

# Compact anchor - short



## Installation and Application Instruction

# Our products from the division BUILDING SOLUTIONS

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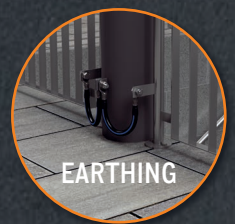
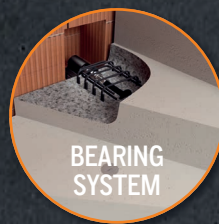
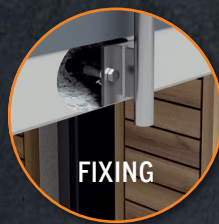
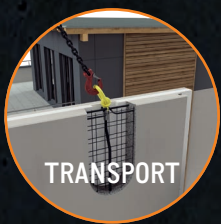
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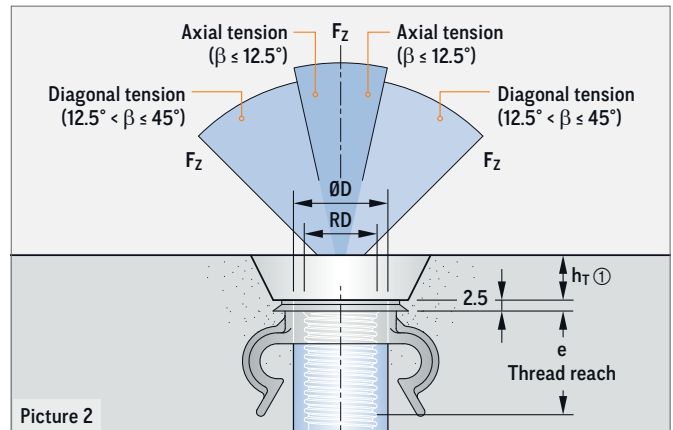
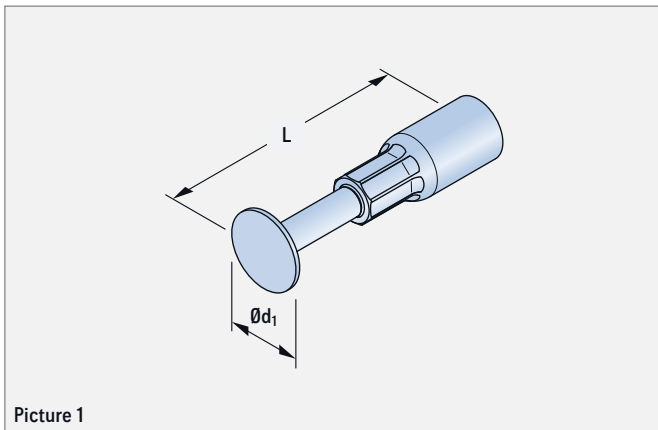


## CONTENT

<b>GENERAL PRODUCT INFORMATION</b>	<b>Page</b>	<b>4</b>
System description	Page	4
EC Declaration of Conformity	Page	4
Dimensions	Page	4
<b>GENERAL NOTES</b>	<b>Page</b>	<b>5</b>
Materials	Page	5
Corrosion	Page	5
Concrete strength	Page	5
Element thicknesses, centre and edge distances	Page	5
Load directions	Page	5
Reinforcement instructions	Page	5
<b>PERMISSIBLE LOAD BEARING CAPACITIES AND BOUNDARY CONDITIONS</b>	<b>Page</b>	<b>6</b>
Axial tension	Page	6
Diagonal tension	Page	6
<b>ADMISSIBLE LOAD CASES</b>	<b>Page</b>	<b>7</b>
Lifting legs w / w/o compensation	Page	7

# PHILIPP Compact anchor - short

## GENERAL PRODUCT INFORMATION



The PHILIPP Compact anchor in short version is used in slab-type precast elements. It is part of the PHILIPP Transport anchor system and complies with the VDI/BV-BS Guideline "Lifting inserts and lifting systems for precast concrete elements" (VDI/BV-BS 6205). The use of Compact anchors requires the compliance with this Installation and Application Instruction as well as the General Installation and Application Instruction.

Both, the Application Instructions for the belonging PHILIPP lifting devices as well as the necessary PHILIPP accessories must be followed also. The anchor may only be used in combination with the mentioned PHILIPP lifting devices. Compact 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. The Threaded transport anchor is not specified for a repeated usage (e.g. ballasts for cranes) or a permanent fixation.






### EC-DECLARATION OF CONFORMITY

The EC Declaration of Conformity (DoC) of the Compact anchor in short version can be downloaded from our website [www.philipp-group.de](http://www.philipp-group.de) or is available on request.



TABLE 1: DIMENSIONS

Ref. no. ② galvanised	Type	Dimensions				
		RD	ØD (mm)	L (mm)	e (mm)	Ød1 (mm)
67K360200	 RD 36	36	47.0	200	68	60
67K420230	 RD 42	42	54.0	230	75	85
67K520320	 RD 52	52	67.0	320	100	85

① Mind the embedding depth  $h_T$  of the corresponding recess former (picture 2).

② Also available in version stainless steel (ref. no. 75K\_\_\_\_VA).

## GENERAL NOTES

### MATERIALS

The Compact anchor consists of a round steel with foot and a crimped-on insert. The threaded inserts are made of special high precision steel tubes and are galvanised according to common standards. This galvanisation protects the anchor temporarily from the storage at the producer site to the final installation in the concrete element.

### CORROSION

In order to avoid contamination or damage to the concrete surface of the precast concrete element due to corrosion of the transport anchor (stream of rust or similar), the insert can be delivered in stainless steel alternatively. Here the cut surface of the reinforcement bar is protected by a special sealing against corrosion.

### CONCRETE STRENGTH

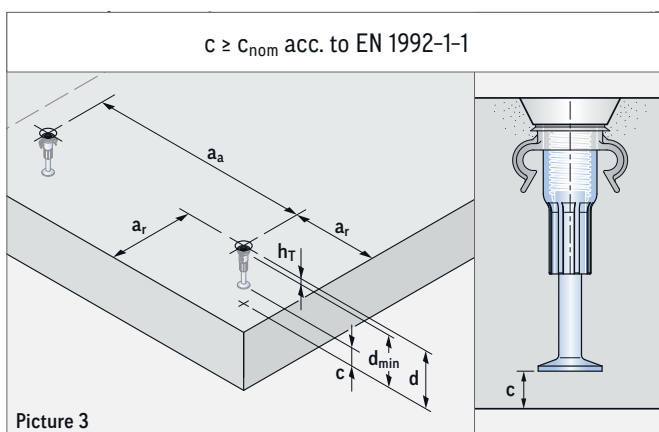
At the time of the first lift the concrete must have a minimum strength  $f_{cc}$  acc. to table 2. Given concrete strengths  $f_{cc}$  are cube compression strengths at the time of the first lifting.

### ELEMENT THICKNESSES, CENTRE AND EDGE DISTANCES

The installation and position of threaded transport anchors in precast concrete elements require minimum element dimensions and centre/edge distances for a safe load transfer. Table 2 shows the minimum thickness  $d_{min}$  of a unit which covers the load directions axial and diagonal tension.

### RECESSED INSTALLATION

If the Threaded transport anchor is installed recessed (e.g. by using a recess former), the minimum thickness  $d_{min}$  has to be increased by  $h_T$  (picture 3).



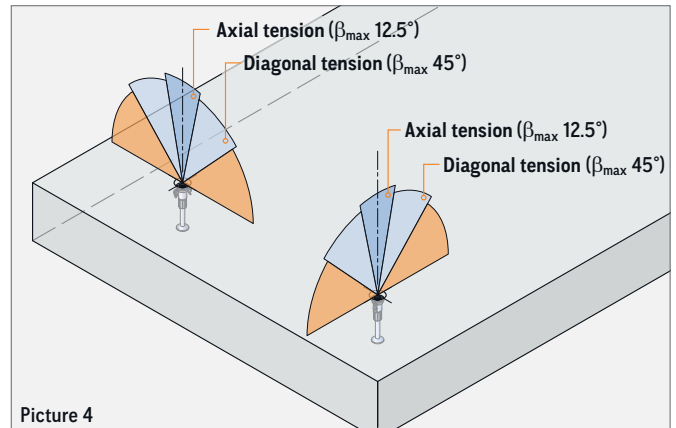
Picture 3

### LOAD DIRECTIONS

The Compact anchor short can only be used for axial and diagonal tension exclusively.

### LATERAL TENSION

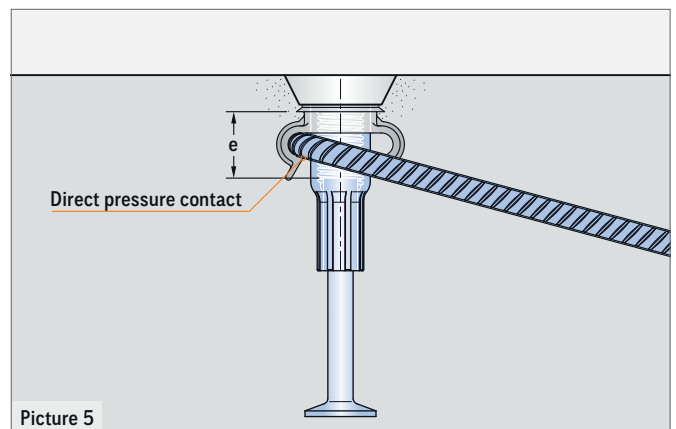
Lateral tension is not allowed within the whole transport chain. This also applies to a diagonal tension with angle  $\beta$  more than  $45^\circ$ !



Picture 4

### REINFORCEMENT INSTRUCTIONS

Additional reinforcement for diagonal tension has to be installed with pressure contact to the anchor insert. The position of the direct pressure contact must be within the thread reach  $e$  of the insert (see picture 5). By using the Marking ring with clip (74KR\_CLIP) this position is guaranteed.



Picture 5

# PHILIPP Compact anchor - short

## PERMISSIBLE LOAD BEARING CAPACITIES AND BOUNDARY CONDITIONS

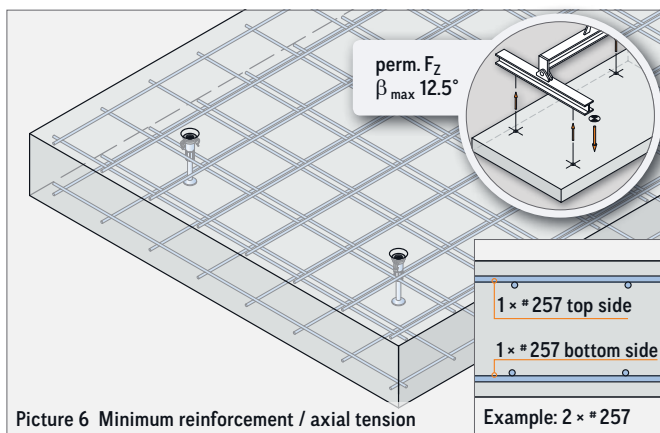
### AXIAL TENSION

In use of Compact anchors short precast units must be reinforced with a minimum reinforcement. Depending on the load case this can differ and is specified in table 2. This minimum reinforcement can be replaced by a comparable steel bar reinforcement. The user is personally responsible for further transmission of load into the concrete unit.



#### EXISTING REINFORCEMENT

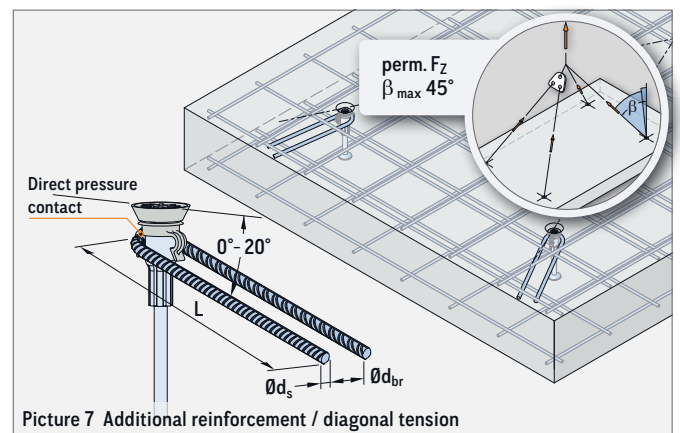
Existing static or constructive reinforcement can be taken into account for the minimum reinforcement of the respective load case.



Picture 6 Minimum reinforcement / axial tension

### DIAGONAL TENSION

If the Compact anchor short is used under diagonal tension  $\beta > 12.5^\circ$  an additional reinforcement according to table 2 is required. Here the reinforcement for diagonal tension is placed contrarily to the tensile direction (picture 7) and must have direct pressure contact to the anchor insert in the peak of its bending. The installation of the rebars for diagonal tension can be done in an angle of  $0^\circ$  to  $20^\circ$  to the concrete surface. If an installation angle of  $0^\circ$  is given the transport anchor has to be installed in a deeper position (e.g. by using a recess former) in order to reach the minimum required concrete covering.



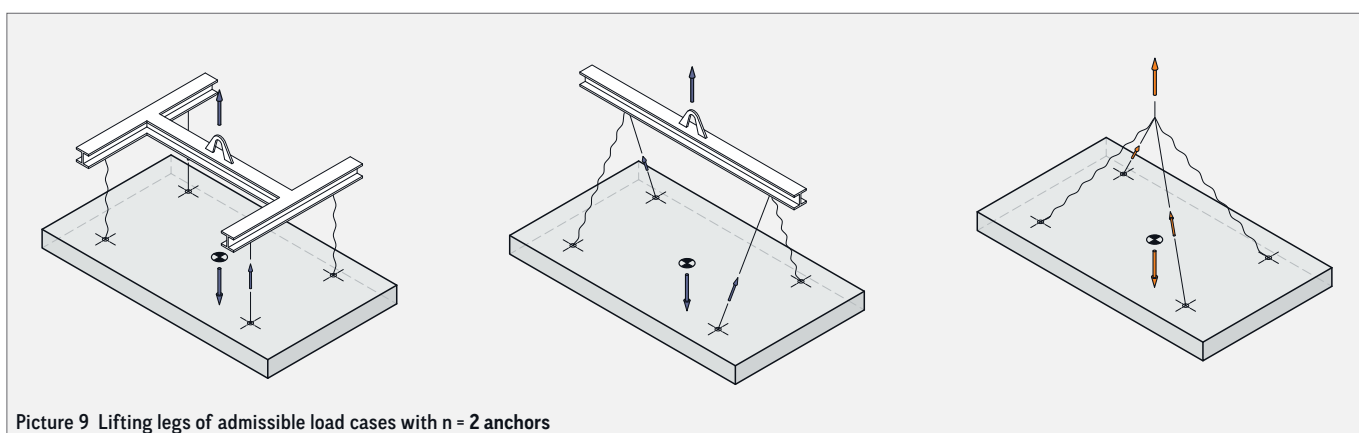
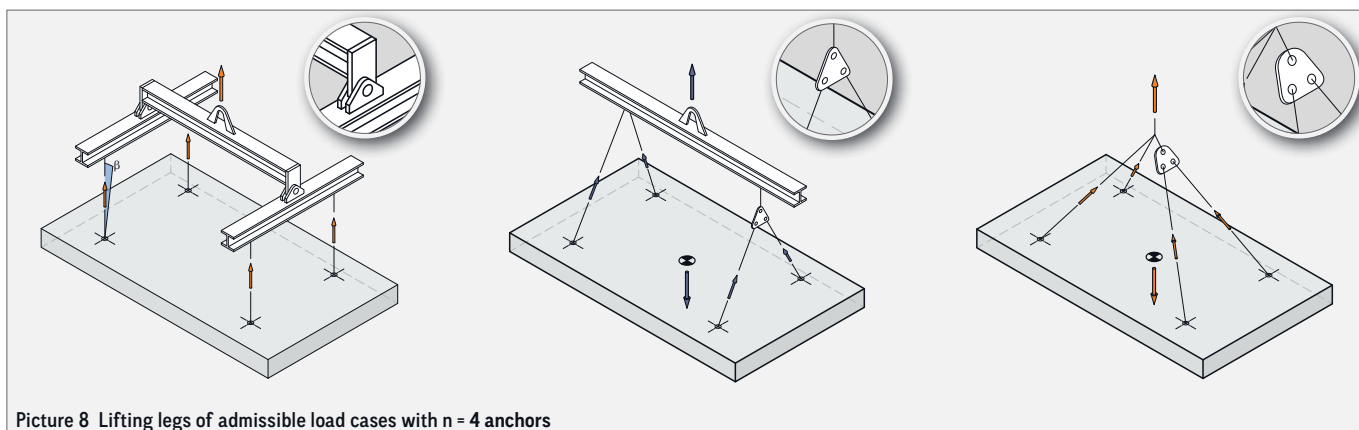
Picture 7 Additional reinforcement / diagonal tension

TABLE 2: AXIAL AND DIAGONAL TENSION IF  $f_{cc} \geq 15 \text{ N/mm}^2$

Load class ①	Minimum element thicknesses			$\beta_{\max} 12.5^\circ$		zul. $F_Z$ (kN)	Mesh reinforcement (square) ( $\text{mm}^2/\text{m}$ )	$\beta_{\max} 45^\circ$		
	Minimum centre distances Minimum edge distances			perm. $F_Z$ (kN)	Reinforcement Mesh reinforcement (square) ( $\text{mm}^2/\text{m}$ )			Reinforcement Add. reinforcement for diagonal tension (B500A)		
	$d_{\min}$ (mm)	$a_a$ (mm)	$a_r$ (mm)					$\varnothing d_s$ (mm)	L (mm)	$\varnothing d_{br}$ (mm)
36	220	1000	500	63.0	$2 \times \# 257$	63.0	$2 \times \# 257$	14	450	56
42	250	1100	550	80.0	$2 \times \# 257$	80.0	$2 \times \# 257$	14	500	56
52	350	1200	600	125.0	$2 \times \# 335$	125.0	$2 \times \# 335$	20	600	92

① For load classes 12 - 30 please refer to the Installation and Application Instruction of the Screw anchor

## ADMISSIBLE LOAD CASES



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