

PHILIPP GROUP

PHILIPP Threaded transport anchor

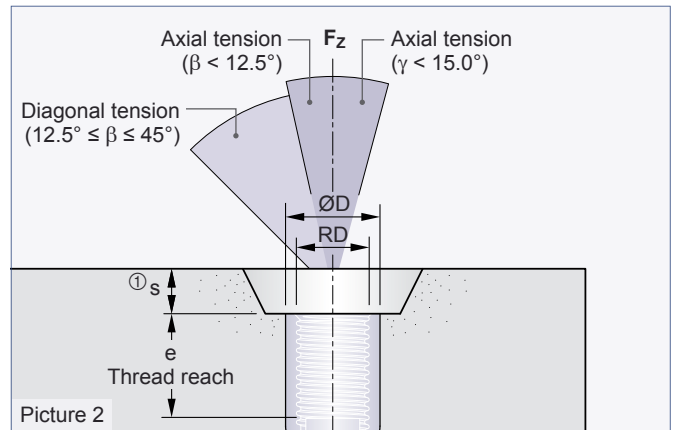
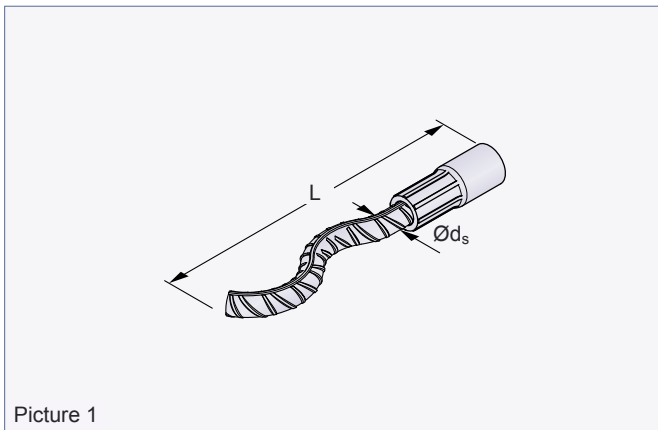


VB3-T-004-en - 01/16

Version: short wavy tail

Installation and Application Instruction

PHILIPP Threaded transport anchor - short wavy tail



The Threaded transport anchor is part of the PHILIPP Transport anchor system and complies with the VDI/BV-BS-Guideline "Lifting inserts and lifting insert systems for precast concrete elements" (VDI/BV-BS 6205). The use of Threaded transport anchors requires the compliance with this Installation Instruction as well as the General Installation Instruction.

The Installation and Application Instructions for the appropriate PHILIPP lifting devices (Lifting Loop with threaded end, Adapter for lateral tension, "Wirbelstar" and "Lifty") as

well as the data sheets of the appropriate PHILIPP accessories (Plastic nailing plates, Retaining caps etc.) must be followed. The anchor may only be used in combination with the mentioned PHILIPP lifting devices. Threaded transport anchors are designed for the transport of precast concrete units only. Multiple use within the transport chain (from production to installation of the unit) means no repeated usage. This Installation Instruction does not specify a repeated usage (e.g. ballasts for cranes) or a permanent fixation.

Table 1: Dimensions

Ref.-No. bright zinc plated	Ref.-No. stainless steel	Type	Dimensions						Weight [kg/100 pcs.]
			RD	ØD [mm]	L [mm]	e [mm]	Ød _s [mm]		
67M12K	75M12VAK	RD 12	12	15.0	110	22	8	6.0	
67M14K	75M14VAK	RD 14	14	18.0	130	25	10	11.0	
67M16K	75M16VAK	RD 16	16	21.0	170	27	12	20.0	
67M18K	75M18VAK	RD 18	18	24.0	175	34	14	27.0	
67M20K	75M20VAK	RD 20	20	27.0	187	35	16	37.0	
67M24K	75M24VAK	RD 24	24	31.0	240	43	16	50.0	
67M30K	75M30VAK	RD 30	30	39.5	300	56	20	110.0	
67M36K	75M36VAK	RD 36	36	47.0	380	68	25	190.0	
67M42K	75M42VAK	RD 42	42	54.0	450	75	28	290.0	

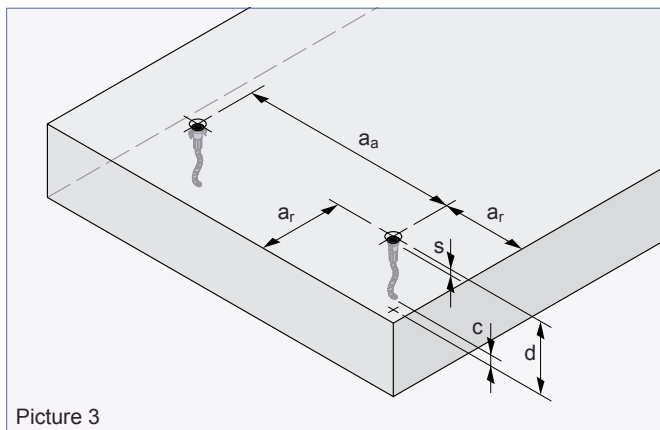
① Mind the embedding depth of the corresponding nailing plate and retaining cap (Picture 2).

Materials

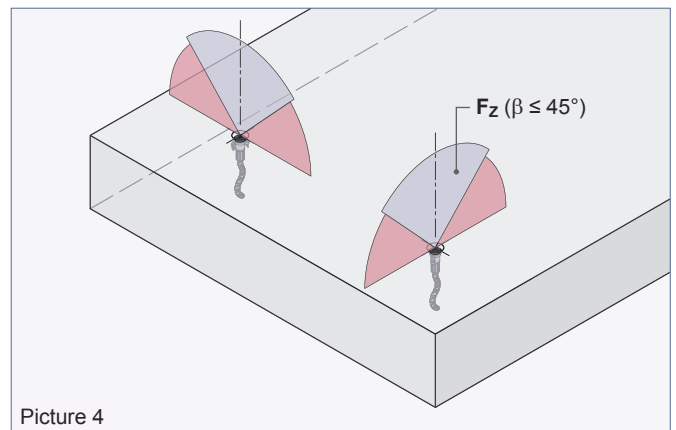
The Threaded transport anchors consist of a straight reinforcement bar B500B with crimped-on insert. The threaded inserts are made of special high precision steel tubes and are galvanised according to common standards. The galvanisation protects the anchor temporarily from the storage at the producer site to the final installation in the concrete element.

If the surface of a concrete element has to fulfil special conditions (e.g. no stream of rust) the insert can be delivered in stainless steel alternatively. Here the cut surface of the reinforcement bar is protected by a special sealant against corrosion.

Bearing capacities



Picture 3



Picture 4

Element thicknesses, centre and edge distances

The installation and position of threaded anchors in precast concrete units require minimum element dimensions and centre distances for a safe load transfer.

Table 2 shows the minimum thickness d of a unit to cover all load directions (axial, diagonal and lateral).

The threaded transport anchors (version: short wavy tail) can only be used for axial and diagonal tension exclusively. Lateral tension is not allowed.

If the Threaded transport anchor is recessed installed in the concrete element (e.g. by a plastic nailing plate) the dimension d must be increased by the amount s (Picture 3).

$$c \geq c_{nom} \text{ acc. to DIN EN 1992-1-1}$$

Table 2: Permissible load bearing capacities

Load class	Element thicknesses, centre and edge distances			perm. F if $f_{cc} \geq 15 \text{ N/mm}^2$ Axial tension / diagonal tension perm. F_z $0^\circ - 45^\circ$
	d [mm]	a_a [mm]	a_r [mm]	
12	140	200	95	5.0
14	160	200	115	8.0
16	195	260	135	12.0
18	202	300	155	16.0
20	215	350	170	20.0
24	270	440	220	25.0
30	390	550	275	40.0
36	410	600	300	63.0
42	480	800	400	80.0

To determine the correct type please refer also to our General Installation Instruction.

The weight of 1.0 t corresponds to 10,0 kN.

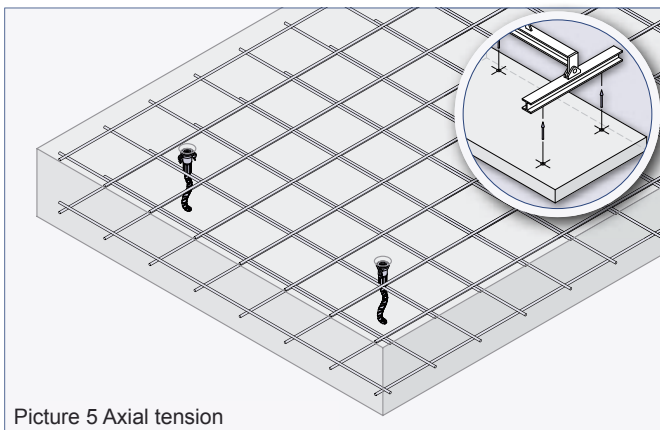
Reinforcement

Reinforcement / axial tension

On use of Threaded transport anchors precast units must be equipped with a minimum reinforcement (Table 3). This mesh reinforcement can be replaced by a comparable steel bar reinforcement. At the first time of lifting the concrete must have a minimum strength f_{cc} of **15 N/mm²**. The user is personally responsible for further transmission of load into the concrete unit.



Existing static or constructive reinforcement can be taken into account for the minimum reinforcement according to Table 3.



Picture 5 Axial tension

Table 3: Minimum reinforcement

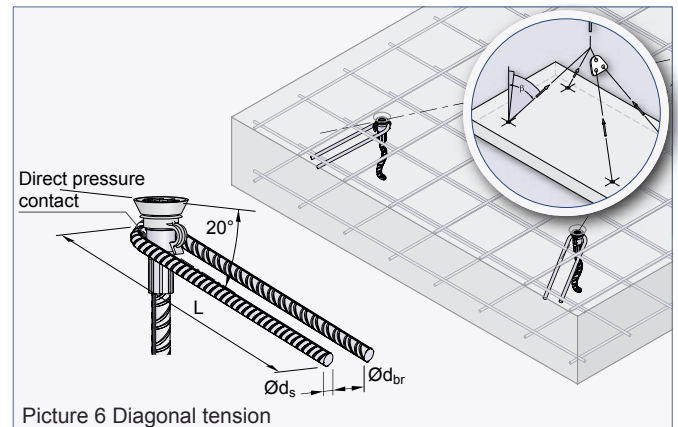
Load class	Mesh reinforcement (square) [mm ² /m]
12	131
14	131
16	131
18	188
20	188
24	188
30	188
36	188
42	188



A lateral tension of the anchor within the complete transport chain is not possible! This also applies to a diagonal tension with an angle β greater than 45°!

Additional reinforcement for diagonal tension

If the Threaded transport anchor is used under diagonal tension $\beta > 12.5^\circ$ an additional reinforcement according to Table 4 is required. Here the reinforcement for diagonal tension is placed contrarily to the tensile direction (Picture 6) and must have direct pressure contact to the anchor insert in the peak of its bending.



Picture 6 Diagonal tension



Position of the direct pressure contact between insert and additional reinforcement must be within the thread reach of the insert.

Table 4 shows possibilities to use appropriate steel diameters if the inclination is less than 30°. Decisive for the choice of the stirrups are the existing diagonal inclinations during the transport chain until the final mounting of the precast element.

Table 4: Additional reinforcement for diagonal tension (material B500B) (required if $\beta > 12.5^\circ$)

Load class	if $12.5^\circ \leq \beta \leq 45^\circ$			if $12.5^\circ \leq \beta \leq 30^\circ$		
	Øds [mm]	L [mm]	Ødbr [mm]	Øds [mm]	L [mm]	Ødbr [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
36	14	550	56	12	450	48
42	16	600	64	14	600	56