

PFEIFER sockets

Item-No. 05.000

Can be used for:

- Installation in the edge of structural elements
- Installation in column-shaped structural elements

For use by:

- trained and qualified personal



PFEIFER

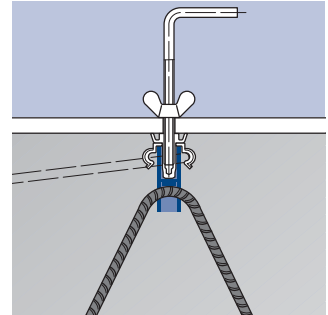
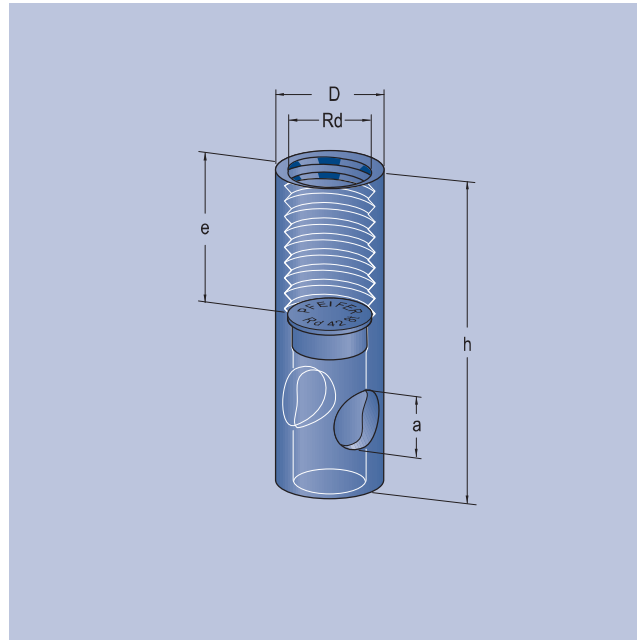
Thread System
Lifting anchor

The PFEIFER socket is a lifting anchor in the PFEIFER thread system, with all-round use. It is suitable for moving columns, supporting beams, shear walls and much more. The customer inserts a retention reinforcement through the cross hole for anchoring and load application.

Advantages: Safe load application, versatile, geometric flexibility in anchoring the forces, unambiguous assignment through PFEIFER colour coding

Material:

Socket made of high grade precision steel tube, galvanized or stainless steel, plastic internal cap, colour-coded



| Ref.-No. galvanized | Ref.-No. stainless steel | Type/Size | $N_{R, adm}$ [kN] | $V_{R, adm}$ [kN] | Thread | Dimensions [mm] | | | Weight approx. [kg/piece] | |
|------------------------|-----------------------------|-----------|----------------------|----------------------|--------------|-----------------|------|----|------------------------------|------|
| | | | | | | D | a | e | | |
| 05.000.123 | 05.000.124 | Rd 12 | 5 | 2,5 | Rd 12 x 1,75 | 15,0 | 8,0 | 22 | 40 | 0,02 |
| 05.000.143 | 05.000.144 | Rd 14 | 8 | 4,0 | Rd 14 x 2,00 | 18,0 | 10,5 | 25 | 47 | 0,04 |
| 05.000.163 | 05.000.164 | Rd 16 | 12 | 6,0 | Rd 16 x 2,00 | 21,0 | 13,0 | 27 | 54 | 0,07 |
| 05.000.183 | 05.000.184 | Rd 18 | 16 | 8,0 | Rd 18 x 2,50 | 24,0 | 13,0 | 34 | 65 | 0,11 |
| 05.000.203 | 05.000.204 | Rd 20 | 20 | 10,0 | Rd 20 x 2,50 | 27,2 | 15,5 | 35 | 69 | 0,15 |
| 05.000.243 | 05.000.244 | Rd 24 | 25 | 12,5 | Rd 24 x 3,00 | 31,0 | 18,0 | 43 | 78 | 0,19 |
| 05.000.303 | 05.000.304 | Rd 30 | 40 | 20,0 | Rd 30 x 3,50 | 39,5 | 22,5 | 56 | 103 | 0,42 |
| 05.000.363 | 05.000.364 | Rd 36 | 63 | 31,5 | Rd 36 x 4,00 | 47,0 | 27,5 | 67 | 125 | 0,71 |
| 05.000.423 | 05.000.424 | Rd 42 | 80 | 40,0 | Rd 42 x 4,50 | 54,0 | 32,0 | 80 | 145 | 1,04 |
| 05.000.523 | 05.000.524 | Rd 52 | 125 | 62,5 | Rd 52 x 5,00 | 67,2 | 40,0 | 97 | 195 | 2,35 |

Example order for PFEIFER sockets, galvanized, Rd 12:
500 PFEIFER sockets, Ref.-No. 05.000.123

Technical installation instructions on page 14

Slab edge installation

Slab face installation

Lifting Anchor

Column-shaped installation

Specialised applications

Accessories

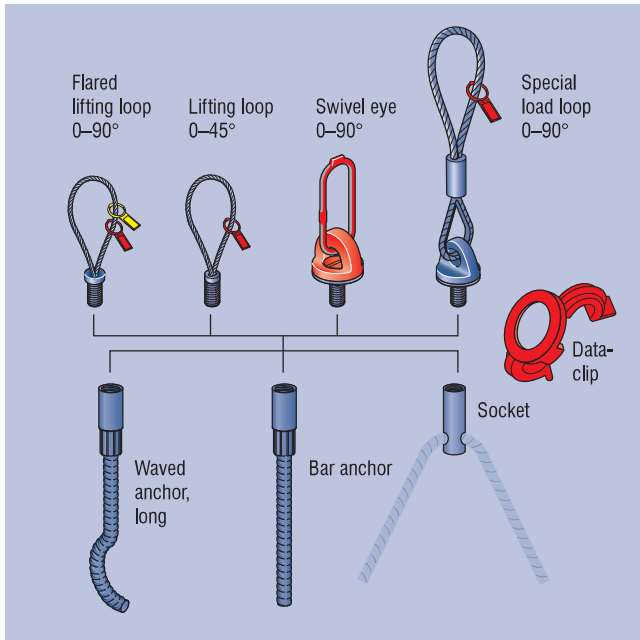
Lifting device

General
Technical Info

Instructions for installation and use for slab edge installation

System

FOR PLANNERS, FOR PRECAST PLANTS, FOR USERS



The PFEIFER thread system consists of the corresponding lifting anchor, the selected lifting device and the colour-coded data clip.

| Type/Size | Ref.-No. | Colour |
|-----------|------------|-----------------|
| Rd 12 | 05.220.120 | Pastel orange |
| Rd 14 | 05.220.140 | Pure white |
| Rd 16 | 05.220.160 | Flame red |
| Rd 18 | 05.220.180 | Light pink |
| Rd 20 | 05.220.200 | Pastel green |
| Rd 24 | 05.220.240 | Anthracite grey |
| Rd 30 | 05.220.300 | Emerald green |
| Rd 36 | 05.220.360 | Light blue |
| Rd 42 | 05.220.420 | Silver grey |
| Rd 52 | 05.220.520 | Sulphur yellow |
| Rd 56 | * | Orange |
| Rd 60 | * | Red |

* For these sizes the marking of the anchor is inside the socket. Here, the front face of the reinforcing steel is marked in the appropriate colour.

Safety

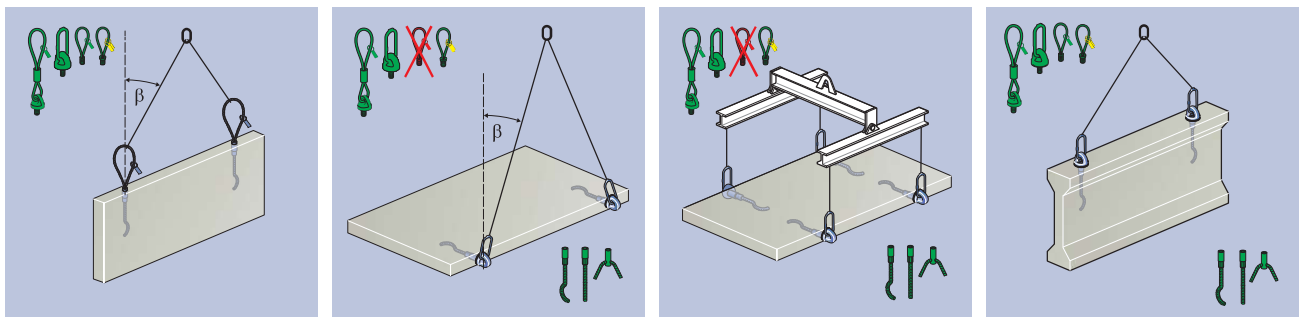
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The following safety parameter values for the PFEIFER lifting anchor system are derived as follows in accordance with the VDI/BV-BS 6205 directive, with the prerequisite of the machinery directive 2006/42/EC. For this, a load-side dynamic working coefficient $\psi_{dyn} = 1.3$ was assumed.

- Steel failure wire rope: $\gamma_s = 4,0$
 - Steel failure chains or full sections: $\gamma_s = 3,0$
 - Concrete failure (procedure B*): $\gamma_c = 2,5$
 - Concrete failure (procedure A*): $\gamma_c = 2,1$
- * for factory monitored fabrication of the prefab concrete elements

Use

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Warning: The use of non-matched system components can cause reduced safety levels and hazards to life and limb. Always use PFEIFER components that are matched to each other!

Caution: The concreted-in anchors must be determined by the planning engineer. The instructions for installation and use of the selected anchor type must be complied with!

! Notice: The anchor must always be attached higher than the centre of gravity because otherwise the element can tip over during transport!

! Notice: To achieve the stated carrying capacity, you need to comply with the minimum additional reinforcements as in Tables 1, 2, 3 or 4 (depending on the load) and the minimum dimensions as in Table 5 and a concrete cube compressive strength of at least 15 N/mm².

$$E \leq R_{adm}$$

! Notice: Determination of stress according to VDI/BV-BS 6205.

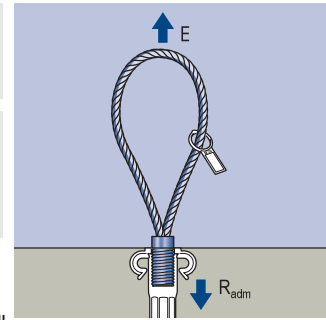
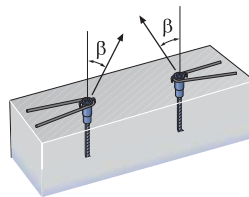
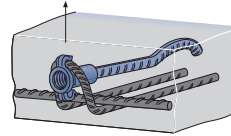


Table 1 – Resistance

Angle of inclination $\beta=0-45^\circ$



Transversal shear pull perpendicular to the panel plane



| Load/application | Type/Size | Adm. resistance $N_{R,adm}$ [kN] | Adm. resistance $V_{R,adm}$ [kN] | Surface reinforcement [mm ² /m] |
|------------------|-----------|----------------------------------|----------------------------------|--|
| | Rd 12 | 5 | 2,5 | 131 |
| | Rd 14 | 8 | 4,0 | 131 |
| | Rd 16 | 12 | 6,0 | 131 |
| | Rd 18 | 16 | 8,0 | 188 |
| | Rd 20 | 20 | 10,0 | 188 |
| | Rd 24 | 25 | 12,5 | 188 |
| | Rd 30 | 40 | 20,0 | 188 |
| | Rd 36 | 63 | 31,5 | 188 |
| | Rd 42 | 80 | 40,0 | 188 |
| | Rd 52 | 125 | 62,5 | 188 |
| | Rd 56 | 150 | – | 188 |
| | Rd 60 | 200 | – | 188 |

! Notice: Parallel shear pull possible only up to 12,5°

Table 2 – Retention reinforcement, socket

| Type/Size | Retention reinforcement | | | Retention reinforcement PFEIFER socket |
|-----------|-------------------------|--------|----------------------|--|
| | L_s [mm] | D [mm] | \varnothing_R [mm] | |
| Rd 12 | 220 | 24 | 6 | |
| Rd 14 | 260 | 32 | 8 | |
| Rd 16 | 310 | 40 | 10 | |
| Rd 18 | 420 | 40 | 10 | |
| Rd 20 | 430 | 48 | 12 | |
| Rd 24 | 470 | 56 | 14 | |
| Rd 30 | 650 | 64 | 16 | |
| Rd 36 | 820 | 140 | 20 | |
| Rd 42 | 840 | 175 | 25 | |
| Rd 52 | 1190 | 196 | 28 | |

! Notice: Retention reinforcement applies only to PFEIFER sockets.

! Caution: Missing or incorrectly installed retention reinforcement of PFEIFER sockets results in anchor failure and falling of the structural element – hazard to life. The retention reinforcement must always be installed in accordance with the Instructions for use.

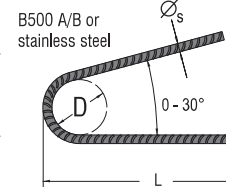
! Notice: The use of PFEIFER sockets is admissible only with the retention reinforcement inserted by the customer in accordance with Table 2.

! Hinweis: Werden PFEIFER-Hülsen mit Hülsenschraube eingebaut, so ist automatisch sichergestellt, dass der Bewehrungsstab zur Rückverankerung in direkten Kontakt zur Hülse ist, da die Hülsenschraube über den Innenstopfen den Bewehrungsstab fest an die Hülsenquetschung drückt.

Table 3 – parallel shear reinforcement

| Type/Size | \varnothing_s [mm] 12,5–30° | D [mm] 12,5–30° | \varnothing_s [mm] 31–45° | D [mm] 31–45° | L [mm] |
|-----------|-------------------------------|-----------------|-----------------------------|---------------|--------|
| Rd 12 | 6 | 24 | 6 | 24 | 150 |
| Rd 14 | 6 | 24 | 6 | 24 | 200 |
| Rd 16 | 8 | 32 | 8 | 32 | 200 |
| Rd 18 | 8 | 32 | 8 | 32 | 250 |
| Rd 20 | 8 | 32 | 8 | 32 | 300 |
| Rd 24 | 10 | 40 | 10 | 40 | 300 |
| Rd 30 | 12 | 48 | 12 | 48 | 400 |
| Rd 36 | 12 | 48 | 14 | 56 | 550 |
| Rd 42 | 14 | 56 | 16 | 64 | 600 |
| Rd 52 | 16 | 68 | 20 | 140 | 750 |
| Rd 56 | – | – | – | – | – |
| Rd 60 | – | – | – | – | – |

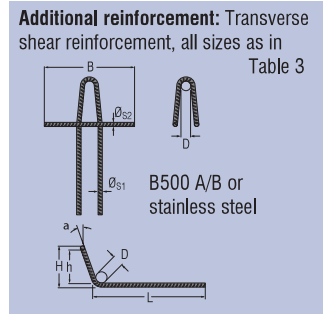
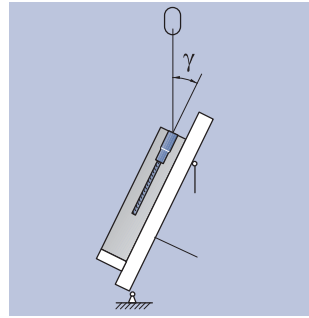
Additional reinforcement
Parallel shear reinforcement, all sizes as in Table 3



! Warning: Waved anchors of sizes Rd 56 and 60 can be loaded up to a parallel shear pull of 12,5°. Loading at greater parallel shear pull results in reduced safety levels and therefore a hazard for life and limb!

Table 4 – transverse shear reinforcement

| Size | \varnothing_{s1} [mm] | L [mm] | h [mm] | H [mm] | D [mm] | α Grad | B [mm] | \varnothing_{s2} [mm] |
|-------|----------------------------|-----------|-----------|-----------|-----------|------------------|-----------|----------------------------|
| Rd 12 | 6 | 270 | 23 | 35 | 24 | 15 | 280 | 8 |
| Rd 14 | 6 | 350 | 30 | 42 | 24 | 15 | 350 | 12 |
| Rd 16 | 8 | 420 | 33 | 49 | 32 | 15 | 400 | 12 |
| Rd 18 | 8 | 460 | 39 | 55 | 32 | 15 | 450 | 12 |
| Rd 20 | 10 | 490 | 44 | 64 | 40 | 15 | 490 | 14 |
| Rd 24 | 12 | 520 | 51 | 75 | 48 | 15 | 550 | 14 |
| Rd 30 | 12 | 570 | 68 | 92 | 48 | 15 | 580 | 16 |
| Rd 36 | 14 | 690 | 90 | 118 | 56 | 15 | 700 | 16 |
| Rd 42 | 16 | 830 | 111 | 143 | 64 | 15 | 850 | 20 |
| Rd 52 | 20 | 930 | 134 | 174 | 140 | 15 | 1000 | 20 |



! Notice: With an angle $\gamma \leq 15^\circ$ inclusion of transverse shear reinforcement is not required. This is applicable, for example, in the use of tilting tables.

! Notice: For simultaneous parallel and transversal shear pull only the transverse shear reinforcement as in Table 4 is required.

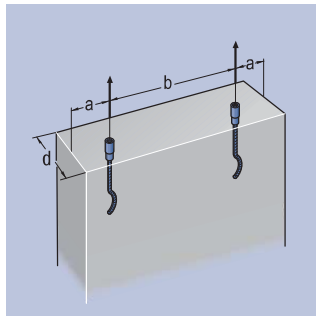


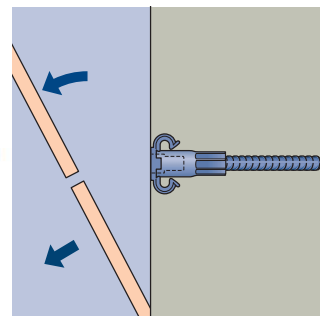
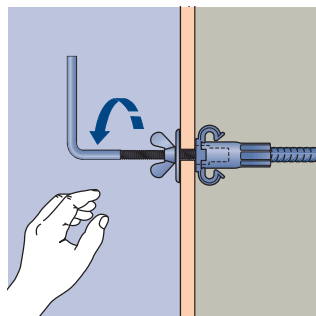
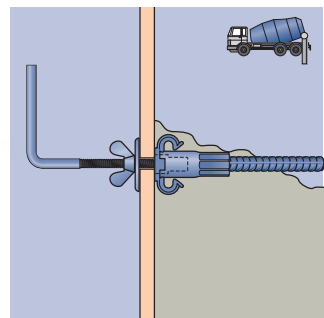
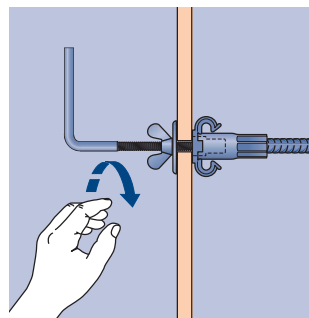
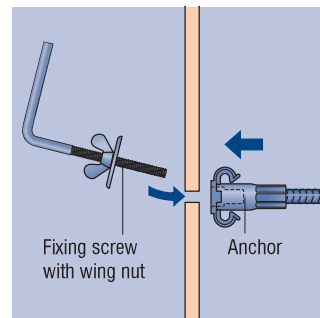
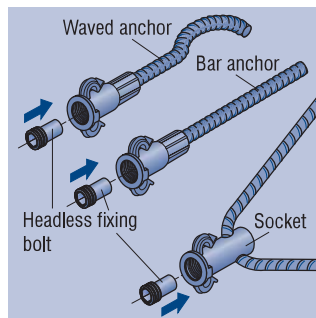
Table 5 – minimum rod dimensions and distances

| Type/Size | Minimum wall thickness d [mm] | | | Transversal shear pull | Edge distance a [mm] | Distances between anchors b [mm] |
|-----------|-------------------------------|------------------------------------|----------------------------------|------------------------|----------------------|----------------------------------|
| | $\beta \leq 12,5^\circ$ | $\beta > 12,5^\circ \leq 30^\circ$ | $30^\circ < \beta \leq 45^\circ$ | | | |
| Rd 12 | 55 | 55 | 60 | 60 | 150 | 300 |
| Rd 14 | 60 | 60 | 70 | 70 | 200 | 400 |
| Rd 16 | 65 | 65 | 80 | 80 | 200 | 400 |
| Rd 18 | 80 | 80 | 95 | 95 | 250 | 500 |
| Rd 20 | 90 | 90 | 110 | 110 | 275 | 550 |
| Rd 24 | 100 | 100 | 125 | 125 | 300 | 600 |
| Rd 30 | 120 | 120 | 140 | 140 | 350 | 700 |
| Rd 36 | 130 | 130 | 150 | 210 | 500 | 1000 |
| Rd 42 | 140 | 140 | 160 | 240 | 500 | 1000 |
| Rd 52 | 150 | 150 | 170 | 280 | 600 | 1200 |
| Rd 56 | 150 | – | – | – | 1250 | 2500 |
| Rd 60 | 200 | – | – | – | 1600 | 3200 |

! Notice: Maintenance of the required concrete cover should be independently checked. A concrete cover of 25 mm was assumed here.

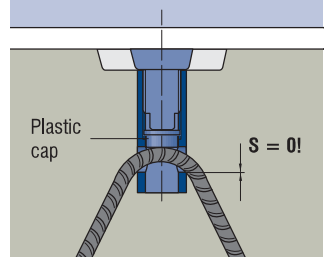
! Notice: For each installation, the available concrete cover must be compared with that required. If the available cover is less than the concrete cover required, stainless steel parallel or transversal shear reinforcement must be employed as applicable.

Installation



! Notice: In the installation illustrations the slab face installation variant with the PFEIFER headless fixing bolt is shown. Different installation variants and product data (e.g. deeper installation) can be found in the accessories section from page 45.

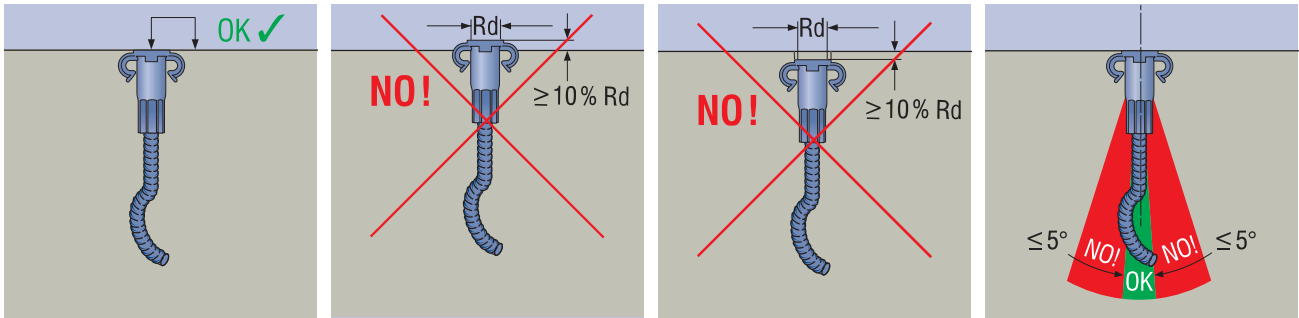
Plastic caps sockets



Installation

FOR PLANNERS, FOR PRECAST PLANTS, FOR USERS

Installation tolerances



Notice: For a planned, recessed installation according to instructions for installation and use the same tolerance field is to be applied.



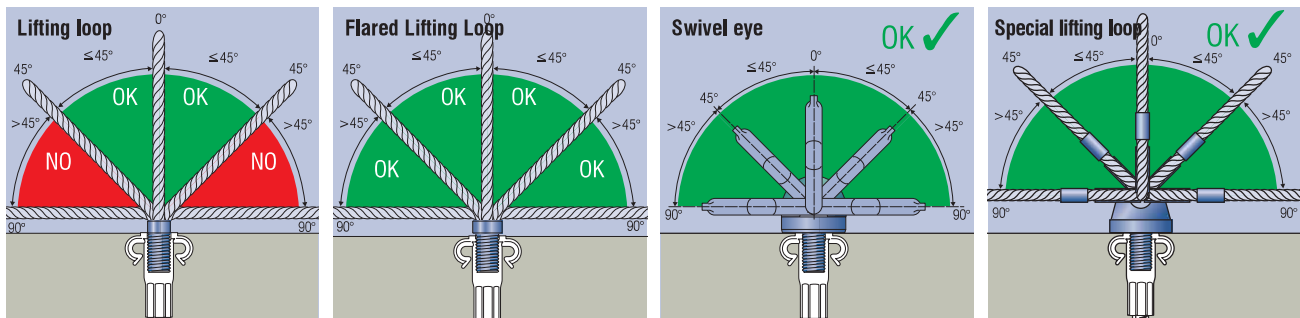
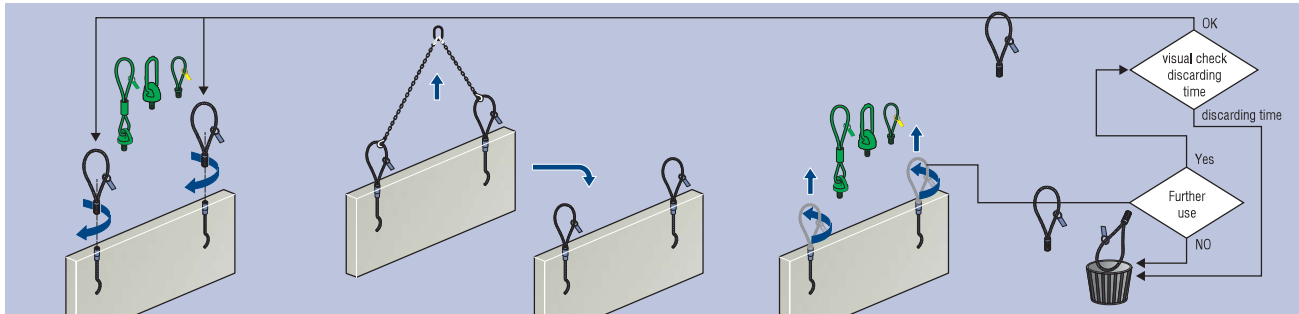
Caution: Incorrect positions and faulty installation of the anchor can lead to early failure and falling down – danger of death! As a rule, the anchor should be installed flush and at right-angles!

Use

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| Tensile load | 0 – 45° | 0 – 45° | 0 – 45° |
|------------------------|--------------|--------------|--------------|
| Transverse shear load* | OK ✓ | OK ✓ | OK ✓ |
| Temperature | -20 to 80 °C | -20 to 80 °C | -20 to 80 °C |

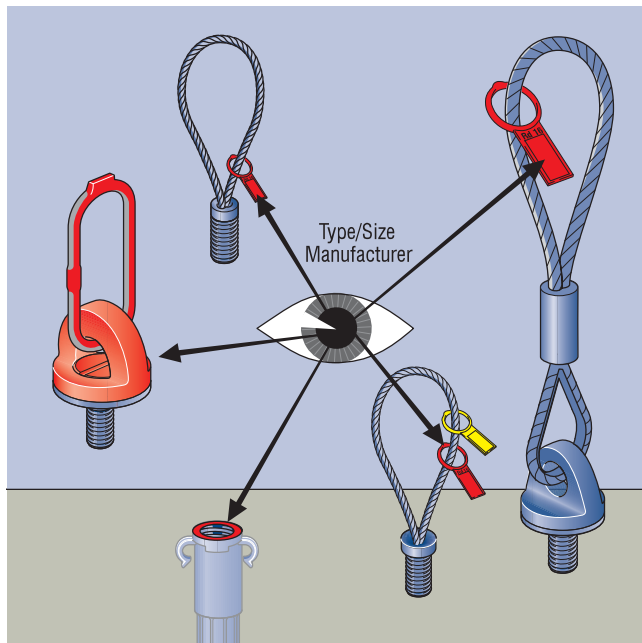
* With swivel eye, special lifting loop or flared lifting loop (where present) and suitable additional reinforcement



Warning: Loading the lifting loop beyond the approved angle will lead to reduced safety of the system. Risk of falling, danger to life! Loading of the lifting devices according to figure only!

Use

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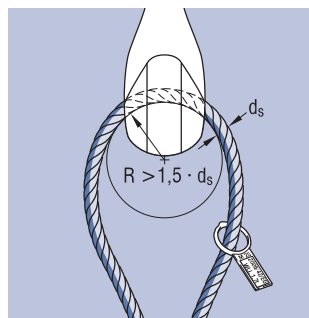


Check the system consistency by, for example, inspecting the data clip of the lifting anchor and the load capacity identification tag of the lifting loop.

Information on the markings:

- Type/Size
- Year of manufacture
- EC marking
- Manufacturer

Caution: If the markings are missing or illegible the lifting devices cannot be correctly allocated to the anchor. This can result in items falling and causing a hazard to life and limb. Lifting devices and anchors with absent or illegible markings must be immediately taken out of service!



Warning: If the deflection radius of the hook is too small, the lifting device can fail even at the rated load. This is a hazard to life. Only attach hooks with a deflection radius of at least 1.5 x the cable diameter.

Misuse

FOR PLANNERS, FOR PRECAST PLANTS, FOR USERS

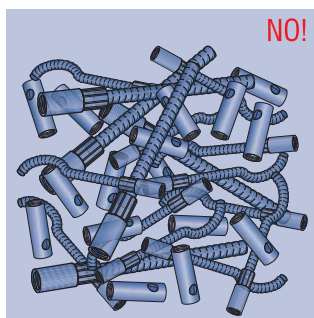
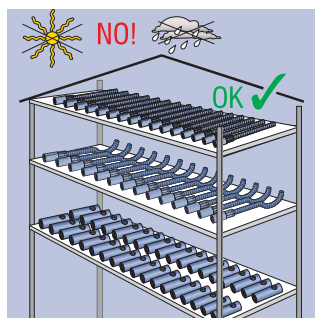
Warning: Use of the anchor by untrained personnel results in the risk of incorrect use and the risk of items falling down, causing injury or death. Use only trained personnel.

Caution: Incorrect use can result in safety hazards and reduced carrying capacity. This results in the risk of a fall and a hazard to life and limb. Lifting anchor systems must be used only in accordance with the instructions for installation and use and only by suitable trained personnel!

Warning: Use of the anchor systems for lashing during transport of the building component is not admissible since this can lead to the load falling and so to injury and death of persons. These anchor systems must be used only for lifting and moving the stated precast concrete elements!

Storage

FOR PLANNERS, FOR PRECAST PLANTS, FOR USERS



Notice: Store the thread system components dry and protected. There is a risk of corrosion if there are large changes of temperature, wetness (humidity) or any influence from acids, road salt or sea water!