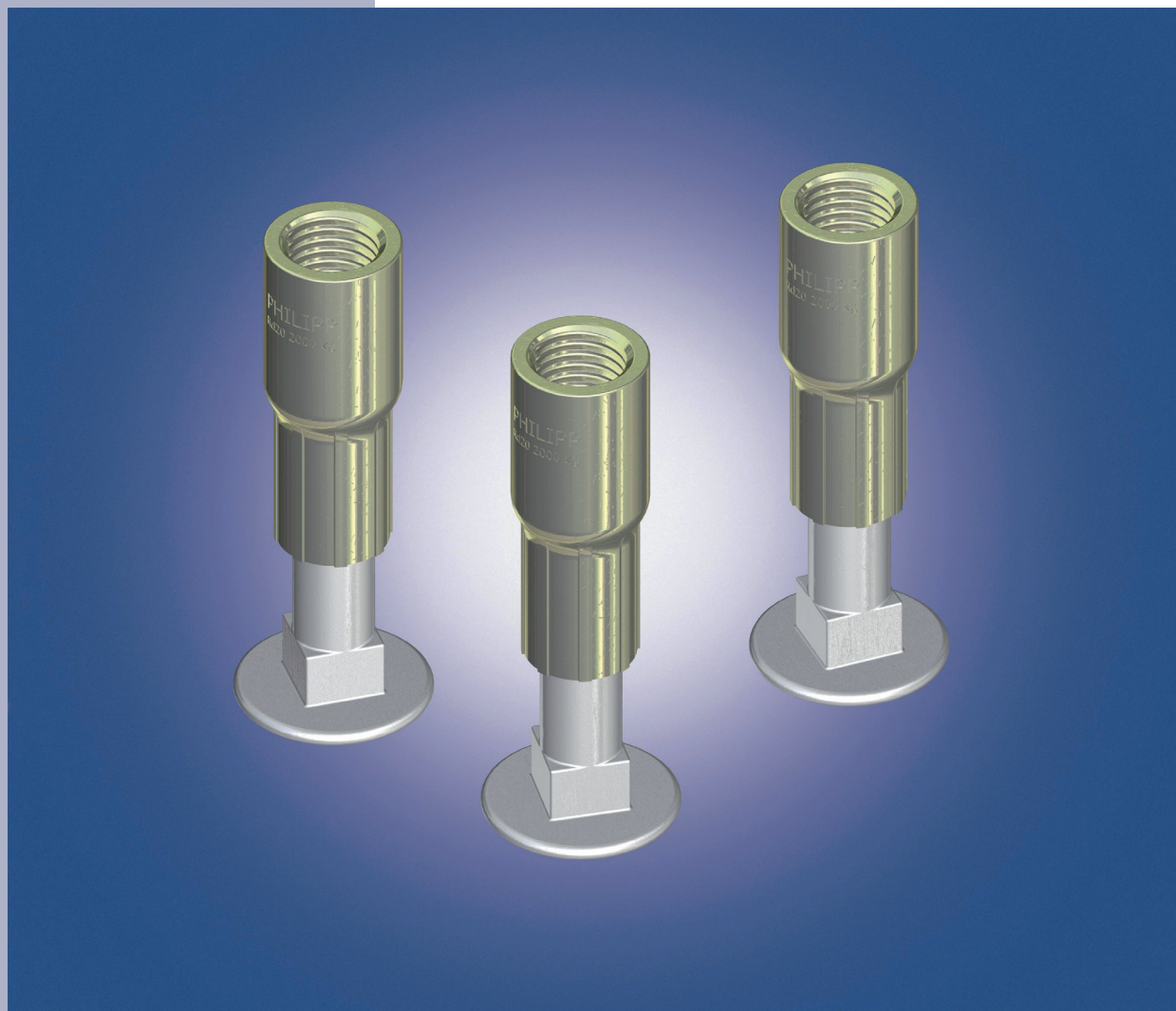PHILIPP GROUP

PHILIPP Screw Anchor

Installation Instruction

INSTALLATION INSTRUCTION
OF PHILIPP SCREW ANCHOR

The **PHILIPP Screw Anchor** is part of the **PHILIPP Transport Anchor System** and complies with the „Safety Rules for Transport Anchors and Systems for Precast Concrete Units" (German regulation, BGR 106).

On use of **PHILIPP Screw Anchor** attention must be paid to this Installation instructions, using instruction of **PHILIPP Lifting Loop with Threaded End**, **PHILIPP Wirbelstar** and **PHILIPP Lifty** as well as the general part. The anchor may only be used in combination with the mentioned **PHILIPP Lifting Devices**.

PHILIPP Screw Anchor are used for transport of precast concrete units. Multiple uses within the transport chain (from production to installation of the unit) are no repeated uses. Repeated use is only allowed if it complies with the German Approval (DIBt, Berlin No. Z-30.3-6 stainless steel).
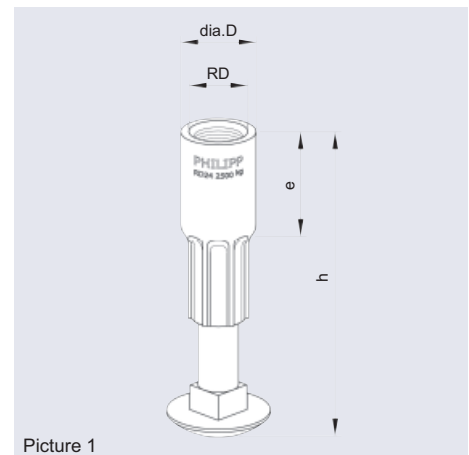
Picture 1

Socket: galvanized or stainless steel

Table 1: Load Bearing Capacity and Dimensions

Art.-No. Galvanized	Art.-No. Stainless Steel	Type RD	Load Bearing Capacity allow. F_Z [kN] 0°-45°	Dimensions [mm]			Weight [kg/100 pcs.]	PU [pcs.]
				dia.D	h	e		
67SA12	75SA12VA	12	5.0	15.0	60	22	4.0	200
67SA14	75SA14VA	14	8.0	18.0	70	25	7.0	200
67SA16	75SA16VA	16	12.0	21.0	80	27	12.0	100
67SA18	75SA18VA	18	16.0	24.0	90	34	22.0	100
67SA20	75SA20VA	20	20.0	27.0	100	35	26.0	50
67SA24	75SA24VA	24	25.0	31.0	115	43	41.0	50
67SA30	75SA30VA	30	40.0	39.5	150	56	72.0	25

For ascertainment of the right load bearing capacity please follow our general installation instruction and technical advice. The weight of 1.0ton results in 10kN.

The **PHILIPP Screw Anchor** can only be used for axial and diagonal tension. Lateral tension is **inadmissible**.

1. Material

The **PHILIPP Screw Anchor** consists of a flat-head bolt with crimped-on insert. The insert is made of special high-precision, galvanized steel according to DIN 50961. Alternatively the insert can be delivered in stainless steel whereas the cut surface is protected against corrosion with a special seal.
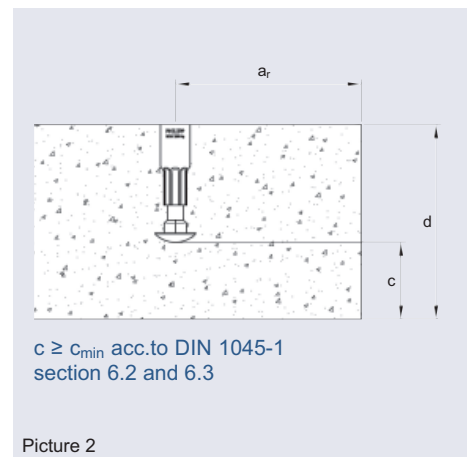
2. Reinforcement

On use of **PHILIPP Screw Anchors** no surface reinforcement is required. The concrete must have a minimum strength of **15 N/mm^2** at first time of lifting. The user is personally responsible for further transmission of load into the unit. Diagonal loading requires a minimum reinforcement (Table 3).

## 3. Center Distance, Edge Distance, Unit Thicknesses

To ensure a safe load transfer the installation and positioning requires minimum dimensions and minimum center distances. The unit thickness d given in Table 2 covers the load directions (axial and diagonal loading).

Table 2: Minimum Center Distance (a_a), Edge Distance (a_r) Minimum Thickness of Unit (d)

Type	a_a [mm]	a_r [mm]	d [mm]
12	360	180	80
14	420	210	90
16	480	240	100
18	540	270	110
20	600	300	120
24	690	345	135
30	900	450	170

$c \geq c_{min}$ acc.to DIN 1045-1 section 6.2 and 6.3

Picture 2

If the **PHILIPP Screw Anchor** is installed in a sunk position (e.g. through the **PHILIPP Nailing Plate**) the installation height is increased by the particular measure.

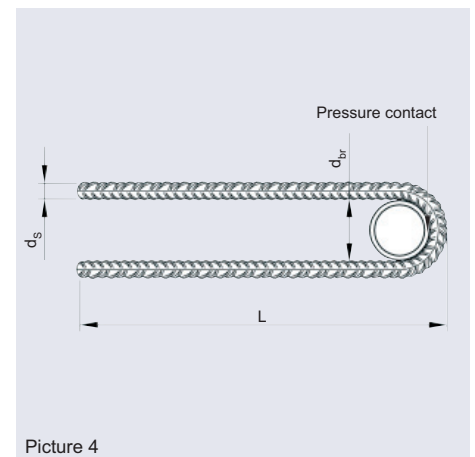Picture 3
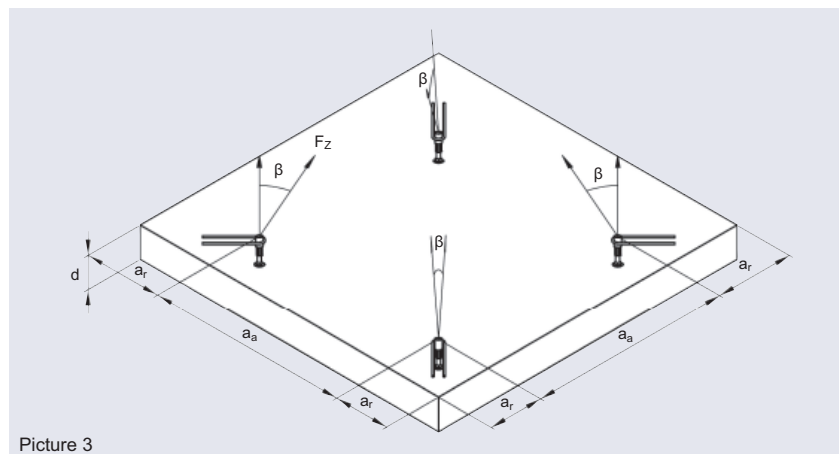
4. Additional Reinforcement for Diagonal Loading

The use of **PHILIPP Screw Anchors** under diagonal tension $\beta \geq 12.5°$ requires additional reinforcement according to Table 3. The diagonal reinforcement is placed contrary to the tensile direction (Picture 4) and has in the summit of the bending pressure contact with the threaded insert of the transport anchor. Table 4 gives the user the possibility to use appropriate steel diameter if the inclination is smaller than 30°. Decisive for the choice of the anchors is the existing diagonal inclination in the transport chain till the mounting of the precast unit.

⚠ Lateral loading of the anchors is not permitted within the whole transport chain. This also counts for diagonal loading with an inclination larger than 45°

Tabelle 3: Additional Reinforcement at Diagonal Tension
(necessary, if $\beta \geq 12,5°$)

Type	at 12,5° ≤ β ≤ 45°			at 12,5° ≤ β ≤ 30°		
	d_s [mm]	L [mm]	d_{br} [mm]	d_s [mm]	L [mm]	d_{br} [mm]
12	6	150	24	6	150	24
14	6	200	24	6	200	24
16	8	200	32	6	250	24
18	8	250	32	8	200	32
20	8	300	32	8	250	32
24	10	300	40	8	300	32
30	12	400	48	10	350	40

Picture 4