

PFEIFER Socket Dowels with Angular End

Item No. 05.256

We recommend socket dowels only for fixings, for which a general technical approval is not necessary.



PFEIFER

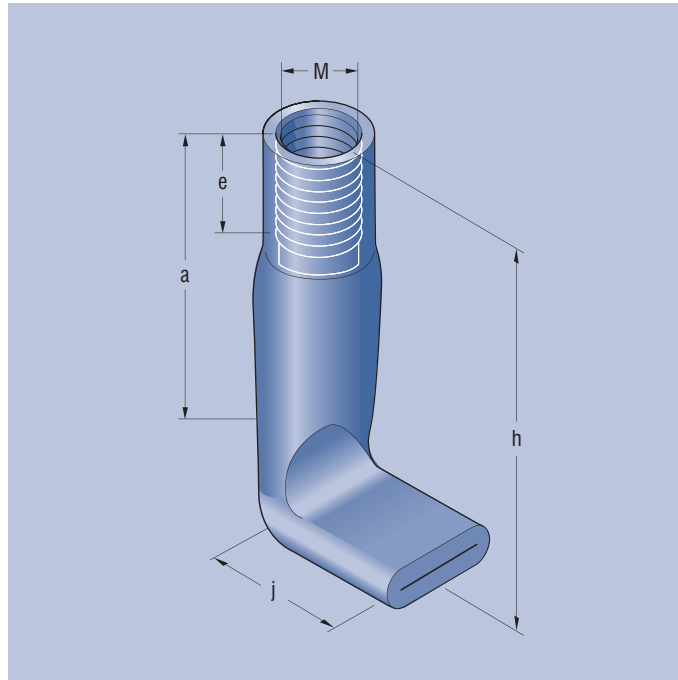
Fixing System
Socket Dowels

PFEIFER socket dowels with angular end transfer forces directly into the concrete without additional reinforcing steels.

The angular end anchors itself into the concrete by means of form closure. The required concrete compressive strength is at least 25 N/mm².

Material:

- Steel, zinc-plated
- stainless steel



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

Ref. No. zinc-plated	Load capacity kg	Size M	Dimensions mm						Packing unit Piece	Weight approx. kg/100 piece
			a	h	e	j	d			
05.256.083.050	300	M 8	25	50	8	20	9	500	1,80	
05.256.103.060	500	M 10	35	60	10	25	12	400	3,80	
05.256.123.045	400	M 12	18	45	12	25	14,9	200	4,80	
05.256.123.070	700	M 12	40	70	12	30	14,9	200	7,10	
-	400	M 16	20	50	16	30	19,8	100	10,00	
05.256.163.060	700	M 16	25	60	16	30	19,8	100	11,70	
05.256.163.100	1200	M 16	32	100	16	35	19,8	100	18,90	
05.256.203.070	800	M 20	30	70	20	30	23,5	100	17,90	
05.256.203.100	1250	M 20	40	100	20	35	23,5	50	23,20	
05.256.243.080	1200	M 24	24	80	24	35	29,6	50	32,40	

Sample order for 200 PFEIFER socket dowels with angular end, galvanized, M 16 x 60:
200 PFEIFER socket dowels with angular end, ref. no. 05.256.163.060

Installation instructions for PFEIFER socket dowel with angular end

1. Installation

The socket dowel can be nailed to the formwork with the PFEIFER nailing plate or it can be screwed through the formwork with a hexagonal screw. Forces are transferred via the angular end. No additional 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 adhered to. Table 1 and Figure 1 show the minimum values for hardened 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 8 x 50	3.0	75
M 10 x 60	5.0	90
M 12 x 45	4.0	75
M 12 x 70	7.0	110
M 16 x 50	4.0	75
M 16 x 60	7.0	90
M 16 x 100	12.0	150
M 20 x 70	8.0	105
M 20 x 100	12.5	150
M 24 x 80	12.0	120

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 a 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 must be achieved. 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 8 x 50	3.0	125	75
M 10 x 60	5.0	150	85
M 12 x 45	4.0	125	70
M 12 x 70	7.0	175	95
M 16 x 50	4.0	125	75
M 16 x 60	7.0	150	85
M 16 x 100	12.0	250	125
M 20 x 70	8.0	175	95
M 20 x 100	12.5	250	125
M 24 x 80	12.0	200	105

* For concrete cover 25 mm!

4. Parallel shear pull (interaction)

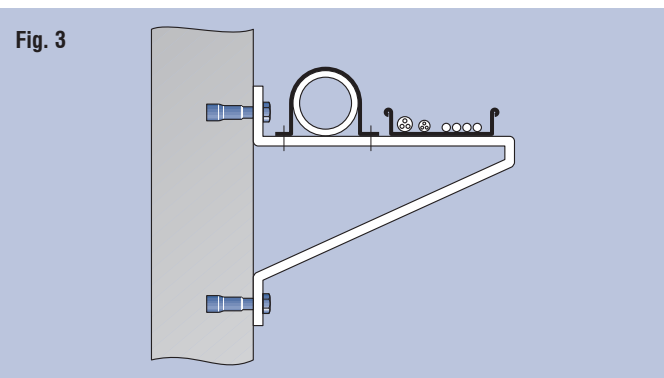
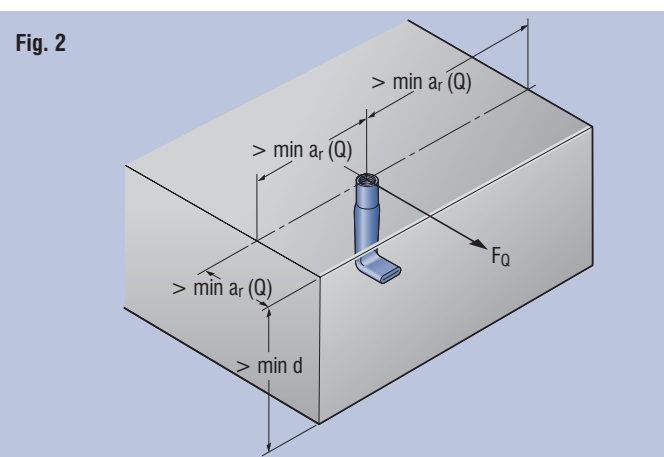
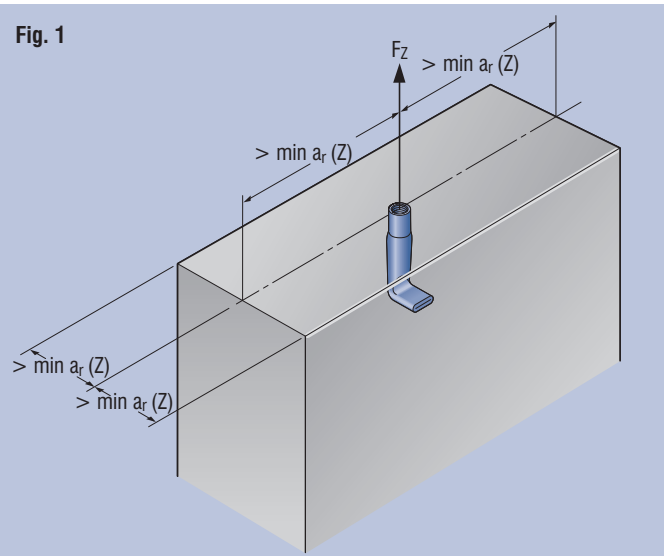
We speak of parallel shear pull if there is a straight pull and transversal pull simultaneously acting on the socket dowel. In doing so, the force components must fulfil the following equation:

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

This simply means that the same admissible force applies for an angle of inclination from 0° to 90°.

5. Example of application

In Figure 3 a typical example of the proper use of PFEIFER socket dowels is shown: Attachment of an installation bracket.



For all application cases a minimum spacing of $\geq 2 \times a_r$ between two dowels distance is to be specified. In case of identical straight pull and transversal pull, the more unfavourable values are to be applied.



In case of recessed installation of the socket dowels, attention must be paid that the pull force resulting from the torque moment does not exceed the admissible load F_Z. The tensile load from torque moment and end state must be smaller than adm F_{Z1}