Deutsches Institut für Bautechnik

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Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments

Designated according to Article 29 of Regulation (EU) No 305/2011 and member of EOTA (European Organisation for Technical Assessment)

European Technical Assessment ETA-21/0483 of 22 December 2021

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the European Technical Assessment:	Deutsches Institut für Bautechnik
Trade name of the construction product	PFEIFER Load Eye
Product family to which the construction product belongs	Elevator lifting device
Manufacturer	Pfeifer Seil- und Hebetechnik GmbH Dr.-Karl-Lenz-Str. 66 87700 Memmingen DEUTSCHLAND
Manufacturing plant	Pfeifer Seil- und Hebetechnik GmbH
This European Technical Assessment contains	10 pages including 3 annexes which form an integral part of this assessment
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	EAD 330075-01-0601, Edition 10/2018

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Specific Part

1 Technical description of the product

The PFEIFER Load Eye is a pre-installed lifting device for the attachment of loads during installation and maintenance work. It consists of an anchor bolt (tie rod, anchor plate) and a shackle located in a plastic box.

The PFEIFER Load Eye is fully embedded in concrete and anchored by bonding and mechanical interlock.

The product description is given in Annex A.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The performances given in Section 3 are only valid if the PFEIFER Load Eye is used in compliance with the specifications and conditions given in Annex B.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the PFEIFER Load Eye of at least 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1

3.2 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Load bearing capacity	See Annex C1
Minimum edge distances and spacing	See Annex B2

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with EAD No. 330075-01-0601, the applicable European legal act is: [97/161/EC].

The system to be applied is: 2+

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 22 December 2021 by Deutsches Institut für Bautechnik

Dipl.-Ing. Beatrix Wittstock
Head of Section

beglaubigt:
Tempel

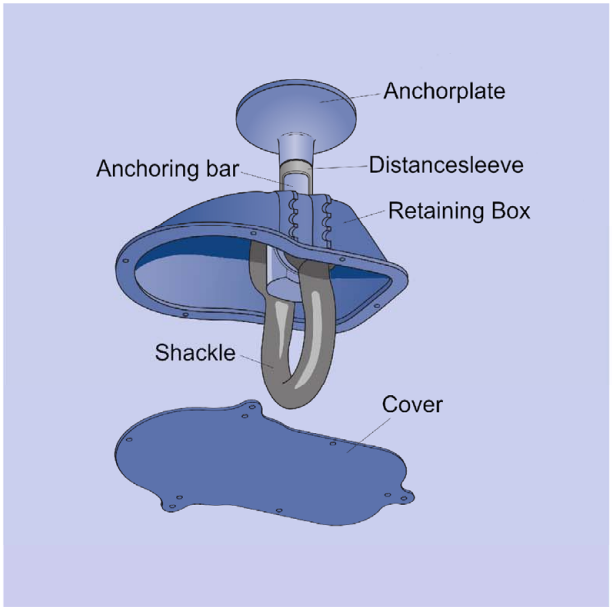

Figure A1: PFEIFER-Load Eye, description

Load Eye Type 20: Retaining box BLUE
Load Eye Type 40: Retaining box RED

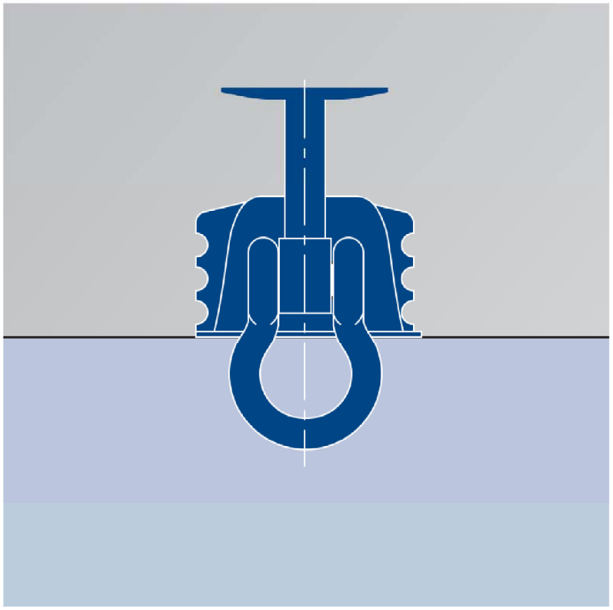

Figure A2: Application

PFEIFER Load Eye	Annex A1
Product description Installed condition	

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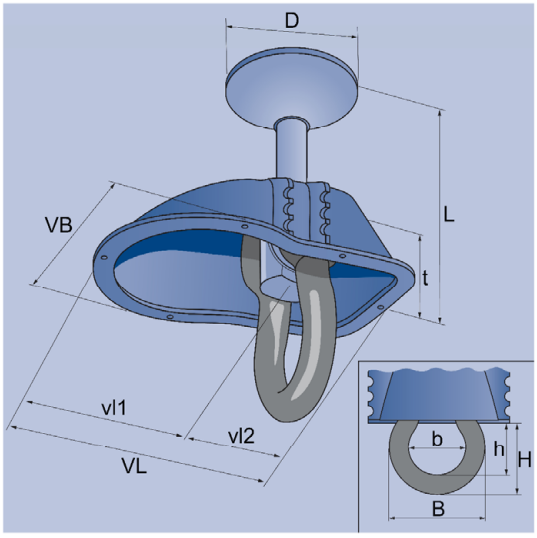

Figure A3: Dimensioning

Table A1: Dimensions [1)]

			Load Eye Type	
			20	40
Total height	L	[mm]	130	200
Length of retaining box	VL	[mm]	195	195
Width of retaining box	VB	[mm]	132	132
Outer height of shackle	H	[mm]	78	75
Outer width of shackle	B	[mm]	86	90
Inner height of shackle	h	[mm]	65	55
Inner width of shackle	b	[mm]	60	50
Position of shackle	vl1	[mm]	125	125
Position of shackle	vl2	[mm]	70	70
Diameter of anchor plater	D	[mm]	90	90

Table A2: Material

Pos.	Description	Material
1	Anchor plate	Construction steel
2	Anchoring bar	High-strength steel, zinc flake coating [2)]
3	Retaining box and covering	Plastic material
4	Shackle	High-strength steel, galvanized
5	Distancing sleeve	Plastic material

1) Approximate dimensions!
2) Layer thickness ≥ 5 µm

PFEIFER Load Eye

Annex A2

Product description
Dimensions, materials

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Specifications of intended use

Fastener subject to
- Static and quasi-static load
- Tension loading, transverse / shear loading apart from the tolerance (see Annex C1) is not allowed

Anchoring base material
- Compacted, reinforced normal weight concrete of strength class C25/30 to C50/60 without fibers according to EN 206:2013+A2:2021
- Cracked or uncracked concrete

Use conditions (Environmental conditions)
- Structures subject to dry internal conditions
- If the environmental conditions to the anchor plate (outside) are different to the shackle side, a special protection against corrosion of the anchor plate must be ensured by a concrete cover according to EN 1992-1-1:2004+AC:2010

Design
- The design of the anchorage shall be carried out under the responsibility of an engineer experienced in the field of anchorages and concrete construction
- Verifiable calculations and design drawings shall be prepared, taking into account the loads to be anchored. The location of the anchorages, including the reinforcement required within the anchorage, shall be indicated on the design drawings

Installation
- The installation instructions according to annex B3 must be observed

PFEIFER Load Eye	**Annex B1**
Intended use Specification	

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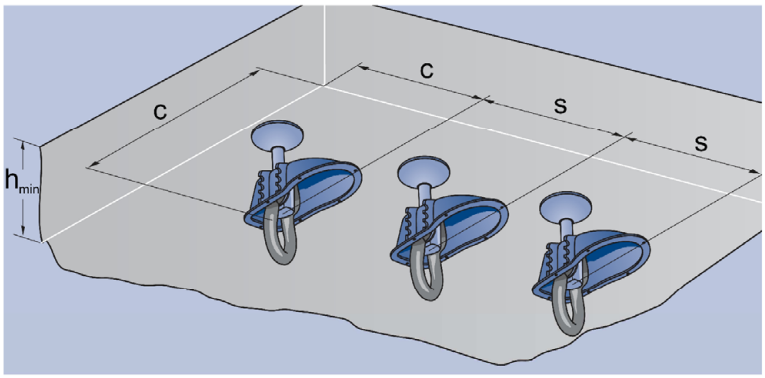

Figure B1: Minimum thickness and distances

Table B1: Minimum thickness, distances

			Load Eye Type	
			20	40
Minimum thickness of component	h_{min}	[mm]	130[1)]	200[1)]
Minimum edge distance	c_{min}	[mm]	250	350
Minimum spacing	s_{min}	[mm]	500	700

Table B2: Additional reinforcement, lower layer

			Load Eye Type	
			20	40
Min. cross-section of the reinforcement [2)]	A_s	[mm²]	115	215

1) The minimum component thickness corresponds to the total height of the Load Eye! Sufficient corrosion protection to the anchor plate must be ensured by a corresponding concrete covering.

2) Reinforcing bars each in longitudinal and transverse direction with $f_{yk,re}$ = 500 N/mm² and a diameter not larger than 16 mm.

PFEIFER Load Eye

Annex B2

Intended use
Installation parameters

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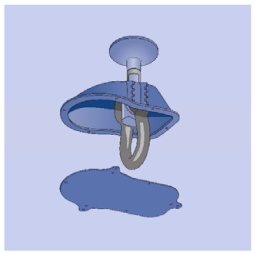
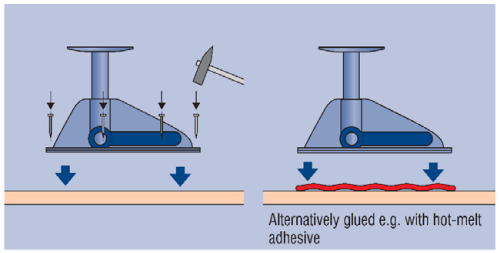


Scope of delivery

Retaining box made of plastic (Type 20: BLUE, Type 40: RED) with shackle, closed in delivery condition with covering. The massive anchoring bar protrudes from the bottom of the box. The anchor plate is screwed securely against rotation onto the end of the anchoring bar.
A distance sleeve on the anchoring bar secures its position.

Labelling by means of stickers on the plastic covering and inside the storage box.



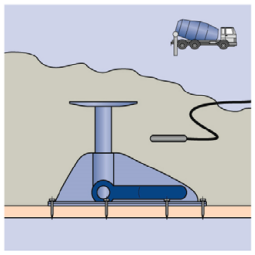
Installation to the formwork

1. Alternative 1

   Nailing the storage box to the formwork
   (Nail holes ø3 mm in the edges of the storage box)

2. Alternative 2

   Gluing the storage box including covering onto the formwork
   (The cover is securely fixed a the storage case)

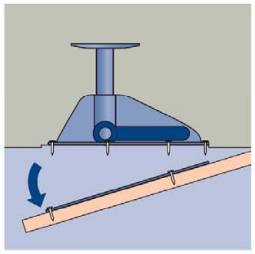


Placing and compacting of concrete

1. Pour in concrete carefully, take care of the built-in components!

2. Compact concrete carefully, avoid direct contact between vibrator and built-in components!

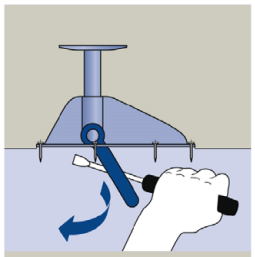
→ Do not remove the built-in components by force!



Removing of formwork

1. Remove formwork including the plastic covering carefully.

→ Avoid any damagings!

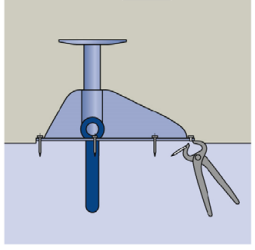


Ensuring operating state

1. Unfold the shackle using a suitable tool or by hand.

→ Pay attention to protruding nails!

2. If necessary, pinch off nails to avoid injurings.



PFEIFER Load Eye

Intended use
Installation instructions

Annex B3

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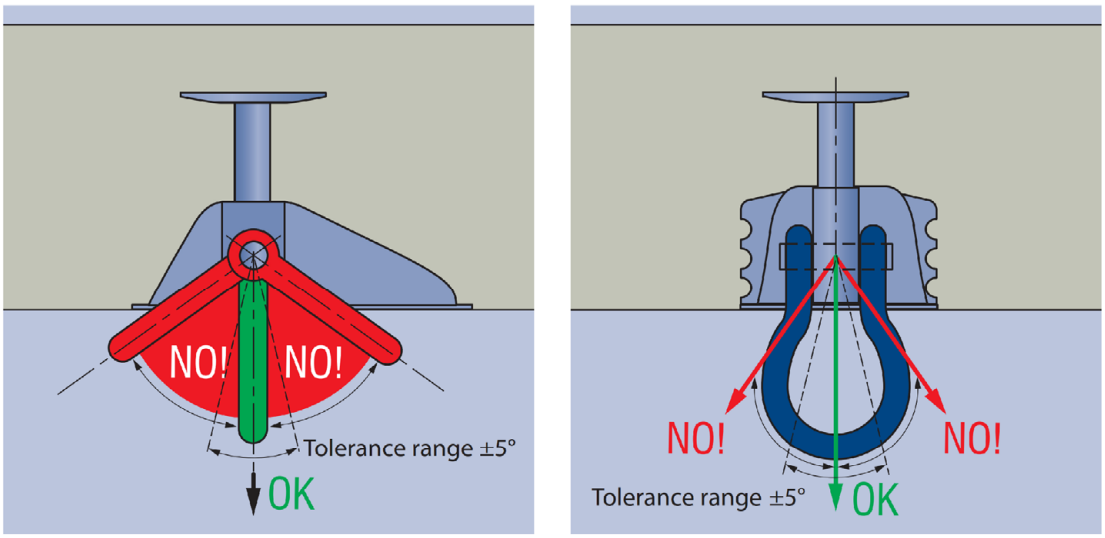

Figure C1: Planned load direction [1)]

Table C1: Characteristic resistances under tension loading in concrete C25/30 to C50/60

			Load Eye Type	
			20	40
Steel and concrete failure				
Characteristic resistance in cracked concrete C25/30 to C50/60 [1)]	F_{Rk}	[kN]	95,6	161,3
Splitting failure				
A reinforcement has to be present to resist the splitting forces and limit the crack width to $w_k \leq 0,3$ mm. See Annex B2, Table B2.				

1) The resistances apply taking into account a tolerance of the load direction angle of ±5° in each direction with regard to the vertical.

PFEIFER Load Eye

Performance
Characteristic resistances

Annex C1