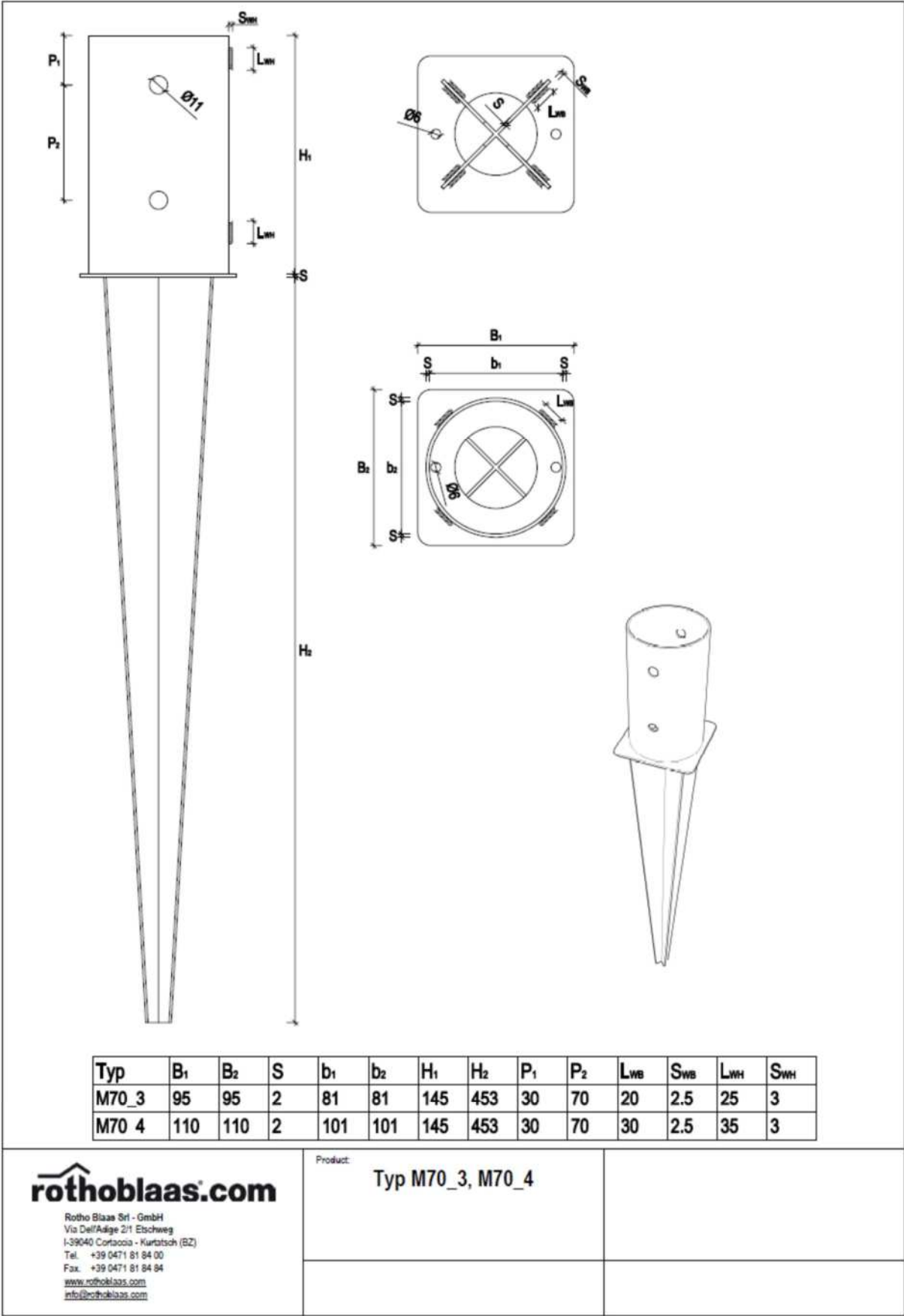




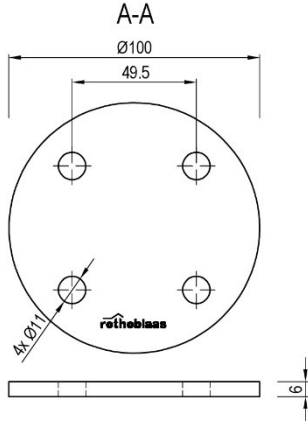
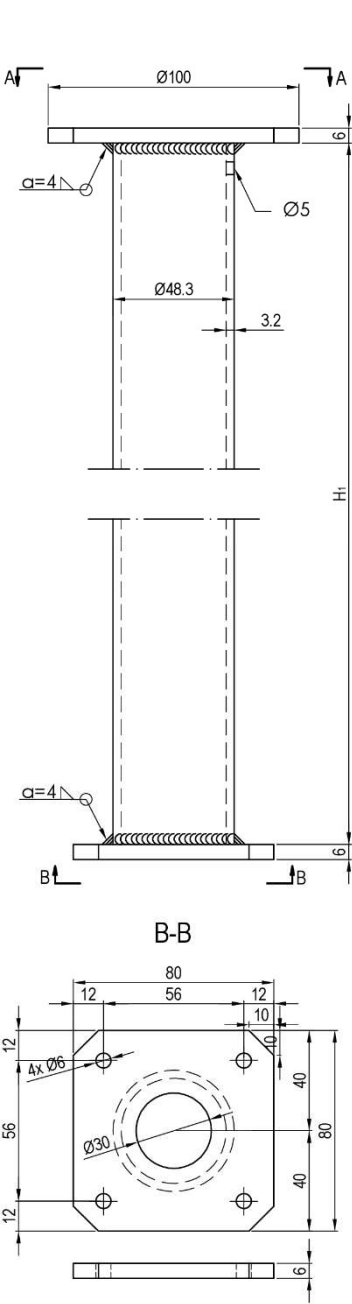










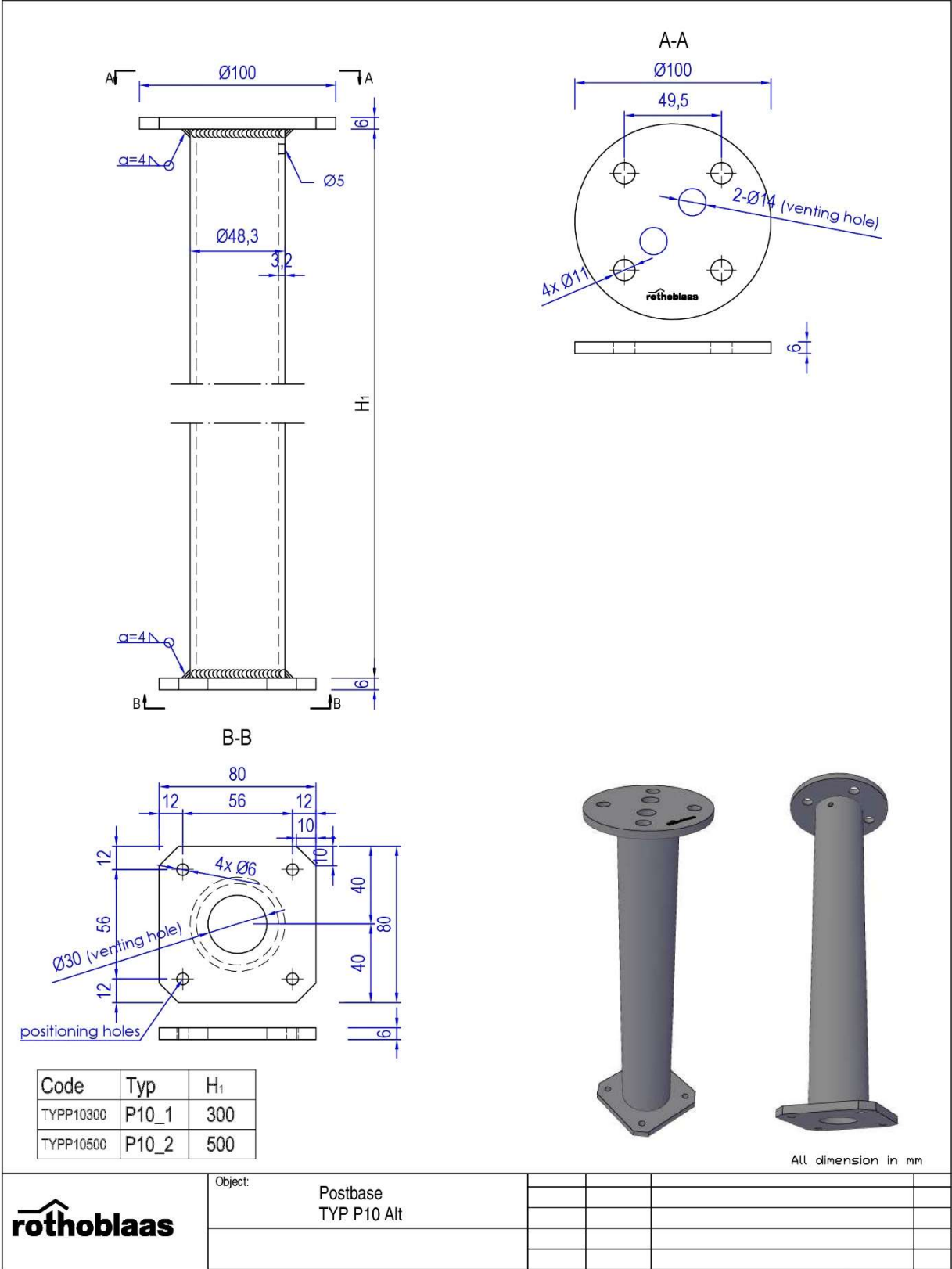


| Code     | Typ   | H <sub>1</sub> |
|----------|-------|----------------|
| TYP10300 | P10_1 | 300            |
| TYP10500 | P10_2 | 500            |

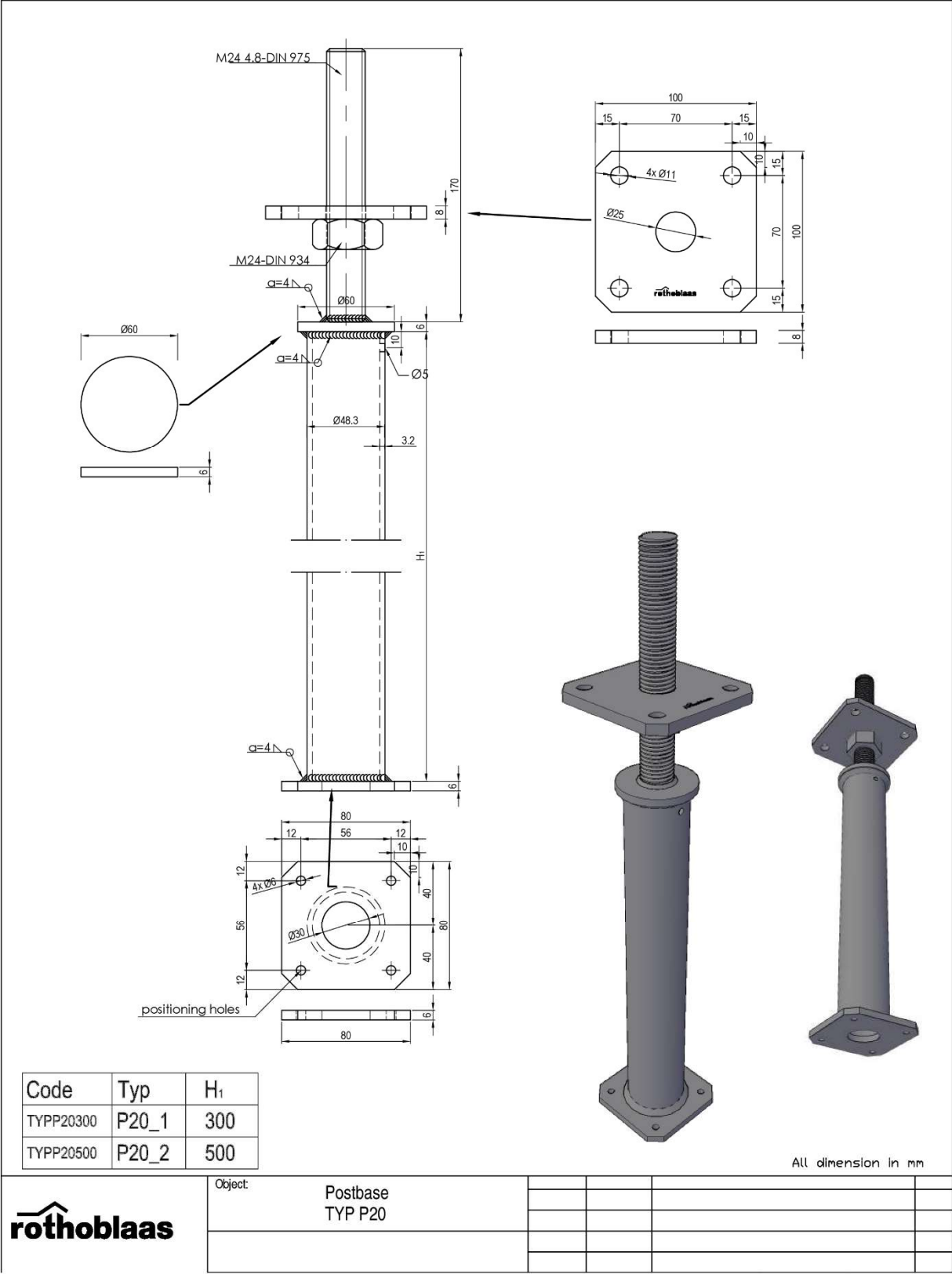
All dimension in mm

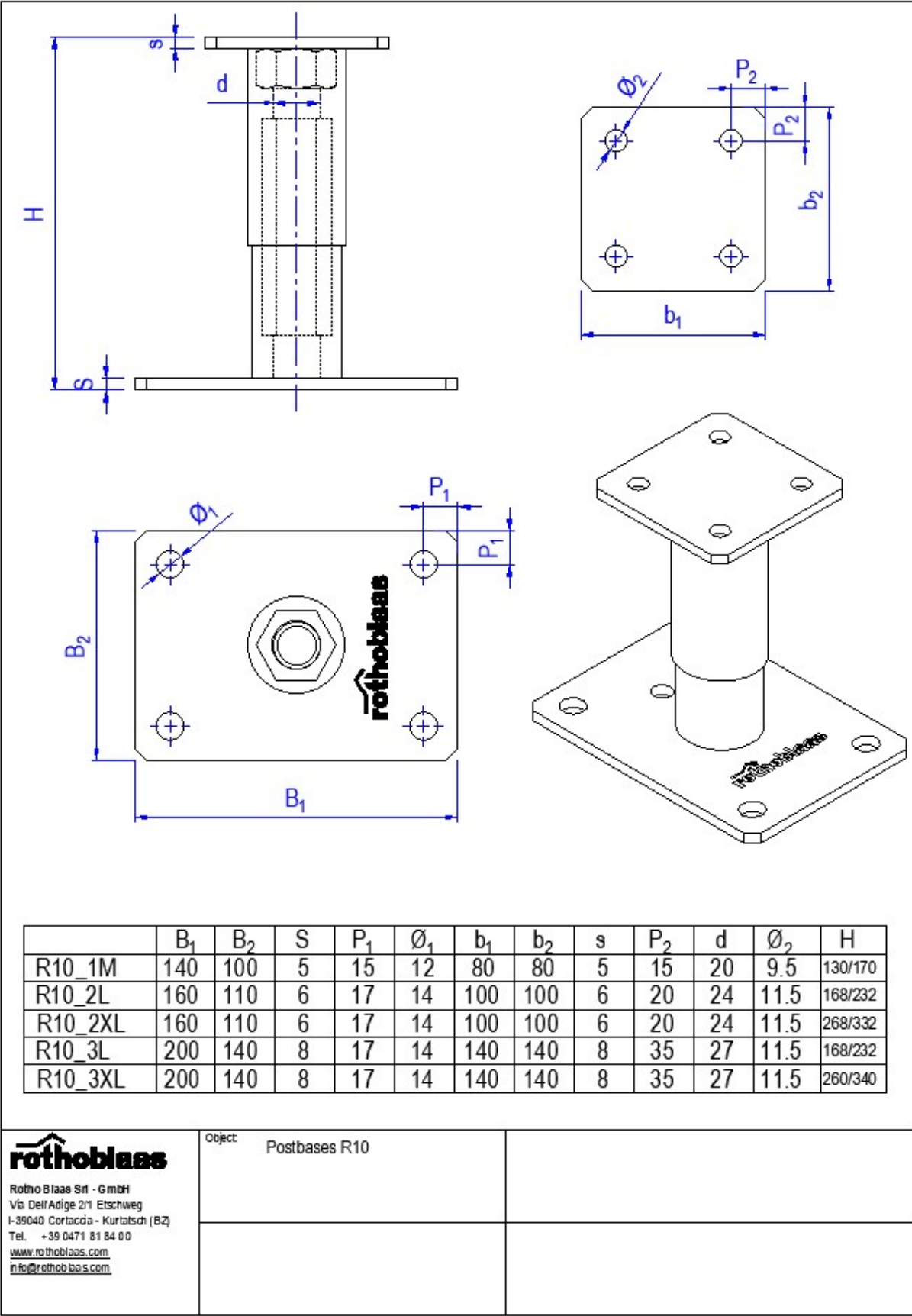
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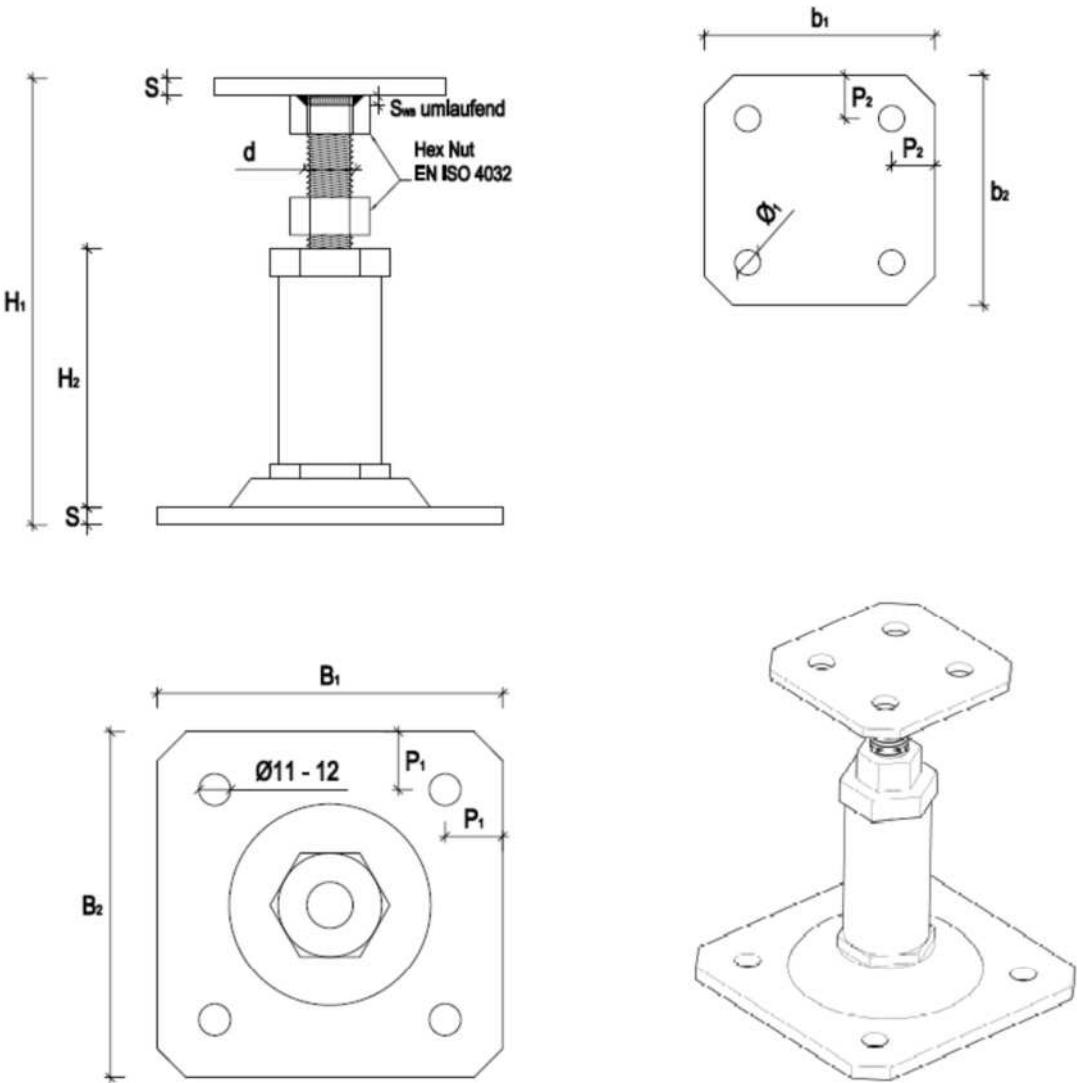
|         |                     |  |  |  |  |
|---------|---------------------|--|--|--|--|
| Object: | Postbase<br>TYP P10 |  |  |  |  |
|         |                     |  |  |  |  |
|         |                     |  |  |  |  |
|         |                     |  |  |  |  |



Post base type P10\_1 Alt and P10\_2 Alt







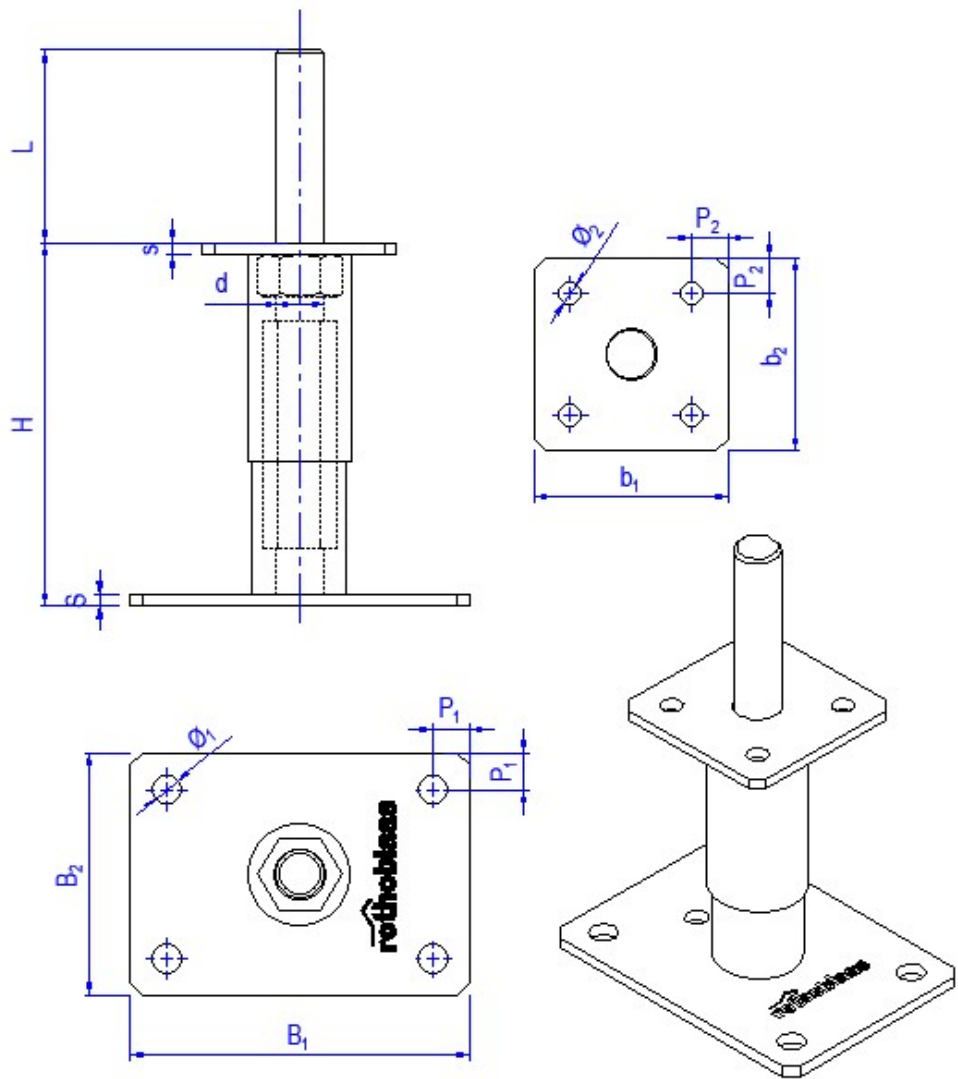
| Typ   | B <sub>1</sub> | B <sub>2</sub> | S | b <sub>1</sub> | b <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | d  | P <sub>1</sub> | P <sub>2</sub> | Ø <sub>1</sub> | S <sub>ws</sub> |
|-------|----------------|----------------|---|----------------|----------------|----------------|----------------|----|----------------|----------------|----------------|-----------------|
| R10_1 | 120            | 120            | 6 | 80             | 80             | 130/165        | 90             | 16 | 20             | 15             | 9              | 4               |
| R10_2 | 160            | 160            | 6 | 100            | 100            | 160/205        | 110            | 20 | 20             | 20             | 11             | 4               |
| R10_3 | 200            | 200            | 8 | 140            | 140            | 190/250        | 130            | 24 | 20             | 20             | 11             | 4               |

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Product:

**Typ R10**  
Adjustable Post base

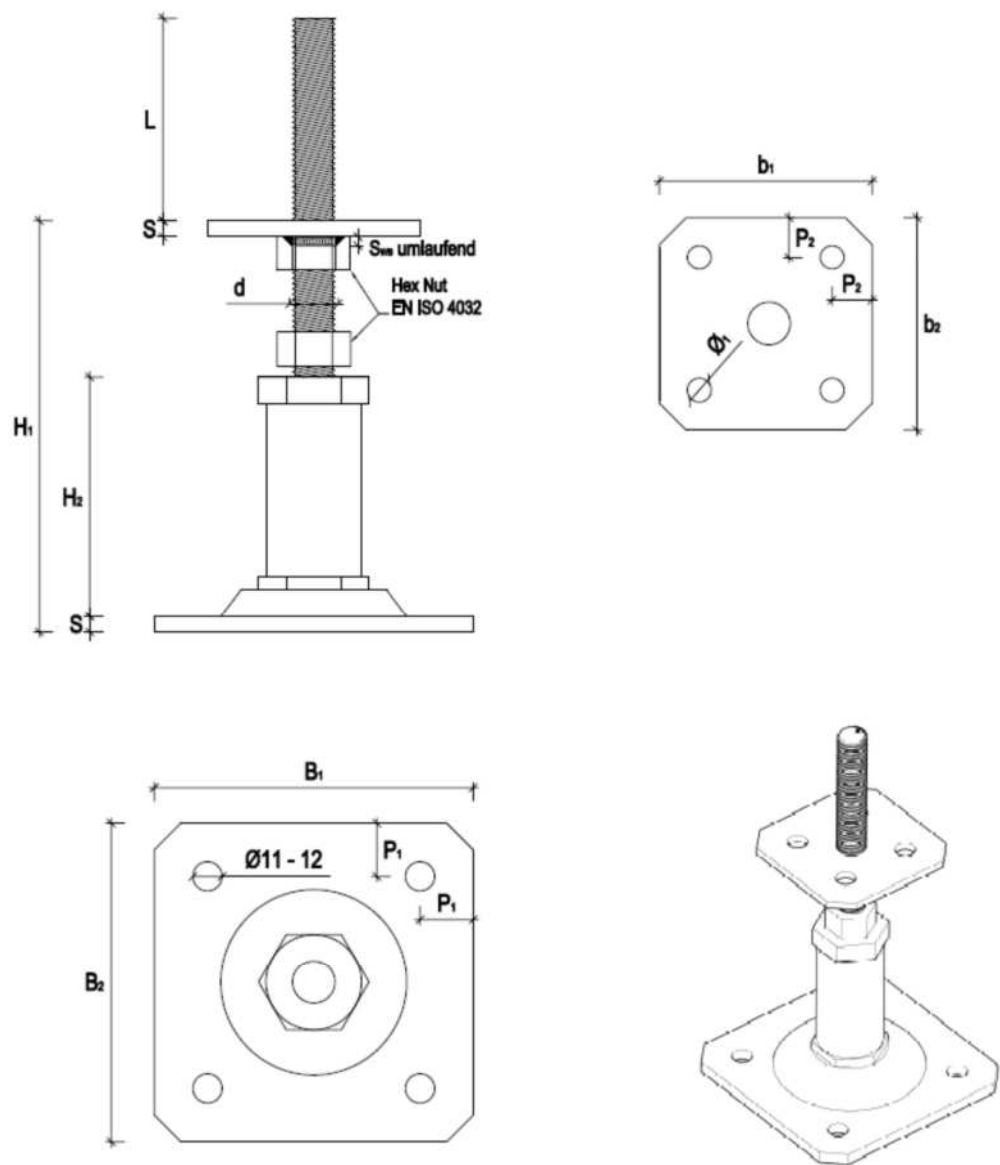


|         | B <sub>1</sub> | B <sub>2</sub> | S | Ø <sub>1</sub> | P <sub>1</sub> | b <sub>1</sub> | b <sub>2</sub> | s | P <sub>2</sub> | d  | Ø <sub>2</sub> | L   | H       |
|---------|----------------|----------------|---|----------------|----------------|----------------|----------------|---|----------------|----|----------------|-----|---------|
| R20_1M  | 140            | 100            | 5 | 12             | 15             | 80             | 80             | 5 | 15             | 20 | 9.5            | 80  | 130/170 |
| R20_2L  | 160            | 110            | 6 | 14             | 17             | 100            | 100            | 6 | 20             | 24 | 11.5           | 120 | 168/232 |
| R20_2XL | 160            | 110            | 6 | 14             | 17             | 100            | 100            | 6 | 20             | 24 | 11.5           | 120 | 268/332 |
| R20_3L  | 200            | 140            | 8 | 14             | 17             | 140            | 140            | 8 | 35             | 27 | 11.5           | 150 | 168/232 |
| R20_3XL | 200            | 140            | 8 | 14             | 17             | 140            | 140            | 8 | 35             | 27 | 11.5           | 150 | 260/340 |



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Object Postbases R20



| Typ   | B <sub>1</sub> | B <sub>2</sub> | S | b <sub>1</sub> | b <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | d  | P <sub>1</sub> | P <sub>2</sub> | Ø <sub>1</sub> | L   | S <sub>sw</sub> |
|-------|----------------|----------------|---|----------------|----------------|----------------|----------------|----|----------------|----------------|----------------|-----|-----------------|
| R20_1 | 120            | 120            | 6 | 80             | 80             | 130/165        | 90             | 16 | 20             | 15             | 9              | 80  | 4               |
| R20_2 | 160            | 160            | 6 | 100            | 100            | 160/205        | 110            | 20 | 20             | 20             | 11             | 120 | 4               |
| R20_3 | 200            | 200            | 8 | 140            | 140            | 190/250        | 130            | 24 | 20             | 20             | 11             | 150 | 4               |

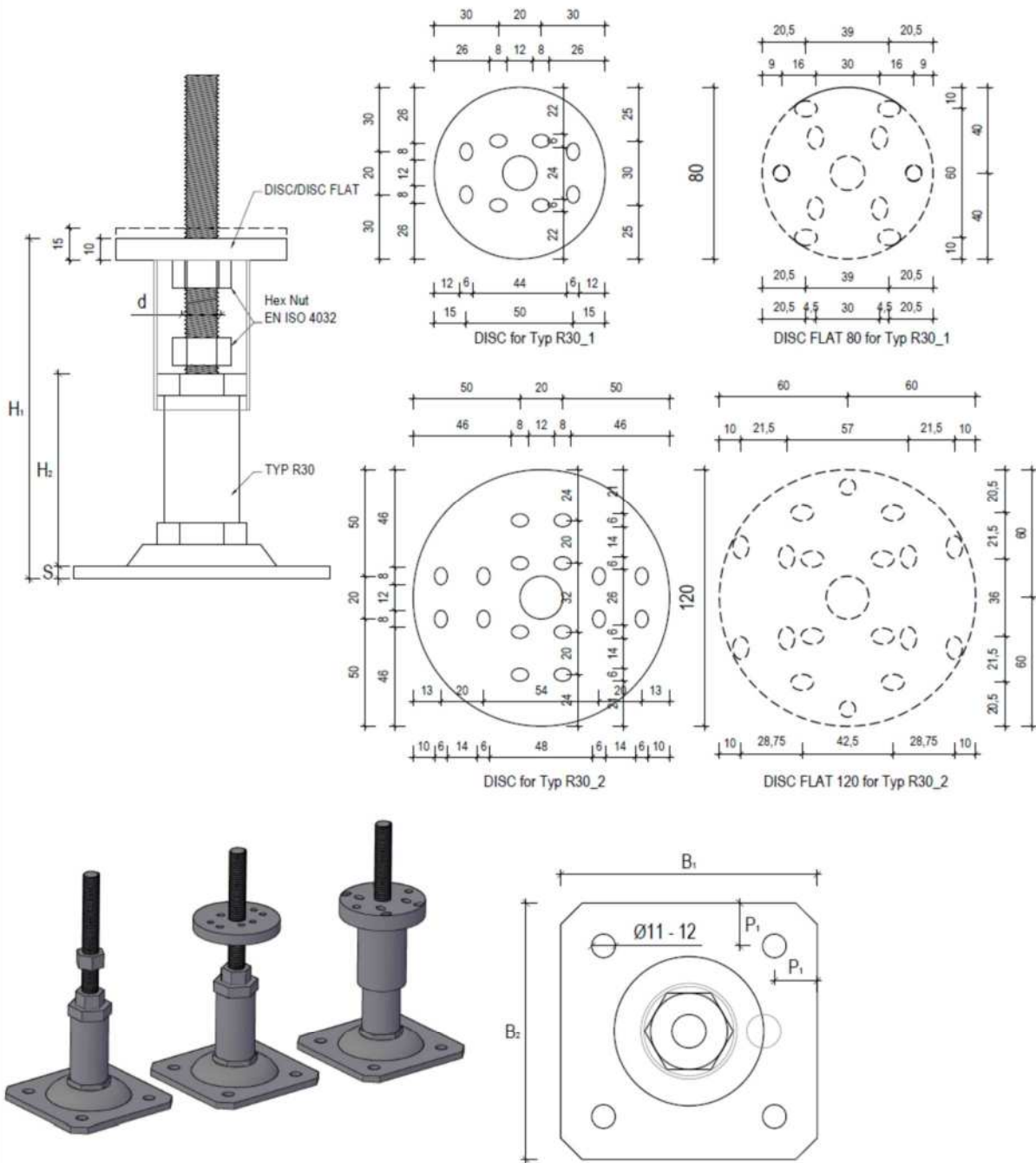
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Product:

**Typ R20**  
Adjustable Post base





| Typ   | $B_1$ | $B_2$ | $S$ | $H_1$   | $H_2$ | $d$ | $P_1$ | $S_{WB}$ |
|-------|-------|-------|-----|---------|-------|-----|-------|----------|
| R30_1 | 120   | 120   | 6   | 135/170 | 90    | 16  | 20    | 4        |
| R30_2 | 160   | 160   | 6   | 165/210 | 110   | 20  | 20    | 4        |

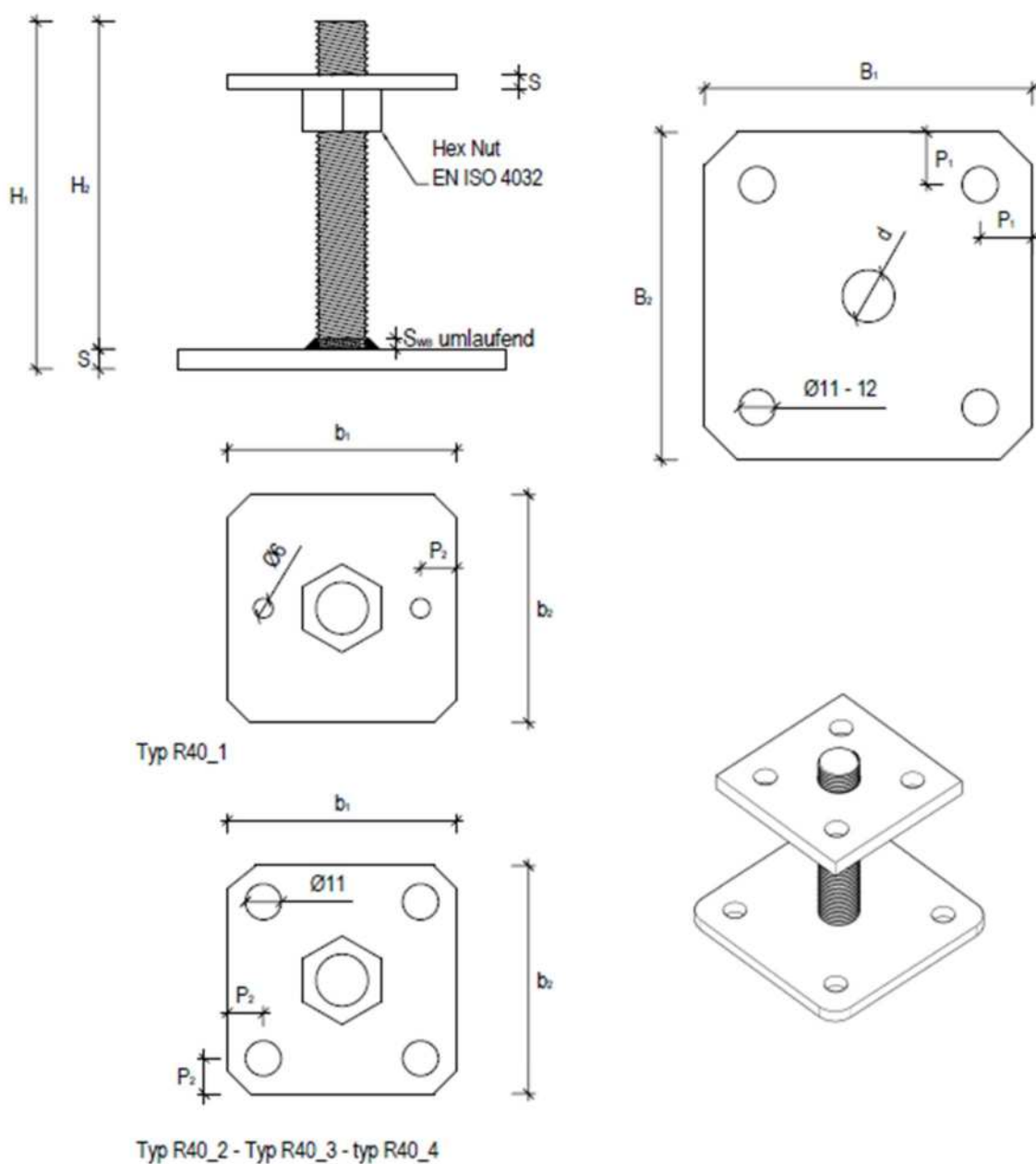
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Product:

**Typ R30**  
**with Disc or Disc Flat**  
Adjustable Post base





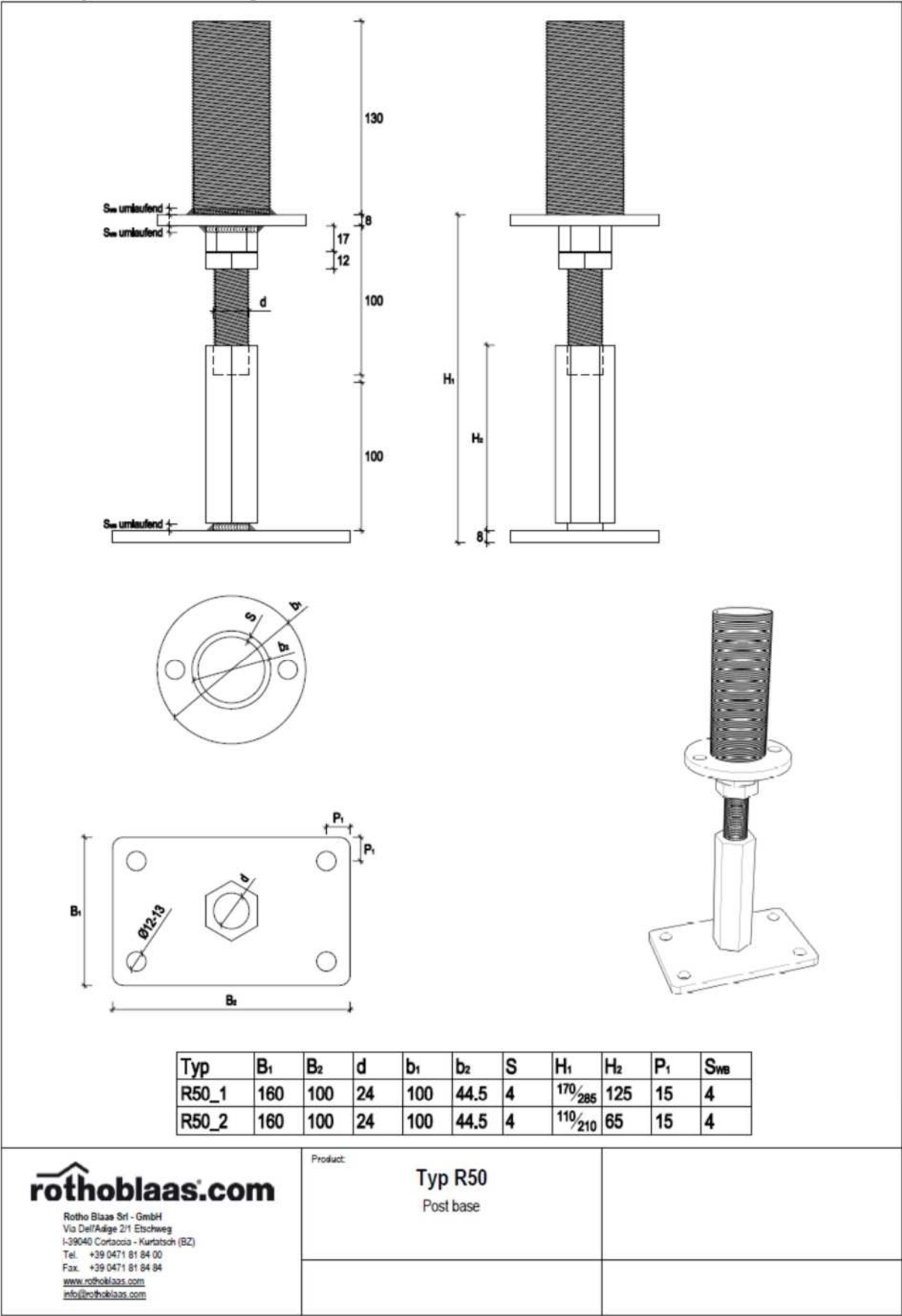
| Typ   | B <sub>1</sub> | B <sub>2</sub> | S | b <sub>1</sub> | b <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | d  | P <sub>1</sub> | P <sub>2</sub> | S <sub>WB</sub> |
|-------|----------------|----------------|---|----------------|----------------|----------------|----------------|----|----------------|----------------|-----------------|
| R40_1 | 100            | 100            | 6 | 70             | 70             | 105            | 99             | 16 | 15             | 10             | 4               |
| R40_2 | 100            | 100            | 6 | 80             | 80             | 105            | 99             | 20 | 15             | 15             | 4               |
| R40_3 | 160            | 100            | 6 | 100            | 100            | 156            | 150            | 20 | 20             | 20             | 4               |
| R40_4 | 160            | 100            | 6 | 100            | 100            | 253.5          | 247.5          | 24 | 20             | 20             | 4               |

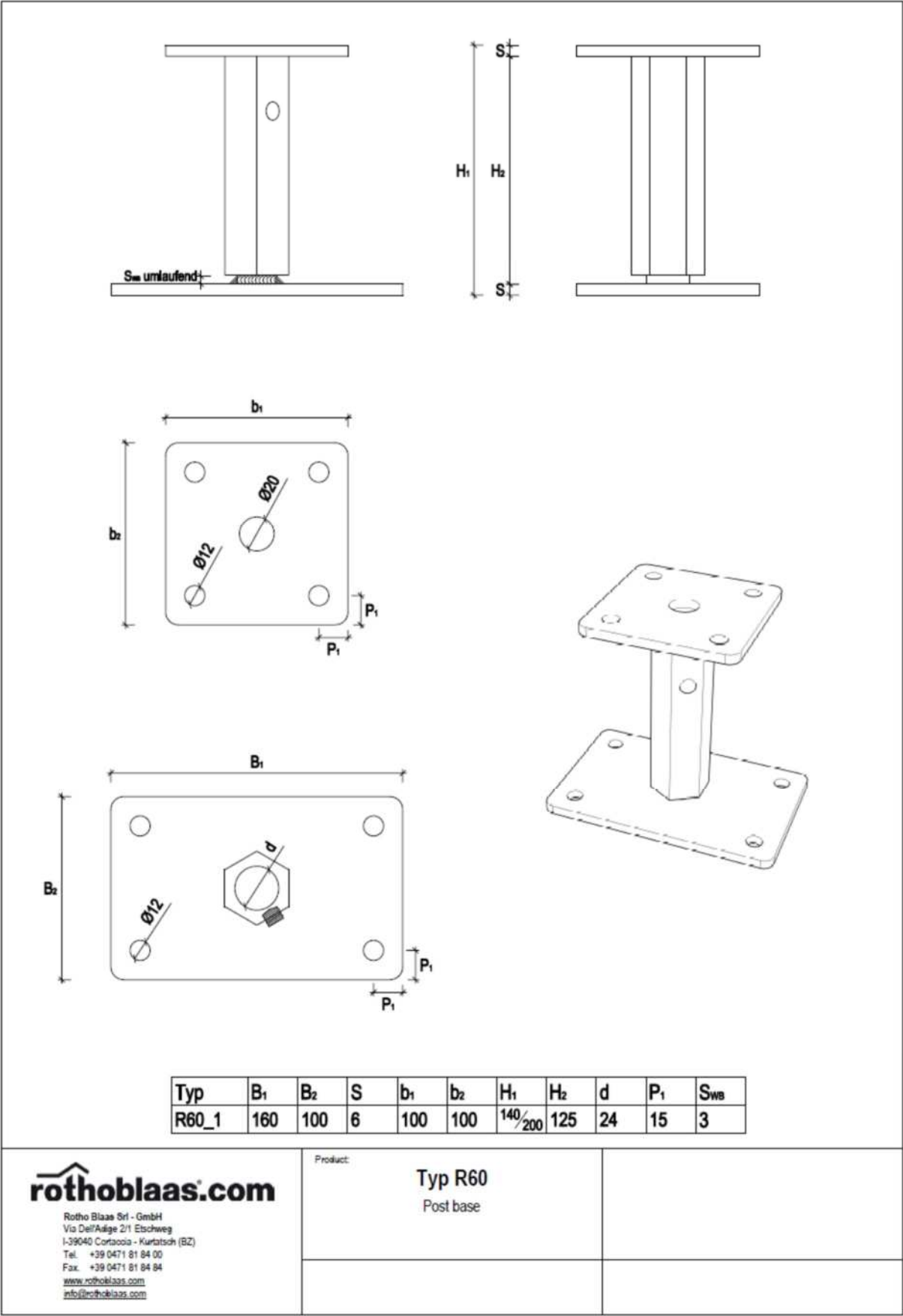
**rothoblaas.com**

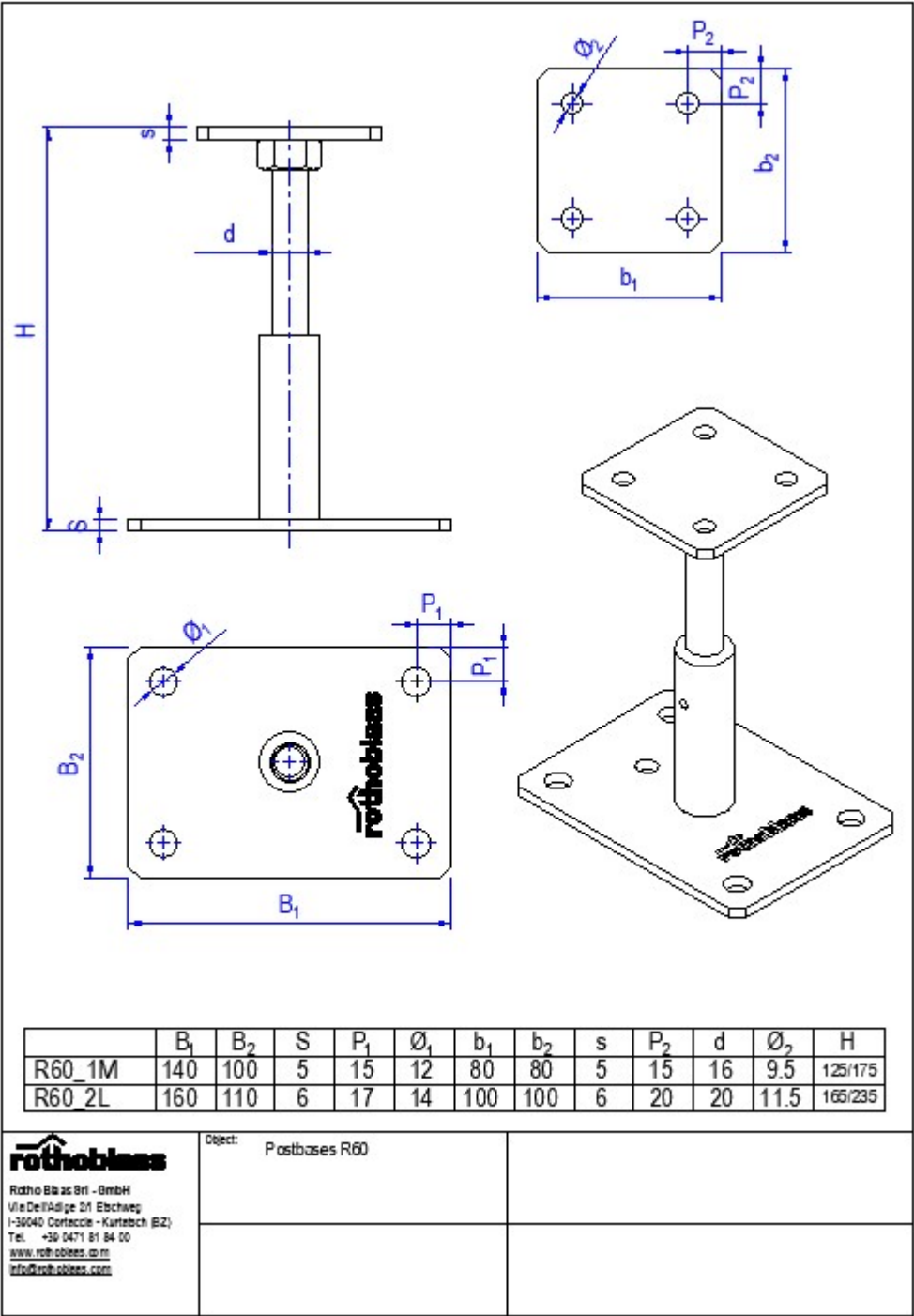
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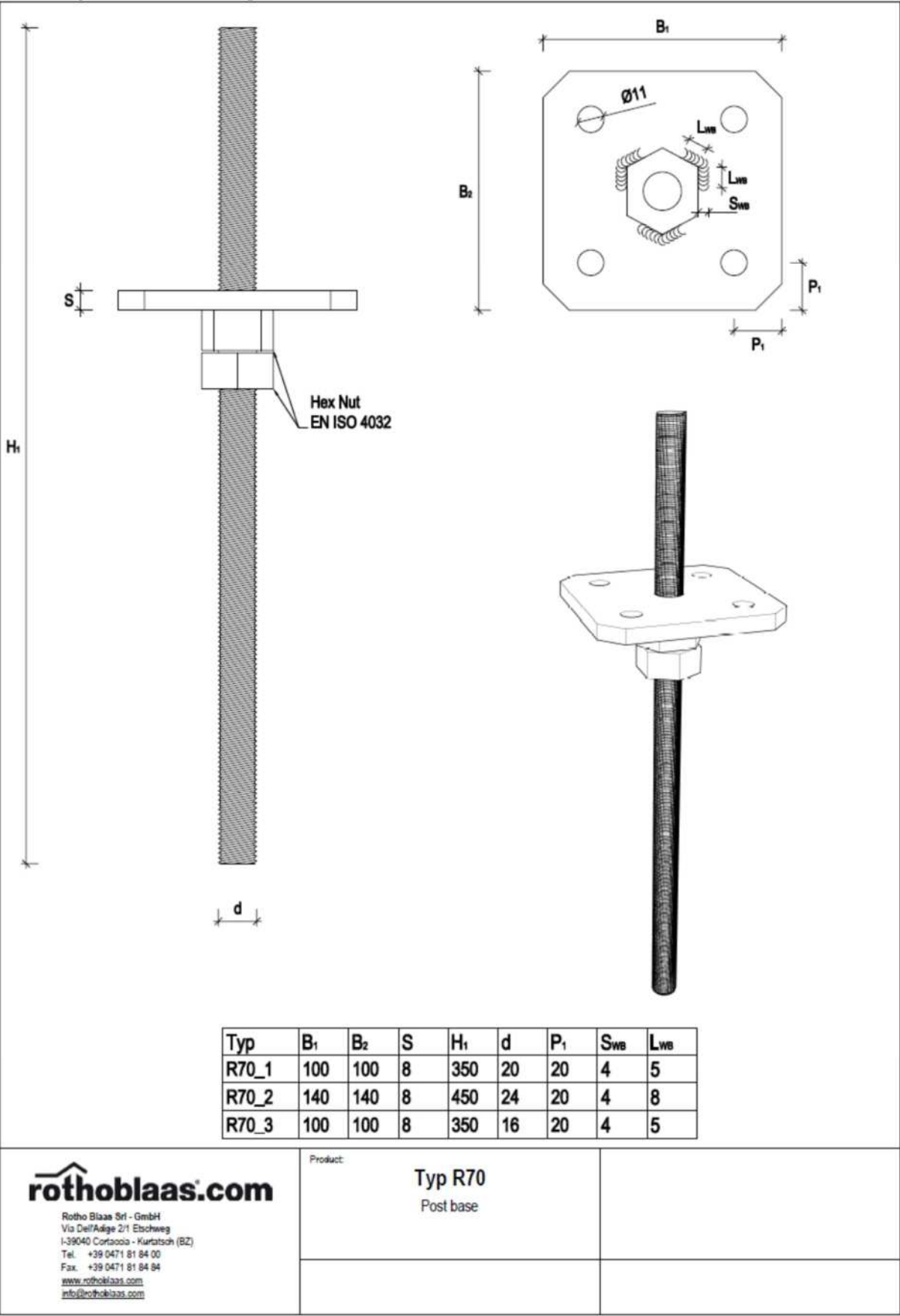
Product

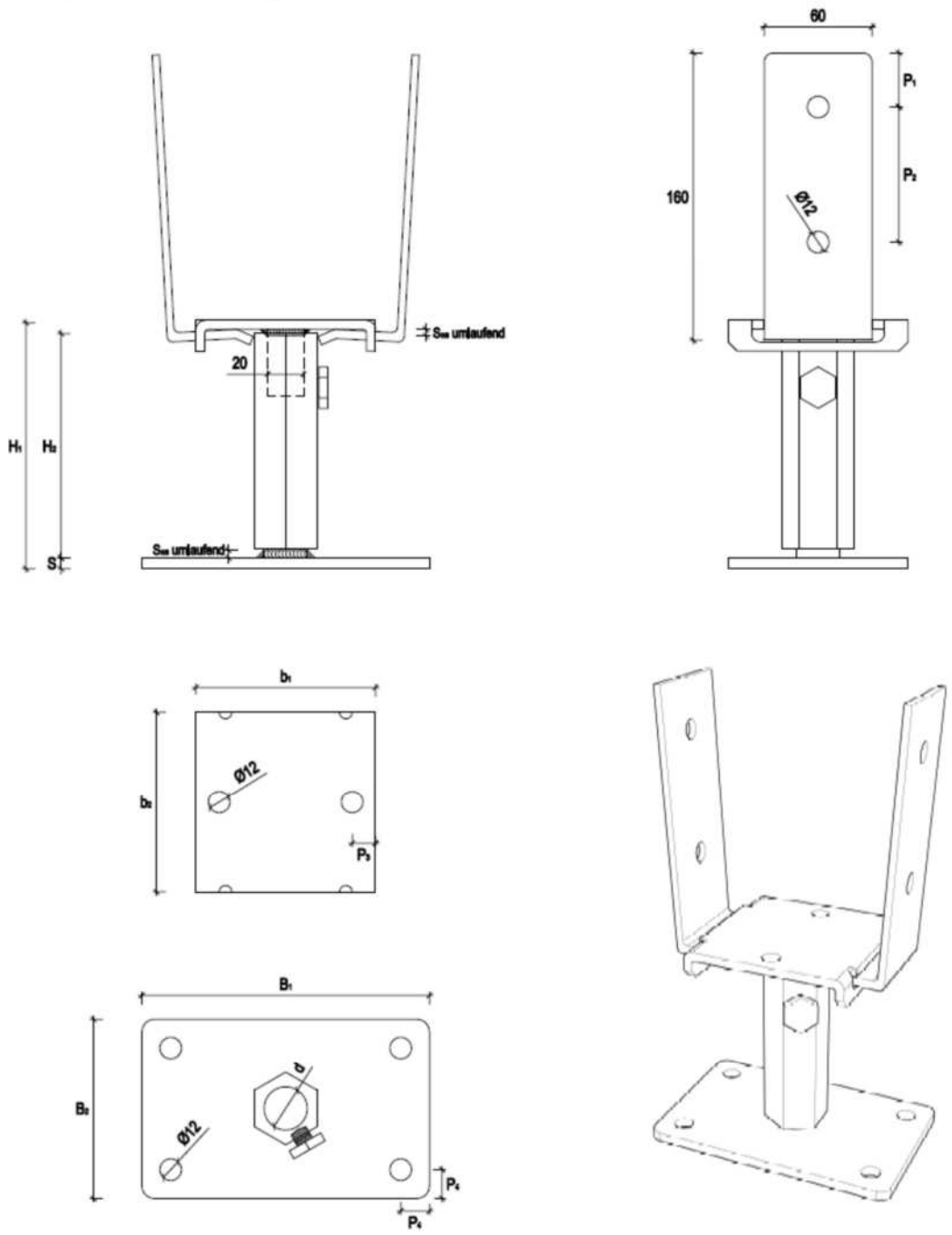
**Typ R40**  
Post base











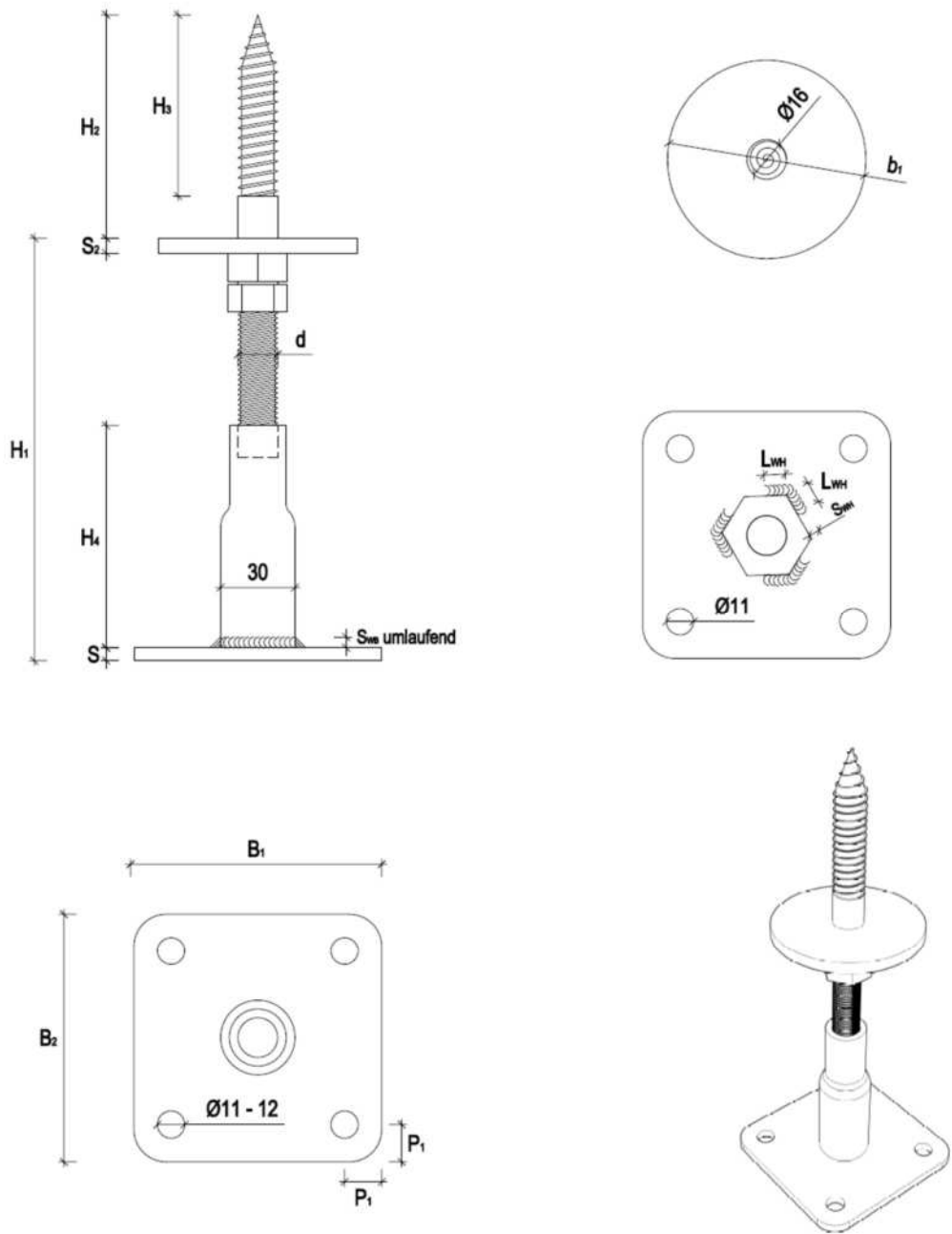
| Typ   | B <sub>1</sub> | B <sub>2</sub> | S | b <sub>1</sub> | b <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | d  | P <sub>1</sub> | P <sub>2</sub> | P <sub>3</sub> | P <sub>4</sub> | S <sub>WB</sub> |
|-------|----------------|----------------|---|----------------|----------------|----------------|----------------|----|----------------|----------------|----------------|----------------|-----------------|
| R80_1 | 160            | 100            | 6 | 100            | 100            | 140/200        | 125            | 24 | 30             | 75             | 15             | 15             | 4               |

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Product:

**Typ R80**  
Post base



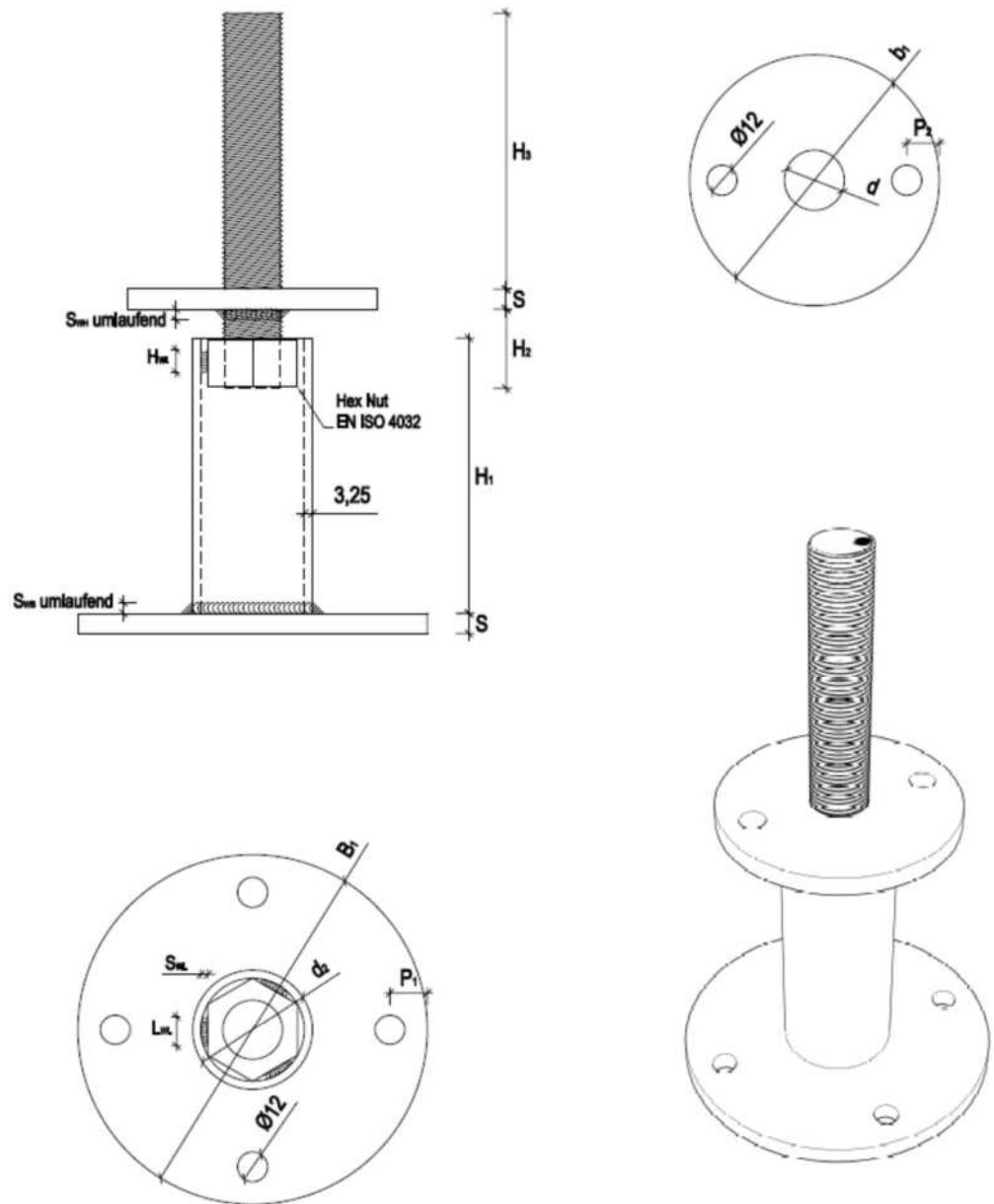
| Typ   | B <sub>1</sub> | B <sub>2</sub> | S | S <sub>2</sub> | b <sub>1</sub> | H <sub>1</sub> | H <sub>2</sub> | H <sub>3</sub> | H <sub>4</sub> | d  | P <sub>1</sub> | S <sub>WB</sub> | S <sub>WH</sub> | L <sub>WH</sub> |
|-------|----------------|----------------|---|----------------|----------------|----------------|----------------|----------------|----------------|----|----------------|-----------------|-----------------|-----------------|
| R90_1 | 100            | 100            | 5 | 6              | 80             | 130/170        | 90             | 70             | 90             | 16 | 15             | 4               | 4               | 8               |

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Product:

**Typ R90**  
Post base



| Typ   | B <sub>1</sub> | S | b <sub>1</sub> | d  | d <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | H <sub>3</sub> | P <sub>1</sub> | P <sub>2</sub> | S <sub>WB</sub> | S <sub>WH</sub> | S <sub>WL</sub> | H <sub>WL</sub> | L <sub>WL</sub> |
|-------|----------------|---|----------------|----|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| S10_1 | 140            | 8 | 100            | 24 | 48,3           | 110            | 35             | 110            | 15             | 15             | 5               | 5               | 5               | 10              | 10              |
| S10_2 | 140            | 8 | 100            | 24 | 48,3           | 145            | 35             | 110            | 15             | 15             | 5               | 5               | 5               | 10              | 10              |

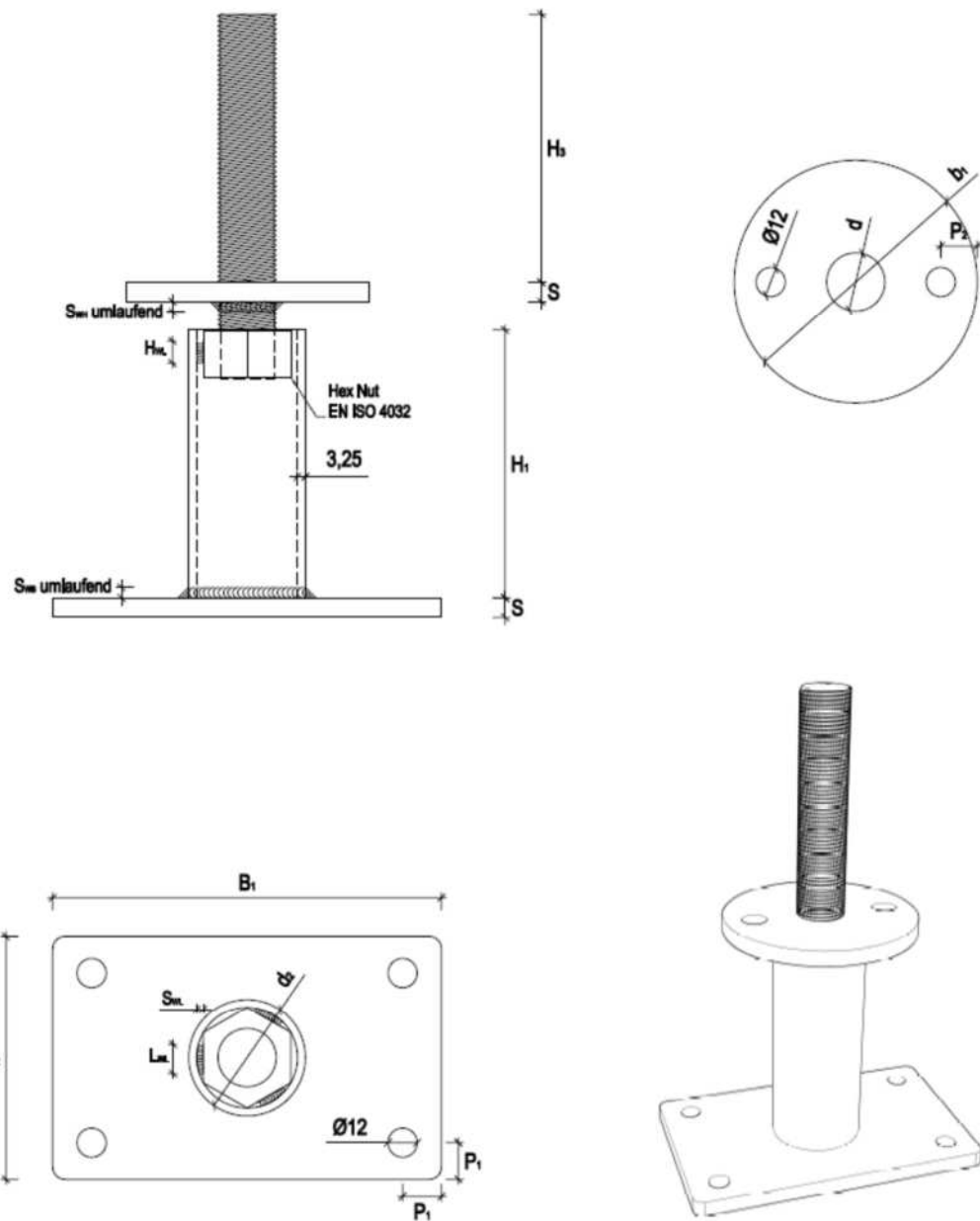
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Product:

**Typ S10**  
Post base





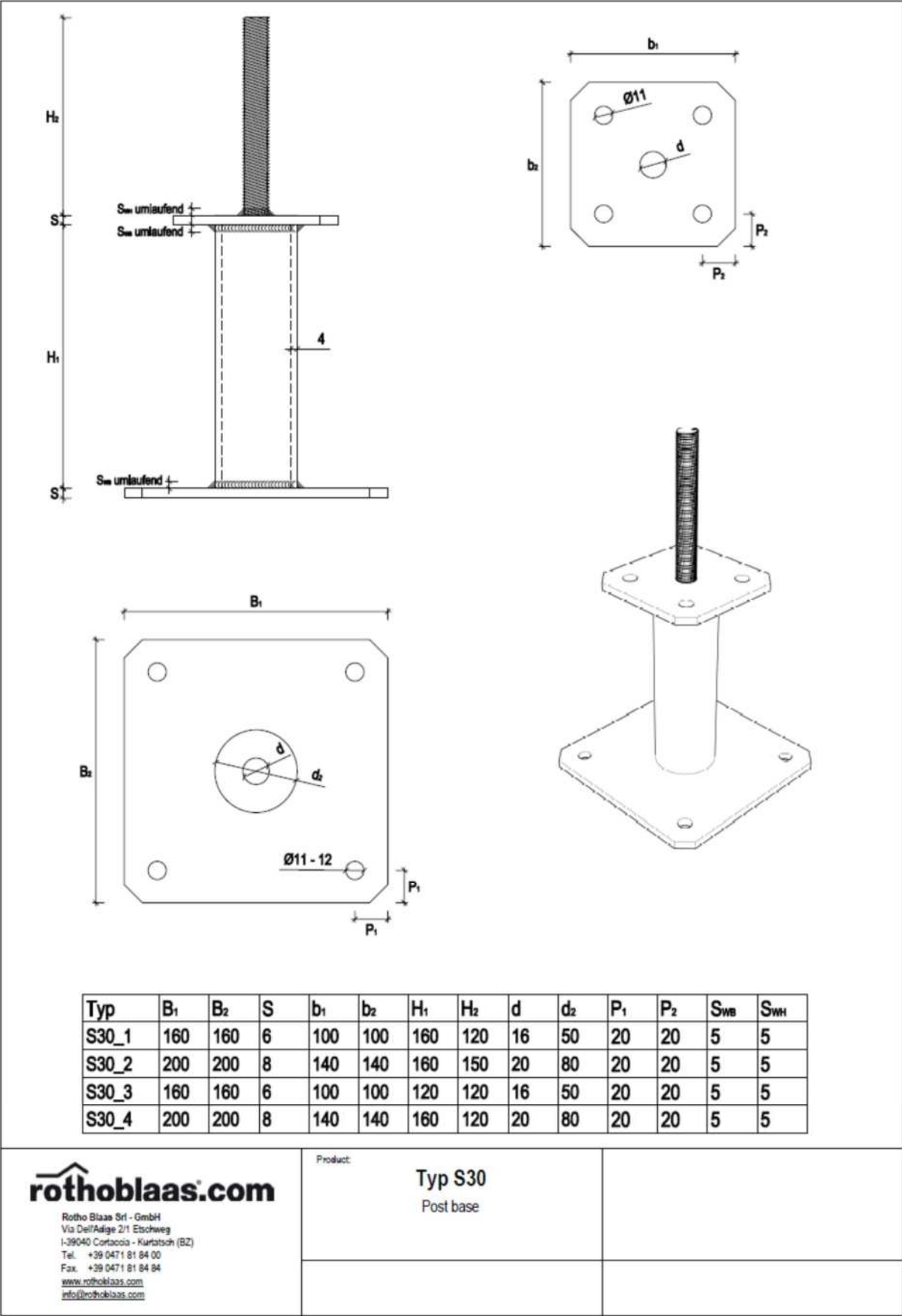
| Typ   | B <sub>1</sub> | B <sub>2</sub> | S | b <sub>1</sub> | d  | d <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | H <sub>3</sub> | P <sub>1</sub> | P <sub>2</sub> | S <sub>WB</sub> | S <sub>WH</sub> | S <sub>WL</sub> | H <sub>WL</sub> | L <sub>WL</sub> |
|-------|----------------|----------------|---|----------------|----|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| S20_1 | 160            | 100            | 8 | 100            | 24 | 48.3           | 110            | 35             | 110            | 15             | 15             | 5               | 5               | 5               | 10              | 10              |
| S20_2 | 160            | 100            | 8 | 100            | 24 | 48.3           | 145            | 35             | 110            | 15             | 15             | 5               | 5               | 5               | 10              | 10              |

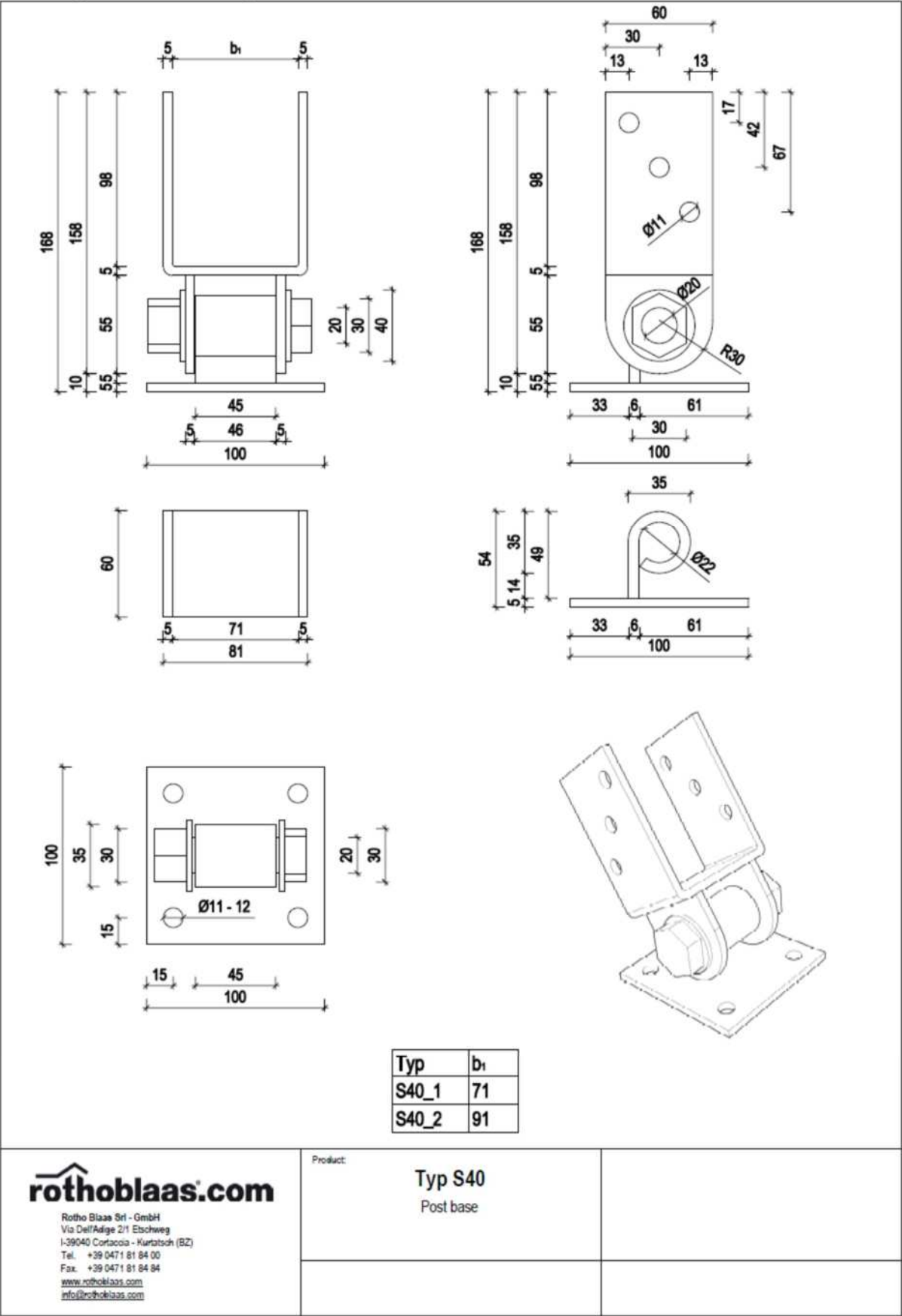
**rothoblaas.com**

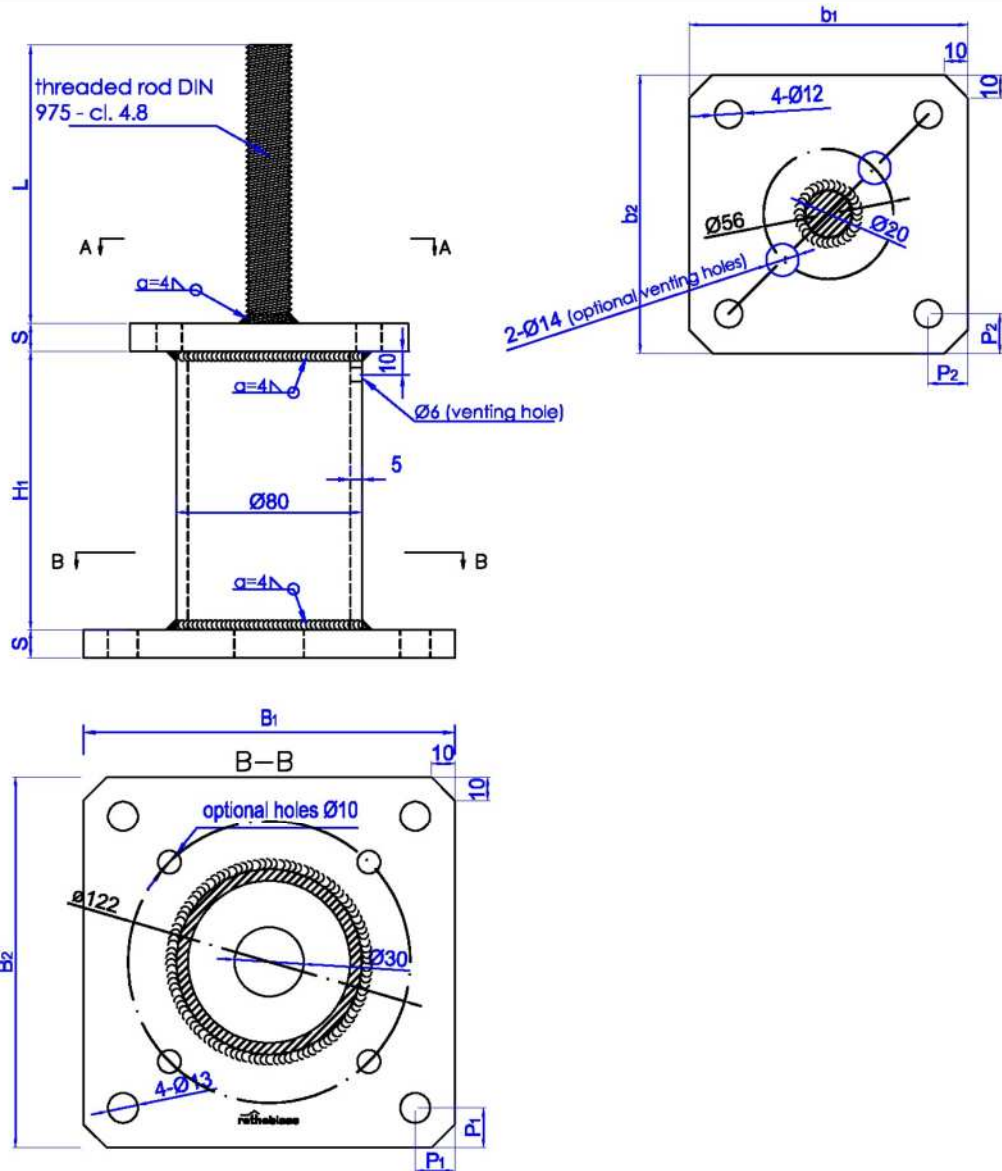
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Product:

**Typ S20**  
Post base







|       | $B_1$ | $B_2$ | $P_1$ | $b_1$ | $b_2$ | $S$      | $P_2$ | $d$ | $L$ | $H_1$ |
|-------|-------|-------|-------|-------|-------|----------|-------|-----|-----|-------|
| S50_1 | 160   | 160   | 17    | 120   | 120   | 12       | 17    | 20  | 120 | 120   |
| S50_2 | 160   | 160   | 17    | 120   | 120   | 12       | 17    | 20  | 120 | 180   |
| S50_3 | 200   | 200   | 20    | 160   | 160   | 14/15/16 | 20    | 24  | 150 | 180   |
| S50_4 | 200   | 200   | 20    | 160   | 160   | 14/15/16 | 20    | 24  | 150 | 240   |

All dimension in mm

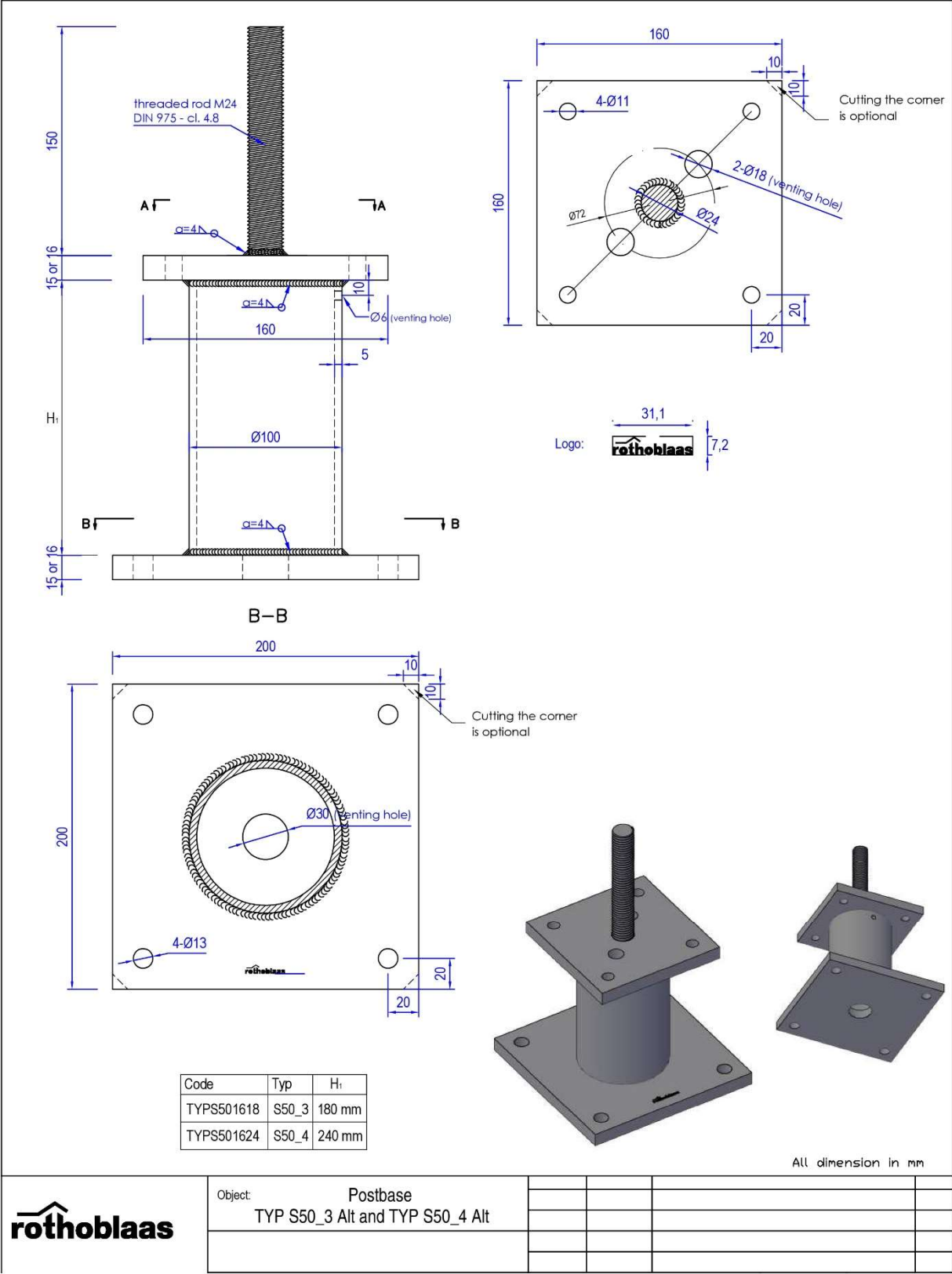
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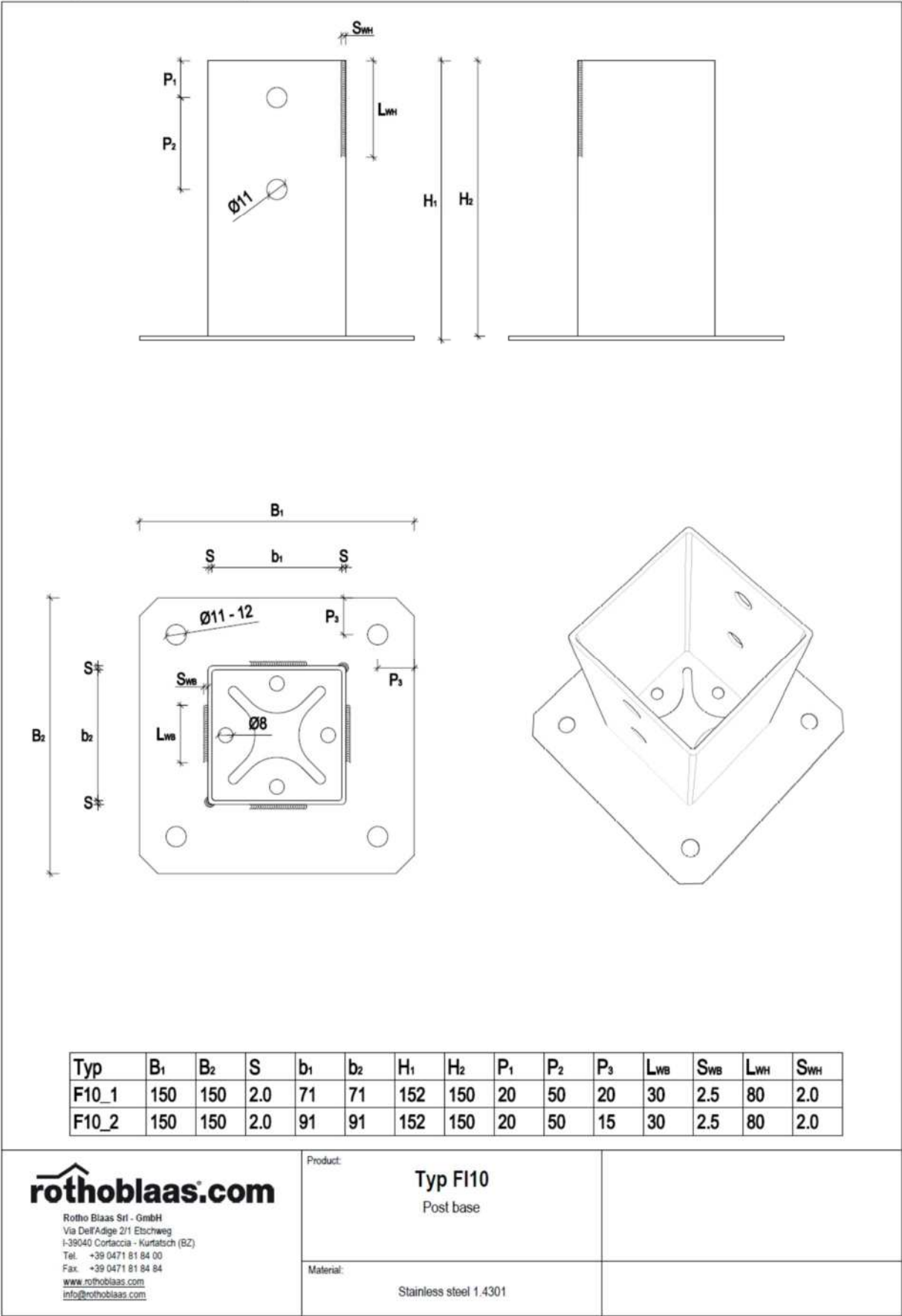
Object:

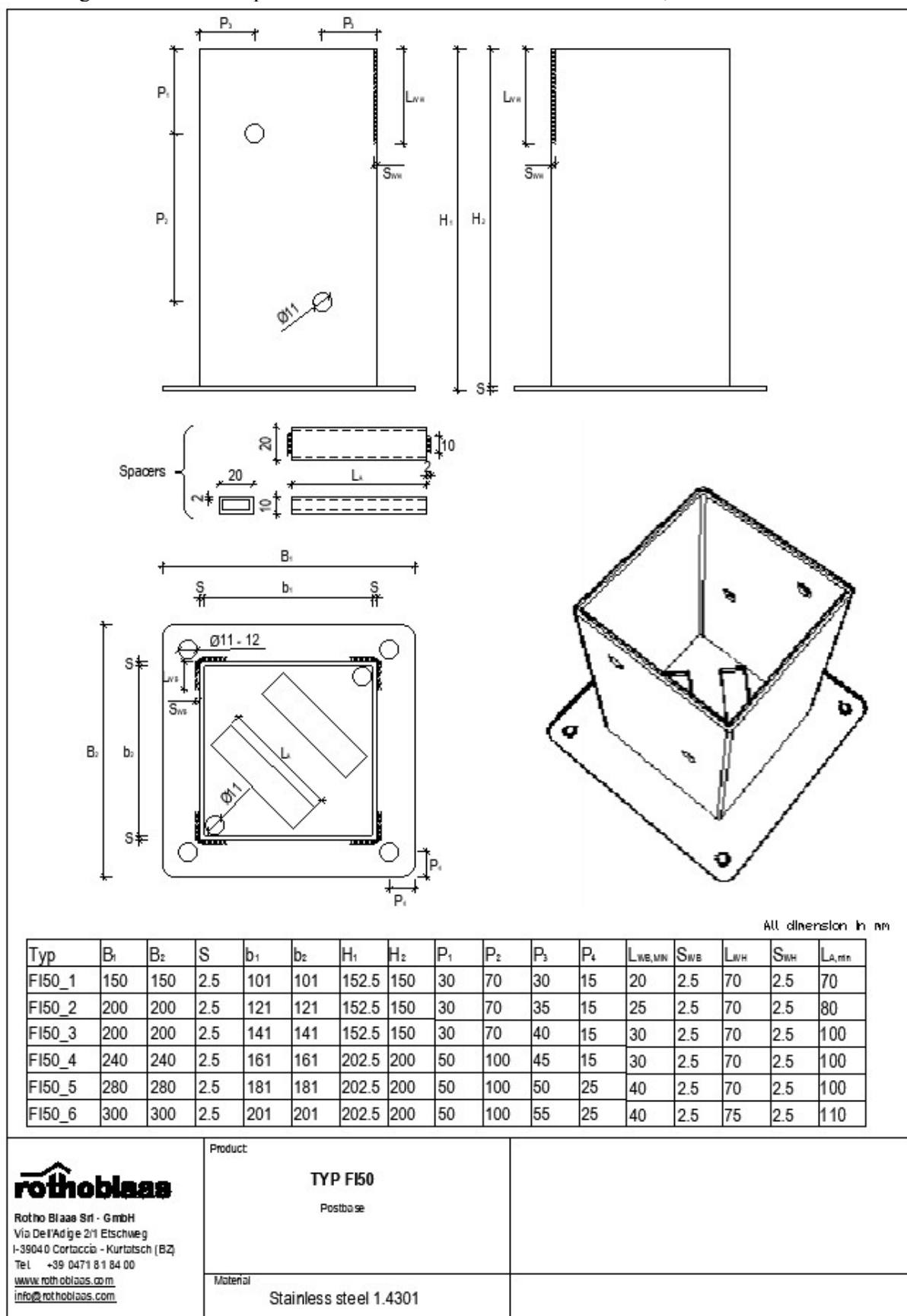
**Typ S50**  
Post base



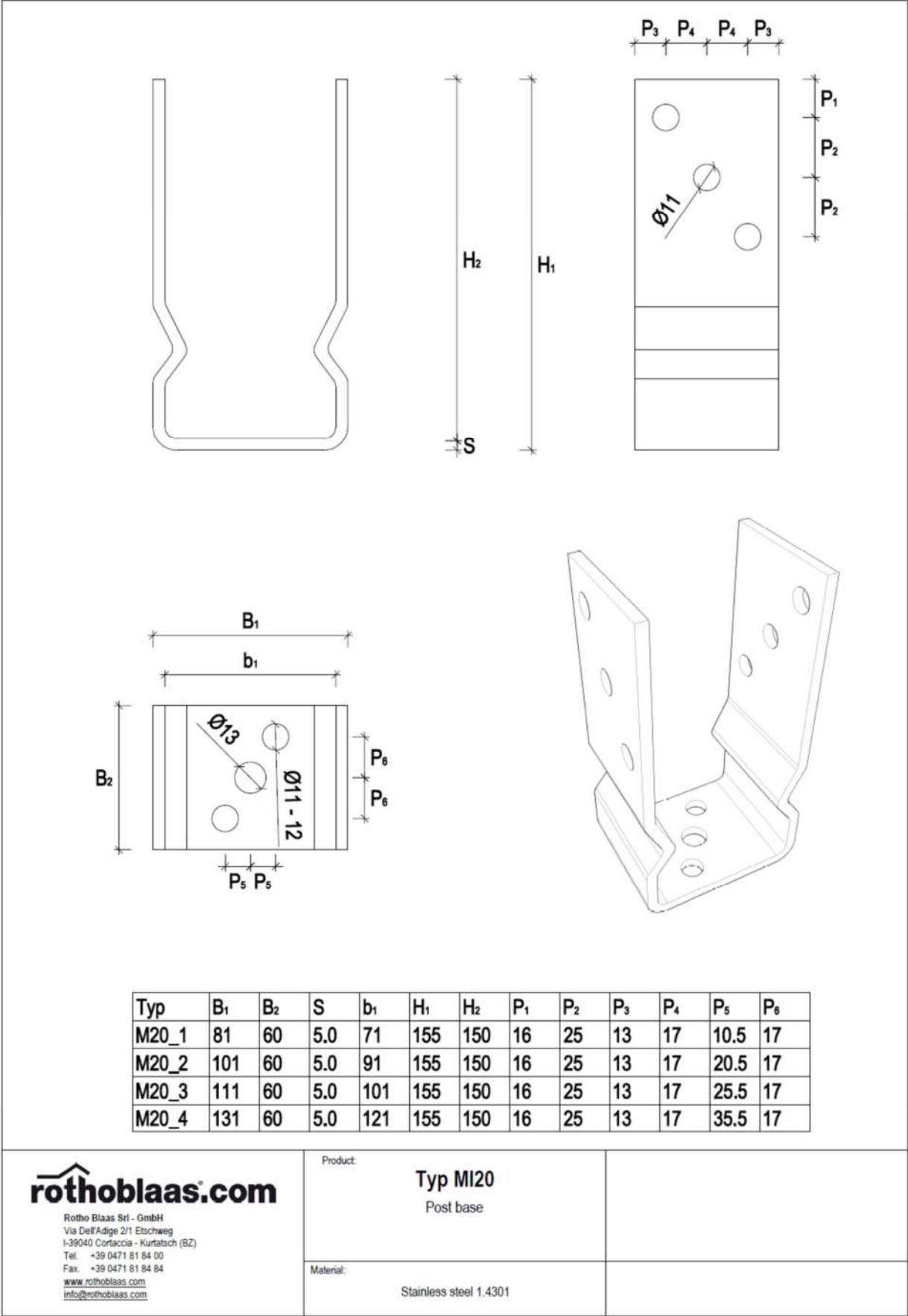


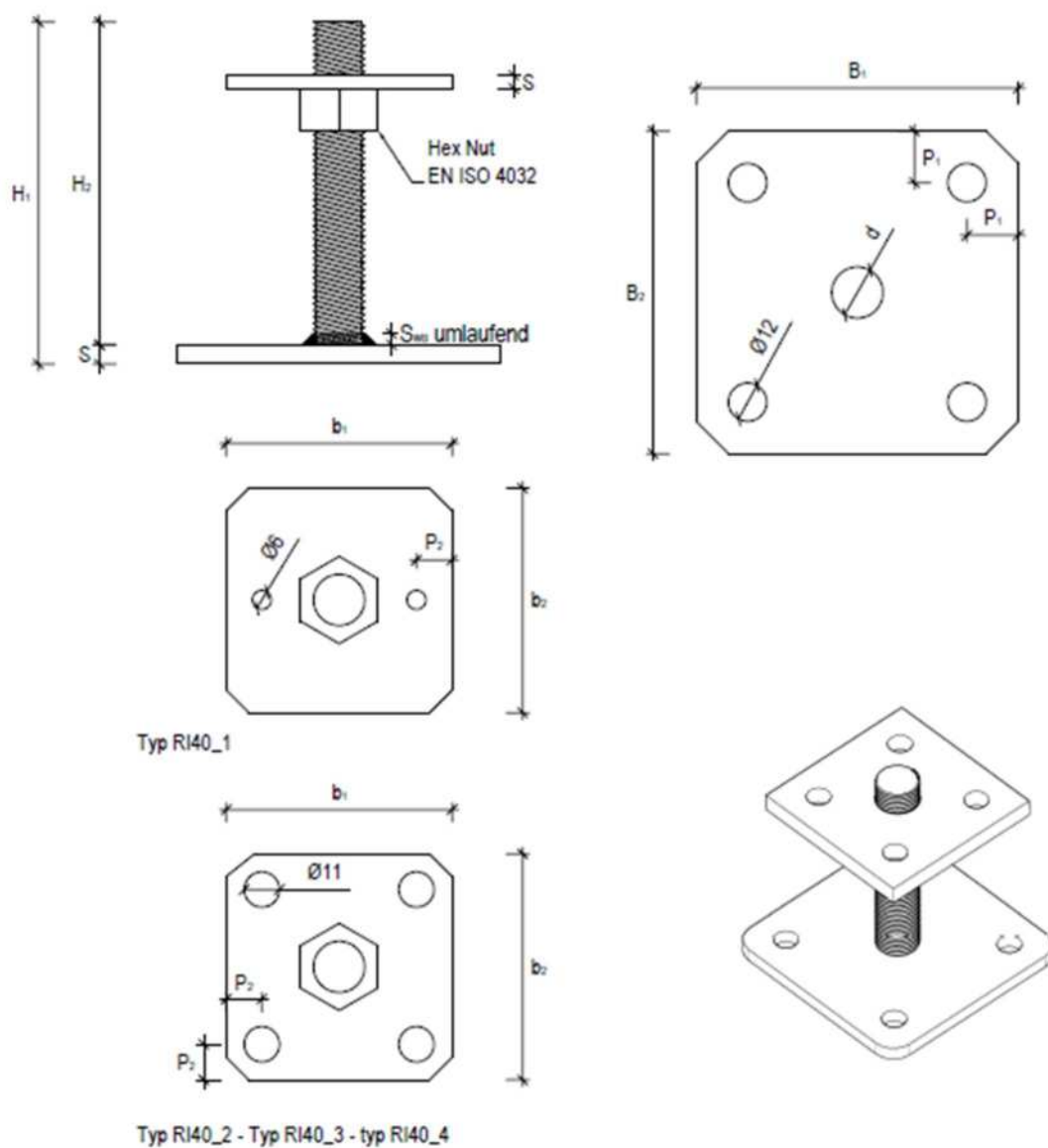
|                                                                                     |                                                     |  |  |  |  |
|-------------------------------------------------------------------------------------|-----------------------------------------------------|--|--|--|--|
|  | Object: Postbase<br>TYP S50_3 Alt and TYP S50_4 Alt |  |  |  |  |
|                                                                                     |                                                     |  |  |  |  |
|                                                                                     |                                                     |  |  |  |  |
|                                                                                     |                                                     |  |  |  |  |











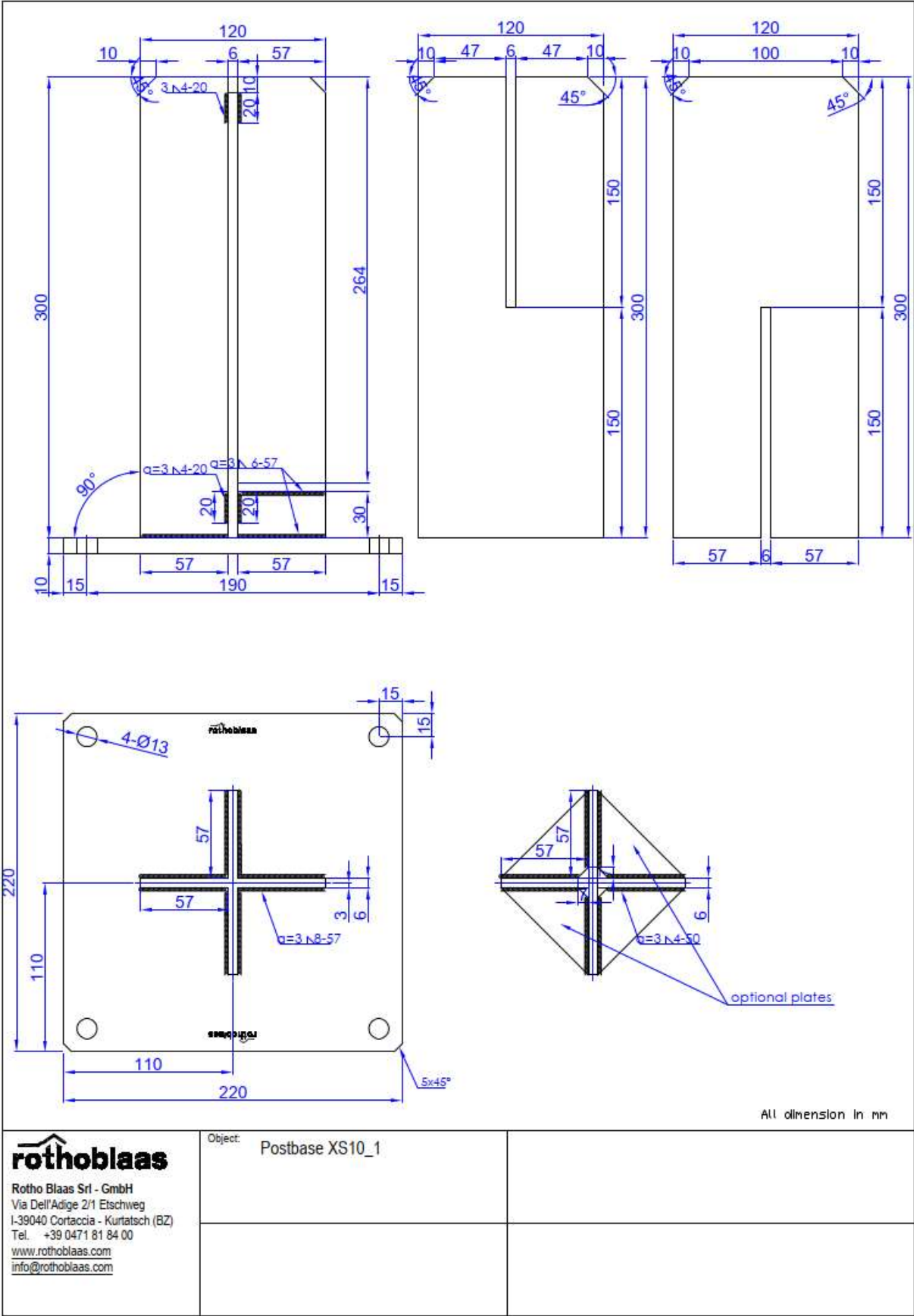
| Typ    | B <sub>1</sub> | B <sub>2</sub> | S | b <sub>1</sub> | b <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | d  | P <sub>1</sub> | P <sub>2</sub> | S <sub>WS</sub> |
|--------|----------------|----------------|---|----------------|----------------|----------------|----------------|----|----------------|----------------|-----------------|
| RI40_1 | 100            | 100            | 6 | 70             | 70             | 105            | 99             | 16 | 15             | 10             | 4               |
| RI40_2 | 100            | 100            | 6 | 80             | 80             | 105            | 99             | 20 | 15             | 15             | 4               |
| RI40_3 | 160            | 100            | 6 | 100            | 100            | 156            | 150            | 20 | 20             | 20             | 4               |
| RI40_4 | 160            | 100            | 6 | 100            | 100            | 253.5          | 247.5          | 24 | 20             | 20             | 4               |

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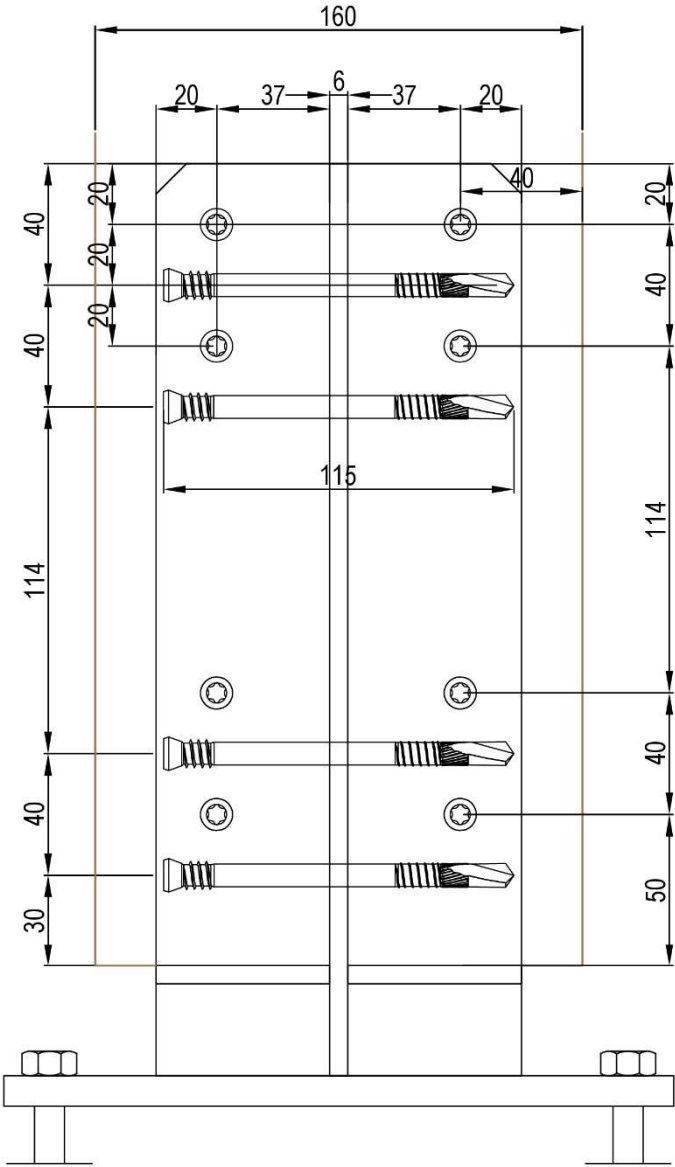
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Product:

**Typ RI40**  
Post base



16 selftapping dowels SBD Ø7,5 x 115  
Post MIN 160x160 mm

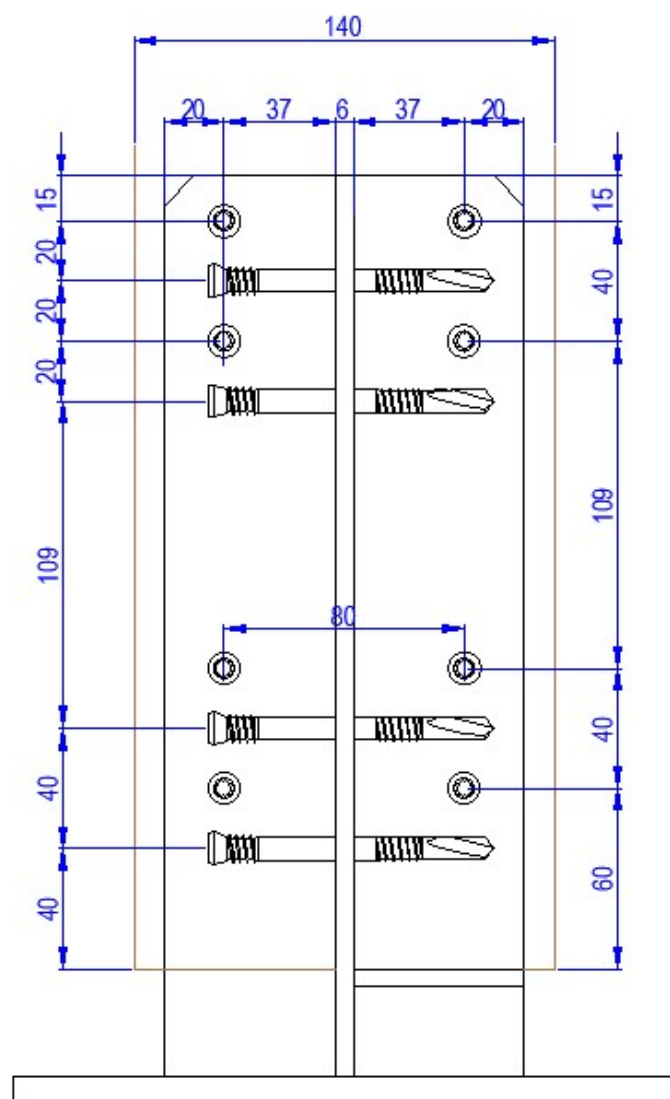


holes for concrete bolts Ø13

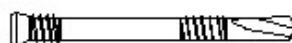
Object: Postbase TYP XS10\_1

Configuration: XS10\_1-16SBD115\_160

# 16 - self-tapping dowels $\varnothing 7.5 \times 95$ Post MIN 140x140



SBD/SBDS - 7.5x95

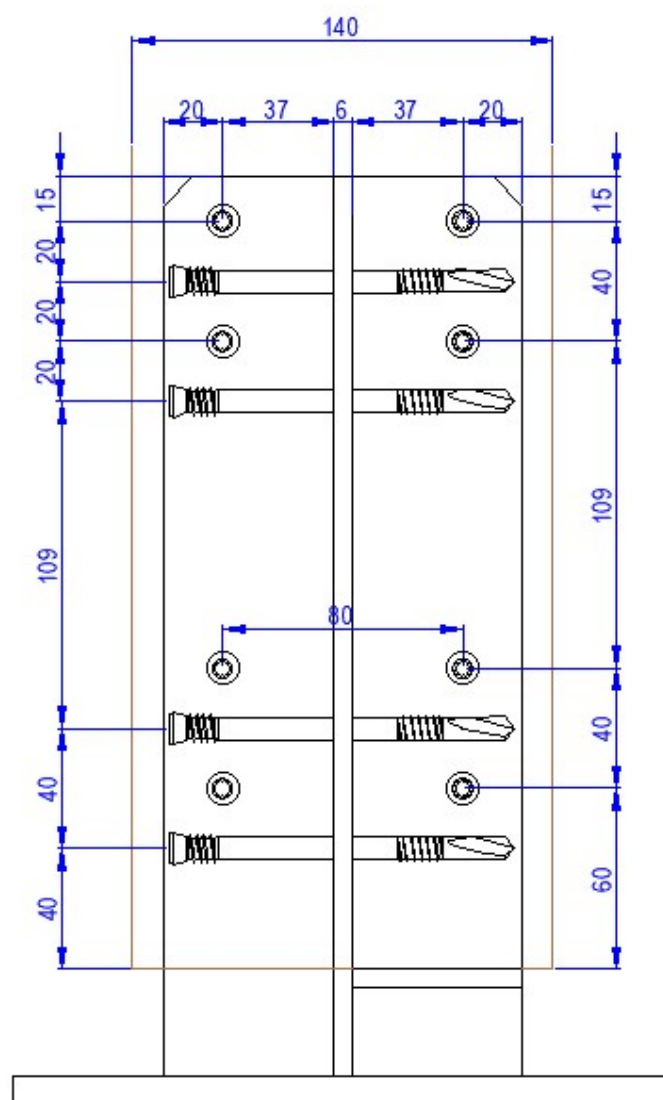


All dimension in mm

Object: Postbase XS10\_1

Configuration: XS10\_1-16SBD95\_140 / XS10\_1-16SBDS95\_140

## 16 - self-tapping dowels $\varnothing 7.5 \times 115$ Post MIN 140x140

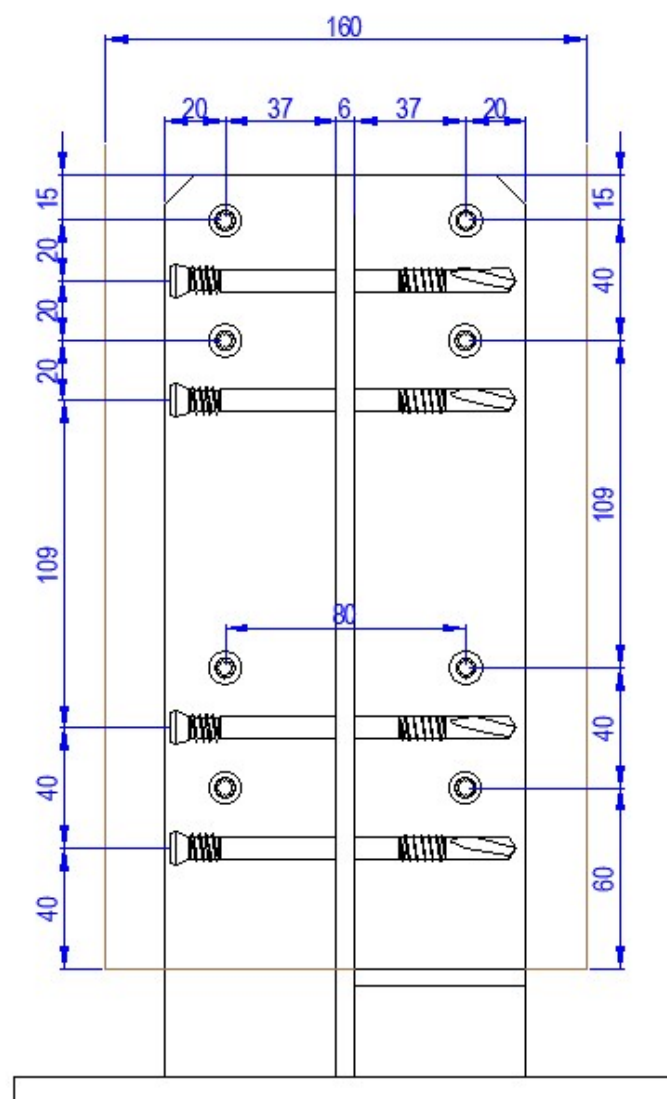


All dimension in mm

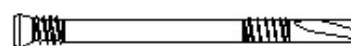
Object: Postbase XS10\_1

Configuration: XS10\_1-16SBD115\_140 / XS10\_1-16SBDS115\_140

# 16 - self-tapping dowels $\varnothing 7.5 \times 115$ Post MIN 160x160



SBD/SBDS - 7.5x115

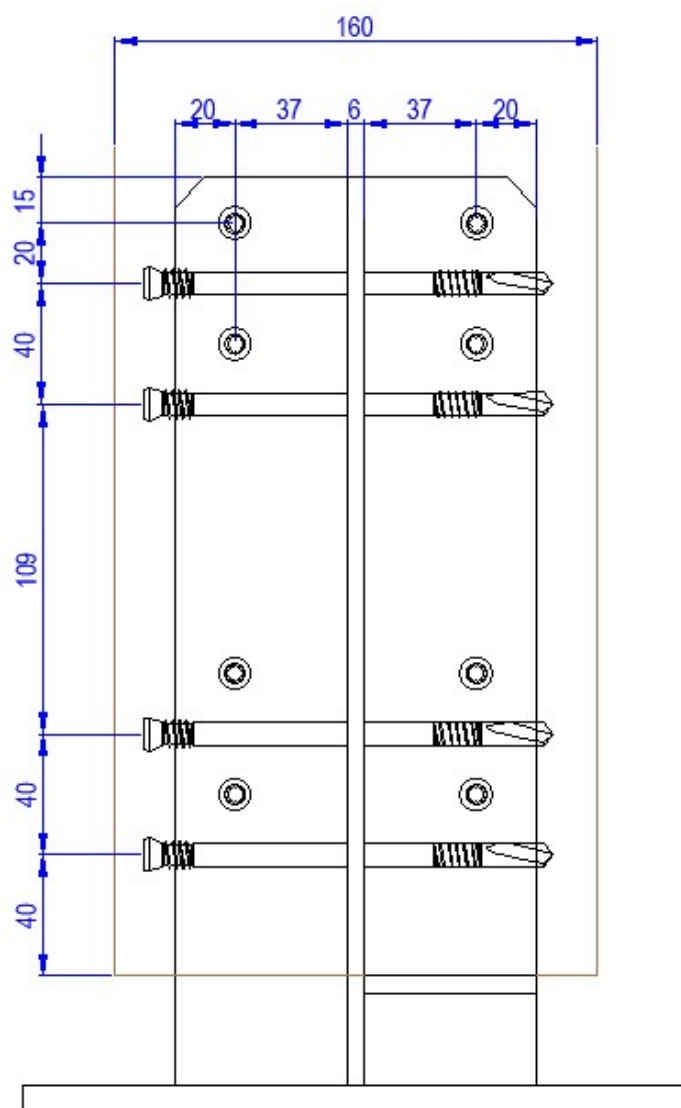


All dimension in mm

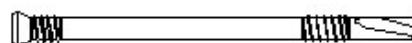
Object: Postbase XS10\_1

Configuration: XS10\_1-16SBD115\_160 / XS10\_1-16SBDS115\_160

## 16 - self-tapping dowels $\varnothing 7.5 \times 135$ Post MIN 160x160



SBD/SBDS - 7.5x135



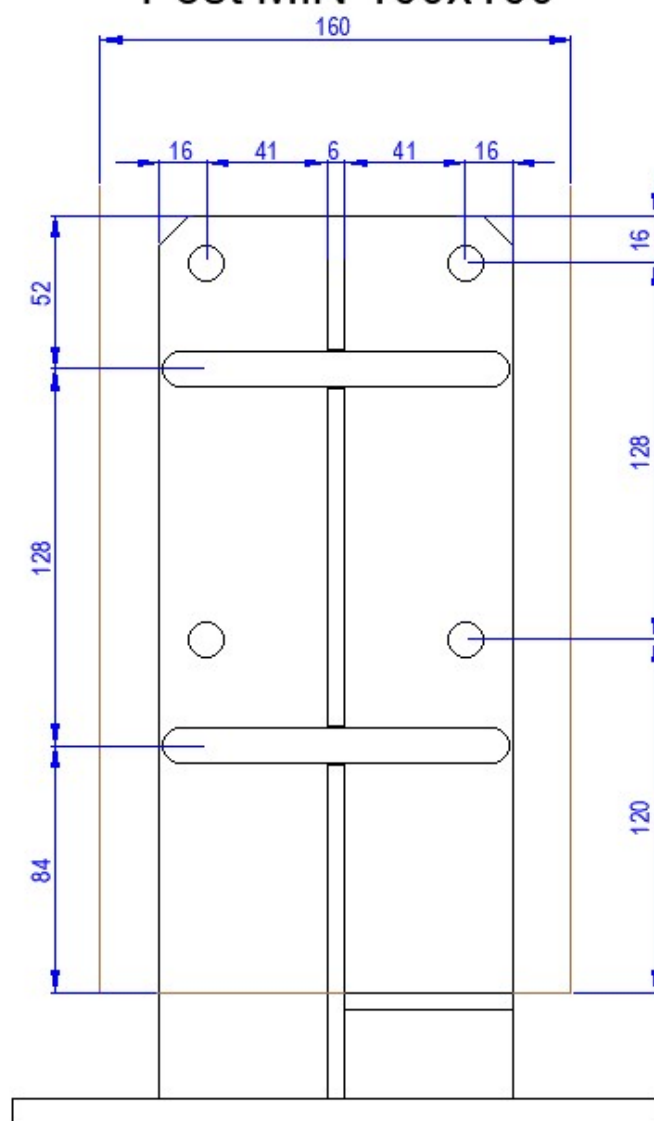
All dimension in mm

Object: Postbase XS10\_1

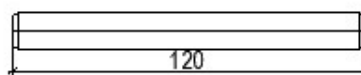
Configuration: XS10\_1-16SBD135\_160 / XS10\_1-16SBDS135\_160



# 8 - smooth dowels $\varnothing 12 \times 120$ Post MIN 160x160



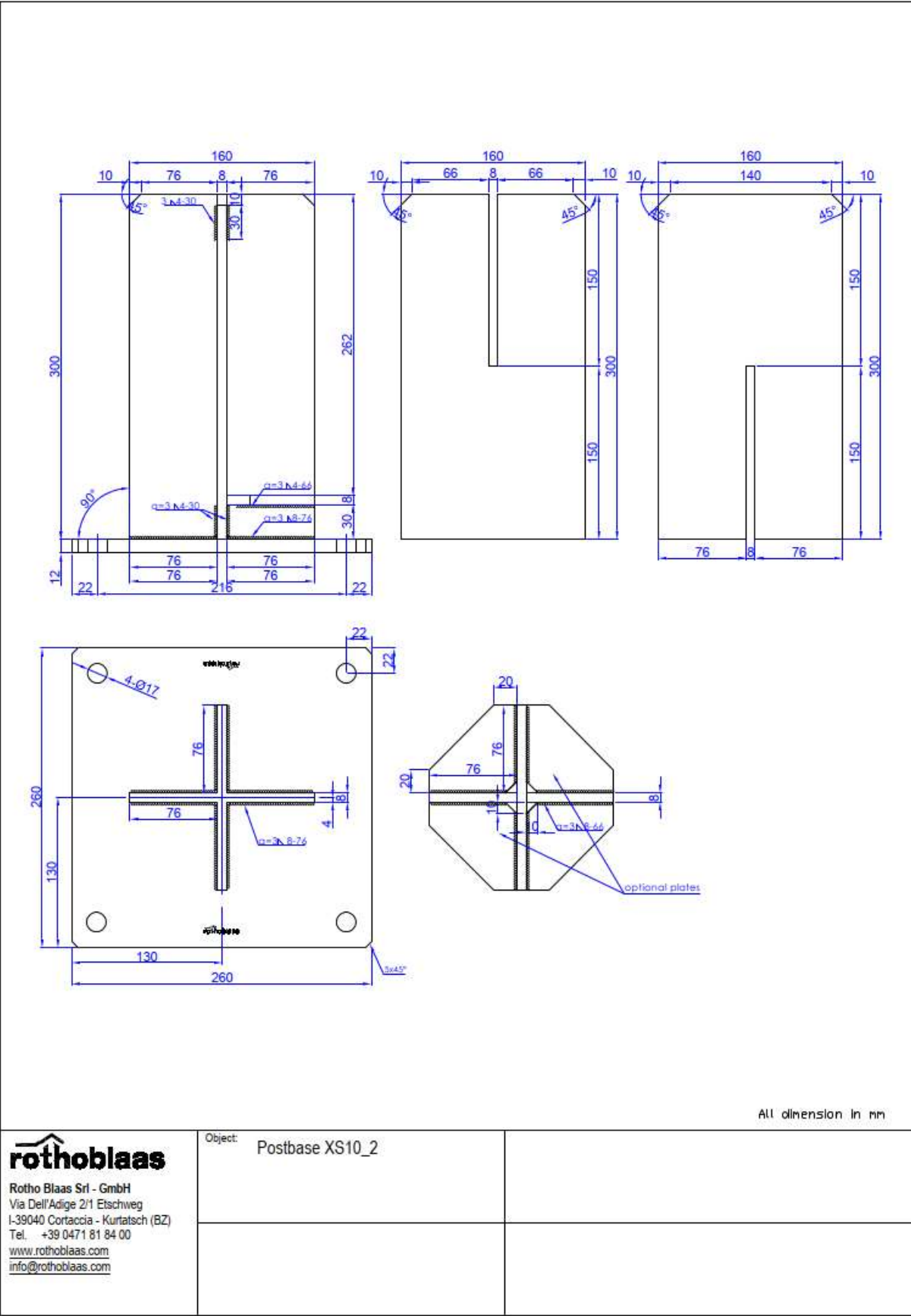
STA 12x120



All dimension in mm

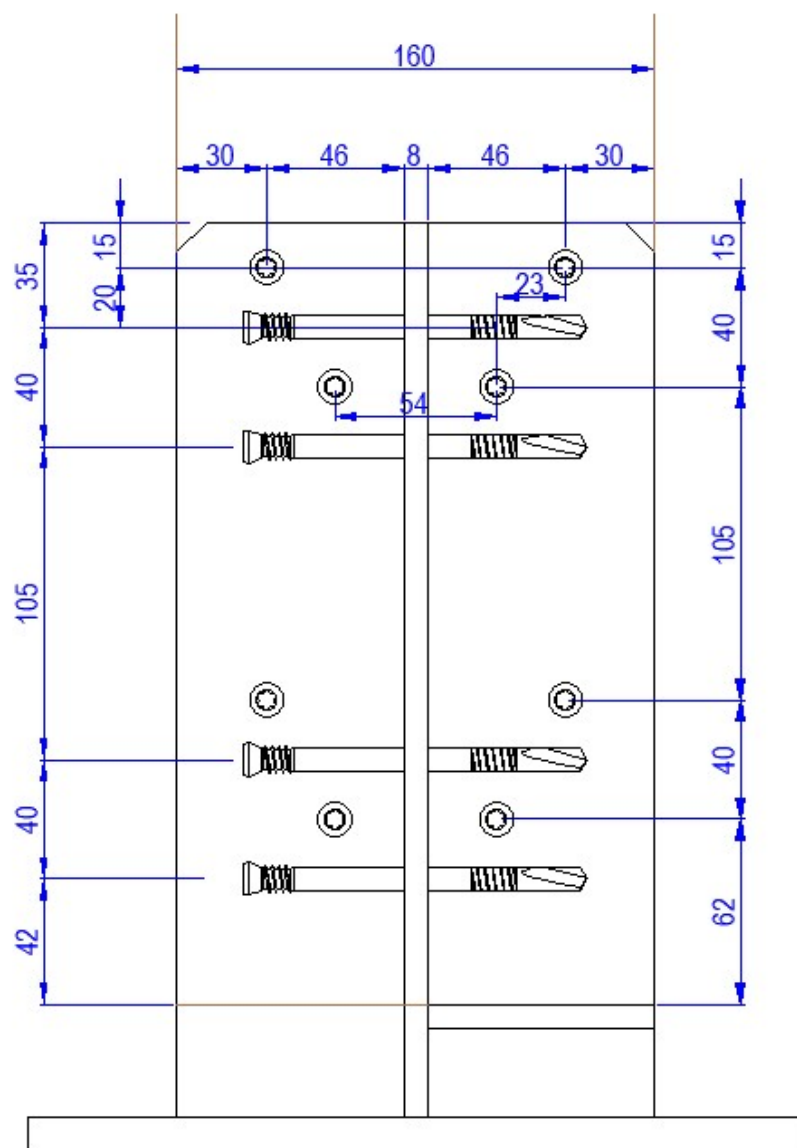
Object: Postbase XS10\_1

Configuration: XS10\_1-8STA120\_160

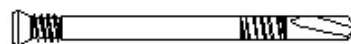


|                                                                                                                                                                                                                                                                                          |                                |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--|
| <p><b>rothoblaas</b></p> <p>Rotho Blaas Srl - GmbH<br/>Via Dell'Adige 2/1 Etschweg<br/>I-39040 Cortaccia - Kurtatsch (BZ)<br/>Tel. +39 0471 81 84 00<br/><a href="http://www.rothoblaas.com">www.rothoblaas.com</a><br/><a href="mailto:info@rothoblaas.com">info@rothoblaas.com</a></p> | <p>Object: Postbase XS10_2</p> |  |
|                                                                                                                                                                                                                                                                                          |                                |  |

# 16 - self tapping dowels Ø7.5 x 115 Post MIN160x160 mm



SBD/SBDS - 7.5x115

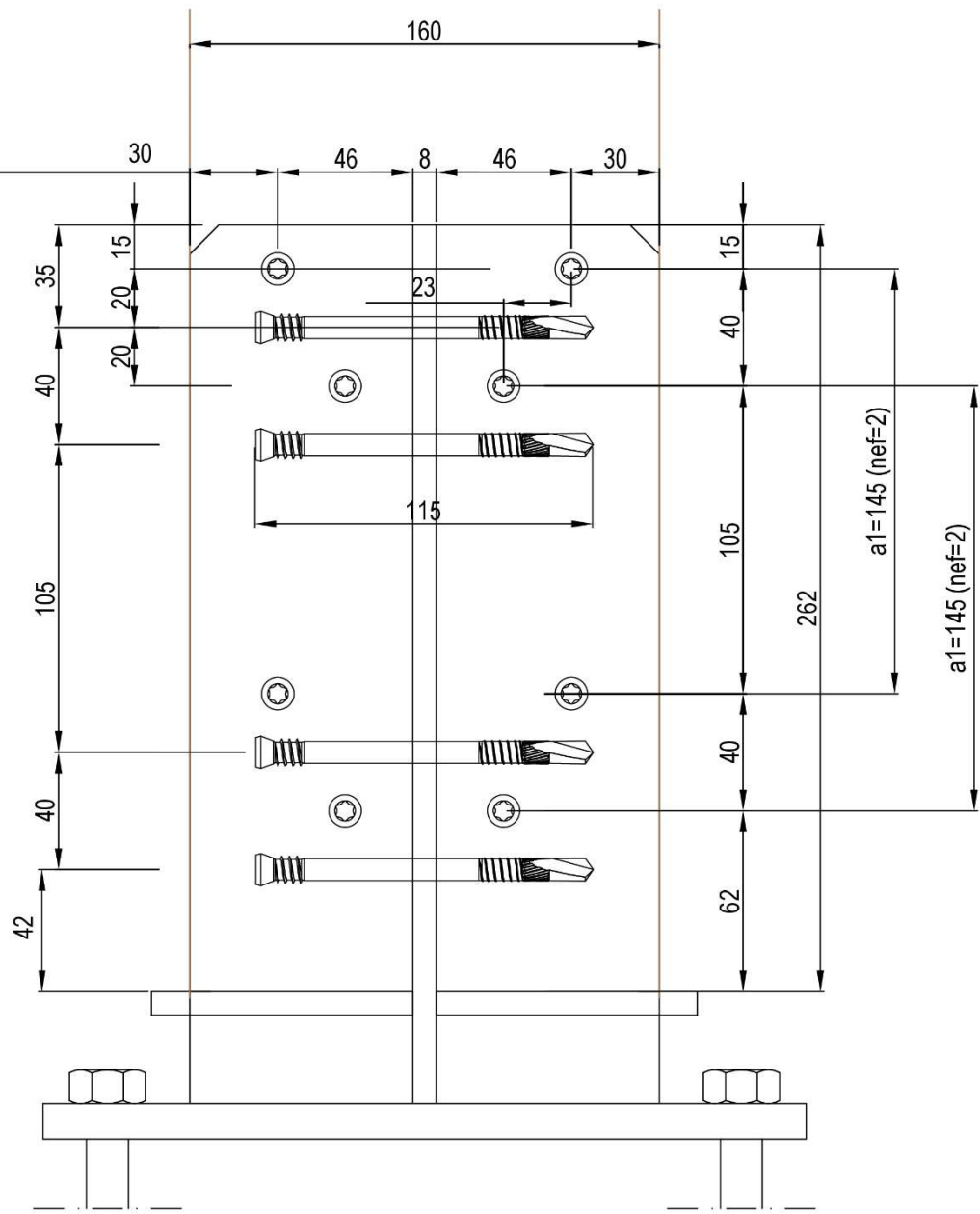


All dimension in mm

Object: Postbase XS10\_2

Configuration: XS10\_2-16SBD115\_160 / XS10\_2-16SBDS115\_160

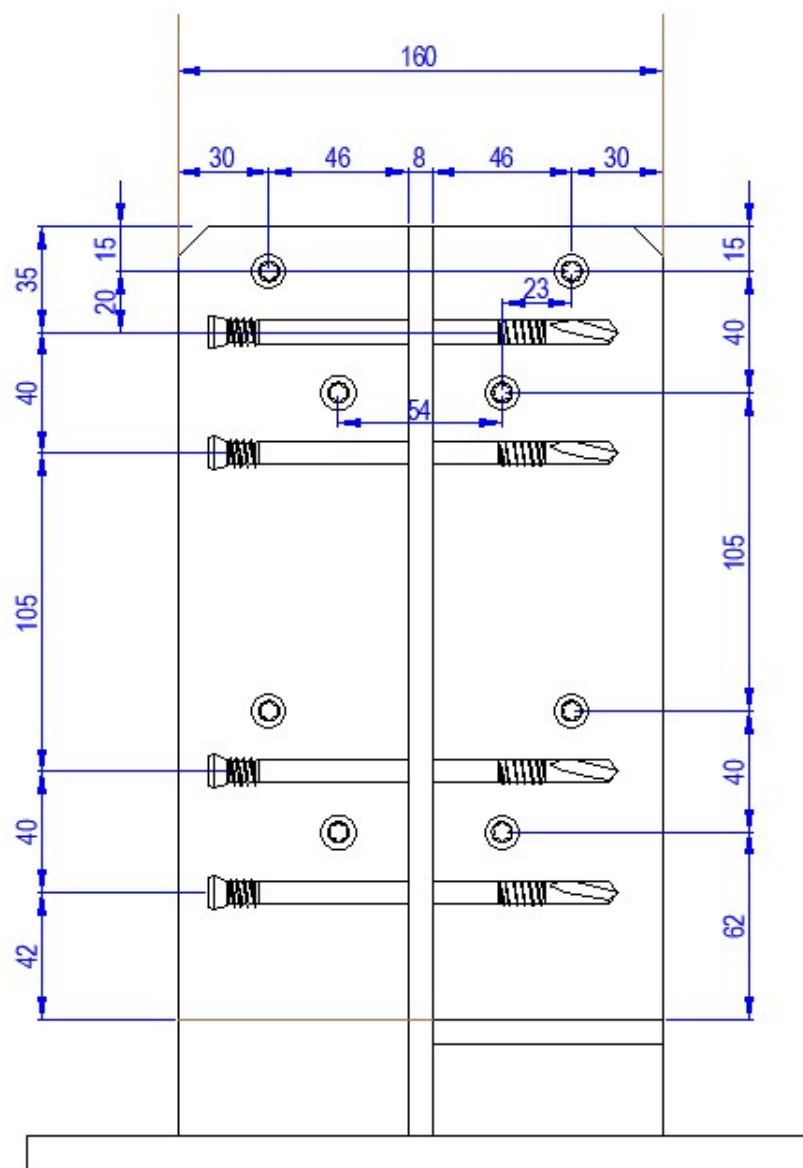
16 selftapping dowels SBD Ø7,5 x 115  
Post MIN160x160 mm



holes for concrete bolts Ø17

Object: Postbase TYP XS10\_2  
Configuration: XS10\_2-16SBD115\_160 Alt

# 16 - self tapping dowels $\text{Ø}7.5 \times 135$ Post MIN160x160 mm



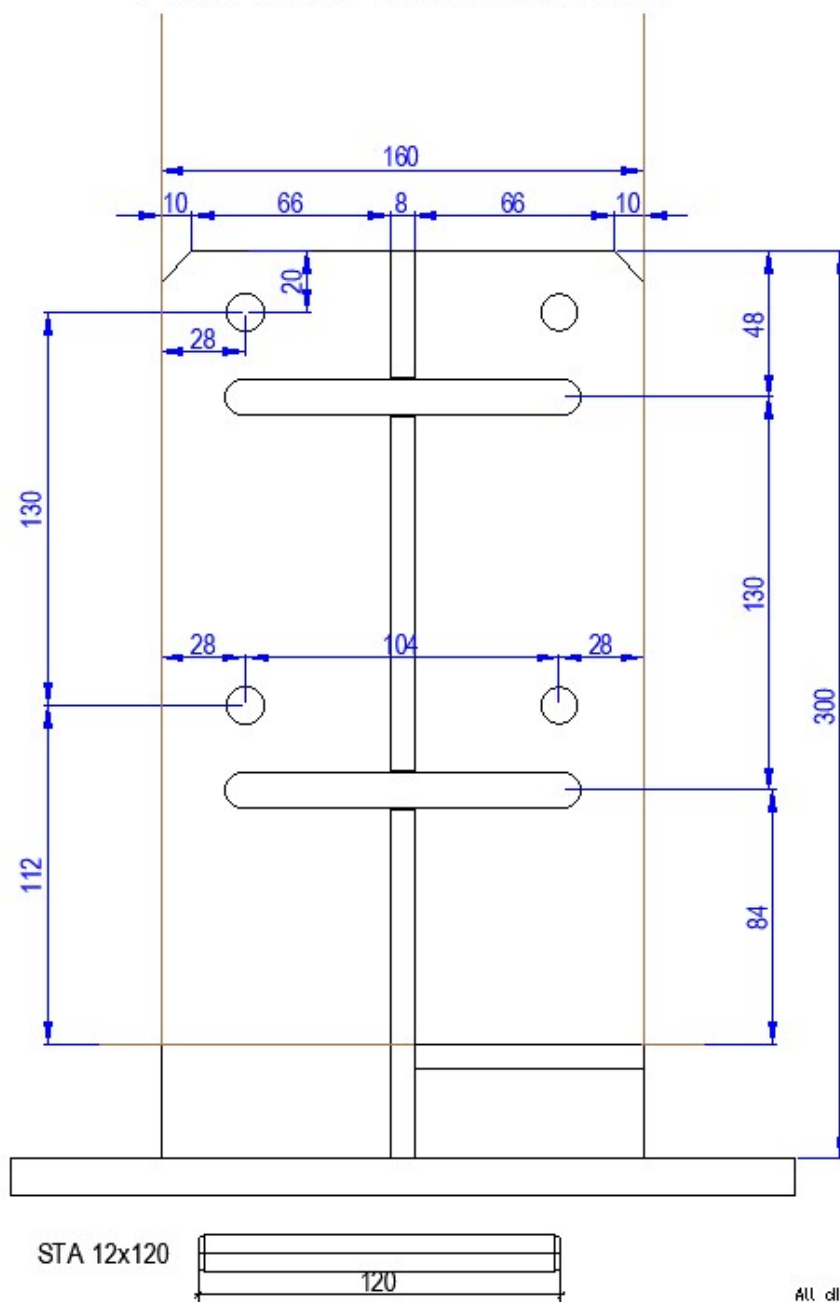
All dimension in mm

Object: Postbase XS10\_2

Configuration: XS10\_2-16SBD135\_160 / XS10\_2-16SBDS135\_160



## 8 - smooth dowels $\varnothing 12 \times 120$ Post MIN 160x160 mm

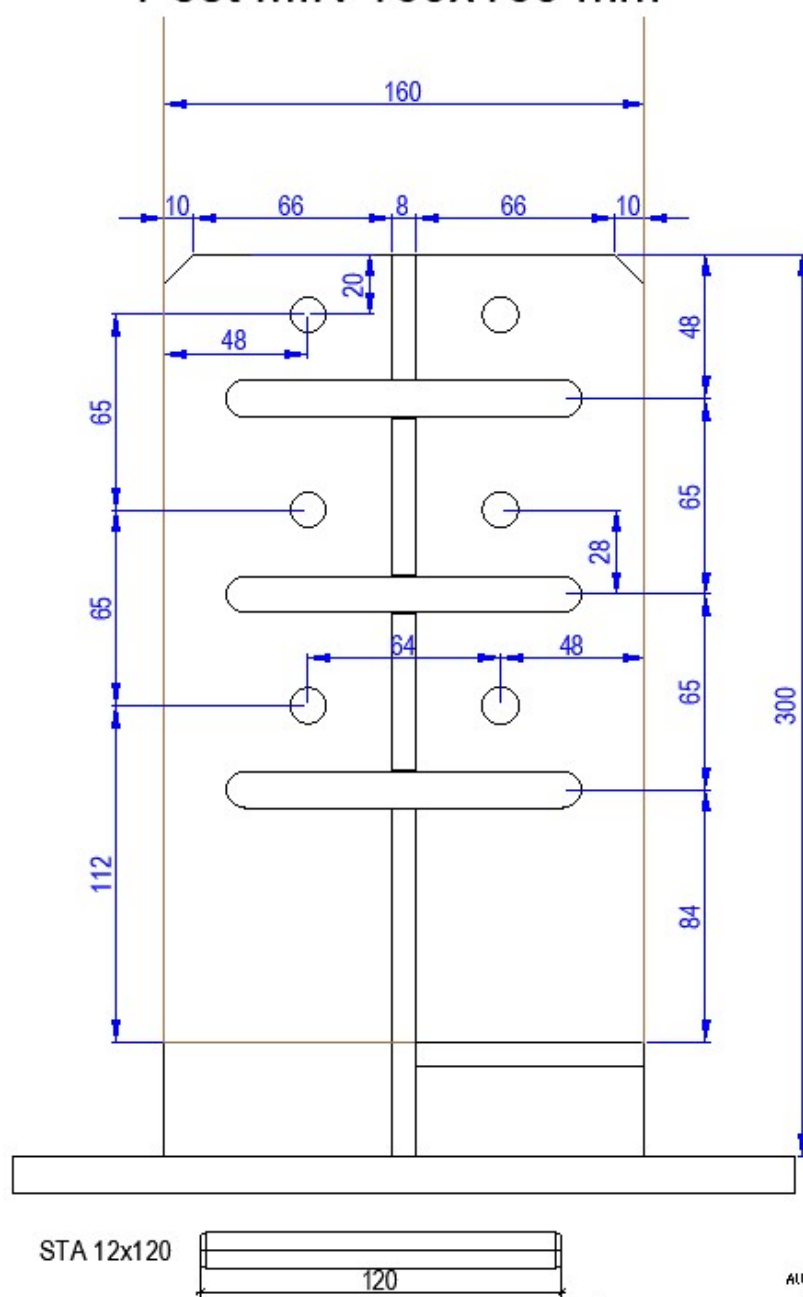


Object: Postbase XS10\_2

Configuration: XS10\_2-8STA120\_160

## 12 - smooth dowels Ø12 x 120

### Post MIN 160x160 mm



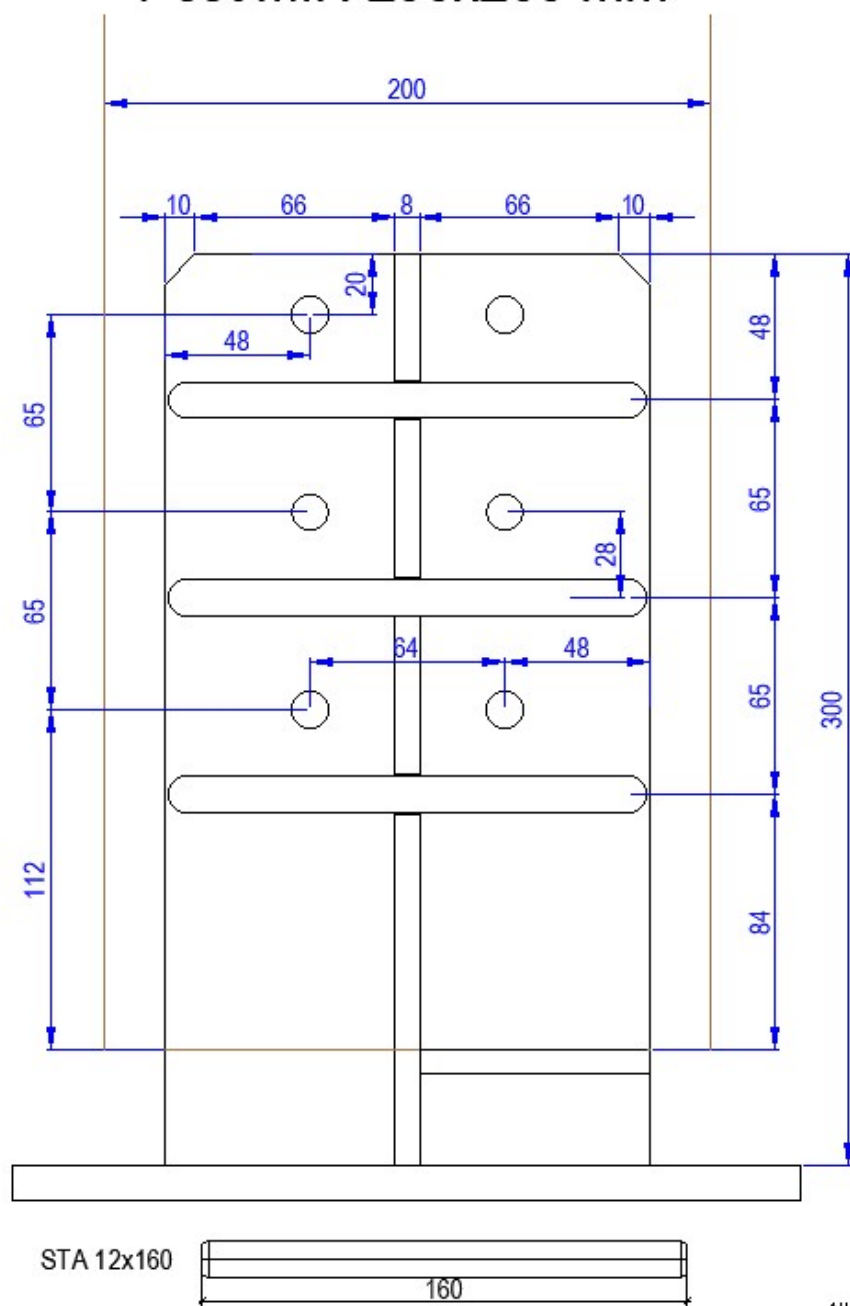
Object: Postbase XS10\_2

Configuration: XS10\_2-12STA120\_160





# 12 - smooth dowels $\varnothing 12 \times 160$ Post MIN 200x200 mm



All dimension in mm

Object: Postbase XS10\_2

Configuration: XS10\_2-8STA160\_200