PHILIPPGROUP

PHILIPP Compact anchor

VB3-T-090-en - 07/21 - PDF

Version: short

Installation Instruction

Transport and mounting systems for prefabricated building

Technical department

Our staff will be pleased to support your planning phase with suggestions for the installation and use of our transport and mounting systems for precast concrete construction.

Special designs

Customized to your particular needs.

Practical tests on site

We ensure that our concepts are tailored precisely to your requirements.

Inspection reports

For documentation purposes and your safety.

On-site service

Our engineers will be pleased to instruct your technicians and production personnel at your plant, to advise on the installation of precast concrete parts and to assist you in the optimisation of your production processes.

High safety level when using our products

Close cooperation with federal materials testing institutes (MTIs), and official approvals for the use of our products and solutions whenever necessary.

Software solutions

The latest design software, animated videos and CAD libraries can always be found under www.philipp-gruppe.de.

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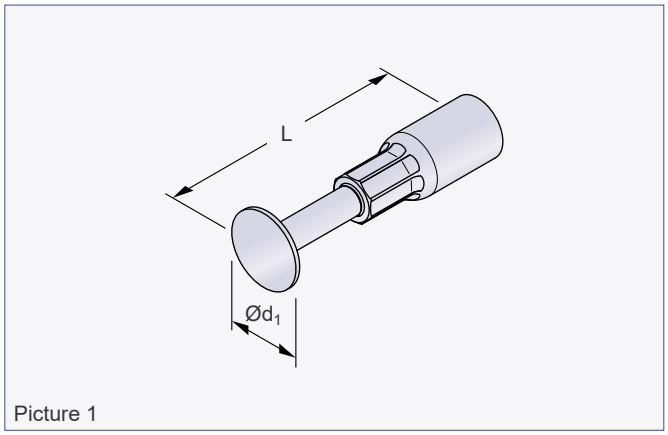
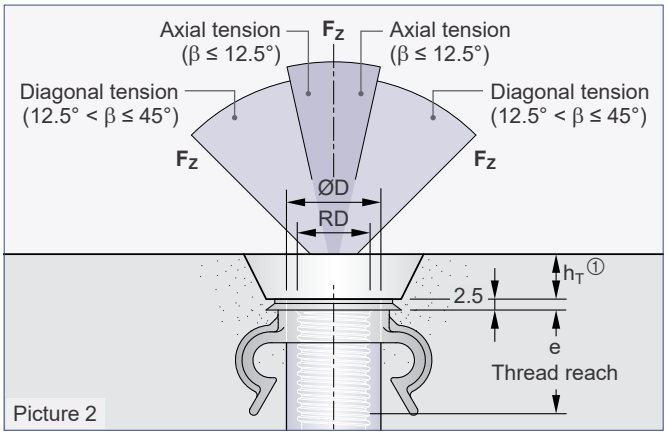
Content




PHILIPP Compact anchor - short



Picture 1



Picture 2

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 insert systems for precast concrete elements" (VDI/BV-BS 6205). The use of Compact anchors requires the compliance with this Installation Instruction as well as the General Installation 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.

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

Table 1: Dimensions

Ref. no. ② **galvanised**	Type	Dimensions RD	ØD [mm]	L [mm]	e [mm]	Ød1 [mm]	Weight [kg/100 pcs.]
67K360200	RD 36	36	47.0	200	68	60	122.0
67K420230	RD 42	42	54.0	230	75	70	223.0
67K520320	RD 52	52	67.0	320	100	85	373.0

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.

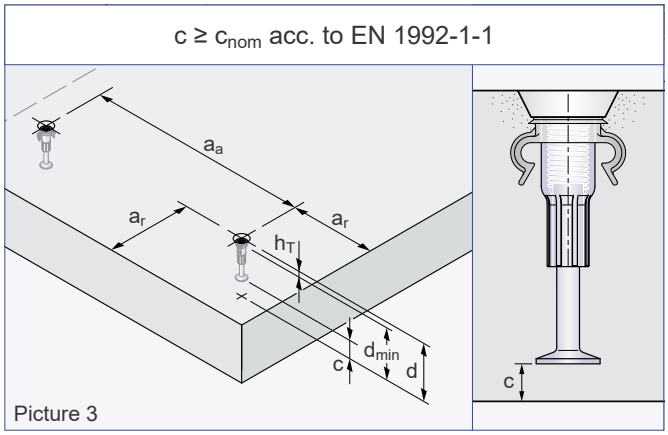
Concrete strength

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 of a unit which covers the load directions axial and diagonal tension.

If the Compact 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).

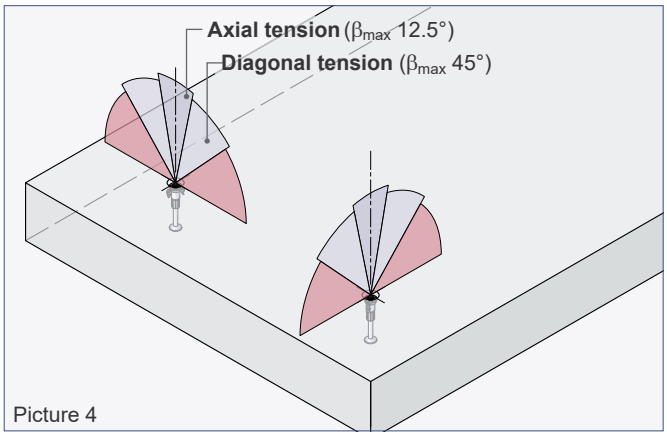


Picture 3

Load directions

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

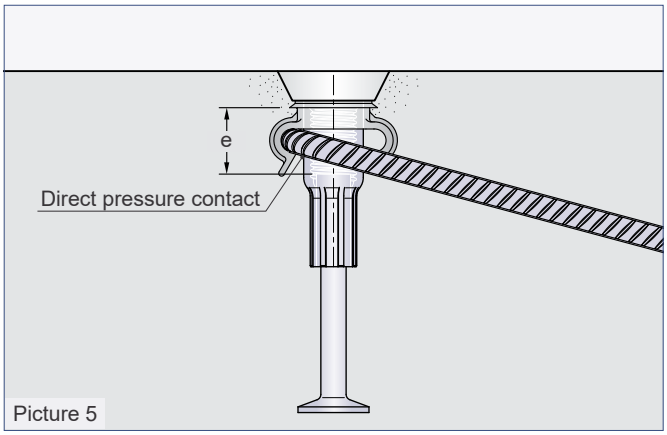
Lateral tension is not allowed within the whole transport chain. This also applies to a diagonal tension with angle β more than 45°!



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

Axial- and diagonal tension: Permissible load bearing capacities and boundary conditions

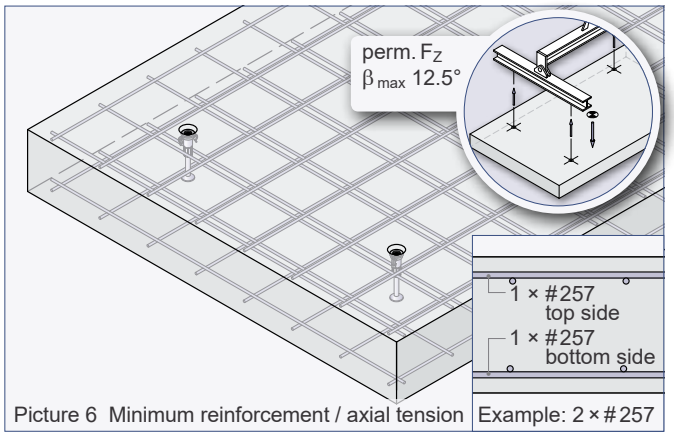
Axial tension

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.

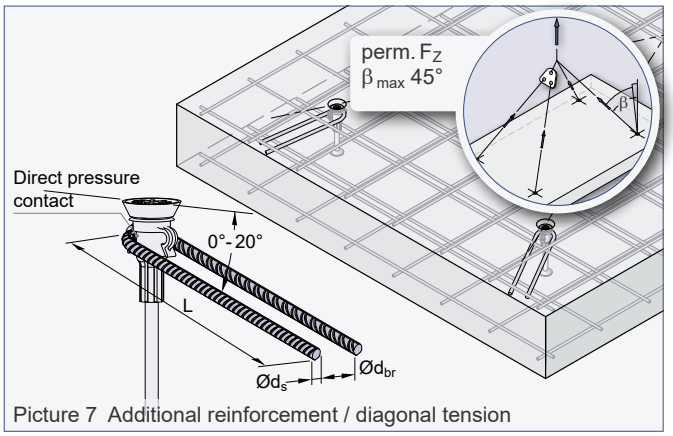
Existing static or constructive reinforcement can be taken into account for the minimum reinforcement of the respective load case.

Diagonal tension

If the Compact anchor short is used under diagonal tension $\beta > 12.5°$ 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° to 20° to the concrete surface. If an installation angle of 0° 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 6 Minimum reinforcement / axial tension | Example: 2 × #257



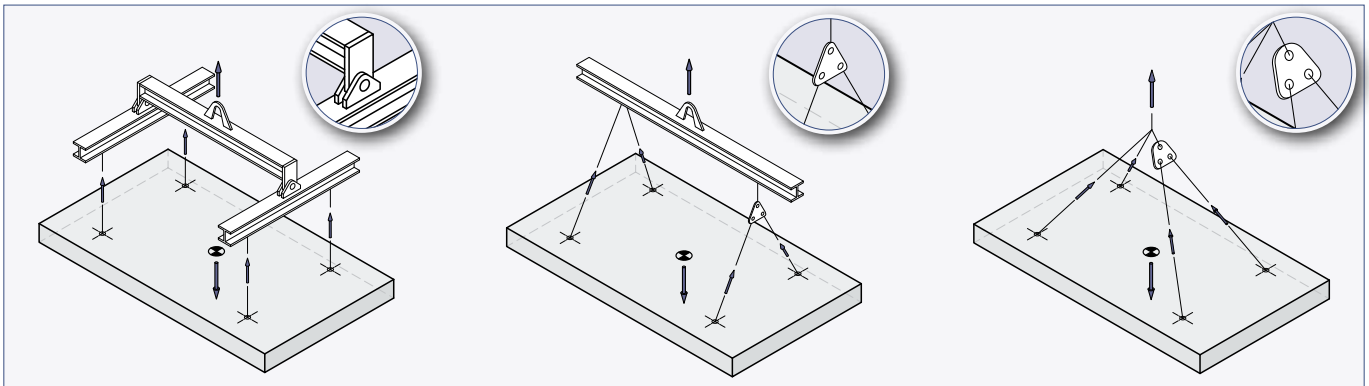
Picture 7 Additional reinforcement / diagonal tension

Table 2: Axial and diagonal tension if $f_{cc} \geq 15$ N/mm²

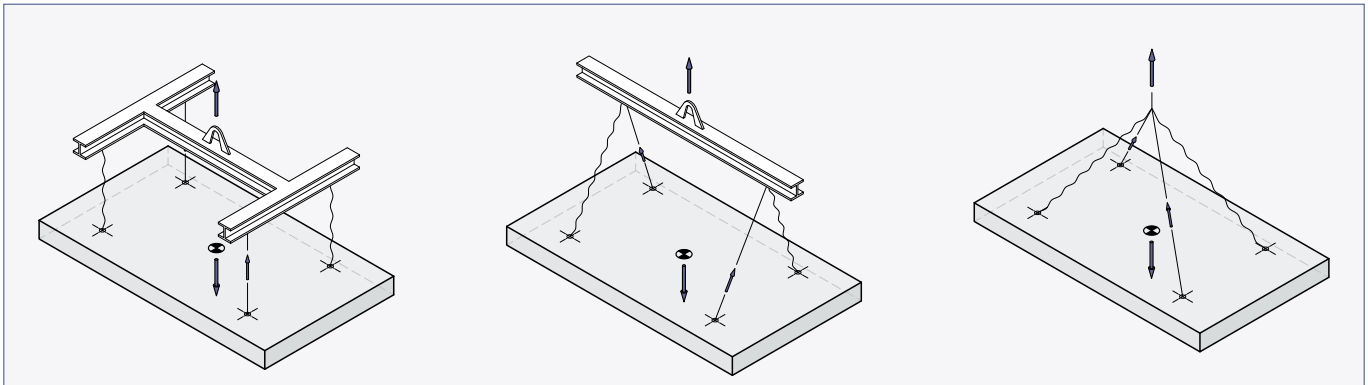
Load class	Minimum element thicknesses Minimum centre distances Minimum edge distances			β_{max} 12.5°		β_{max} 45°				
				allow. F_Z	Reinforcement Mesh reinforcement (square)	allow. F_Z	Reinforcement Mesh reinforcement (square)	Add. reinforcement for diagonal tension (B500A)		
	d_{min} [mm]	a_a [mm]	a_r [mm]	[kN]	[mm²/m]	[kN]	[mm²/m]	$Ød_s$ [mm]	L [mm]	$Ød_{br}$ [mm]
36	220	1000	500	63.0	2 × #257	63.0	2 × #257	14	450	56
42	250	1100	550	80.0	2 × #257	80.0	2 × #257	14	500	56
52	350	1200	600	125.0	2 × #335	125.0	2 × #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



Picture 8 Lifting legs of admissible load cases with **n = 4 anchors**



Picture 9 Lifting legs of admissible load cases with **n = 2 anchors**

Our customers trust us to deliver.
We do everything in our power to reward their faith and we start each day intending to do better than the last. We provide strength and stability in an ever-changing world. We provide it support.

Welcome to the PHILIPP Group

Sustainable solutions

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