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A CRH COMPANY

HALFEN HLX Lift-Box PSA

European Technical Assessment ETA-22/0184



Leviat, the home of


HALFEN

HALFEN HLX Lift-Box PSA

General note

Leviat is committed to minimising and, wherever possible, eliminating construction risk.

This certificate is an important indicator of our product's safety, reliability and quality, providing the industry with additional confidence in its suitability. It confirms that this product has passed specific performance and quality assurance criteria.

This European Technical Assessment only applies to original HALFEN products, manufactured by Leviat. The specifications in the following pages are not transferable to other manufacturers' products. Inappropriate use of this information carries risk.



ETA-Danmark A/S
Göteborg Plads 1
DK-2150 Nordhavn
Tel. +45 72 24 59 00
Fax +45 72 24 59 04
Internet www.etadanmark.dk

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to Article 29 of the Regulation (EU)
No 305/2011 of the European
Parliament and of the Council of 9
March 2011

MEMBER OF EOTA



European Technical Assessment ETA-22/0184 of 2022/05/08

I General Part

Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: ETA-Danmark A/S

Trade name of the construction product:

HALFEN Lift-Box HLX PSA

Product family to which the above construction product belongs:

Anchor device for fastening personal fall protection systems to concrete structures

Manufacturer:

Leviat GmbH
Liebigstr. 14
D-40764 Langenfeld
www.leviat.com

Manufacturing plant:

Leviat Manufacturing Plants

This European Technical Assessment contains:

9 pages including 4 annexes which form an integral part of the document

This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of:

EAD 331072-00-0601 –
Anchor device for fastening personal fall protection systems to concrete structures

This version replaces:

Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

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II SPECIFIC PART OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of product

Technical description of the product

HALFEN Lift-Box HLX PSA is a pre-installed anchorage point for fastening personal fall protection systems e.g., in elevator shafts, embedded in reinforced normal concrete (cracked or uncracked), strength classes C25/30 to C50/60 according to EN 206-1 and anchored by bonding and mechanical interlock.

HALFEN Lift-Box HLX PSA consists of a chain link located in a plastic housing which may be used as an anchorage point. A chain link is looped into a ring eye bolt with a metric thread. That allows to screw this into an anchor which transfers the load into the concrete. The anchor is realized as an internal threaded socket with washer and hexagon bolt. The plastic housing is equipped with a plastic cover that is to be removed when the product is embedded, and the anchorage point is going to be used. The plastic housing is intended to facilitate proper embedment in the concrete and is not meant to carry any load.

The product description is given in Annex 2.

The characteristic material values, dimensions and tolerances of the anchors not indicated in Annexes shall correspond to the respective values laid down in the technical documentation of this European Technical Assessment.

2 Specification of the intended use in accordance with the applicable European Assessment Document (hereinafter EAD)

HALFEN Lift-Box HLX PSA for fastening personal fall protection systems is intended to be cast into the roof of e. g. elevator shafts, it can be used for precast and cast in-situ slabs.

The anchor device is used to protect operators working at height, by arresting them in a fall. The operators attach themselves to the fastening ring using e. g. ropes and karabiners (overhead use).

In the case of a fall, the personal protection equipment that is attached to the anchor, prevents physical damage

to the operator, assuming the correct usage. The product is designed for use in all areas of industry, construction and maintenance.

The HALFEN Lift-Box HLX PSA is intended for mainly axial tensile loads where only small angular deviations are allowed.

The provisions made in this European Technical Assessment are based on an assumed intended working life of the anchor of 25 years.

The indications given on the working life cannot be interpreted as a guarantee given by the producer or Assessment Body, 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 Characteristics of product

Characteristic	Assessment of characteristic
3.1 Safety in case of fire (BWR2)	
Reaction to fire	The steel components of HALFEN Lift-Box HLX PSA are classified as class A1 in accordance with EN 13501-1 and Commission Delegated Regulation 2016/364
3.2 Basic Works Requirement 4: Safety and accessibility in use (BWR4)	
Static loading	Annex 1-2
Dynamic loading	Annex 1-2
Check of deformation capacity in case of constraining forces	Annex 1-2
Durability	The steel components of the HALFEN Lift-Box HLX PSA are made of galvanized steel and subjected to dry internal environment (category C1 acc. to EN ISO 12944-2, table 1) only

4 Assessment and verification of constancy of performance (AVCP)


4.1 AVCP system

According to the decision 2018/771/EC of the European Commission, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) is 1+.

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

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at ETA-Danmark prior to CE marking

Issued in Copenhagen on 2022-05-08 by



Thomas Bruun
Managing Director, ETA-Danmark

Table 1: Product

Trade name	Substructure
HALFEN Lift-Box HLX PSA	Reinforced concrete C25/30 to C50/60 (cracked or non-cracked) ^a

^a according EN 206:2013 + A1:2016: Concrete - Specification, performance, production and conformity

The setup of the system and the components of the product are shown in Annex 2.

Design values of actions

$$F_{Ed} = F_{Ek} \times \gamma_F$$

The recommended partial safety factor γ_F is 1.5.

The recommended partial safety factor is used to determine the design load capacities unless there is no specification of a partial safety factor in national regulations or national annexes to EN 1990.

This leads to the following values:

Example:

$$\text{For one user: } F_{Ed} = F_{Ek} \times \gamma_F = 6 \text{ kN} \times 1.5 = 9 \text{ kN}$$

$$\text{For two users: } F_{Ed} = F_{Ek} \times \gamma_F = (6 + 1) \text{ kN} \times 1.5 = 10.5 \text{ kN}$$

$$\text{For three users: } F_{Ed} = F_{Ek} \times \gamma_F = (6 + 2) \text{ kN} \times 1.5 = 12 \text{ kN}$$

$$\text{For four users: } F_{Ed} = F_{Ek} \times \gamma_F = (6 + 3) \text{ kN} \times 1.5 = 13.5 \text{ kN}$$

HALFEN Fall protection system HLX PSA

Annex 1

Overview and design values of actions

Setup of the system

Table 2: Substrate reinforced concrete C25/30 to C50/60:

Anchor device	Min. edge distance c_{min} [mm]	Min. thickness of the concrete member h_{min} [mm]
HALFEN Lift-Box HLX PSA	250	150

Design values of the load bearing capacity

$$F_{Rd} = F_{Rk} / \gamma_F = 78.8 \text{ kN} / 1.5 = 52.5 \text{ kN}$$

The recommended partial safety factor γ_F is 1.5, unless there is no partial safety factor in national regulations.

Dynamic strength

Four users

Deformation capacity

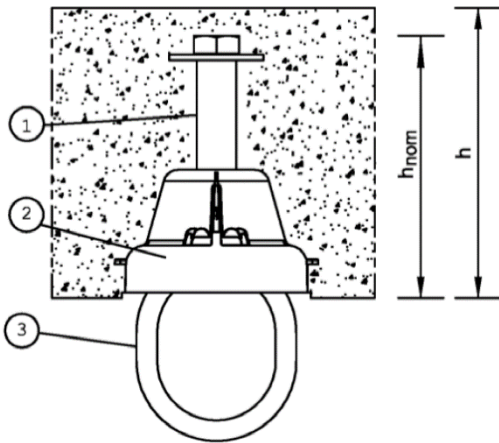
< 10 mm at 0.7 kN

HALFEN Fall protection system HLX PSA

HLX PSA for use in concrete

Annex 2.1

Components of the product



- 1: Anchor
- 2: Plastic housing
- 3: Chain link

Installed condition

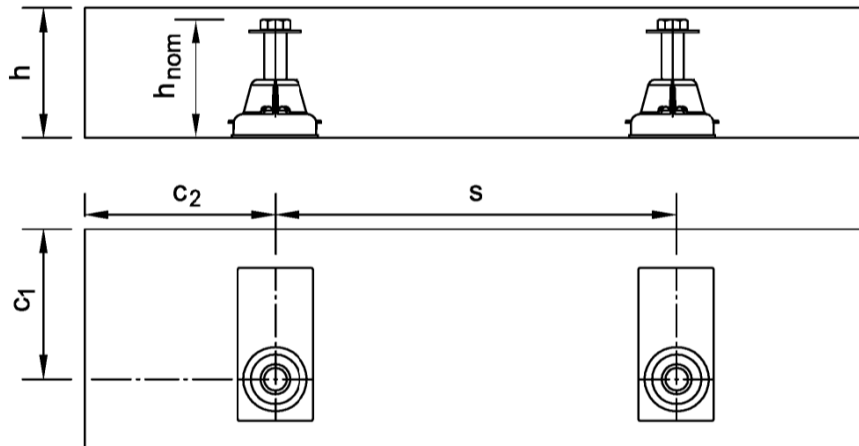


Table 3: Installation parameters

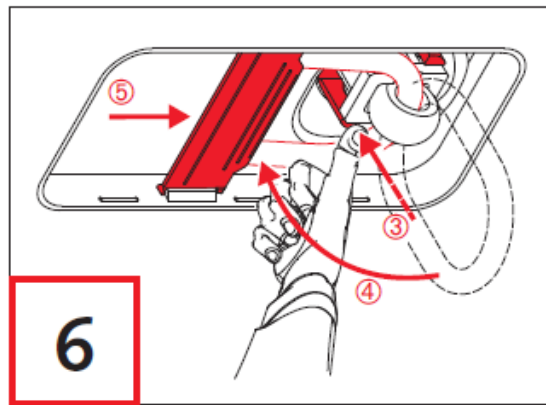
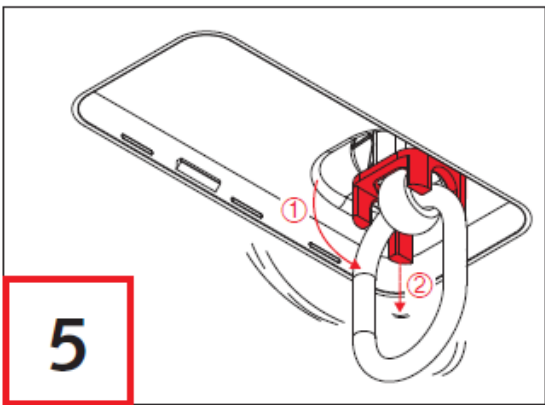
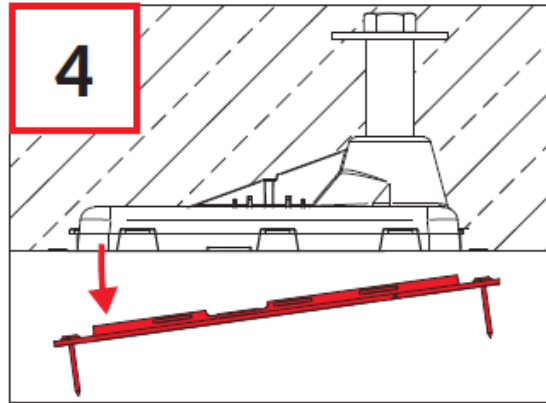
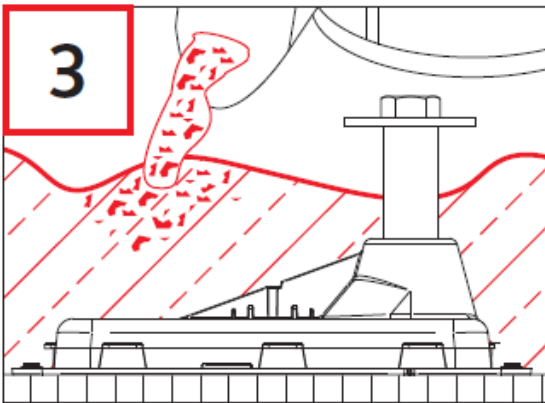
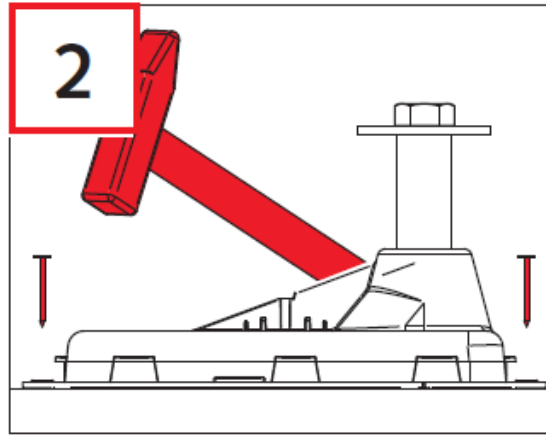
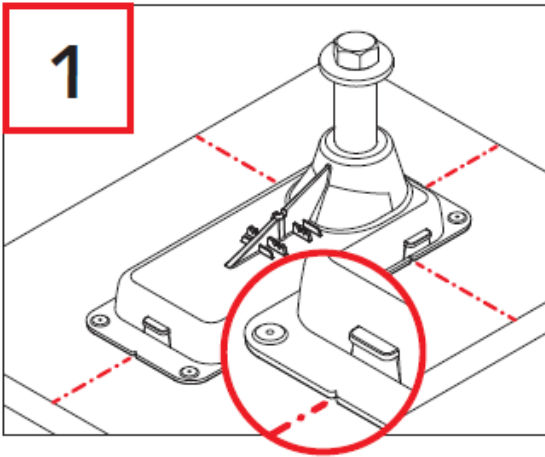
h_{nom} [mm]	min h [mm]	min c_1, c_2 [mm]	min s [mm]	concrete
139	150	250	500	min C25/30

HALFEN Fall protection system HLX PSA

HLX PSA for use in concrete

Annex 2.2

Installation Instructions



HALFEN Fall protection system HLX PSA

Installation instructions

Annex 2.3



For more information on the products featured here, please contact Leviat:

Australia

Leviat
98 Kurrajong Avenue,
Mount Druitt, Sydney, NSW 2770
Tel: +61 - 2 8808 3100
Email: info.au@leviat.com

Austria

Leviat
Leonard-Bernstein-Str. 10
Saturn Tower, 1220 Wien
Tel: +43 - 1 - 259 6770
Email: info.at@leviat.com

Belgium

Leviat
Industrielaan 2
1740 Ternat
Tel: +32 - 2 - 582 29 45
Email: info.be@leviat.com

China

Leviat
Room 601 Tower D, Vantone Centre
No. A6 Chao Yang Men Wai Street
Chaoyang District
Beijing · P.R. China 100020
Tel: +86 - 10 5907 3200
Email: info.cn@leviat.com

Czech Republic

Leviat
Business Center Šafránková
Šafránková 1238/1
155 00 Praha 5
Tel: +420 - 311 - 690 060
Email: info.cz@leviat.com

Finland

Leviat
Vädursgatan 5
412 50 Göteborg / Sweden
Tel: +358 (0)10 6338781
Email: info.fi@leviat.com

France

Leviat
6, Rue de Cabanis
FR 31240 L'Union
Toulouse
Tel: +33 - 5 - 34 25 54 82
Email: info.fr@leviat.com

Germany

Leviat
Liebigstrasse 14
40764 Langenfeld
Tel: +49 - 2173 - 970 - 0
Email: info.de@leviat.com

India

Leviat
309, 3rd Floor, Orion Business Park
Ghodbunder Road, Kapurbawdi,
Thane West, Thane,
Maharashtra 400607
Tel: +91 - 22 2589 2032
Email: info.in@leviat.com

Italy

Leviat
Via F.lli Bronzetti 28
24124 Bergamo
Tel: +39 - 035 - 0760711
Email: info.it@leviat.com

Malaysia

Leviat
28 Jalan Anggerik Mokara 31/59
Kota Kemuning, 40460 Shah Alam
Selangor
Tel: +603 - 5122 4182
Email: info.my@leviat.com

Netherlands

Leviat
Oostermaat 3
7623 CS Borne
Tel: +31 - 74 - 267 14 49
Email: info.nl@leviat.com

New Zealand

Leviat
2/19 Nuttall Drive, Hillsborough,
Christchurch 8022
Tel: +64 - 3 376 5205
Email: info.nz@leviat.com

Norway

Leviat
Vestre Svanholmen 5
4313 Sandnes
Tel: +47 - 51 82 34 00
Email: info.no@leviat.com

Philippines

Leviat
2933 Regus, Joy Nostalg,
ADB Avenue
Ortigas Center
Pasig City
Tel: +63 - 2 7957 6381
Email: info.ph@leviat.com

Poland

Leviat
Ul. Obornicka 287
60-691 Poznań
Tel: +48 - 61 - 622 14 14
Email: info.pl@leviat.com

Singapore

Leviat
14 Benoi Crescent
Singapore 629977
Tel: +65 - 6266 6802
Email: info.sg@leviat.com

Spain

Leviat
Polígono Industrial Santa Ana
c/ Ignacio Zuloaga, 20
28522 Rivas-Vaciamadrid
Tel: +34 - 91 632 18 40
Email: info.es@leviat.com

Sweden

Leviat
Vädursgatan 5
412 50 Göteborg
Tel: +46 - 31 - 98 58 00
Email: info.se@leviat.com

Switzerland

Leviat
Grenzstrasse 24
3250 Lyss
Tel: +41 (0)800 22 66 00
Email: info.ch@leviat.com

United Arab Emirates

Leviat
RA08 TB02, PO Box 17225
JAFZA, Jebel Ali, Dubai
Tel: +971 (0)4 883 4346
Email: info.ae@leviat.com

United Kingdom

Leviat
President Way, President Park,
Sheffield, S4 7UR
Tel: +44 - 114 275 5224
Email: info.uk@leviat.com

USA / Canada

Leviat
6467 S Falkenburg Road
Riverview, FL 33578
Tel: (800) 423-9140
Email: info.us@leviat.us

For countries not listed

Email: info@leviat.com

Leviat.com