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European Technical Assessment

ETA-24/0873
of 23/06/2026

General part

Technical Assessment Body issuing the European Technical Assessment
Technický a zkušební ústav stavební Praha, s.p.

Trade name of the construction product	Three-dimensional nailing plates KLR, KP, KPK, KPL, KR, KRD, KB, KK, KKB, KL, KM, KPS, KRB, KSB, KWB, KWC, LU, LB, NT, PPS, PPSR, PR, PS, PS 84L, PSK, PSL, PSP, PSPO, PSR, PSRP, PSRT, PSRU, PST, SD, SDPSK, SDS, WB, WBC, WBU, WBZ
Product family to which the construction product belongs	Product area: 13 Three-dimensional Nailing Plates
Manufacturer	DOMAX Sp. z o.o. Aleja Parku Krajobrazowego 109 84-207 Koleczkowo Łężyce Republic of Poland
Manufacturing plant	DOMAX Sp. z o.o. Aleja Parku Krajobrazowego 109 84-207 Koleczkowo Łężyce Republic of Poland
This European Technical Assessment contains	141 pages including 6 Annexes, which form an integral part of this European Technical Assessment
This European Technical Assessment is issued in accordance with Article 95(4) of Regulation (EU) 2024/3110, on the basis of	EAD 130186-00-0603 Three-dimensional nailing plates
This version replaces	ETA 24/0873, version 01 issued on 05/08/2025

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1 Technical description of the product

The three-dimensional nailing plates DMX® are one-piece, non-welded (KB, KK, KL, KM, KP, KR, KRB, KSB, KWB, KWC, WBZ,), non-welded or welded (KKB, PS, SDP 90 A, SDP 90 B, SDP 100 A, SDP 100 B, SDP 120 A, SDP 120 B, SDSP 70 A, SDSP 70 B, KM, KL, WB, WBZ, PSK, SDPSK), welded (PSL, PSP, PSPO, PST, PS 84L) elements or multi-piece, welded and/or bolted (PSR, PSRT, PSRU, PSRP, PPS, PR, PPSR) elements, made of the cold-formed steel sheet grade DX51D according to EN 10346 with the zinc coating mass of 275 g/m², electrogalvanized steel DC01 according to EN 10131 with corrosion protection Fe/Zn 12 + powder coating 60 µm or structural steel S235 according to EN 10025-2 with corrosion protection Fe/Zn 12 or hot-dip galvanization (HDG). Elements SD and SDS have extra powder coating 60 µm (see list below). The three-dimensional nailing plates correspond to the drawings and dimensions given in Annex 1.

Table 1 Technical description of the product

Table 1 Technical description of the product								
Type of Domax connector	Made of	Kind of corrosion protection	Type of connector	Intended use				
KLR 1	DX51D	Z275	Angle	Used to connect two piece of timber or timber – concrete or timber – steel				
KLR 2								
KLR 3								
KLR 4								
KLR 5								
KLR 6								
KP 2 (3 mm)	DX51D	Z275			Angle	Used to connect two piece of timber or timber – concrete or timber – steel		
KP 7								
KP 8								
KP 9								
KPK 4	DX51D	Z275		Angle			Used to connect two piece of timber	
KPK 11								
KPK12								
KPK 13								
KPK 21								
KPK 22								
KPK 23								
KPK 31								
KPK 32								
KPK 33								
KPL 5	DX51D	Z275					Angle	Used to connect two piece of timber or timber – concrete or timber – steel
KPL 6								
KPL 11								

Type of Domax connector	Made of	Kind of corrosion protection	Type of connector	Intended use
KPL 21				
KR	KR 1 – DC01	Fe/Zn 12		
	KR 2 – DX51D	Z275		
	KR 3 – DX51D	Z275		
KR 4	S 235	Z275		
KR 5	DX51D	Z275		
KR 6	DC01	Fe/Zn 12		
KR 7				
KRD 5	DX51D	Z275		
KRD 6				
LU	DX51D	Z275		
WBC	DX51D	Z275	Beam hanger	Used to connect two piece of timber or timber – concrete or timber – steel
WBU	DX51D	Z275		
ŁB	S235	Fe/Zn 12	Angle	
NT	DX51D	Z275	Tape tension	
KKB 1	S235	Fe/Zn 12	Beam hanger	Used to connect two piece of timber or timber – concrete or timber – steel
PS 60	S235 / B500	Fe/Zn 12	Post base	Used to connect timber beam with concrete ground, end-grain to steel plate
PS 70				
PS 80				
PS 90				
PS 100				
PS 120				
PS 140				
KPS 1	DX51D	Z275	Angle	Used to connect two piece of timber or timber – concrete or timber – steel
KPS 2				
KPS 3				
KPS 4				

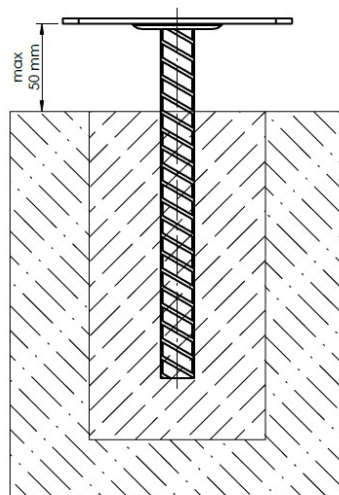
Type of Domax connector	Made of	Kind of corrosion protection	Type of connector	Intended use
SD	SDLZ 1 – DX51D	Z275 + Powder Coating 60 µm	Angle	Used to connect two piece of timber, side-grain to side-grain
	SDKLR 1 – DX51D	Z275 + Powder Coating 60 µm		
	SDKL 1 – DX51D	Z275 + Powder Coating 60 µm		
	SDP 90 A – S235	Fe/Zn 12 + Powder Coating 60 µm	Post base	Used to connect timber beam with concrete ground, end-grain to steel plate
	SDP 90 B – S235	Fe/Zn 12 + Powder Coating 60 µm		
	SDP 100 A – S235	Fe/Zn 12 + Powder Coating 60 µm		
	SDP 100 B – S235	Fe/Zn 12 + Powder Coating 60 µm		
	SDP 120 A – S235	Fe/Zn 12 + Powder Coating 60 µm		
	SDP 120 B – S235	Fe/Zn 12 + Powder Coating 60 µm		
	SDD 85 A – DX51D	Z275 + Powder Coating 60 µm	Decor	Use to decorate another connector
	SDD 85 B – DX51D	Z275 + Powder Coating 60 µm		
SDS	SDSP 70 A – S235	Fe/Zn 12 + Powder Coating 60 µm	Post base	Used to connect timber beam with concrete ground, end-grain to steel plate
	SDSP 70 B – S235	Fe/Zn 12 + Powder Coating 60 µm		
	SDSKW 2 – DX51D	Z275 + Powder Coating 60 µm	Angle	Used to connect two piece of timber, side-grain to side-grain
	SDSKW 8 – DX51D	Z275 + Powder Coating 60 µm		
	SDSKP 1 – DX51D	Z275 + Powder Coating 60 µm		
	SDSKP 5 – DX51D	Z275 + Powder Coating 60 µm		
	SDSKM 7 – DX51D	Z275 + Powder Coating 60 µm	Beam hanger	Used to connect two piece of timber, end-grain to side-grain
	SDSWBZ 10 – DX51D	Z275 + Powder Coating 60 µm		
	SDSWBZ 11 – DX51D	Z275 + Powder Coating 60 µm		
	SDSWBZ 14 – DX51D	Z275 + Powder Coating 60 µm		
	SDSWBZ 21 – DX51D	Z275 + Powder Coating 60 µm		
	SDSWBZ 26 – DX51D	Z275 + Powder Coating 60 µm		

Type of Domax connector	Made of	Kind of corrosion protection	Type of connector	Intended use
	SDSWBZ 30 – DX51D	Z275 + Powder Coating 60 µm		
KB 4	S 235	Fe/Zn 12	Angle	Used to connect two piece of timber or timber – concrete or timber – steel
KK 0	DC01	Fe/Zn 12 + Powder Coating 60 µm		Used to connect two piece of timber
KK 11	DX51D	Z275		Used to connect two piece of timber or timber – concrete or timber – steel
KK 12				
KL 6				
KM 17				
KM 18				
KRB 7	DC01	Fe/Zn 12 + Powder Coating 60 µm		Used to connect two piece of timber
KSB 1				
KWB1				
KWC 1				
WBZ 14	DX51D	Z275		Beam hanger
PSL 50, 70, 90, 100	S 235	HDG	Post base	Used to connect timber beam with concrete ground, end-grain to steel plate
PSP 70, 90, 100, 120	S 235	HDG		
PSPO 80, 100	S 235	HDG		
PSR 80, 110	S 235	Fe/Zn 12		
PSRT	S 235	HDG		
PSRU	S 235	HDG		
PST 70, 90, 100, 120, 140	S 235	HDG		
PS 84 L	S 235	HDG	Angle	Used to connect two piece of timber
KM 16 (2 mm)	DX51D	Z275		
KM 16 (3 mm)				
KM 8 (2.5 mm)				
KM 19 (3 mm)				
KM 3 (2.5 mm)				
KL 0				Used to connect two piece of timber or timber – concrete or timber – steel
KL 5 (3 mm)				

Type of Domax connector	Made of	Kind of corrosion protection	Type of connector	Intended use
WB 39	DX51D	Z275	Beam-hanger	Used to connect two piece of timber, end-grain to side-grain or timber – concrete or timber – steel
WB 40				
WB 41				
WB 42				
WB 43				
WB 44				
WB 45				
WB 46				
WB 47				
WB 48				
WB 49				
WB 50				
WB 51				
WB 52				
WB 53				
WB 54				
WB 55				
WB 56				
WB 57				
WB 58				
WB 59				
WB 60				
WB 61				
WB 62				
WB 63				
WBZ 38				Used to connect two piece of timber, end-grain to side-grain
WBZ 49				
WBZ 52				
WBZ 54				
PSR 80 M24	S235JR	Fe/Zn 12	Post base	Used to connect timber beam with concrete ground, end-grain to steel plate
PSR 100 M24	S235JR	Fe/Zn 12		
PSR 130 M24	S235JR	Fe/Zn 12		
PSR 80 M20	S235JR	Fe/Zn 12		
PSR 100 M20	S235JR	Fe/Zn 12		
PSR 130 M20	S235JR	Fe/Zn 12		
PSRP 80 M20	S235JR	Fe/Zn 12		
PSRP 100 M20	S235JR	Fe/Zn 12		
PSRP 130 M20	S235JR	Fe/Zn 12		
PPSR 80	S235JR	Fe/Zn 12		

Type of Domax connector	Made of	Kind of corrosion protection	Type of connector	Intended use
PPSR 100	S235JR	Fe/Zn 12		
PPSR 130	S235JR	Fe/Zn 12		
PPS 80	S235JR	Fe/Zn 12		
PPS 100	S235JR	Fe/Zn 12		
PPS 130	S235JR	Fe/Zn 12		
PR 100 100-150	S235JR	Fe/Zn 12		
PR 100 130-150	S235JR	Fe/Zn 12		
PR 130 130-150	S235JR	Fe/Zn 12		
PSK 70	DX51D	Z275		
SDPSK 70	DX51D	Z275/Powder coating 60 um		

For post bases with concrete bars (PPS 80, PPS 100, PPS 130, PS 84L, PS, PSL) have to be fulfilled the maximal free length 50 mm. Threaded rods are made from rebars B500SP.



For welded three-dimensional nailing plates, the information about weld is mentioned in table below.

Table 2 Welded three-dimensional nailing plates

Name	Weld size [mm]	Symbol	Weld length [mm]	Qty.
PS (60,70)	a 3.5		56.0	1
PS (80,90,100,120,140)	a 3.5		63.55	1
PS84L	a 3.5		63.55	1
PSL (50,70,90,100)	a 3.5		56.0	1
PSRT	a 3.5		63.55	2
PSRU	a 3.5		63.55	1
PPS 80	a 2.8		64.3	1
PPS 100	a 2.8		64.3	1

PPS 130	a 2.8		64.3	1
PR 100/130-150	a 2.8		57.23	1
PR 100/100-150	a 2.8		57.23	1
PR 130/130-150	a 2.8		57.23	1
PSR 80 M20	a 2.8		57.23	1
PSR 100 M20	a 2.8		57.23	1
PSR 130 M20	a 2.8		57.23	1
PSR 80 M24	a 2.8		69.1	1
PSR 100 M24	a 2.8		69.1	1
PSR 130 M24	a 2.8		69.1	1
PSRP 80 M20	a 2.8		57.23	1
PSRP 100 M20	a 2.8		57.23	1
PSRP 130 M20	a 2.8		57.23	1

Yield strength for used steel DX51D is 265 MPa (thickness 1.5 mm).

Yield strength for used steel DX51D is 297 MPa (thickness 2 mm).

Yield strength for used steel DX51D is 287 MPa (thickness 2.5 mm).

Yield strength for used steel DX51D is 278 MPa (thickness 3 mm).

Yield strength for used steel DX51D is 314 MPa (thickness 4 mm).

Yield strength for used steel DC01 is 175 MPa (thickness 1 mm).

Yield strength for used steel DC01 is 218 MPa (thickness 2 mm).

Yield strength for used steel DC01 is 209 MPa (thickness 3 mm).

Yield strength for used steel S235 is 348 MPa (thickness 2 mm).

Yield strength for used steel S235 is 348 MPa (thickness 3 mm).

Yield strength for used steel S235 is 279 MPa (thickness 4 mm).

Yield strength for used steel S235 is 266 MPa (thickness 5 mm).

Yield strength for used steel S235 is 250 MPa (thickness 6 mm).

Yield strength for used steel S235 is 304 MPa (thickness 8 mm).

Tensile strength for used rebars B500SP is 671 MPa (diameter 18.0 mm)

1.1 Identification

The identification parameters and reference to product specifications for identifying the materials and components which constitute the three-dimensional nailing plates are given in Annex 1.

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

The three-dimensional nailing plates are intended to be used as connections in loadbearing timber structures (to connect vertical timber columns to concrete, wood or steel ground). For connecting the mutually perpendicular, load-bearing, solid timber elements, in side-grain to side-grain configurations, in joints for which requirements for mechanical resistance and stability in the sense of the Basic Works Requirement 1 of Regulation (EU) No 305/2011 shall be fulfilled.

For connections made with the three-dimensional nailing plates shall be used the elements described in Annex 1.

Ring shank nails according to EN 14592+A1 with the diameter ≥ 4 mm and characteristic tensile capacity $F_{ax,Rk}$ not less than 1.80 kN shall be used for connections made with the three-dimensional nailing plates.

Products with at least one hole larger than 5 mm in diameter may be used for wood-to-wood, wood-to-concrete, or wood-to-steel connections.

Connectors that meet the above requirement must be fixed to a concrete or steel substrate using fasteners with a diameter that is no more than 2 mm smaller than the diameter of the hole in the connector.

Connectors must fit snugly to steel and concrete substrates, and the fasteners should be arranged symmetrically.

In concrete applications, fasteners must be installed with washers recommended by the manufacturer.

It is assumed that the characteristic load-bearing capacity of the connection for wood-concrete or wood-steel joints is the same as for wood-wood connection.

In respect of the requirements concerning corrosion resistance, three-dimensional nailing plates are for use in timber structures subjected to the internal conditions defined by service classes 1, 2 and 3 (connectors with additional powder coating) according to EN 1995-1-1 (Eurocode 5), in corrosion aggressiveness categories C1 and C2 according to EN ISO 12944-2, without action of acid gases or vapours.

The provisions made in this European Technical Assessment are based on an assumed working life of the product of 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

The assessment of the fitness of the three-dimensional nailing plates for the intended use has been made in compliance with the European Assessment Document (EAD) 130186-00-0603 Three-dimensional nailing plates.

2.1 Installation of three-dimensional nailing plates

The installation instructions including special installation techniques and provisions for the qualification of the personnel are given in the manufacturer's technical documentation.

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

The assessment of the fitness for use of the above-mentioned three-dimensional nailing plates according to the Basic Work Requirements (BWR) were carried out in compliance with EAD 130186-00-0603.

The European Technical Assessment is issued for the three-dimensional nailing plates on the basis of agreed data and information, deposited at Technický a zkušební ústav stavební Praha, s.p., which identifies three-dimensional nailing plates that has been assessed and judged. Changes to the plates or production process which could result in this deposited data and information being incorrect should be notified to Technický a zkušební ústav stavební Praha, s.p. before the changes are introduced. Technický a zkušební ústav stavební Praha, s.p. will decide whether or not such changes affect the ETA and consequently the validity of the CE marking on the basis of the ETA and if so whether further assessment or alternations to the ETA shall be necessary.

Table 3 Essential characteristics of the product

Essential characteristic		Performance
3.1 BWR 1: Mechanical resistance and stability		
3.1.1	Joint strength	See Annex 3
3.1.2	Joint stiffness	NPA
3.1.3	Joint ductility	NPA
3.1.4	Resistance to seismic actions	NPA
3.1.5	Resistance to corrosion and deterioration	NPA
3.2 BWR 2: Safety in case of fire		
3.2.1	Reaction to fire	The steel elements are classified as class A1 of reaction to fire (non-combustible products) in accordance with EN 13501-1+A1 and to European Commission Decision 96/603/EC amended by European Commission Decision 2000/605/EC.
3.2.2	Resistance to fire	NPA

3.1 Mechanical resistance and stability (BWR 1)

3.1.1 Joint strength

The characteristic load-carrying capacities of joints loaded according to static diagrams (shown in Annex 2), determined by tests carried out according to EAD 130186-00-0603, clause 2.2.1 and calculations carried out in accordance with EN 1995-1-1 are given in Annex 3. The characteristic load-carrying capacities of joints for other load directions shall be calculated on the basis of EN 1995-1-1 (Eurocode 5) or according to national regulations. The design values shall be determined according to EN 1995-1-1 (Eurocode 5).

Following the requirements of EAD, the applicant provided to the TAB test results, configuration of the connections and static schemes (direction of force actions).

3.1.2 Joint stiffness

No performance assessed.

3.1.3 Joint ductility

No performance assessed.

3.2 Safety in case of fire (BWR 2)

3.2.1 Reaction to fire

The steel elements are classified as class A1 of reaction to fire (non-combustible products) in accordance with EN 13501-1+A1 and to European Commission Decision 96/603/EC amended by European Commission Decision 2000/605/EC.

3.2.2 Resistance to fire

Performance in relation to fire resistance would be determined for the complete structural element with any associated finishes, therefore there is no performance assessed option used to this Basic Work Requirement.

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

According to the Decision 1997/638/EC¹, of the European Commission the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011 and Commission delegated Regulation (EU) No 568/2014) given in the following table applies:

Product(s)	Intended use(s)	Level(s) or class(es)	Attestation of conformity system(s)
Shear plates, toothed-plate connectors, punched nail plates, nailing plates	For structural timber products		2+

¹ Official Journal of the European Communities L 268/37 of 1.10.1997

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 Technický a zkušební ústav stavební Praha, s.p.

Issued in Prague on 23/06/2026

By
Jiří Studnička, Ph.D.
Head of the TAB

Annexes:

Annex 1	Product details and definitions
Annex 2	Loading and calculations according to static diagrams
Annex 3	The characteristic load-carrying capacities of connectors
Annex 4	Nailing patterns
Annex 5	Specification of connection elements
Annex 6	Reference documents

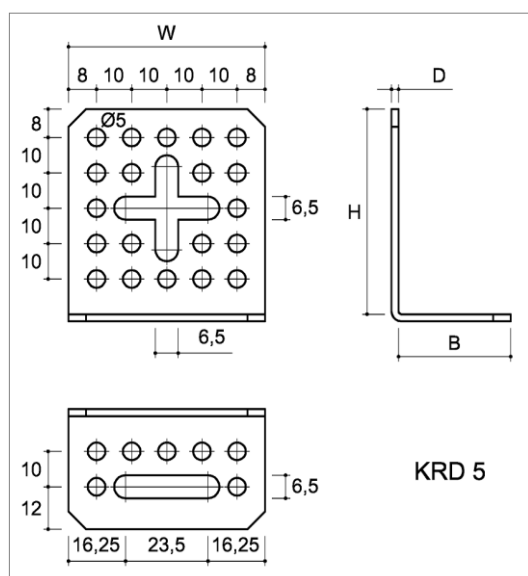


Figure 1 Type KRD 5

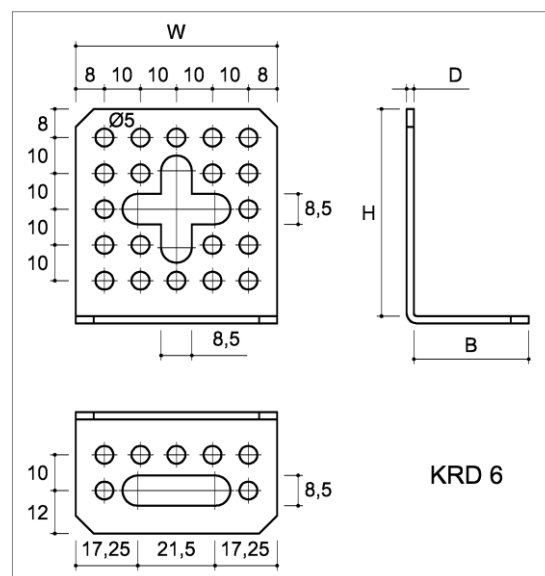


Figure 2 Type KRD 6

Table 4 KRD three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Number of holes
	W	H	B	D	ø 5
KRD 5	56	58	32	2	27
KRD 6	56	58	32	2	27

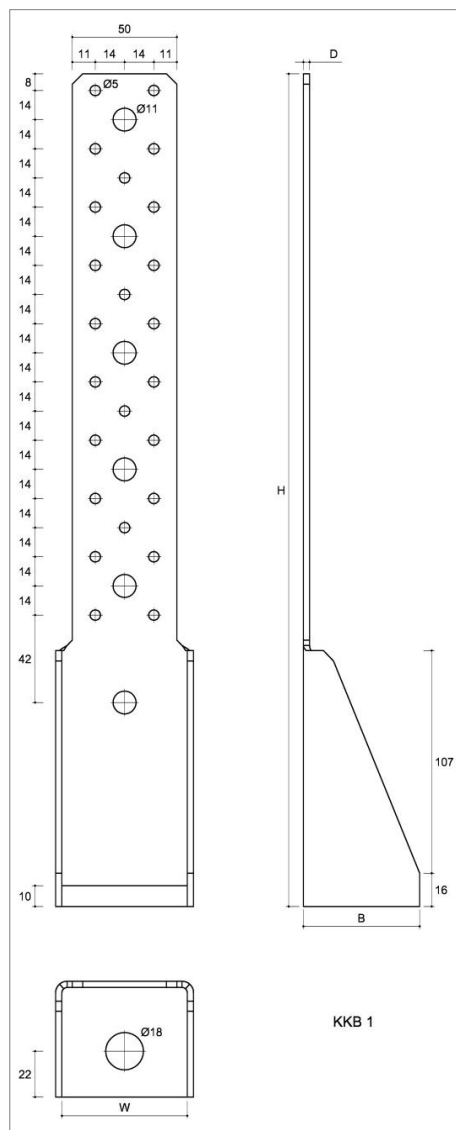


Figure 3 Type KKB 1

Table 5 KKB three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings		
	W	H	B	D	Ø 5	Ø 11	Ø 18
KKB 1	60	400	56	3	24	6	1

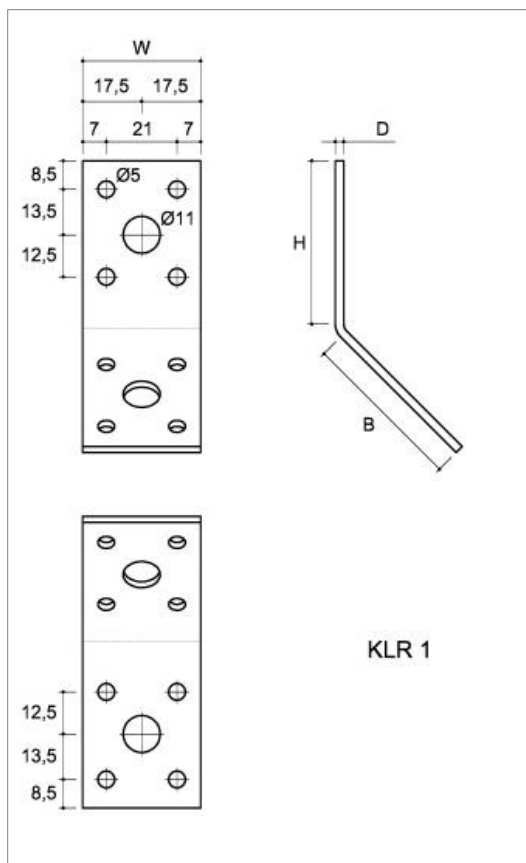


Figure 4 Type KLR 1

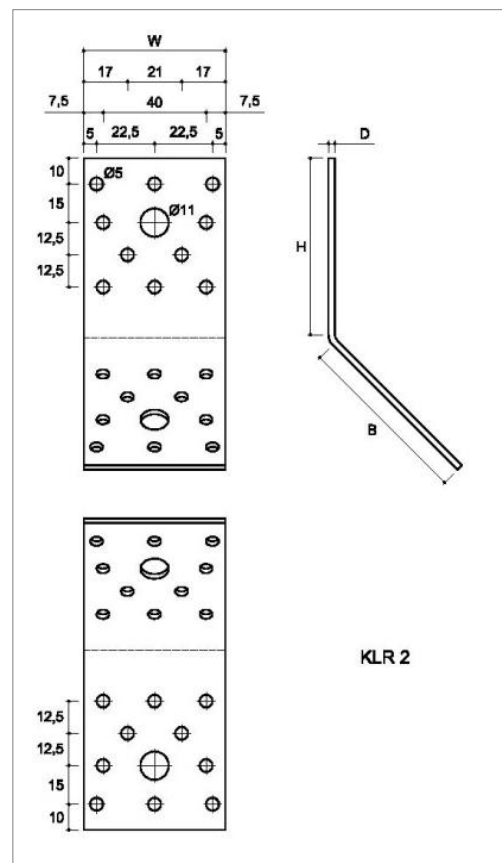


Figure 5 Type KLR 2

Table 6 KLR three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings	
	W	H	B	D	Ø 5	Ø 11
KLR 1	35	50	50	2.5	8	2
KLR 2	55	70	70	2.5	20	2

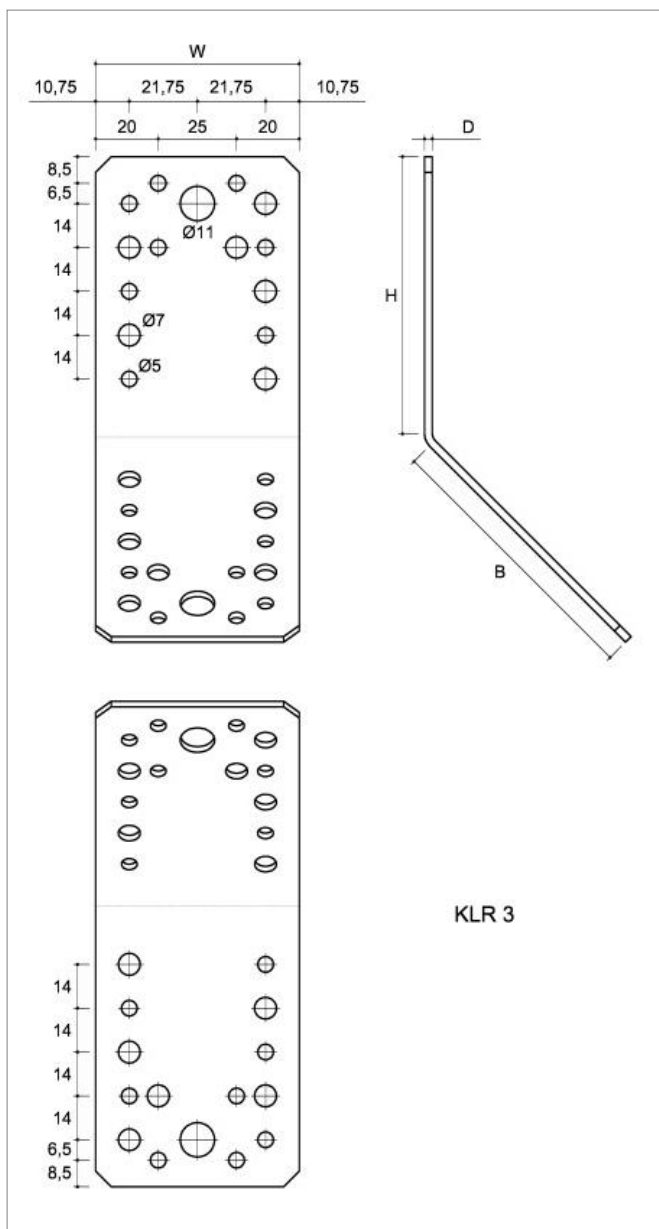


Figure 6 Type KLR 3

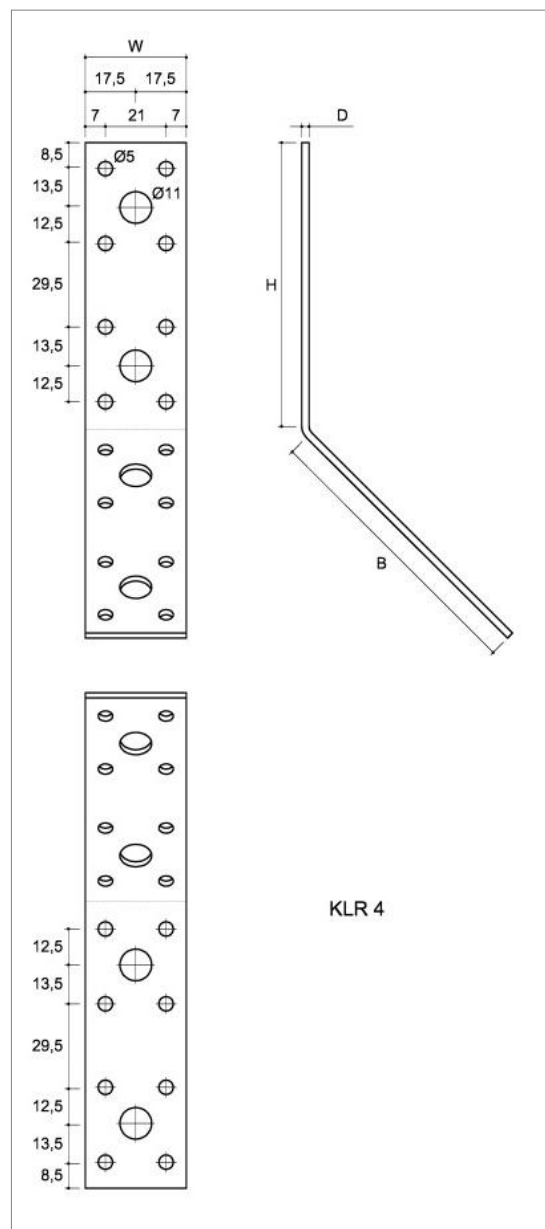


Figure 7 Type KLR 4

Table 7 KLR three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings		
	W	H	B	D	ø 5	ø 7	ø 11
KLR 3	65	90	90	2.5	16	12	2
KLR 4	35	100	100	2.5	16	-	4

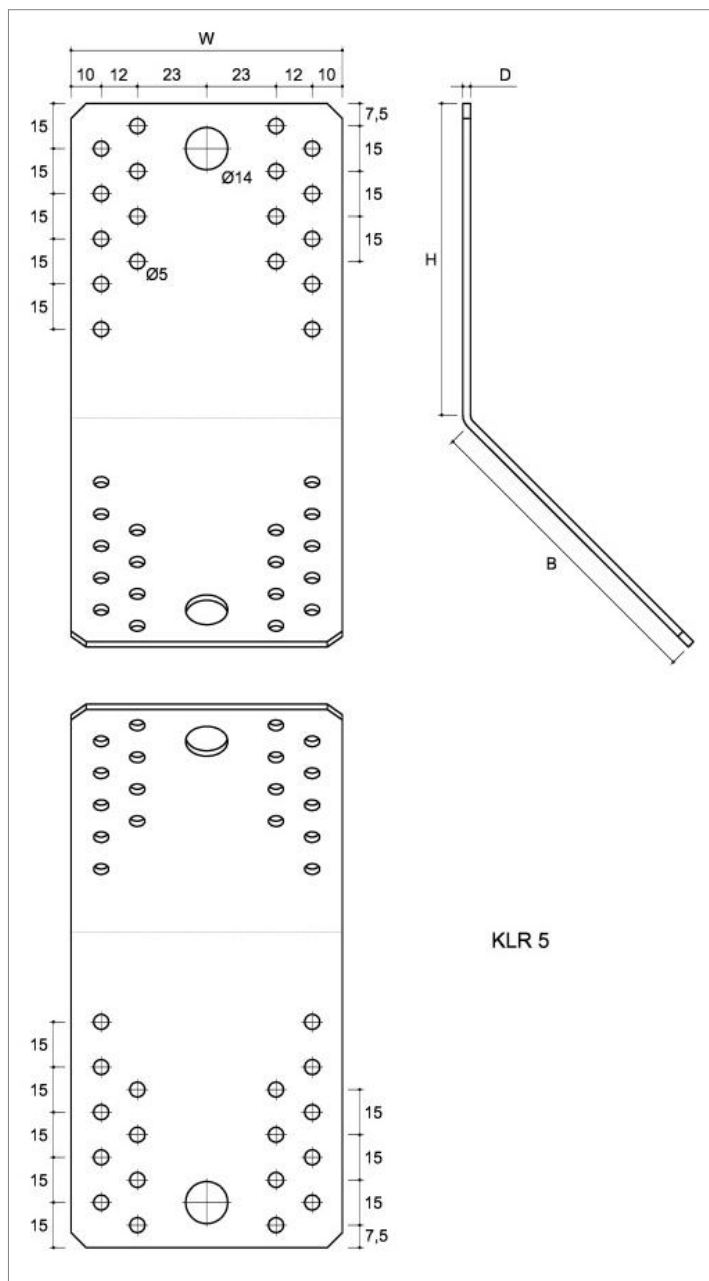


Figure 8 Type KLR 5

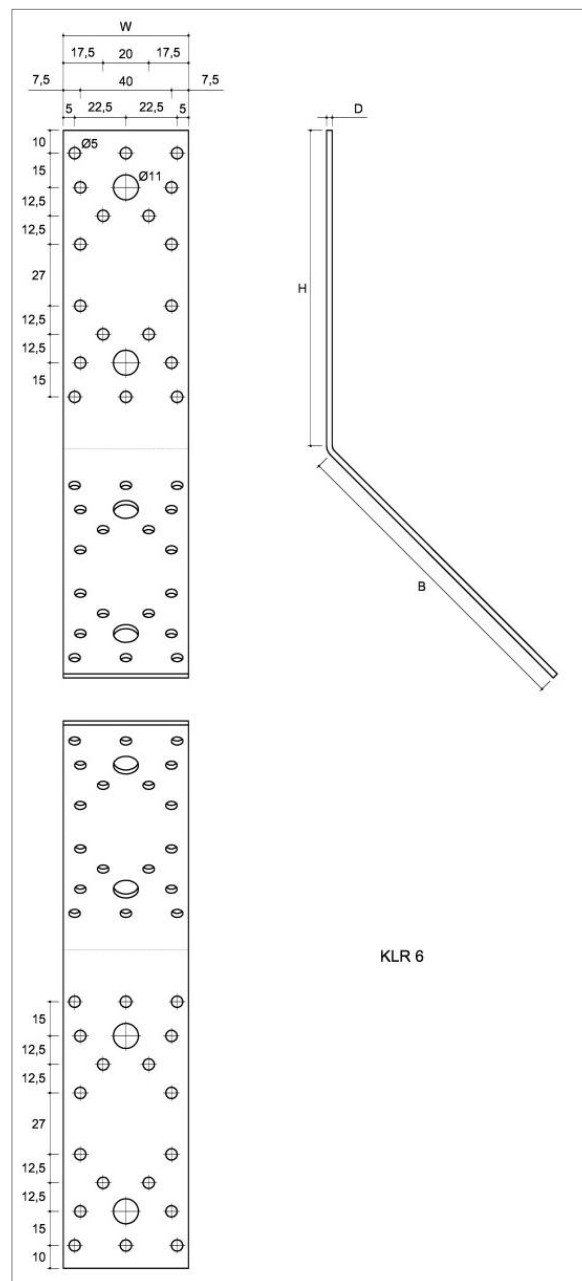


Figure 9 Type KLR 6

Table 8 KLR three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings		
	W	H	B	D	ø 5	ø 11	ø 14
KLR 5	90	105	105	2.5	36	-	2
KLR 6	55	140	140	2.5	36	4	-

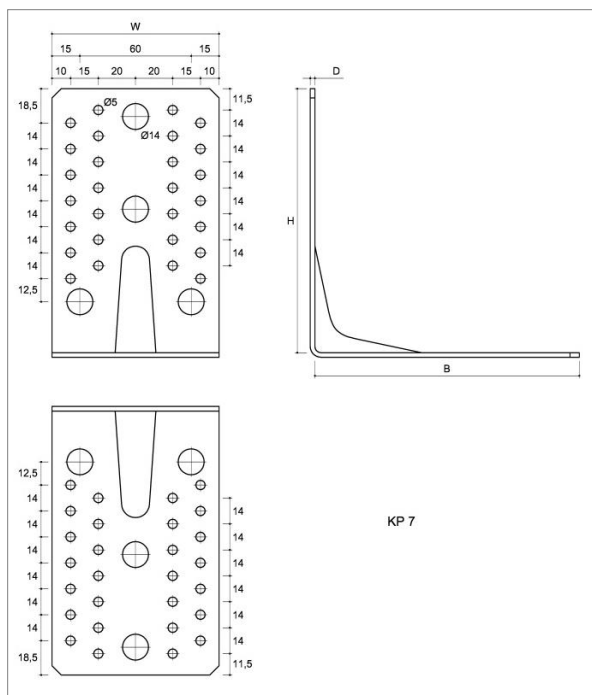


Figure 10 Type KP 7

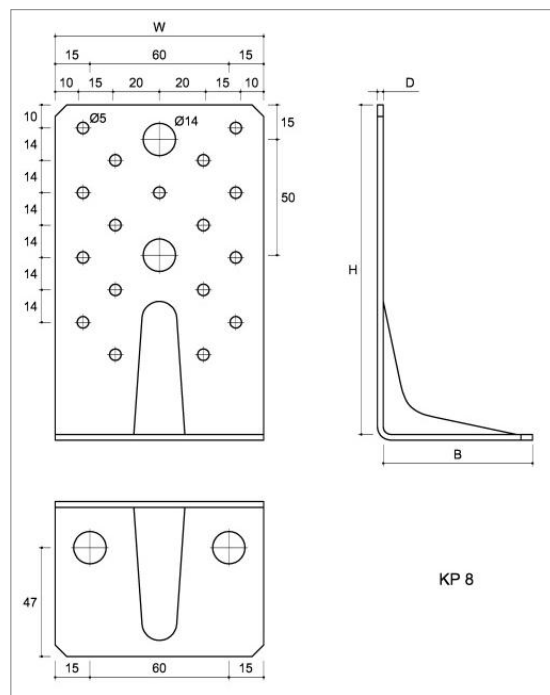


Figure 11 Type KP 8

Table 9 KP three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings	
	W	H	B	D	ø 5	ø 14
KP 7	90	143	143	2.5	56	8
KP 8	90	143	65	2.5	17	4

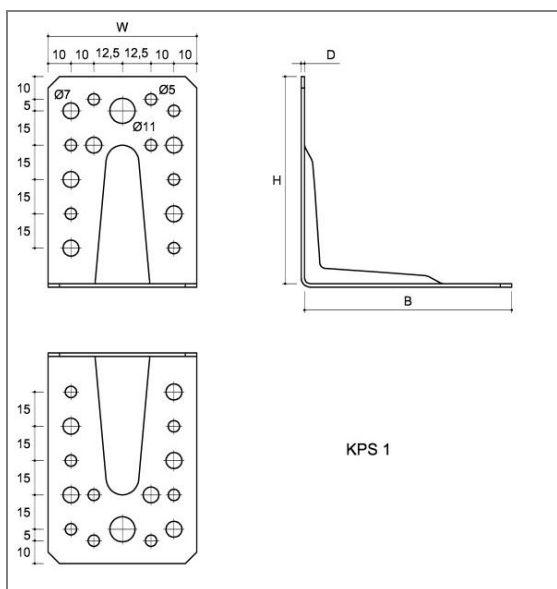


Figure 12 Type KPS 1

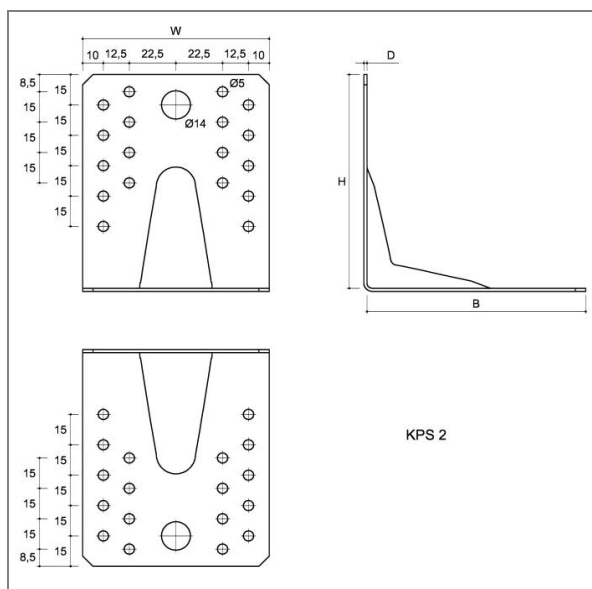


Figure 13 Type KPS 2

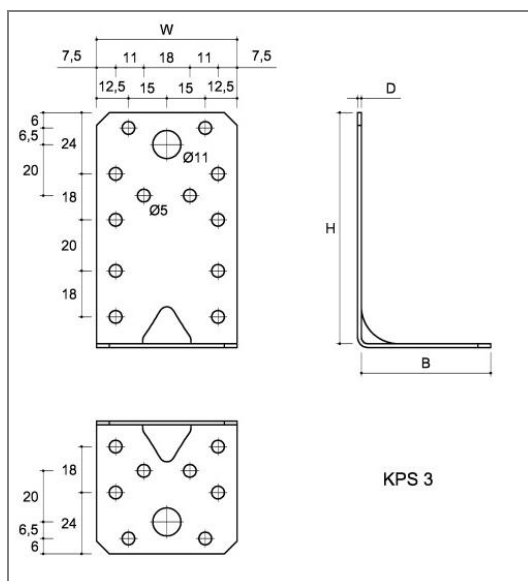


Figure 14 Type KPS 3

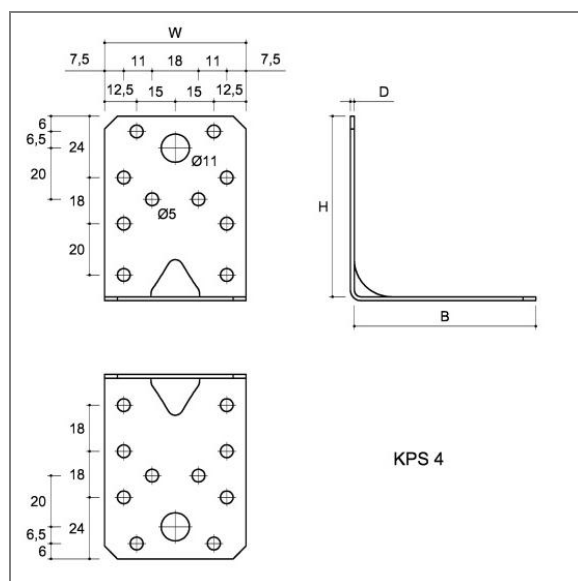


Figure 15 Type KPS 4

Table 10 KPS three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings			
	W	H	B	D	Ø 5	Ø 7	Ø 11	Ø 14
KPS 1	65	90	90	1,5	16	12	2	-
KPS 2	90	105	105	1,5	36	-	-	2
KPS 3	55	90	50	1,5	20	-	2	-
KPS 4	55	70	70	1,5	20	-	2	-

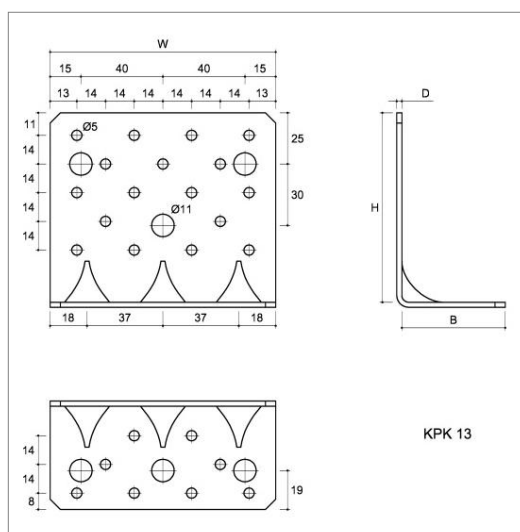


Figure 16 Type KPK 13

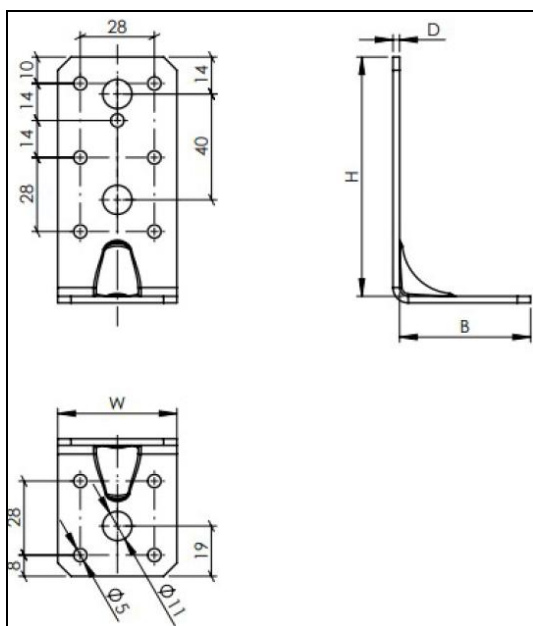


Figure 17 Type KPK 11

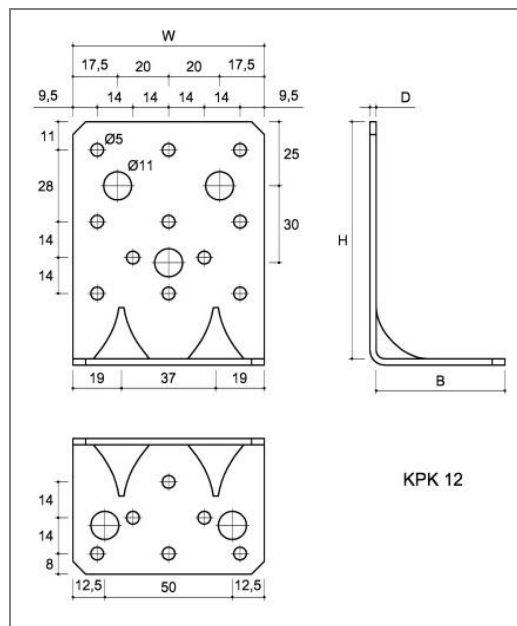


Figure 18 Type KPK 12

Table 11 KPK three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings	
	W	H	B	D	ø 5	ø 11
KPK 11	45	90	50	2.5	11	3
KPK 12	75	93	50	2.5	17	5
KPK 13	110	93	50	2.5	25	6

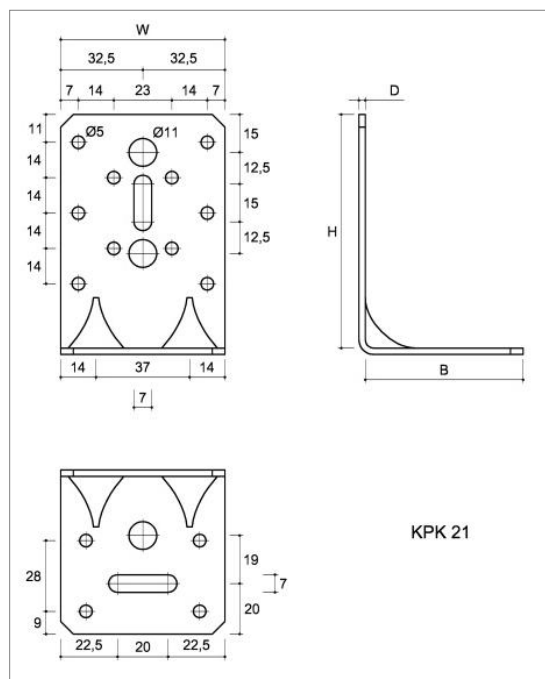


Figure 19 Type KPK 21

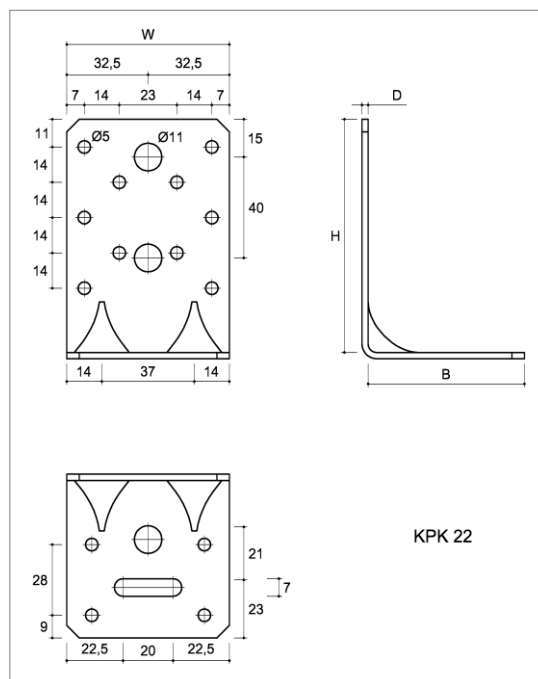


Figure 20 Type KPK 22

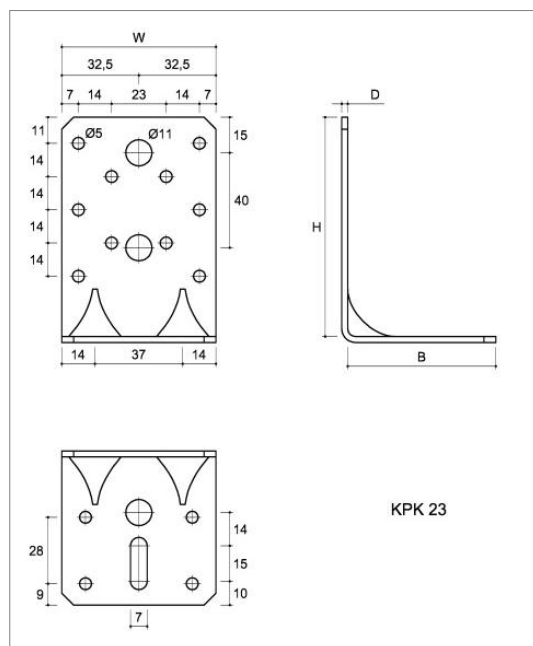


Figure 21 Type KPK 23

Table 12 KPK three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings	
	W	H	B	D	ø 5	ø 11
KPK 21	65	93	63	2.5	14	3
KPK 22	65	93	63	2.5	14	3
KPK 23	65	93	63	2.5	14	3

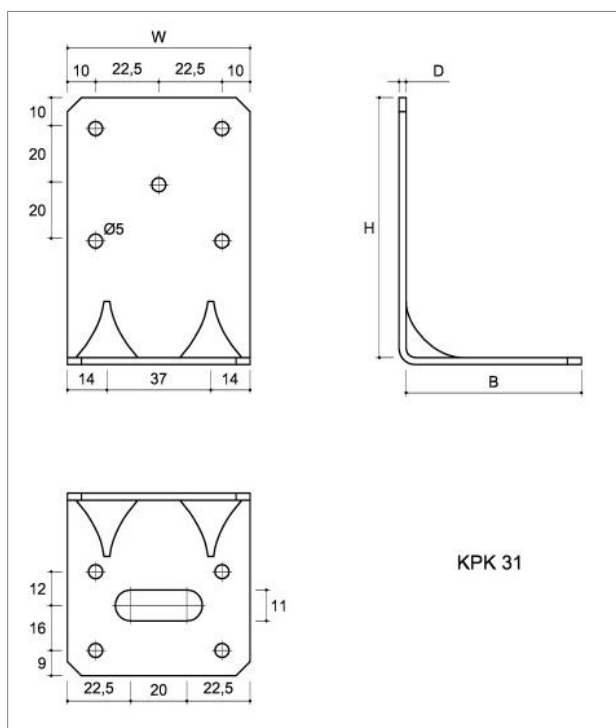


Figure 22 Type KPK 31

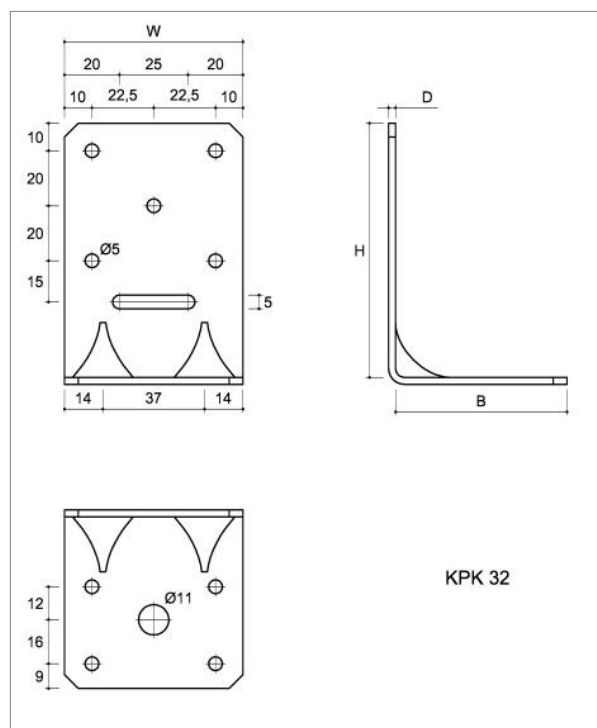


Figure 23 Type KPK 32

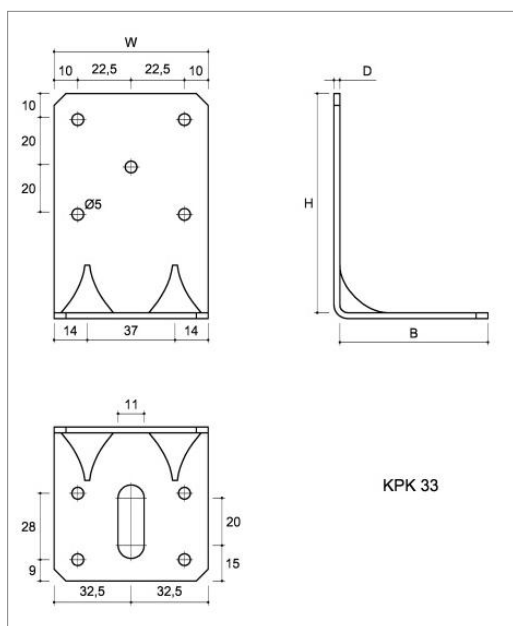


Figure 24 Type KPK 33

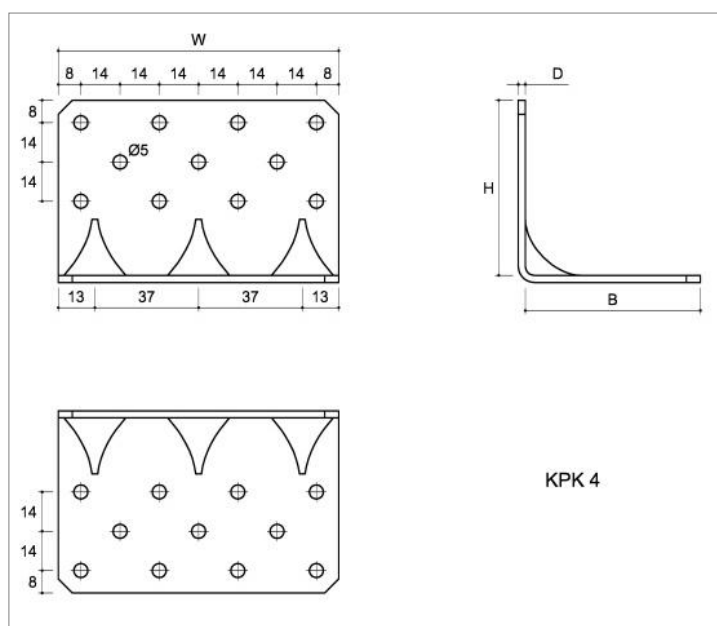


Figure 25 Type KPK 4

Table 13 KPK three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings	
	W	H	B	D	Ø 5	Ø 11
KPK 31	65	93	63	2.5	9	-
KPK 32	65	93	63	2.5	9	1
KPK 33	65	93	63	2.5	9	-
KPK 4	100	63	63	2.5	22	-

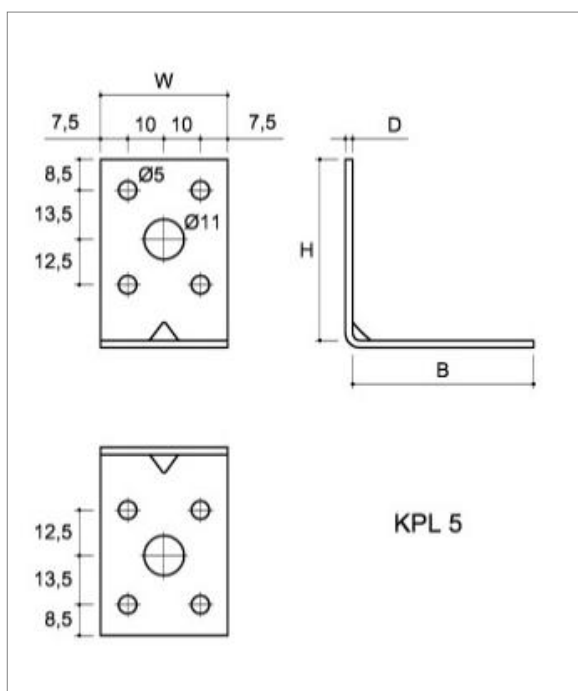


Figure 26 Type KPL 5

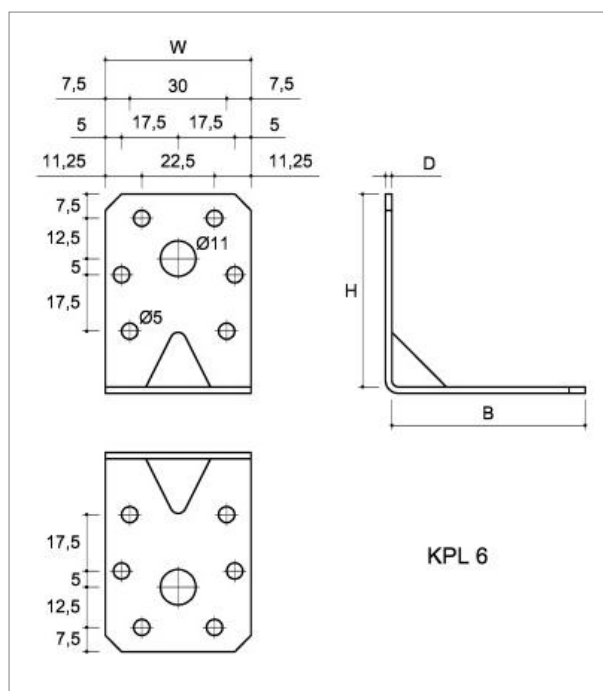


Figure 27 Type KPL 6

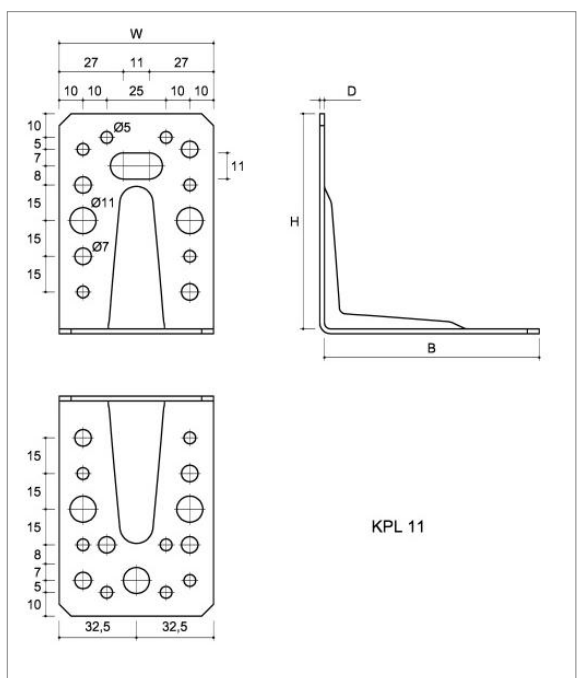


Figure 28 Type KPL 11

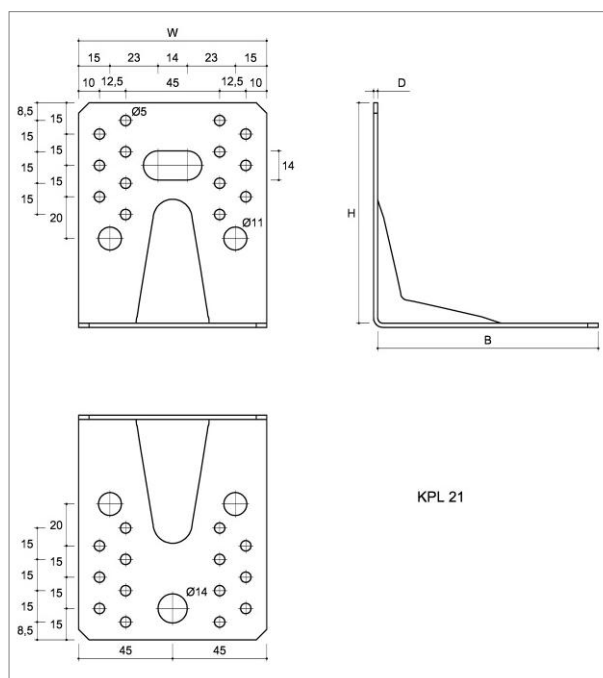


Figure 29 Type KPL 21

Table 14 KPL three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings			
	W	H	B	D	ø 5	ø 7	ø 11	ø 14
KPL 5	35	50	50	2	8	-	2	-
KPL 6	45	60	60	2	12	-	2	-
KPL 11	65	90	90	2	13	9	5	-
KPL 21	90	105	105	2	28	-	4	1

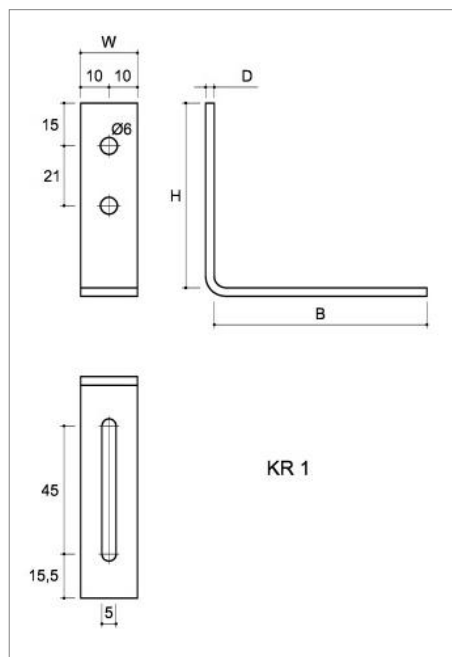


Figure 30 Type KR 1

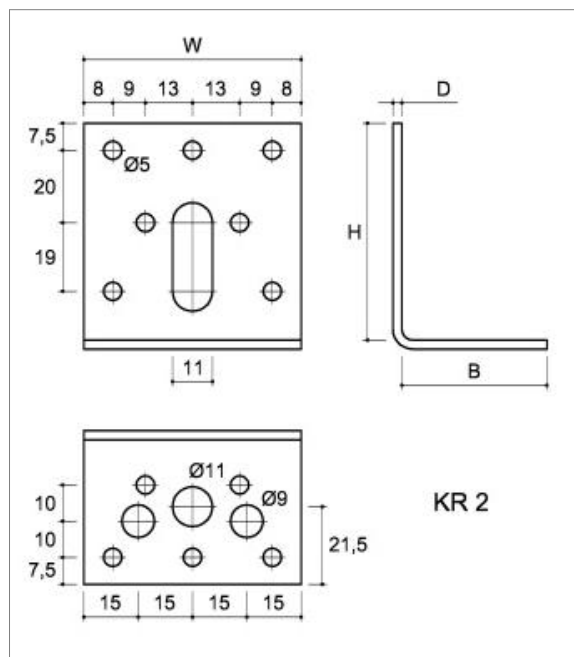


Figure 31 Type KR 2

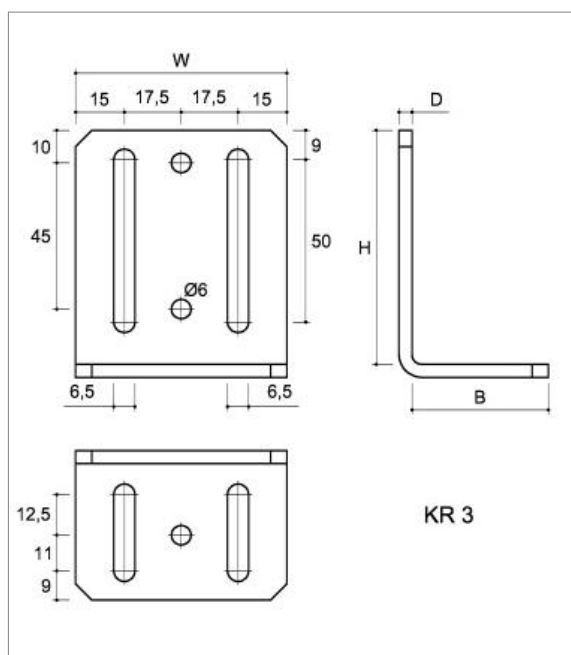


Figure 32 Type KR 3

Table 15 KR three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings			
	W	H	B	D	Ø 5	Ø 6	Ø 9	Ø 11
KR 1	20	65	75	3	-	2	-	-
KR 2	60	60	40	2.5	12	-	2	1
KR 3	65	72	42	4	-	3	-	-

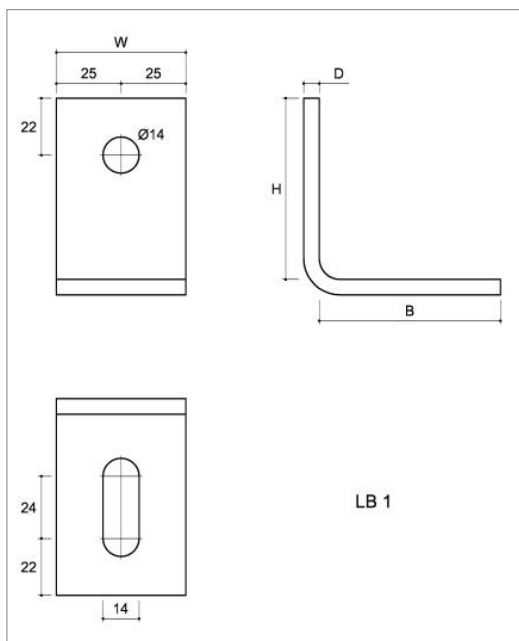


Figure 33 Type LB 1

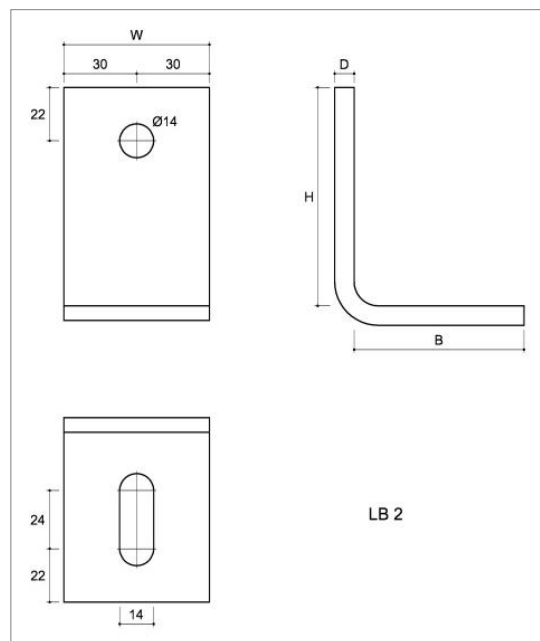


Figure 34 Type LB 2

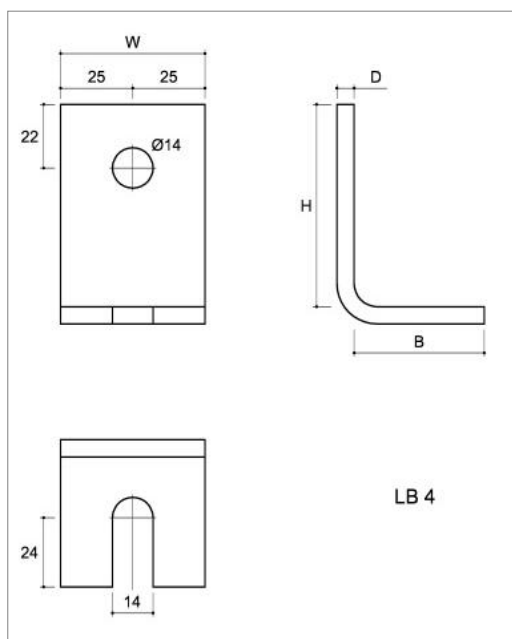


Figure 35 Type LB 4

Table 16 LB three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings
	W	H	B	D	ø 14
LB 1	50	70	70	6	1
LB 2	60	90	70	8	1
LB 4	50	70	45	6	1

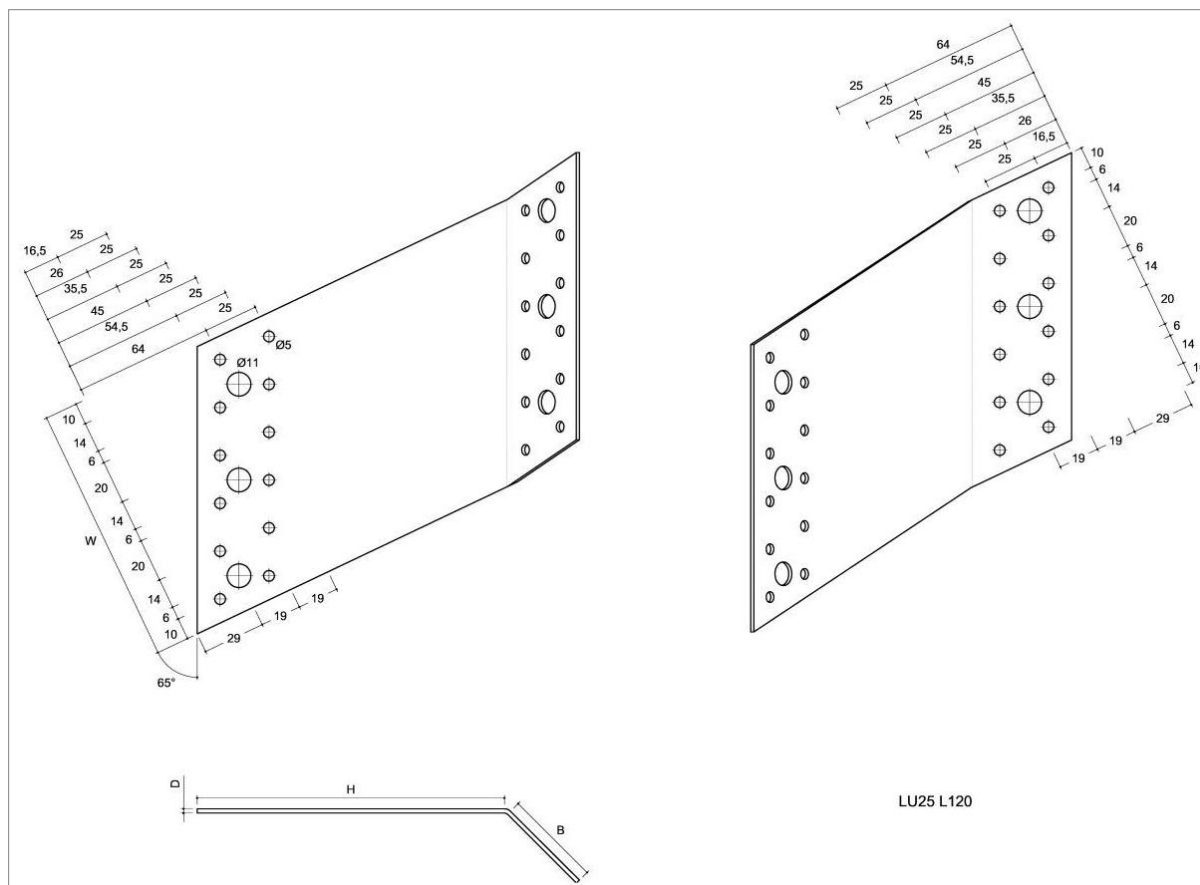


Figure 36 Type LU25 L120

Table 17 LU25 three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings	
	W	H	B	D	ø 5	ø 11
LU25 L80	80	142	45	2	16	4
LU25 R80	80	142	45	2	16	4
LU25 L120	120	142	45	2	24	6
LU25 R120	120	142	45	2	24	6

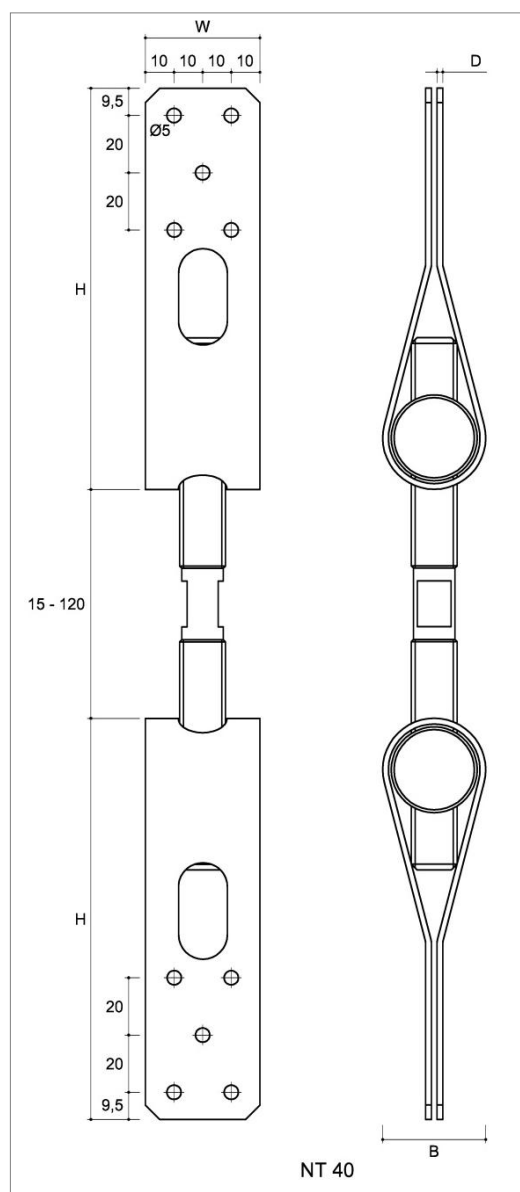


Figure 37 Type NT 40

Table 18 NT three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings
	W	H	B	D	Ø 5
NT 25	30	137	25	1.5	12
NT 40	40	140	36	2	10
NT 60	60	140	36	2	14

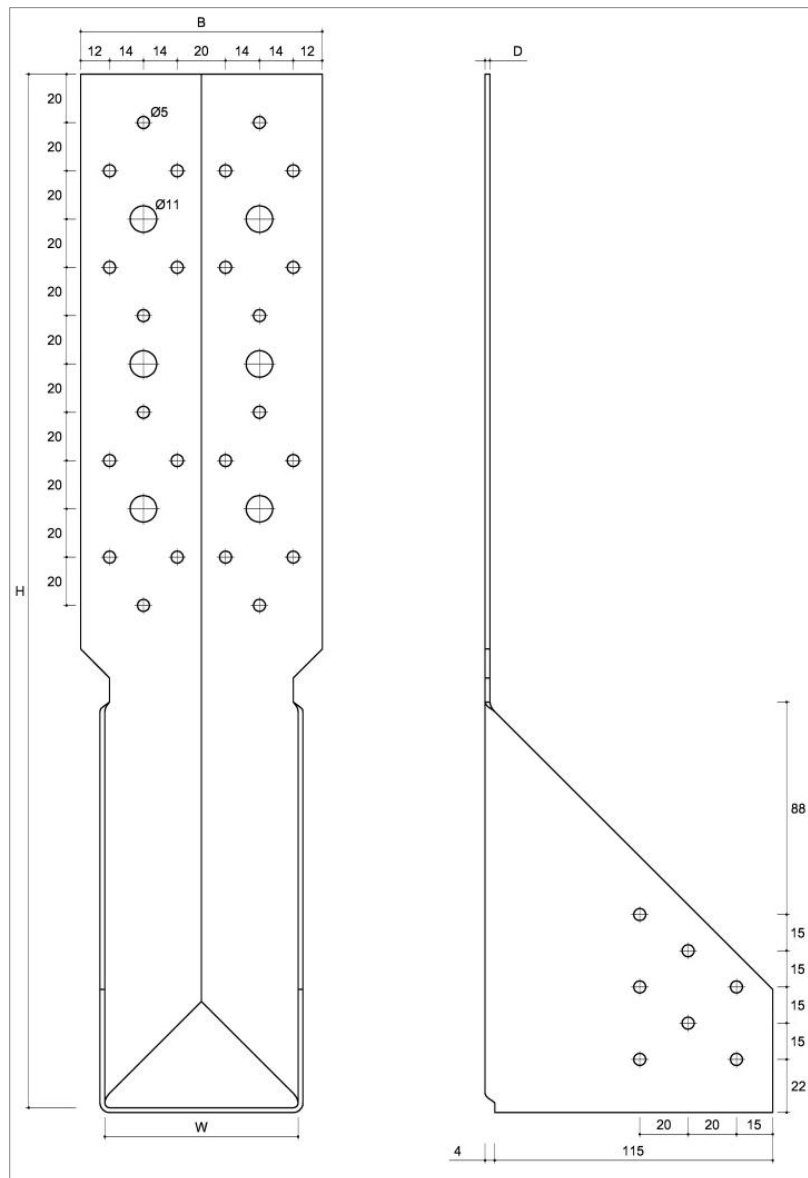


Figure 38 Type WBC 80

Table 19 WBC three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings	
	W	H	B	D	Ø 5	Ø 11
WBC 80	80	428	100	2	38	6
WBC 92	92	443	114	2	42	8
WBC 100	100	443	120	2	42	8
WBC 120	120	505	148	2	48	10
WBC 137	137	515	160	2	52	12

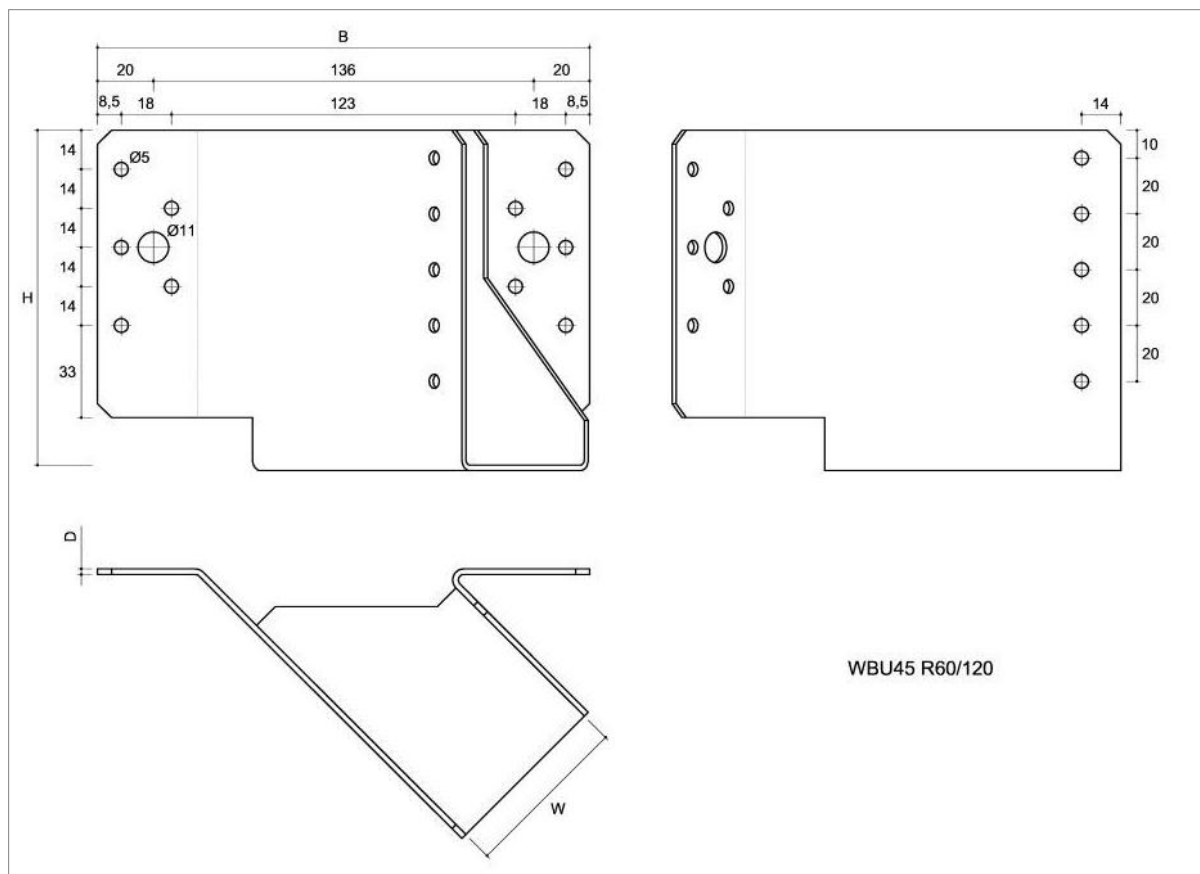


Figure 39 Type WBU 45 R60/120

Table 20 WBU 45 three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings	
	W	H	B	D	Ø 5	Ø 11
WBU45 R45/105 WBU45 L45/105	45	105	155	2	12	2
WBU45 R50/105 WBU45 L50/105	50	105	162	2	12	2
WBU45 R60/120 WBU45 L60/120	60	120	176	2	15	2

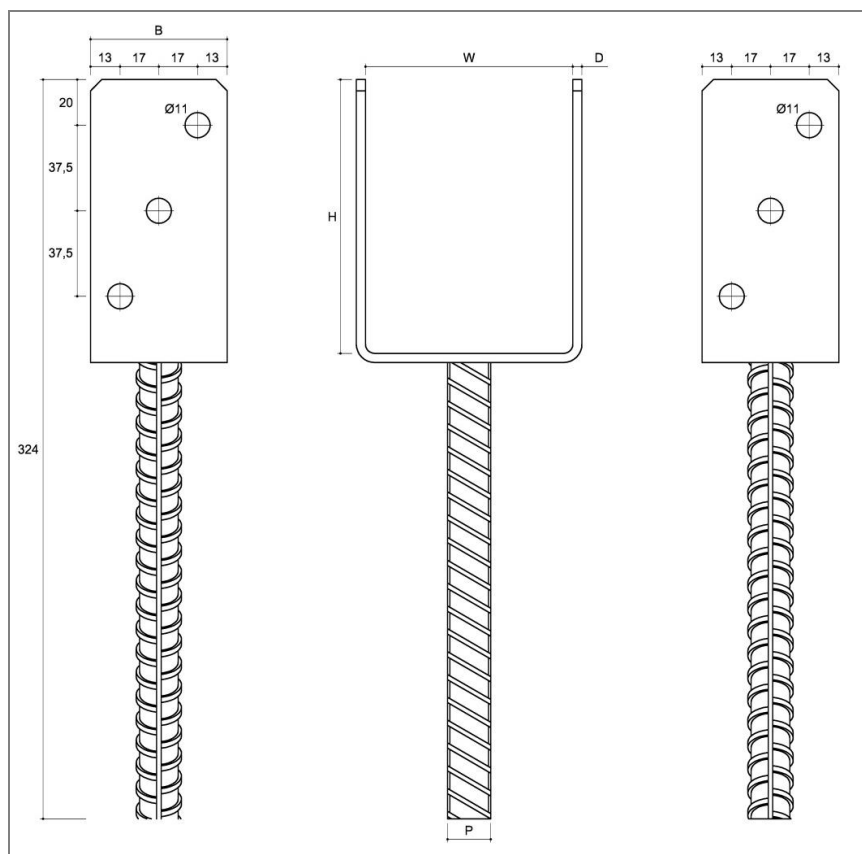


Figure 40 Type PS 90

Table 21 PS three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm					Quantity of openings
	W	H	B	D	P	Ø 11
PS 60	61	120	60	4	Ø 16	6
PS 70	71	120	60	4	Ø 16	6
PS 80	81	120	60	4	Ø 18	6
PS 90	91	120	60	4	Ø 18	6
PS 100	101	120	60	4	Ø 18	6
PS 120	121	120	60	4	Ø 18	6
PS 140	141	120	60	4	Ø 18	6

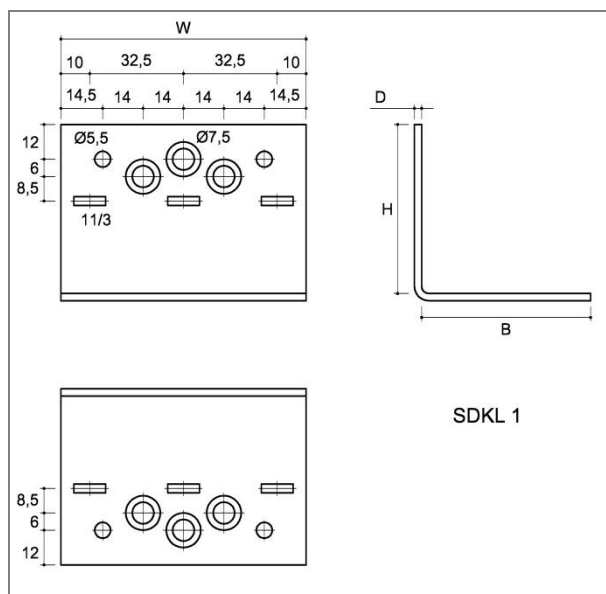


Figure 41 Type SDKL 1

Table 22 SDKL three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings		
	W	H	B	D	Ø 5.5	Ø 7.5	11/3
SDKL 1	85	58	58	2,5	4	6	6

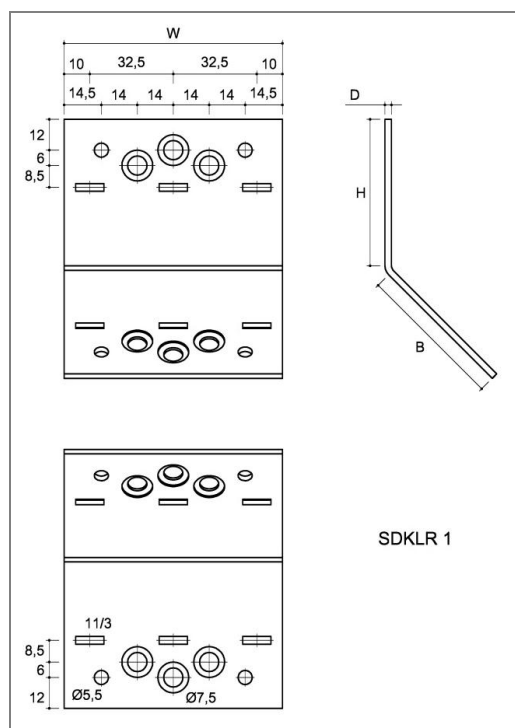


Figure 42 Type SDKLR 1

Table 23 SDKLR three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings		
	W	H	B	D	Ø 5.5	Ø 7.5	11/3
SDKLR 1	85	57	57	2,5	4	6	6

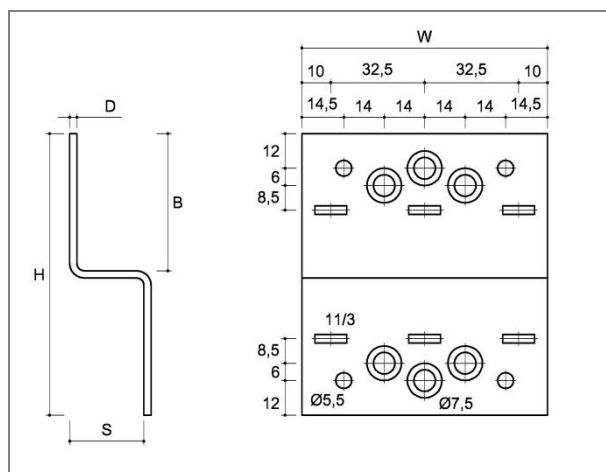


Figure 43 Type SDLZ 1

Table 24 SDLZ 1 three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm					Quantity of openings		
	W	H	B	S	D	Ø 5.5	Ø 7.5	11/3
SDLZ 1	85	96,5	47	24	2,5	4	6	6

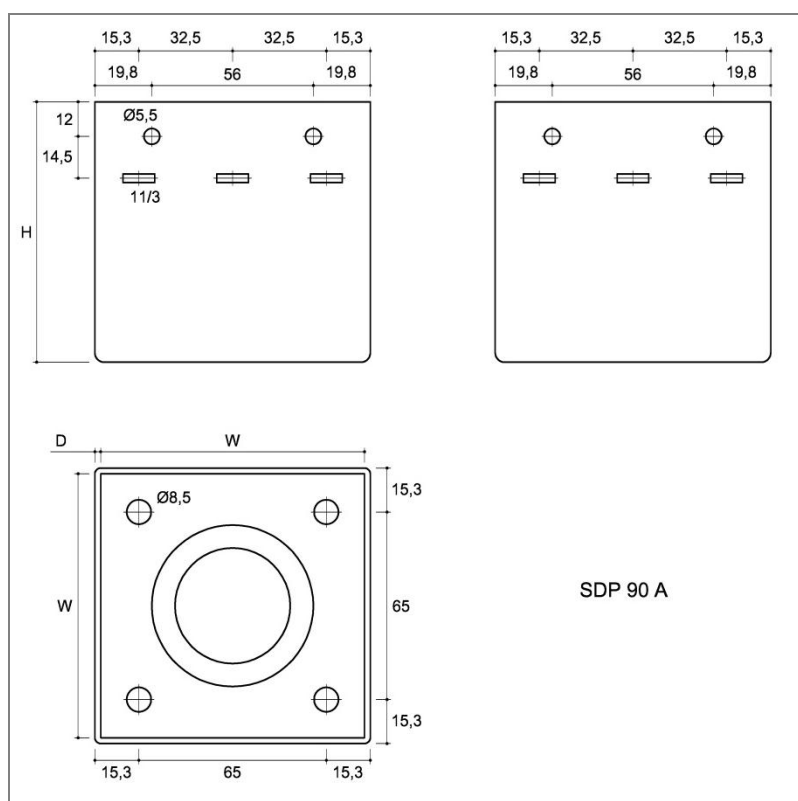


Figure 44 Type SDP 90 A

Table 25 SDP 90 A three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm			Quantity of openings		
	W	H	D	Ø 5.5	Ø 8.5	11/3
SDP 90 A	91	90	2	8	4	12
SDP 100 A	101	90	2	8	4	12
SDP 120 A	121	90	2	8	4	12

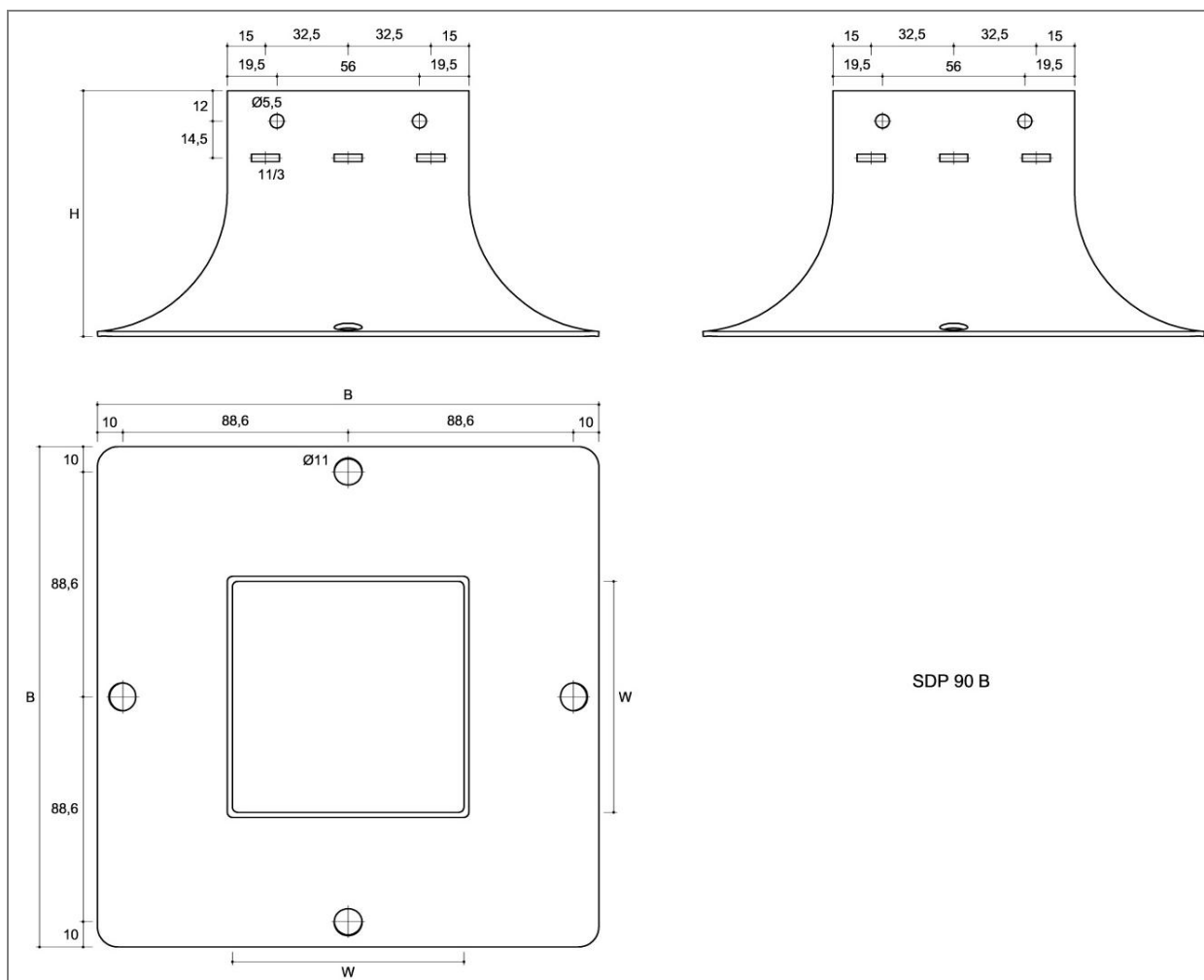


Figure 45 Type SDP 90 B

Table 26 SDP 90 B three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings		
	W	H	D	B	Ø 5.5	Ø 11	11/3
SDP 90 B	91	97	2	197	8	4	12
SDP 100 B	101	97	2	207	8	4	12
SDP 120 B	121	97	2	227	8	4	12

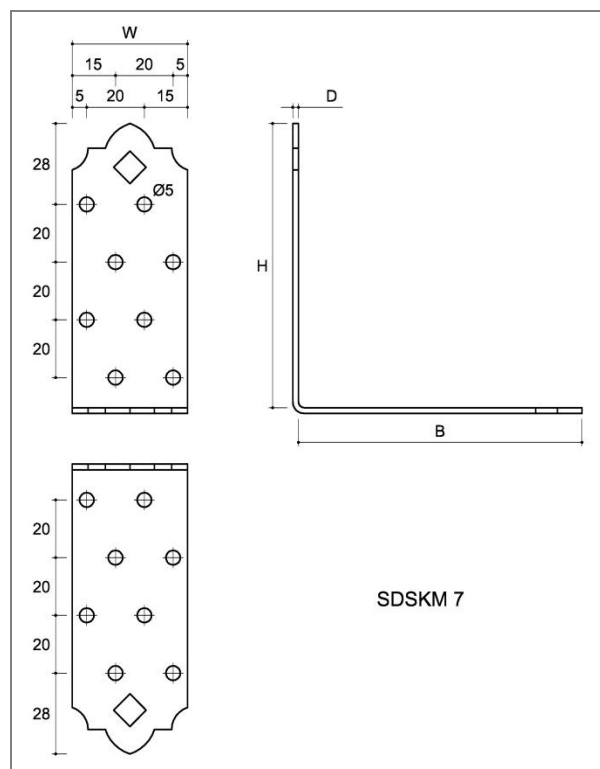


Figure 46 Type SDSKM 7

Table 27 SDSKM three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings
	W	H	B	D	$\varnothing 5$
SDSKM 7	40	98	98	2	16

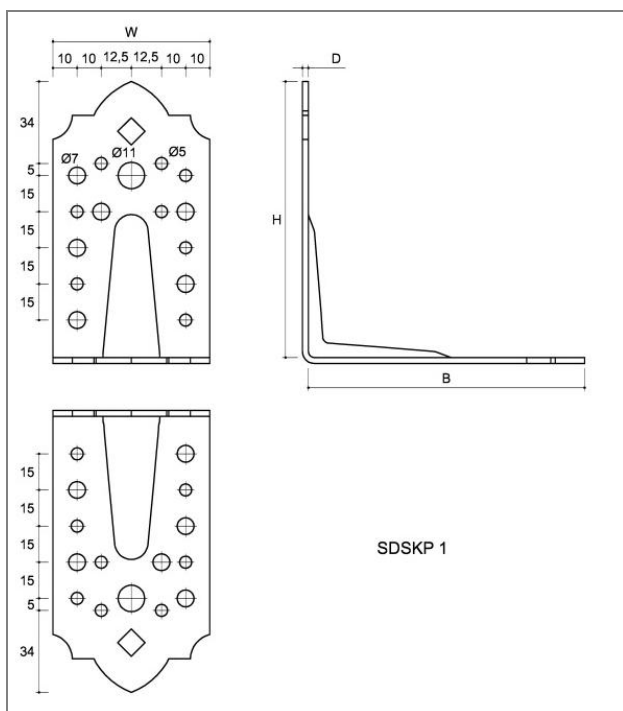


Figure 47 Type SDSKP 1

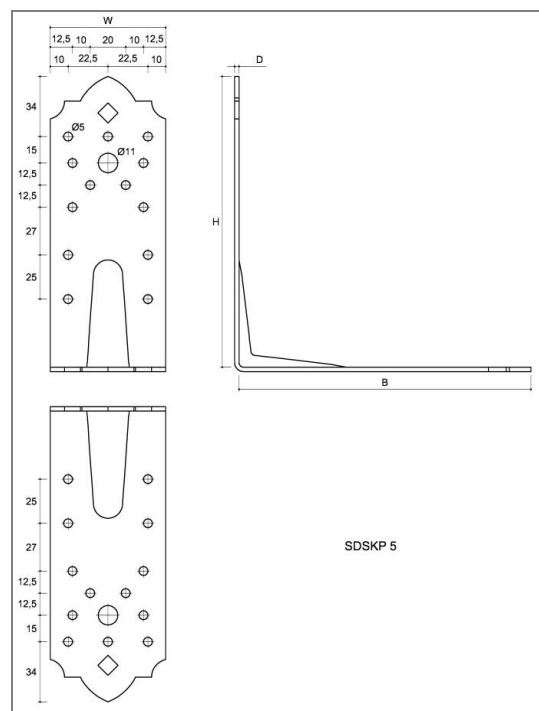


Figure 48 Type SDSKP 5

Table 28 SDSKP three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings		
	W	H	B	D	ø 5	ø 7	ø 11
SDSKP 1	65	115	115	2,5	16	12	2
SDSKP 5	65	165	165	2,5	26	-	2

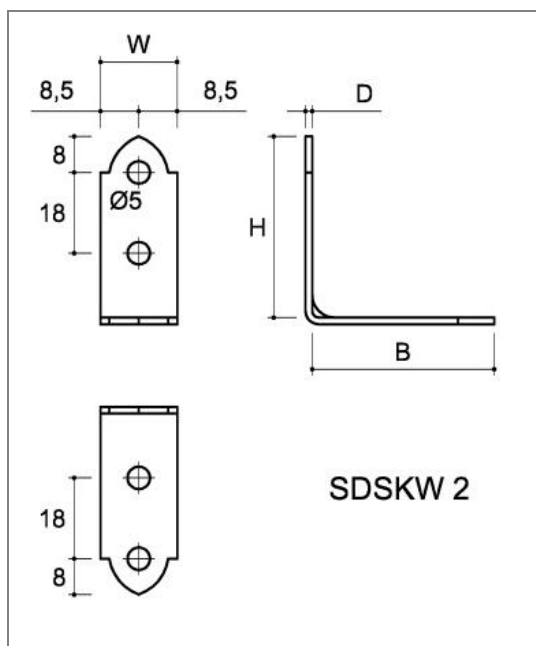


Figure 49 Type SDSKW 2

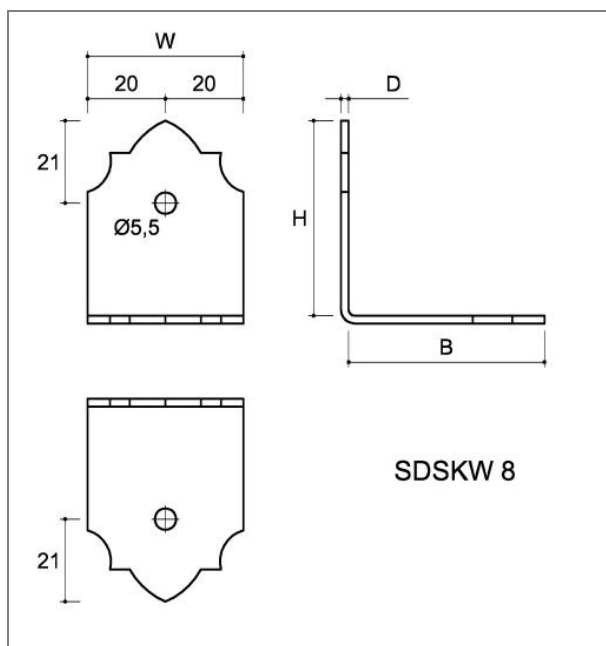


Figure 50 Type SDSKW 8

Table 29 SDSKW three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings	
	W	H	B	D	Ø 5	Ø 5.5
SDSKW 2	17	40	40	1,5	4	-
SDSKW 8	40	50	50	2	-	2

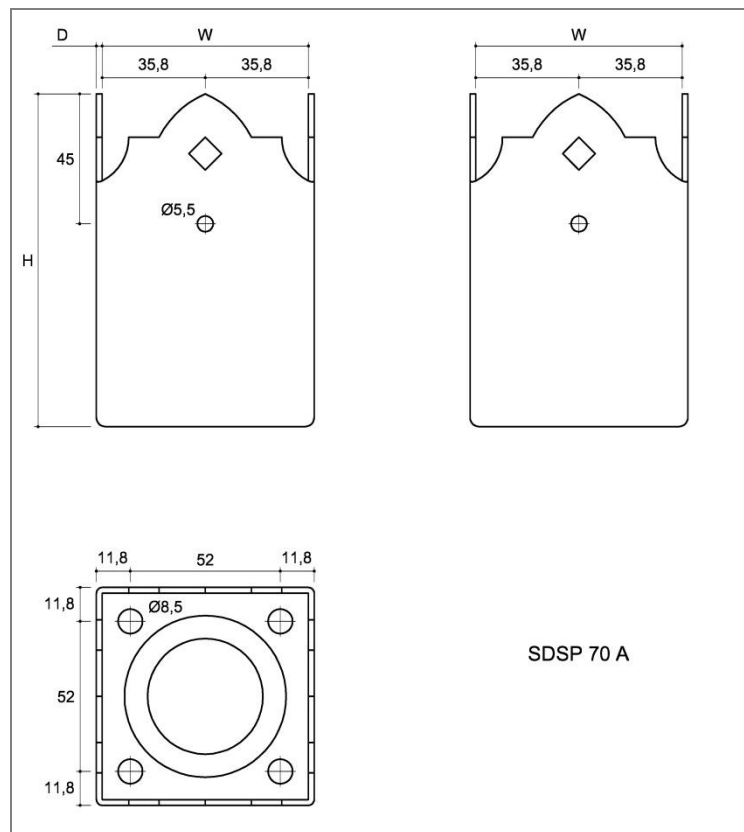


Figure 51 Type SDSP 70 A

Table 30 SDSP three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm			Quantity of openings	
	W	H	D	ø 5.5	ø 8.5
SDSP 70 A	71	115	2	4	4

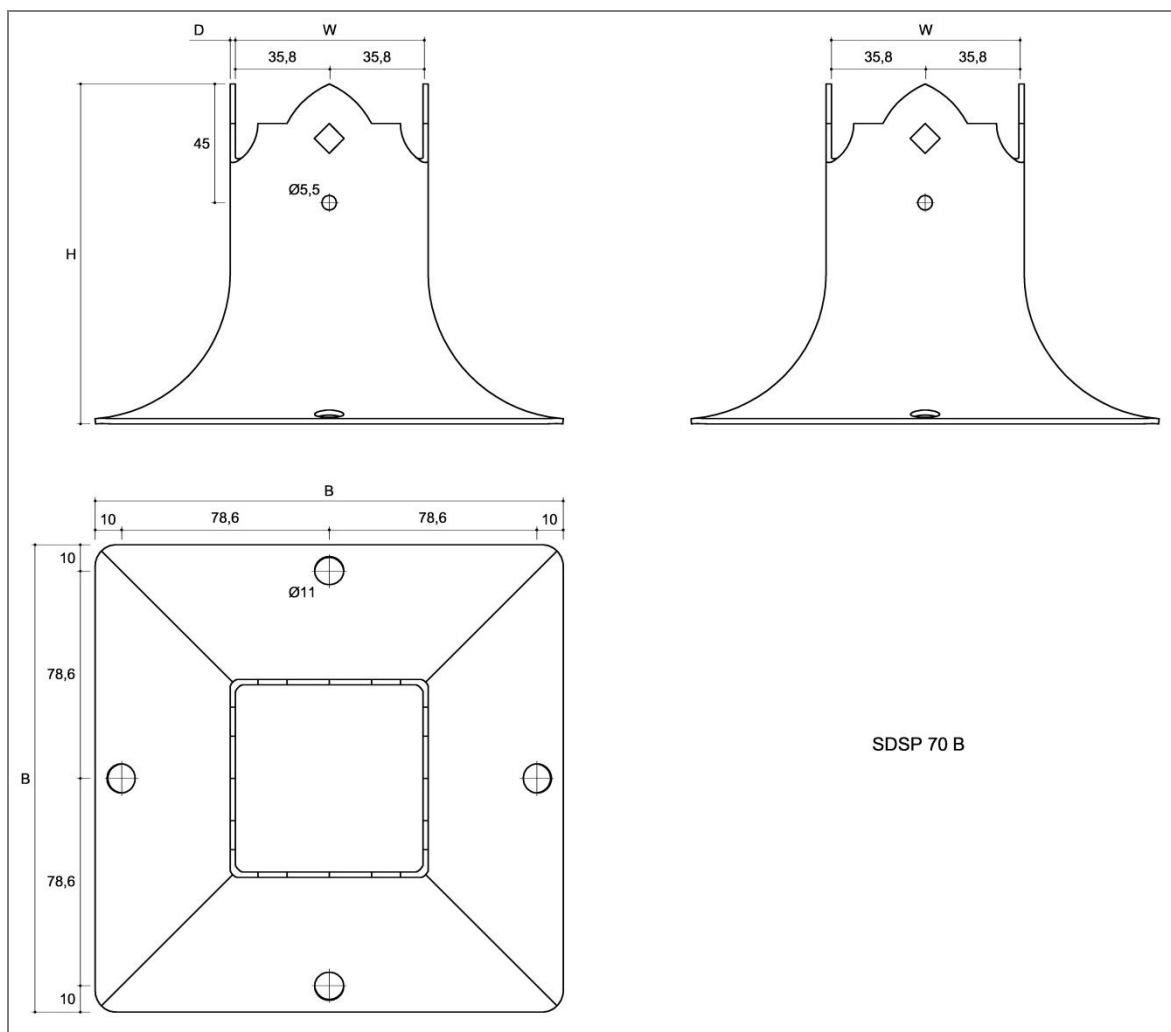


Figure 52 Type SDSP 70B

Table 31 SDSP three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings	
	W	H	D	B	ø 5.5	ø 11
SDSP 70 B	71	129	2	177	4	4

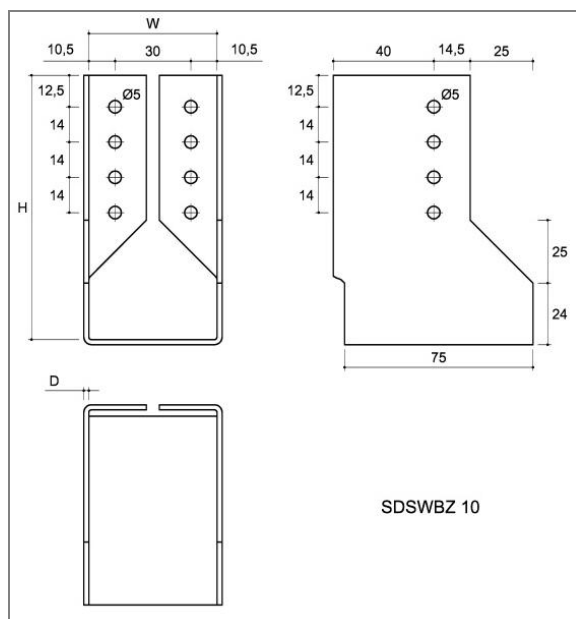


Figure 53 Type SDSWBZ 10

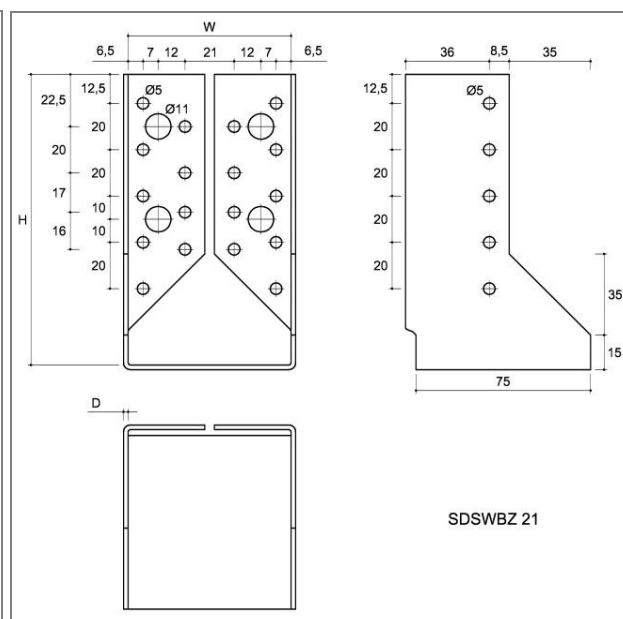


Figure 54 Type SDSWBZ 21

Table 32 SDSWBZ three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm			Quantity of openings	
	W	H	D	Ø 5	Ø 11
SDSWBZ 10	51	105	2	16	-
SDSWBZ 11	51	135	2	24	-
SDSWBZ 14	60	100	2	16	-
SDSWBZ 21	70	125	2	28	4
SDSWBZ 26	80	120	2	28	4
SDSWBZ 30	100	140	2	34	4

MASKING ELEMENTS

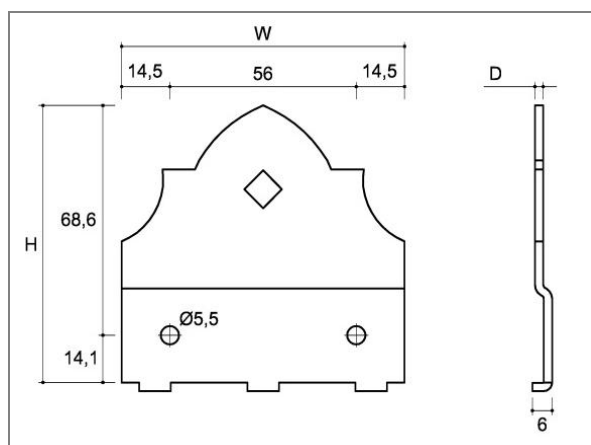


Figure 55 Type SDD 85 A

Table 33 SDD masking elements symbols and dimensions

Symbol	Dimensions, mm			Quantity of openings
	W	H	D	Ø 5.5
SDD 85 A	85	83	2,5	2
SDD 85 B	85	83	2,5	2

CONNECTION ELEMENTS

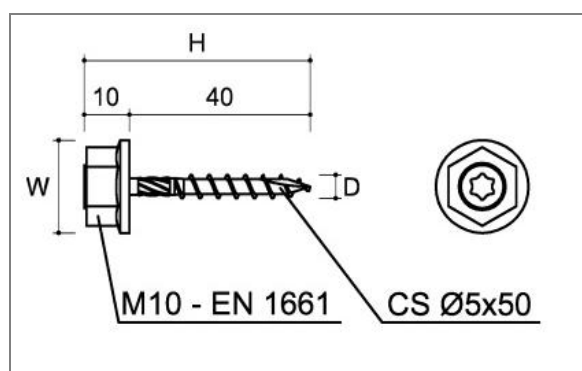


Figure 56 Type SDCS 50

Table 34 SDCS dowel type connector symbols and dimensions

Symbol	Dimensions, mm		
	W	H	D
SDCS 50	20.5	50	5.2

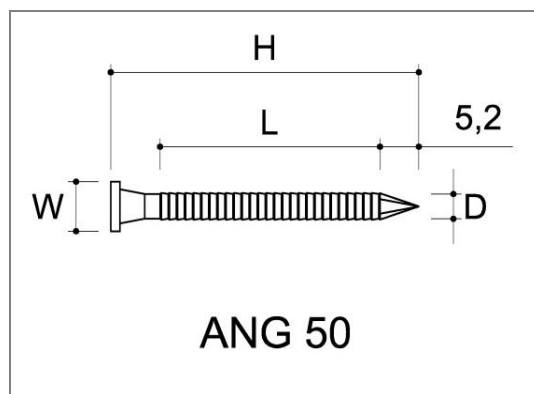


Figure 57 Type ANG 50

Table 35 Anchor dowel type connector symbols and dimensions

Symbol	Dimensions, mm			
	D	H	L	W
ANG 40	4	40	26.8	8
ANG 50	4	50	36.8	8

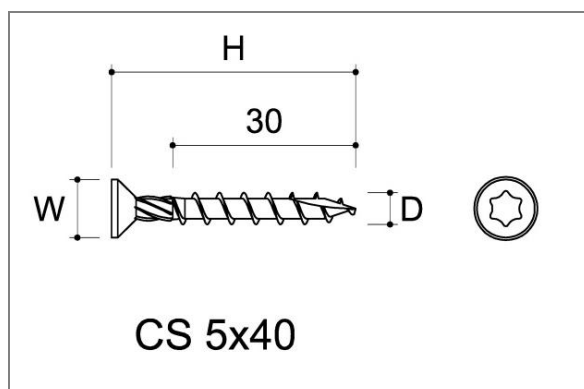


Figure 58 Type CS 5x40

Table 36 CS dowel type connector symbols and dimensions

Symbol	Dimensions, mm		
	D	H	W
CS 5x40	5	40	9.5
CS 5x50	5	50	9.5

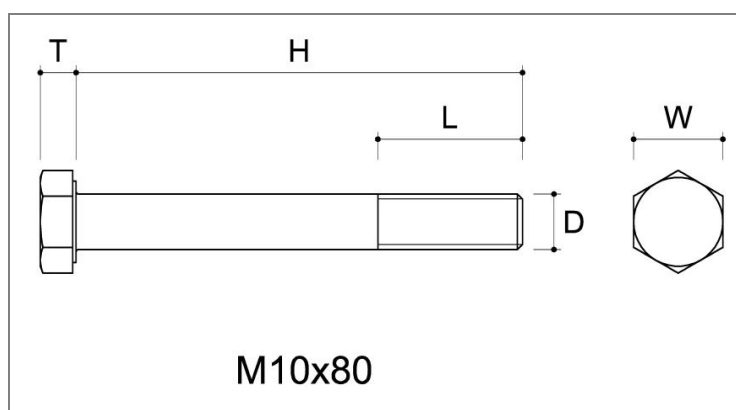
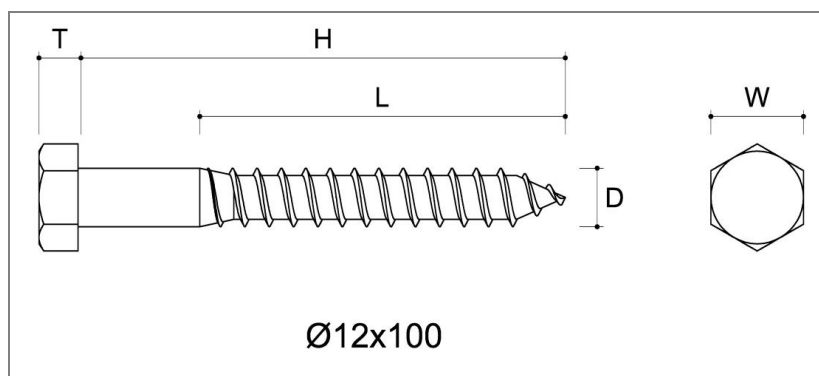


Figure 59 Type M10x80

Table 37 M bolt type connector symbols and dimensions

Symbol	Dimensions, mm					Standard
	D	H	L	W	T	
M10x80	M10	80	26	16	6.4	ISO 4014

**Figure 60** Type Ø12x100**Table 38** Ø12x100 type connector symbols and dimensions

Symbol	Dimensions, mm					Standard
	D	H	L	W	T	
Ø12x100	12	100	75	19	8	DIN 571

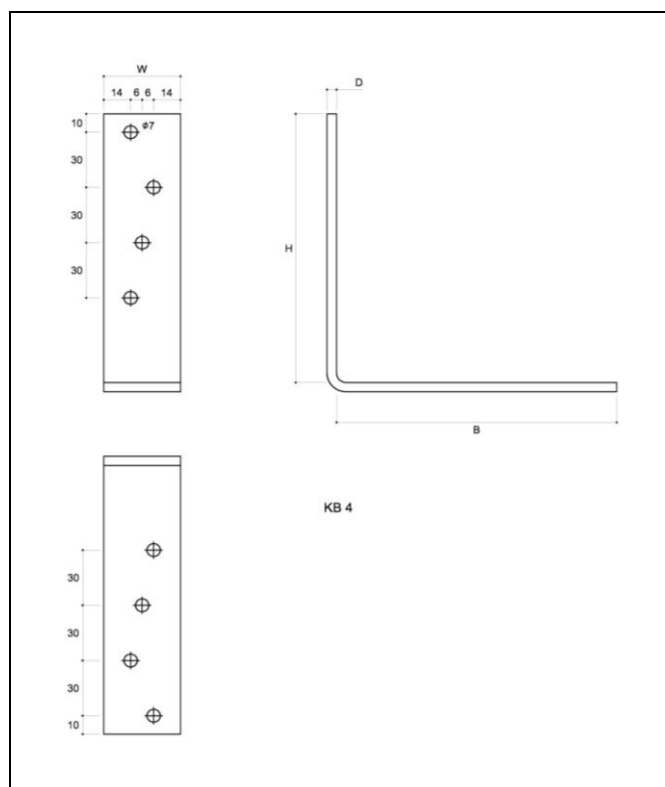
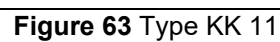
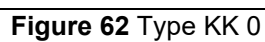


Figure 61 Type KB 4

Table 39 KB three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings
	W	H	B	D	ø7
KB 4	40	146	146	5	8



Symbol	Dimensions, mm				Quantity of openings	
	W	H	B	D	ø5	ø13
KK 0	30	78	38	2	5	-
KK 11	40	206	39	4	19	1

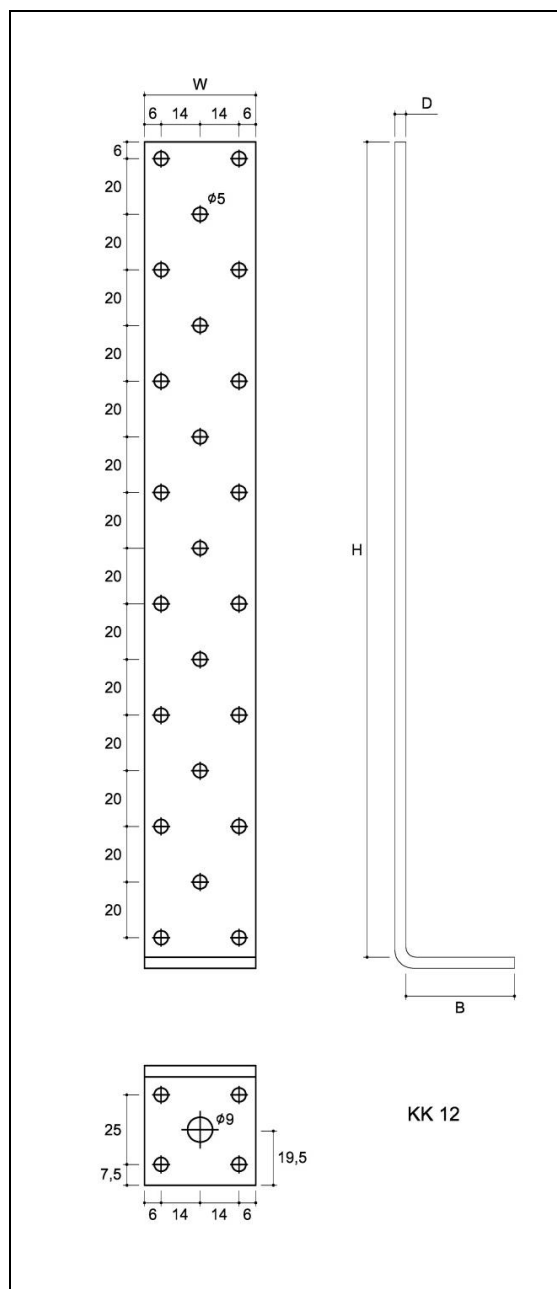


Figure 64 Type KK 12

Table 41 KK three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings	
	W	H	B	D	ø5	ø9
KK 12	40	296	39	4	27	1

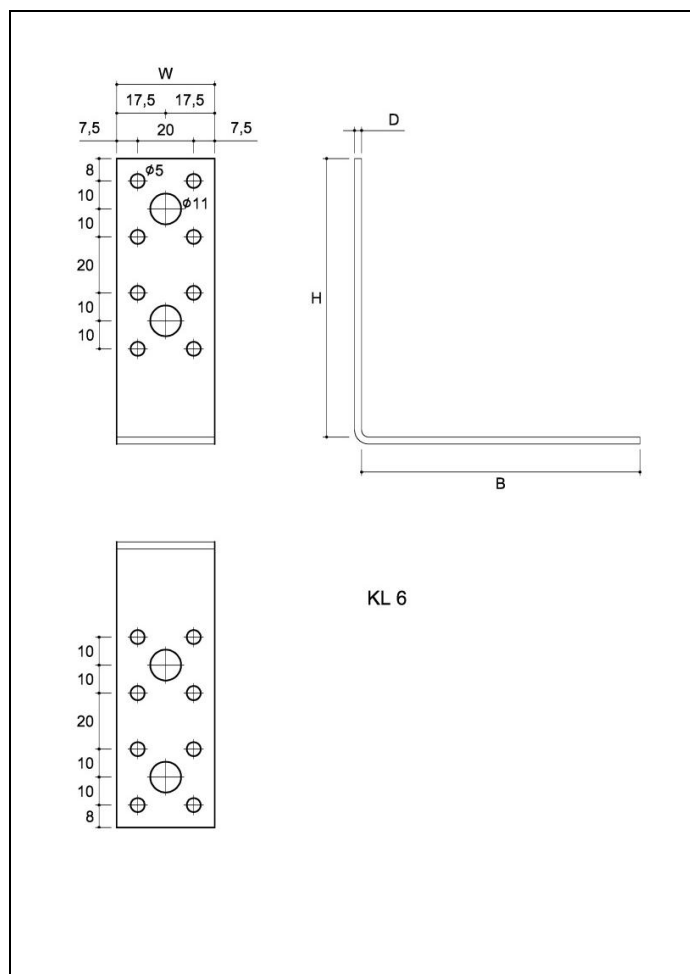


Figure 65 Type KL 6

Table 42 KL three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings	
	W	H	B	D	$\varnothing 5$	$\varnothing 11$
KL 6	35	99.5	99.5	2.5	16	4

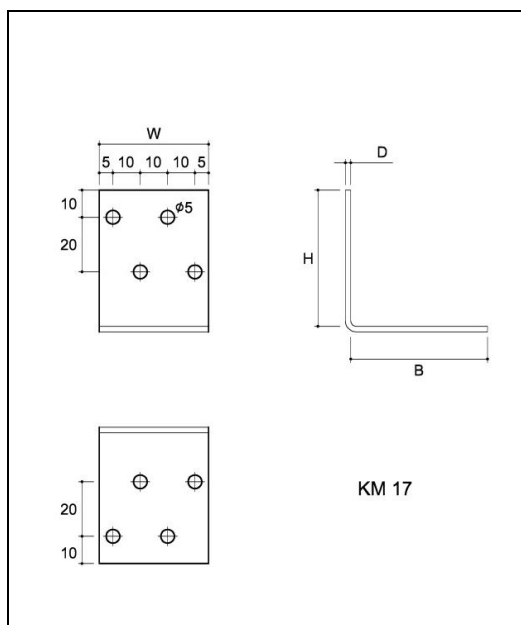


Figure 66 Type KM 17

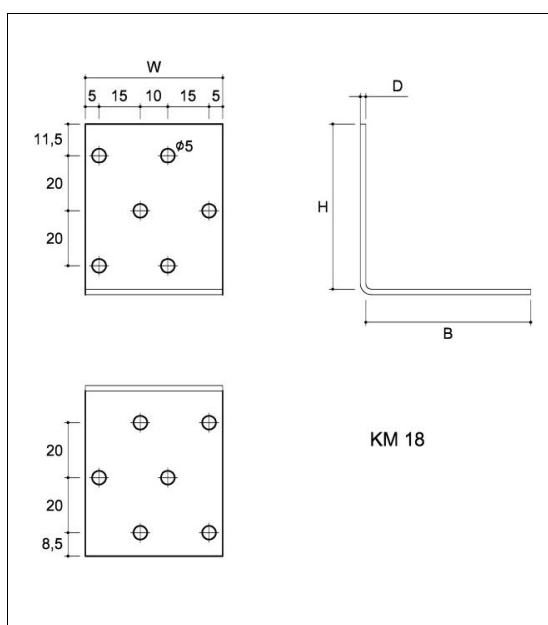


Figure 67 Type KM 18

Table 43 KM three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings	
	W	H	B	D	ø5	
KM 17	40	50	50	2	8	
KM 18	50	60	60	2	12	

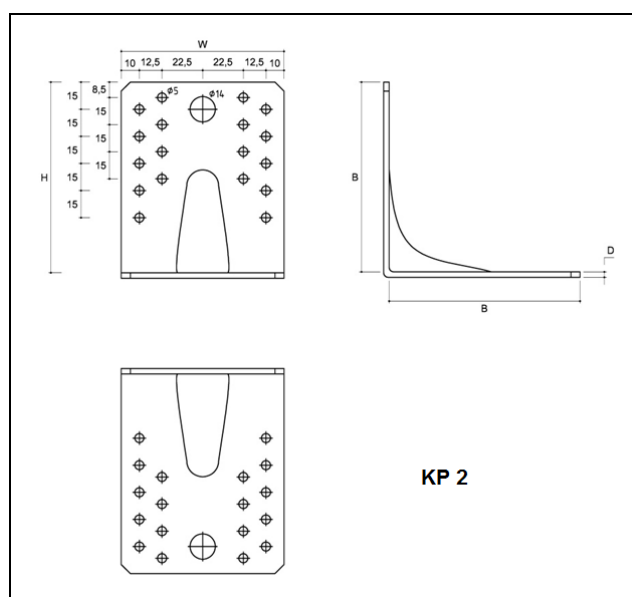


Figure 68 Type KP 2

Table 44 KP three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings	
	W	H	B	D	ø5	ø14
KP 2	90	105.5	105.5	3	36	2

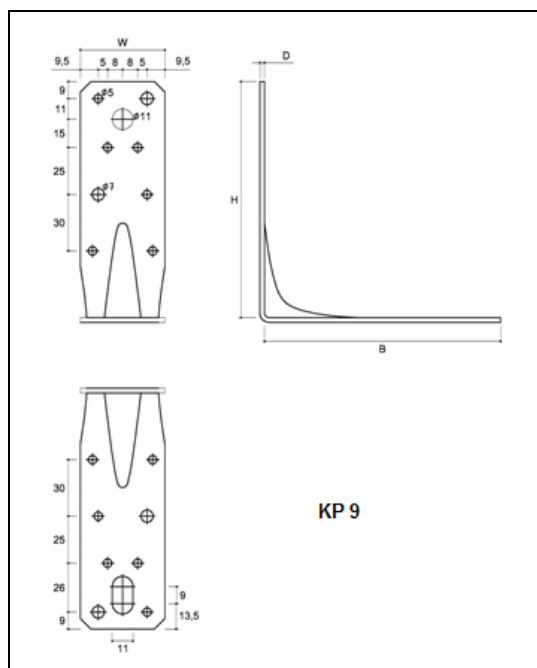


Figure 69 Type KP 9

Table 45 KP three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings		
	W	H	B	D	ø5	ø7	ø11
KP 9	45	126	126	2.5	12	4	1

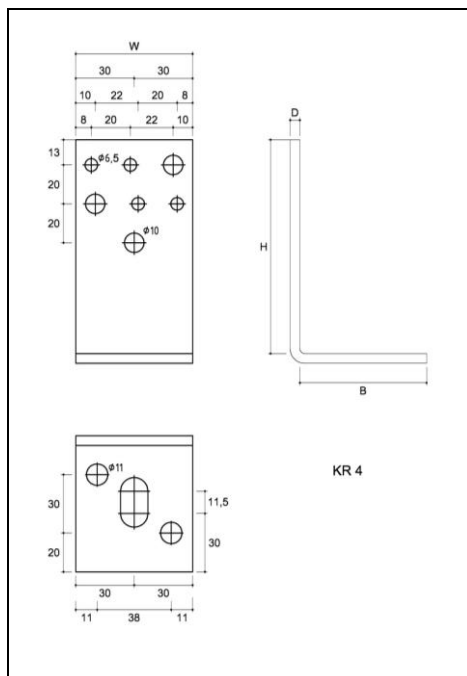


Figure 70 Type KR 4

Table 46 KR three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings		
	W	H	B	D	ø6.5	ø10	ø11
KR 4	60	110	65	5	4	3	2

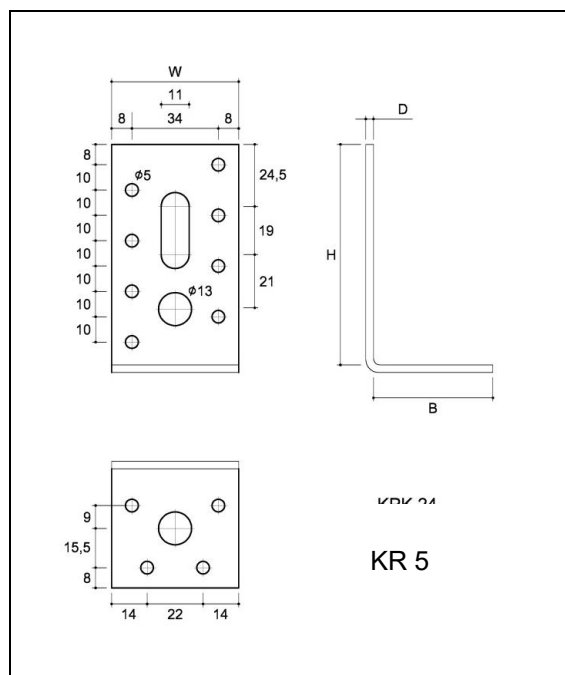


Figure 71 Type KR 5

Table 47 KR three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings	
	W	H	B	D	ø5	ø13
KR 5	50	87	47	3	12	2

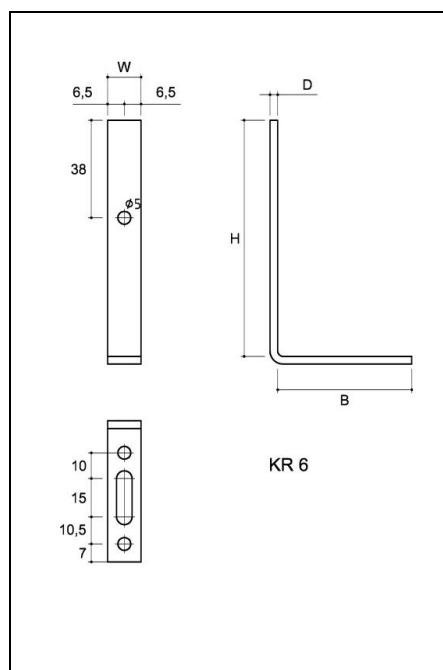


Figure 72 Type KR 6

Table 48 KR three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings	
	W	H	B	D	ø5	
KR 6	13	92	52	3	3	

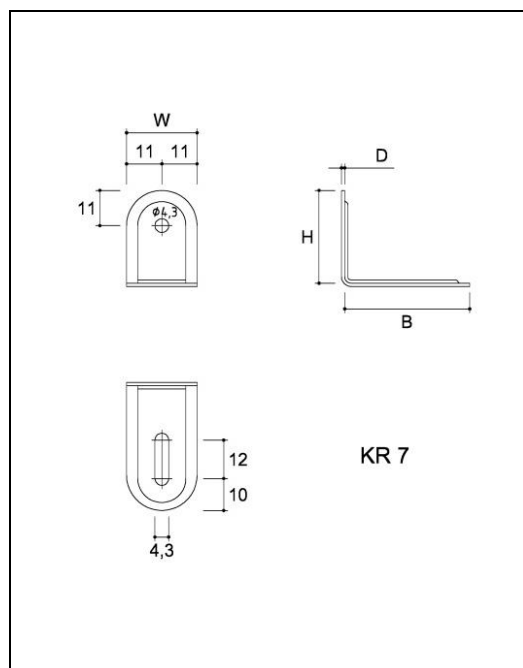


Figure 73 Type KR 7, KRB 7

Table 49 KR, KRB three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings
	W	H	B	D	ø4.3
KR 7	22	29	39	1	1
KRB 7	22	29	39	1	1

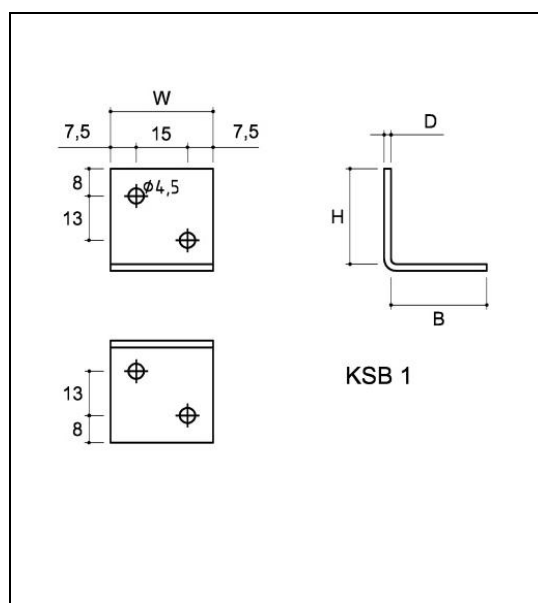


Figure 74 Type KSB 1

Table 50 KSB three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings
	W	H	B	D	ø4,5
KSB 1	30	28	28	2	4

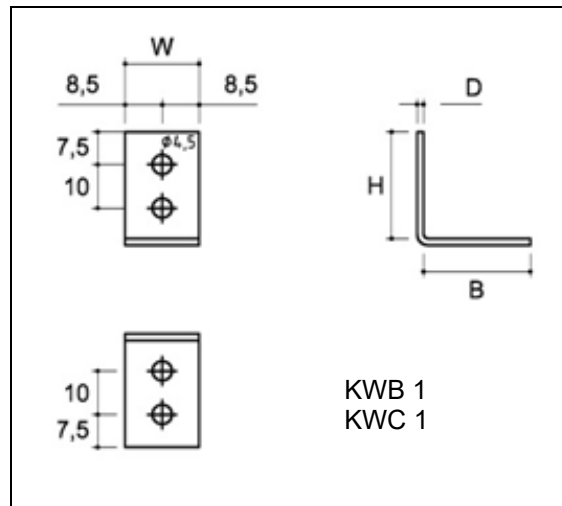


Figure 75 Type KWB 1, KWC 1

Table 51 KWB, KWC three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings
	W	H	B	D	ø4.5
KWB 1	17	24.5	24.5	2	4
KWC 1	17	24.5	24.5	2	4

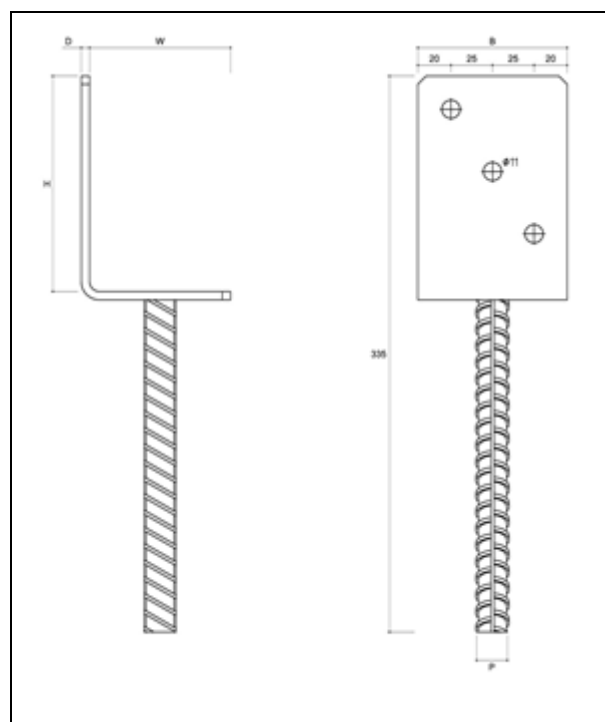


Figure 76 Type PS 84L

Table 52 PS 84 three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm					Quantity of openings
	W	H	B	D	P	ø11
PS 84L	90	130	90	5	ø18	3

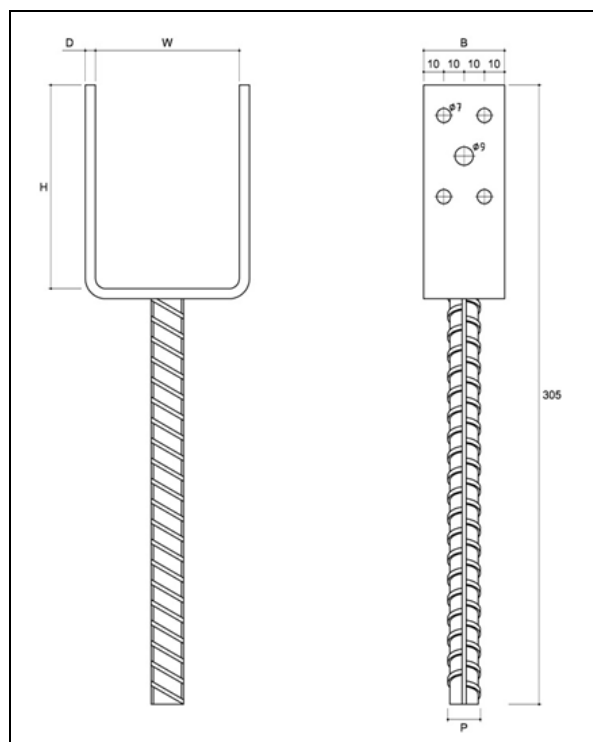


Figure 77 Type PSL 70

Table 53 PSL three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm					Quantity of openings	
	W	H	B	D	P	ø7	ø9
PSL 50	51	100	40	5	ø16	8	2
PSL 70	71	100	40	5	ø16	8	2
PSL 90	91	100	40	5	ø16	8	2
PSL 100	101	100	40	5	ø16	8	2

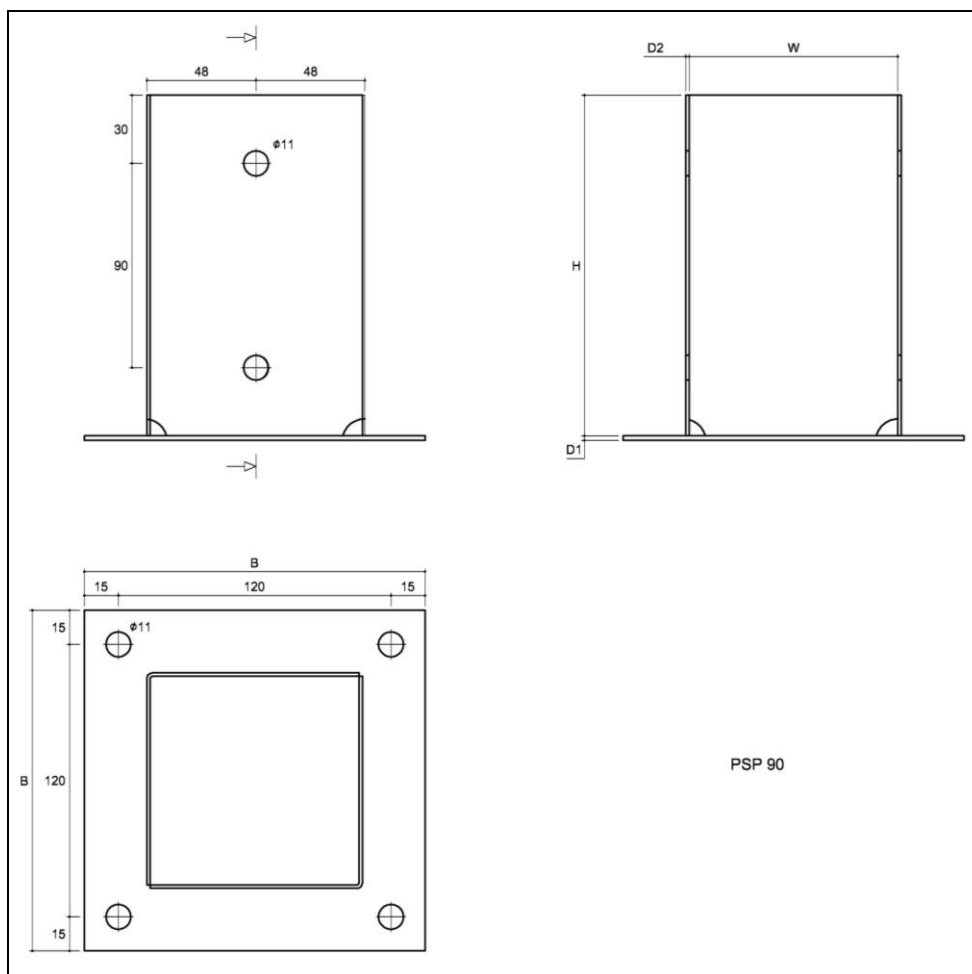


Figure 78 Type PSP 90

Table 54 PSP three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm					Quantity of openings
	W	H	B	D1	D2	ø11
PSP 70	72	150	150	2	1.5	8
PSP 90	92	150	150	2	1.5	8
PSP 100	102	150	150	2	2	8
PSP 120	122	150	180	2	2	8

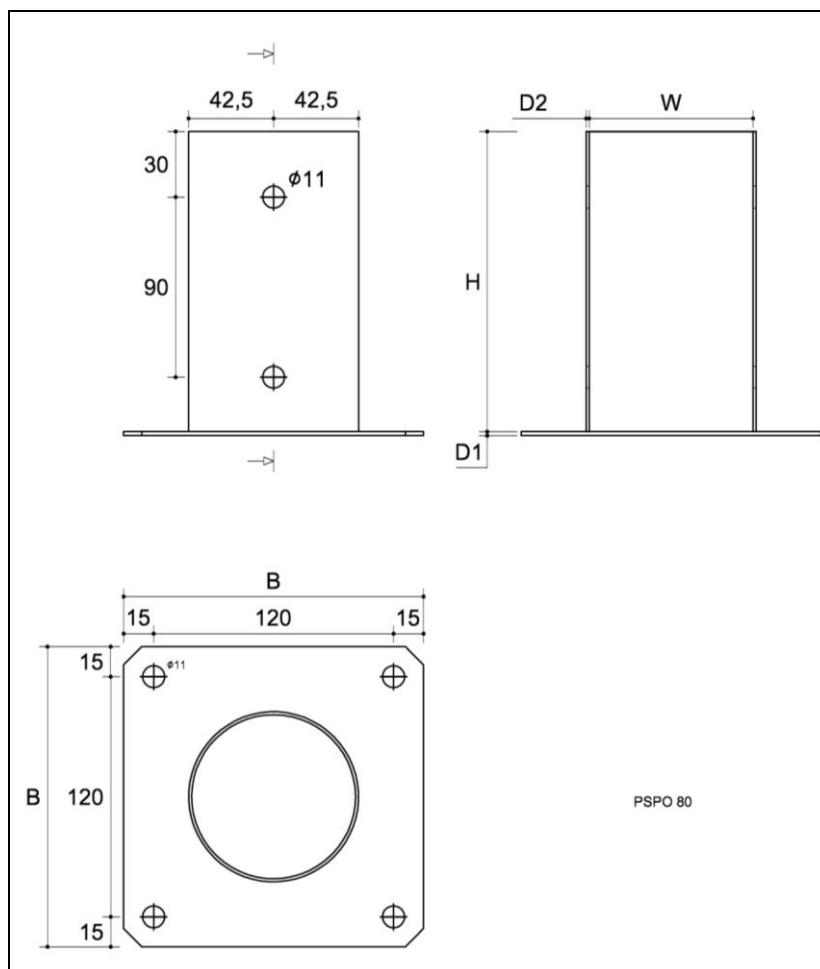


Figure 79 Type PSPO 80

Table 55 PSPO three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm					Quantity of openings
	W	H	B	D1	D2	ø11
PSPO 80	ø82	150	150	2	1.5	8
PSPO 100	ø102	150	150	2	1.5	8

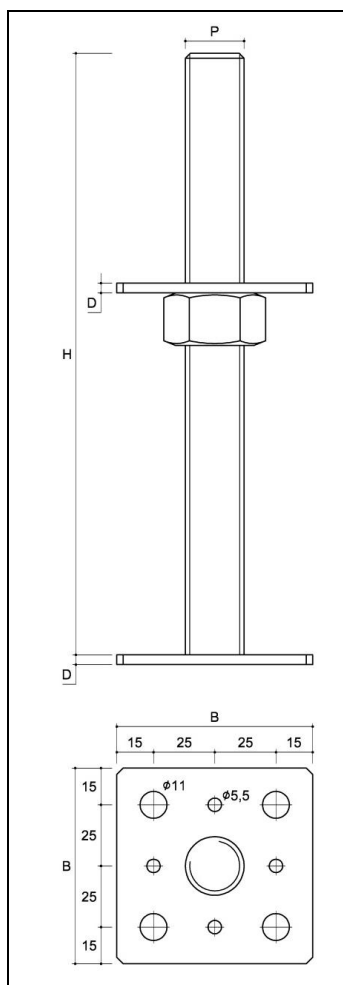


Figure 80 Type PSR 80

Table 56 PSR three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm				Quantity of openings	
	H	B	D	P	ø5.5	ø11
PSR 80	246	80	4	M24	8	8
PSR 110	246	110	4	M24	8	8

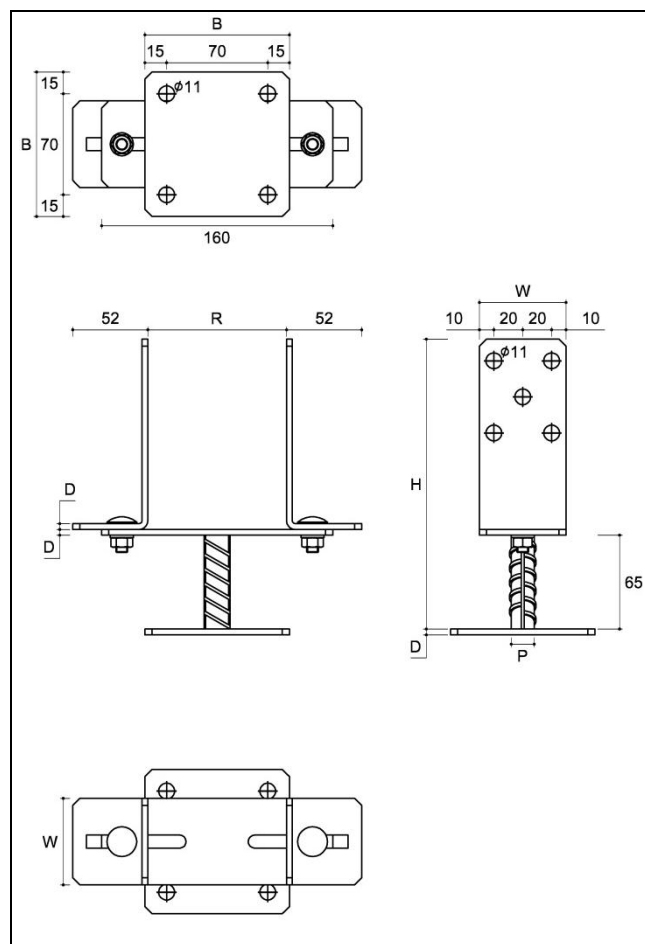


Figure 81 Type PSRT

Table 57 PSRT three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions of the timber beam	Dimensions, mm						Quantity of openings
	[mm]	W	H	B	D	R	P	ø11
PSRT	60x120	60	200	100	4	60	ø18	14
	70x120	60	200	100	4	70	ø18	14
	80x120	60	200	100	4	80	ø18	14
	90x120	60	200	100	4	90	ø18	14

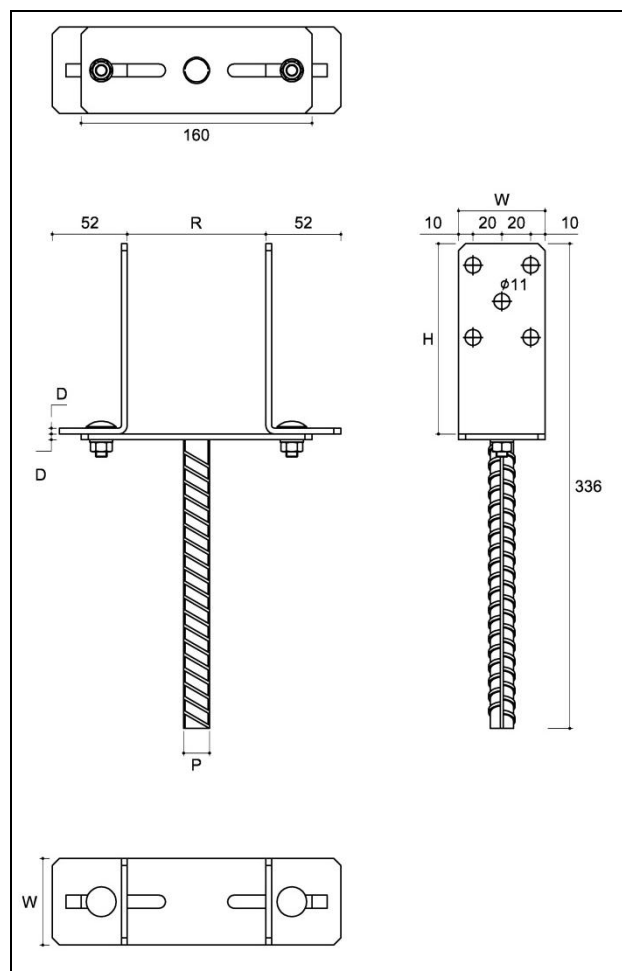


Figure 82 Type PSRU

Table 58 PSRU three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions of the timber beam	Dimensions, mm					Quantity of openings
	[mm]	W	H	P	R	D	$\phi 11$
PSRU	60x120	60	132	$\phi 18$	60	4	10
	70x120	60	132	$\phi 18$	70	4	10
	80x120	60	132	$\phi 18$	80	4	10
	90x120	60	132	$\phi 18$	90	4	10

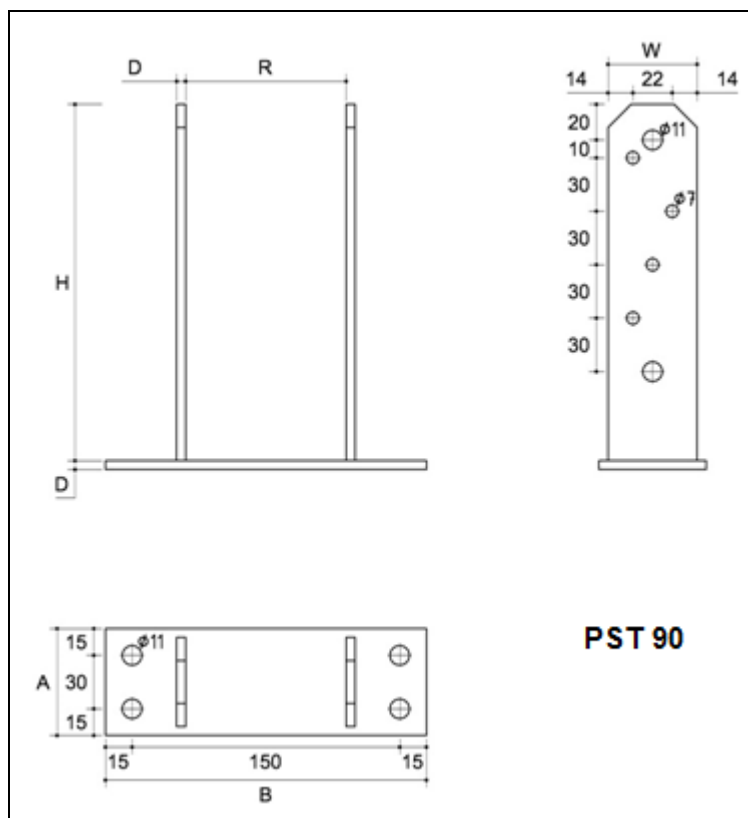


Figure 83 Type PST 90

Table 59 PST three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm						Quantity of openings	
	W	H	R	A	B	D	$\varnothing 7$	$\varnothing 11$
PST 70	50	200	70	60	160	5	8	8
PST 90	50	200	90	60	180	5	8	8
PST 100	50	200	100	60	190	5	8	8
PST 120	50	200	120	60	210	5	8	8
PST 140	50	200	140	60	230	5	8	8

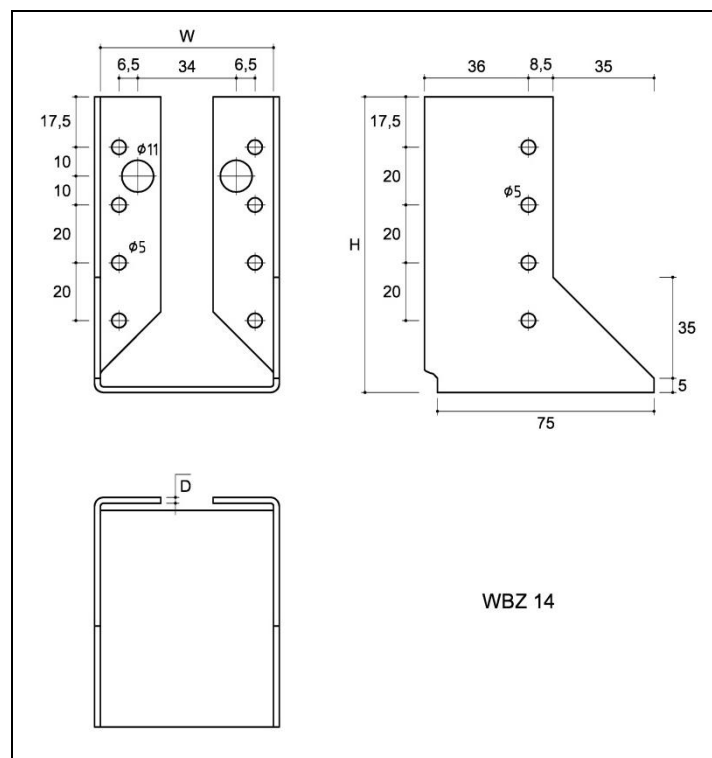
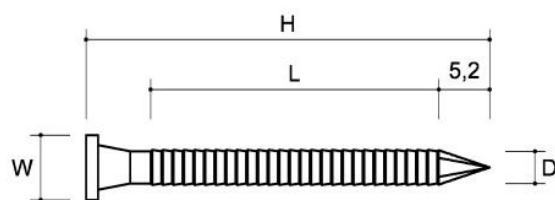


Figure 84 Type WBZ 14

Table 60 WBZ 14 three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions, mm			Quantity of openings	
	W	H	D	$\phi 5$	$\phi 11$
WBZ 14	60	102	2	16	2

CONNECTION ELEMENTS

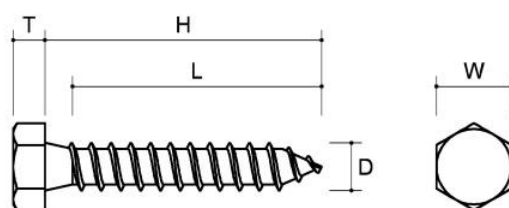


ANG 50

Figure 85 Type ANG 50

Table 61 ANCHOR dowel type connector symbols and dimensions

Symbol	Dimensions, mm				DoP No.
	D	H	L	W	
ANG 50	4	50	36.8	8	DWU 30-20232 AN (issued on 02.01.2018)



Ø6x35

Figure 86 Type 6x35

Table 62 ø6x35 type connector symbols and dimensions

Symbol	Dimensions, mm					Standard
	D	H	L	W	T	
ø6x35	6	35	31	9.7	4	DIN 571

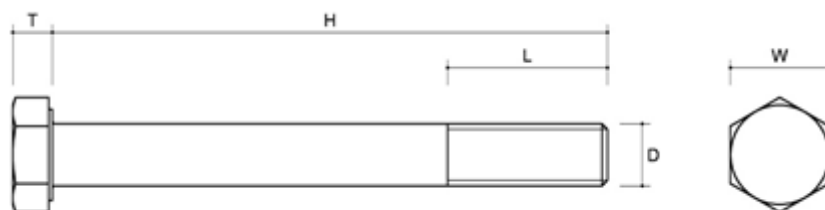
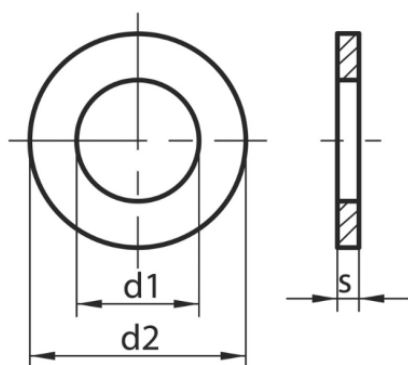


Figure 87 Bolt type M

Table 63 M bolt type connector symbols and dimensions

Symbol	Dimensions, mm					Standard
	D	H	L	W	T	
M12x110	12	110	30	18	7.5	ISO 4014
M10x160	10	160	32	16	6.5	ISO 4014
M10x140	10	140	32	16	6.5	ISO 4014
M10x130	10	130	32	16	6.5	ISO 4014
M10x120	10	120	26	16	6.5	ISO 4014
M10x110	10	110	26	16	6.5	ISO 4014
M10x90	10	90	26	16	6.5	ISO 4014
M10x70	10	70	26	16	6.5	ISO 4014
M10x60	10	60	26	16	6,5	ISO 4014
M8x120	8	120	22	13	5.2	ISO 4014
M8x110	8	110	22	13	5.2	ISO 4014
M8x100	8	100	22	13	5.2	ISO 4014
M8x90	8	90	22	13	5.2	ISO 4014
M8x70	8	70	22	13	5.2	ISO 4014

**Figure 88** Washet type M10**Table 64** Washer type M10 symbols and dimensions

Symbol	Dimensions [mm]			DoP No.
	d1	d2	s	
M10	10.5	20	2	NKJ/CPR/2015-09-01 rev.02 (issued on 15.01.2016)

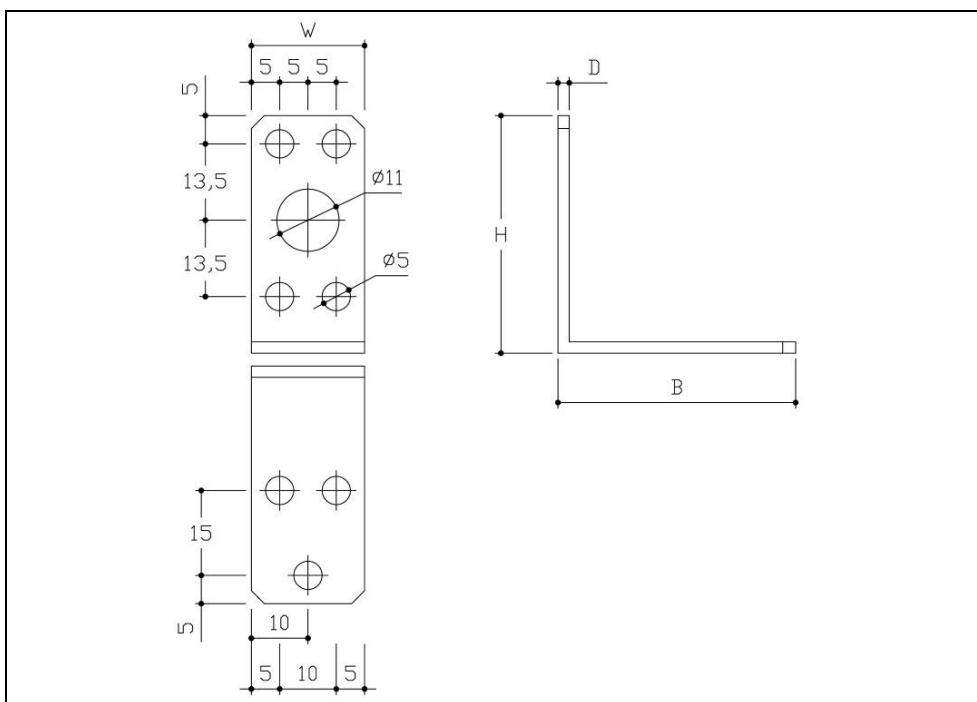


Figure 89 Type KL 0

Table 65 KL 0 three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions [mm]				Quantity of openings	
	W	H	B	D	Ø5	Ø11
KL 0	20	40	40	2	7	1

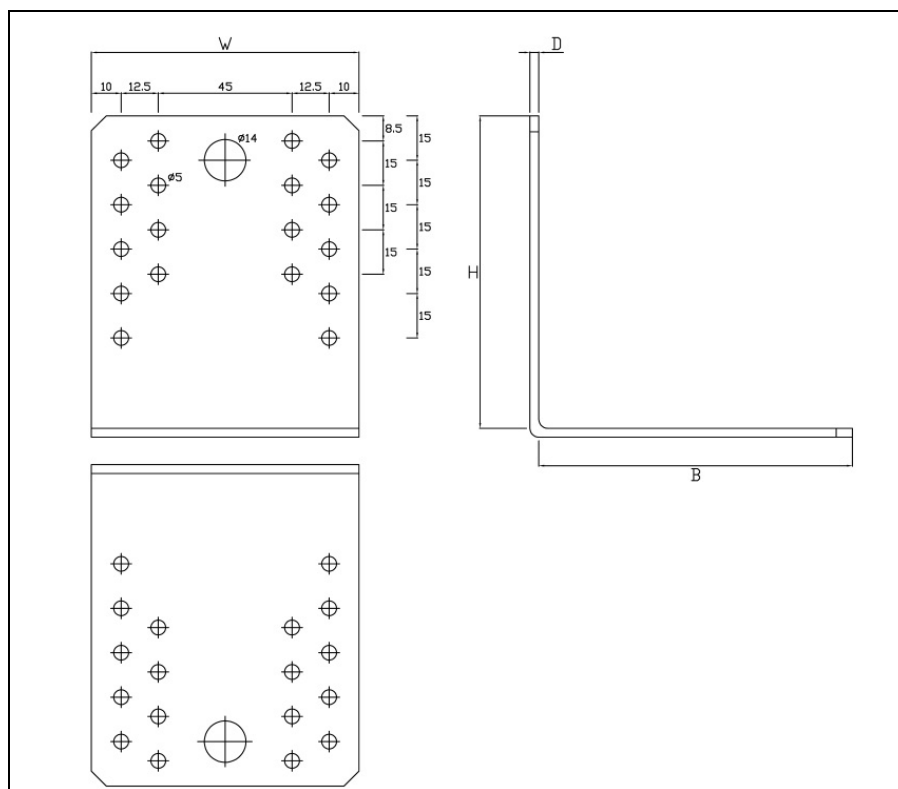


Figure 90 Type KL 5

Table 66 KL 5 three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions [mm]				Quantity of openings	
	W	H	B	D	Ø5	Ø14
KL 5	90	105	105	3	36	2

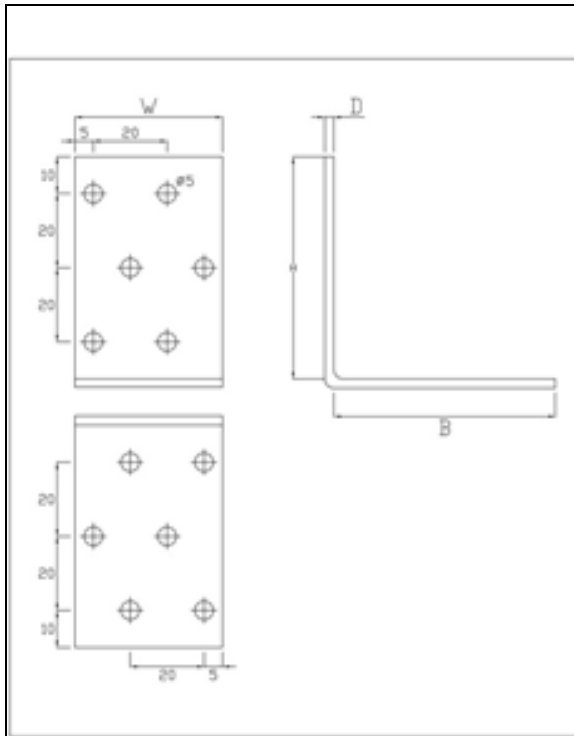


Figure 91 Type KM 3

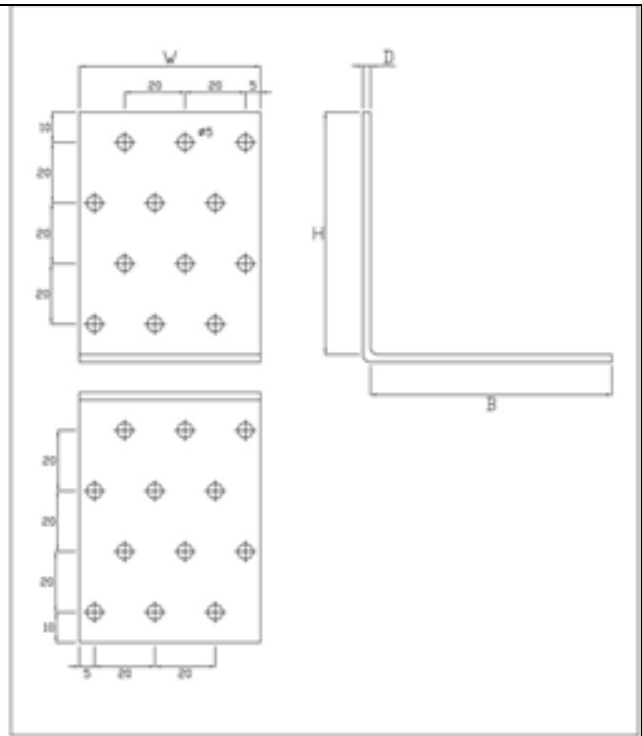


Figure 92 Type KM 8

Table 67 KM three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions [mm]				Quantity of openings
	W	H	B	D	
KM 3	40	60	60	2,5	12
KM 8	60	80	80	2,5	24

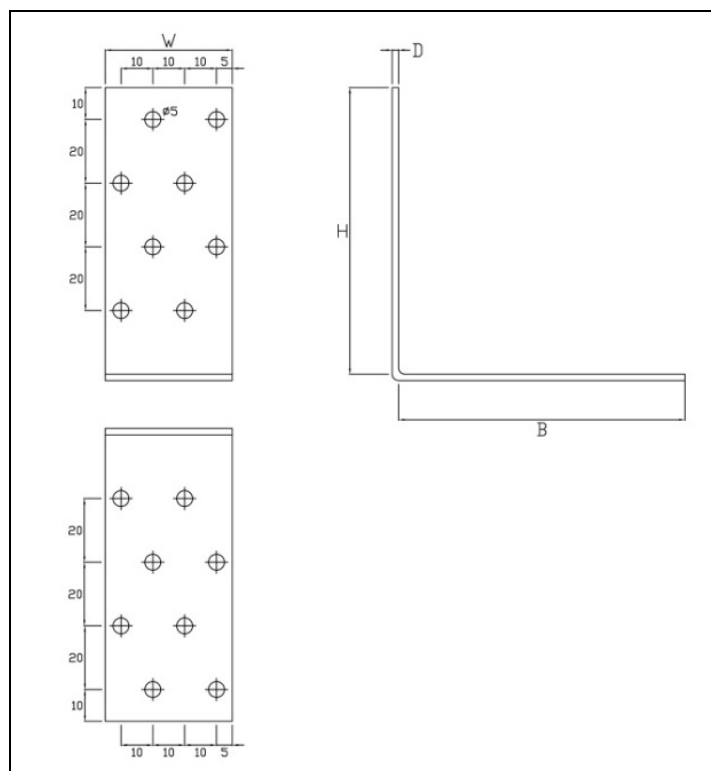


Figure 93 Type KM 16 and KM 16 (3 mm)

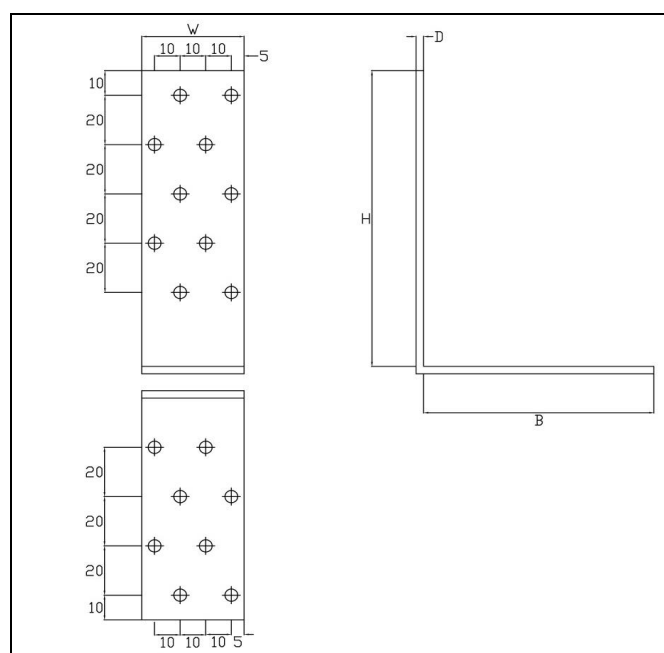


Figure 94 Type KM 19

Table 68 KM three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions [mm]				Quantity of openings
	W	H	B	D	
KM 16	40	90	90	2	16
KM 16	40	90	90	3	16
KM 19	40	120	90	3	18

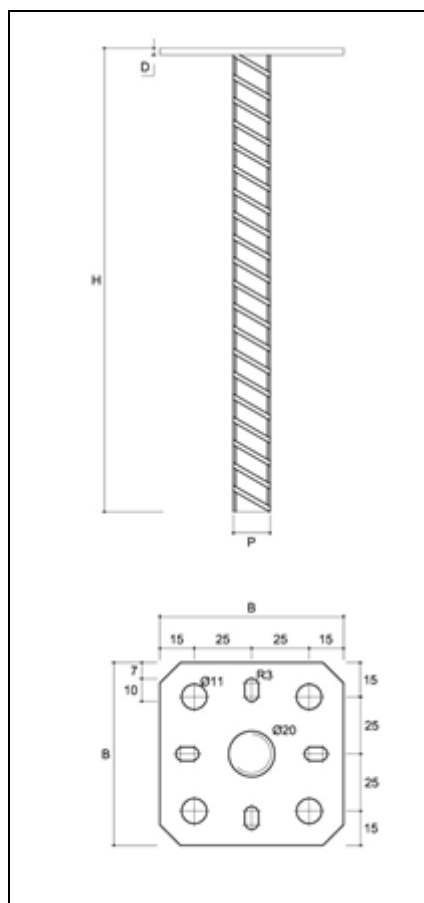


Figure 95 Type PPS 80

Table 69 PPS three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions [mm]				Quantity of openings	
	H	B	D	P	Ø11	Ø20
PPS 80	202	80	3	Ø18	4	1
PPS 100	205	100	3	Ø18	4	1
PPS 130	205	130	3	Ø18	4	1

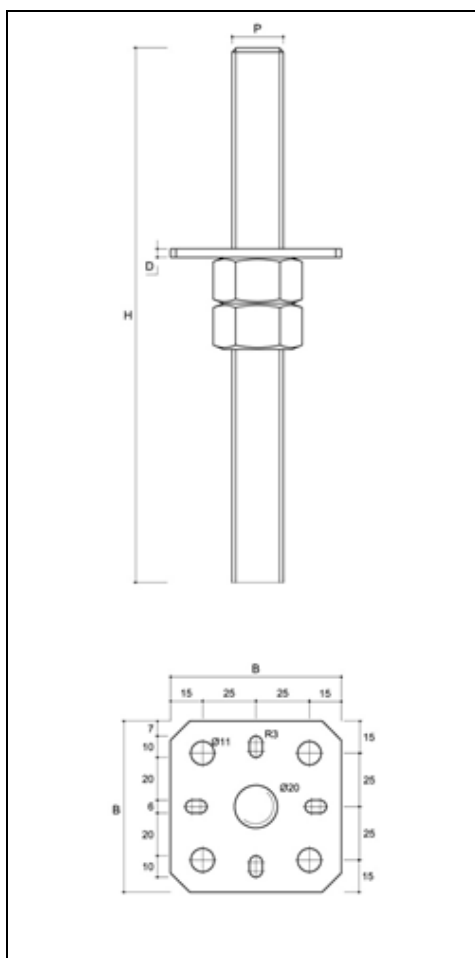


Figure 96 Type PPSR 80

Table 70 PPSR three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions [mm]				Quantity of openings	
	H	B	D	P	Ø11	Ø20
PPSR 80	330	80	3	M20	8	2
PPSR 100	330	100	3	M20	8	2
PPSR 130	330	130	3	M20	8	2

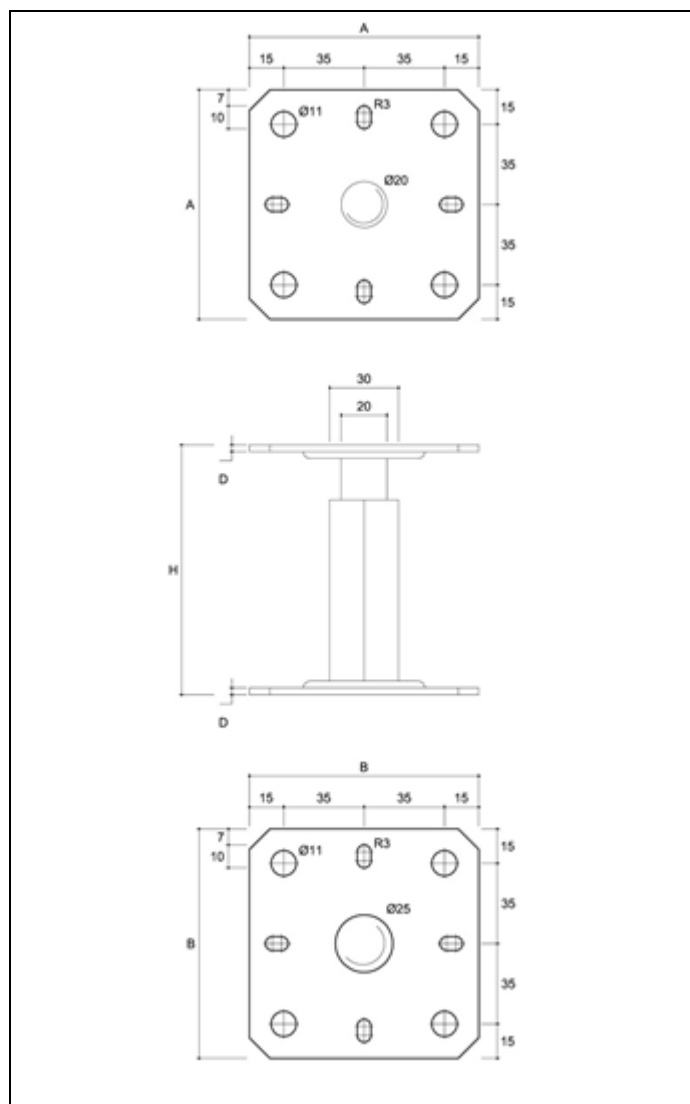


Figure 97 Type PR 100 100-150

Table 71 PR three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions [mm]				Quantity of openings		
	H	A	B	D	Ø11	Ø20	Ø25
PR 100 100-150	100-150	100	100	3	8	1	1
PR 100 130-150	100-150	100	130	3	8	1	1
PR 130 130-150	100-150	130	130	3	8	1	1

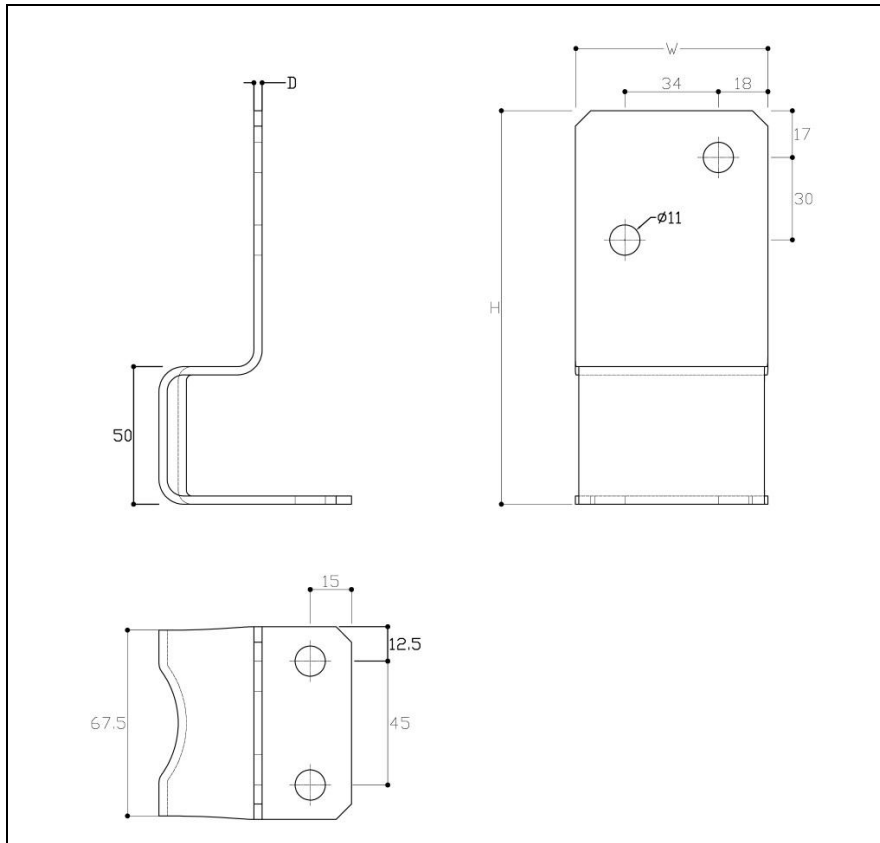


Figure 98 Type PSK 70

Table 72 PSK three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions [mm]			Quantity of openings
	H	B	D	$\varnothing 11$
PSK 70	143	70	3	4
SDPSK 70	165	70	3	4

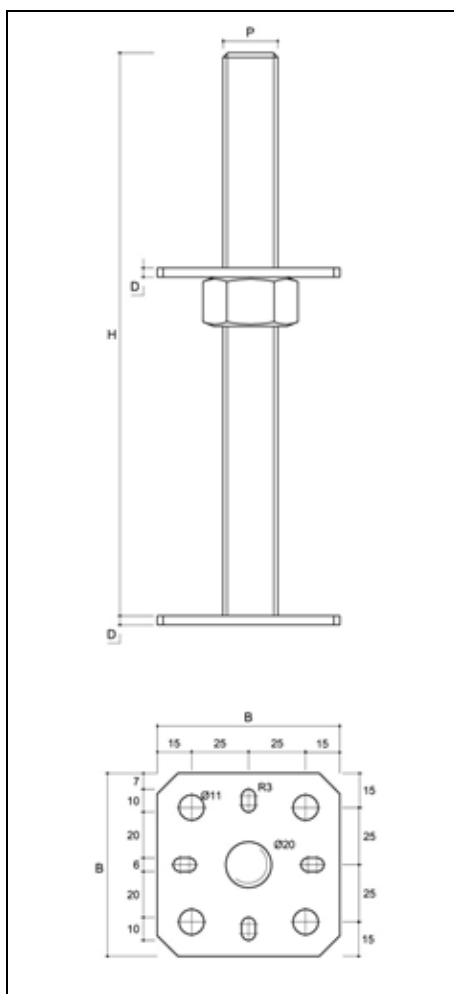


Figure 99 Type PSR 80 M20

Table 73 PSR three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions [mm]				Quantity of openings		
	H	B	D	P	Ø11	Ø20	Ø24
PSR 80 M20	240	80	3	M20	8	2	-
PSR 100 M20	252	100	3	M20	8	2	-
PSR 130 M20	252	130	3	M20	8	2	-
PSR 80 M24	250	80	4	M24	8	-	2
PSR 100 M24	250	100	4	M24	8	-	2
PSR 130 M24	250	130	4	M24	8	-	2

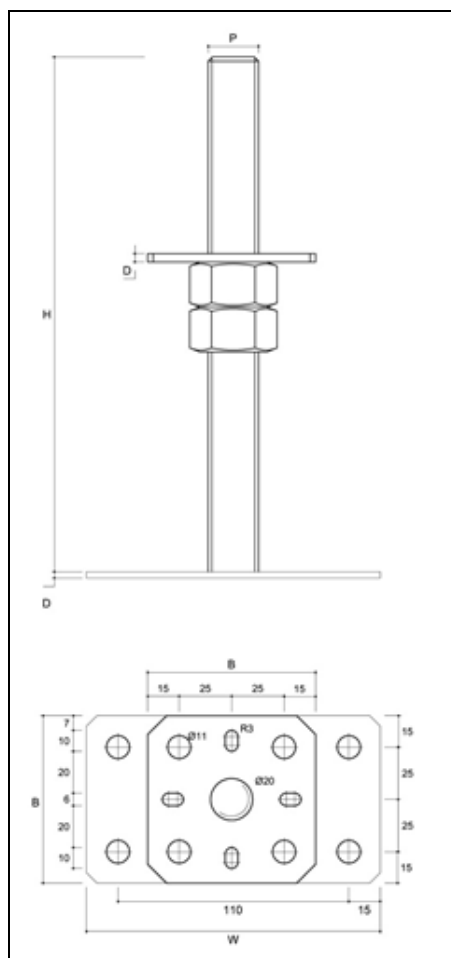


Figure 100 Type PSRP 80 M20

Table 74 PSRP three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions [mm]					Quantity of openings	
	H	W	B	D	P	Ø11	Ø20
PSRP 80 M20	250	140	80	3	M20	8	2
PSRP 100 M20	250	160	100	3	M20	8	2
PSRP 130 M20	250	200	130	3	M20	8	2

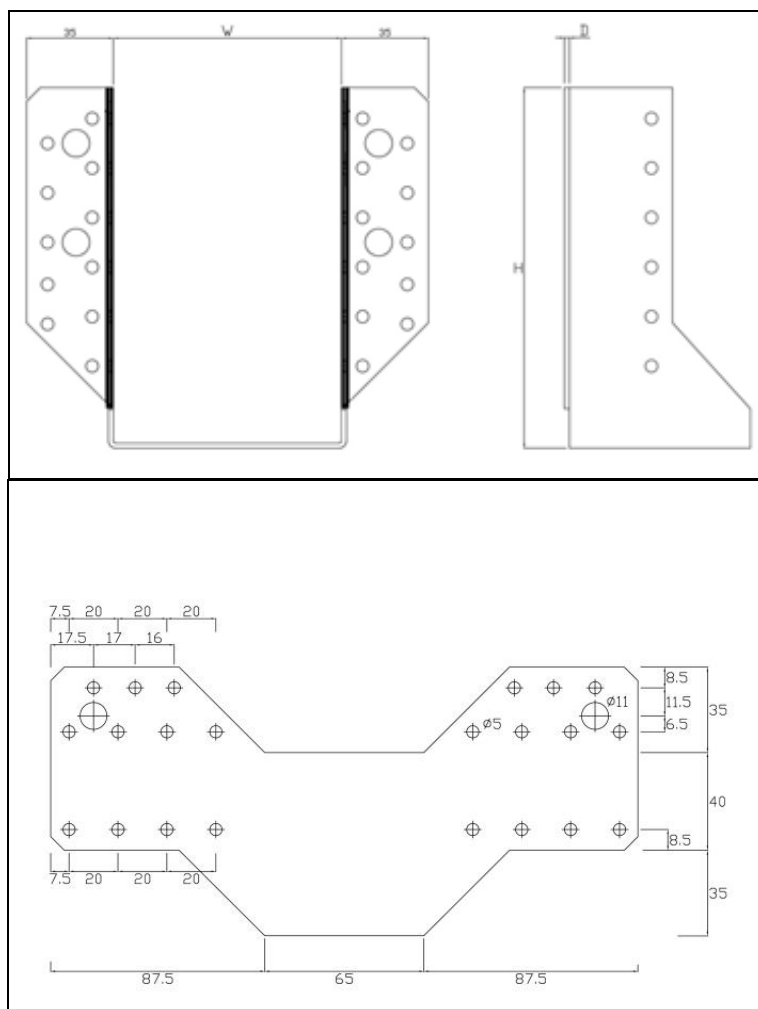


Figure 101 Type WB, type A

Table 75 WB three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions [mm]			Quantity of openings		Type
	W	H	D	Ø5	Ø11	
WB 40	25	109	2	22	2	A
WB 43	32	106	2	22	2	A
WB 44	32	116	2	22	2	A
WB 47	38	103	2	22	2	A
WB 48	41	101	2	22	2	A
WB 49	45	99	2	22	2	A
WB 52	48	98	2	22	2	A
WB 53	48	108	2	22	2	A
WB 57	51	96	2	22	2	A

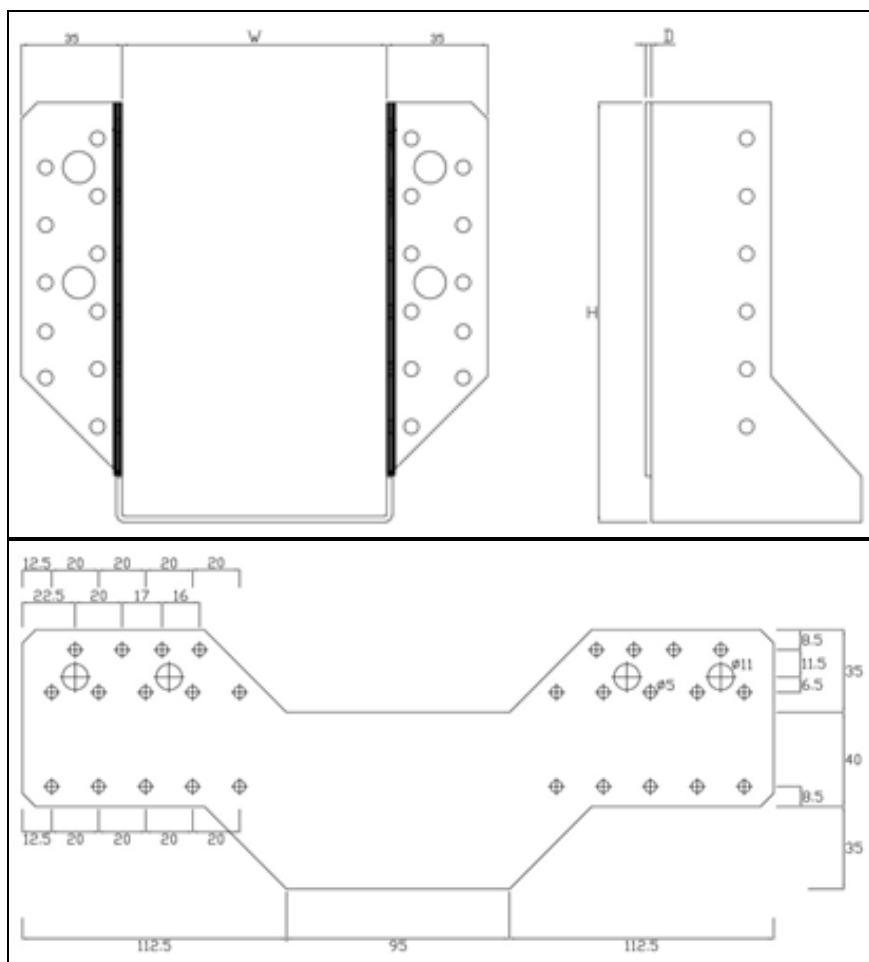


Figure 102 Type WB, type B

Table 76 WB three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions [mm]			Quantity of openings		Type
	W	H	D	Ø5	Ø11	
WB 41	28	148	2	28	4	B
WB 45	32	146	2	28	4	B
WB 54	48	138	2	28	4	B
WB 59	73	125	2	28	4	B

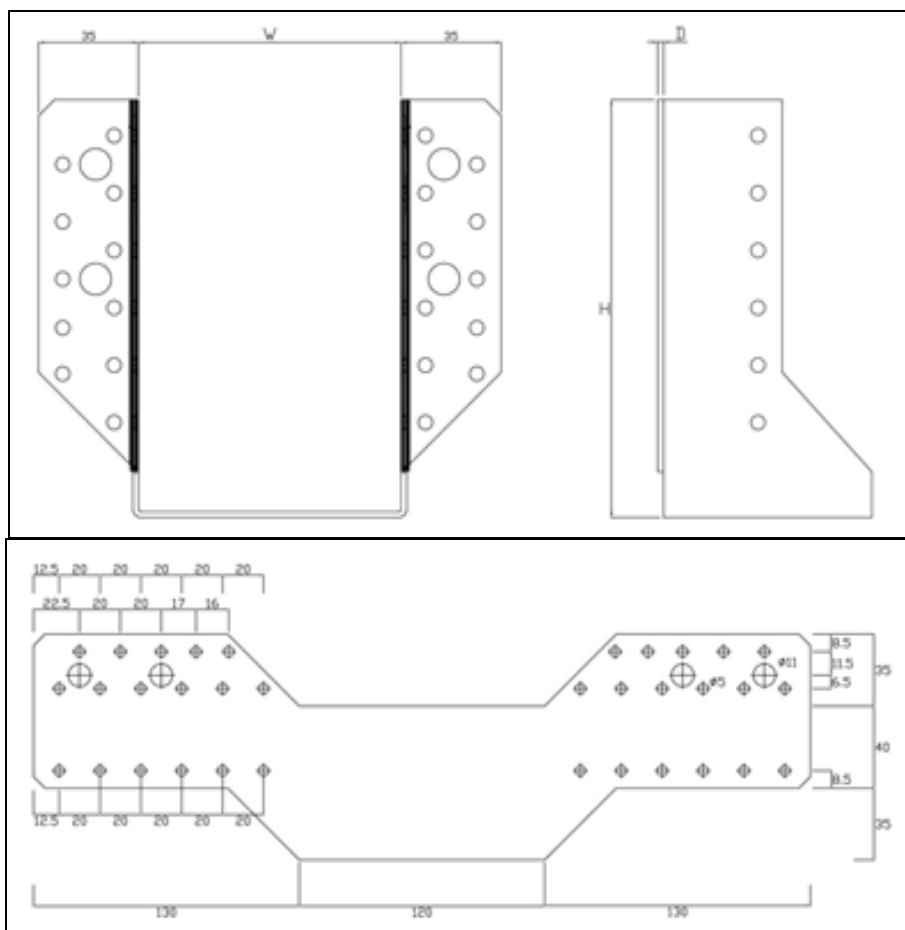


Figure 103 Type WB, type C

Table 77 PSR three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions [mm]			Quantity of openings		Type
	W	H	D	Ø5	Ø11	
WB 39	92	146	2	34	4	C
WB 42	28	178	2	34	4	C
WB 46	32	176	2	34	4	C
WB 50	45	169	2	34	4	C
WB 55	48	168	2	34	4	C
WB 60	73	155	2	34	4	C
WB 63	98	143	2	34	4	C

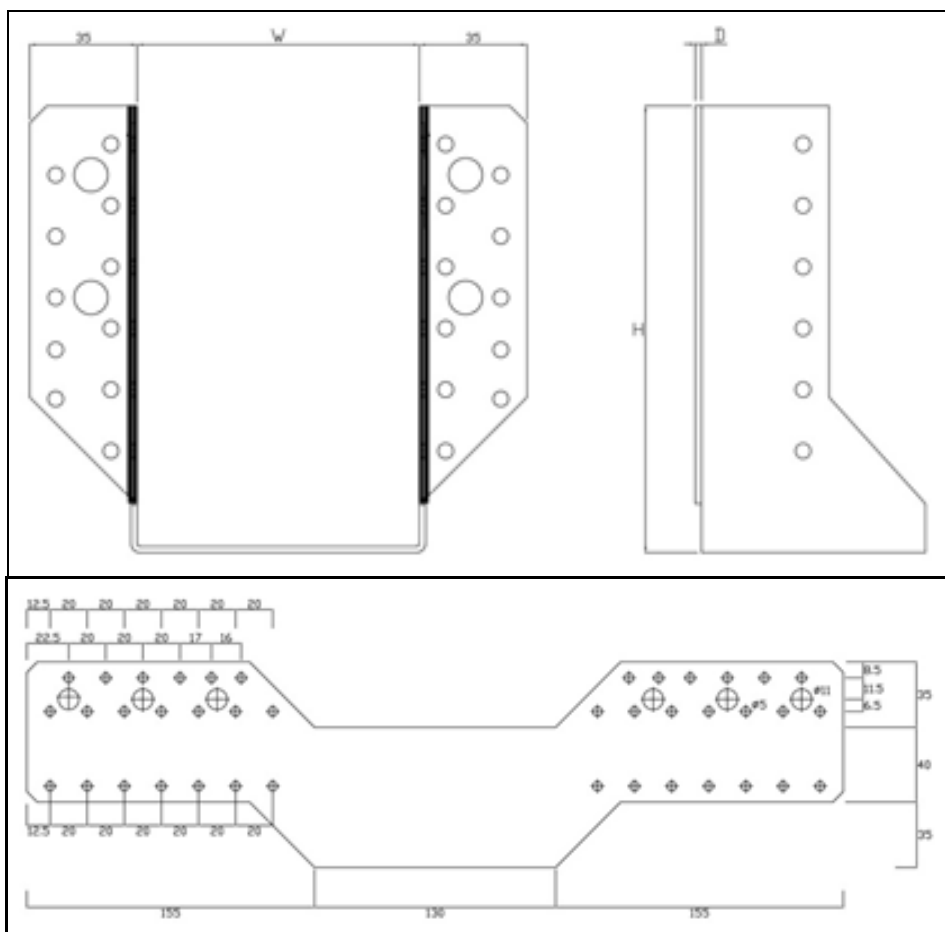


Figure 104 Type WB, type D

Table 78 WB three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions [mm]			Quantity of openings		Type
	W	H	D	Ø5	Ø11	
WB 51	45	199	2	40	6	D
WB 61	73	185	2	40	6	D

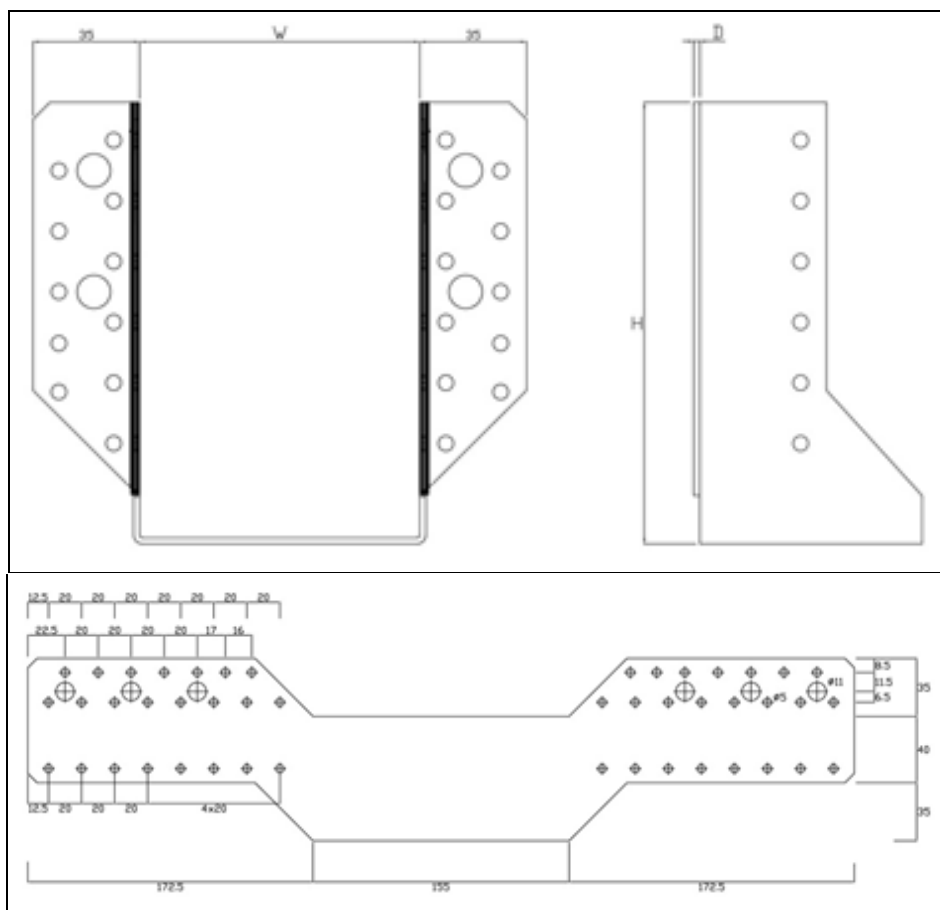


Figure 105 Type WB, type E

Table 79 WB three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions [mm]			Quantity of openings		Type
	W	H	D	Ø5	Ø11	
WB 56	48	228	2	46	6	E
WB 58	66	219	2	46	6	E
WB 62	90	207	2	46	6	E

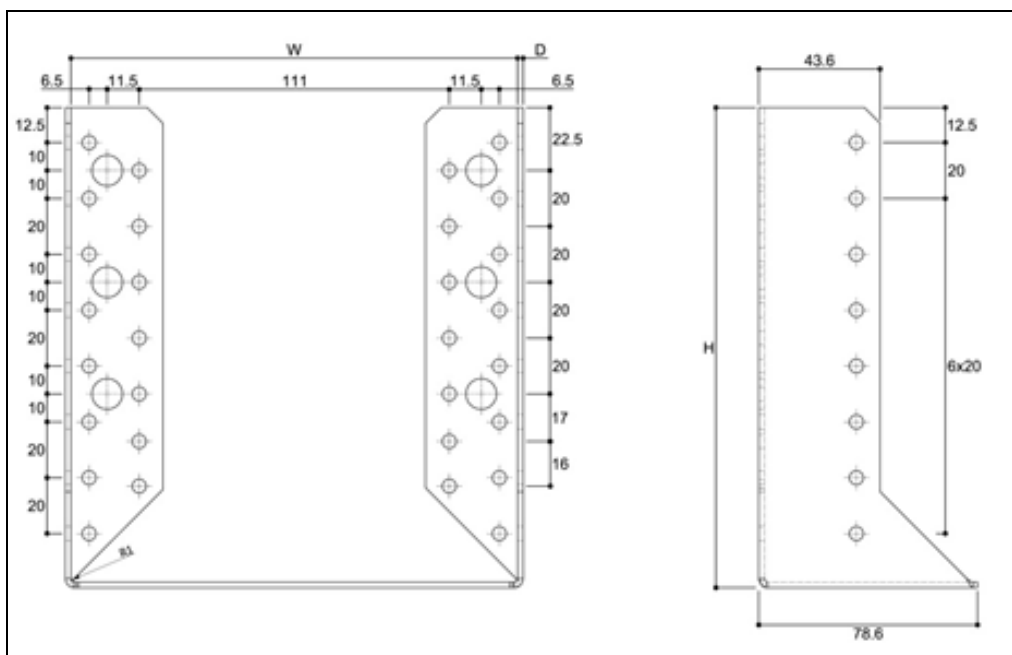


Figure 106 Type WBZ 38

Table 80 WBZ three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions [mm]			Quantity of openings	
	W	H	D	$\varnothing 5$	$\varnothing 11$
WBZ 38	160,5	172	2	46	6

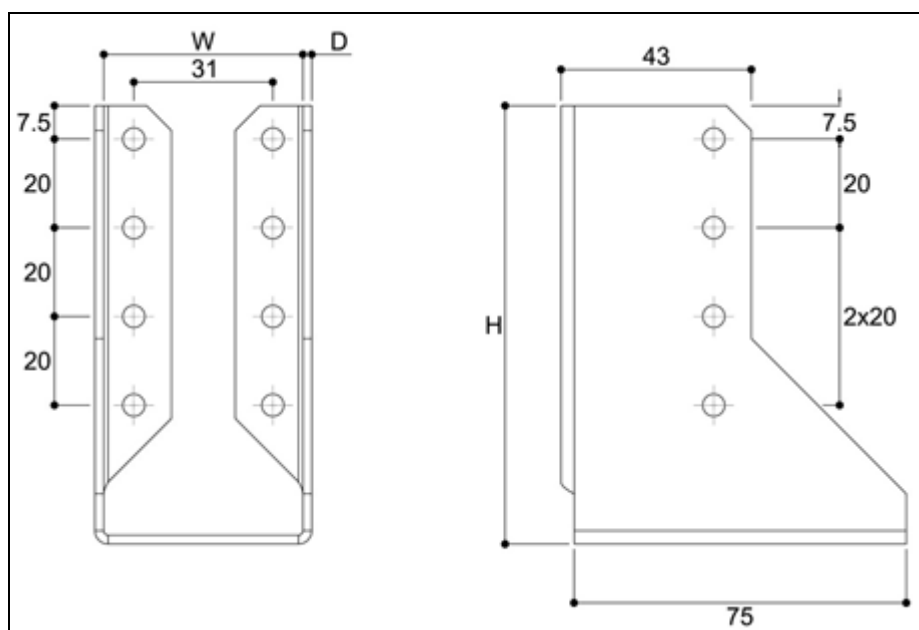


Figure 107 Type WBZ 49

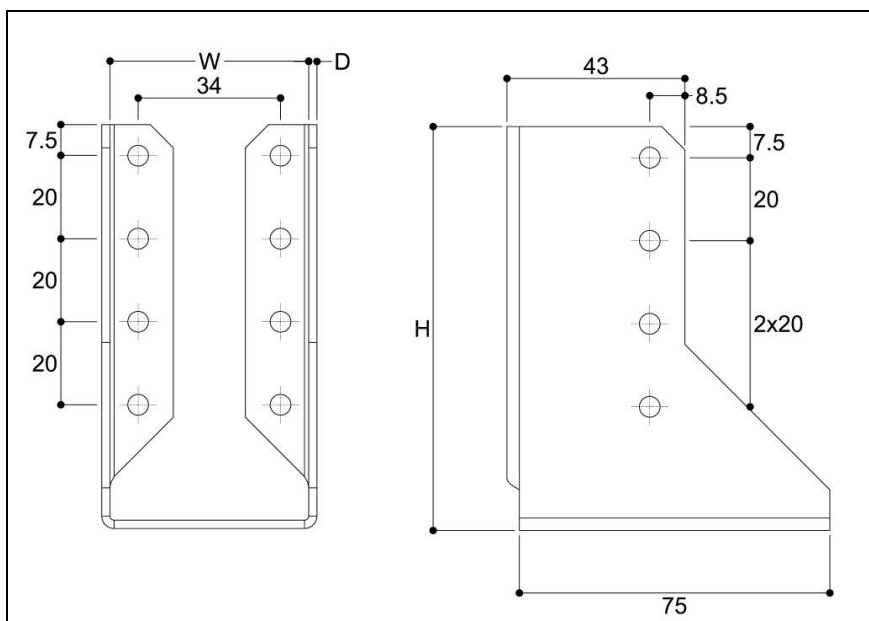


Figure 108 Type WBZ 52

Table 81 WBZ three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions [mm]			Quantity of openings
	W	H	D	
WBZ 49	45	99	2	16
WBZ 52	48	98	2	16

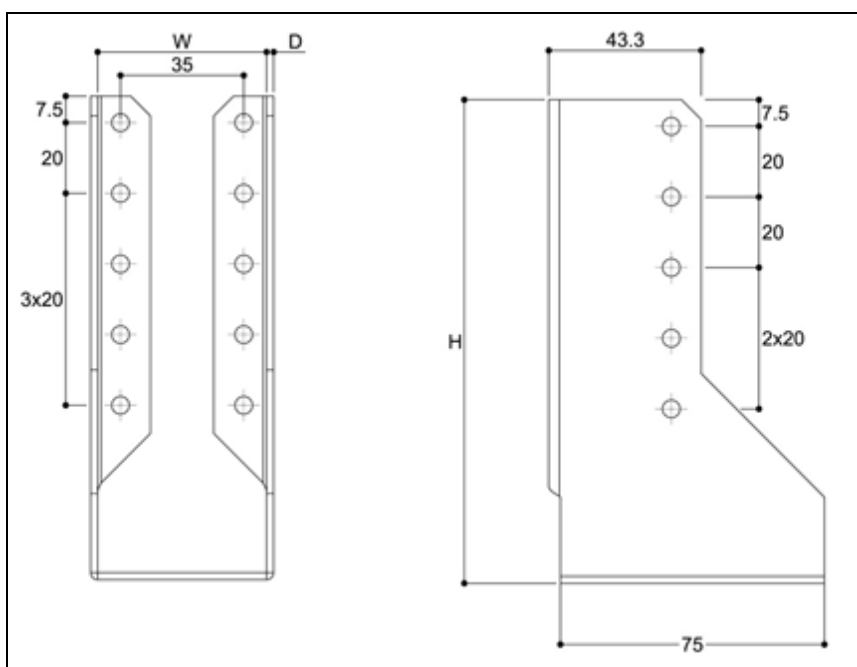
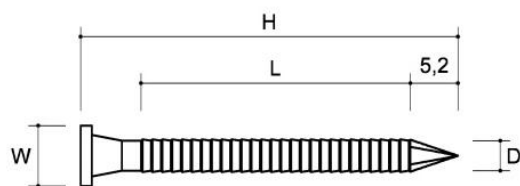


Figure 109 Type WBZ 54

Table 82 WBZ three-dimensional nailing plate symbols and dimensions

Symbol	Dimensions [mm]			Quantity of openings
	W	H	D	
WBZ 54	48	138	2	20

CONNECTION ELEMENTS



ANG 50

Figure 110 Type ANG 50

Table 83 ANCHOR dowel type connector symbols and dimensions

Symbol	Dimensions, mm				DoP No.
	D	H	L	W	
ANG 50	4	50	36.8	8	DWU 30-20232 AN (issued on 02.01.2018)

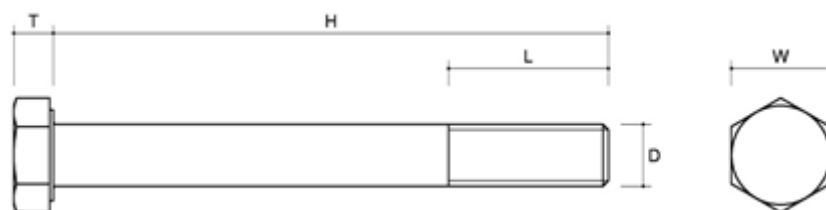


Figure 111 Bolt type M

Table 84 M bolt type connector symbols and dimensions

Symbol	Dimensions, mm					DoP No.
	D	H	L	W	T	
M10x60 – 5.8	10	60	26	16	6,5	NKJ/CPR/20170201 (issued on 01.02.2017)

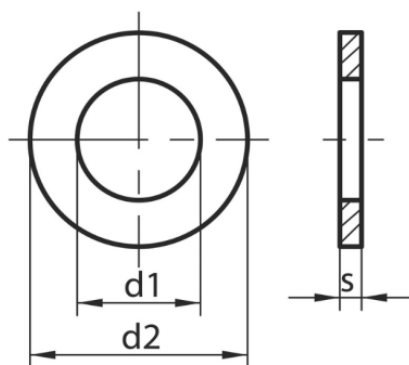


Figure 112 Washet type M10

Table 85 Washer type M10 symbols and dimensions

Symbol	Dimensions [mm]			DoP No.
	d1	d2	s	
M10	10.5	20	2	NKJ/CPR/2015-09-01 rev.02 (issued on 15.01.2016)

THREE-DIMENSIONAL NAILING PLATES	ANNEX 2 ETA 24/0873
LOADING ACCORDING TO STATIC DIAGRAMS	

LOADING ACCORDING TO STATIC DIAGRAMS
(for selected elements)

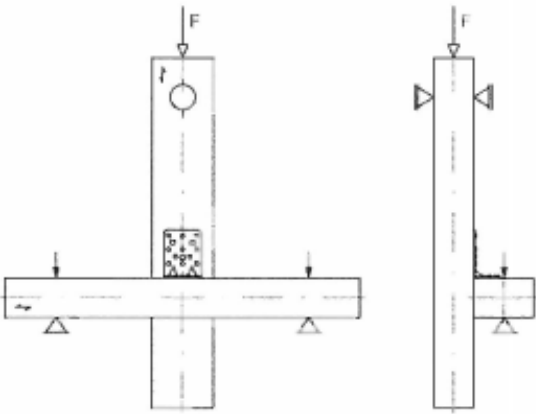
No.	Scheme	Connector types
1		KPK 11, 12, 13, 21, 22, 23 KPL 5, 6, 11, 21 KR 1, 2, 3 KRD 5, 6

Figure 113 Scheme 1

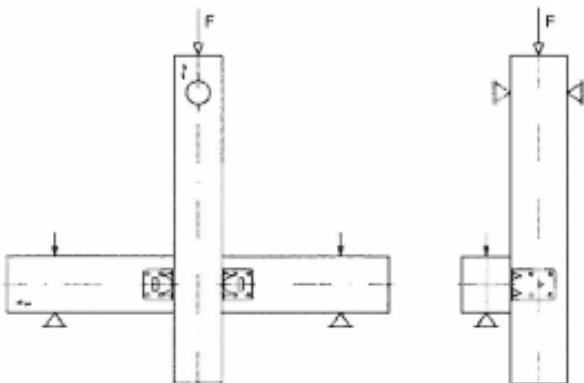
No.	Scheme	Connector types
2		KPK 31 KPK 32 KPK 33

Figure 114 Scheme 2

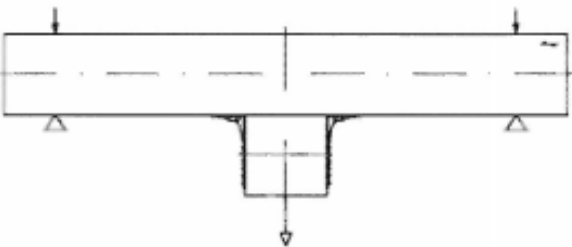
No.	Scheme	Connector types
3		KP 7 KP 8

Figure 115 Scheme 3

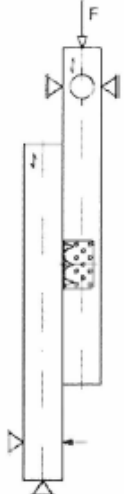
No.	Scheme	Connector types
4		KPK 4

Figure 116 Scheme 4

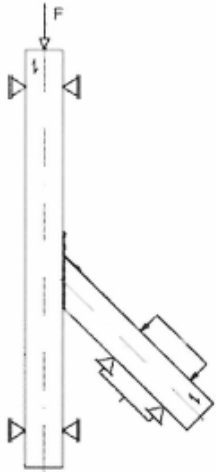
No.	Scheme	Connector types
5		KLR 1 KLR 2 KLR 3 KLR 4 KLR 5 KLR 6

Figure 117 Scheme 5

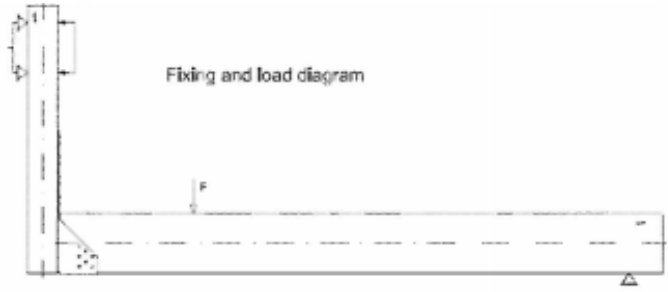
No.	Scheme	Connector types
6	 Fixing and load diagram	WBC 80 WBC 92 WBC 100 WBC 120 WBC 137

Figure 118 Scheme 6

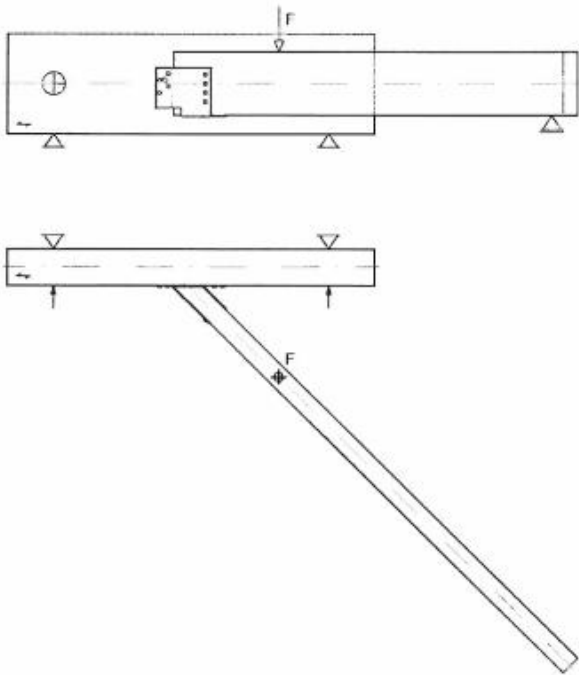
No.	Scheme	Connector types
7		WBU 45 R45-105; L45-105 R50-105; L50-105 R60-120; L60-120

Figure 119 Scheme 7

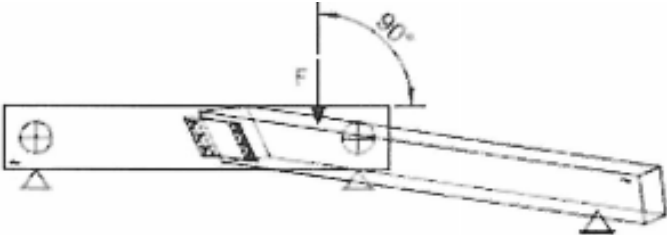
No.	Scheme	Connector types
8		LU 25 R80; L80 R120; L120

Figure 120 Scheme 8

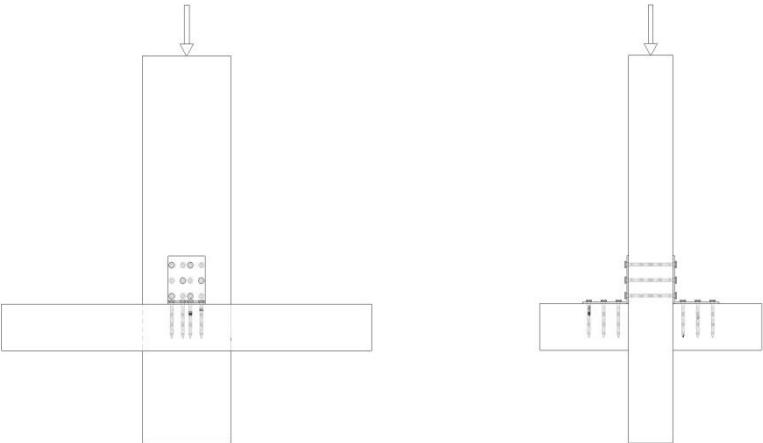
No.	Scheme	Connector types
9		KB 4 KK 0 KL 6 KM 17 KM 18 KP 2 KP 9 KR 5 KR 6 KR 7 KRB 7 KSB 1 KWB 1 KWC 1

Figure 121 Scheme 9

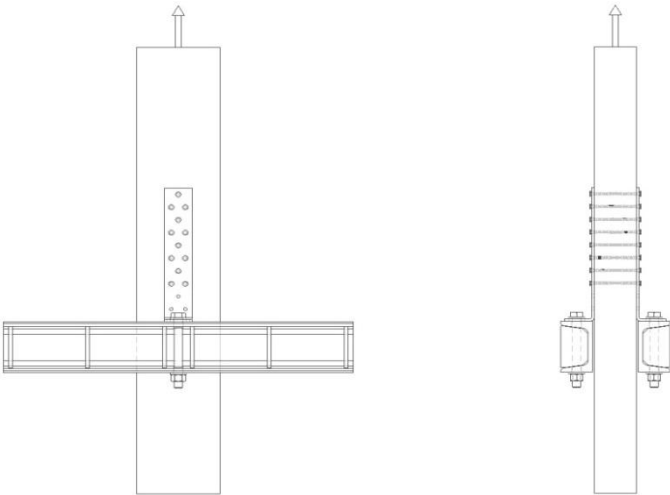
No.	Scheme	Connector types
10		KK 11 KK 12 KR 4

Figure 122 Scheme 10

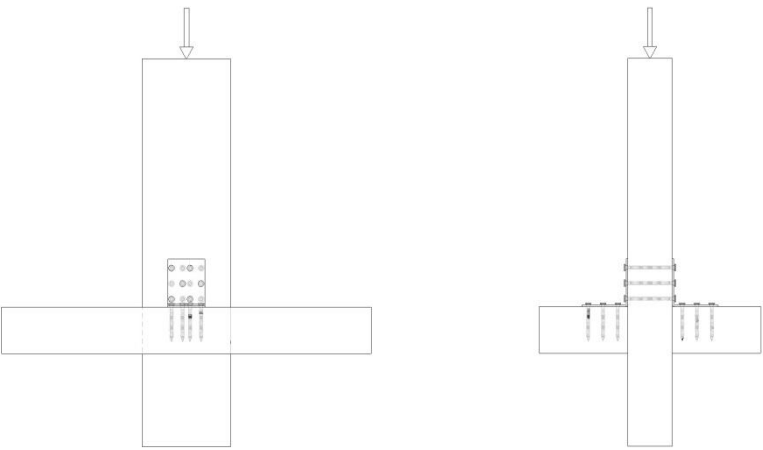
No.	Scheme	Connector types
11		KM 16 KM 16 (3 mm) KM 8 (2.5 mm) KM 19 KM 3 (2.5 mm) KL 0 KL 5 (3 mm)

Figure 123 Scheme 11

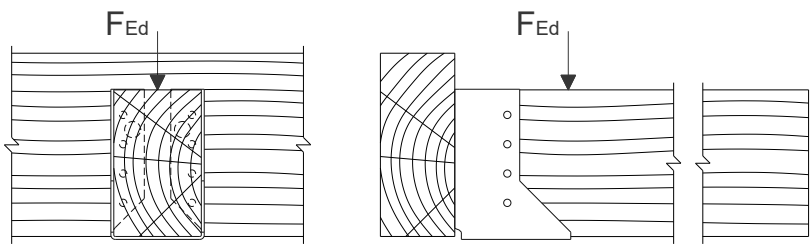
No.	Scheme	Connector types
12		WBZ 38 WBZ 49 WBZ 52 WBZ 54

Figure 124 Scheme 12

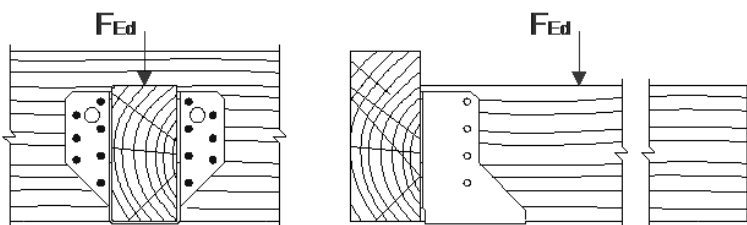
No.	Scheme	Connector types
13		WB 39 WB 40 WB 41 WB 42 WB 43 WB 44 WB 45 WB 46 WB 47 WB 48 WB 49 WB 50 WB 51 WB 52 WB 53 WB 54 WB 55 WB 56 WB 57 WB 58 WB 59 WB 60 WB 61 WB 62 WB 63

Figure 125 Scheme 13

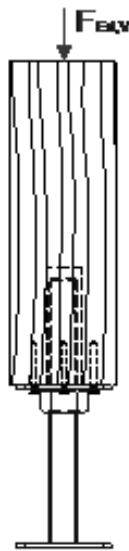
No.	Scheme	Connector types
14		PSR 80 M24 PSR 100 M24 PSR 130 M24 PSR 80 M20 PSR 100 M20 PSR 130 M20

Figure 126 Scheme 14

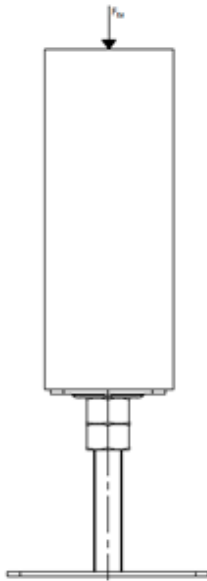
No.	Scheme	Connector types
15		PSRP 80 M20 PSRP 100 M20 PSRP 130 M20

Figure 127 Scheme 15

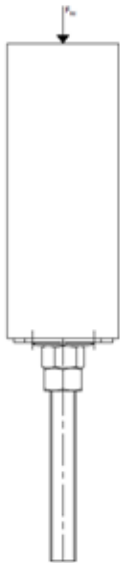
No.	Scheme	Connector types
16		PPSR 80 PPSR 100 PPSR 130

Figure 128 Scheme 16

No.	Scheme	Connector types
17		PPS 80 PPS 100 PPS 130

Figure 129 Scheme 17

No.	Scheme	Connector types
18		PR 100 100-150 PR 100 130-150 PR 130 130-150

Figure 130 Scheme 18

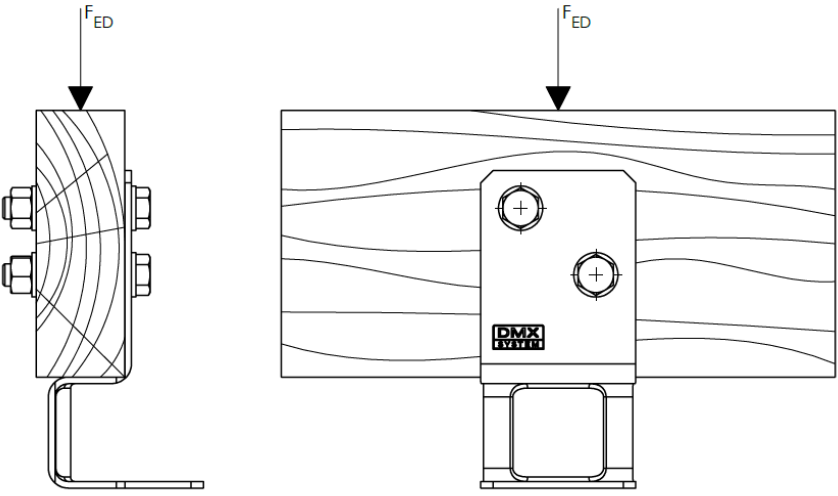
No.	Scheme	Connector types
19		PSK 70 SDPSK 70

Figure 131 Scheme 19

THREE-DIMENSIONAL NAILING PLATES	ANNEX 2 ETA 24/0873
CALCULATIONS ACCORDING TO STATIC DIAGRAMMS	

CALCULATIONS ACCORDING TO STATIC DIAGRAMMS
(for selected elements)

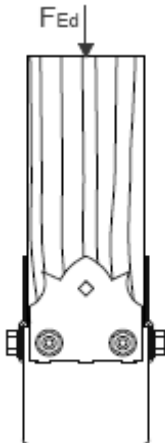
No.	Scheme	Connector types
1		SDP 90 A SDP 100 A SDP 120 A

Figure 132 Scheme 1

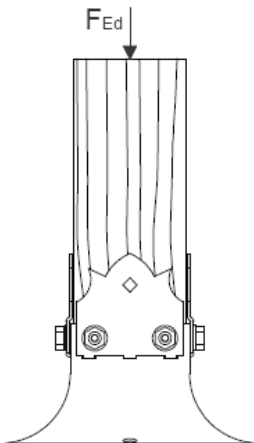
No.	Scheme	Connector types
2		SDP 90 B SDP 100 B SDP 120 B

Figure 133 Scheme 2

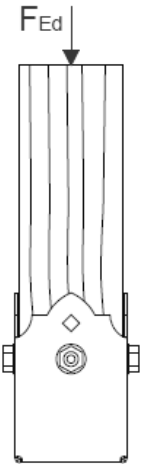
No.	Scheme	Connector types
3		SDSP 70 A

Figure 134 Scheme 3

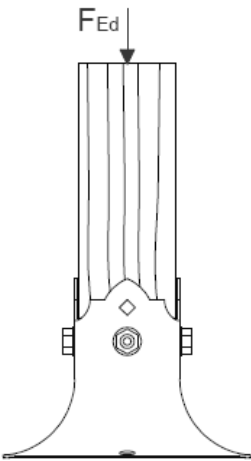
No.	Scheme	Connector types
4		SDSP 70 B

Figure 135 Scheme 4

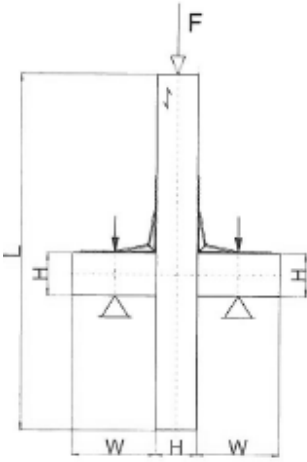
No.	Scheme	Connector types
5		KPS 1 KPS 2 KPS 3 KPS 4

Figure 136 Scheme 5

No.	Scheme	Connector types
6		PS 60 PS 70 PS 80 PS 90 PS 100 PS 120 PS 140

Figure 137 Scheme 6

No.	Scheme	Connector types
7		SDKL 1 pull out

Figure 138 Scheme 7

No.	Scheme	Connector types
8		SDKL 1 pressure

Figure 139 Scheme 8

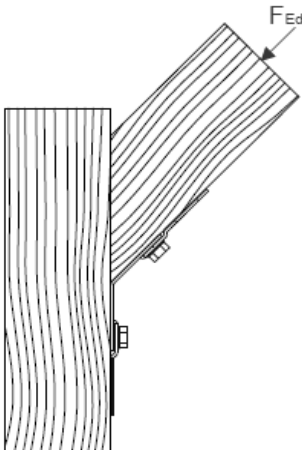
No.	Scheme	Connector types
9		SDKLR 1

Figure 140 Scheme 9

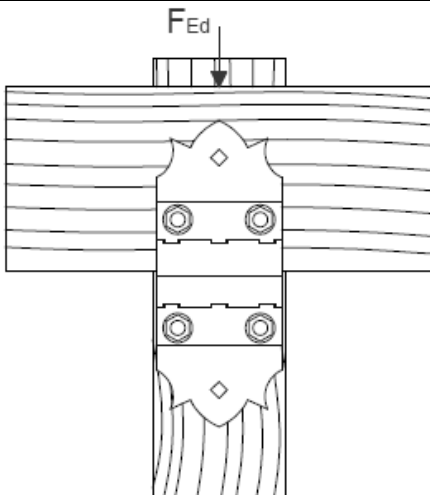
No.	Scheme	Connector types
10		SDLZ 1

Figure 141 Scheme 10

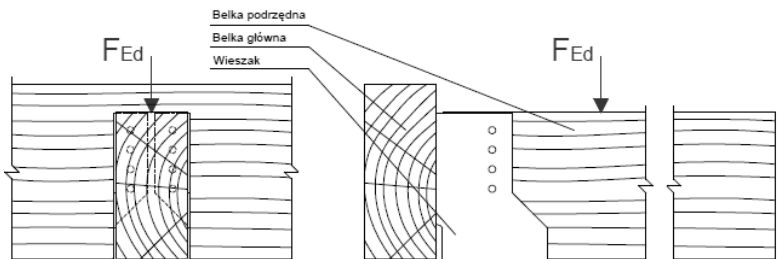
No.	Scheme	Connector types
11		SDSWBZ 10 SDSWBZ 11 SDSWBZ 14 SDSWBZ 21 SDSWBZ 26 SDSWBZ 30

Figure 142 Scheme 11

No.	Scheme	Connector type
12		WBZ 14

Figure 143 Scheme 12

No.	Scheme	Connector type
13		PSL 50 PSL 70 PSL 90 PSL 100

Figure 144 Scheme 13

No.	Scheme	Connector type
14		PSP 70 PSP 90 PSP 100 PSP 120 PSPO 80 PSPO 100 PST 70 PST 90 PST 100 PST 120 PST 140

Figure 145 Scheme 14

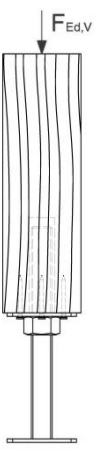
No.	Scheme	Connector type
15		PSR 80 PSR 110

Figure 146 Scheme 15

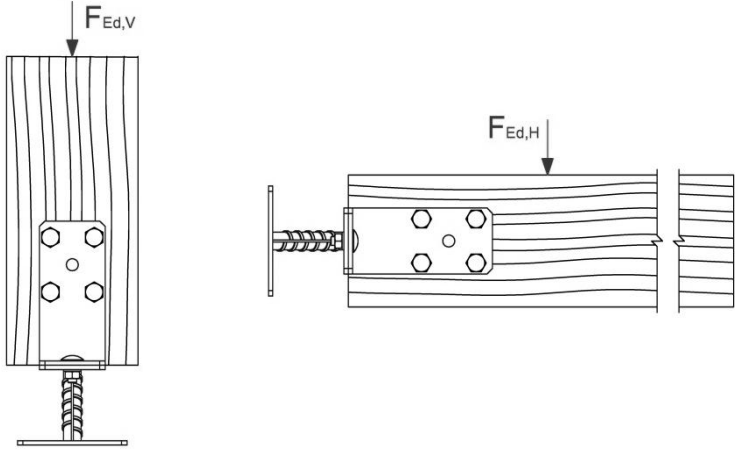
No.	Scheme	Connector type
16		PSRT

Figure 147 Scheme 16

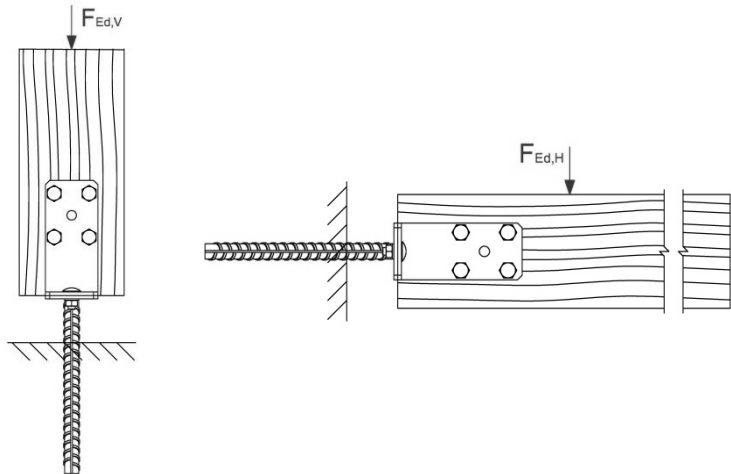
No.	Scheme	Connector type
17		PSRU

Figure 148 Scheme 17

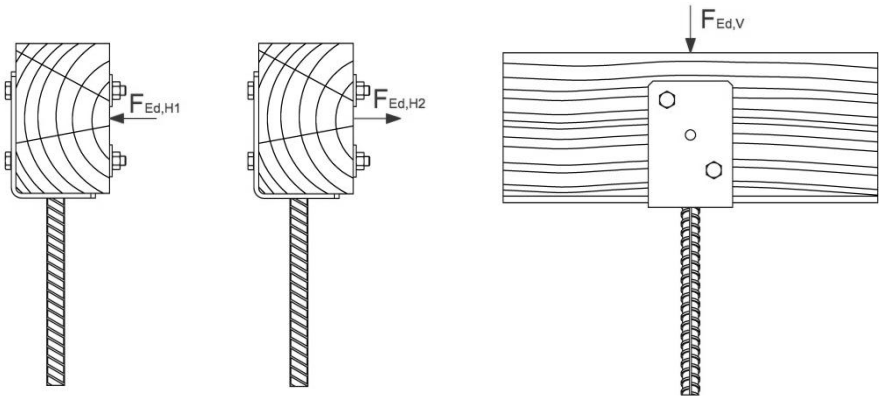
No.	Scheme	Connector type
18		PS 84L

Figure 149 Scheme 18

THREE-DIMENSIONAL NAILING PLATES	ANNEX 3 ETA 24/0873
THE CHARACTERISTIC LOAD-CARRYING CAPACITIES OF CONNECTORS	

Table 86 The characteristic load-carrying capacities of connectors

Type group	Type	Timber Moisture [%]	Density $\rho_{\text{mean}, 12\%}$ [kg·m ⁻³]	$P_{\text{max, mean}}$ [kN]	$P_{\text{max, k}}$ [kN]	Note No.
KP	KP 7	16.9	428.2	18.34	12.5	1
	KP 8	23.0	411.7	20.62	12.9	1
KPL	KPL 5	15.2	421.2	8.09	6.8	2
	KPL 6	12.9	422.8	9.49	6.2	2
	KPL 11	14.9	452.1	18.43	13.0	2
	KPL 21	15.6	472.7	21.23	17.1	2
KPK	KPK 4	14.3	416.8	15.85	12.7	2
	KPK 11	17.7	460.8	13.00	10.4	2
	KPK 12	14.3	460.9	17.32	13.5	2
	KPK 13	13.4	398.2	22.13	16.7	2
	KPK 21	12.3	468.5	13.53	10.8	2
	KPK 22	11.3	407.5	13.14	10.6	2
	KPK 23	11.3	460.9	12.79	9.0	2
	KPK 31	13.6	436.6	12.44	9.3	3
	KPK 32	12.2	424.8	12.62	10.5	3
	KPK 33	15.4	415.4	13.66	10.5	3
KLR	KLR 1	13.8	422.2	5.71	4.2	2
	KLR 2	15.5	429.7	10.95	7.9	2
	KLR 3	15.5	407.1	10.59	8.3	2
	KLR 4	15.7	468.1	6.35	5.1	2
	KLR 5	15.3	410.8	15.41	13.6	2
	KLR 6	16.0	497.6	9.98	7.2	2
KR	KR 1	13.4	438.8	6.74	5.1	2
	KR 2	14.6	396.2	12.29	6.7	2
	KR 3	14.7	408.7	7.53	6.3	2
WBC	WBC 80	14.7	423.2	42.06	34.9	2
	WBC 92	16.8	424.0	42.79	36.1	2
	WBC 100	14.9	423.6	42.71	26.8	2
	WBC 120	16.7	414.3	47.22	29.2	2

Type group	Type	Timber Moisture [%]	Density $\rho_{\text{mean, 12\%}}$ [kg·m ⁻³]	$P_{\text{max, mean}}$ [kN]	$P_{\text{max, k}}$ [kN]	Note No.
	WBC 137	14.9	428.4	52.44	42.1	2
WBU	WBU 45 R45-105	15.6	385.4	16.96	11.0	2
	WBU 45 R50-105	14.5	387.0	16.43	12.4	2
	WBU 45 R60-120	14.9	423.8	21.47	16.5	2
KRD	KRD 5	16.1	453.8	9.65	6.1	2
	KRD 6	16.1	430.8	8.74	6.1	2
LU	LU 25 R80	14.7	436.5	9.07	6.1	2
	LU 25 R120	14.6	414.5	14.76	12.3	2

Notes:

1 Given forces are per one connector (one angle bracket), the test connections consisted of two connectors, forces for the complete connections are twice as high

2 One connector

3 The forces are given for the complete connection consisting of two connectors, hence force per one connector (one angle bracket) is half of the given value

Table 87 The characteristic load-carrying capacities of joints (loading)

Type group	Type	Timber Moisture [%]	Density $\rho_{\text{mean, 12\%}}$ [kg·m ⁻³]	$P_{\text{max, mean}}$ [kN]	$P_{\text{max, k}}$ [kN]	Note No.
ŁB	ŁB 1	12.0	400.1	13.41	9.9	1
	ŁB 2	12.0	400.1	15.27	10.4	1
	ŁB 4	12.0	400.1	12.73	9.4	1
NT	NT 25	-	-	25.26	15.7	2
	NT 40	-	-	37.14	32.8	2
	NT 60	-	-	67.62	59.8	2
KKB	KKB 1	12.0	400.0	81.14	57.6	3

Notes:

1 Given forces are for one connector, the test connections consisted of two connectors, hence the force for the complete connection is twice the given

2 One connector loaded in tension

3 Given forces are for the complete connection, the test connections consisted of two connectors, hence force for one connector is half of the given

Table 88 The characteristic load-carrying capacities of connectors (load)

Connector	Type of Load	Timber Moisture	Density ρ_{mean} 12% [kg*m ⁻³]	$P_{max,mean}$ (350 kg*m ⁻³) [kN]	$P_{max,k}$ (350 kg*m ⁻³) [kN]	Connectors per connection	Method of determination	Document No.	Note
KB 4	pressure	12.7	420	21.9	19.3	2	testing	KB4-01-0001/15	2)
KK 0	pressure	12	411	9.7	7.7	2	testing	KK0-01-0001/15	2)
KK 11	pull out	11.7	429	32.8	26.5	2	testing	KK11-01-0001/15	2)
KK 12	pull out	11.4	439	20.7	18.3	2	testing	KK12-01-0001/15	2)
KL 6	pressure	11.9	435	16.2	13.6	2	testing	KL6-01-0001/15	2)
KM 17	pressure	11.4	456	11.2	9.3	2	testing	KM17-01-0001/15	2)
KM 18	pressure	14.3	437	13.5	11.2	2	testing	KM18-01-0001/15	2)
KP 2	pressure	11	C24	24.3	21.9	2	testing	LCE-O-ML-01	2)
KP 9	pressure	12.2	440	21.6	18.2	2	testing	KP130-01-0001/15	2)
KR 4	pull out	11.4	461	17.4	14.9	2	testing	KR4-01-0001/15	2)
KR 5	pressure	11.5	450	17.4	14.7	2	testing	KR5-01-0001/15	2)
KR 6	pressure	11.7	429	7.7	6.7	2	testing	KR6-01-0001/15	2)
KR 7	pressure	11.3	414	3.5	3	2	testing	KR7-01-0001/15	2)
KRB 7	pressure	11.3	414	3.5	3	2	testing	KR7-01-0001/15	2)
KSB 1	pressure	-	C24	3.7	3.4	2	testing	LCE-O-ML-01	2)
KWB 1	pressure	13.8	439	5.7	5	2	testing	KWC1-01-0001/15	2)

Connector	Type of Load	Timber Moisture	Density ρ_{mean} 12% [kg*m ⁻³]	$P_{max,mean}$ (350 kg*m ⁻³) [kN]	$P_{max,k}$ (350 kg*m ⁻³) [kN]	Connectors per connection	Method of determination	Document No.	Note
KWC 1	pressure	13.8	439	5.7	5	2	testing	KWC1-01-0001/15	2)
WBZ 14	pressure	-	C24	-	9.3	1	calculation	LCE-O-WBZ-01	1)

Notes:

1) The forces are given for the complete connection consisting of one connector

2) The forces are given for the complete connection consisting of two connectors, hence force per one connector (one angle bracket) is half of the given value.

$P_{max,k}$ characteristic load-bearing capacity of connector

Table 89 The characteristic load-carrying capacities of joints (calculations)

Type of connector	Load	Bearing Capacity [kN]		Method of determination	Document No.
		Timber	Steel		
SDLZ 1	shear	3.6	-	calculation	KAO-O-SOD-13
SDKLR 1	oblique	3.3	-	calculation	KAO-O-SOD-12
SDKL 1	pull out	-	1.1	calculation	KAO-O-SOD-10
	pressure	3.3	-	calculation	KAO-O-SOD-11
SDSP 70 A	pressure	34.8	-	calculation	KAO-O-SOD-23
SDSP 70 B	pressure	108.6	-	calculation	KAO-O-SOD-24
SDP 90 A	pressure	39.6	-	calculation	KAO-O-SOD-15
SDP 90 B	pressure	180.6	-	calculation	KAO-O-SOD-17
SDP 100 A	pressure	39.6	-	calculation	KAO-O-SOD-15
SDP 100 B	pressure	220.5	-	calculation	KAO-O-SOD-17
SDP 120 A	pressure	39.6	-	calculation	KAO-O-SOD-15
SDP 120 B	pressure	312.9	-	calculation	KAO-O-SOD-17
SDSKW 2	pressure	3.3		testing	KAO-O-SOD-21
SDSKW 8	pressure	3.5		testing	KAO-O-SOD-22
SDSKP 1	pressure	17.8		testing	KAO-O-SOD-21
SDSKP 5	pressure	10.9		testing	KAO-O-SOD-21
SDSKM 7	pressure	5.8		testing	KAO-O-SOD-21
SDSWBZ 10	pressure	9.6	-	calculation	KAO-O-SOD-18
SDSWBZ 11	pressure	12.3	-	calculation	KAO-O-SOD-19
SDSWBZ 14	pressure	9.3	-	calculation	KAO-O-SOD-20
SDSWBZ 21	pressure	17.2		testing	KAO-O-SOD-21
SDSWBZ 26	pressure	17.2		testing	KAO-O-SOD-21
SDSWBZ 30	pressure	22.4		testing	KAO-O-SOD-21

Table 90 The characteristic load-carrying capacities of joints (calculations)

Type of connector	Characteristic bearing capacity [kN]	Document No.
	Timber	
PS 60	4.1	BPS-0001/13
PS 70	4.3	BPS-0002/13
PS 80	6.9	BPS-0003/13
PS 90	6.2	BPS-0004/13
PS 100	6.7	BPS-0005/13
PS 120	8.2	BPS-0006/13
PS 140	7.5	BPS-0007/13
KPS 1	16.3	KE1-0009/14
KPS 2	18.7	KE1-0010/14
KPS 3	12.6	KE1-0011/14
KPS 4	11.6	KE1-0012/14

Table 91 Overview of bearing capacities of connector type PS

Type of connector	Bearing capacity $N_{Rd,V}$ [kN] (calculation)		Bearing capacity $N_{Rd,H1}$ [kN] (calculation)		Bearing capacity $N_{Rd,H2}$ [kN] (testing)
	Bearing capacity of timber	Bearing capacity of steel	Bearing capacity of timber	Bearing capacity of steel	
PS 60	61.7	51.7	12.2	6.9	4.7
PS 70	86.6	51.7	12.2	6.9	4.4
PS 80	99.2	57.3	12.2	9.6	7.7
PS 90	111.8	57.3	12.2	9.6	6.8
PS 100	124.4	57.3	12.2	9.6	7
PS 120	149.6	57.3	12.2	9.6	9.1
PS 140	174.8	57.3	12.2	9.6	7.8

$N_{Rd,V}$ - Vertical load force, $N_{Rd,H1}$ - Horizontal load force, $N_{Rd,H2}$ - Vertical load force parallel to the side of base

Document No.: KAO-L-PS-01

For combinations of loads ($F_{Ed,V}$, $F_{Ed,H1}$, $F_{Ed,H2}$) a linear summation of the utilization ratios may be used. This method may be applied by using a following criteria:

$$\frac{F_{Ed,V}}{N_{Rd,V}} + \frac{F_{Ed,H1}}{N_{Rd,H1}} + \frac{F_{Ed,H2}}{N_{Rd,H2}} \leq 1$$

Table 92 The characteristic load-carrying capacities of connectors (calculations)

Connector	Beam dimensions [mm]	Pressure $F_{Ed,V}$		Shear $F_{Ed,H1}$		Shear $F_{Ed,H2}$		Document No.
		Timber $N_{Rk,V,w}$ [kN]	Steel $N_{Rd,V,s}$ [kN]	Timber $N_{Rk,H1,w}$ [kN]	Steel $N_{Rd,H1,s}$ [kN]	Timber $N_{Rk,H2,w}$ [kN]	Steel $N_{Rd,H2,s}$ [kN]	
PSL 50	50x65	40.8	51.7	2.9	2.4	5.6	1.3	KAO-L-PSL-01
PSL 70	70x70	60.5	51.7	2.9	2.4	8.2	1.3	
PSL 90	90x90	77.3	51.7	2.9	2.4	11.2	1.3	
PSL 100	100x100	85.7	51.7	2.9	2.4	11.2	1.3	
PSP 70	70x70	13.4	21.6	11.4	11.2	11.4	11.2	KAO-L-PSP-01
PSP 90	90x90	13.4	21.6	14.6	15.3	14.6	15.3	
PSP 100	100x100	14.1	28.8	16.3	23.2	16.3	23.2	
PSP 120	120x120	14.1	28.8	19.5	28.6	19.5	28.6	
PSPO 80	ø80	13.4	21.6	9.8	25.2	9.8	25.2	KAO-L-PSPO-01
PSPO 100	ø100	13.4	21.6	15.2	30.8	15.2	30.8	
PSR 80	90x90	115.3	49.3	-	-	-	-	KAO-L-PSR-01
PSR 110	120x120	235	49.3	-	-	-	-	
PSRT	60x120	75.6	57.3	13	0.5	-	-	KAO-L-PSRT-01
	70x120	88.2	57.3	15.2	0.5	-	-	
	80x120	100.8	57.3	17.4	0.5	-	-	
	90x120	113.4	57.3	19.5	0.5	-	-	
PSRU	60x120	75.6	57.3	13	0.5	-	-	KAO-L-PSRU-01
	70x120	88.2	57.3	15.2	0.5	-	-	
	80x120	100.8	57.3	17.4	0.5	-	-	
	90x120	113.4	57.3	19.5	0.5	-	-	
PST 70	70x80	31.9	117.5	2.5	3.7	8.8	7.1	KAO-L-PST-01
PST 90	90x90	31.9	117.5	2.5	3.7	12	7.1	
PST 100	100x100	31.9	117.5	2.5	3.7	13	7.1	
PST 120	120x120	31.9	117.5	2.5	3.7	13	7.1	

Connector	Beam dimensions [mm]	Pressure $F_{Ed,V}$		Shear $F_{Ed,H1}$		Shear $F_{Ed,H2}$		Document No.
		Timber $N_{Rk,V,w}$ [kN]	Steel $N_{Rd,V,s}$ [kN]	Timber $N_{Rk,H1,w}$ [kN]	Steel $N_{Rd,H1,s}$ [kN]	Timber $N_{Rk,H2,w}$ [kN]	Steel $N_{Rd,H2,s}$ [kN]	
PST 140	140x140	31.9	117.5	2.5	3.7	13	7.1	
PS 84 L	160x100	29.3	57.3	5.3	2.2	12.2	1.8	KAO-L-PS84-01

Table 93 The characteristic load-carrying capacities of connectors

Connector	Type of Load	Timber Moisture	Density	$P_{max,mean}$	$P_{max,k}$	Connectors per connection	Method of determination	Note
			$\rho_{mean, 12\%}$	(350 kg*m ³)	(350 kg*m ³)			
		[%]	[kg*m ³]	[kN]	[kN]			
KM 16	pressure	11.7	441	11.1	8.5	2	testing	2)
KM 16 (3 mm)	pressure	-	C24	11.1	8.5	2	calculation	2)
KM 8 (2.5 mm)	pressure	-	C24	7.33	6.68	2	testing	2)
KM 19	pressure	11.9	429	20.5	15.4	2	testing	2)
KM 3 (2.5 mm)	pressure	-	C24	4.05	3.83	2	testing	2)
KL 0	pressure	12.7	438	8.6	7.4	2	testing	2)
KL 5 (3 mm)	pressure	-	C24	24.3	21.9	2	testing	2)
WB 39	pressure	-	C24	-	13.2	1	calculation	1)
WB 40	pressure	-	C24	-	6.6	1	calculation	1)
WB 41	pressure	-	C24	-	7.4	1	calculation	1)
WB 42	pressure	-	C24	-	7.4	1	calculation	1)
WB 43	pressure	-	C24	-	8.4	1	calculation	1)
WB 44	pressure	-	C24	-	8.4	1	calculation	1)
WB 45	pressure	-	C24	-	8.4	1	calculation	1)
WB 46	pressure	-	C24	-	8.4	1	calculation	1)
WB 47	pressure	-	C24	-	9.7	1	calculation	1)
WB 48	pressure	-	C24	-	9.6	1	calculation	1)
WB 49	pressure	-	C24	-	9.4	1	calculation	1)

Connector	Type of Load	Timber Moisture	Density	$P_{\max, \text{mean}}$	$P_{\max, k}$	Connectors per connection	Method of determination	Note
			$\rho_{\text{mean}, 12\%}$	(350 kg*m ³)	(350 kg*m ³)			
		[%]	[kg*m ³]	[kN]	[kN]			
WB 50	pressure	-	C24	-	11.8	1	calculation	1)
WB 51	pressure	-	C24	-	11.8	1	calculation	1)
WB 52	pressure	-	C24	-	9.3	1	calculation	1)
WB 53	pressure	-	C24	-	9.3	1	calculation	1)
WB 54	pressure	-	C24	-	12.4	1	calculation	1)
WB 55	pressure	-	C24	-	12.6	1	calculation	1)
WB 56	pressure	-	C24	-	12.6	1	calculation	1)
WB 57	pressure	-	C24	-	9.1	1	calculation	1)
WB 58	pressure	-	C24	-	17.3	1	calculation	1)
WB 59	pressure	-	C24	-	11.2	1	calculation	1)
WB 60	pressure	-	C24	-	14.2	1	calculation	1)
WB 61	pressure	-	C24	-	18.4	1	calculation	1)
WB 62	pressure	-	C24	-	22.9	1	calculation	1)
WB 63	pressure	-	C24	-	12.9	1	calculation	1)
WBZ 38	pressure	-	C24	-	16.2	1	calculation	1)
WBZ 49	pressure	-	C24	-	4.8	1	calculation	1)
WBZ 52	pressure	-	C24	-	4.8	1	calculation	1)
WBZ 54	pressure	-	C24	-	5.8	1	calculation	1)
PSR 80 M24	pressure	-	C24	-	49.3	1	calculation	1)
PSR 100 M24	pressure	-	C24	-	49.3	1	calculation	1)
PSR 130 M24	pressure	-	C24	-	49.3	1	calculation	1)
PSR 80 M20	pressure	-	C24	-	40.8	1	calculation	1)
PSR 100 M20	pressure	-	C24	-	40.8	1	calculation	1)
PSR 130 M20	pressure	-	C24	-	40.8	1	calculation	1)
PSRP 80 M20	pressure	-	C24	-	40.8	1	calculation	1)

Connector	Type of Load	Timber Moisture	Density	$P_{\max, \text{mean}}$	$P_{\max, k}$	Connectors per connection	Method of determination	Note
			$\rho_{\text{mean}, 12\%}$	(350 kg*m ³)	(350 kg*m ³)			
		[%]	[kg*m ³]	[kN]	[kN]			
PSRP 100 M20	pressure	-	C24	-	40.8	1	calculation	1)
PSRP 130 M20	pressure	-	C24	-	40.8	1	calculation	1)
PPSR 80	pressure	-	C24	-	52.6	1	calculation	1)
PPSR 100	pressure	-	C24	-	52.6	1	calculation	1)
PPSR 130	pressure	-	C24	-	52.6	1	calculation	1)
PPS 80	pressure	-	C24	-	57.3	1	calculation	1)
PPS 100	pressure	-	C24	-	57.3	1	calculation	1)
PPS 130	pressure	-	C24	-	57.3	1	calculation	1)
PR 100 100-150	pressure	-	C24	-	40.8	1	calculation	1)
PR 100 130-150	pressure	-	C24	-	40.8	1	calculation	1)
PR 130 130-150	pressure	-	C24	-	40.8	1	calculation	1)
PSK 70	pressure	-	C25	-	4.9	1	calculation	1)
SDPSK 70	pressure	-	C26	-	4.9	1	calculation	1)

THREE-DIMENSIONAL NAILING PLATES

NAILING PATTERNS

ANNEX 4
ETA 24/0873

It is always necessary to put nails in the black marked holes. This is the only one proper pattern. Too many or too long nails can weaken the wood, when are quite close to the edge (rule is stated below).

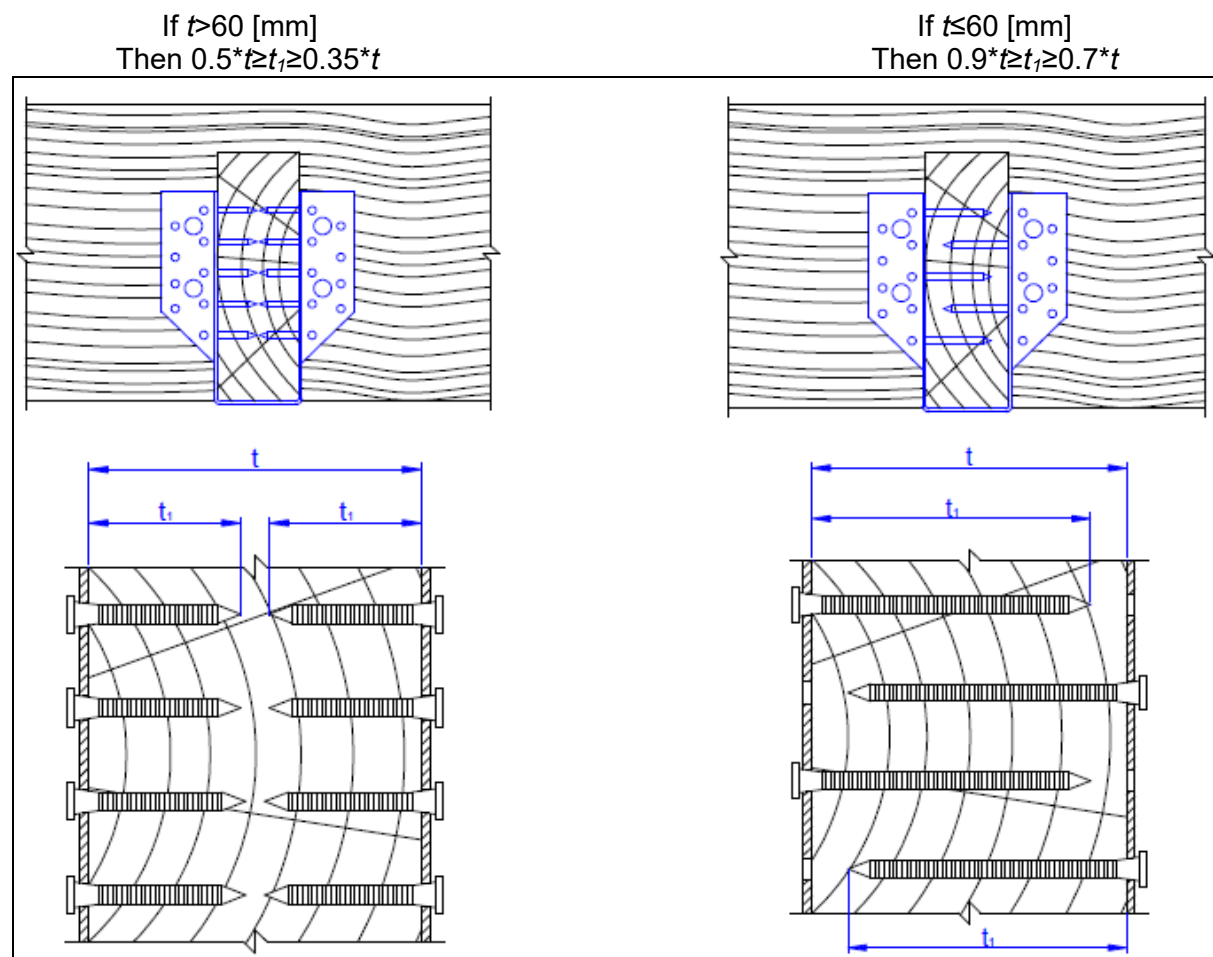


Figure 150 Rule for placement nails

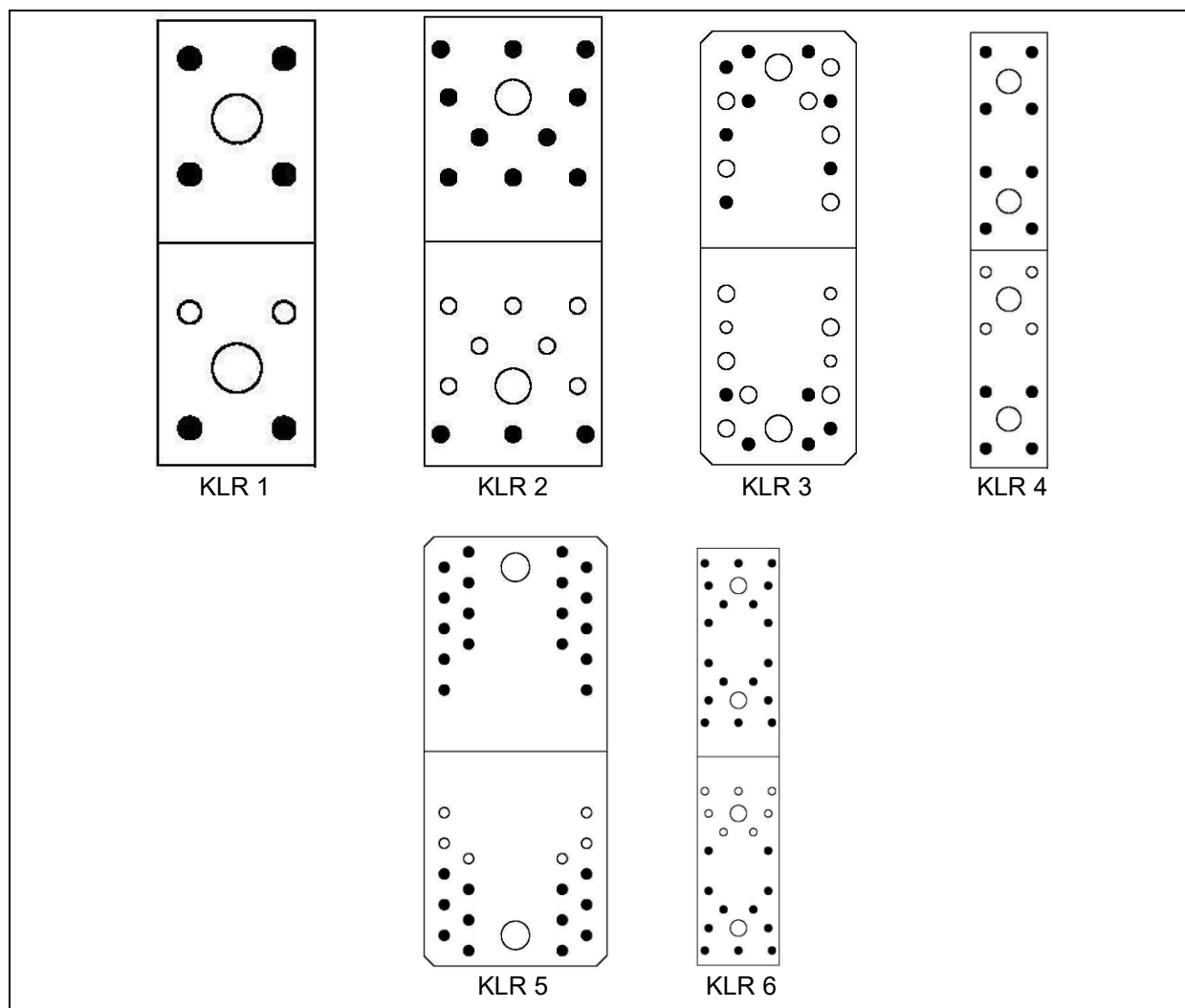


Figure 151 Type KLR

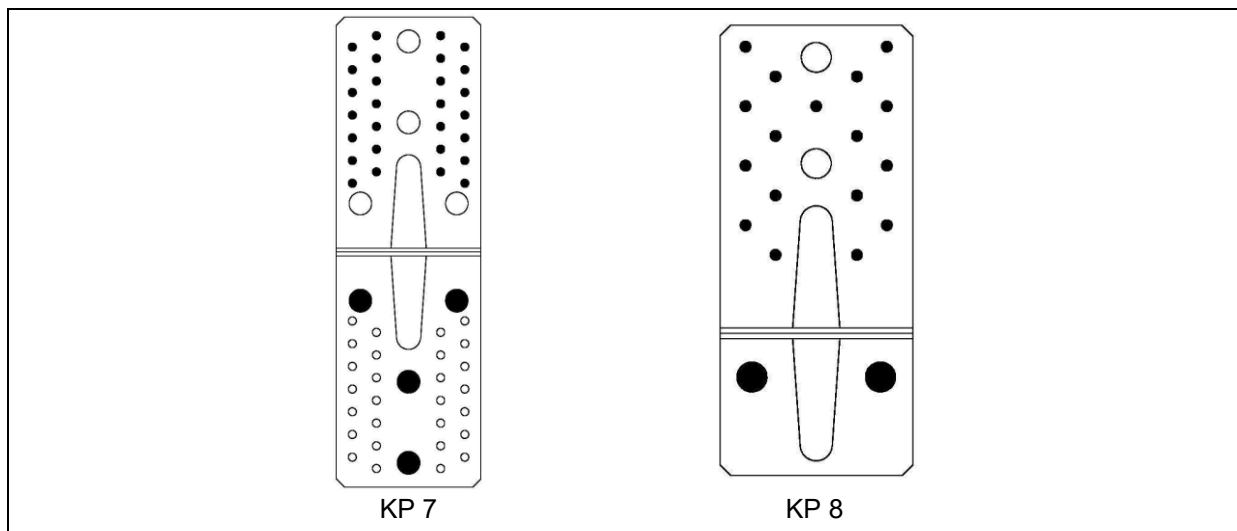


Figure 152 Type KP

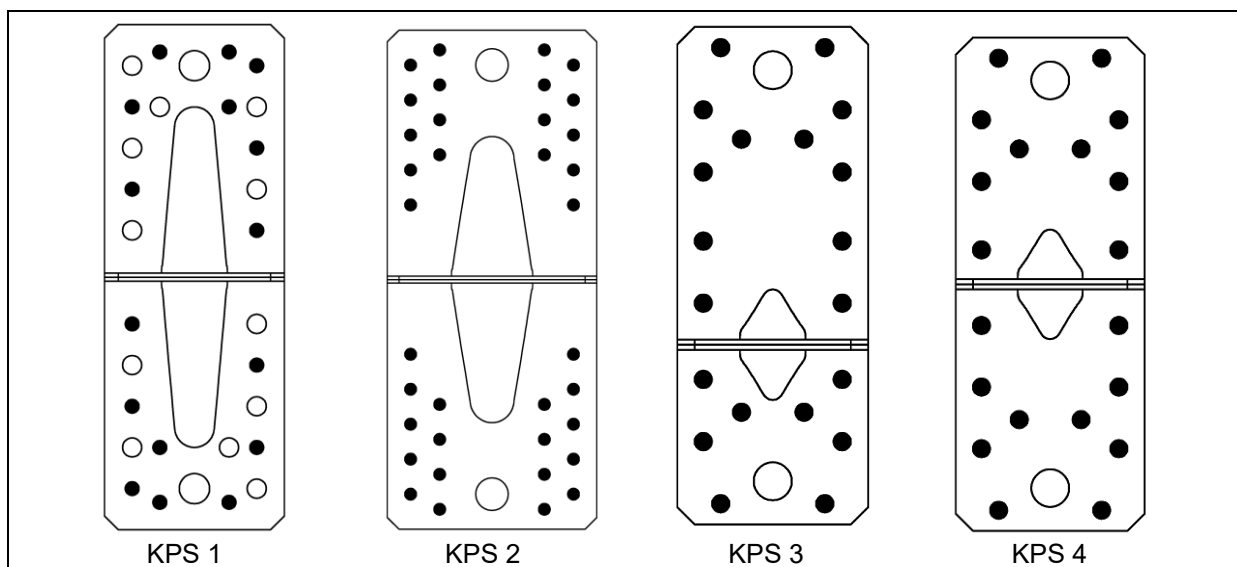


Figure 153 Type KPS

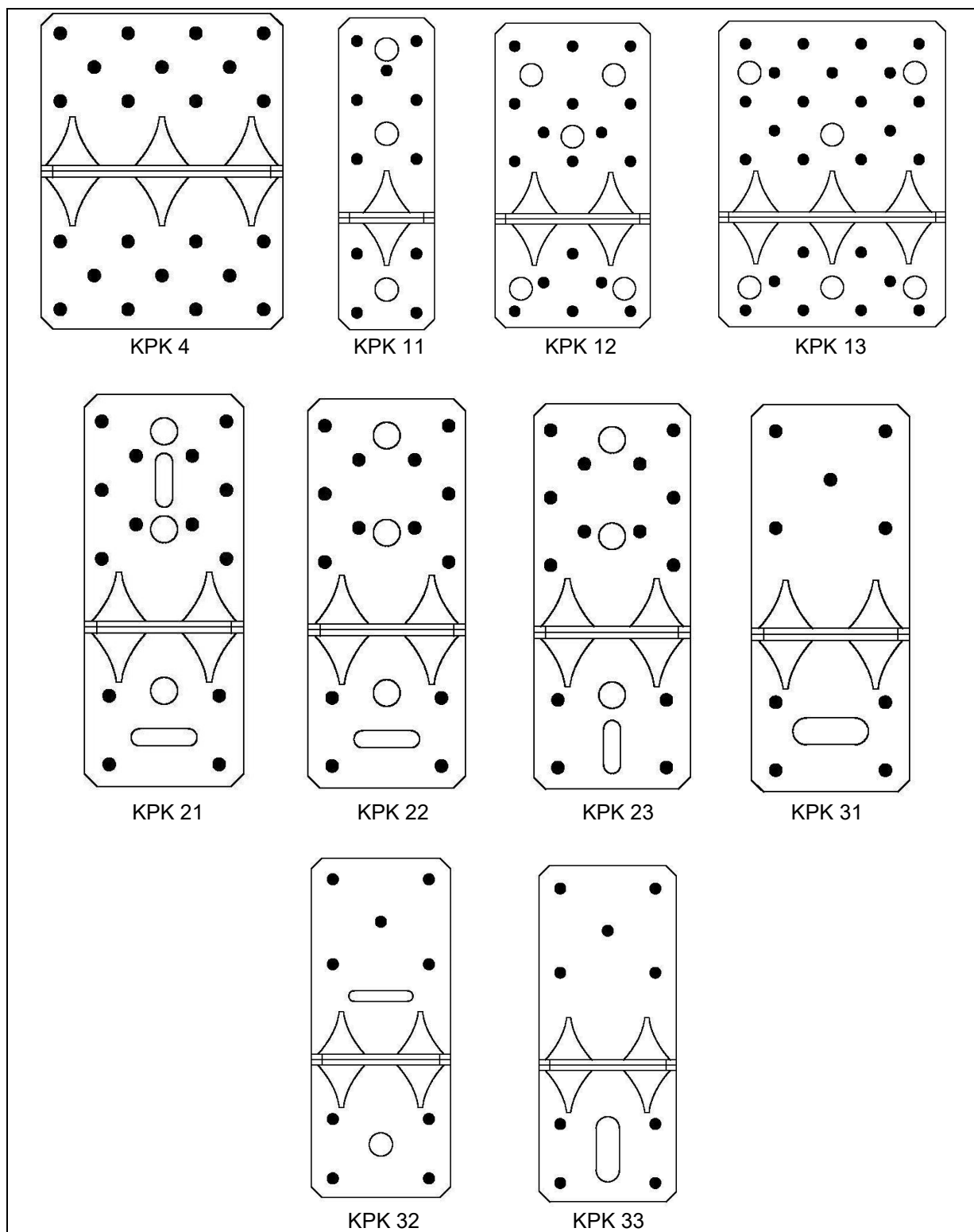


Figure 154 Type KPK

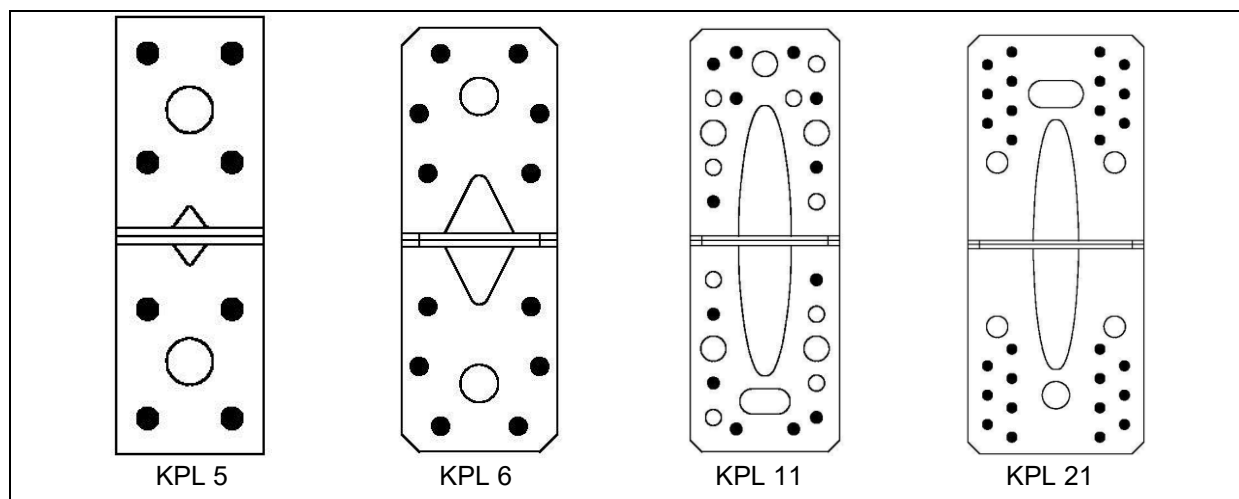


Figure 155 Type KPL

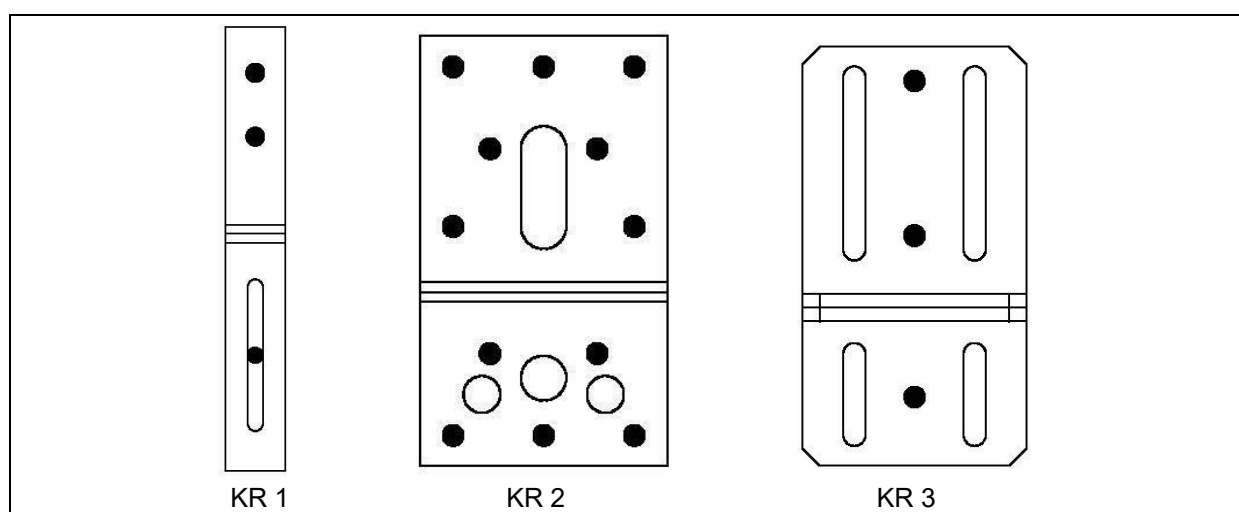


Figure 156 Type KR

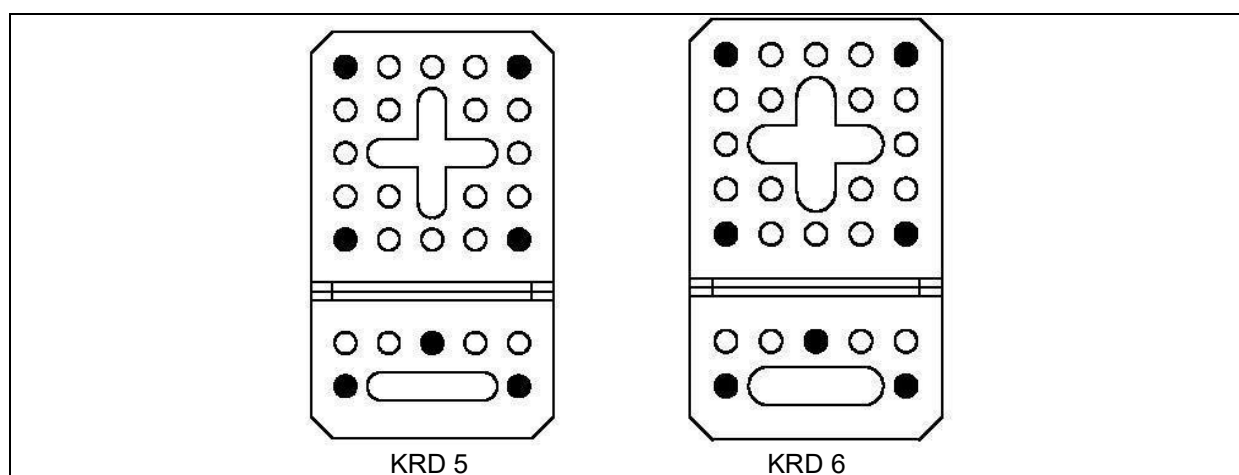


Figure 157 Type KRD

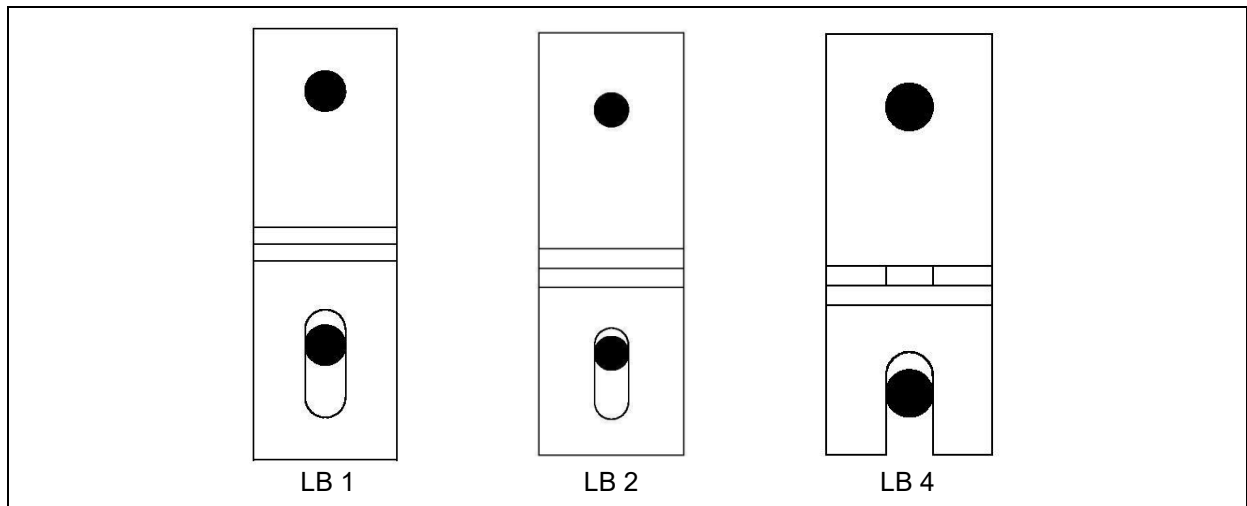


Figure 158 Type LB

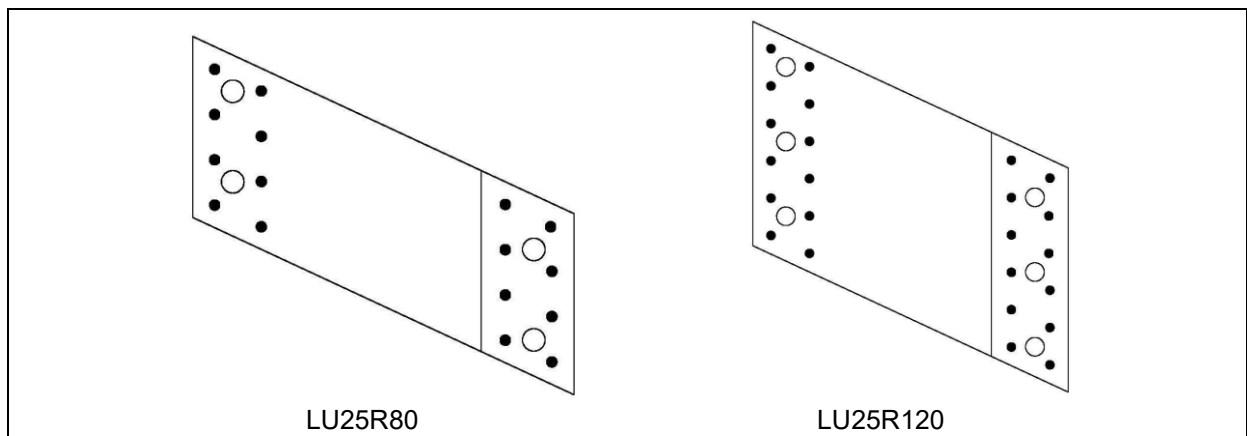


Figure 159 Type LU

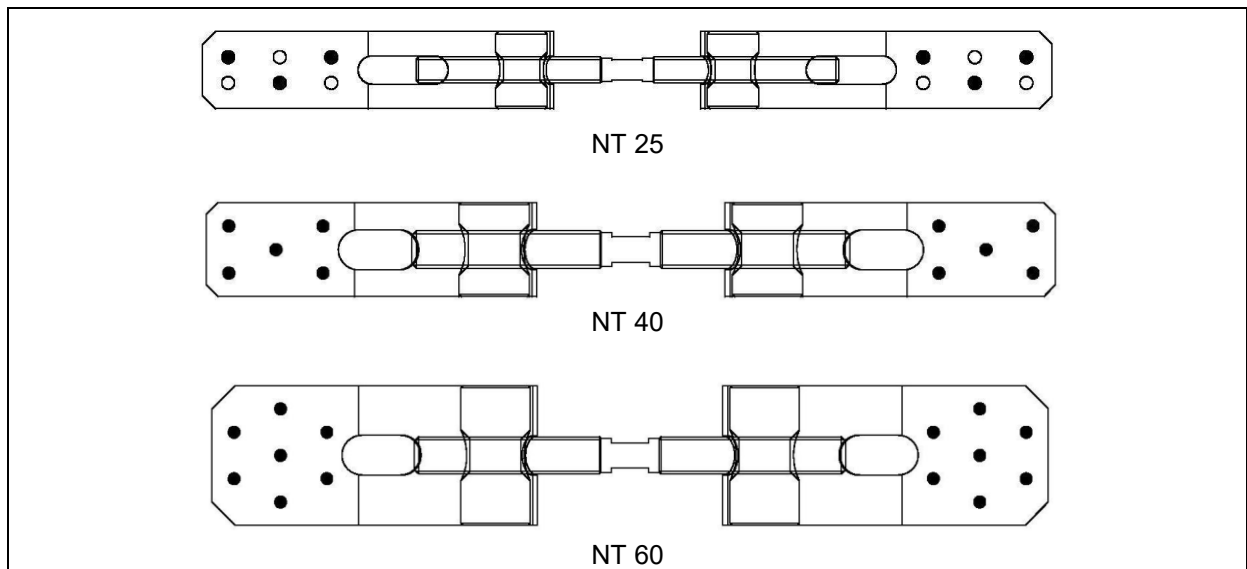


Figure 160 Type NT

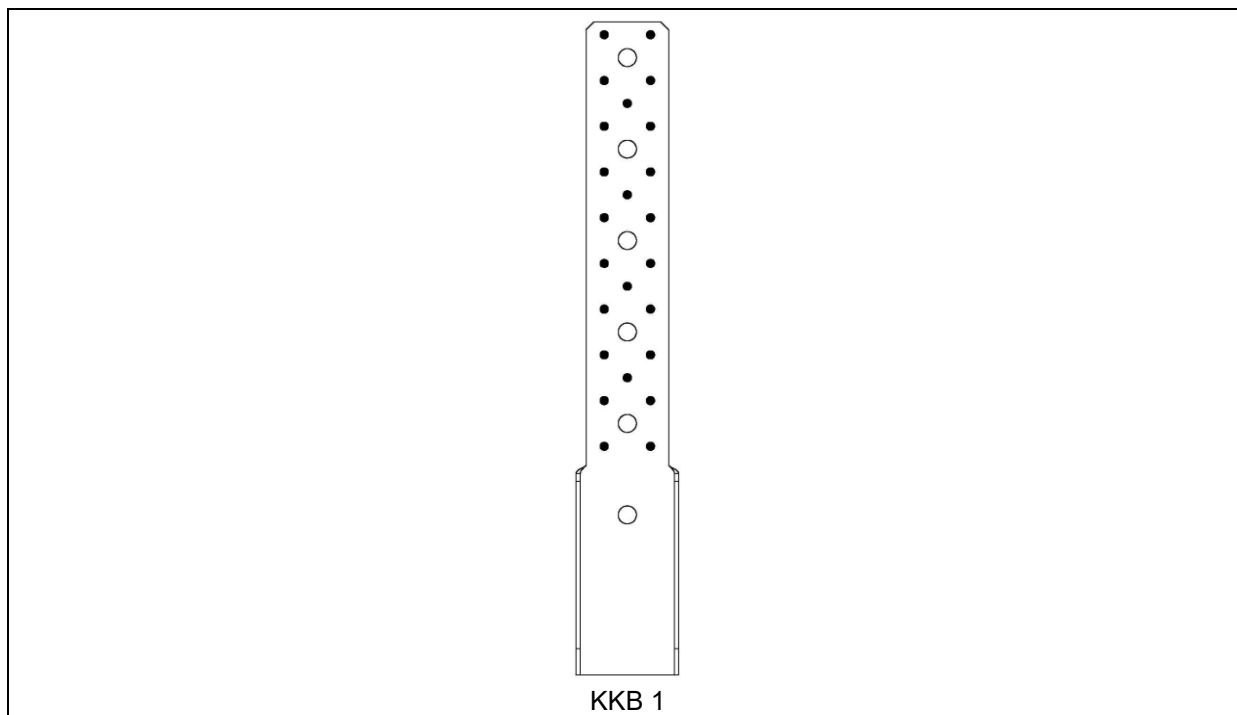


Figure 161 Type KKB

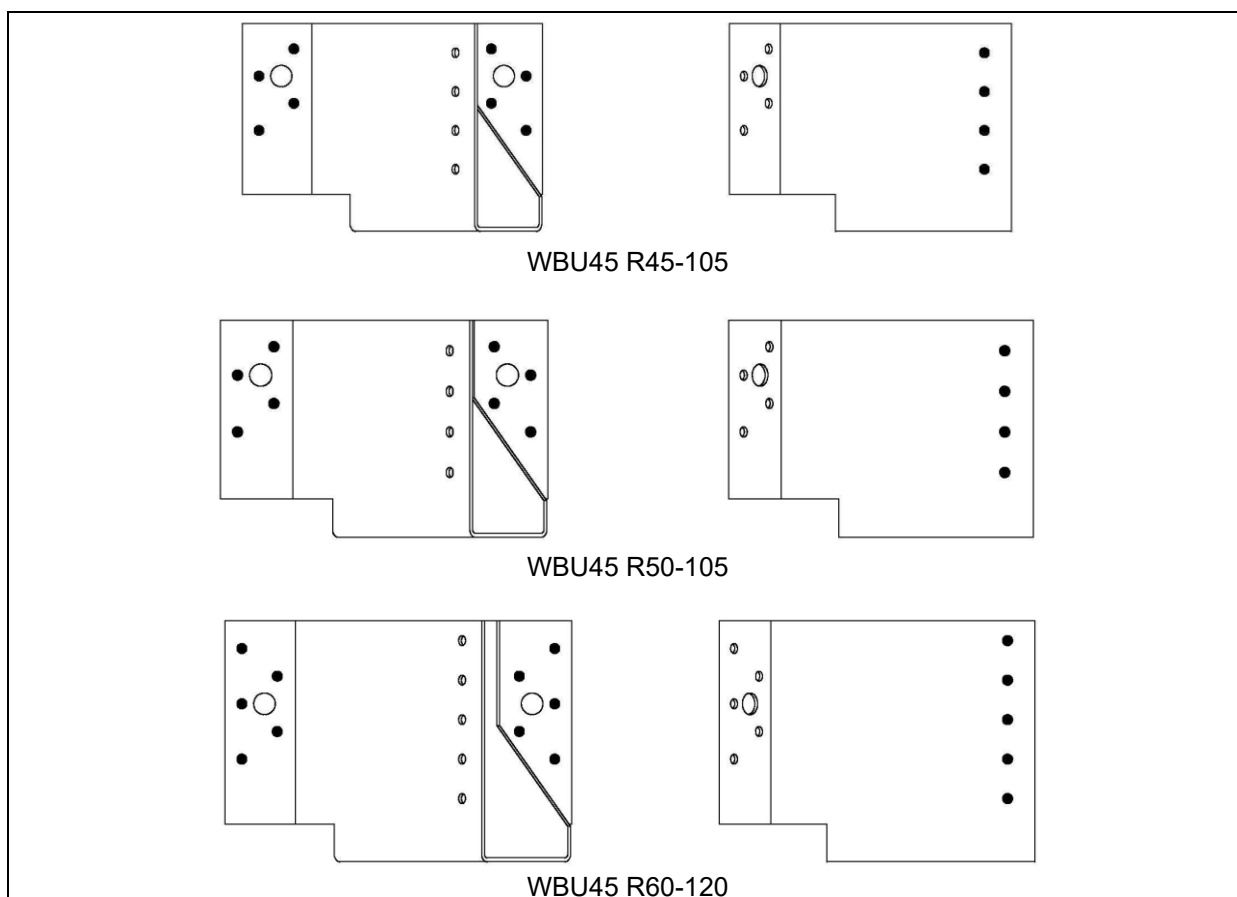


Figure 162 Type WBU

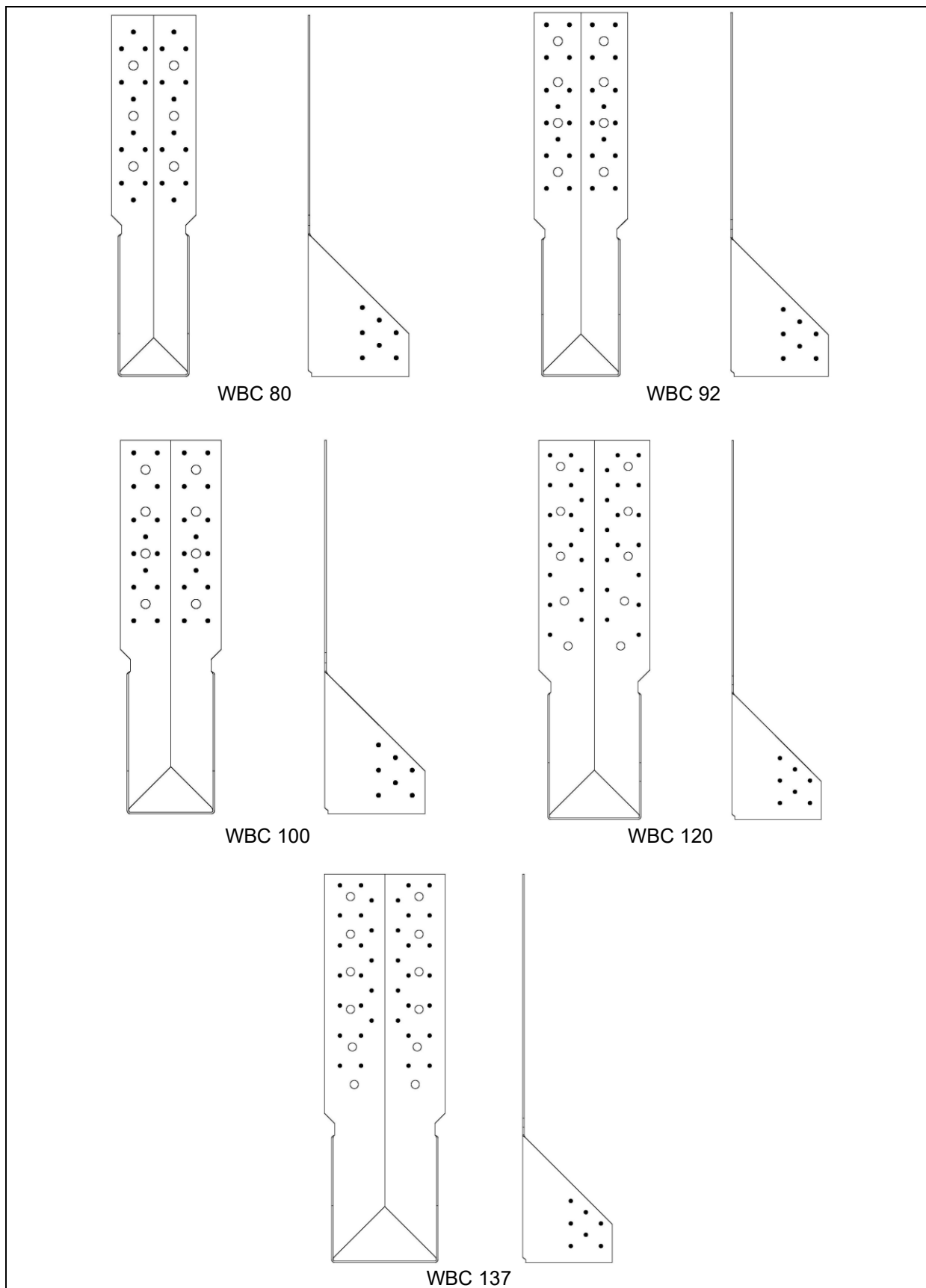


Figure 163 Type WBC

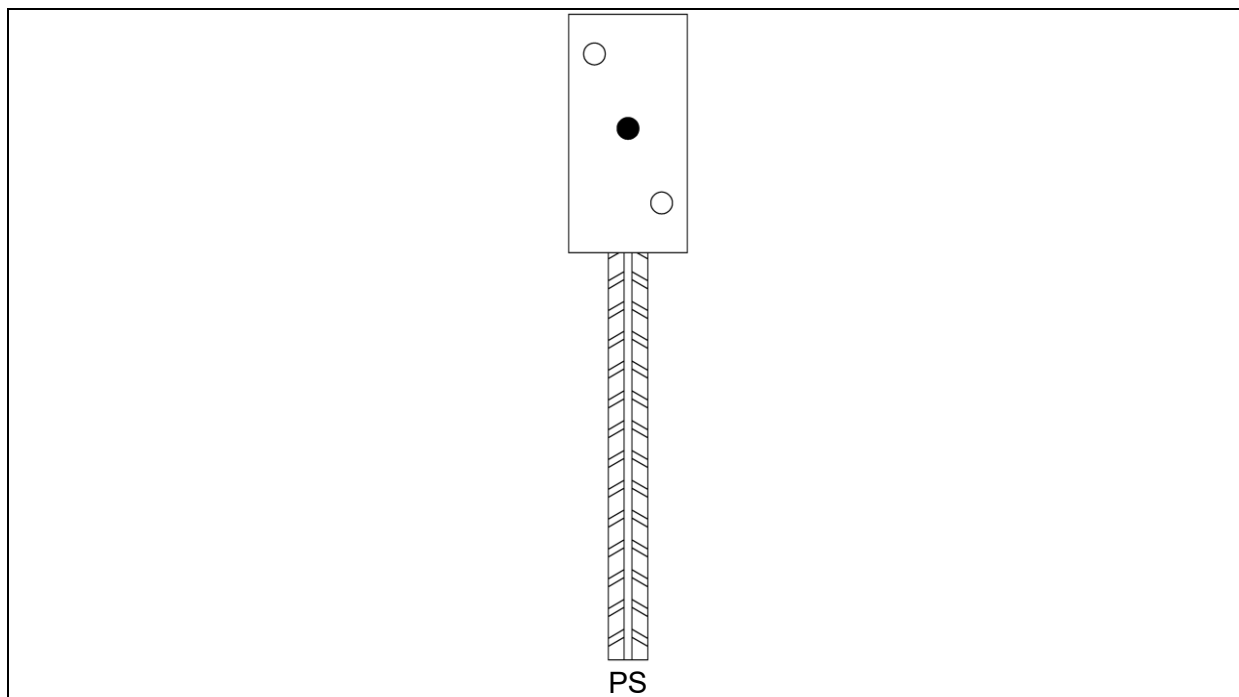
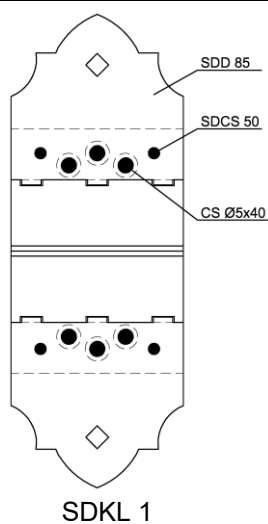
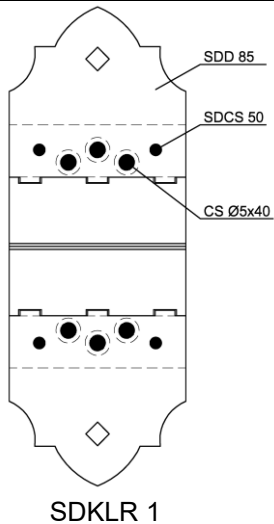


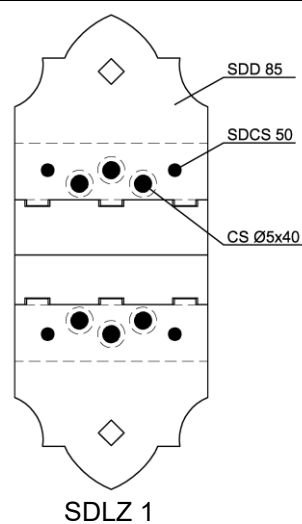
Figure 164 Type PS



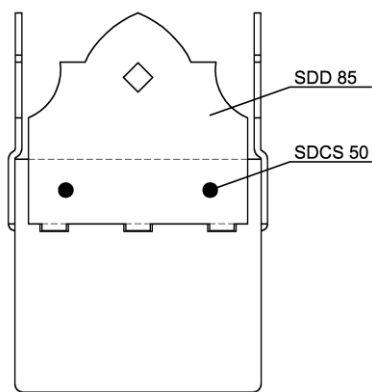
SDKL 1



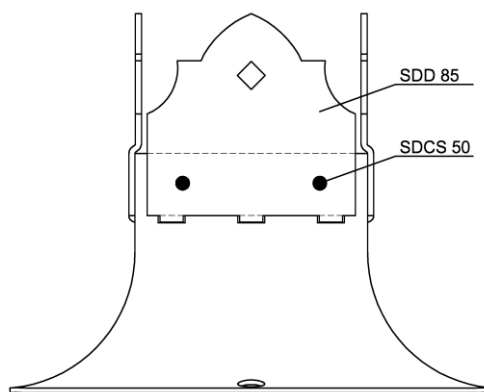
SDKLR 1



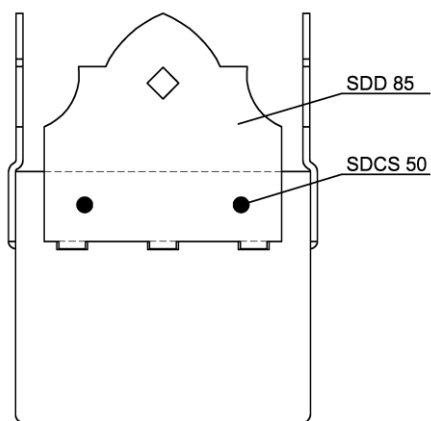
SDLZ 1



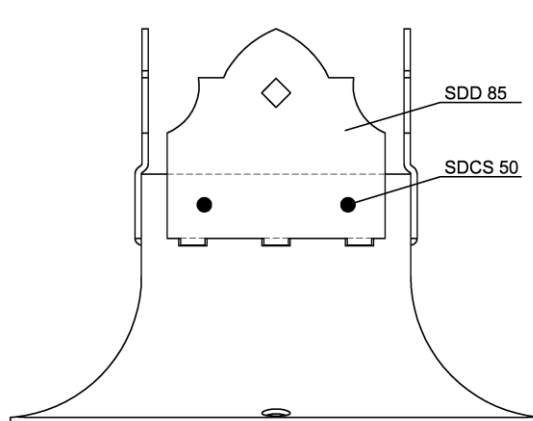
SDP 90 A



SDP 90 B



SDP 100 A



SDP 100 B

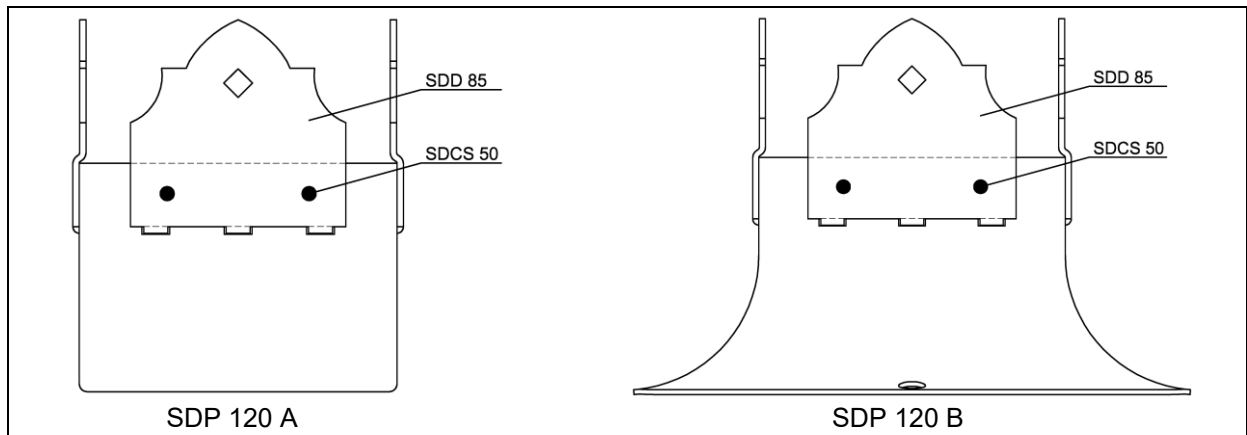
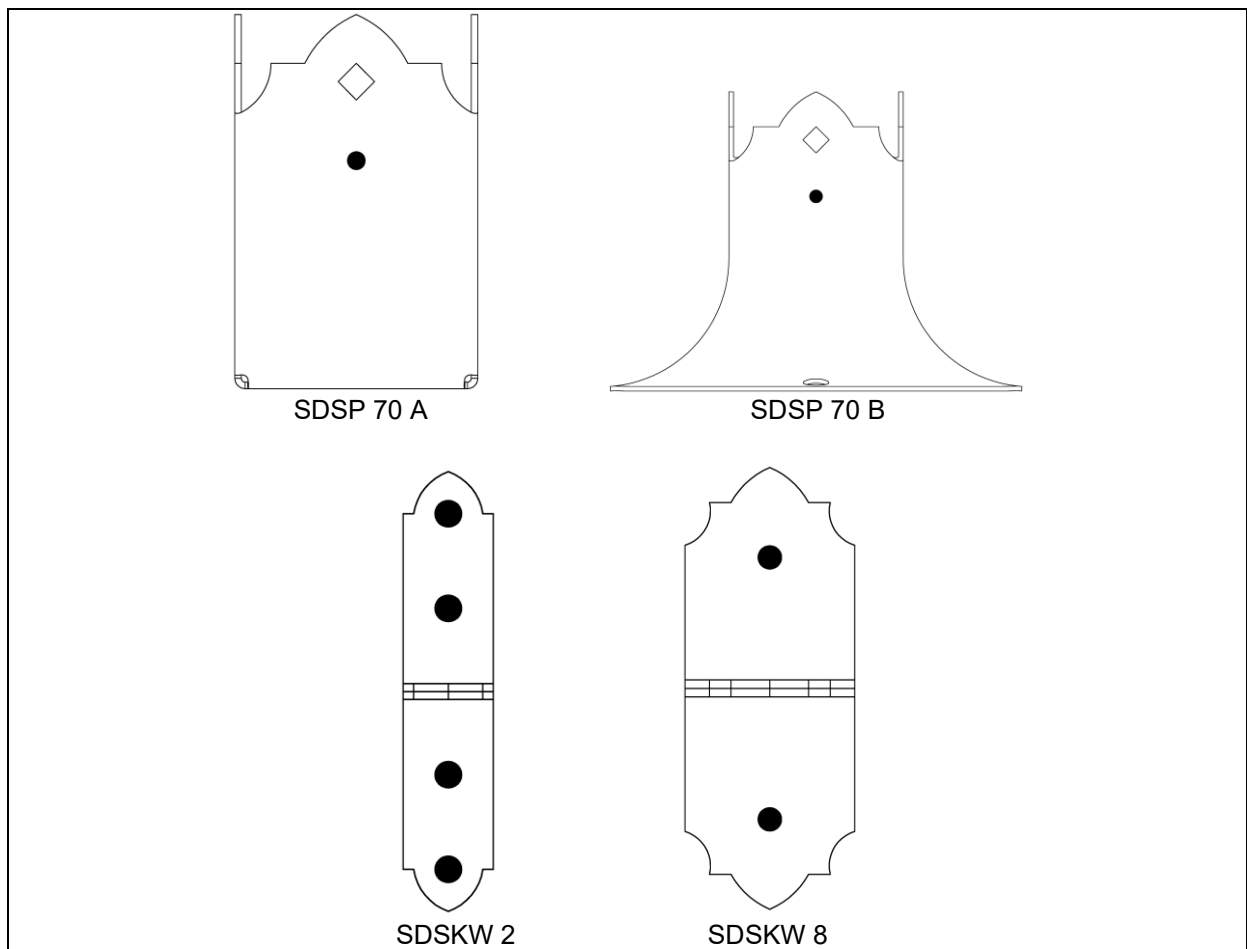
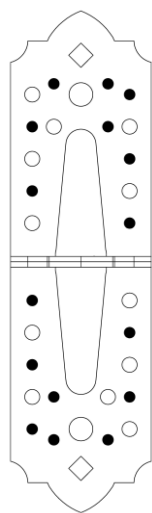
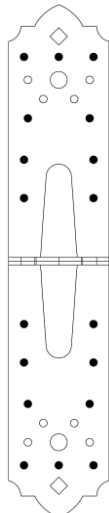


Figure 165 Type SD

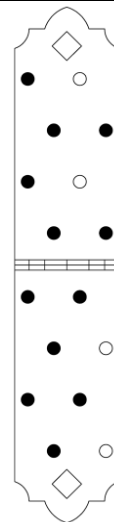




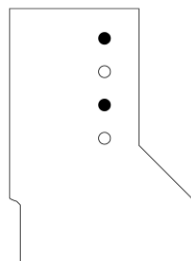
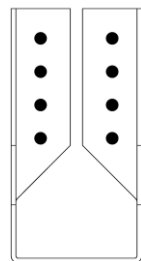
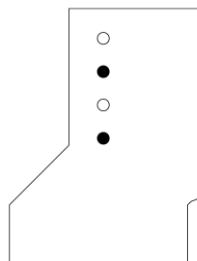
SDSKP 1



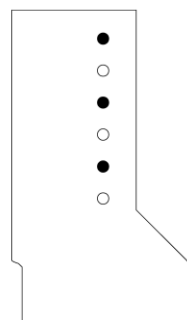
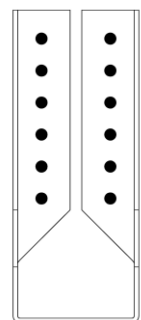
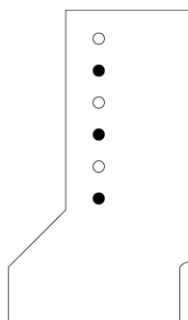
SDSKP 5



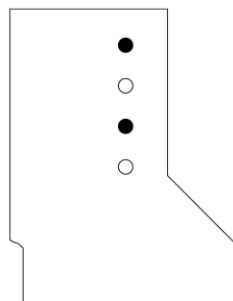
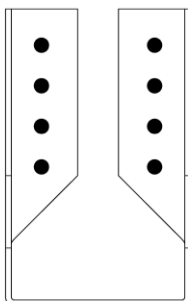
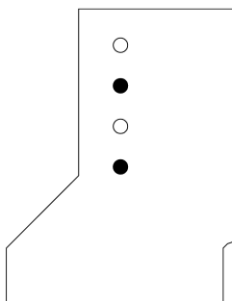
SDSKM 7



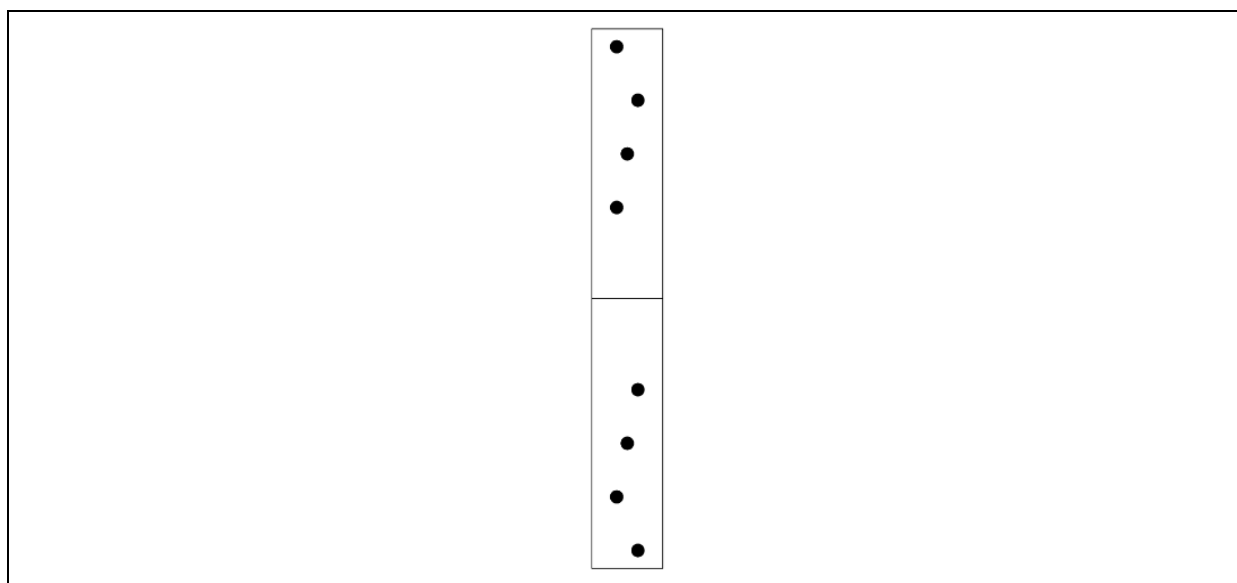
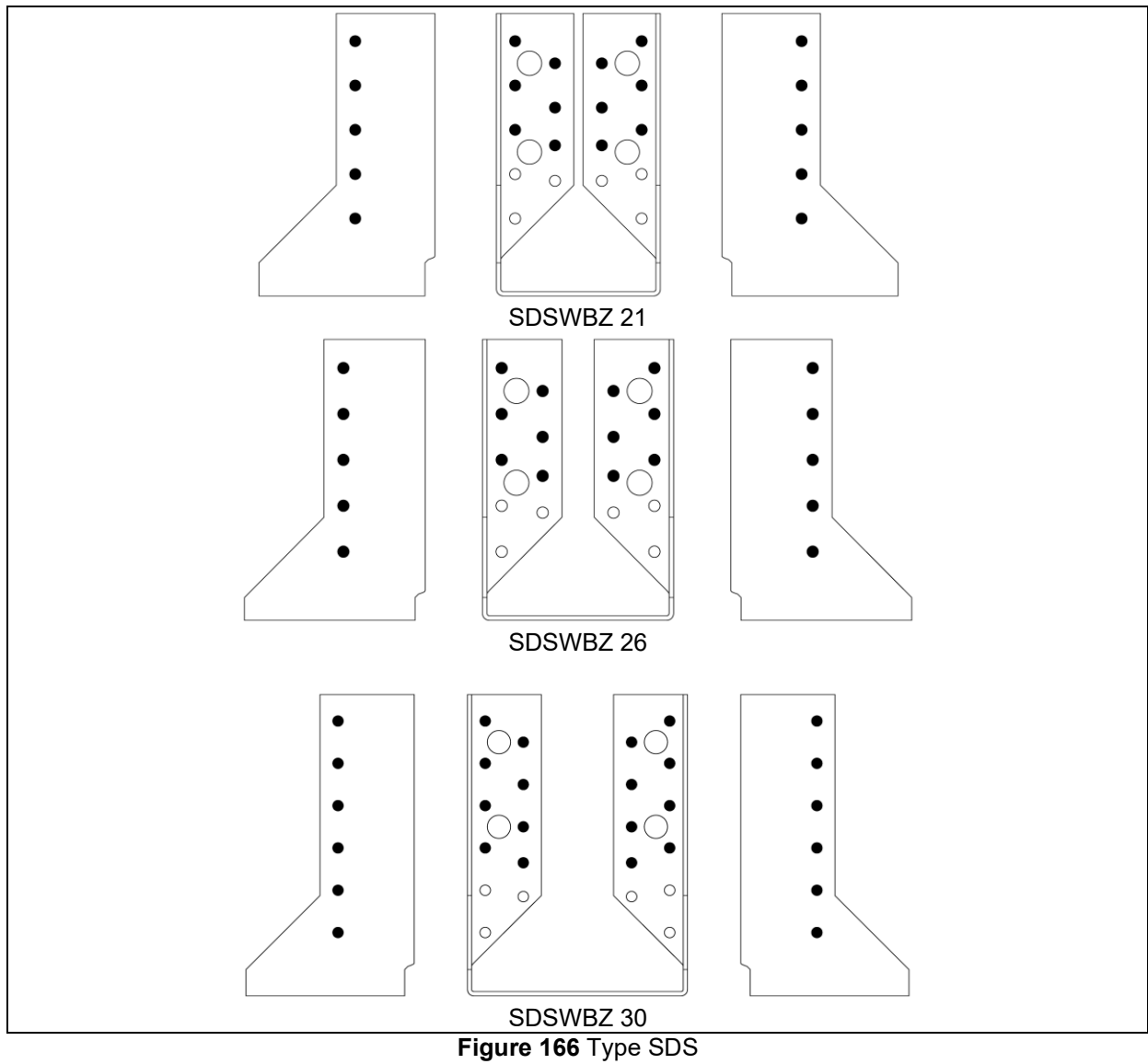
SDSWBZ 10

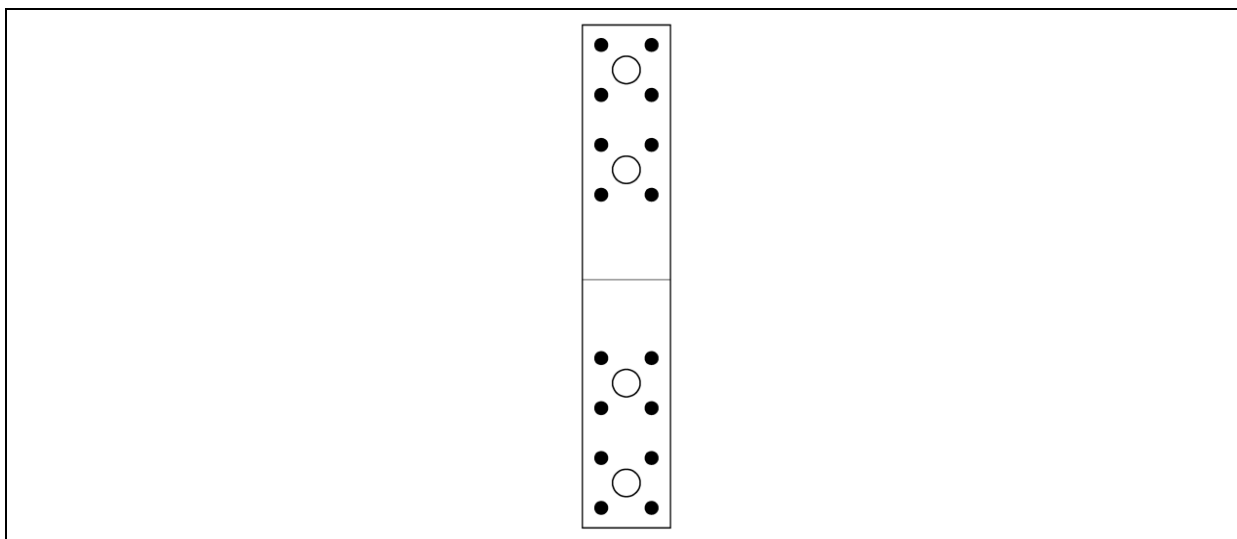
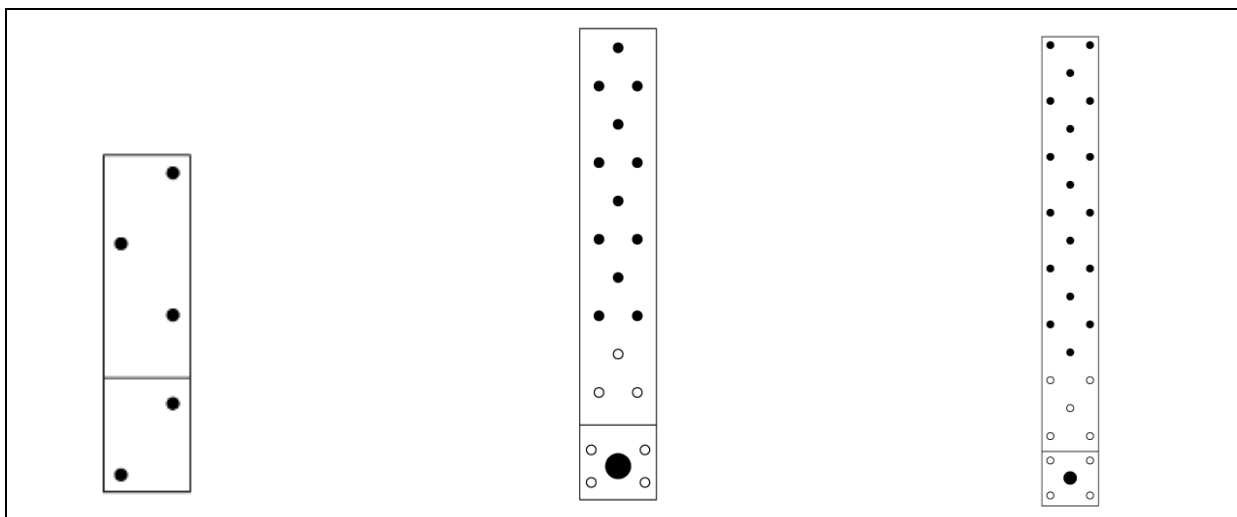


SDSWBZ 11



SDSWBZ 14





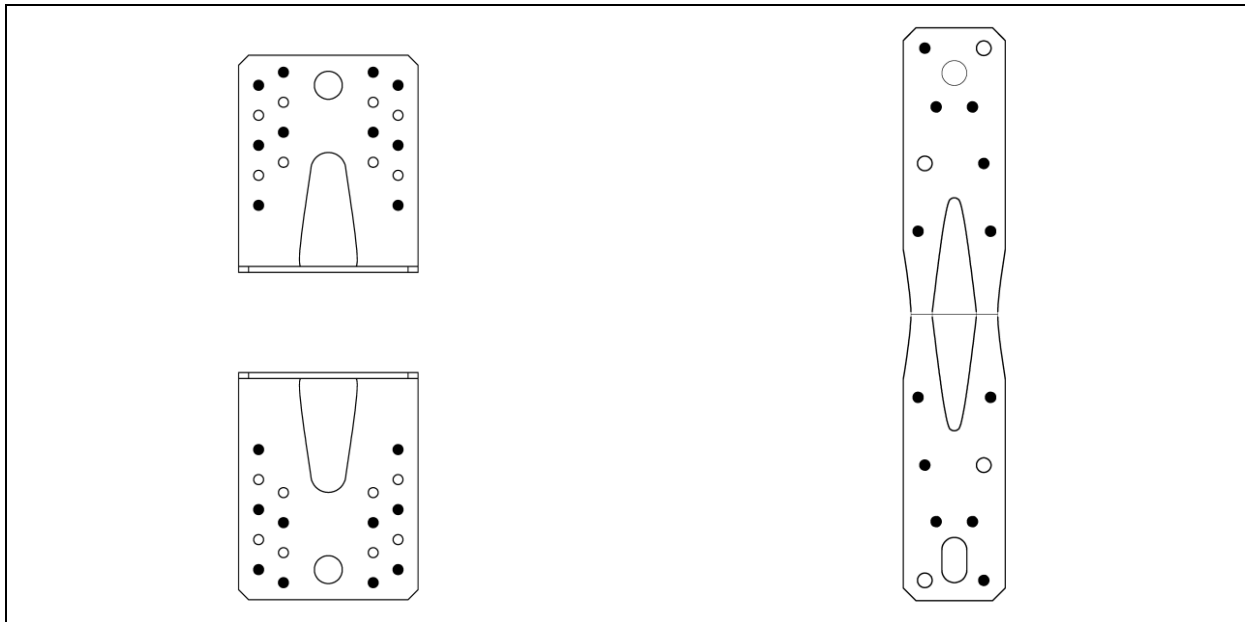


Figure 174 Type KP 2

Figure 175 Type KP 9

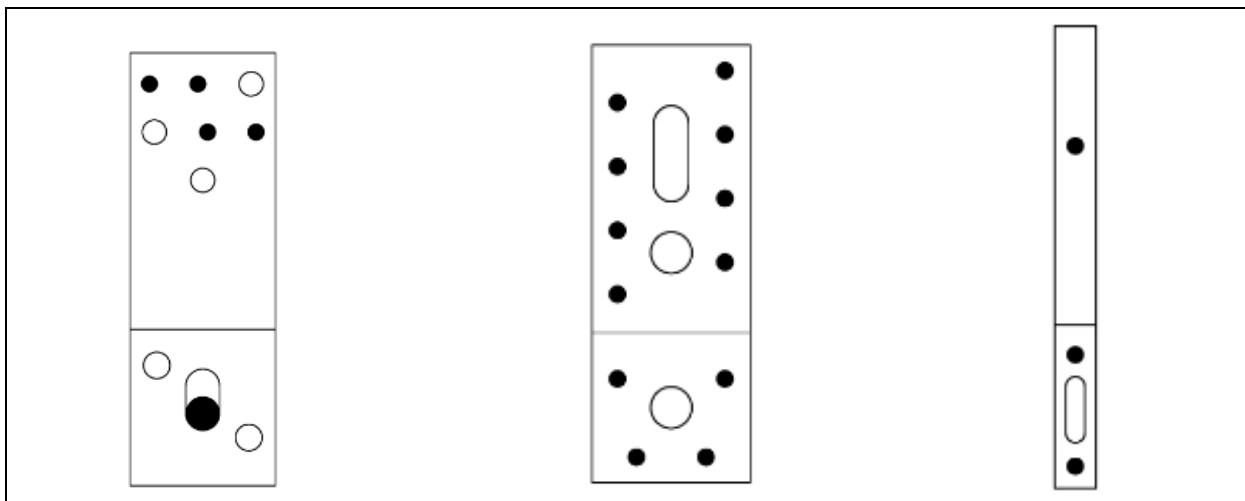


Figure 176 Type KR 4

Figure 177 Type KR 5

Figure 178 Type KR 6

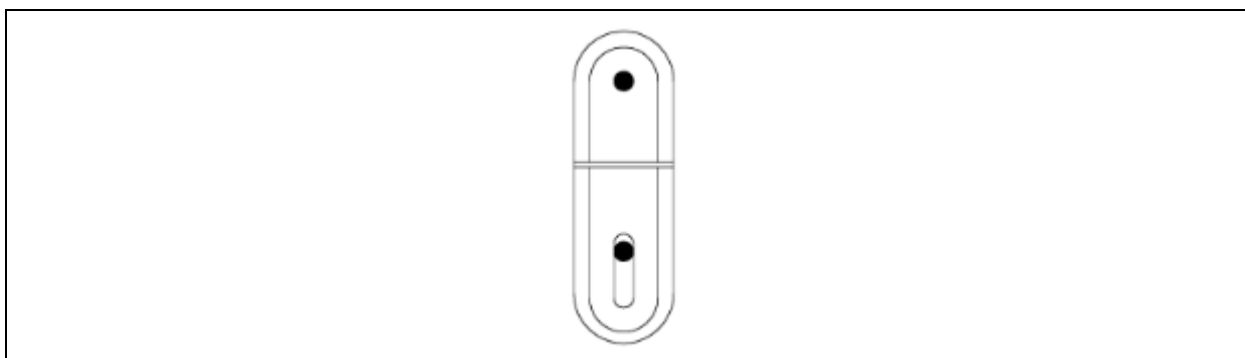


Figure 179 Type KR 7, KRB 7

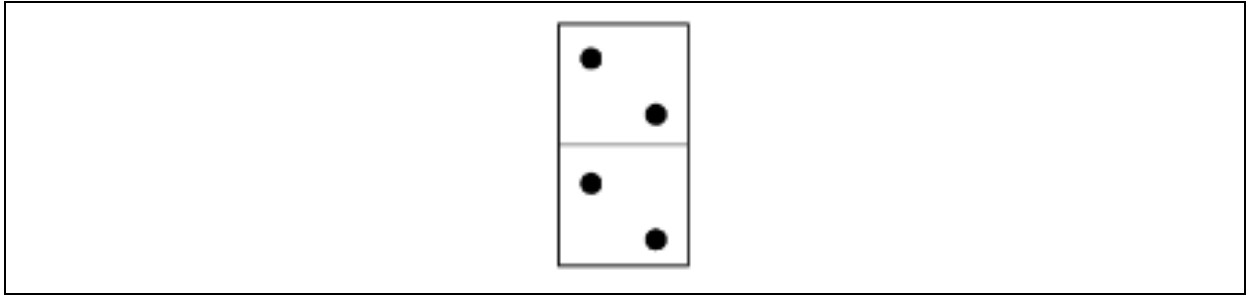


Figure 180 Type KSB 1

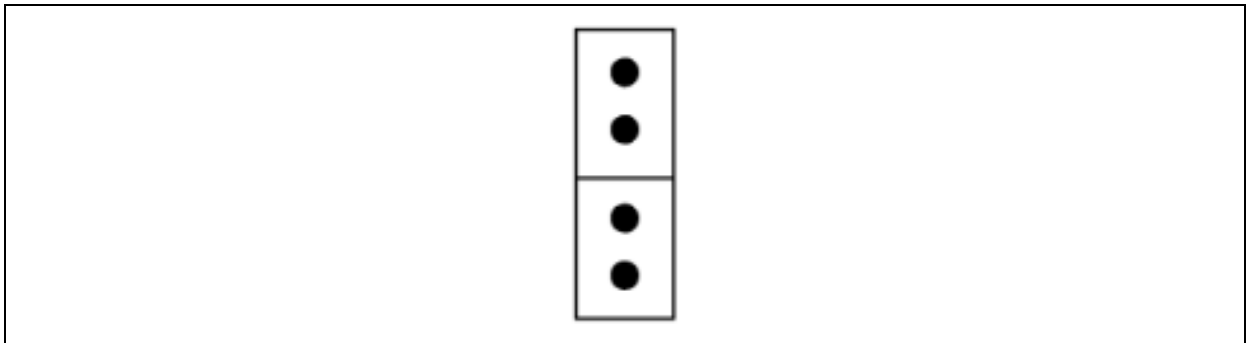


Figure 181 Type KWB 1, KWC 1

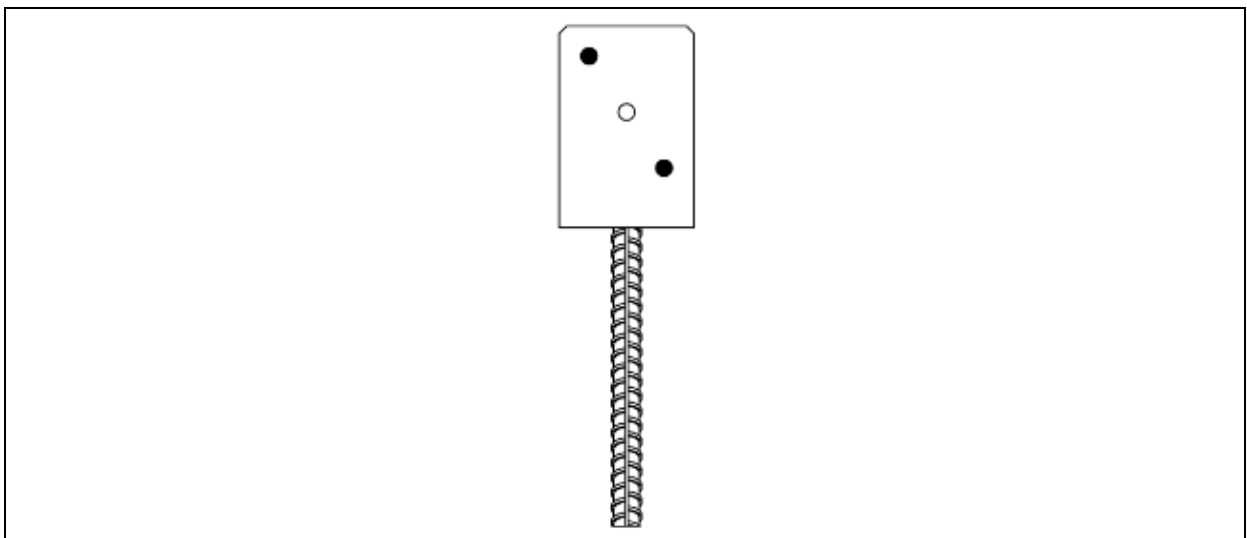


Figure 182 Type PS 84 L

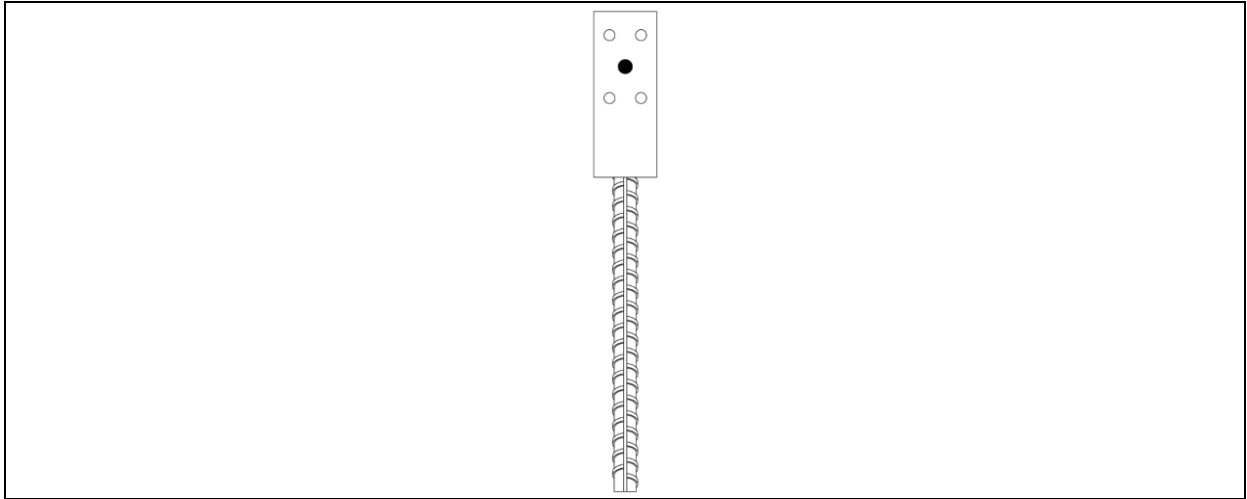


Figure 183 Type PSL

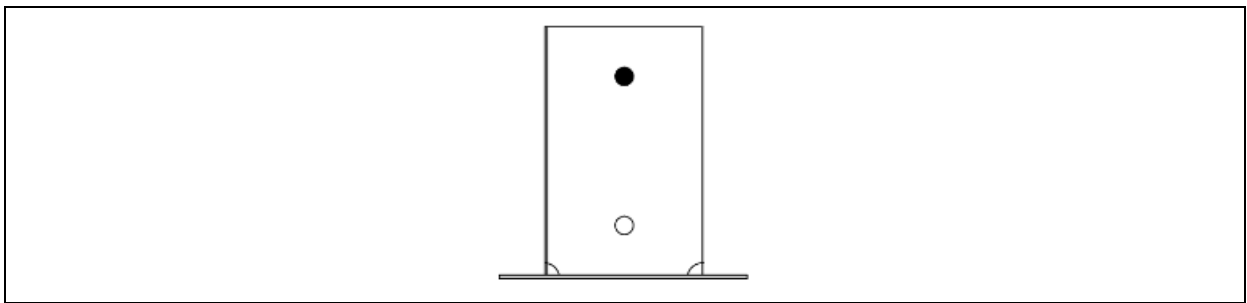


Figure 184 Type PSP

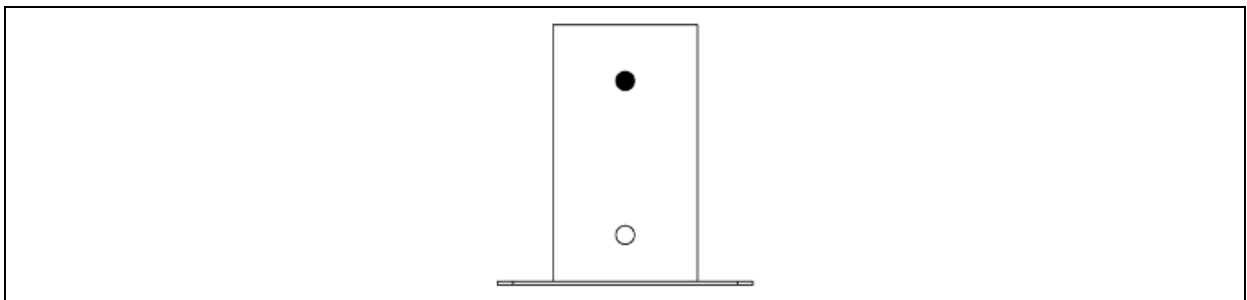


Figure 185 Type PSPO

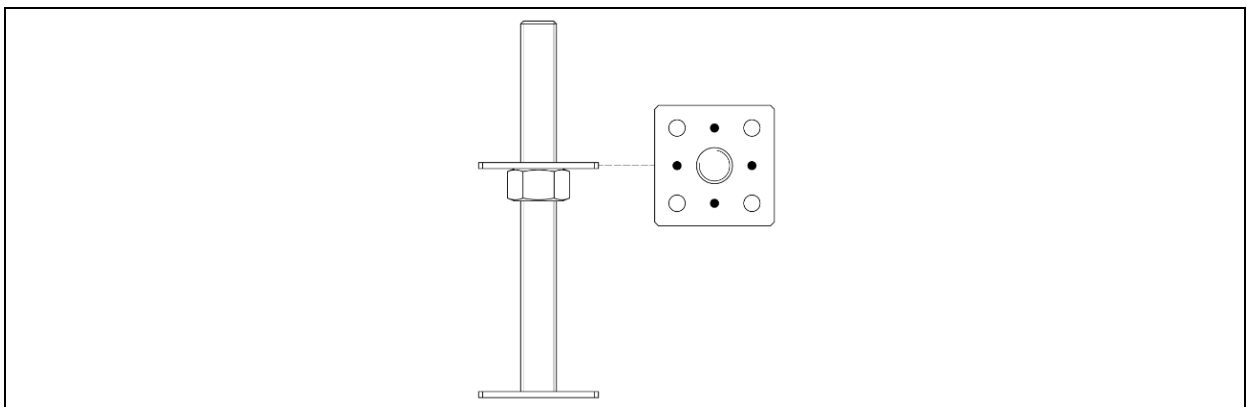


Figure 186 Type PSR

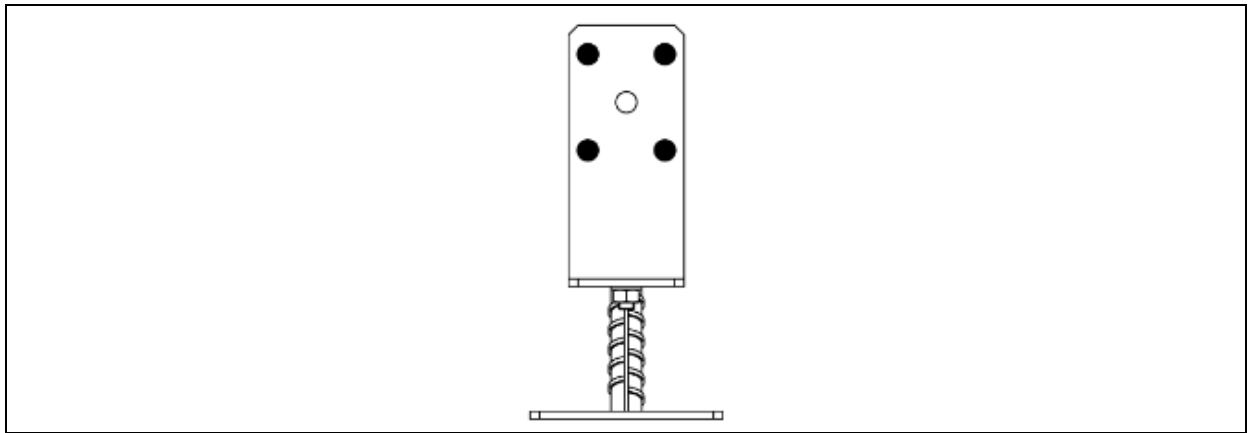


Figure 187 Type PSRT

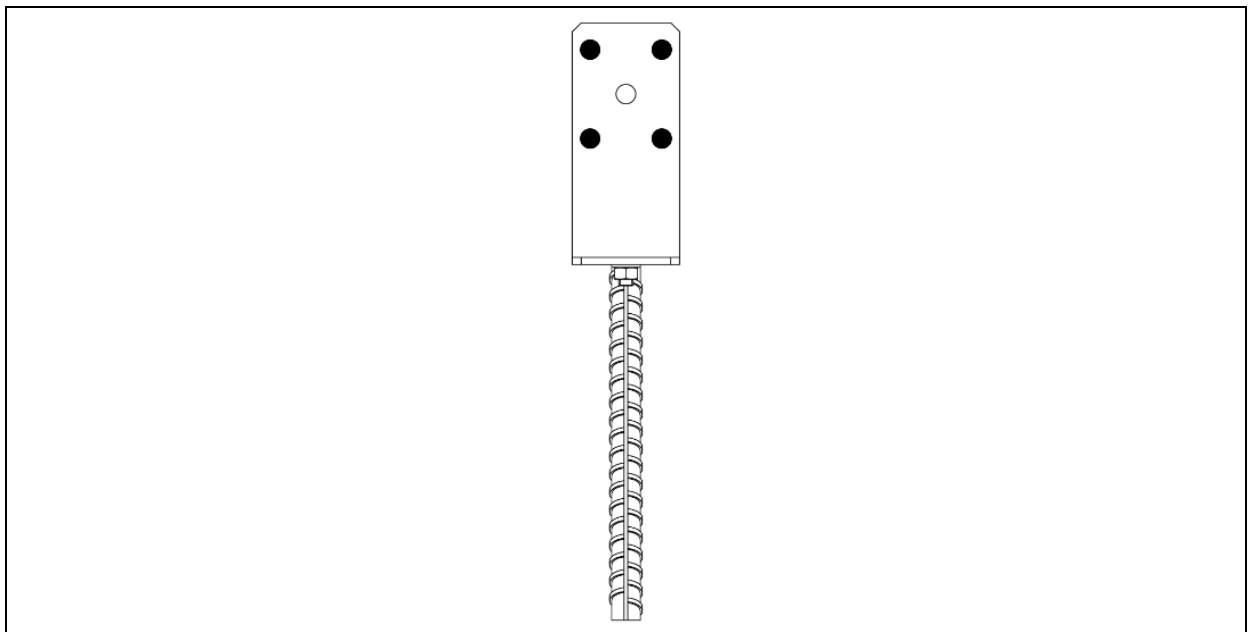


Figure 188 Type PSRU

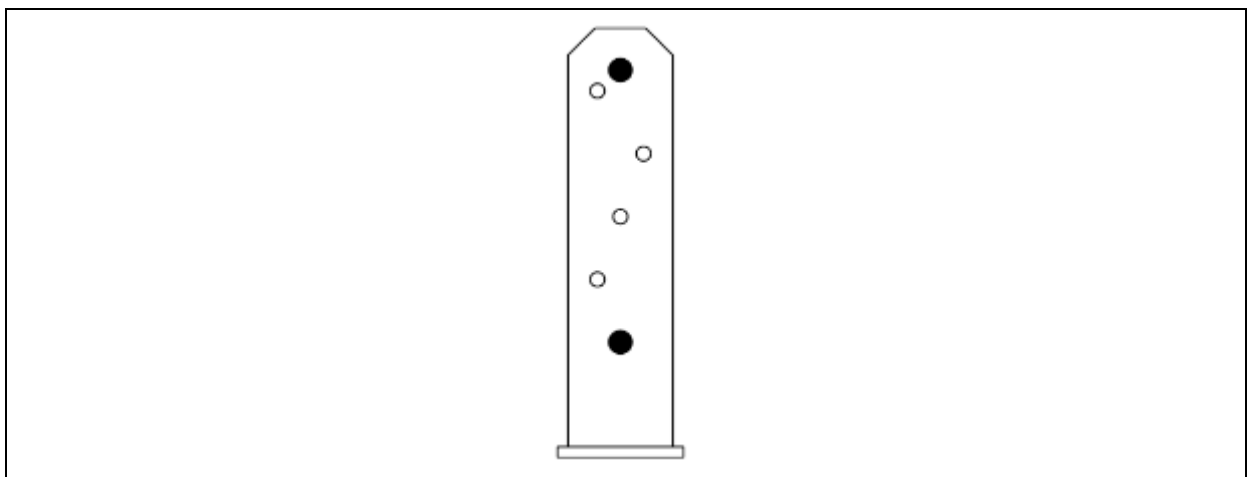


Figure 189 Type PST

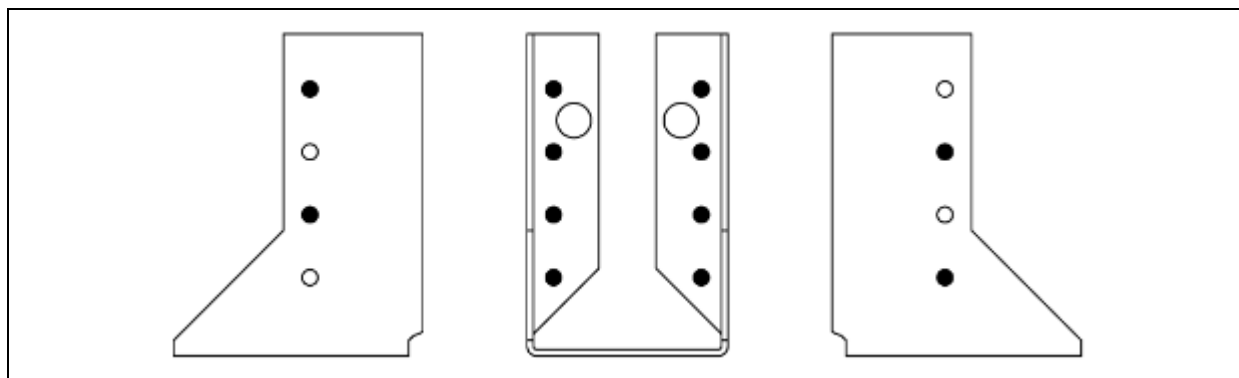


Figure 190 Type WBZ

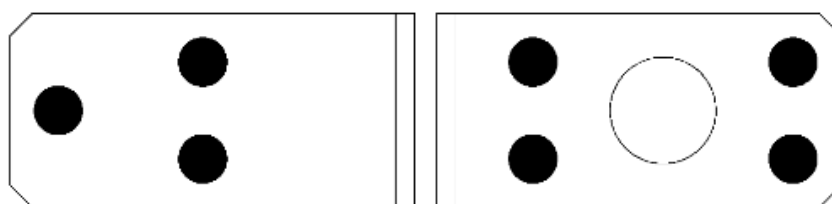


Figure 191 Type KL 0

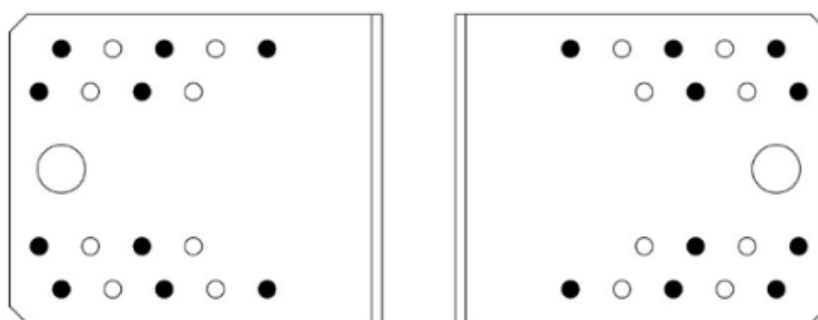


Figure 192 Type KL 5

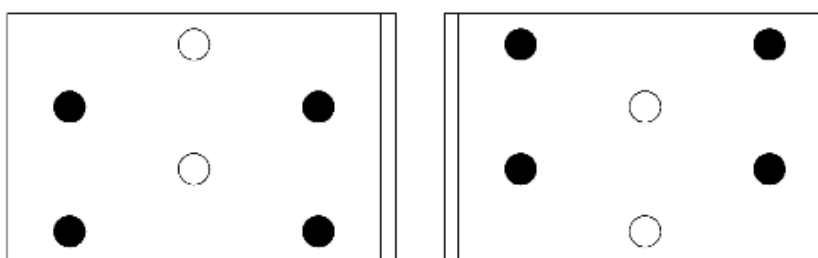


Figure 193 Type KM 3

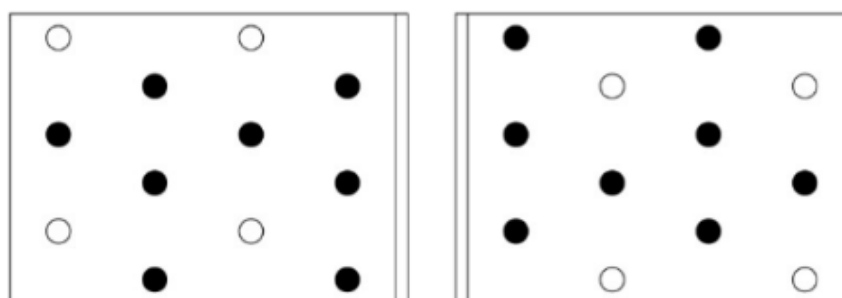


Figure 194 Type KM 8



Figure 195 Type KM 16

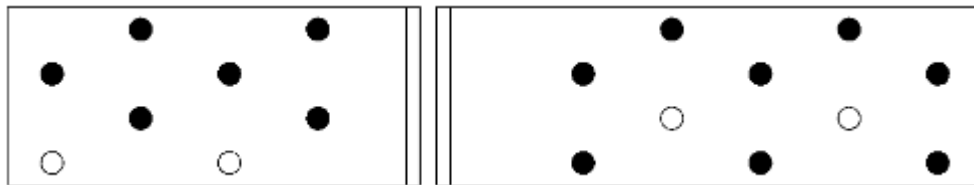


Figure 196 Type KM 19

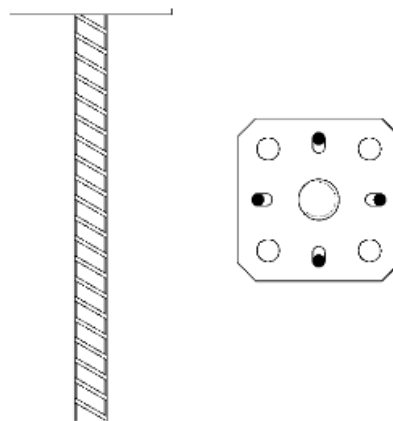


Figure 197 Type PPS

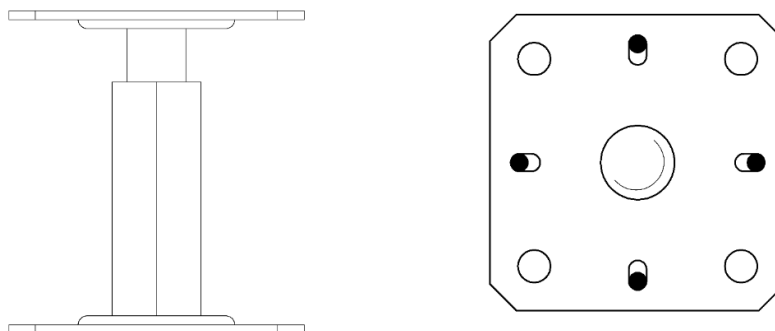


Figure 198 Type PR

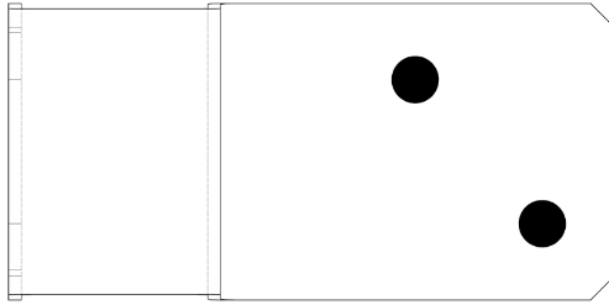


Figure 199 Type PSK

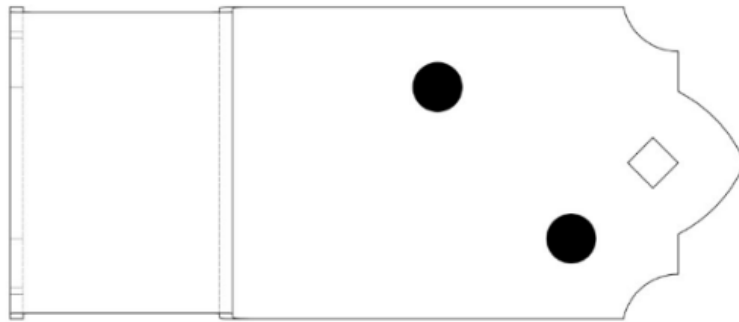


Figure 200 Type SDPSK

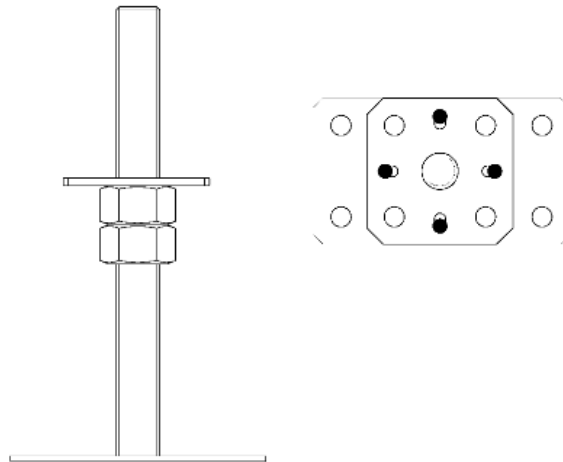


Figure 201 Type PSR

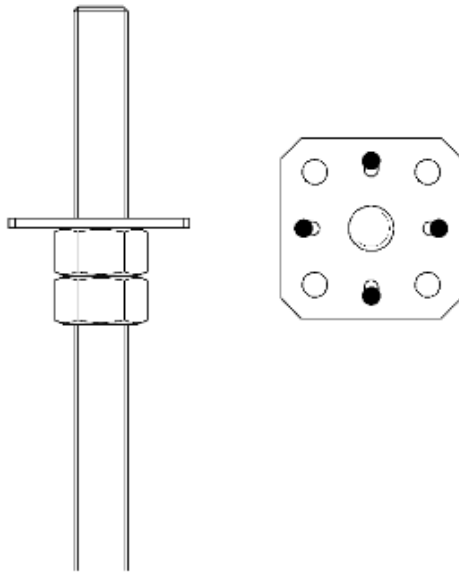


Figure 202 Type PPSR

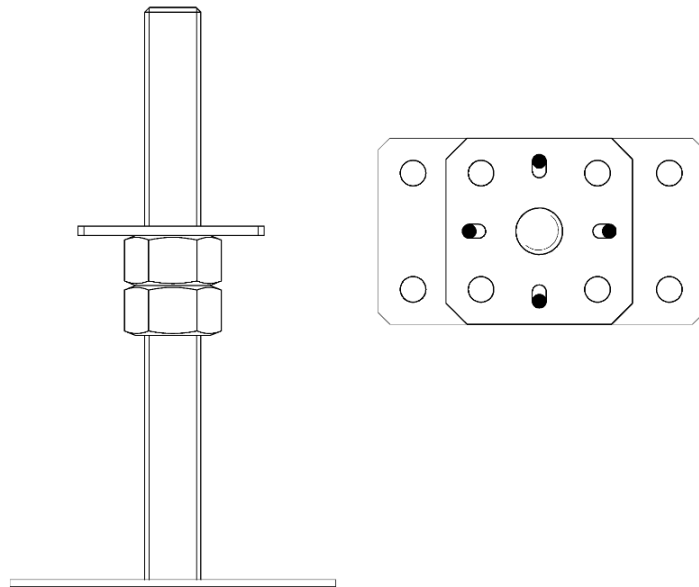


Figure 203 Type PSRP

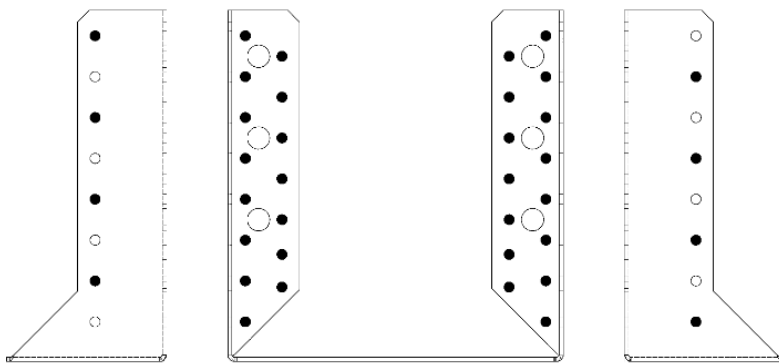


Figure 204 Type WBZ 38

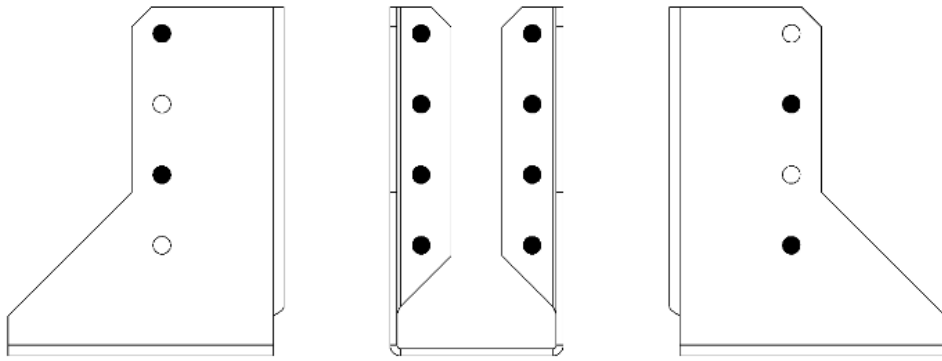


Figure 205 Type WBZ 49

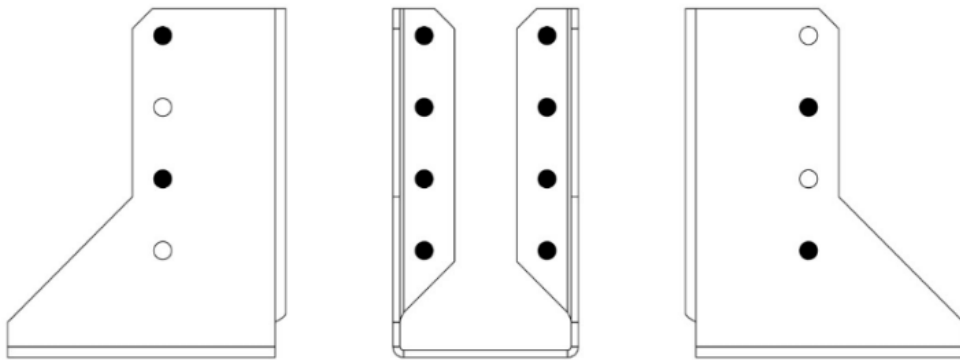


Figure 206 WBZ 52

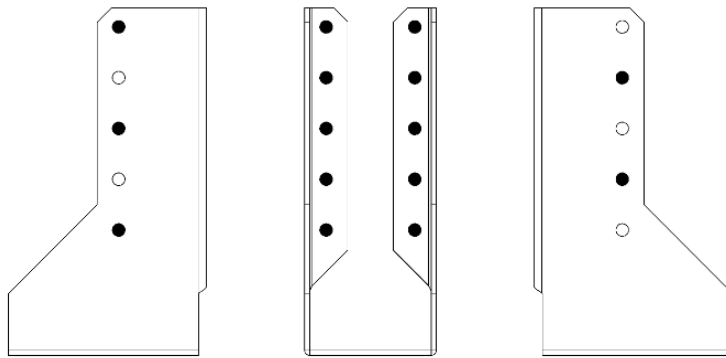


Figure 207 WBZ 54

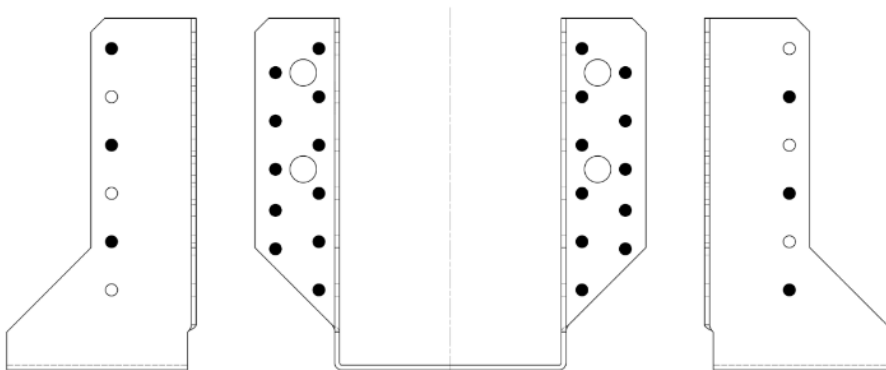


Figure 208 WB 39

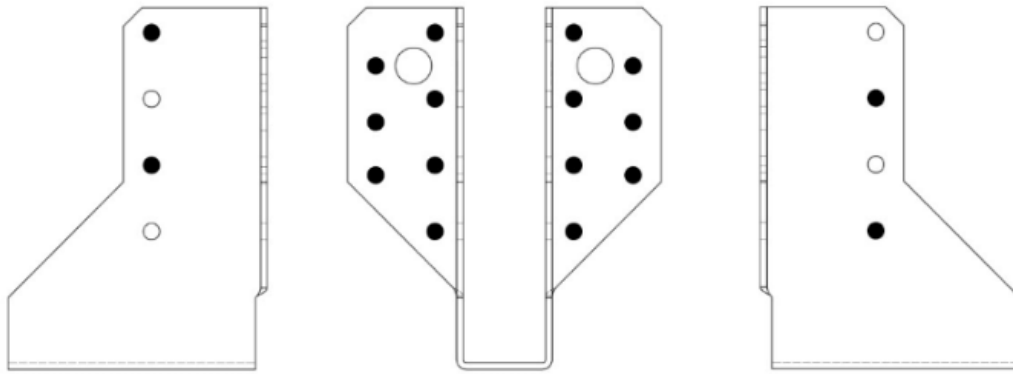


Figure 209 WB 40

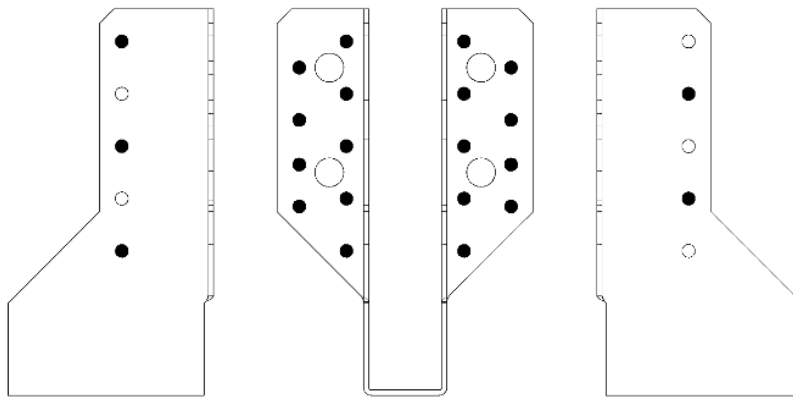


Figure 210 WB 41

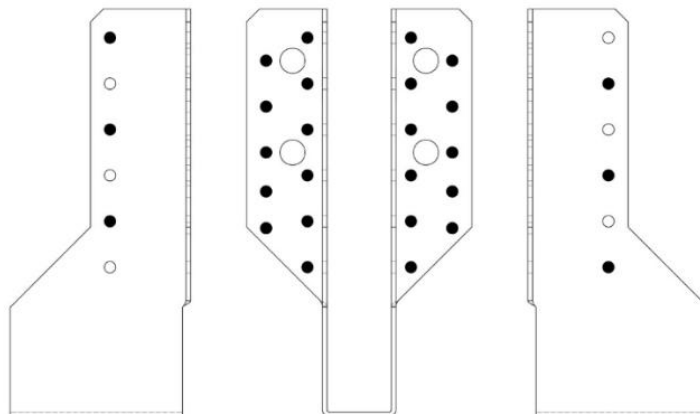


Figure 211 WB 42

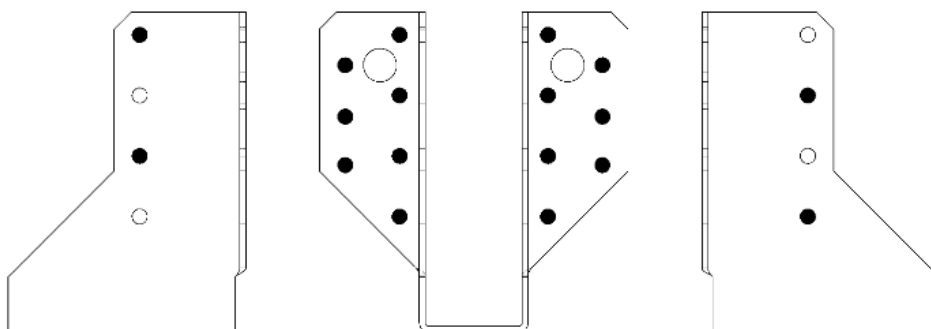


Figure 212 WB 43

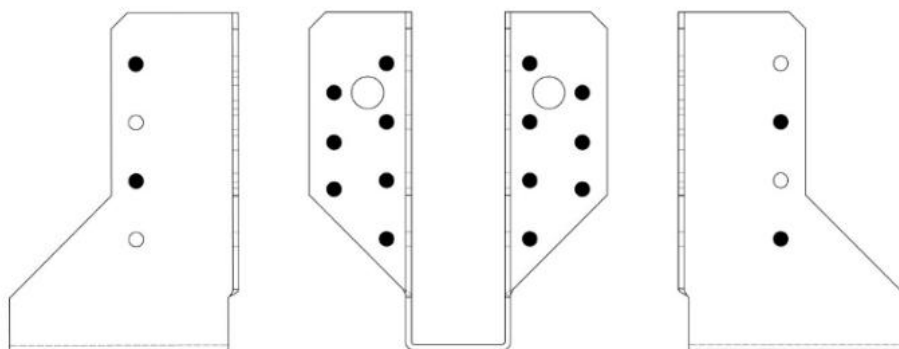


Figure 213 WB 44

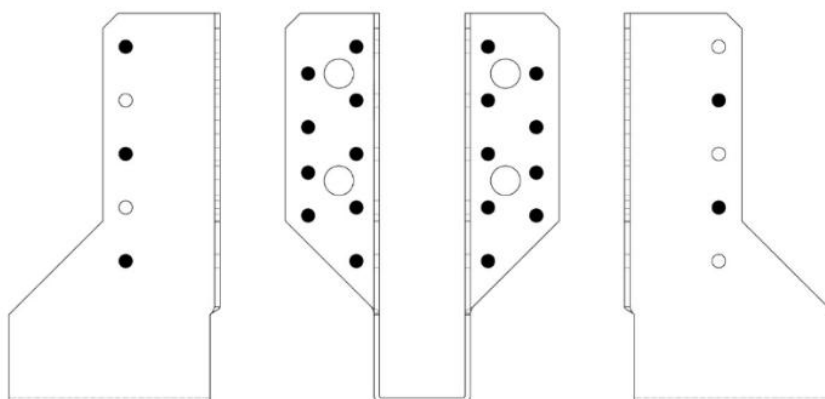


Figure 214 WB 45

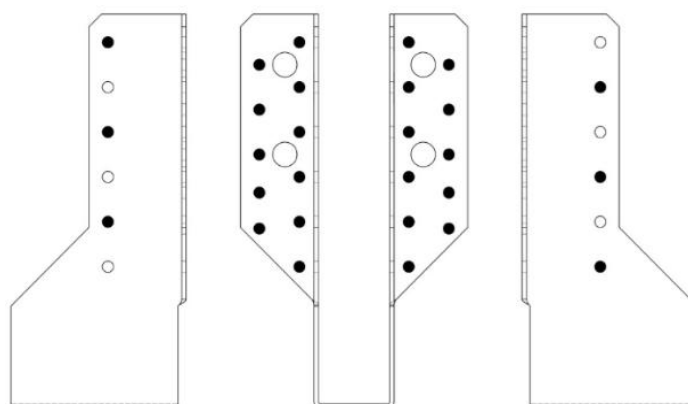


Figure 215 WB 46

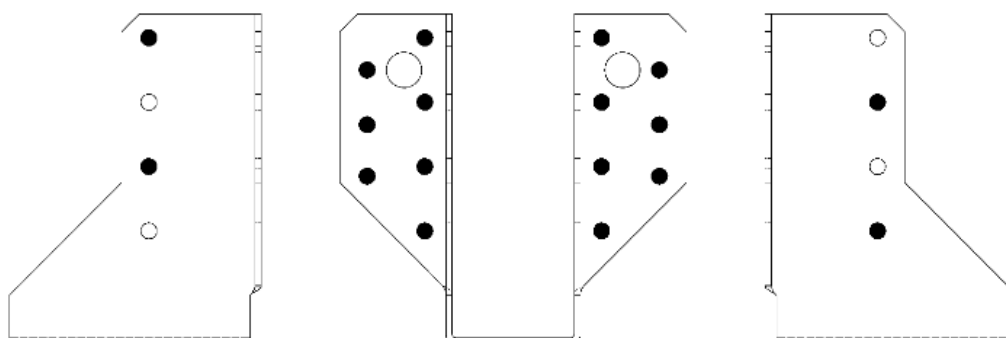


Figure 216 WB 47

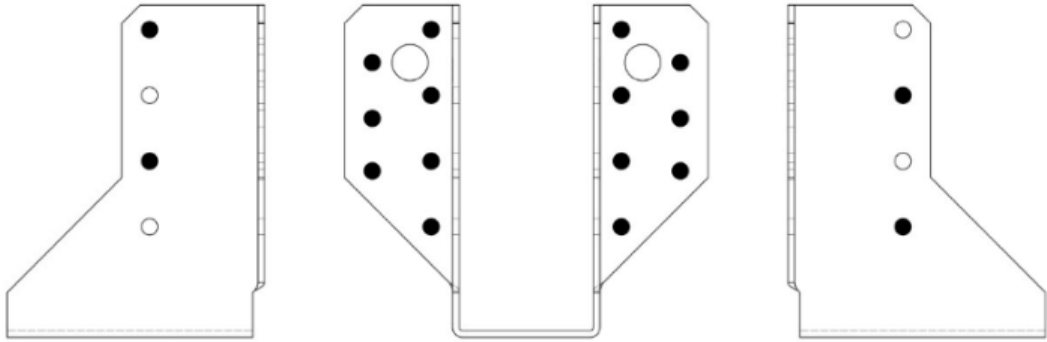


Figure 217 WB 48

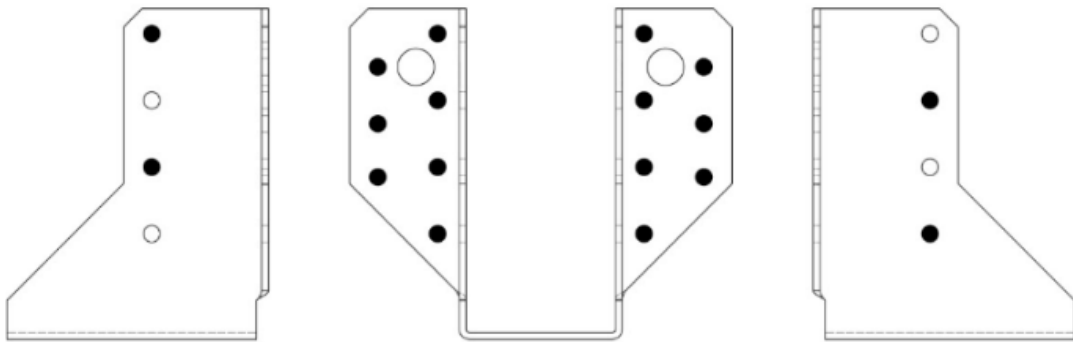


Figure 218 WB 49

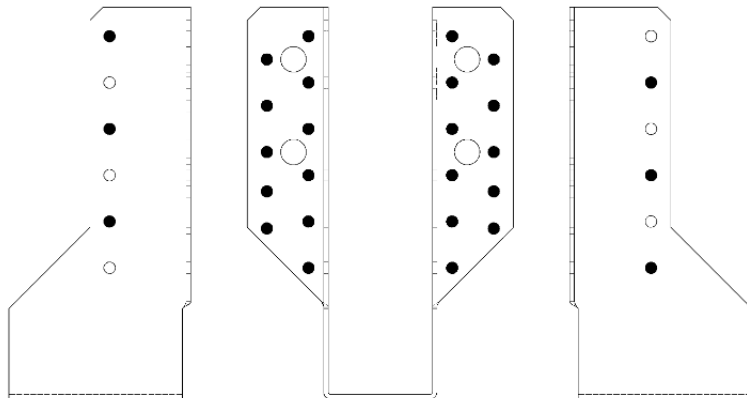


Figure 219 WB 50

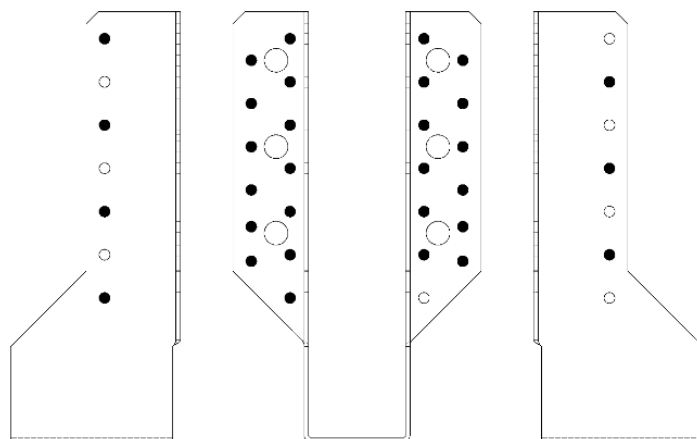


Figure 220 WB 51

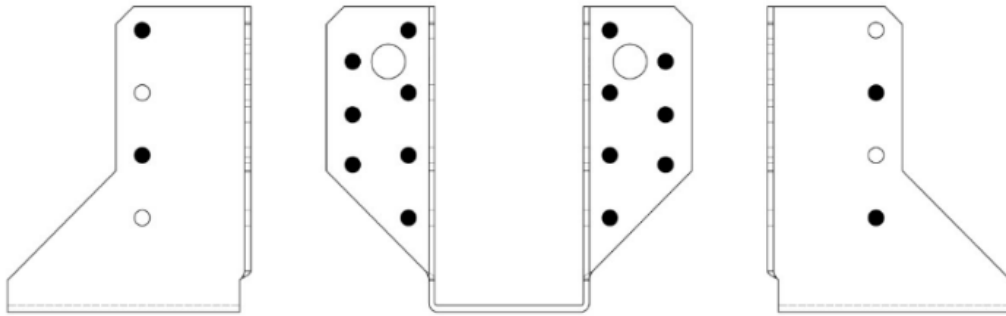


Figure 221 WB 52

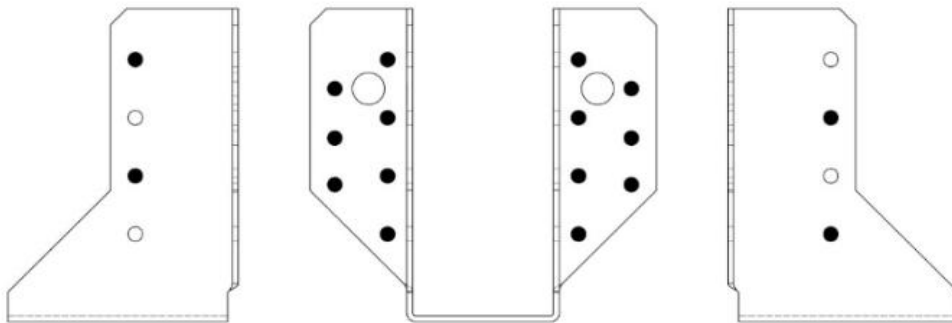


Figure 222 WB 53

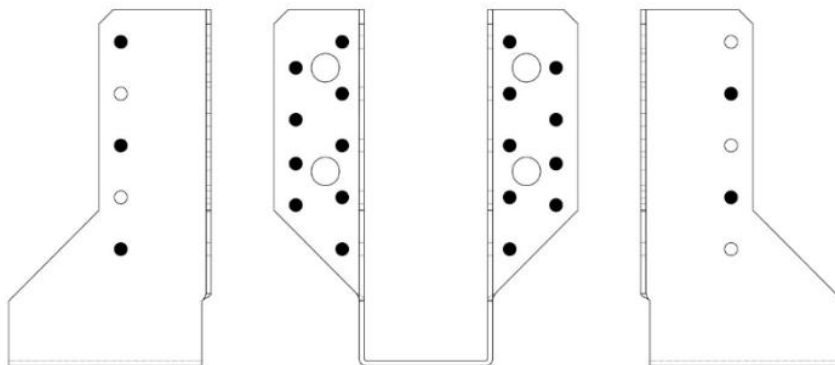


Figure 223 WB 54

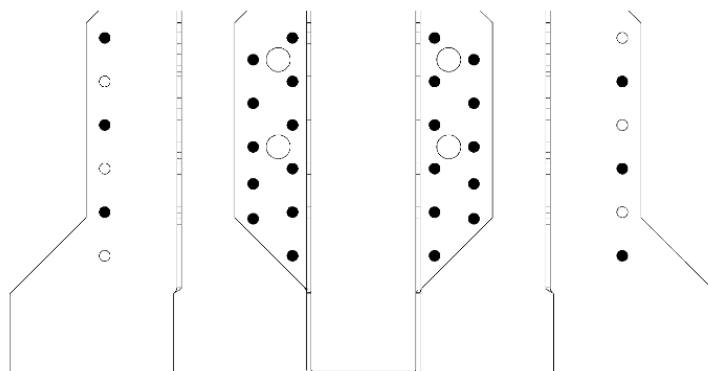


Figure 224 WB 55

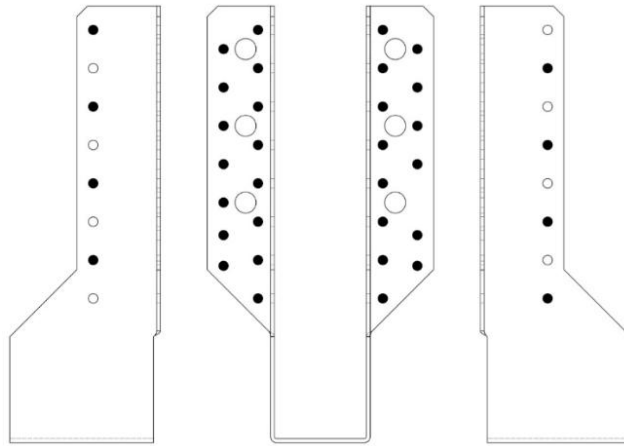


Figure 225 WB 56

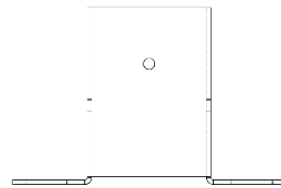
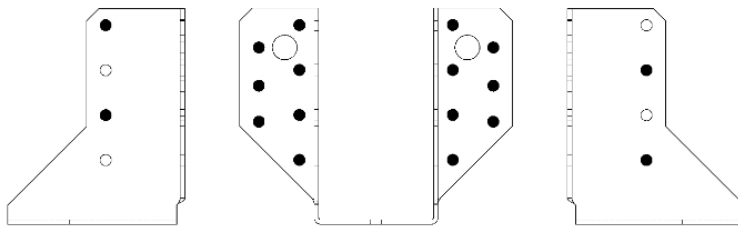


Figure 226 WB 57

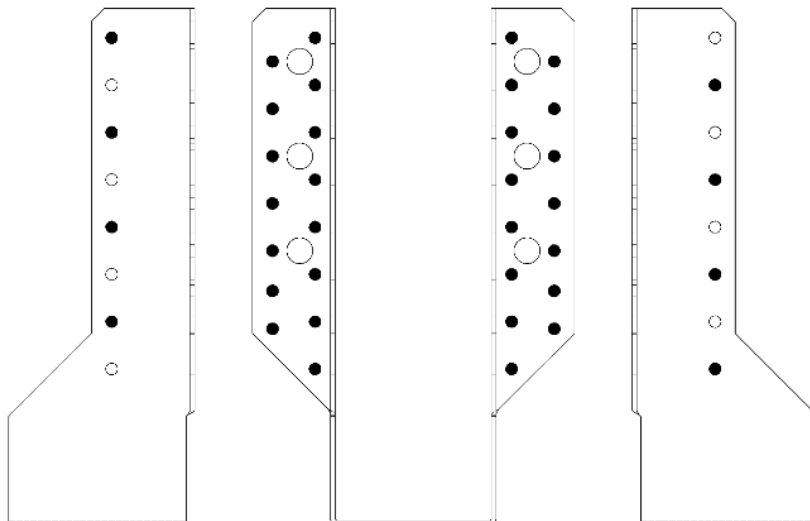


Figure 227 WB 58

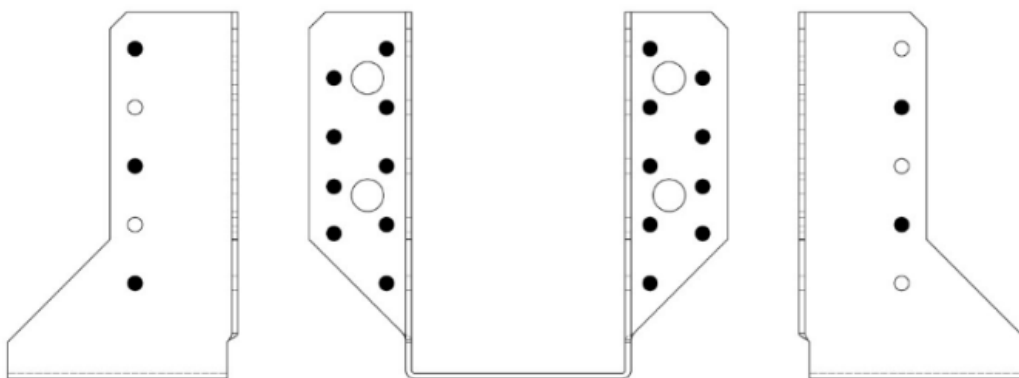


Figure 228 WB 59

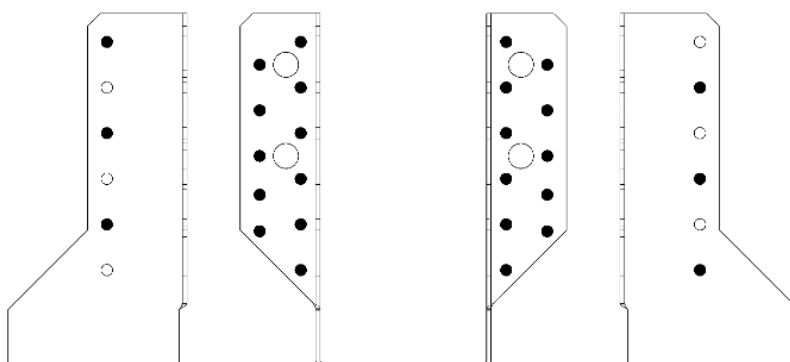


Figure 229 WB 60

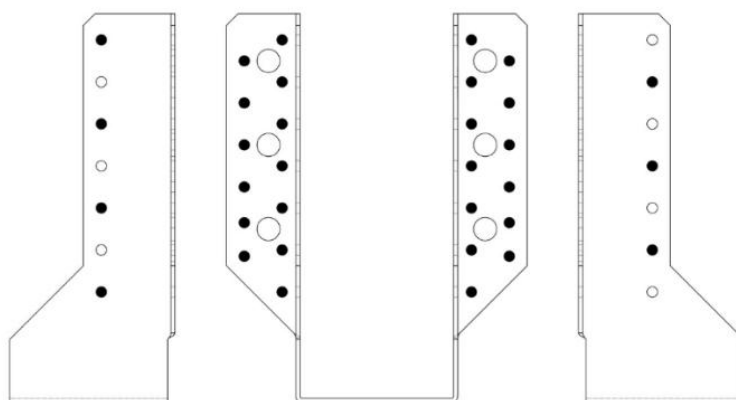


Figure 230 WB 61

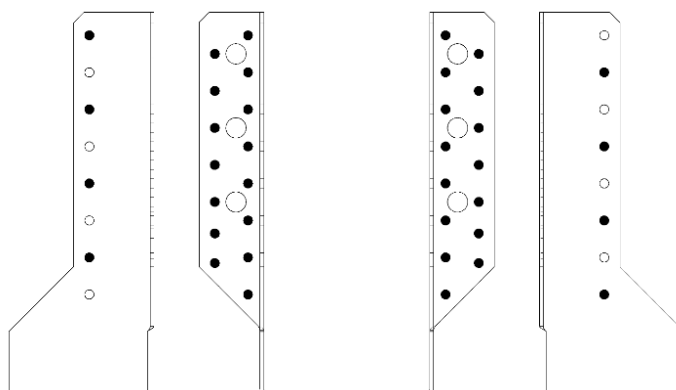


Figure 231 WB 62

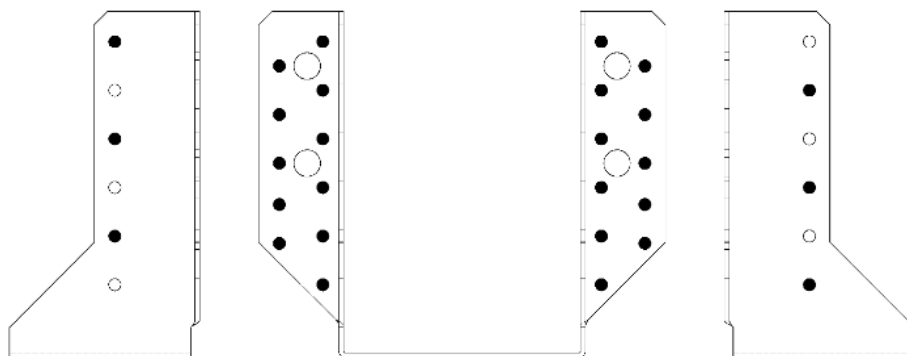


Figure 232 WB 63

THREE-DIMENSIONAL NAILING PLATES	ANNEX 5 ETA 24/0873
SPECIFICATION OF CONNECTION ELEMENTS	

Table 94 Specification of connection elements

Connector	Dowel type connectors	Connectors per Detail	Connectors per Connection
		[pc.]	[pc.]
KLR 1	ANCHOR $\varnothing$ 4x50	6	6
KLR 2	ANCHOR $\varnothing$ 4x50	13	13
KLR 3	ANCHOR $\varnothing$ 4x50	13	13
KLR 4	ANCHOR $\varnothing$ 4x50	12	12
KLR 5	ANCHOR $\varnothing$ 4x50	30	30
KLR 6	ANCHOR $\varnothing$ 4x50	29	29
KP 7	ANCHOR $\varnothing$ 4x50 / DIN 571 $\varnothing$ 12x100	28 / 4	56 / 8
KP 8	ANCHOR $\varnothing$ 4x50 / DIN 571 $\varnothing$ 12x100	17 / 2	34 / 4
KPK 4	ANCHOR $\varnothing$ 4x50	22	22
KPK 11	ANCHOR $\varnothing$ 4x50	11	11
KPK 12	ANCHOR $\varnothing$ 4x50	17	17
KPK 13	ANCHOR $\varnothing$ 4x50	25	25
KPK 21	ANCHOR $\varnothing$ 4x50	14	14
KPK 22	ANCHOR $\varnothing$ 4x50	14	14
KPK 23	ANCHOR $\varnothing$ 4x50	14	14
KPK 31	ANCHOR $\varnothing$ 4x50	9	18
KPK 32	ANCHOR $\varnothing$ 4x50	9	18
KPK 33	ANCHOR $\varnothing$ 4x50	9	18
KPL 5	ANCHOR $\varnothing$ 4x50	8	8
KPL 6	ANCHOR $\varnothing$ 4x50	12	12
KPL 11	ANCHOR $\varnothing$ 4x50	13	13
KPL 21	ANCHOR $\varnothing$ 4x50	28	28
KR 1	ANCHOR $\varnothing$ 4x50	3	3
KR 2	ANCHOR $\varnothing$ 4x50	12	12
KP 3	ANCHOR $\varnothing$ 4x50	3	3
KRD 5	ANCHOR $\varnothing$ 4x50	7	7
KRD 6	ANCHOR $\varnothing$ 4x50	7	7
SDLZ 1	SDCS 50 / CS $\varnothing$ 5x40	4 / 6	4 / 6
SDKLR 1	SDCS 50 / CS $\varnothing$ 5x40	4 / 6	4 / 6
SDKL 1	SDCS 50 / CS $\varnothing$ 5x40	4 / 6	4 / 6
SDSP 70 A	SDCS 50	4	4
SDSP 70 B	SDCS 50	4	4
SDP 90 A	SDCS 50	8	8
SDP 90 B	SDCS 50	8	8
SDP 100 A	SDCS 50	8	8
SDP 100 B	SDCS 50	8	8
SDP 120 A	SDCS 50	8	8
SDP 120 B	SDCS 50	8	8

Connector	Dowel type connectors	Connectors per Detail	Connectors per Connection
		[pc.]	[pc.]
SDSKW 2	ANCHOR $\varnothing$ 4x50	4	8
SDSKW 8	SDCS 50	2	4
SDSKP 1	ANCHOR $\varnothing$ 4x50	16	32
SDSKP 5	ANCHOR $\varnothing$ 4x50	18	36
SDSKM 7	ANCHOR $\varnothing$ 4x50	12	24
SDSWBZ 10	ANCHOR $\varnothing$ 4x50 / ANCHOR $\varnothing$ 4x40	8 / 4	8 / 4
SDSWBZ 11	ANCHOR $\varnothing$ 4x50 / ANCHOR $\varnothing$ 4x40	12 / 6	12 / 6
SDSWBZ 14	ANCHOR $\varnothing$ 4x50 / ANCHOR $\varnothing$ 4x40	8 / 4	8 / 4
SDSWBZ 21	ANCHOR $\varnothing$ 4x50 / ANCHOR $\varnothing$ 4x40	12 / 10	12 / 10
SDSWBZ 26	ANCHOR $\varnothing$ 4x50 / ANCHOR $\varnothing$ 4x40	12 / 10	12 / 10
SDSWBZ 30	ANCHOR $\varnothing$ 4x50 / ANCHOR $\varnothing$ 4x40	16 / 12	16 / 12
PS 60	ISO 4014 M10x80-5.8	1	1
PS 70	ISO 4014 M10x90-5.8	1	1
PS 80	ISO 4014 M10x100-5.8	1	1
PS 90	ISO 4014 M10x110-5.8	1	1
PS 100	ISO 4014 M10x120-5.8	1	1
PS 120	ISO 4014 M10x140-5.8	1	1
PS 140	ISO 4014 M10x160-5.8	1	1
LU25 R80 (L80)	ANCHOR $\varnothing$ 4x50	16	16
LU25 R120 (L120)	ANCHOR $\varnothing$ 4x50	24	24
WBC 80	ANCHOR $\varnothing$ 4x50 / ANCHOR $\varnothing$ 4x40	24 / 14	24 / 14
WBC 92	ANCHOR $\varnothing$ 4x50 / ANCHOR $\varnothing$ 4x40	28 / 14	28 / 14
WBC 100	ANCHOR $\varnothing$ 4x50 / ANCHOR $\varnothing$ 4x40	28 / 14	28 / 14
WBC 120	ANCHOR $\varnothing$ 4x50 / ANCHOR $\varnothing$ 4x40	34 / 14	34 / 14
WBC 137	ANCHOR $\varnothing$ 4x50 / ANCHOR $\varnothing$ 4x40	38 / 14	38 / 14
WBU45 R45-105 (L45-105)	ANCHOR $\varnothing$ 4x50 / ANCHOR $\varnothing$ 4x40	8 / 4	8 / 4
WBU45 R50-105 (L50-105)	ANCHOR $\varnothing$ 4x50 / ANCHOR $\varnothing$ 4x40	8 / 4	8 / 4
WBU45 R60-120 (L60-120)	ANCHOR $\varnothing$ 4x50 / ANCHOR $\varnothing$ 4x40	10 / 5	10 / 5
KKB 1	ANCHOR $\varnothing$ 4x50 / ISO 4014 M16x160-5.8	24 / 1	48 / 2
LB 1	ISO 4014 M12x120-5.8 / ISO 4014 M12x90-5.8	1 / 1	1 / 2
LB 2	ISO 4014 M12x120-5.8 / ISO 4014 M12x90-5.8	1 / 1	1 / 2
LB 4	ISO 4014 M12x120-5.8 / ISO 4014 M12x90-5.8	1 / 1	1 / 2
NT 25	ISO 4017 M5x16-8.8	6	6
NT 40	ISO 4017 M5x16-8.8	10	10
NT 60	ISO 4017 M5x16-8.8	14	14
KPS 1	ANCHOR $\varnothing$ 4x50	16	32
KPS 2	ANCHOR $\varnothing$ 4x50	36	72

Connector	Dowel type connectors	Connectors per Detail	Connectors per Connection
		[pc.]	[pc.]
KPS 3	ANCHOR $\varnothing$ 4x50	20	40
KPS 4	ANCHOR $\varnothing$ 4x50	20	40
KB 4	DIN 571 $\varnothing$ 6x35	8	16
KK 0	ANCHOR $\varnothing$ 4x50	5	10
KK 11	ANCHOR $\varnothing$ 4x50 / ISO 4014 M12x110-5.8	12 / 1	24 / 2
KK 12	ANCHOR $\varnothing$ 4x50 / ISO 4014 M8x100-5.8	18 / 1	36 / 2
KL 6	ANCHOR $\varnothing$ 4x50	16	32
KM 17	ANCHOR $\varnothing$ 4x50	8	16
KM 18	ANCHOR $\varnothing$ 4x50	12	24
KP 2	ANCHOR $\varnothing$ 4x50	20	40
KP 9	ANCHOR $\varnothing$ 4x50	12	24
KR 4	DIN 571 $\varnothing$ 6x35 / ISO 4014 M12x110-5.8	4 / 1	8 / 2
KR 5	ANCHOR $\varnothing$ 4x50	12	24
KR 6	ANCHOR $\varnothing$ 4x50	3	6
KR 7	ANCHOR $\varnothing$ 4x50	2	4
KRB 7	ANCHOR $\varnothing$ 4x50	2	4
KSB 1	ANCHOR $\varnothing$ 4x50	4	8
KWB 1	ANCHOR $\varnothing$ 4x50	4	8
KWC 1	ANCHOR $\varnothing$ 4x50	4	8
WBZ 14	ANCHOR $\varnothing$ 4x50 / ANCHOR $\varnothing$ 4x50	8 / 4	8 / 4
PSL 50	ISO 4014 M8x70-5.8	1	1
PSL 70	ISO 4014 M8x90-5.8	1	1
PSL 90	ISO 4014 M8x110-5.8	1	1
PSL 100	ISO 4014 M8x120-5.8	1	1
PSP 70	ISO 4014 M10x90-5.8	1	1
PSP 90	ISO 4014 M10x110-5.8	1	1
PSP 100	ISO 4014 M10x120-5.8	1	1
PSP 120	ISO 4014 M10x130-5.8	1	1
PSPO 80	ISO 4014 M10x100-5.8	1	1
PSPO 100	ISO 4014 M10x120-5.8	1	1
PSR 80	ANCHOR $\varnothing$ 4x50	4	4
PSR 110	ANCHOR $\varnothing$ 4x50	4	4
PSRT	ISO 4014 M10-5.8	4	4
PSRU	ISO 4014 M10-5.8	4	4
PST 70	ISO 4014 M10x90-5.8	2	2
PST 90	ISO 4014 M10x110-5.8	2	2
PST 100	ISO 4014 M10x120-5.8	2	2
PST 120	ISO 4014 M10x140-5.8	2	2
PST 140	ISO 4014 M10x160-5.8	2	2
PS 84 L	ISO 4014 M10x120-5.8 (washer ISO	2	2

Connector	Dowel type connectors	Connectors per Detail	Connectors per Connection
		[pc.]	[pc.]
	7094)		
KM 16	ANCHOR Ø4x50	16	32
KM 16 (3mm)	ANCHOR Ø4x50	16	32
KM 8 (2.5 mm)	ANCHOR Ø4x50	16	32
KM 19 (3mm)	ANCHOR Ø4x50	14	28
KM 3 (2.5 mm)	ANCHOR Ø4x50	8	16
KL 0	ANCHOR Ø4x50	7	14
KL 5 (3mm)	ANCHOR Ø4x50	20	40
WB 39	ANCHOR Ø4x50/ANCHOR Ø4x50	22/8	22/8
WB 40	ANCHOR Ø4x50/ANCHOR Ø4x50	14/4	14/4
WB 41	ANCHOR Ø4x50/ANCHOR Ø4x50	18/6	18/6
WB 42	ANCHOR Ø4x50/ANCHOR Ø4x50	22/6	22/6
WB 43	ANCHOR Ø4x50/ANCHOR Ø4x50	14/4	14/4
WB 44	ANCHOR Ø4x50/ANCHOR Ø4x50	14/4	14/4
WB 45	ANCHOR Ø4x50/ANCHOR Ø4x50	18/6	18/6
WB 46	ANCHOR Ø4x50/ANCHOR Ø4x50	22/6	22/6
WB 47	ANCHOR Ø4x50/ANCHOR Ø4x50	14/4	14/4
WB 48	ANCHOR Ø4x50/ANCHOR Ø4x50	14/4	14/4
WB 49	ANCHOR Ø4x50/ANCHOR Ø4x50	14/4	14/4
WB 50	ANCHOR Ø4x50/ANCHOR Ø4x50	22/6	22/6
WB 51	ANCHOR Ø4x50/ANCHOR Ø4x50	26/8	26/8
WB 52	ANCHOR Ø4x50/ANCHOR Ø4x50	14/4	14/4
WB 53	ANCHOR Ø4x50/ANCHOR Ø4x50	14/4	14/4
WB 54	ANCHOR Ø4x50/ANCHOR Ø4x50	18/6	18/6
WB 55	ANCHOR Ø4x50/ANCHOR Ø4x50	22/6	22/6
WB 56	ANCHOR Ø4x50/ANCHOR Ø4x50	30/8	30/8
WB 57	ANCHOR Ø4x50/ANCHOR Ø4x50	12/4	12/4
WB 58	ANCHOR Ø4x50/ANCHOR Ø4x50	30/8	30/8
WB 59	ANCHOR Ø4x50/ANCHOR Ø4x50	18/6	18/6
WB 60	ANCHOR Ø4x50/ANCHOR Ø4x50	22/6	22/6
WB 61	ANCHOR Ø4x50/ANCHOR Ø4x50	26/8	26/8
WB 62	ANCHOR Ø4x50/ANCHOR Ø4x50	30/8	30/8
WB 63	ANCHOR Ø4x50/ANCHOR Ø4x50	22/6	22/6
WBZ 38	ANCHOR Ø4x50/ANCHOR Ø4x50	16/8	16/8
WBZ 49	ANCHOR Ø4x50/ANCHOR Ø4x50	8/4	8/4
WBZ 52	ANCHOR Ø4x50/ANCHOR Ø4x50	8/4	8/4
WBZ 54	ANCHOR Ø4x50/ANCHOR Ø4x50	10/6	10/6
PSR 80 M24	ANCHOR Ø4x50	4	4
PSR 100 M24	ANCHOR Ø4x50	4	4
PSR 130 M24	ANCHOR Ø4x50	4	4
PSR 80 M20	ANCHOR Ø4x50	4	4
PSR 100 M20	ANCHOR Ø4x50	4	4

Connector	Dowel type connectors	Connectors per Detail	Connectors per Connection
		[pc.]	[pc.]
PSR 130 M20	ANCHOR Ø4x50	4	4
PSRP 80 M20	ANCHOR Ø4x50	4	4
PSRP 100 M20	ANCHOR Ø4x50	4	4
PSRP 130 M20	ANCHOR Ø4x50	4	4
PPSR 80	ANCHOR Ø4x50	4	4
PPSR 100	ANCHOR Ø4x50	4	4
PPSR 130	ANCHOR Ø4x50	4	4
PPS 80	ANCHOR Ø4x50	4	4
PPS 100	ANCHOR Ø4x50	4	4
PPS 130	ANCHOR Ø4x50	4	4
PR 100 100-150	ANCHOR Ø4x50	4	4
PR 100 130-150	ANCHOR Ø4x50	4	4
PR 130 130-150	ANCHOR Ø4x50	4	4
PSK 70	Bolt M 10x60 - 5.8 + washer M10	2	2
SDPSK 70	Bolt M 10x60 - 5.8 + washer M10	2	2

THREE-DIMENSIONAL NAILING PLATES	ANNEX 6 ETA 24/0873
REFERENCE DOCUMENTS	

- [1] European Assessment Document 130186-00-0603, edition July 2018,
Three-dimensional nailing plates
- [2] EN 10346 Continuously hot-dip coated steel flat products - Technical delivery conditions
- [3] EN 10131 Cold rolled uncoated and zinc or zinc-nickel electrolytically coated low carbon and high yield strength steel flat products for cold forming - Tolerances on dimensions and shape
- [4] EN 10025-2 Hot rolled products of structural steels - Part 2: Technical delivery conditions for non-alloy structural steels
- [5] EN 14592+A1 Timber structures - Dowel-type fasteners – Requirements
- [6] EN 1995-1-1 Eurocode 5: Design of timber structures - Part 1-1: General - Common rules and rules for buildings
- [7] EN ISO 12944-2 Paints and varnishes - Corrosion protection of steel structures by protective paint systems - Part 2: Classification of environments
- [8] EN ISO 8970 Timber structures - Testing of joints made with mechanical fasteners - Requirements for wood density
- [9] EN 26891 Timber structures – Joints made with mechanical fasteners – General principles for the determination of strength and deformation characteristics
- [10] EN 384+A2 Structural timber – Determination of characteristic values of mechanical properties and density
- [11] EN 13183-2 Moisture content of a piece of sawn timber - Part 2: Estimation by electrical resistance method
- [12] EN 1309-1 Round and sawn timber - Method of measurement of dimensions - Part 1: Sawn timber
- [13] EN 14358 Timber structures – Calculation and verification of characteristic values
- [14] EN 13501-1 Fire classification of construction products and building elements - Part 1: Classification using test data from reaction to fire tests