PHILIPPGROUP

PHILIPP Angled loop

VB3-T-043-en - 01/16

Installation and Application 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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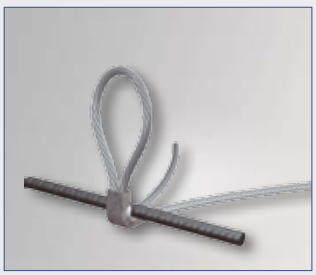
Content

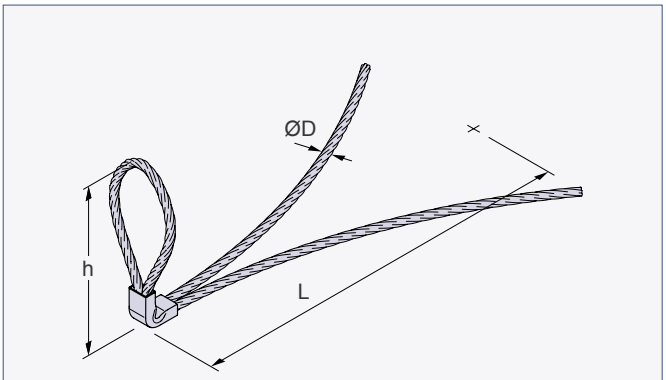


PHILIPP Angled loop

The Angled loop is part of the PHILIPP transport anchor systems.
The use of the Angled loop requires the compliance with this Installation Instruction as well as the General Installation Instruction.

Angled loops 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. A repeated use (e.g. ballasts for cranes) is not allowed.



Picture 1

Table 1: Permissible load bearing capacities and dimensions

Ref.-No.	Type	Perm. load Fz 0°- 30°	Colour code	Dimensions [mm]			Weight
		[kN]		ØD	h	L	[kg/100 pcs.]
44W10180350	2.5	25.0	Jet black	10	180	350	43.0
44W12230380	4.0	40.0	Emerald green	12	230	380	62.0
44W14230380	5.2	52.0	Curry	14	230	380	84.0

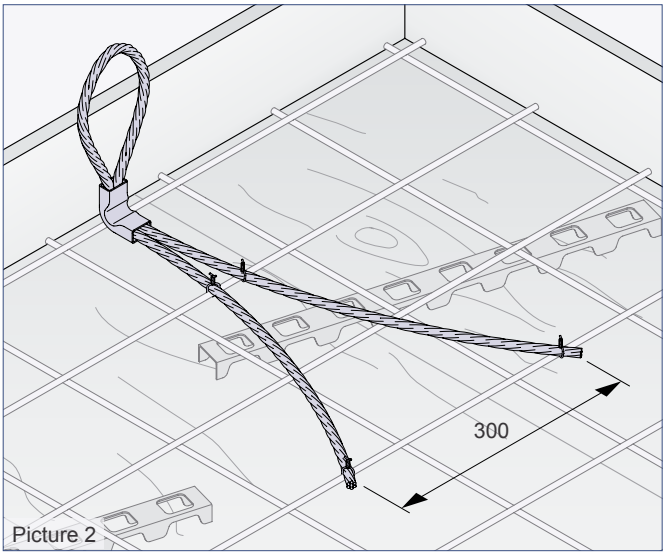
- To determine the correct type please refer also to our General Installation Instruction.
- The weight of 1.0 t corresponds to 10.0 kN.
- Special versions available on request at all times.
- Rope diameter ØD is a standard value and can vary depending on the wire rope construction.

Materials

The Angled loops consist of a wire rope and is formed to a loop by a cold-formed ferrule.

Application

Prior concreting the precast element the Angled loops are installed to the mould. In order to guarantee the position of the Angled loops during concreting and compacting it must be fixed to the reinforcement. A necessary reinforcement bar must installed with pressure contact to the loop. Both open ends of the Angled loop have to be fixed during installation with a spread of ca. 30 cm (Picture 2). When the element is ready various lifting devices can be hooked on the upper end of the Angled loop sticking out of the concrete.



Picture 2

Application restrictions

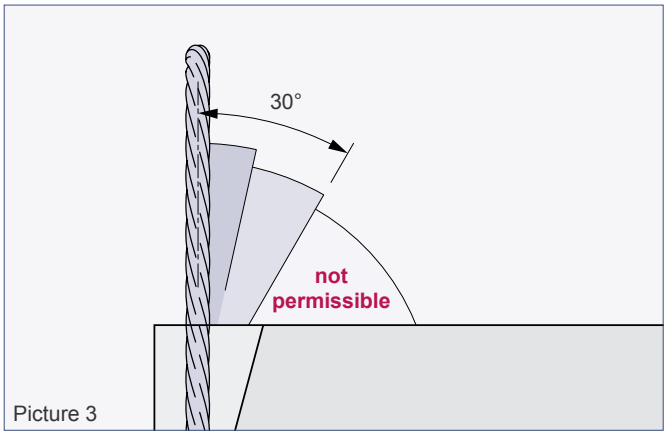
During storage of the concrete units please make sure that the Angled loops are not bent in any way. With an outdoor storage of the precast units the loops sticking out are exposed to the elements and this may lead to a reduction of the bearing capacity.

If a significant corrosion occurs to the protruding parts of the Angled loops a transport of the elements is not allowed anymore.

Safety and reinforcement

During use of Angled loops the following must be considered:

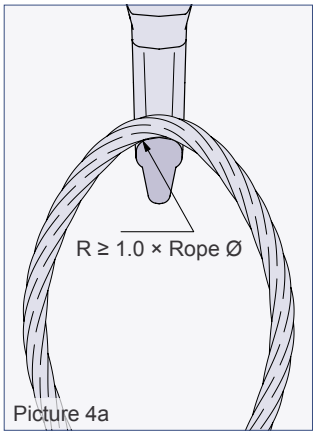
- The use of damaged Angled loops with broken strands, contusions, kinks or corrosion pits is not allowed.
- Contact of Angled loops with acids or alkalis must be avoided.
- The Angled loops can only be used with a diagonal tension β of max. 30° (Picture 3).
- As to avoid an inadmissible lever action during rigging of the Angled loop an appropriate recess for the hock must be chosen.



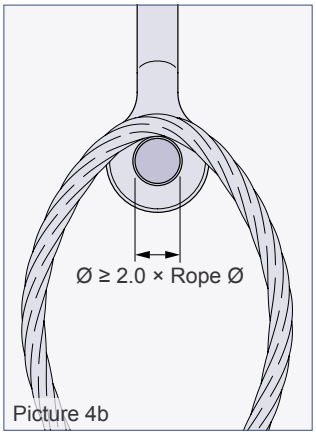
Picture 3

Safety notices

The transition radii of used hooks must be the same or larger than the actual rope diameter of the Angled loop (Picture 4). Using a shackle the pin must be at least two times of the wire rope diameter of the Angled loop (Picture 4b). By using too small, too large or sharp-edged hooks the lifetime of the lifting device will be reduced.



Picture 4a



Picture 4b

Welding or other strong heat influences on the Angled loop are not allowed.

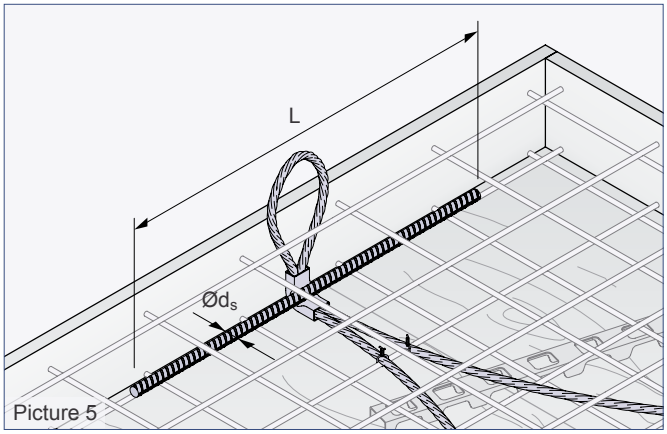
Reinforcement

For the installation of Angled loops precast units must be reinforced with a minimum reinforcement near surface and one reinforcement bar acc. to Picture 5 and Table 2.

Existing static or constructive reinforcement can be taken into account for the minimum reinforcement according to Table 2.

This minimum reinforcement can be replaced by comparable reinforcement bars. Should it be necessary to cut single bars for the installation of Angled loops these have to be replaced by bars of the same diameter, strength and enough lap length according to EC 2.

At the first time of lifting the concrete must have a minimum strength of **15 N/mm²**. The user is personally responsible for further transmission of load into the concrete unit.



Picture 5

Table 2: Reinforcement

Type	Bearing capacity 0°- 30° [kg]	Mesh reinforcement (square) [mm²/m]	Additional reinforcement Ød$_s$ [mm]	Additional reinforcement L [mm]
2.5	2500	188	14	300
4.0	4000	188	16	350
5.2	5200	188	20	400

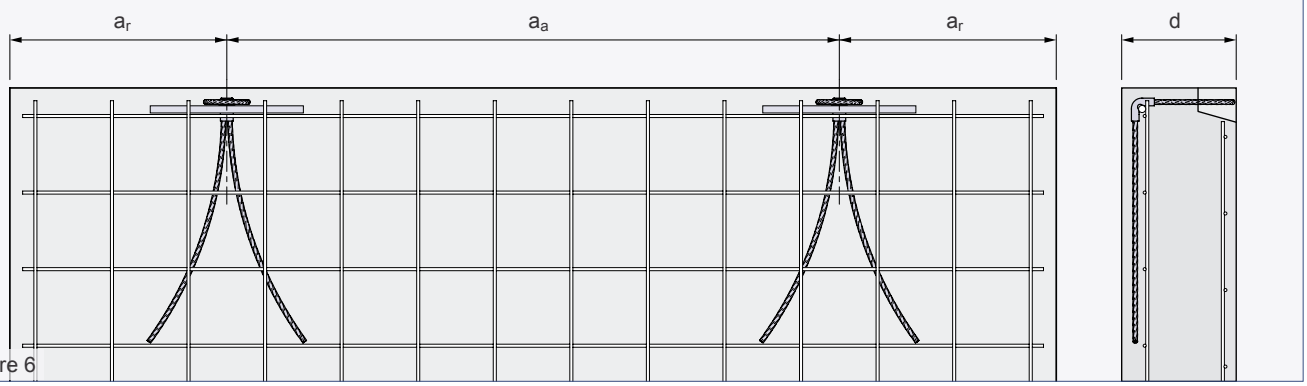
Installation

Centre and edge distances, element thicknesses

The installation and position of Angled loops in precast concrete units require minimum dimensions and centre/edge distances for a safe load transfer. These are given in Table 3.

Table 3: Centre distances (a_a), edge distances (a_r) and element thicknesses (d)

Type	a_a [mm]	a_r [mm]	d [mm]
2.5	1000	500	200
4.0	1000	500	270
5.2	1000	500	270



Picture 6

Notes:

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.

Welcome to the PHILIPP Group

Sustainable solutions

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