

PHILIPPGROUP

PHILIPP Cast-in lifting hoop



VB3-T-041-en - 04/19 - PDF

Type AS 28.0 - AS 95.0

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.

■ Engineering contact

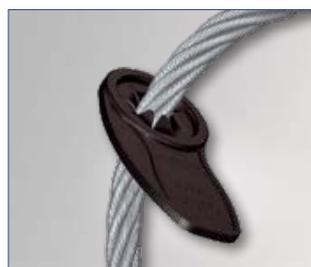
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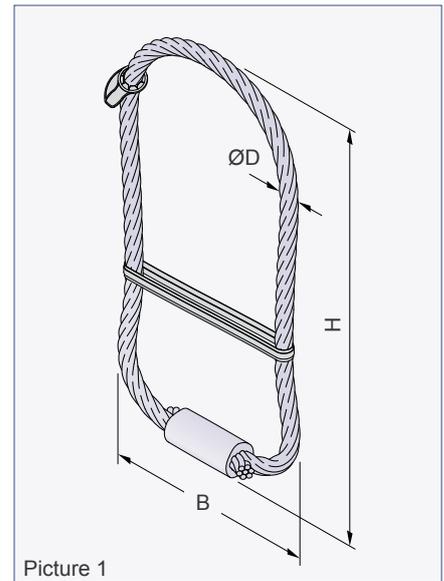
PHILIPP Cast-in lifting hoop

The Cast-in lifting hoop is part of the PHILIPP transport anchor system. Cast-in lifting hoops 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.

Depending on the individual application and load direction it might be necessary to contact our technical department.



For special solutions please contact our technical department under +49 (0) 60 21 / 40 27-318 or by e-mail to technik@philipp-group.de.



Picture 1

Table 1: Permissible load bearing capacities and dimensions

Ref.-No. galvanised	Type	perm. F_z ① 0° - 30° [kN]	Colour code	H ② [mm]	B ③ [mm]	ØD ② [mm]	Weight [kg/pc.]
442280	AS 28.0	280	● Pure white	800	375	32.0	9.7
442320	AS 32.0	320	● Jet black	880	426	32.0	11.1
442370	AS 37.0	370	● Salmon orange	950	440	36.0	15.2
442420	AS 42.0	420	● Salmon orange	1000	480	38.0	19.3
442470	AS 47.0	470	● Salmon orange	1100	520	44.0	20.9
442520	AS 52.0	520	● Salmon orange	1200	550	44.0	27.1
442570	AS 57.0	570	● Salmon orange	1350	645	44.0	30.8
442650	AS 65.0	650	● Salmon orange	1430	690	48.0	36.1
442750	AS 75.0	750	● Salmon orange	1530	725	50.0	46.1
442850	AS 85.0	850	● Salmon orange	1680	850	52.0	55.1
442950	AS 95.0	950	● Salmon orange	1800	900	52.0	67.6

① Load bearing capacity of steel.

② Dimensions H and B are standard values and can vary depending on the position of the fixation strap.

③ Rope diameter ØD is a standard value and can vary depending on the wire rope construction.

- To determine the correct type please refer also to our General Installation Instruction.
- The weight of 1,0 t corresponds to 10,0 kN.

General Information / Application

Materials

Cast-in lifting hoops are made of steel wire rope. Both ends of the wire rope are bonded together by a ferrule and form a loop. The Cast-in lifting hoops are available in a bright and galvanised version.

Marking

In order to identify the type of the Cast-in lifting hoop visually it is marked with a coloured tag. This tag must also be visible at the segment sticking out after concreting. With its fins the tag guarantees an easy fixing to this part of the Cast-in lifting hoop sticking out of the element.

Following data are given on the tag:

- Producer PHILIPP
- Bearing capacity e.g. 32000 kg
- Year of manufacturing e.g. 2019

Corrosion

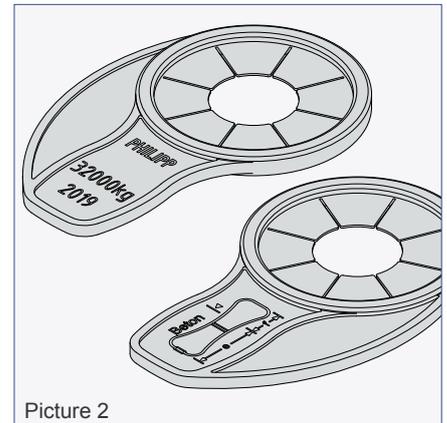
Aluminium ferrules should be avoided because of corrosion if an increased chlorine equivalent in the concrete is used. For this application a Cast-in lifting hoop with a steel ferrule is more suitable and can be delivered by PHILIPP on request. An increased chlorine equivalent exists if the values given in the German standards DIN EN 206 and DIN 1045-2 are exceeded.

Installation

If Cast-in lifting hoops are installed in an open side of a mould they must be fixed carefully to the reinforcement so that the embedment depth is guaranteed (Picture 3).

It might be necessary to add some steel bars. Here attention has to be paid not to place those steel bars directly to the ferrule of the hoop.

 Welding or other strong heat influences on the lifting hoops are not allowed.

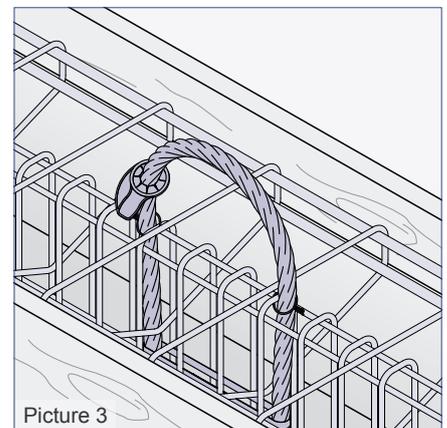


Picture 2

 The aluminium ferrule used in Cast-in lifting hoops must not be placed near-surface of the concrete element. The concrete cover for the ferrule has to be determined using following equation.

$$c_{\text{Ferrule}} \geq 1.2 \cdot c_{\text{min}}$$

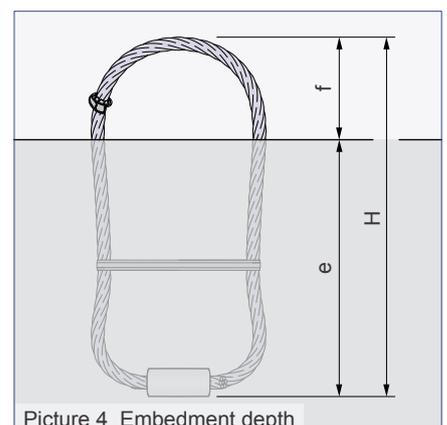
(DIN EN 1992-1-1 part 4 a. tab. 4.4N)
(DIN EN 1992-1-1/NA tab. NA.4.4)



Picture 3

Table 2: Embedment depth

Type	e [mm]	f [mm]
28.0	590	210
32.0	630	250
37.0	670	280
42.0	700	300
47.0	770	330
52.0	850	350
57.0	950	400
65.0	1000	430
75.0	1070	460
85.0	1170	510
95.0	1250	550

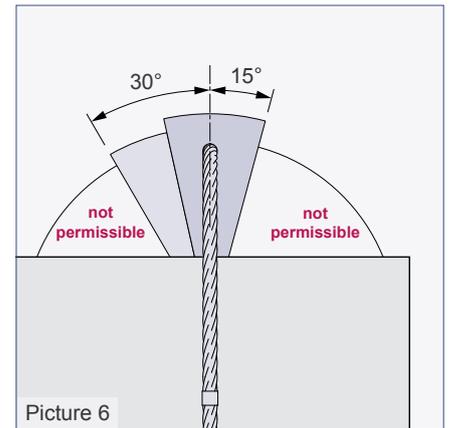
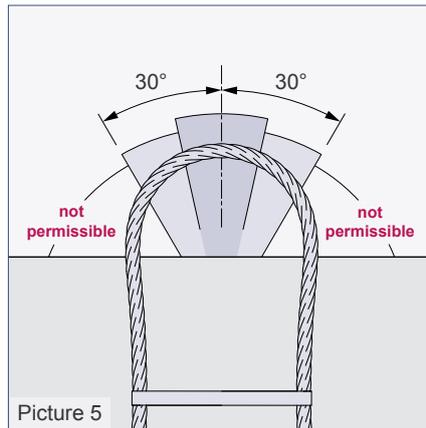


Picture 4 Embedment depth

Application and safety

Permissible load directions

Cast-in lifting hoops can be used only for axial and diagonal tension $\beta \leq 30^\circ$.

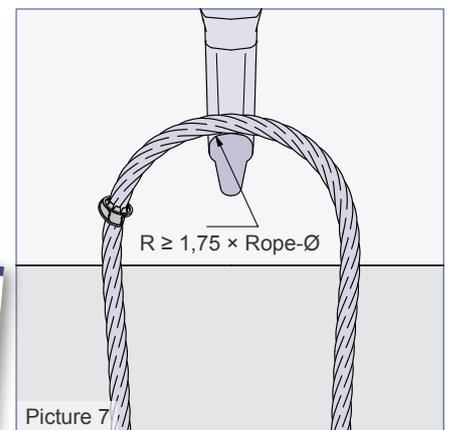


Safety notices

By using too small, too large or sharp-edged hooks the lifetime of the lifting device will be reduced. The transition radii of used hooks must be at least 1.75 times of the wire rope diameter of the Cast-in lifting hoop (Picture 7). Using a shackle the pin must be at least 3.5 times of the wire rope diameter of the Cast-in lifting hoop (Picture 8).

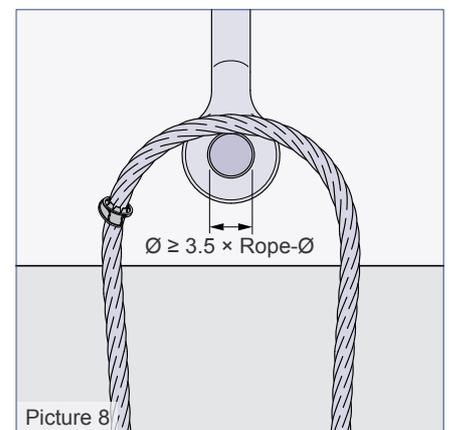


In order to guarantee the correct transition radius we recommend to use our Wire protection pulley. This is available in six dimensions for all our Cast-in lifting hoops from AS 0.8 up to AS 95.0 to. For more details please refer to the separate data sheet of the Wire protection pulley.



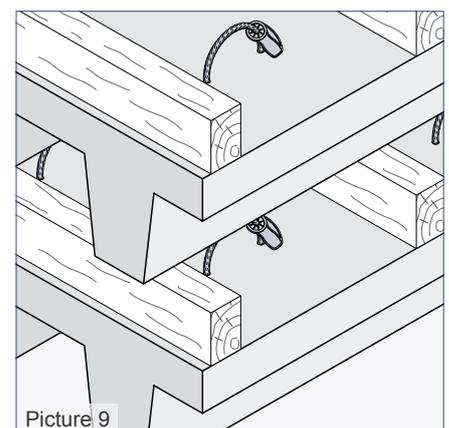
During use of Cast-in lifting hoops the following must be considered:

- The use of damaged Cast-in lifting hoops with broken strands, contusions, kinks or corrosion pits is not allowed.
- Contact of Cast-in lifting hoops with acids or alkalis must be avoided.
- Misuse of Cast-in lifting hoops because of wrong load directions must also be avoided.
- Lever arms caused by rotating, tilting or swinging which result in local blow-out failures in the concrete or broken wire ropes are inadmissible!



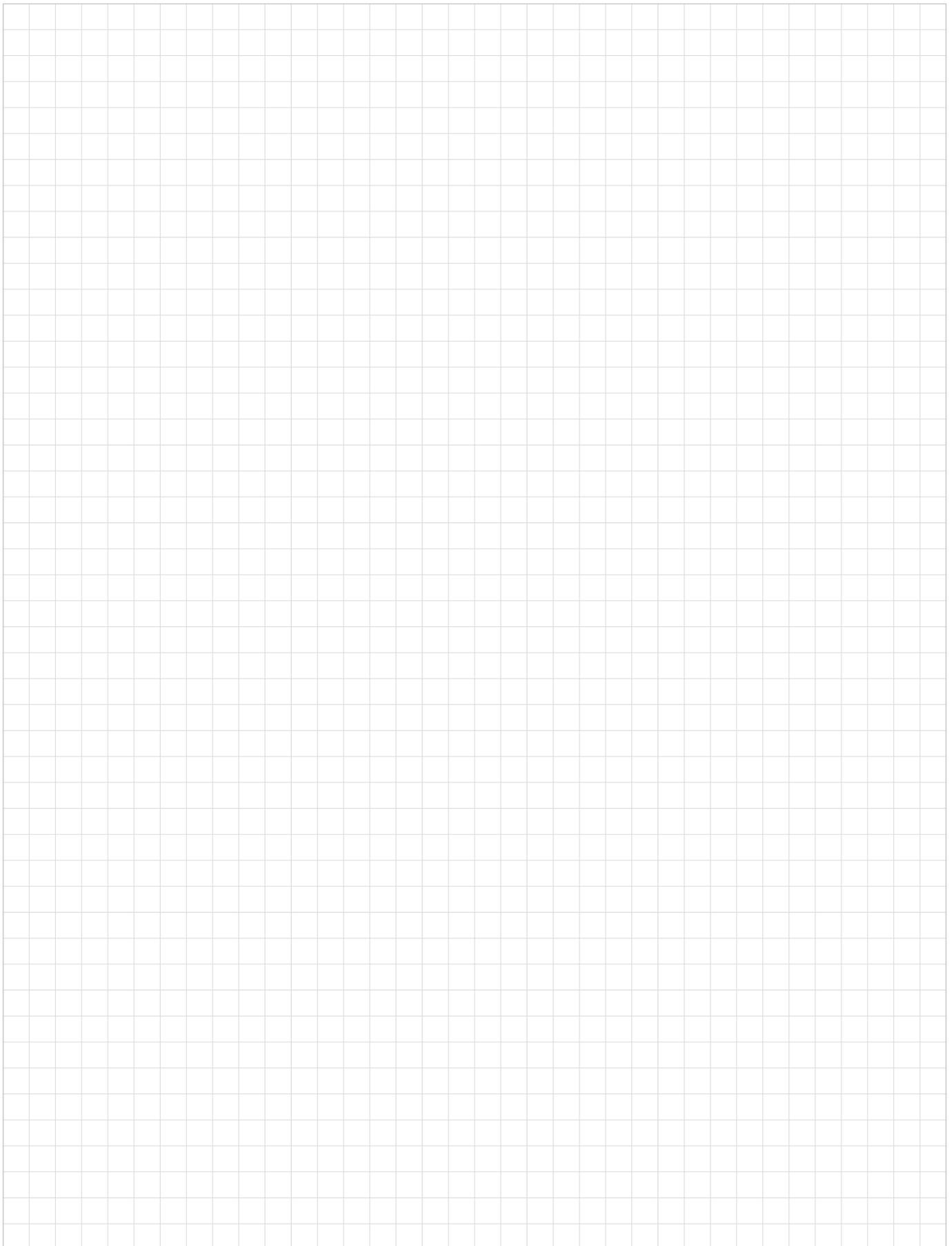
Storage of the precast units

During storage of the concrete units please make sure that the Cast-in lifting hoops are not bent in any way. This can be guaranteed by using a spacer (e.g. a squared timber) between the concrete elements. An outdoor storage of the concrete units can lead to corrosion and as a result to a reduction of the hoop bearing capacity.



If a significant corrosion appears to the installed Cast-in lifting hoops they cannot be used for lifting anymore.

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

PHILIPPGROUP



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