

PFEIFER Socket Dowel with cross hole

Item-No. 05.254



PFEIFER

Fixing System

Socket Dowels

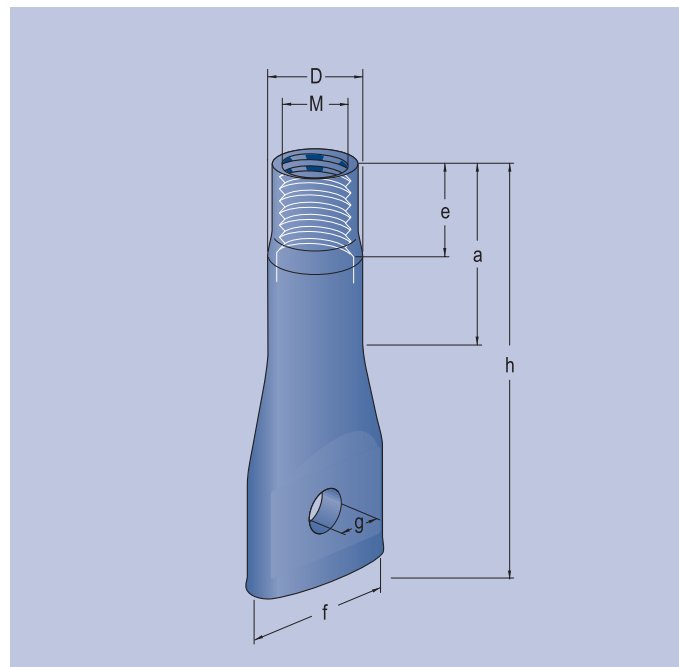
We recommend Socket Dowels only for fixings, for which a general technical approval is not necessary.

A reinforcement bar has to be inserted through the cross hole thus a safe transmission of the static forces into the concrete is guaranteed.

Load capacity specified (in axial direction) is calculated for concrete compressive strength of 25 N/mm².

Material:

M 6 – M 12
DIN 2394, St 34-2 NBK
M 16 – M 30
DIN 1626, St 33/37-2
Stainless steel 1.4571



Minimal tolerances from the dimension specifications are possible. They will not influence the load capacity.

Ref. No. black/plain	Ref. No. zinc-plated	Ref. No. stainless steel	Load capacity t	adm. F kN	Size M x h	a	Dimensions mm				Packing- unit pieces	Weight approx. kg/packing unit
						e	f	g	D			
–	05.254.063.040	–	0,15	1,5	6 x 40	25	6	12,5	6,2	8,5	500	3,5
–	05.254.083.040	–	0,20	2,0	8 x 40	25	8	16,0	6,2	10,5	500	4,5
–	05.254.083.050	05.254.084.050	0,25	2,5	8 x 50	25	8	16,0	6,2	10,5	500	5,5
–	05.254.103.050	–	0,35	3,5	10 x 50	24	10	20,0	6,2	13,5	500	10,0
–	–	05.254.104.050	0,35	3,5	10 x 50	24	10	20,0	6,2	13,5	100	2,3
–	05.254.123.060	–	0,50	5,0	12 x 60	25	12	24,5	7,2	17,0	400	16,8
–	–	05.254.124.060	0,50	5,0	12 x 60	25	12	25,0	7,2	17,0	100	3,3
–	05.254.123.070	–	0,60	6,0	12 x 70	30	12	24,5	7,2	17,0	400	19,6
05.254.162.070	05.254.163.070	–	0,70	7,0	16 x 70	25	16	30,5	9,2	21,3	200	18,2
05.254.162.080	05.254.163.080	–	0,80	8,0	16 x 80	25	16	30,0	12,2	21,3	200	20,4
–	–	05.254.164.080	0,80	8,0	16 x 80	25	16	31,0	12,2	21,3	50	5,0
05.254.162.100	05.254.163.100	–	1,00	10,0	16 x 100	32	16	30,5	9,2	21,3	100	13,4
05.254.162.120	05.254.163.120	–	1,20	12,0	16 x 120	32	16	30,5	12,2	21,3	100	15,7
05.254.202.100	05.254.203.100	–	1,25	12,5	20 x 100	40	20	38,5	12,2	26,9	100	16,5
–	–	05.254.204.100	1,25	12,5	20 x 100	40	20	39,0	12,2	26,9	25	3,8
05.254.202.120	05.254.203.120	–	1,40	14,0	20 x 120	40	20	38,5	14,2	26,9	100	21,0
05.254.242.120	05.254.243.120	–	1,80	18,0	24 x 120	50	24	48,0	14,2	33,7	50	16,7
05.254.302.150	05.254.303.150	–	2,75	27,5	30 x 150	70	30	64,0	15,2	42,0	25	13,8

Sample order: 200 PFEIFER Socket Dowel with cross hole, plain, M 16 x 80 mm:
200 PFEIFER Socket Dowel ref. no. 05.254.162.080

Instructions for PFEIFER Socket Dowels with cross hole

1. Installation

To be able to transfer forces into the concrete a reinforcement bar is put through the cross hole. The largest bar diameter should be chosen that passes through the cross hole. The socket dowel can be nailed to the formwork by PFEIFER Nail Disc or with a hexagonal bolt bolted through a hole in the formwork.

2. Straight pull

To avoid premature failure of the Socket Dowel caused by blow-out of the concrete under straight pull, the socket dowel has to be a minimum edge distance. Table 1 and figure 1 show the minimum values for a hardened concrete with a compressive strength of 25 N/mm².

Table 1 – edge distance for axial pull

Size mm x mm	adm. F _Z kN	min a _r (Z) mm
M 6 x 40	1,5	60
M 8 x 40	2,0	60
M 8 x 50	2,5	75
M 10 x 50	3,5	75
M 12 x 60	5,0	90
M 12 x 70	6,0	105
M 16 x 70	7,0	105
M 16 x 80	8,0	120
M 16 x 100	10,0	150
M 16 x 120	12,0	180
M 20 x 100	12,5	150
M 20 x 120	14,0	180
M 24 x 120	18,0	180
M 30 x 150	27,5	225

3. Transversal pull

If the Socket Dowel is exposed to shear forces (vertically to the longitudinal axis of the Socket Dowel) in the direction of the free edge, there is danger of concrete blow-out. To make sure the forces are transferred properly to the concrete certain minimum edge distances (a_r) and minimum thickness of panel (d) should be kept. Therefore see table 2 and figure 2. Greater concrete cover may result in thicker precast concrete panels.

Table 2 – edge distance, thickness of the panels under shear forces

Size mm x mm	adm. F _Q kN	min a _r (Q) mm	min d mm
M 6 x 40	1,5	80	65
M 8 x 40	2,0	80	65
M 8 x 50	2,5	100	75
M 10 x 50	3,5	100	75
M 12 x 60	5,0	120	85
M 12 x 70	6,0	140	95
M 16 x 70	7,0	140	95
M 16 x 80	8,0	160	105
M 16 x 100	10,0	200	125
M 16 x 120	12,0	240	145
M 20 x 100	12,5	200	125
M 20 x 120	14,0	240	145
M 24 x 120	18,0	240	145
M 30 x 150	27,5	300	175

Figure 1

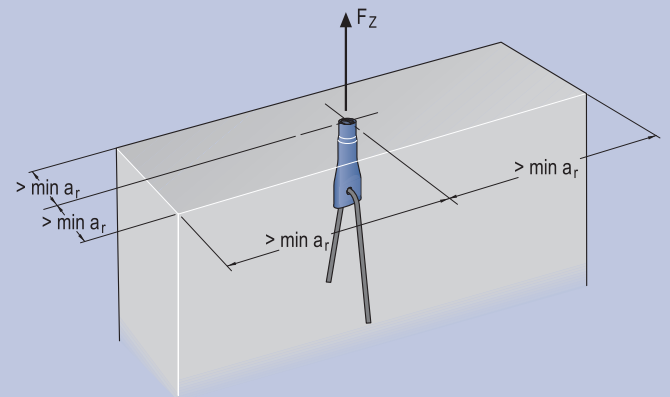
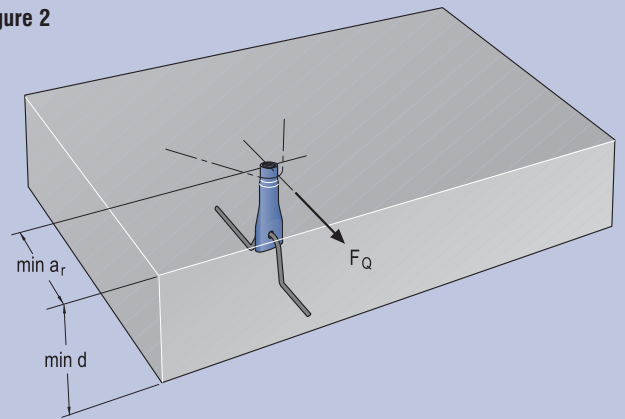


Figure 2



4. Parallel shear force (interaction)

We speak of shear force if there is straight pull and angular shear simultaneously working on the Socket Dowel. Their force components should be calculated according to the following formula:

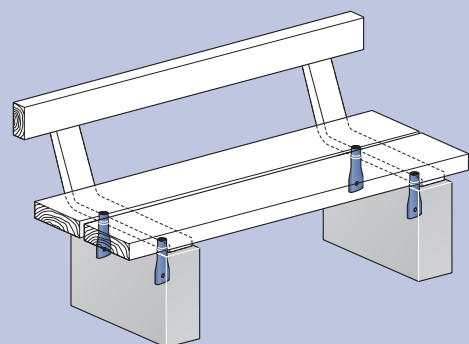
$$\sqrt{F_z^2 + F_Q^2} \leq \text{adm } F$$

This means for an angle of inclination of 90° the same admissible force is valid.

5. Example of application

In figure 3 we show a typical example of an application of PFEIFER Socket Dowels: bench consoles fixed with Socket Dowels to a foundation.

Figure 3



PFEIFER Socket Dowel with cross hole and nail plate

Item-No. 05.258

We recommend Socket Dowels
only for fixings, for which a general
technical approval is not necessary.



PFEIFER

Fixing System
Socket Dowels

Through the nailing plate the PFEIFER Socket Dowels can be nailed to wooden formwork.

A reinforcement bar has to be inserted through the cross hole thus a safe transmission of the static forces into the concrete is guaranteed.

Load capacity specified (in axial direction) is calculated for concrete compressive strength of 25 N/mm².

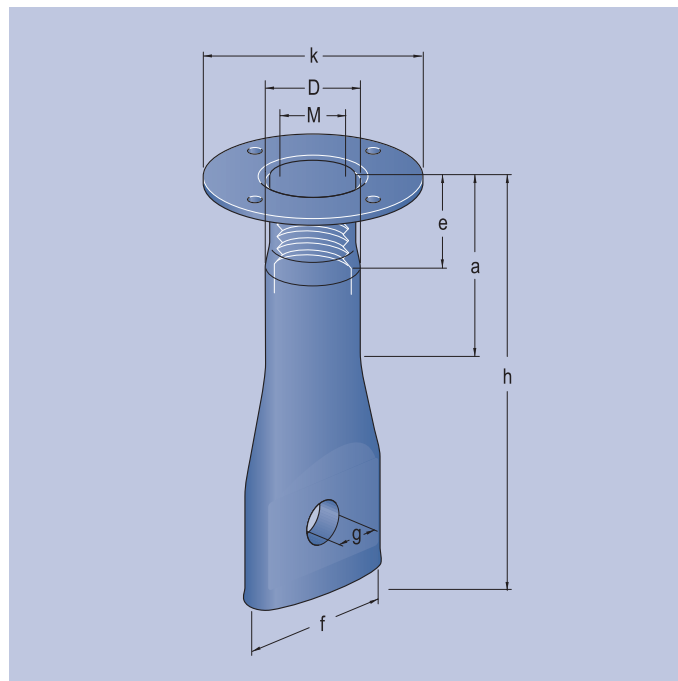
Werkstoff:

M 8 – M 12

DIN 2394, St 34-2

M 16 – M 20

DIN 1626, St 33/37-2a



Minimal tolerances for the dimension specifications are possible. They will not influence the load capacity.

Ref. No. black/plain	Ref. No. zinc-plated	Load capacity t	adm. F kN	Size M x h	Dimensions mm						Packing unit pieces	Weight approx. kg/packing unit
					a	e	f	g	K	D		
–	05.258.103.050	0,35	3,5	10 x 50	24	10	20	6,2	34	13,5	200	5,6
–	05.258.123.070	0,60	6,0	12 x 70	30	12	25	7,2	40	17,0	200	12,4
05.258.162.100	05.258.163.100	1,00	10,0	16 x 100	32	16	30	9,2	44	21,3	100	14,6
05.258.202.100	05.258.203.100	1,25	12,5	20 x 100	40	20	39	12,2	48	26,9	100	18,0

Sample order:

200 PFEIFER Socket Dowels with cross hole and nail plate, zinc-plated, M 12 x 70 mm:

200 PFEIFER Socket Dowels ref. no. 05.258.123.070

Instructions for PFEIFER Socket Dowels with cross hole and nail plate

1. Installation

To be able to transfer forces into the concrete a reinforcement bar is put through the cross hole. The largest bar diameter should be chosen that passes through the cross hole. Fixation of the Socket Dowel can be done by nailing the nailing plate to the wooden formwork. Also by means of a hexagonal bolt and a drilled hole through the formwork the Socket Dowel can be fixed.

2. Straight pull

To avoid premature failure of the Socket Dowel caused by blow-out of the concrete under straight pull the Socket Dowel has to be a minimum edge distance from the corners of any precast concrete panel.

Table 1 – Edge distance at axial pull

Size mm x mm	adm. F_z kN	min a_r (Z) mm
M 10 x 50	3,5	75
M 12 x 70	6,0	105
M 16 x 100	10,0	150
M 20 x 100	12,5	150

3. Transversal pull

If the Socket Dowel is exposed to shear forces (angular to the longitudinal axis of the Socket Dowel) in the direction of the free edge there is danger of concrete blow-out. To make sure the forces are transferred properly to the concrete certain minimum edge distance (a_r) and minimum thickness of panel (d) should be kept. Therefore see table 2 and figure 2. Greater concrete cover may result in thicker precast concrete panels.

Table 2 – Edge distance, thickness of the panel under shear forces

Size mm x mm	adm. F_Q kN	min a_r (Q) mm	min d mm
M 10 x 50	3,5	100	75
M 12 x 70	6,0	140	95
M 16 x 100	10,0	200	125
M 20 x 100	12,5	200	125

4. Parallel shear force (interaction)

We speak of shear force if there is straight pull and angular shear simultaneously working on the socket dowel. Their force components should be calculated according to the following formula:

$$\sqrt{F_z^2 + F_Q^2} \leq \text{adm. } F$$

This means for an angle of inclination of 0 to 90° the same admissible force is valid.

5. Example of application

In figure 3 we show a typical example for the use of PFEIFER Socket Dowels: staircase fixed to a precast concrete panel.

Figure 1

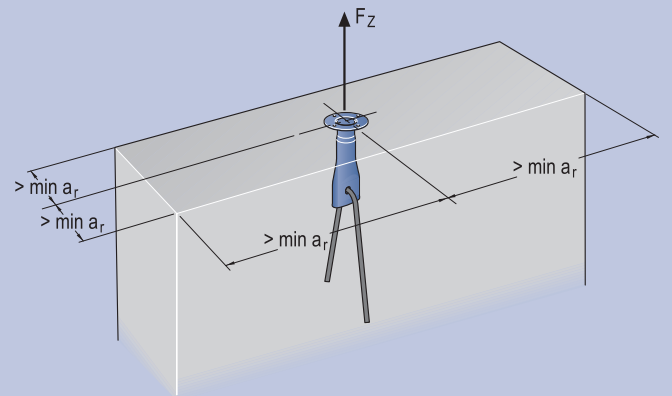


Figure 2

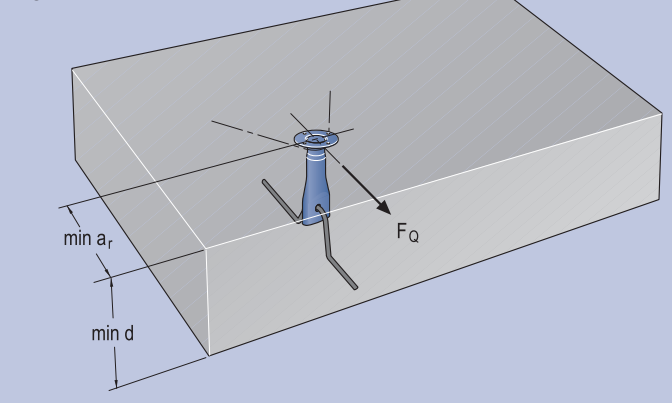
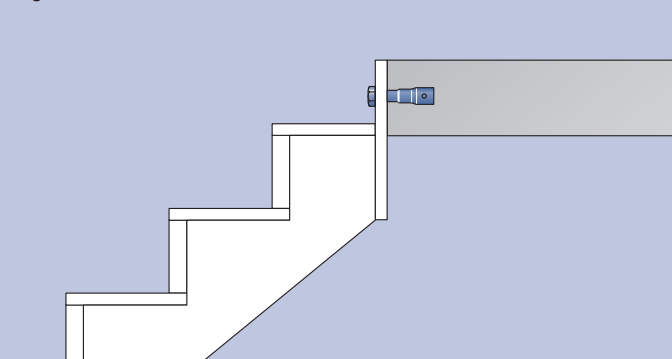


Figure 3



PFEIFER Socket Dowel with crimped end

Item-No. 05.250

We recommend Socket Dowels only for fixings, for which a general technical approval is not necessary.



PFEIFER

Fixing System
Socket Dowels

Fixing Sockets with crimped end give proof of excellent loading capacities in the most varied fields of application. The crimped end of the Socket Dowel transfers the force into the concrete by form closure.

The load bearing capacity specified is calculated with a safety factor of $\gamma \geq 5$ and for concrete strength of 25 N/mm².

Material:

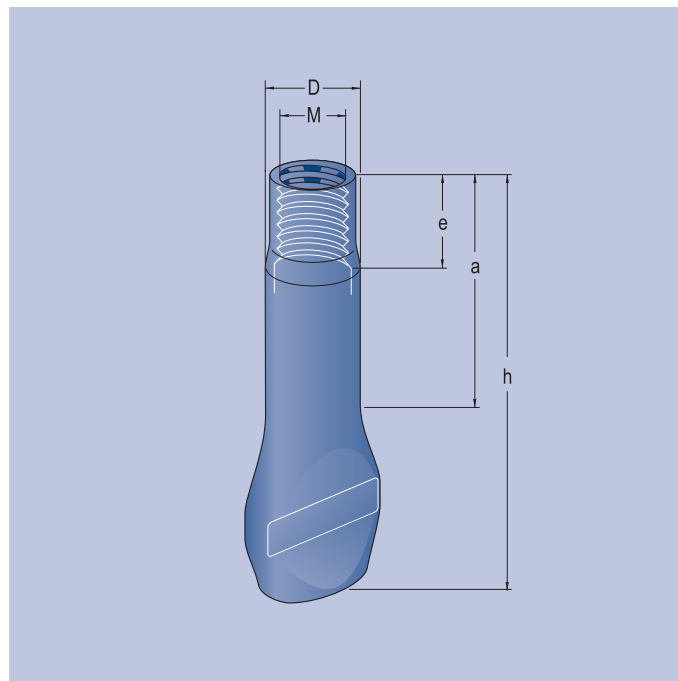
M 10 – M 12

DIN 2394, St 34-2 NBK

M 16 – M 24

DIN 1626, St 33/37-2

Stainless steel 1.4571



Minimal tolerances from the dimension specifications are possible. They will not influence the load capacity.

Ref. No. black/plain	Ref. No. zinc-plated	Ref. No. stainless steel	Load capacity t	adm. F kN	Size M x h	Dimensions mm			Packing unit pieces	Weight approx. kg/packing unit
						a	e	D		
–	–	05.250.064.040	0,15	1,5	6 x 40	25	6	8,5	200	1,6
–	05.250.103.050	–	0,32	3,2	10 x 50	25	10	13,5	500	10,0
–	05.250.103.060	–	0,40	4,0	10 x 60	30	10	13,5	500	12,5
–	05.250.123.050	–	0,40	4,0	12 x 50	30	12	13,5	400	14,4
–	05.250.123.070	–	0,60	6,0	12 x 70	40	12	17,0	400	21,2
05.250.162.100	05.250.163.100	–	1,00	10,0	16 x 100	50	16	21,3	100	11,5
05.250.202.100	05.250.203.100	–	1,25	12,5	20 x 100	50	20	26,9	100	15,1
05.250.242.100	05.250.243.100	–	1,60	16,0	24 x 100	40	24	33,7	50	13,5

Sample order:

200 PFEIFER Socket Dowels with crimped end, plain, M 16 x 100 mm:

200 PFEIFER Socket Dowels ref. no. 05.250.162.100

Installation instructions for PFEIFER Socket Dowels with crimped end

1. Installation

The Socket Dowel can be fixed to the formwork with the PFEIFER Nail Disc or it can be screwed through the formwork with a hexagonal screw. Forces are transferred by form closure. No further reinforcement is necessary. The crimped end can differ from the shape shown overleaf without the load capacity being affected.

2. Straight pull

In order to avoid premature failure of the Socket Dowel caused by blow-out of the concrete under straight pull, a certain minimum edge distance has to be considered. Table 1 and Figure 1 show the minimum values for concrete with a compressive strength of 25 N/mm².

Table 1 – Edge distance under straight pull

Size mm x mm	adm. F _Z kN	min a _r (Z) mm
M 6 x 40	1,5	60
M 10 x 50	3,2	75
M 10 x 60	4,0	90
M 12 x 50	4,0	75
M 12 x 70	6,0	105
M 16 x 100	10,0	150
M 20 x 100	12,5	150
M 24 x 100	16,0	150

3. Transversal pull loads

If there is exposure to transversal pull (vertically to the longitudinal axis of the Socket Dowel) in the direction of the free edge, there is danger of concrete blow-out. To make sure the forces are transferred properly, certain minimum edge distances (a_r) and minimum thickness of panel d should be considered. See Table 2 and Figure 2. Greater concrete cover may result in thicker precast concrete panels.

Table 2 – Edge distance, thickness of panel under transversal pull

Size mm x mm	adm. F _Q kN	min a _r (Q) mm	min d mm
M 6 x 40	1,5	80	65
M 10 x 50	3,2	90	70
M 10 x 60	4,0	120	85
M 12 x 50	4,0	100	75
M 12 x 70	6,0	140	95
M 16 x 100	10,0	200	125
M 20 x 100	12,5	200	125
M 24 x 100	16,0	200	125

4. Parallel shear pull (interaction)

We speak of parallel shear pull if there is straight pull and transversal pull simultaneously working on the Socket Dowel. The force components should fulfil the following formula:

$$\sqrt{F_Z^2 + F_Q^2} \leq \text{adm. } F$$

This means, simply explained, for an angle of inclination from 0° to 90° the same admissible force is valid.

5. Example of application

In Figure 3 a typical example for the proper use of PFEIFER Fixing Sockets is shown: Attachment of an installation bracket.

Figure 1

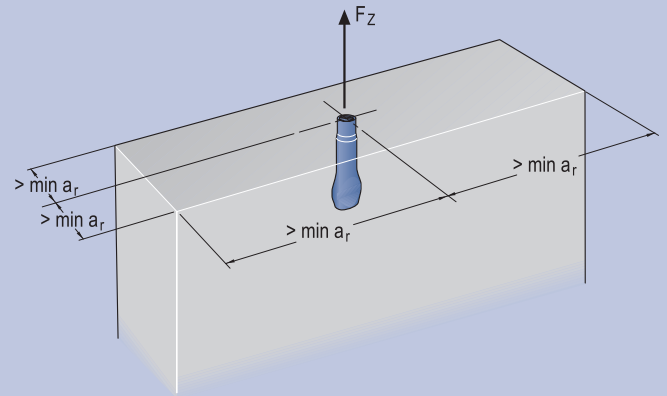


Figure 2

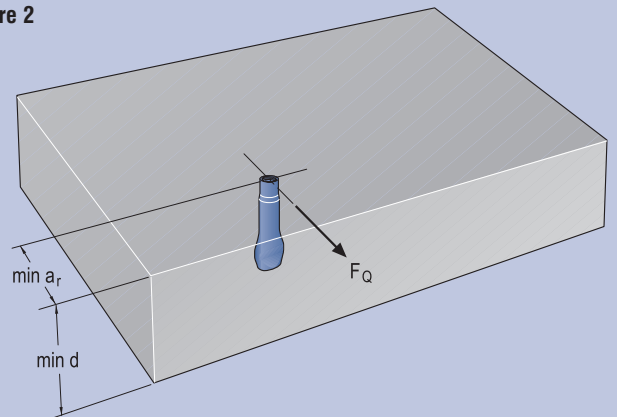
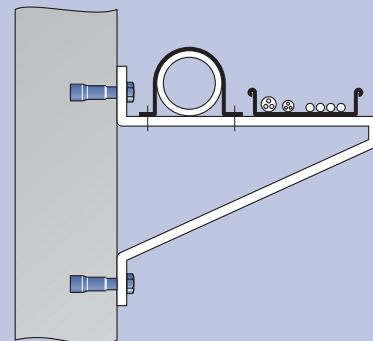


Figure 3



PFEIFER Socket Dowel with crimped end and nail plate

Item-No. 05.252

We recommend Socket Dowels
only for fixings, for which a
general technical approval is not
necessary.



PFEIFER

Fixing System
Socket Dowels

PFEIFER Socket Dowels can be attached to wooden formwork simply and efficiently using the nail plate.

The crimped end of the PFEIFER Socket Dowel transfers the forces safely into the concrete by form closure. The values are valid for concrete with compressive strength of 25 N/mm².

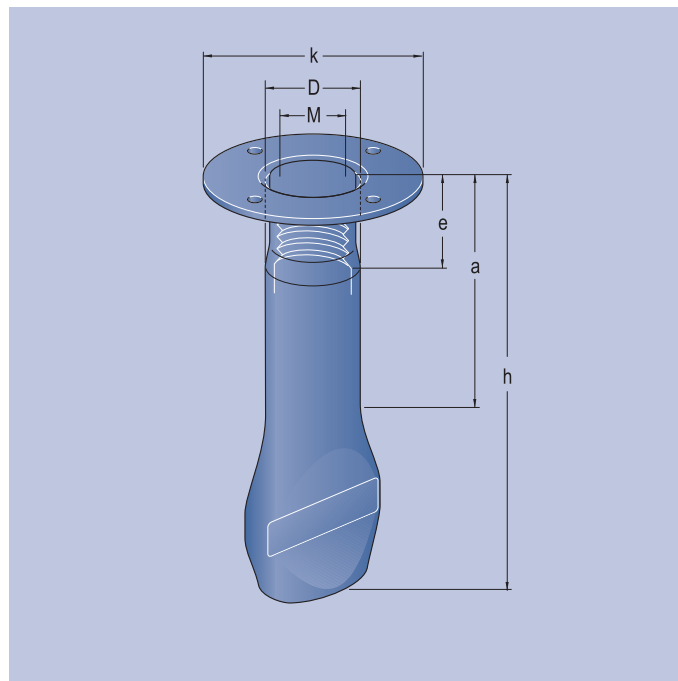
Material:

M 10 – M 12

DIN 2394, St 34-2

M 16 – M 24

DIN 1626, St 33/37-2



Minimal tolerances from the dimension specifications are possible and do not affect the load capacity.

Ref. No. black/plain	Ref No. zinc-plated	Load capacity t	adm. F kN	Size M x h	Dimensions mm				Packing unit piece	Weight approx kg/packing unit
					a	e	k	D		
–	05.252.103.060	0,40	4,0	10 x 60	40	10	34	13,5	200	6,4
–	05.252.123.070	0,60	6,0	12 x 70	40	12	40	17,0	200	12,8
05.252.162.100	05.252.163.100	1,00	10,0	16 x 100	50	16	44	21,3	100	12,9
05.252.202.100	05.252.203.100	1,25	12,5	20 x 100	50	20	48	26,9	100	16,6
05.252.242.100	05.252.243.100	1,60	16,0	24 x 100	40	24	57	33,7	50	14,3

Sample order:

200 PFEIFER Socket Dowels with crimped end and nail plate, zinc-plated M 12 x 70 mm:

200 PFEIFER Socket Dowels ref. no. 05.252.123.070

Installation instructions for PFEIFER Socket Dowel with crimped end and nail plate

1. Installation

The Socket Dowel with crimped end and nail plate can be nailed directly to the formwork. Alternatively, it can be screwed onto the formwork with a hexagonal screw. No further reinforcement is necessary.

2. Straight pull

In order to avoid premature failure of the Socket Dowel caused by blow-out of the concrete under straight pull, a certain minimum edge distance has to be considered. Table 1 and Figure 1 show the minimum values for concrete with a compressive strength of 25 N/mm².

Table 1 – Edge distance under straight pull

Size mm x mm	adm. F _Z kN	min a _r (Z) mm
M 10 x 60	4,0	90
M 12 x 70	6,0	105
M 16 x 100	10,0	150
M 20 x 100	12,5	150
M 24 x 100	16,0	150

3. Transversal pull load

If there is exposure to transversal pull (vertically to the longitudinal axis of the Socket Dowel) in the direction of the free edge, there is danger of concrete blow-out. To make sure the forces are transferred properly, certain minimum edge distances (a_r) and minimum thickness of panel d should be considered. See Table 2 and Figure 2. Greater concrete cover may result in thicker precast concrete panels.

Table 2 – Edge distance, thickness of panel under transversal pull

Size mm x mm	adm. F _Q kN	min a _r (Q) mm	min d mm
M 10 x 60	4,0	120	85
M 12 x 70	6,0	140	95
M 16 x 100	10,0	200	125
M 20 x 100	12,5	200	125
M 24 x 100	16,0	200	125

4. Parallel shear force (interaction)

We speak of parallel shear pull if there is straight pull and transversal pull simultaneously working on the Socket Dowel. The force components should fulfil the following formula:

$$\sqrt{F_z^2 + F_Q^2} \leq \text{adm } F$$

This means for an angle of inclination from 0° to 90° the same admissible force is valid.

5. Example of application

In Figure 3 a typical example for the proper use of PFEIFER Fixing Sockets is shown: Attachment of machines to foundations.

Figure 1

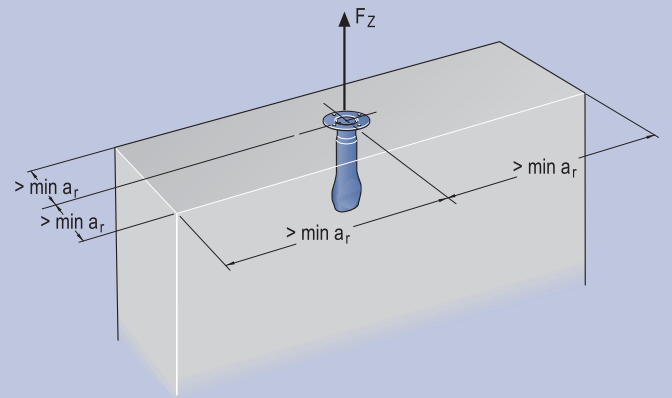


Figure 2

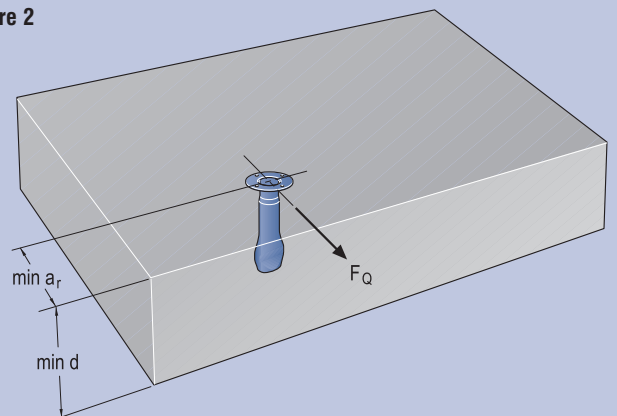


Figure 3

