

# 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/mm<sup>2</sup>.

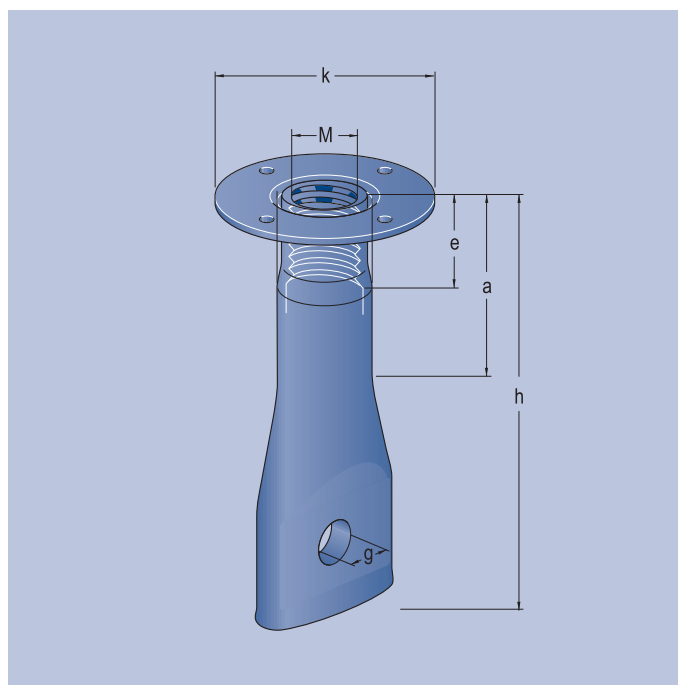
Material:

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.<br>black/plain | Ref. No.<br>zinc-plated | Load<br>capacity t | adm. F<br>kN | Size<br>M x h | a  | Dimensions mm |      |    | Packing unit<br>pieces | Weight approx.<br>kg/packing unit |
|-------------------------|-------------------------|--------------------|--------------|---------------|----|---------------|------|----|------------------------|-----------------------------------|
|                         |                         |                    |              |               |    | e             | g    | k  |                        |                                   |
| –                       | <b>05.258.103.050</b>   | 0,35               | 3,5          | 10 x 50       | 24 | 10            | 6,2  | 34 | 200                    | 5,6                               |
| –                       | <b>05.258.123.070</b>   | 0,60               | 6,0          | 12 x 70       | 30 | 12            | 7,2  | 40 | 200                    | 12,4                              |
| <b>05.258.162.100</b>   | <b>05.258.163.100</b>   | 1,00               | 10,0         | 16 x 100      | 32 | 16            | 9,2  | 44 | 100                    | 14,6                              |
| <b>05.258.202.100</b>   | <b>05.258.203.100</b>   | 1,25               | 12,5         | 20 x 100      | 40 | 20            | 12,2 | 48 | 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<br>mm x mm | adm. $F_z$<br>kN | min $a_r$ (Z)<br>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<br>mm x mm | adm. $F_Q$<br>kN | min $a_r$ (Q)<br>mm | min $d$<br>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:

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

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.

