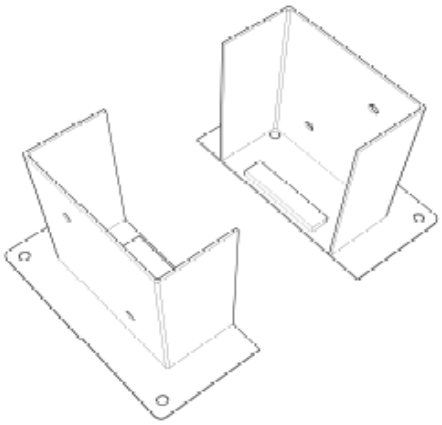
rothoengineer

Data sheet post base Type FD10

Name of the manufacturer:	Rotho Blaas srl - Via dell'Adige 2/1 - 39040 Cortaccia (BZ) Italy
Number of the European Technical Approval:	ETA 10/0422
Number of the ETA Guideline:	ETAG 015
Name of product:	FD10_1, FD10_2, FD10_3, FD10_4, FD10_5

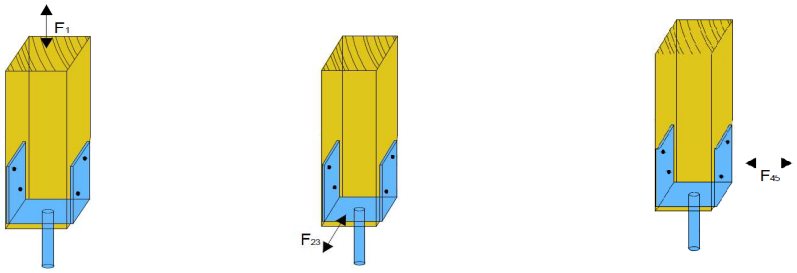


Product details and definitions

Post base		Metal Fasteners	Distances [mm]		
Type	Dimension	Type	max. a	$e_{F2/F3}$	$e_{F4/F5}$
FD10_1	121x56	4x HBS+ 8x60mm	-	108	40
FD10_2	141x66	4x HBS+ 8x60mm	-	108	40
FD10_3	161x76	4x HBS+ 8x60mm	-	108	40
FD10_4	181x86	4x HBS+ 8x60mm	-	108	40
FD10_5	201x96	4x HBS+ 8x60mm	-	108	40

Definition of forces, their direction and eccentricity

Force F_1: tensile or compression load
Force F_2 / F_3: horizontal load parallel to the side plates of post base
Force F_4 / F_5: horizontal load perpendicular to the side plates of post base



Acting forces

F_1 axial force (tension or compression) acting along the central axis of the joint
F_2 and F_3 horizontal force parallel to the side plates of the post base acting with the lever arm $e_{F2/F3}$ above the foundation
F_4 and F_5 horizontal force perpendicular to the side plates of the post base acting with the lever arm $e_{F4/F5}$ above the foundation

Combined forces

$\sum F_{i,d} / R_{i,d} \leq 1$ The forces F_2 and F_3 or F_4 and F_5 are forces with opposite direction. F_4 or F_5 , respectively, is able to act simultaneously with F_1 .

Safety principles and partial factors

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

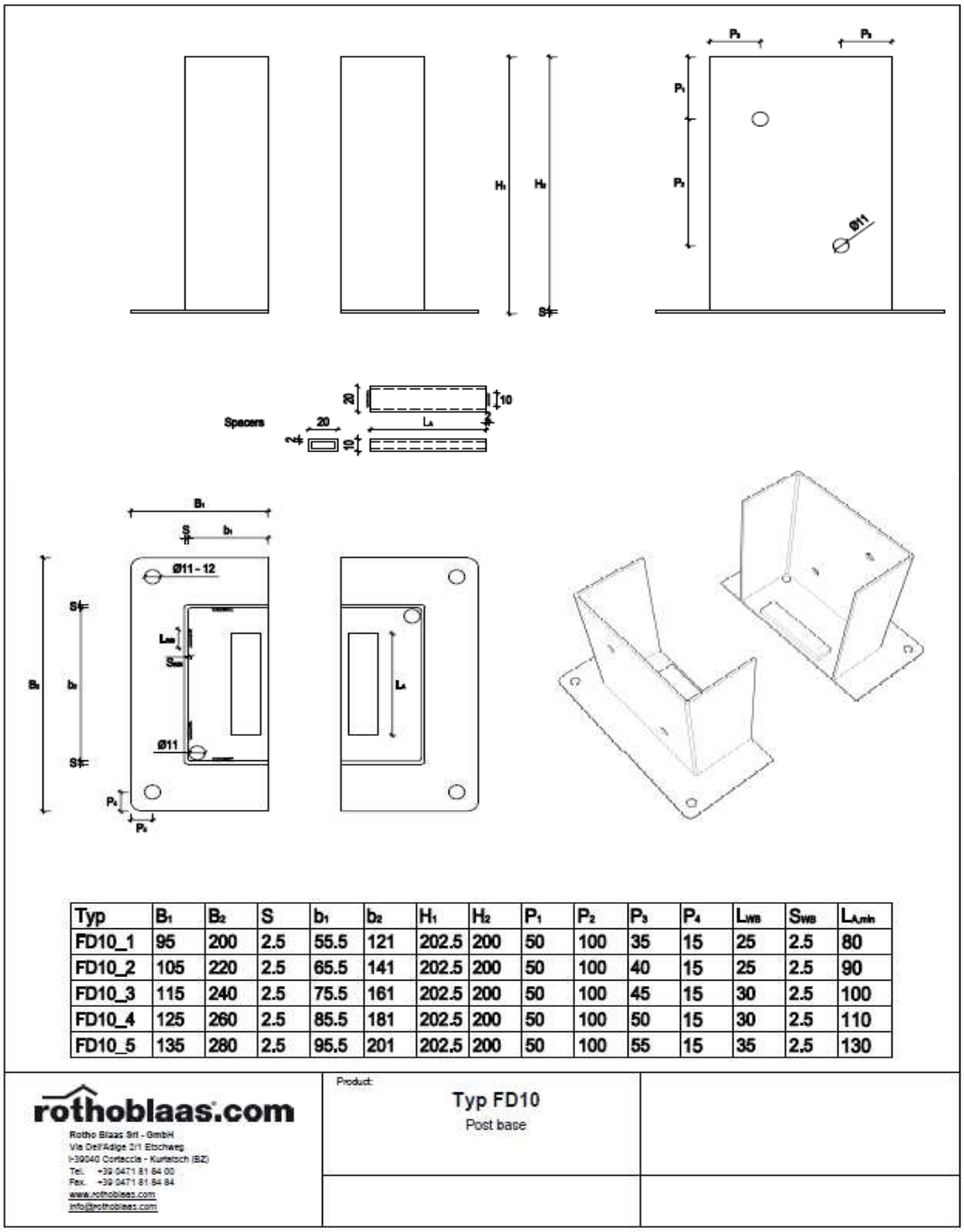
$$F_{Rd} = \min \left\{ \frac{k_{mod} * F_{Rk,H}}{\gamma_{M,H}} ; \frac{F_{Rk,S}}{\gamma_{Mi,S}} ; \frac{F_{Rk,B}}{\gamma_{Ri,B}} \right\}$$

$F_{Rk,H}$ timber failure or failure of the metal fasteners (EN 1995-1-1)
$F_{Rk,S}$ steel failure (EN 1993-1-1)
$F_{Rk,B}$ foundation failure (EN 1997-1)

Characteristic load-carrying capacities *

	F_1 (Compression) [KN]			F_1 (Tension) [KN]			F_{23} [KN]			F_{45} [KN]		
Type	**Timber**	**Steel**		**Timber**	**Steel**		**Timber**	**Steel**		**Timber**	**Steel**	
FD10_1	33,6	33,5	-	7,1	4,7	-	20,9	2,6	-	10,2	10,4	-
FD10_2	37,8	37,6	-	7,1	5	-	24,4	3,3	-	11,5	11,4	-
FD10_3	42	41,8	-	7,1	5,6	-	24,4	4,1	-	12,7	12,5	-
FD10_4	46,2	46	-	7,1	6,1	-	24,4	5	-	14	13,5	-
FD10_5	54,6	54,4	-	7,1	6	-	24,4	6	-	15,3	14	-
	-	-	-	-	-	-	-	-	-	-	-	-
	γ_m	$\gamma_{m,0}$		γ_m	$\gamma_{m,0}$		γ_m	$\gamma_{m,0}$		γ_m	$\gamma_{m,0}$	

* Characteristic load-carrying capacities are referred to a couple of brackets



Typ	B_1	B_2	S	b_1	b_2	H_1	H_2	P_1	P_2	P_3	P_4	L_{WB}	S_{WB}	$L_{A,min}$
FD10_1	95	200	2.5	55.5	121	202.5	200	50	100	35	15	25	2.5	80
FD10_2	105	220	2.5	65.5	141	202.5	200	50	100	40	15	25	2.5	90
FD10_3	115	240	2.5	75.5	161	202.5	200	50	100	45	15	30	2.5	100
FD10_4	125	260	2.5	85.5	181	202.5	200	50	100	50	15	30	2.5	110
FD10_5	135	280	2.5	95.5	201	202.5	200	50	100	55	15	35	2.5	130

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Product:

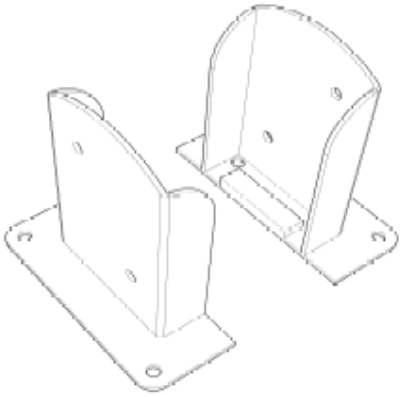
Typ FD10

Post base

rothoengineer

Data sheet post base Type FD20

Name of the manufacturer:	Rotho Blaas srl - Via dell'Adige 2/1 - 39040 Cortaccia (BZ) Italy
Number of the European Technical Approval:	ETA 10/0422
Number of the ETA Guideline:	ETAG 015
Name of product:	FD20_1, FD20_2, FD20_3, FD20_4

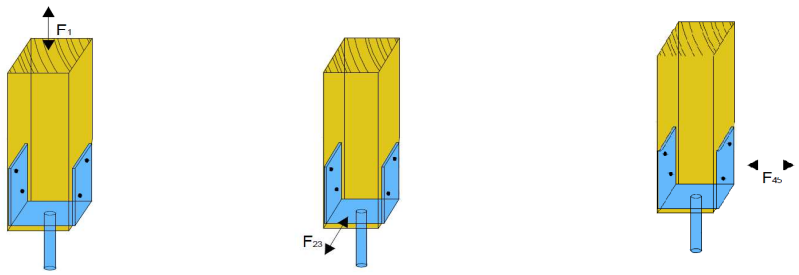


Product details and definitions

Post base		Metal Fasteners	Distances [mm]		
Type	Dimension	Type	max. a	$e_{F2/F3}$	$e_{F4/F5}$
FD20_1	121x38	4x HBS+ 8x60mm	-	94	41
FD20_2	141x46	4x HBS+ 8x60mm	-	94	41
FD20_3	161x54	4x HBS+ 8x60mm	-	94	41
FD20_4	201x66	4x HBS+ 8x60mm	-	94	41

Definition of forces, their direction and eccentricity

Force F_1: tensile or compression load
Force F_2 / F_3: horizontal load parallel to the side plates of post base
Force F_4 / F_5: horizontal load perpendicular to the side plates of post base



Acting forces

F_1	axial force (tension or compression) acting along the central axis of the joint
F_2 and F_3	horizontal force parallel to the side plates of the post base acting with the lever arm $e_{F2/F3}$ above the foundation
F_4 and F_5	horizontal force perpendicular to the side plates of the post base acting with the lever arm $e_{F4/F5}$ above the foundation

Combined forces

$\sum F_{i,d} / R_{i,d} \leq 1$ The forces F_2 and F_3 or F_4 and F_5 are forces with opposite direction. F_4 or F_5 , respectively, is able to act simultaneously with F_1 .

Safety principles and partial factors

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

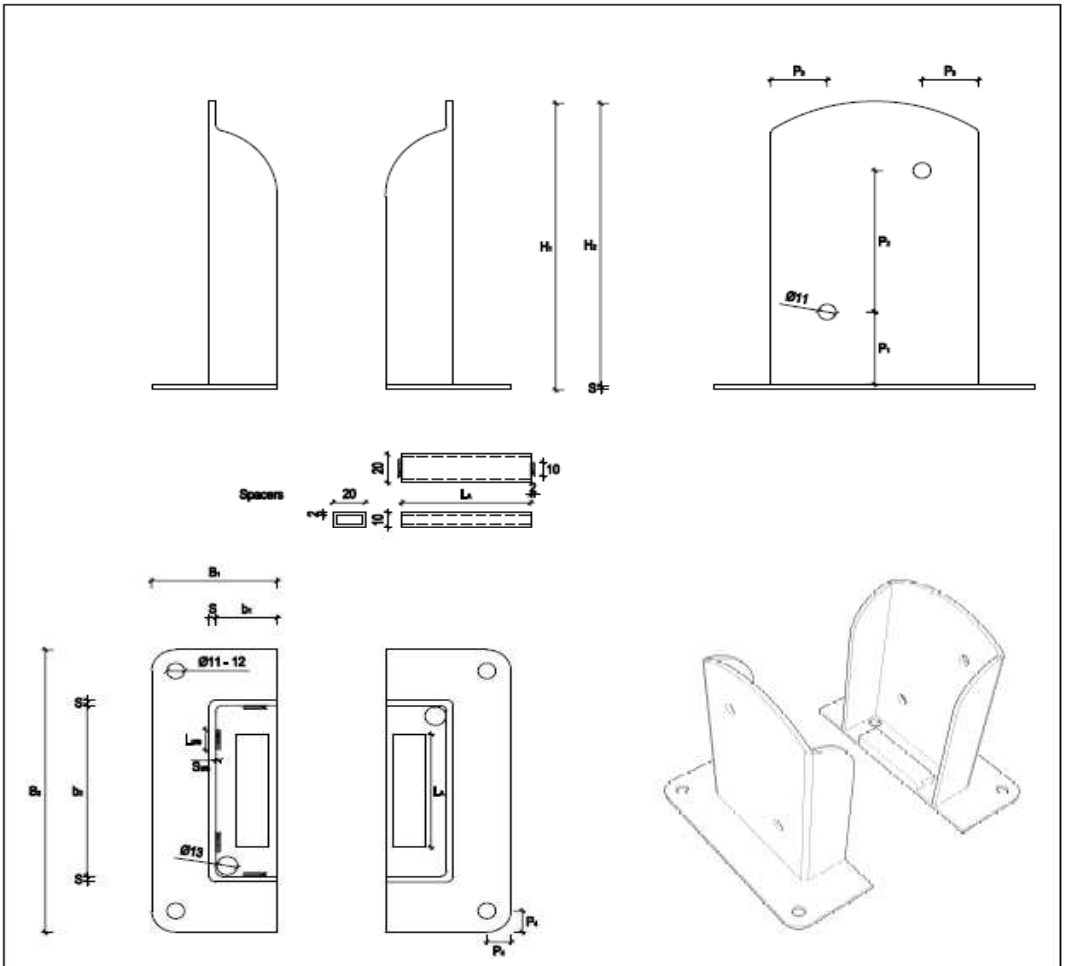
$$F_{Rd} = \min \left\{ \frac{k_{mod} * F_{Rk,H}}{\gamma_{M,H}} ; \frac{F_{Rk,S}}{\gamma_{Mi,S}} ; \frac{F_{Rk,B}}{\gamma_{Ri,B}} \right\}$$

$F_{Rk,H}$	timber failure or failure of the metal fasteners (EN 1995-1-1)
$F_{Rk,S}$	steel failure (EN 1993-1-1)
$F_{Rk,B}$	foundation failure (EN 1997-1)

Characteristic load-carrying capacities *

	F_1 (Compression) [KN]			F_1 (Tension) [KN]			F_{23} [KN]			F_{45} [KN]		
Type	**Timber**	**Steel**		**Timber**	**Steel**		**Timber**	**Steel**		**Timber**	**Steel**	
FD20_1	33,6	33,5	-	7	11,8	-	22,9	3,7	-	16,1	19,4	-
FD20_2	37,8	37,6	-	7	13,3	-	31,6	4,7	-	17,7	21,4	-
FD20_3	42	41,8	-	7	14,6	-	32,9	5,9	-	19,3	23,3	-
FD20_4	54,6	54,4	-	7	17	-	27,5	2,6	-	17	27,2	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	γ_m	$\gamma_{m,0}$		γ_m	$\gamma_{m,0}$		γ_m	$\gamma_{m,0}$		γ_m	$\gamma_{m,0}$	

* Characteristic load-carrying capacities are referred to a couple of brackets



Typ	B_1	B_2	S	b_1	b_2	H_1	H_2	P_1	P_2	P_3	P_4	L_{WB}	S_{WB}	$L_{A,min}$
FD20_1	78	200	4	38	121	204	200	50	100	35	15	20	4	80
FD20_2	85	220	4	46	141	204	200	50	100	40	15	25	4	90
FD20_3	92	240	4	54	161	204	200	50	100	45	15	30	4	100
FD20_4	105	280	4	66	201	204	200	50	100	55	15	35	4	130

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Product:

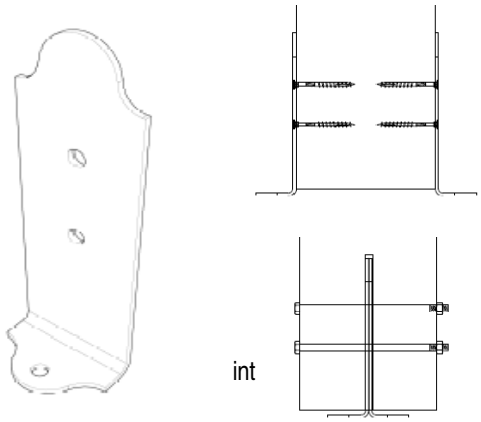
Typ FD20

Post base

rothoengineer

Data sheet post base Type FD30

Name of the manufacturer:	Rotho Blaas srl - Via dell'Adige 2/1 - 39040 Cortaccia (BZ) Italy
Number of the European Technical Approval:	ETA 10/0422
Number of the ETA Guideline:	ETAG 015
Name of product:	FD30_1, FD30_2, FD30_1 int, FD30_2 int

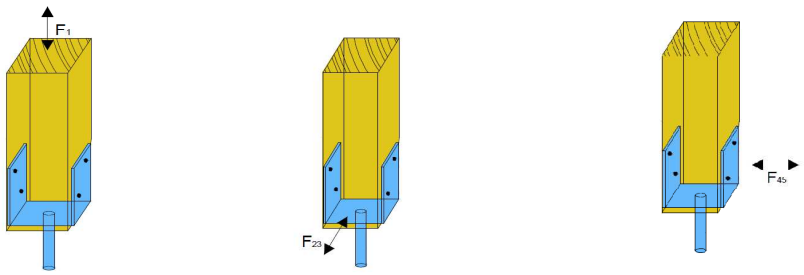


Product details and definitions

Post base		Metal Fasteners	Distances [mm]		
Type	Dimension	Type	max. a	$e_{F2/F3}$	$e_{F4/F5}$
FD30_1	60x180	4x HBS+ 8x40mm	-	-	38
FD30_2	80x240	4x HBS+ 8x40mm	-	-	38
FD30_1 int	60x180	2x Bolts Ø10mm	-	-	38
FD30_2 int	80x240	2x Bolts Ø10mm	-	-	38

Definition of forces, their direction and eccentricity

Force F_1: tensile or compression load
Force F_2 / F_3: horizontal load parallel to the side plates of post base
Force F_4 / F_5: horizontal load perpendicular to the side plates of post base



Acting forces

F_1 axial force (tension or compression) acting along the central axis of the joint
F_2 and F_3 horizontal force parallel to the side plates of the post base acting with the lever arm $e_{F2/F3}$ above the foundation
F_4 and F_5 horizontal force perpendicular to the side plates of the post base acting with the lever arm $e_{F4/F5}$ above the foundation

Combined forces

$\sum F_{i,d} / R_{i,d} \leq 1$ The forces F_2 and F_3 or F_4 and F_5 are forces with opposite direction. F_4 or F_5 , respectively, is able to act simultaneously with F_1 .

Safety principles and partial factors

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

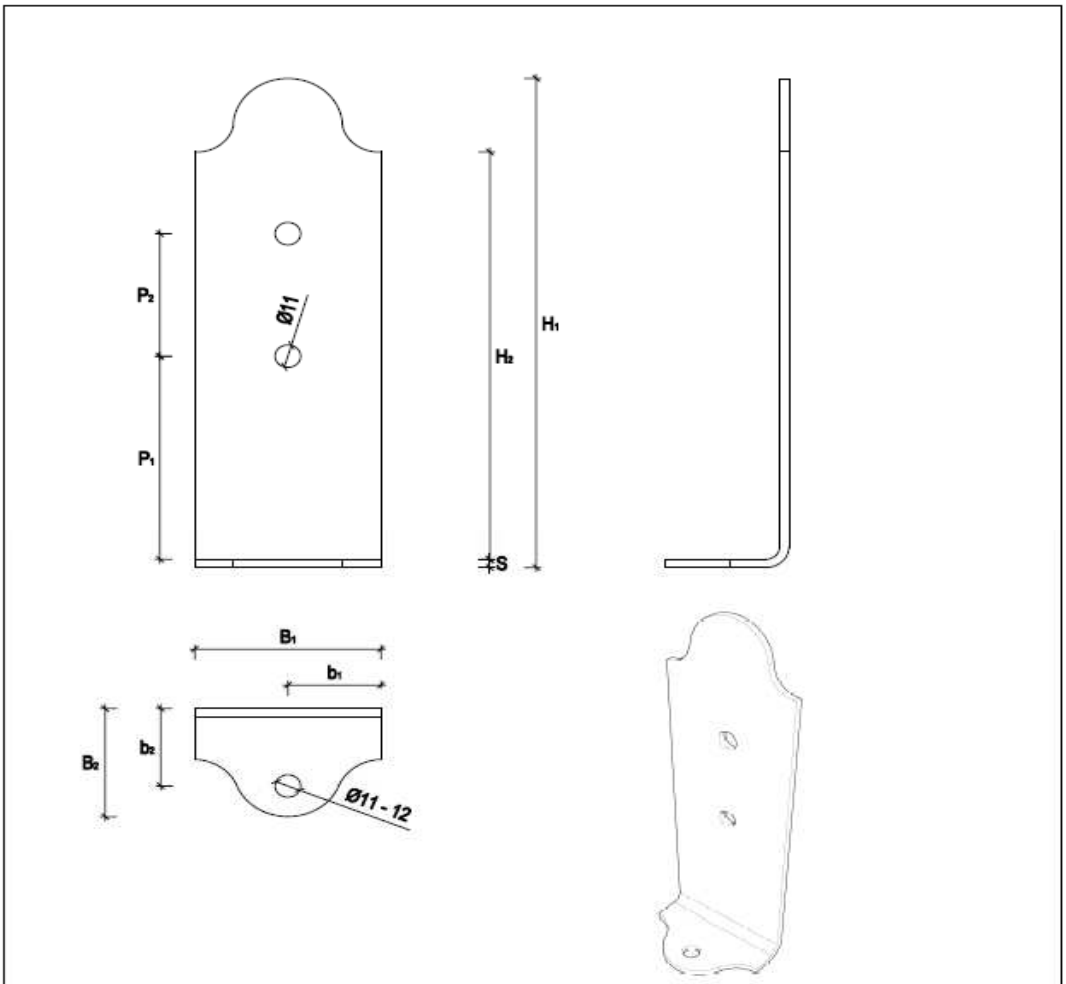
$$F_{Rd} = \min \left\{ \frac{k_{mod} * F_{Rk,H}}{\gamma_{M,H}} ; \frac{F_{Rk,S}}{\gamma_{Mi,S}} ; \frac{F_{Rk,B}}{\gamma_{Ri,B}} \right\}$$

$F_{Rk,H}$ timber failure or failure of the metal fasteners (EN 1995-1-1)
$F_{Rk,S}$ steel failure (EN 1993-1-1)
$F_{Rk,B}$ foundation failure (EN 1997-1)

Characteristic load-carrying capacities *

	F_1 (Compression) [KN]			F_1 (Tension) [KN]			F_{23} [KN]			F_{45} [KN]		
Type	**Timber**	**Steel**		**Timber**	**Steel**		**Timber**	**Steel**		**Timber**	**Steel**	
FD30_1	77,6	71,9	-	7	4,7	-	-	-	-	9,3	3,2	-
FD30_2	115,8	95,9	-	7,3	3,6	-	-	-	-	9	4	-
FD30_1 int	77,6	12,5	-	13,5	4,7	-	-	-	-	2,1	3,2	-
FD30_2 int	115,8	16,7	-	13,5	3,6	-	-	-	-	2,6	4	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	γ_m	$\gamma_{m,0}$		γ_m	$\gamma_{m,0}$		γ_m	$\gamma_{m,0}$		γ_m	$\gamma_{m,0}$	

* Characteristic load-carrying capacities are referred to a couple of brackets



Typ	B_1	B_2	S	b_1	b_2	H_1	H_2	P_1	P_2
FD30_1	60	50	4.0	30	30	180	150	85	50
FD30_2	80	50	4.0	40	38	240	200	100	60

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Product:

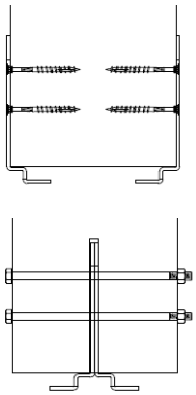
Typ FD30

Post base

rothoengineer

Data sheet post base Type FD40

Name of the manufacturer: Rotho Blaas srl - Via dell'Adige 2/1 - 39040 Cortaccia (BZ) Italy
Number of the European Technical Approval: ETA 10/0422
Number of the ETA Guideline: ETAG 015
Name of product: FD40_1, FD40_2, FD40_1 int, FD40_2 int



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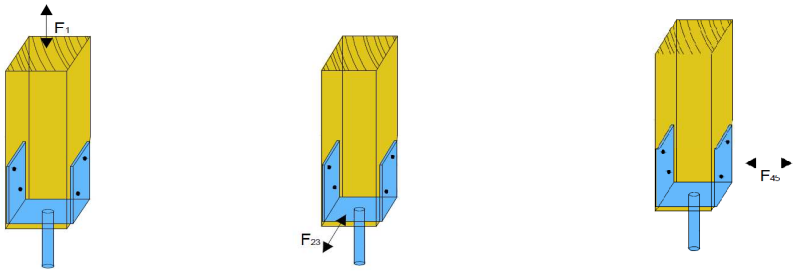
Product details and definitions

Post base		Metal Fasteners	Distances [mm]		
Type	Dimension	Type	max. a	$e_{F2/F3}$	$e_{F4/F5}$
FD40_1	60x180	4x HBS+ 8x40mm	-	-	46
FD40_2	80x240	4x HBS+ 8x40mm	-	-	46
FD40_1 int	60x180	2x Bolts Ø10mm	-	-	43
FD40_2 int	80x240	2x Bolts Ø10mm	-	-	43

Definition of forces, their direction and eccentricity

Force F_1: tensile or compression load
Force F_2 / F_3: horizontal load parallel to the side plates of post base
Force F_4 / F_5: horizontal load perpendicular to the side plates of post base



Acting forces

F_1 axial force (tension or compression) acting along the central axis of the joint
F_2 and F_3 horizontal force parallel to the side plates of the post base acting with the lever arm $e_{F2/F3}$ above the foundation
F_4 and F_5 horizontal force perpendicular to the side plates of the post base acting with the lever arm $e_{F4/F5}$ above the foundation

Combined forces

$\sum F_{i,d} / R_{i,d} \leq 1$ The forces F_2 and F_3 or F_4 and F_5 are forces with opposite direction. F_4 or F_5 , respectively, is able to act simultaneously with F_1 .

Safety principles and partial factors

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

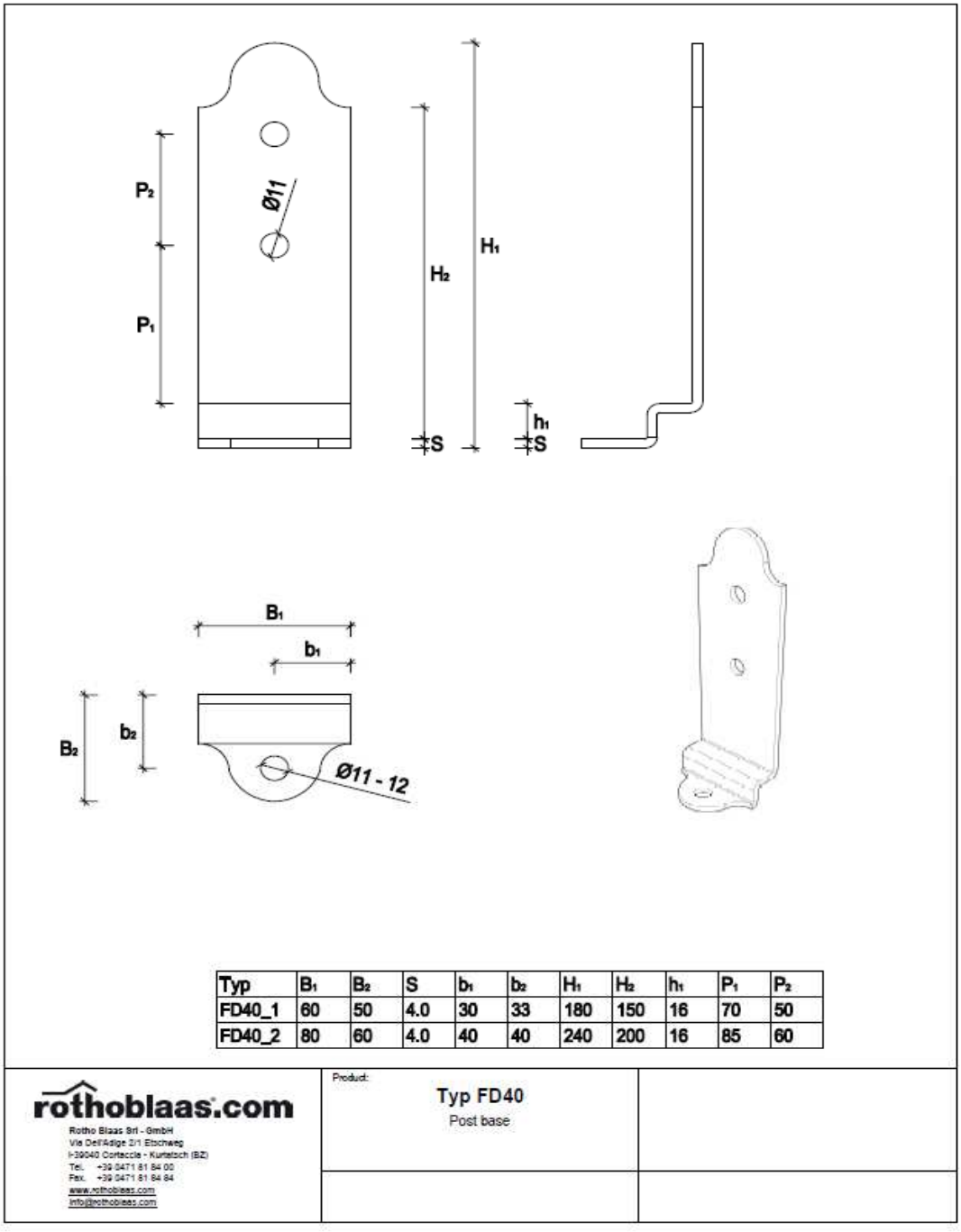
$$F_{Rd} = \min \left\{ \frac{k_{mod} * F_{Rk,H}}{\gamma_{M,H}} ; \frac{F_{Rk,S}}{\gamma_{Mi,S}} ; \frac{F_{Rk,B}}{\gamma_{Ri,B}} \right\}$$

$F_{Rk,H}$ timber failure or failure of the metal fasteners (EN 1995-1-1)
$F_{Rk,S}$ steel failure (EN 1993-1-1)
$F_{Rk,B}$ foundation failure (EN 1997-1)

Characteristic load-carrying capacities *

	F_1 (Compression) [KN]			F_1 (Tension) [KN]			F_{23} [KN]			F_{45} [KN]		
Type	**Timber**	**Steel**		**Timber**	**Steel**		**Timber**	**Steel**		**Timber**	**Steel**	
FD40_1	7	6,3	-	4,5	6,3	-	-	-	-	8,2	5	-
FD40_2	7,3	8,4	-	9	8,4	-	-	-	-	8,6	6,5	-
FD40_1 int	19,8	12,5	-	13,5	6,3	-	-	-	-	2,1	5,1	-
FD40_2 int	20,7	16,7	-	13,5	8,4	-	-	-	-	2,6	5,2	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	γ_m	$\gamma_{m,0}$		γ_m	$\gamma_{m,0}$		γ_m	$\gamma_{m,0}$		γ_m	$\gamma_{m,0}$	

* Characteristic load-carrying capacities are referred to a couple of brackets



Typ	B_1	B_2	S	b_1	b_2	H_1	H_2	h_1	P_1	P_2
FD40_1	60	50	4.0	30	33	180	150	16	70	50
FD40_2	80	60	4.0	40	40	240	200	16	85	60

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Product:
Typ FD40
Post base

rothoengineer

Data sheet post base Type FD50

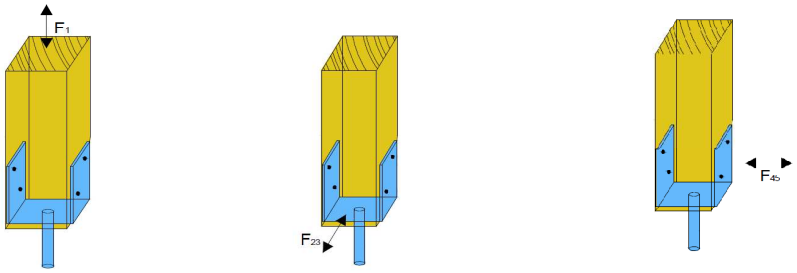
Name of the manufacturer:	Rotho Blaas srl - Via dell'Adige 2/1 - 39040 Cortaccia (BZ) Italy
Number of the European Technical Approval:	ETA 10/0422
Number of the ETA Guideline:	ETAG 015
Name of product:	FD50_1, FD50_2

Product details and definitions

Post base		Metal Fasteners	Distances [mm]		
Type	Dimension	Type	max. a	$e_{F2/F3}$	$e_{F4/F5}$
FD50_1	46x46	4x HBS+ 8x60mm	-	-	-
FD50_2	76x76	4x HBS+ 8x60mm	-	-	90

Definition of forces, their direction and eccentricity

Force F_1: tensile or compression load
Force F_2 / F_3: horizontal load parallel to the side plates of post base
Force F_4 / F_5: horizontal load perpendicular to the side plates of post base



Acting forces

F_1 axial force (tension or compression) acting along the central axis of the joint
F_2 and F_3 horizontal force parallel to the side plates of the post base acting with the lever arm $e_{F2/F3}$ above the foundation
F_4 and F_5 horizontal force perpendicular to the side plates of the post base acting with the lever arm $e_{F4/F5}$ above the foundation

Combined forces

$\sum F_{i,d} / R_{i,d} \leq 1$ The forces F_2 and F_3 or F_4 and F_5 are forces with opposite direction. F_4 or F_5 , respectively, is able to act simultaneously with F_1 .

Safety principles and partial factors

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

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

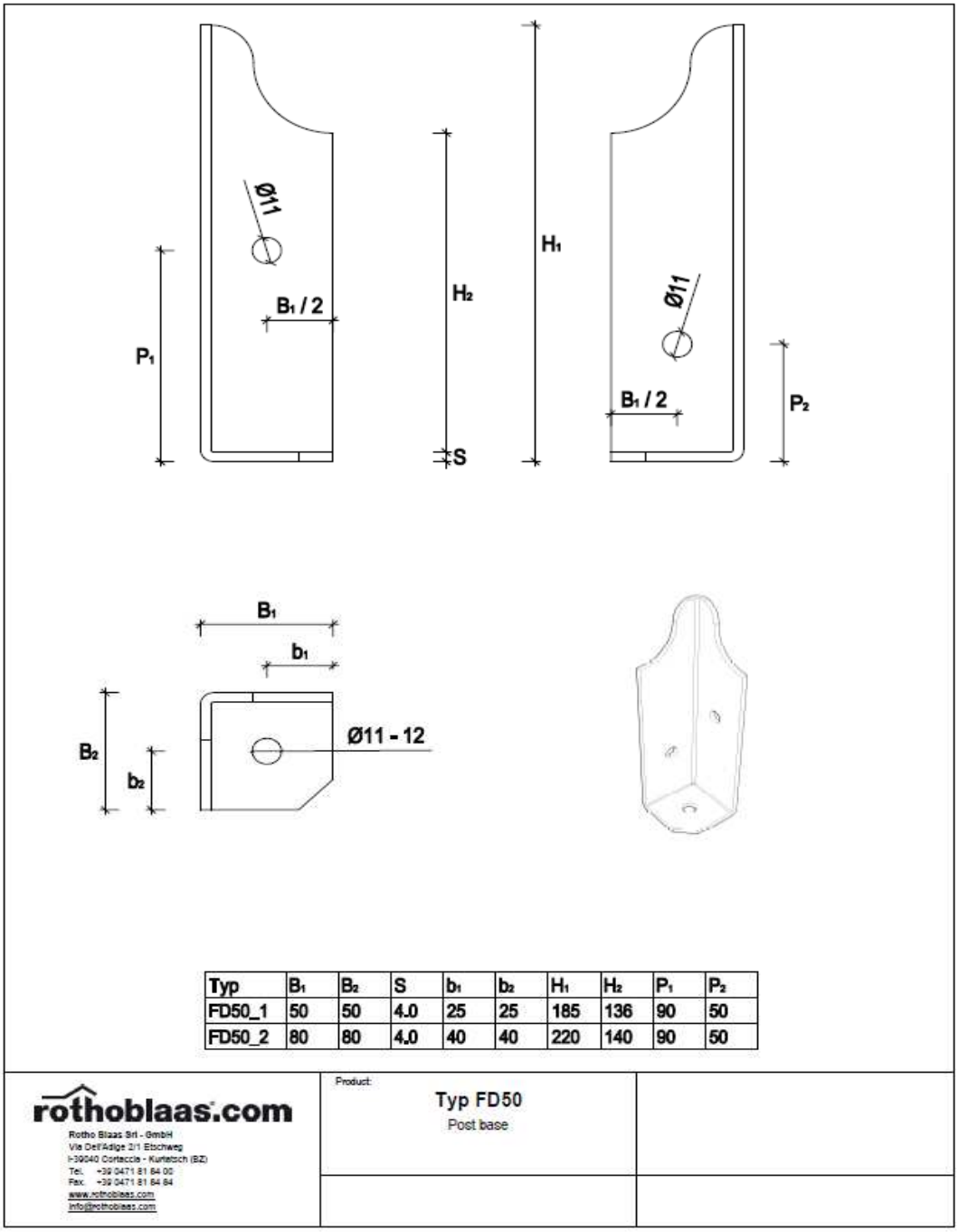
$F_{Rk,H}$ timber failure or failure of the metal fasteners (EN 1995-1-1)
$F_{Rk,S}$ steel failure (EN 1993-1-1)
$F_{Rk,B}$ foundation failure (EN 1997-1)

Characteristic load-carrying capacities *

	F_1 (Compression) [KN]			F_1 (Tension) [KN]			F_{23} [KN]			F_{45} [KN]		
Type	**Timber**	**Steel**		**Timber**	**Steel**		**Timber**	**Steel**		**Timber**	**Steel**	
FD50_1	69,4	-	-	-	-	-	-	-	-	-	-	-
FD50_2	203,8	-	-	7,8	10	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	γ_m			γ_m	$\gamma_{m,0}$		γ_m	$\gamma_{m,0}$		γ_m	$\gamma_{m,0}$	

* Characteristic load-carrying capacities are referred to a couple of angle brackets

When 4 angle brackets are used, the characteristic load-carrying capacities may be increased by a factor of 2,0.



Typ	B_1	B_2	S	b_1	b_2	H_1	H_2	P_1	P_2
FD50_1	50	50	4.0	25	25	185	136	90	50
FD50_2	80	80	4.0	40	40	220	140	90	50

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Product:

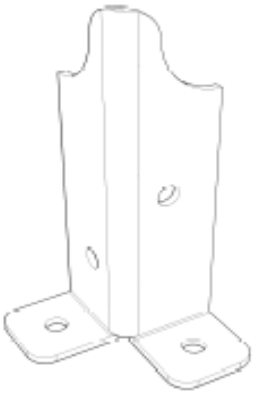
Typ FD50

Post base

rothoengineer

Data sheet post base Type FD60

Name of the manufacturer:	Rotho Blaas srl - Via dell'Adige 2/1 - 39040 Cortaccia (BZ) Italy
Number of the European Technical Approval:	ETA 10/0422
Number of the ETA Guideline:	ETAG 015
Name of product:	FD60_1, FD60_2

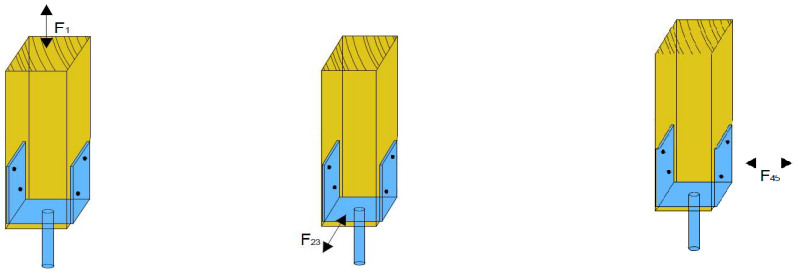


Product details and definitions

Post base		Metal Fasteners	Distances [mm]		
Type	Dimension	Type	max. a	$e_{F2/F3}$	$e_{F4/F5}$
FD60_1	46x46	4x HBS+ 8x60mm	-	-	-
FD60_2	76x76	4x HBS+ 8x60mm	-	89	89

Definition of forces, their direction and eccentricity

Force F_1: tensile or compression load
Force F_2 / F_3: horizontal load parallel to the side plates of post base
Force F_4 / F_5: horizontal load perpendicular to the side plates of post base



Acting forces

F_1 axial force (tension or compression) acting along the central axis of the joint
F_2 and F_3 horizontal force parallel to the side plates of the post base acting with the lever arm $e_{F2/F3}$ above the foundation
F_4 and F_5 horizontal force perpendicular to the side plates of the post base acting with the lever arm $e_{F4/F5}$ above the foundation

Combined forces

$\sum F_{i,d} / R_{i,d} \leq 1$ The forces F_2 and F_3 or F_4 and F_5 are forces with opposite direction. F_4 or F_5 , respectively, is able to act simultaneously with F_1 .

Safety principles and partial factors

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

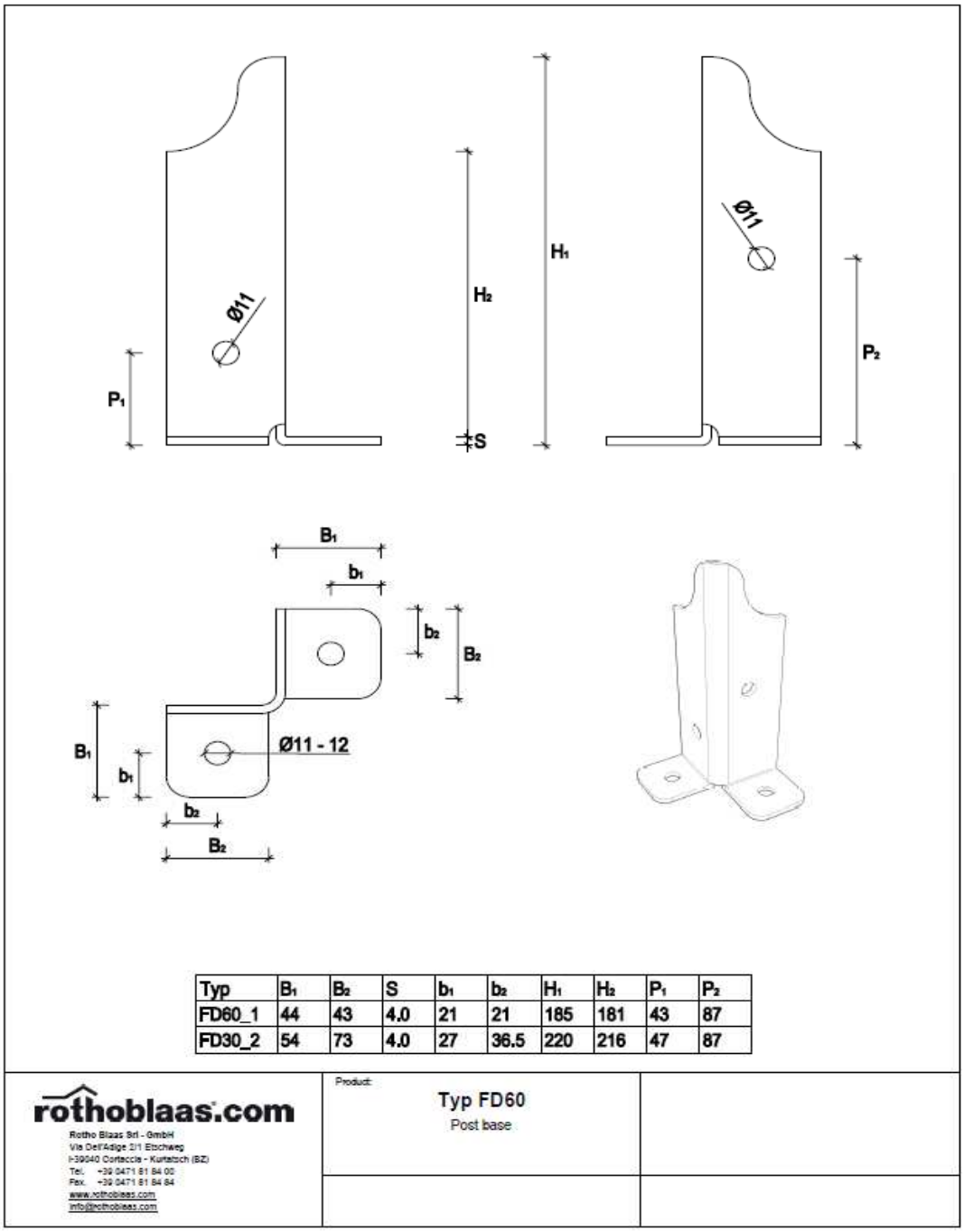
$$F_{Rd} = \min \left\{ \frac{k_{mod} * F_{Rk,H}}{\gamma_{M,H}} ; \frac{F_{Rk,S}}{\gamma_{Mi,S}} ; \frac{F_{Rk,B}}{\gamma_{Ri,B}} \right\}$$

$F_{Rk,H}$ timber failure or failure of the metal fasteners (EN 1995-1-1)
$F_{Rk,S}$ steel failure (EN 1993-1-1)
$F_{Rk,B}$ foundation failure (EN 1997-1)

Characteristic load-carrying capacities

	F_1 (Compression) [KN]			F_1 (Tension) [KN]			F_{23} [KN]			F_{45} [KN]		
Type	**Timber**	**Steel**		**Timber**	**Steel**		**Timber**	**Steel**		**Timber**	**Steel**	
FD60_1	75,6	-	-	-	-	-	-	-	-	-	-	-
FD60_2	263,4	-	-	7,8	17,7	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	γ_m			γ_m	$\gamma_{m,0}$		γ_m	$\gamma_{m,0}$		γ_m	$\gamma_{m,0}$	

* Characteristic load-carrying capacities are referred to a couple of angle brackets
When 4 angle brackets are used, the characteristic load-carrying capacities for F_1 (Tension), F_{23} and F_{45} may be increased by a factor of 2,0.



Typ	B_1	B_2	S	b_1	b_2	H_1	H_2	P_1	P_2
FD60_1	44	43	4.0	21	21	185	181	43	87
FD30_2	54	73	4.0	27	36.5	220	216	47	87

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