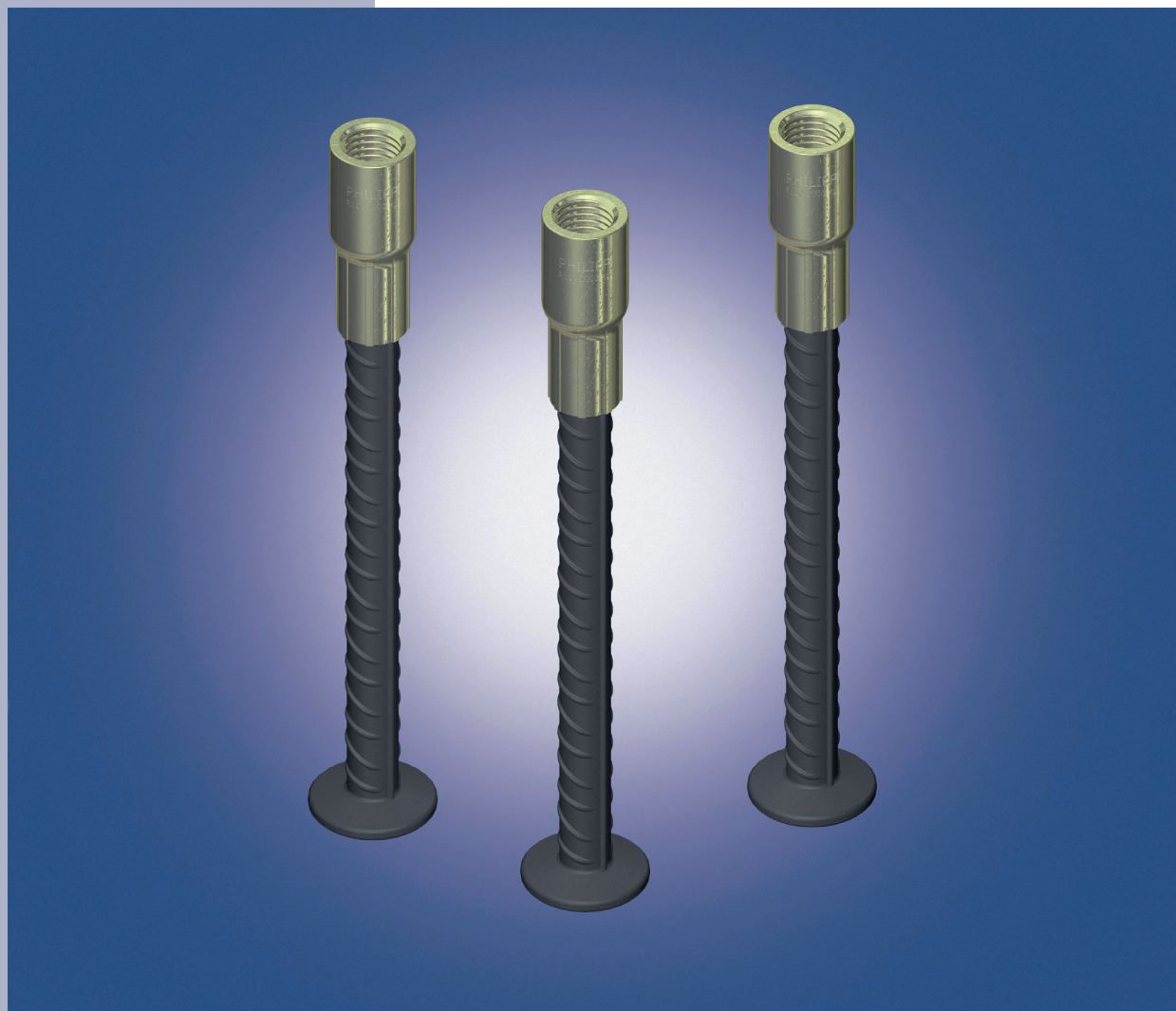




# PHILIPP Compact Anchor

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## Installation Instruction

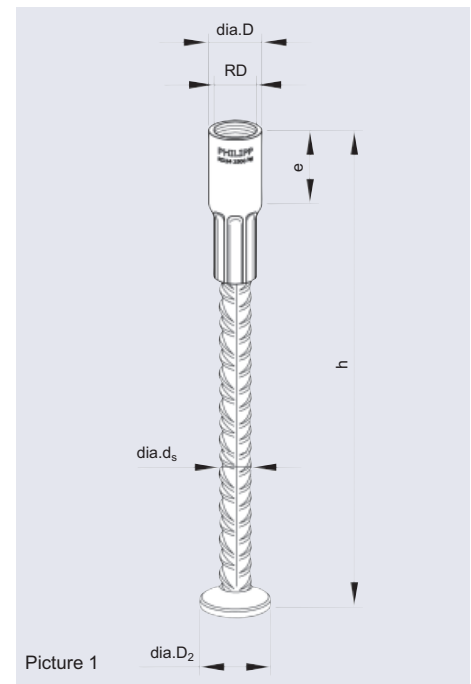


# INSTALLATION INSTRUCTION OF PHILIPP COMPACT ANCHOR

The **PHILIPP Compact 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 Compact Anchor** attention must be paid to this installation instruction, the using instructions 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 Compact Anchors** 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).



**Table 1: Load Bearing Capacities and Dimensions**

Art.-No. Galvanized	Art.-No. Stainless Steel	Type	Load Bearing Capacity [kN]		Dimensions [mm]					Weight [kg/100 pcs.]	PU [pcs.]
			allow. F <sub>Z</sub> 0° - 45	allow. F <sub>Q</sub> Lateral Tension	dia.D	dia.d <sub>s</sub>	dia.D <sub>2</sub>	e	h		
67K120100	75K120100	12	5.0	2.5	15.0	8	25	22	100	6.0	200
67K120150	75K120150	12	5.0	2.5	15.0	8	25	22	150	7.5	200
67K140105	75K140105	14	8.0	4.0	18.0	10	25	25	105	10.0	100
67K140155	75K140155	14	8.0	4.0	18.0	10	25	25	155	13.0	100
67K160130	75K160130	16	12.0	6.0	21.0	10	25	27	130	14.0	100
67K160175	75K160175	16	12.0	6.0	21.0	10	25	27	175	17.0	100
67K180150	75K180150	18	16.0	8.0	24.0	14	35	34	150	29.0	50
67K180225	75K180225	18	16.0	8.0	24.0	14	35	34	225	36.0	50
67K200185	75K200185	20	20.0	10.0	27.0	14	35	35	185	34.0	50
67K200250	75K200250	20	20.0	10.0	27.0	14	35	35	250	43.0	50
67K240200	75K240200	24	25.0	12.5	31.0	14	35	43	200	42.0	50
67K240275	75K240275	24	25.0	12.5	31.0	14	35	43	275	52.0	25
67K300275	75K300275	30	40.0	20.0	39.5	20	45	56	275	105.2	25
67K300350	75K300350	30	40.0	20.0	39.5	20	45	56	350	126.0	1
67K360334	75K360334	36	63.0	31.5	47.0	25	60	68	334	184.0	1
67K360450	75K360450	36	63.0	31.5	47.0	25	60	68	450	227.0	1
67K420385	75K420385	42	80.0	40.0	54.0	28	70	80	385	273.0	1
67K420500	75K420500	42	80.0	40.0	54.0	28	70	80	500	320.0	1
67K520550	75K520550	52	125.0	62.5	67.0	32	80	100	550	567.0	1
67K520700	75K520700	52	125.0	62.5	67.0	32	80	100	700	634.0	1

**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.**

On lateral tension the **PHILIPP Compact Anchors** have just the half load bearing capacity compared to axial loading. However, this is no limitation because during tilt-up just the half of the unit weight has to be lifted (see also General Installation Instruction).

## 1. Material

The **PHILIPP Compact Anchor** consists of a reinforcement bar (BSt500S) with a compressed foot and crimped-on insert. The threaded inserts are made from precision steel in special quality and are galvanized according to DIN 50961. Alternatively the insert can be delivered in stainless steel whereas the cut surface of the rebar is protected against corrosion with a special seal.

## 2. Reinforcement

On use of **PHILIPP Compact Anchors** precast units must be reinforced with a minimum surface reinforcement (Table 2).

 Existing static-structural reinforcement may be taken into account on requested minimum reinforcement according to Table 2.

The minimum reinforcement can be exchanged by comparable longitudinal reinforcement and stirrups. The concrete must have a strength of min. **15 N/mm<sup>2</sup>** at first time of lifting. The user is personally responsible for further transmission of load into the unit.

**Table 2: Minimum Reinforcement**

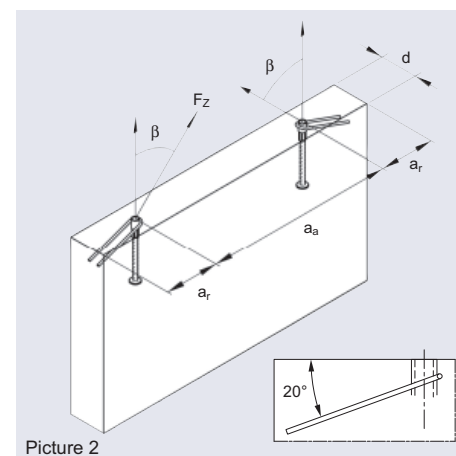
Type	Mesh Reinforcement (quadratic) [mm <sup>2</sup> /m]
12	131
14	131
16	131
18	188
20	188
24	188
30	188
36	188
42	188
52	188

## 3. Center Distances, Edge Distances and Unit Thicknesses

To ensure a safe load transfer the installation and positioning of the **PHILIPP Compact Anchor** requires minimum dimensions and minimum center distances. The unit thickness *d* covers all load directions (axial, diagonal and lateral loading).

**Table 3: Minimum Center Distance (*a<sub>a</sub>*), Edge Distance (*a<sub>r</sub>*), Minimum Thickness of Unit (*d*)**

Type	<i>a<sub>a</sub></i> [mm]	<i>a<sub>r</sub></i> [mm]	<i>d</i> [mm]
12	300	150	60
14	400	200	60
16	400	200	80
18	500	250	100
20	550	275	100
24	600	300	120
30	650	325	140
36	800	400	200
42	1000	500	240
52	1200	600	275



## 4. Additional Reinforcement for Diagonal Loading

The use of **PHILIPP Compact Anchor** under diagonal tension  $\beta \geq 12.5^\circ$  requires additional reinforcement according to Table 4. The diagonal reinforcement is placed contrary to the tensile direction (Picture 2) and has in the summit of the bending pressure contact with the threaded insert of the **PHILIPP Compact Anchor** (Picture 3a). Table 4 offers the user the possibility to use appropriate steel diameter if the inclination is smaller than  $30^\circ$ . Decisive for the choice of the stirrups is the existing diagonal inclination in the transport chain till the mounting of the precast unit.

**Table 4: Additional Reinforcement on Diagonal Tension**  
(necessary, if  $\beta \geq 12,5^\circ$ )

Type	at $12,5^\circ \leq \beta \leq 45^\circ$			at $12,5^\circ \leq \beta \leq 30^\circ$		
	dia. $d_s$ [mm]	L [mm]	$d_{br}$ [mm]	dia. $d_s$ [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
36	14	550	56	12	450	48
42	16	600	64	14	600	56
52	20	750	140	16	700	67

## 5. Additional Reinforcement for Lateral Loading

If the unit is loaded by a lateral load where the inclination is  $\gamma \geq 15^\circ$ , an additional reinforcement is required (Table 5). The reinforcement for lateral loading is installed in the front side of the wall contrary to the load direction. Tilting up the wall can cause diagonal and lateral loading at the same time (Picture 4b). In this case only the reinforcement for lateral loading is required (anchorage reinforcement tail or double reinforcement tail). The diagonal loading is then already covered.

Turning or tilting up the unit requires lateral reinforcement (anchorage reinforcement tail according to Picture 5b). The double reinforcement tail (Picture 5a) covers all the other loads. At lateral loading the mesh reinforcement (Table 2) must be applied as a mesh cap. Additionally to the mesh cap longitudinal reinforcement must be installed according to Table 5.

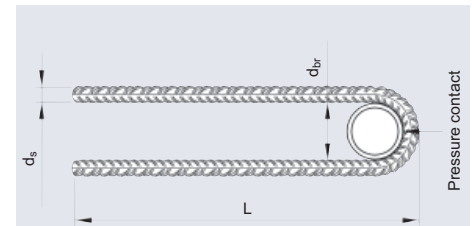
Table 5 gives the user the possibility to use an anchorage reinforcement tail (Picture 5b) or a double reinforcement tail (Picture 5a) for lateral loading. Both stirrups must have pressure contact with the thread of the transport anchor. Lateral loading with **PHILIPP Compact Anchors** are only allowed for unit thicknesses according to Table 3.

**Table 5: Additional Reinforcement on Lateral Tension**  
(necessary, if  $\gamma \geq 15^\circ$ )

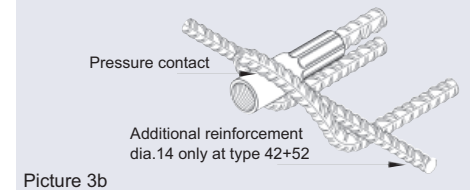
Type	$d_{s1}$	L	H	$d_{br}$	$d_{s2}$	$H_1$	$L_1$	Longitudinal Reinforcement	
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
12	6	270	35	24	**	-	-	dia.10	850
14	6	350	42	24	**	-	-	dia.10	850
16	8	420	49	32	8	49	600	dia.10	850
18	8	460	55	32	8	55	750	dia.12	850
20	10	490	64	40	10	64	800	dia.12	850
24	12	520	75	48	12	75	800	dia.12	850
30	12	570	92	48	12	92	1000	dia.16	1000
36	14	690	118	56	14	118	1000	dia.16	1000
42*	16	830	143	64	16	143	1200	dia.16	1000
52*	20	930	174	140	20	174	1500	dia.20	1200

\* additional reinforcement dia. 14mm, l=60cm (Picture 3b)

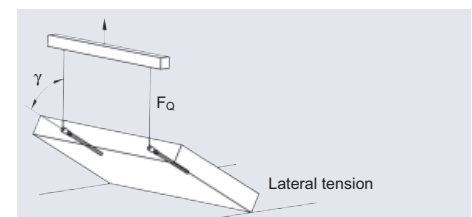
\*\* for this unit sizes the minimum unit thickness is too small for a double reinforcement tail



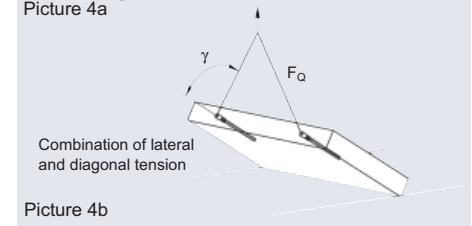
Picture 3a



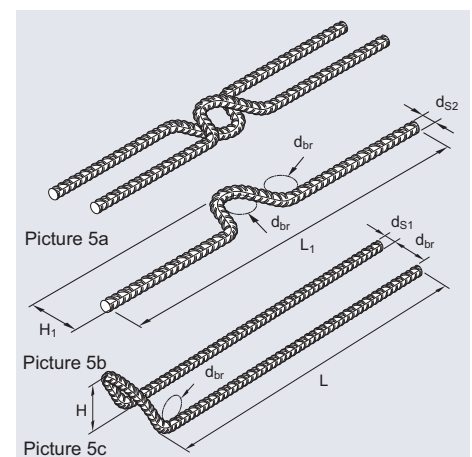
Picture 3b



Picture 4a



Picture 4b



Picture 5a

Picture 5b

Picture 5c