Cost-effective ceiling construction with Steel Bearings

Tables for pre-dimensioning

PFEIFER

Objective of the tables

The tables are intended for pre-dimensioning of the transversal shear force carrying capacity in the final state, as well as the choice of the necessary additional reinforcement when using PFEIFER Steel Bearings. The geometric dimensions of the π ceiling serve as the input values. Depending on the selected Steel Bearing type and the desired reinforcement, the working load limits for common installation conditions can be obtained.

The complete dimensioning of the support for the assembly and final condition can subsequently be carried out with the free PFEIFER dimensioning software and a verifiable printout can be generated.

General DIBT (German Institute of Building Technology) building authority approval

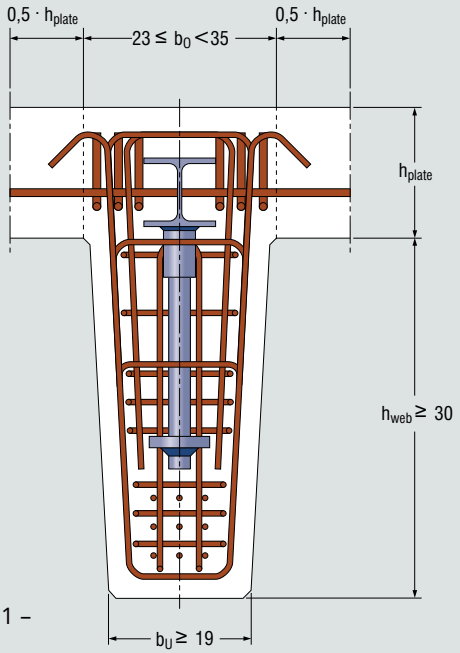
Software

You can find the approval, dimensioning software, and more here:

www.pfeifer.info/steel-bearing

Initial conditions

- **Base module** 1 – narrow web (see graphic on the right)
- Additional reinforcement on the Steel Bearing according to subsequent pages
- Concrete quality top layer C25/30
- Concrete quality precast element ≥ C35/45
- Web heights from 30 to 70 cm
- Preselection of the required transversal shear force carrying capacity in the assembly state, depending on the Steel Bearing type



Basic module 1 – narrow web

Notes:

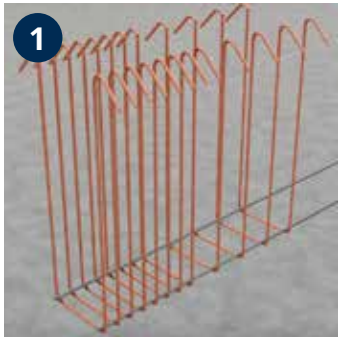
In-situ concrete supplement (top concrete) also possible in C20/25 or ≥ C30/37, for corresponding table values see approval.

Table values for basic module 2 - wide web - can also be found in the relevant approval.

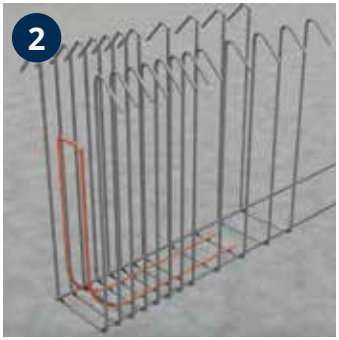
Required additional reinforcement on the Steel Bearing

Reinforcement cage

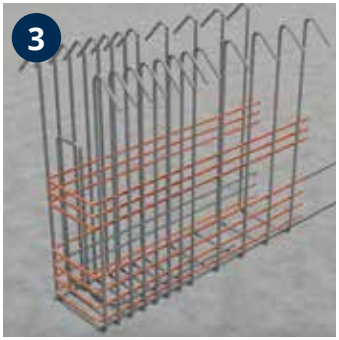
Suspension reinforcement



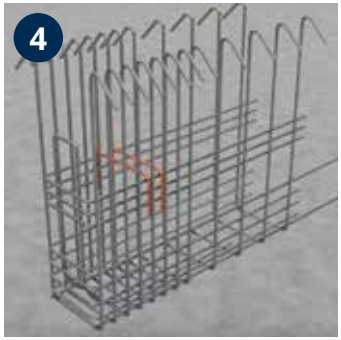
Bent-up loop

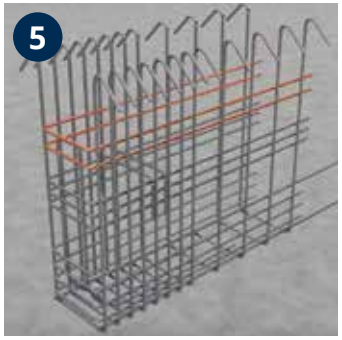


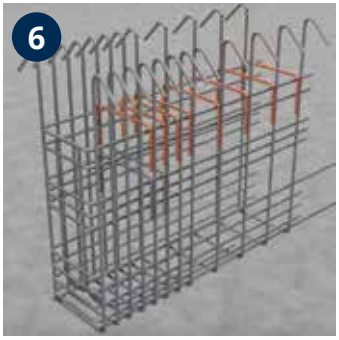
Front stirrup,
bottom & central



Bottom plug





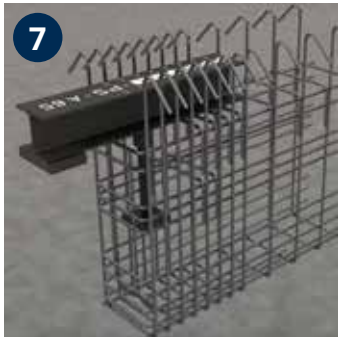


5: Front stirrup, top

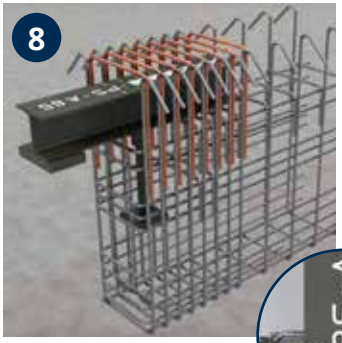
6: Top stirrup

Steel Bearing and additional reinforcement in formwork

Steel Bearing



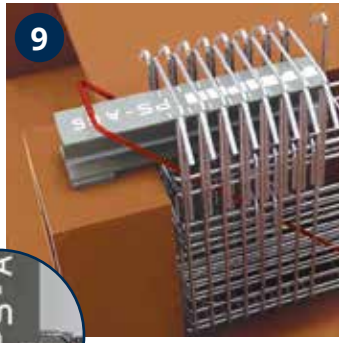
Upper stirrup caps



Position stirrup on line!

Distance to Steel Bearing: min. 1 cm

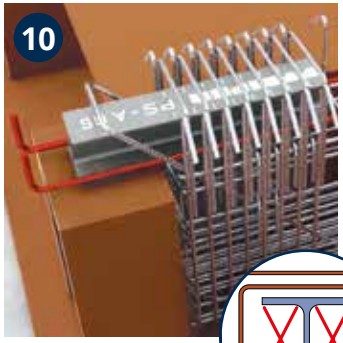
Diagonal stirrup

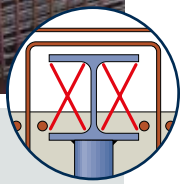


Spacing to Steel Bearing: min. 1 cm

Angle: 45°

Additional concrete steel reinforcement



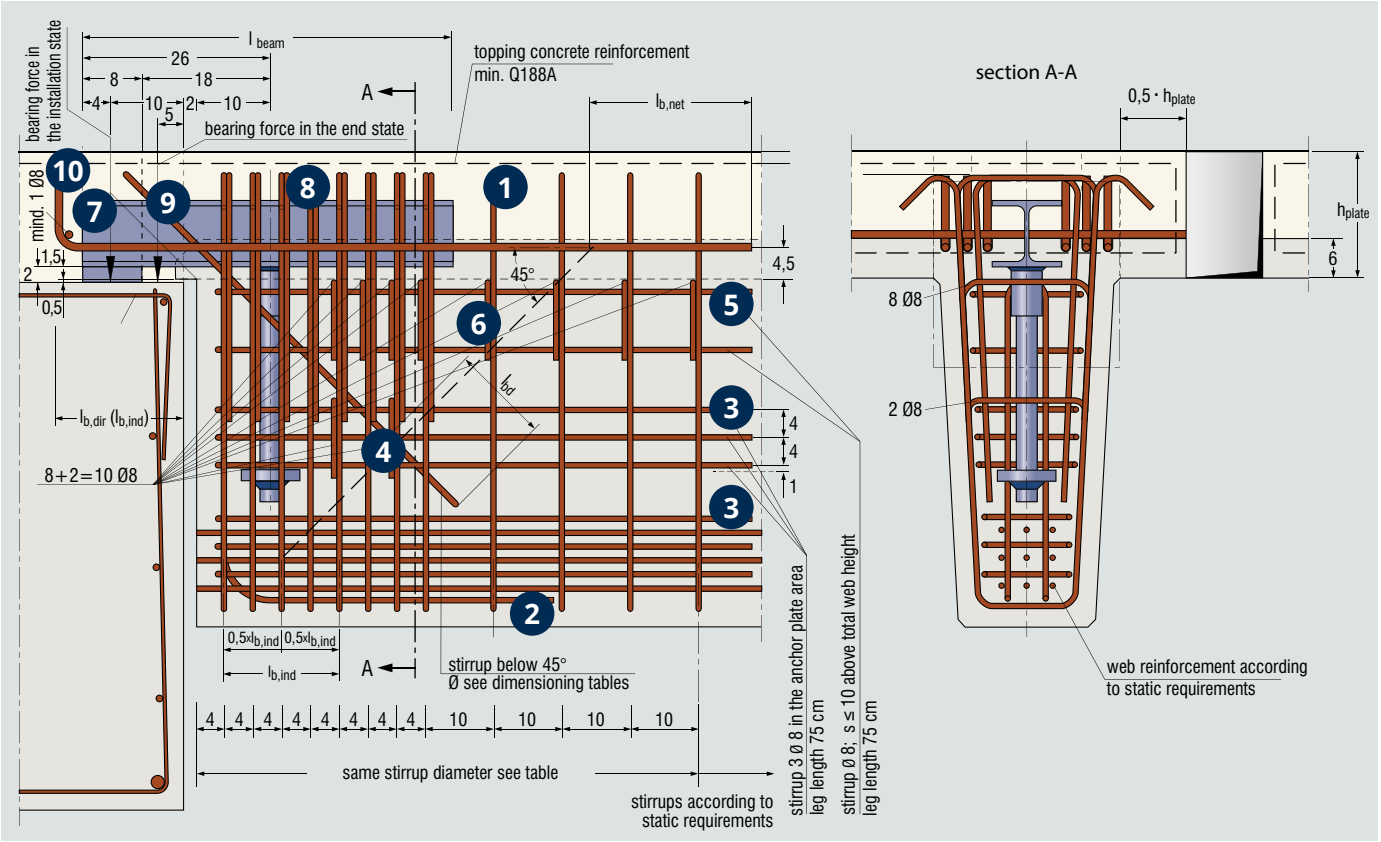


Do not place in the beam cross-section!

Required additional reinforcement on the Steel Bearing

Overview

1. **Suspension reinforcement:**
   Reinforcement proposal according to tables
2. **Bent-up loop:**
   Reinforcement proposal according to tables
3. **Front stirrup, bottom & central:**
   below = according to static requirements | centre = 3 Ø8
4. **Bottom stirrup:** 2 Ø8
5. **Front stirrup, top:** n Ø8
   n = according to static requirements
6. **Top stirrup:** 8 Ø8
7. **Steel Bearings:** add/insert in reinforcement cage
8. **Upper stirrup cap:**
   Reinforcement proposal according to tables
9. **Diagonal stirrup:**
   Reinforcement proposal according to tables
10. **Additional concrete steel reinforcement:**
    Reinforcement proposal according to tables



Notice:
The exact dimensions of the additional reinforcement as well as the statically necessary reinforcement of the entire component are to be determined by the responsible planner. The specified reinforcement are regulated by approval no. **Z-15.6-287**.

Steel Bearing PS-A 65

$V_{Rd,installation}$ = 65 kN[1] | Web height h_{web} = **30 cm** | Concrete quality top layer C25/30 | Basic module 1

Plate thickness (at the bearing)	**Transversal shear force carrying capacity in the end state [2]**	**Suspension reinforcement (stirrups) [3] each two legged**			**Horizontal additional concrete steel reinforcement**	
		1 Stirrup and stirrup cap 8	2 Bent-up loop	9 Stirrup below 45°	10 Reinforcement proposal [4]	
h_{plate} [cm]	$V_{Rd,total}$ [kN]	n ø [mm]	ø [mm]	ø [mm]	Quantity	ø [mm]
15	111.77	8	8	10	2	12
15	151.71	8	8	10	4	12
15	154.48	10	8	12	4	12
16	115.70	8	8	10	2	12
16	161.52	8	8	10	4	12
16	168.10	10	8	12	6	12
17	119.54	8	8	10	2	12
17	168.29	8	8	10	4	12
17	181.44	10	8	12	6	12
18	123.31	8	8	10	2	12
18	173.81	8	8	10	4	12
18	194.54	10	8	12	6	12
19	127.00	8	8	10	2	12
19	178.68	8	8	10	4	12
19	197.14	10	8	12	6	12
20	130.62	8	8	10	2	12
20	183.41	8	8	10	4	12
20	198.80	10	8	12	6	12
21	134.17	8	8	10	2	12
21	188.03	8	8	10	4	12
21	200.47	10	8	12	6	12
22	137.65	8	8	10	2	12
22	192.55	8	8	10	4	12
22	202.17	10	8	12	6	12
23	141.06	8	8	10	2	12
23	196.96	8	8	10	4	12
23	203.89	10	8	12	6	12
24	144.41	8	8	10	2	12
24	201.29	8	8	10	4	12
24	205.62	10	8	12	6	12

[1] The partial safety factor of the stress may not be reduced. The dead weight should always be based on Y_G = 1,35 !
[2] Calculated horizontal force due to constraint: $H_{Rd} = 0{,}20 \cdot V_{Rd,total}$
[3] For arrangement and design of the suspension reinforcement, see general technical application criteria (approval Z-15.6-287, Annexes 2.1-2.9)
[4] Alternatively, thinner bar diameters with overall the same or larger cross-section can be selected.

Steel Bearing PS-A 65

$V_{Rd,installation}$ = 65 kN[1] | Web height h_{web} = **40 cm** | Concrete quality top layer C25/30 | Basic module 1

Plate thickness (at the bearing)	Transversal shear force carrying capacity in the end state [2]	Suspension reinforcement (stirrups) [3] each two legged			Horizontal additional concrete steel reinforcement	
		1 Stirrup and 8 stirrup cap	2 Bent-up loop	9 Stirrup below 45°	10 Reinforcement proposal [4]	
h_{plate} [cm]	$V_{Rd,total}$ [kN]	n ø [mm]	ø [mm]	ø [mm]	Quantity	ø [mm]
15	111.77	8	8	10	2	12
15	164.48	8	8	10	4	12
15	208.55	10	8	12	6	12
16	115.70	8	8	10	2	12
16	171.80	8	8	10	4	12
16	221.59	10	8	12	6	12
16	237.10	10	8	12	8	12
17	119.54	8	8	10	2	12
17	179.03	8	8	10	4	12
17	232.52	10	8	12	6	12
17	242.54	10	8	12	8	12
18	123.31	8	8	10	2	12
18	185.55	8	8	10	4	12
18	243.29	10	8	12	6	12
18	261.26	10	8	12	8	12
19	127.00	8	8	10	2	12
19	188.54	8	8	10	4	12
19	251.52	10	8	12	6	12
19	271.93	10	8	12	8	12
20	130.62	8	8	10	2	12
20	194.34	8	8	10	4	12
20	256.06	10	8	12	6	12
20	286.18	10	8	12	8	12
21	134.17	8	8	10	2	12
21	200.07	8	8	10	4	12
21	265.40	10	8	12	6	12
21	300.41	10	8	12	8	12
22	137.65	8	8	10	2	12
22	205.73	8	8	10	4	12
22	275.02	10	8	12	6	12
22	313.27	10	8	12	8	12
23	141.06	8	8	10	2	12
23	211.32	8	8	10	4	12
23	284.53	10	8	12	6	12
23	318.95	10	8	12	8	12
24	144.41	8	8	10	2	12
24	216.84	8	8	10	4	12
24	293.94	10	8	12	6	12
24	329.59	10	8	12	8	12

[1] The partial safety factor of the stress may not be reduced. The dead weight should always be based on Y_G = 1,35 !
[2] Calculated horizontal force due to constraint: $H_{Rd} = 0{,}20 \cdot V_{Rd,total}$
[3] For arrangement and design of the suspension reinforcement, see general technical application criteria (approval Z-15.6-287, Annexes 2.1-2.9)
[4] Alternatively, thinner bar diameters with overall the same or larger cross-section can be selected.

Steel Bearing PS-A 65

$V_{Rd,installation}$ = 65 kN[1] | Web height h_{web} = **50 cm** | Concrete quality top layer C25/30 | Basic module 1

Plate thickness (at the bearing)	**Transversal shear force carrying capacity in the end state** [2]	**Suspension reinforcement (stirrups)** [3] **each two legged**			**Horizontal additional concrete steel reinforcement**	
		(1) Stirrup and stirrup cap (8)	(2) Bent-up loop	(9) Stirrup below 45°	(10) Reinforcement proposal [4]	
h_{plate} [cm]	$V_{Rd,total}$ [kN]	n ø [mm]	ø [mm]	ø [mm]	Quantity	ø [mm]
15	121.91	8	8	10	2	12
15	186.39	8	8	10	4	12
15	233.57	10	8	12	6	12
16	126.55	8	8	10	2	12
16	195.15	8	8	10	4	12
16	249.92	10	8	12	6	12
17	131.07	8	8	10	2	12
17	204.70	8	8	10	4	12
17	255.60	10	8	12	6	12
18	135.48	8	8	10	2	12
18	212.41	8	8	10	4	12
18	270.46	10	8	12	6	12
19	139.79	8	8	10	2	12
19	218.12	8	8	10	4	12
19	290.43	10	8	12	6	12
20	143.99	8	8	10	2	12
20	221.58	8	8	10	4	12
20	300.06	10	8	12	6	12
20	302.31	10	8	12	8	12
21	148.09	8	8	10	2	12
21	227.07	8	8	10	4	12
21	303.60	10	8	12	6	12
21	313.77	10	8	12	8	12
22	152.10	8	8	10	2	12
22	232.49	8	8	10	4	12
22	316.38	10	8	12	6	12
22	321.02	10	8	12	8	12
23	156.02	8	8	10	2	12
23	237.85	8	8	10	4	12
23	319.85	10	8	12	6	12
23	328.99	10	8	12	8	12
24	159.84	8	8	10	2	12
24	243.14	8	8	10	4	12
24	327.84	10	8	12	6	12
24	350.02	10	8	12	8	12

[1] The partial safety factor of the stress may not be reduced. The dead weight should always be based on Y_G = 1,35 !
[2] Calculated horizontal force due to constraint: $H_{Rd} = 0{,}20 \cdot V_{Rd,total}$
[3] For arrangement and design of the suspension reinforcement, see general technical application criteria (approval Z-15.6-287, Annexes 2.1-2.9)
[4] Alternatively, thinner bar diameters with overall the same or larger cross-section can be selected.

Steel Bearing PS-A 80/100

$V_{Rd,installation}$ = 80 kN[1] | Web height h_{web} = **30 cm** | Concrete quality top layer C25/30 | Basic module 1

Plate thickness (at the bearing)	**Transversal shear force carrying capacity in the end state** [2]	**Suspension reinforcement (stirrups)** [3] **each two legged**			**Horizontal additional concrete steel reinforcement**	
		1 Stirrup and stirrup cap 8	2 Bent-up loop	9 Stirrup below 45°	10 Reinforcement proposal [4]	
h_{plate} [cm]	$V_{Rd,total}$ [kN]	n ø [mm]	ø [mm]	ø [mm]	Quantity	ø [mm]
15	125.13	8	10	10	2	12
15	135.63	8	10	10	4	12
16	128.92	8	10	10	2	12
16	144.40	8	10	10	4	12
17	132.31	8	10	10	2	12
17	153.00	8	10	10	4	12
18	134.91	8	10	10	2	12
18	161.44	8	10	10	4	12
19	137.42	8	10	10	2	12
19	163.01	8	10	10	4	12
20	139.87	8	10	10	2	12
20	163.96	8	10	10	4	12
21	142.26	8	10	10	2	12
21	164.93	8	10	10	4	12
22	144.58	8	10	10	2	12
22	165.91	8	10	10	4	12
23	146.86	8	10	10	2	12
23	166.90	8	10	10	4	12
24	149.08	8	10	10	2	12
24	167.90	8	10	10	4	12

[1] The partial safety factor of the stress may not be reduced. The dead weight should always be based on Y_G = 1,35 !
[2] Calculated horizontal force due to constraint: H_{Rd} = 0,20 • $V_{Rd,total}$
[3] For arrangement and design of the suspension reinforcement, see general technical application criteria (approval Z-15.6-287, Annexes 2.1-2.9)
[4] Alternatively, thinner bar diameters with overall the same or larger cross-section can be selected.

Steel Bearing PS-A 80/100

$V_{Rd,installation}$ = 100 kN[1] | Web height h_{web} = **40 cm** | Concrete quality top layer C25/30 | Basic module 1

Plate thickness (at the bearing)	Transversal shear force carrying capacity in the end state [2]	Suspension reinforcement (stirrups) [3] each two legged			Horizontal additional concrete steel reinforcement	
		1 Stirrup and stirrup cap 8	2 Bent-up loop	9 Stirrup below 45°	10 Reinforcement proposal [4]	
h_{plate} [cm]	$V_{Rd,total}$ [kN]	n ø [mm]	ø [mm]	ø [mm]	Quantity	ø [mm]
15	142.94	8	10	10	2	12
15	194.25	8	10	10	4	12
15	215.35	10	10	12	6	12
16	146.54	8	10	10	2	12
16	201.51	8	10	10	4	12
16	247.08	10	10	12	6	12
16	257.03	10	10	12	8	12
17	150.07	8	10	10	2	12
17	208.03	8	10	10	4	12
17	256.15	10	10	12	6	12
17	269.07	10	10	12	8	12
18	153.53	8	10	10	2	12
18	214.02	8	10	10	4	12
18	263.31	10	10	12	6	12
18	277.93	10	10	12	8	12
19	156.92	8	10	10	2	12
19	219.66	8	10	10	4	12
19	269.44	10	10	12	6	12
19	288.44	10	10	12	8	12
20	160.24	8	10	10	2	12
20	225.23	8	10	10	4	12
20	276.06	10	10	12	6	12
20	292.84	10	10	12	8	12
21	163.50	8	10	10	2	12
21	230.74	8	10	10	4	12
21	282.01	10	10	12	6	12
21	294.85	10	10	12	8	12
22	166.69	8	10	10	2	12
22	236.18	8	10	10	4	12
22	288.01	10	10	12	6	12
22	296.90	10	10	12	8	12
23	169.82	8	10	10	2	12
23	241.55	8	10	10	4	12
23	293.92	10	10	12	6	12
23	298.96	10	10	12	8	12
24	172.89	8	10	10	2	12
24	246.85	8	10	10	4	12
24	299.83	10	10	12	6	12
24	304.25	10	10	12	8	12

[1] The partial safety factor of the stress may not be reduced. The dead weight should always be based on Y_G = 1,35 !
[2] Calculated horizontal force due to constraint: $H_{Rd} = 0{,}20 \cdot V_{Rd,total}$
[3] For arrangement and design of the suspension reinforcement, see general technical application criteria (approval Z-15.6-287, Annexes 2.1-2.9)
[4] Alternatively, thinner bar diameters with overall the same or larger cross-section can be selected.

Steel Bearing PS-A 80/100

$V_{Rd,installation}$ = 100 kN[1] | Web height h_{web} = **50 cm** | Concrete quality top layer C25/30 | Basic module 1

Plate thickness (at the bearing)	**Transversal shear force carrying capacity in the end state** [2]	**Suspension reinforcement (stirrups)** [3] **each two legged**			**Horizontal additional concrete steel reinforcement**	
		(1) Stirrup and stirrup cap (8) n ø [mm]	(2) Bent-up loop ø [mm]	(9) Stirrup below 45° ø [mm]	(10) Reinforcement proposal [4]	
h_{plate} [cm]	$V_{Rd,total}$ [kN]				Quantity	ø [mm]
15	152.24	8	10	10	2	12
15	217.55	8	10	10	4	12
15	261.12	10	10	12	6	12
16	156.50	8	10	10	2	12
16	227.42	8	10	10	4	12
16	268.98	10	10	12	6	12
17	160.65	8	10	10	2	12
17	233.07	8	10	10	4	12
17	279.85	10	10	12	6	12
18	164.70	8	10	10	2	12
18	239.74	8	10	10	4	12
18	295.04	10	10	12	6	12
19	168.65	8	10	10	2	12
19	246.32	8	10	10	4	12
19	300.79	10	10	12	6	12
20	172.51	8	10	10	2	12
20	252.49	8	10	10	4	12
20	304.88	10	10	12	6	12
20	317.61	10	10	12	8	12
21	176.28	8	10	10	2	12
21	257.76	8	10	10	4	12
21	313.29	10	10	12	6	12
21	334.97	10	10	12	8	12
22	179.96	8	10	10	2	12
22	262.97	8	10	10	4	12
22	321.92	10	10	12	6	12
22	349.12	10	10	12	8	12
23	183.55	8	10	10	2	12
23	268.11	8	10	10	4	12
23	328.05	10	10	12	6	12
23	352.12	10	10	12	8	12
24	187.07	8	10	10	2	12
24	273.18	8	10	10	4	12
24	335.01	10	10	12	6	12
24	365.37	10	10	12	8	12

[1] The partial safety factor of the stress may not be reduced. The dead weight should always be based on Y_G = 1,35 !
[2] Calculated horizontal force due to constraint: H_{Rd} = 0,20 • $V_{Rd,total}$
[3] For arrangement and design of the suspension reinforcement, see general technical application criteria (approval Z-15.6-287, Annexes 2.1-2.9)
[4] Alternatively, thinner bar diameters with overall the same or larger cross-section can be selected.

Steel Bearing PS-A 130

$V_{Rd,installation}$ = 130 kN[1] | Web height h_{web} = **50 cm** | Concrete quality top layer C25/30 | Basic module 1

Plate thickness (at the bearing)	**Transversal shear force carrying capacity in the end state** [2]	**Suspension reinforcement (stirrups)** [3] **each two legged**			**Horizontal additional concrete steel reinforcement**	
		1 Stirrup and stirrup cap 8	2 Bent-up loop	9 Stirrup below 45°	10 Reinforcement proposal [4]	
h_{plate} [cm]	$V_{Rd,total}$ [kN]	n ø [mm]	ø [mm]	ø [mm]	Quantity	ø [mm]
16	182.17	8	10	10	2	12
16	228.72	8	10	10	4	12
16	283.66	10	10	12	6	12
16	290.59	10	10	12	8	12
17	186.01	8	10	10	2	12
17	235.11	8	10	10	4	12
17	289.72	10	10	12	6	12
17	296.36	10	10	12	8	12
18	189.75	8	10	10	2	12
18	241.36	8	10	10	4	12
18	295.00	10	10	12	6	12
18	296.24	10	10	12	8	12
19	193.40	8	10	10	2	12
19	247.47	8	10	10	4	12
19	301.17	10	10	12	6	12
19	311.62	10	10	12	8	12
20	196.96	8	10	10	2	12
20	253.30	8	10	10	4	12
20	307.37	10	10	12	6	12
20	313.77	10	10	12	8	12
21	200.44	8	10	10	2	12
21	258.57	8	10	10	4	12
21	313.62	10	10	12	6	12
21	315.91	10	10	12	8	12
22	203.83	8	10	10	2	12
22	263.76	8	10	10	4	12
22	320.07	10	10	12	6	12
23	207.15	8	10	10	2	12
23	266.76	8	10	10	4	12
23	320.15	10	10	12	6	12
24	210.40	8	10	10	2	12
24	268.10	8	10	10	4	12
24	322.25	10	10	12	6	12

[1] The partial safety factor of the stress may not be reduced. The dead weight should always be based on Y_G = 1,35 !
[2] Calculated horizontal force due to constraint: $H_{Rd} = 0{,}20 \cdot V_{Rd,total}$
[3] For arrangement and design of the suspension reinforcement, see general technical application criteria (approval Z-15.6-287, Annexes 2.1-2.9)
[4] Alternatively, thinner bar diameters with overall the same or larger cross-section can be selected.

Steel Bearing PS-A 130

$V_{Rd,installation}$ = 130 kN[1] | Web height h_{web} = **60 cm** | Concrete quality top layer C25/30 | Basic module 1

Plate thickness (at the bearing)	**Transversal shear force carrying capacity in the end state [2]**	**Suspension reinforcement (stirrups) [3] each two legged**			**Horizontal additional concrete steel reinforcement**	
		1 Stirrup and stirrup cap 8	2 Bent-up loop	9 Stirrup below 45°	10 Reinforcement proposal [4]	
h_{plate} [cm]	$V_{Rd,total}$ [kN]	n ø [mm]	ø [mm]	ø [mm]	Quantity	ø [mm]
16	182.17	8	10	10	2	12
16	240.21	8	10	10	4	12
16	288.17	10	10	12	6	12
16	290.59	10	10	12	8	12
17	186.01	8	10	10	2	12
17	241.08	8	10	10	4	12
17	290.80	10	10	12	6	12
17	296.36	10	10	12	8	12
18	189.75	8	10	10	2	12
18	241.96	8	10	10	4	12
18	297.61	10	10	12	6	12
18	311.15	10	10	12	8	12
19	193.40	8	10	10	2	12
19	247.75	8	10	10	4	12
19	306.24	10	10	12	6	12
19	325.85	10	10	12	8	12
20	196.96	8	10	10	2	12
20	253.72	8	10	10	4	12
20	310.40	10	10	12	6	12
20	339.93	10	10	12	8	12
21	200.44	8	10	10	2	12
21	259.01	8	10	10	4	12
21	328.29	10	10	12	6	12
21	355.38	10	10	12	8	12
22	203.83	8	10	10	2	12
22	264.17	8	10	10	4	12
22	337.35	10	10	12	6	12
22	375.29	10	10	12	8	12
23	207.15	8	10	10	2	12
23	268.34	8	10	10	4	12
23	344.35	10	10	12	6	12
23	376.23	10	10	12	8	12
24	210.40	8	10	10	2	12
24	269.54	8	10	10	4	12
24	347.58	10	10	12	6	12
24	378.52	10	10	12	8	12

[1] The partial safety factor of the stress may not be reduced. The dead weight should always be based on Y_G = 1,35 !
[2] Calculated horizontal force due to constraint: $H_{Rd} = 0{,}20 \cdot V_{Rd,total}$
[3] For arrangement and design of the suspension reinforcement, see general technical application criteria (approval Z-15.6-287, Annexes 2.1-2.9)
[4] Alternatively, thinner bar diameters with overall the same or larger cross-section can be selected.

Steel Bearing PS-A 130

$V_{Rd,installation}$ = 130 kN[1] | Web height h_{web} = **70 cm** | Concrete quality top layer C25/30 | Basic module 1

Plate thickness (at the bearing)	**Transversal shear force carrying capacity in the end state** [2]	**Suspension reinforcement (stirrups)** [3] **each two legged**			**Horizontal additional concrete steel reinforcement**	
		(1) Stirrup and stirrup cap (8)	(2) Bent-up loop	(9) Stirrup below 45°	(10) Reinforcement proposal [4]	
h_{plate} [cm]	$V_{Rd,total}$ [kN]	n ø [mm]	ø [mm]	ø [mm]	Quantity	ø [mm]
16	182.17	8	10	10	2	12
16	241.99	8	10	10	4	12
16	295.62	10	10	12	6	12
16	298.62	10	10	12	8	12
17	186.01	8	10	10	2	12
17	242.78	8	10	10	4	12
17	300.85	10	10	12	6	12
17	312.33	10	10	12	8	12
18	189.75	8	10	10	2	12
18	243.56	8	10	10	4	12
18	312.14	10	10	12	6	12
18	319.77	10	10	12	8	12
19	193.40	8	10	10	2	12
19	247.98	8	10	10	4	12
19	320.31	10	10	12	6	12
19	328.26	10	10	12	8	12
20	196.96	8	10	10	2	12
20	253.94	8	10	10	4	12
20	335.67	10	10	12	6	12
20	345.99	10	10	12	8	12
21	200.44	8	10	10	2	12
21	259.37	8	10	10	4	12
21	342.65	10	10	12	6	12
21	355.67	10	10	12	8	12
22	203.83	8	10	10	2	12
22	264.51	8	10	10	4	12
22	349.56	10	10	12	6	12
22	380.04	10	10	12	8	12
23	207.15	8	10	10	2	12
23	269.58	8	10	10	4	12
23	355.40	10	10	12	6	12
23	391.47	10	10	12	8	12
24	210.40	8	10	10	2	12
24	270.71	8	10	10	4	12
24	372.37	10	10	12	6	12
24	393.03	10	10	12	8	12

[1] The partial safety factor of the stress may not be reduced. The dead weight should always be based on Y_G = 1,35 !
[2] Calculated horizontal force due to constraint: $H_{Rd} = 0{,}20 \cdot V_{Rd,total}$
[3] For arrangement and design of the suspension reinforcement, see general technical application criteria (approval Z-15.6-287, Annexes 2.1-2.9)
[4] Alternatively, thinner bar diameters with overall the same or larger cross-section can be selected.

Steel Bearing PS-A 160

$V_{Rd,installation}$ = 160 kN[1] | Web height h_{web} = **60 cm** | Concrete quality top layer C25/30 | Basic module 1

Plate thickness (at the bearing)	**Transversal shear force carrying capacity in the end state** [2]	**Suspension reinforcement (stirrups)** [3] **each two legged**			**Horizontal additional concrete steel reinforcement**	
		(1) Stirrup and stirrup cap (8)	(2) Bent-up loop	(9) Stirrup below 45°	(10) Reinforcement proposal [4]	
h_{plate} [cm]	$V_{Rd,total}$ [kN]	n ø [mm]	ø [mm]	ø [mm]	Quantity	ø [mm]
18	214.79	8	10	10	2	12
18	236.03	8	10	10	4	12
18	277.23	10	10	12	6	12
19	218.14	8	10	10	2	12
19	236.36	8	10	10	4	12
19	278.37	10	10	12	6	12
20	221.41	8	10	10	2	12
20	236.69	8	10	10	4	12
20	279.49	10	10	12	6	12
21	224.60	8	10	10	2	12
21	237.02	8	10	10	4	12
21	280.62	10	10	12	6	12
22	227.71	8	10	10	2	12
22	237.35	8	10	10	4	12
22	281.64	10	10	12	6	12
23	230.76	8	10	10	2	12
23	237.67	8	10	10	4	12
23	282.65	10	10	12	6	12
24	233.73	8	10	10	2	12
24	237.99	8	10	10	4	12
24	283.66	10	10	12	4	12

[1] The partial safety factor of the stress may not be reduced. The dead weight should always be based on Y_G = 1,35 !
[2] Calculated horizontal force due to constraint: $H_{Rd} = 0{,}20 \cdot V_{Rd,total}$
[3] For arrangement and design of the suspension reinforcement, see general technical application criteria (approval Z-15.6-287, Annexes 2.1-2.9)
[4] Alternatively, thinner bar diameters with overall the same or larger cross-section can be selected.

Steel Bearing PS-A 160

$V_{Rd,installation}$ = 160 kN[1] | Web height h_{web} = **70 cm** | Concrete quality top layer C25/30 | Basic module 1

Plate thickness (at the bearing)	**Transversal shear force carrying capacity in the end state** [2]	**Suspension reinforcement (stirrups)** [3] **each two legged**			**Horizontal additional concrete steel reinforcement**	
		1 Stirrup and stirrup cap	2 Bent-up loop	9 Stirrup below 45°	10 Reinforcement proposal [4]	
h_{plate} [cm]	$V_{Rd,total}$ [kN]	8 n ø [mm]	ø [mm]	ø [mm]	Quantity	ø [mm]
18	214.79	8	10	10	2	12
18	237.17	8	10	10	4	12
18	292.71	10	10	12	6	12
18	315.67	10	10	12	8	12
19	218.14	8	10	10	2	12
19	237.47	8	10	10	4	12
19	330.48	10	10	12	6	12
20	221.41	8	10	10	2	12
20	237.76	8	10	10	4	12
20	331.47	10	10	12	6	12
21	224.60	8	10	10	2	12
21	238.06	8	10	10	4	12
21	332.86	10	10	12	6	12
22	227.71	8	10	10	2	12
22	309.29	10	10	12	4	12
22	347.27	10	10	12	6	12
23	230.76	8	10	10	2	12
23	313.73	10	10	12	4	12
23	350.14	10	10	12	6	12
24	233.73	8	10	10	2	12
24	316.80	10	10	12	4	12
24	351.83	10	10	12	6	12

[1] The partial safety factor of the stress may not be reduced. The dead weight should always be based on Y_G = 1,35 !
[2] Calculated horizontal force due to constraint: $H_{Rd} = 0{,}20 \cdot V_{Rd,total}$
[3] For arrangement and design of the suspension reinforcement, see general technical application criteria (approval Z-15.6-287, Annexes 2.1-2.9)
[4] Alternatively, thinner bar diameters with overall the same or larger cross-section can be selected.

INTERNATIONAL

Sales:
+49 (0) 83 31 937 231
export-bt@pfeifer.de

Technical support:
+49 (0) 83 31 937 345
support-bt@pfeifer.de

www.pfeifer.info/connecting-and-lifting-systems

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