

**Leviat**<sup>®</sup>  
A CRH COMPANY



Faster, safer,  
higher quality  
precast concrete  
construction

COMPLIANT  
AS 3850.1:2015



**Ancon**<sup>®</sup>  
EdjPro Lifting Systems

July 2022

# We are one team. We are Leviat.

Leviat is the new name of CRH's construction accessories companies worldwide.



Under the Leviat brand, we have united the expertise, skills and resources of Ancon and its sister companies to create a world leader in fixing, connecting and anchoring technology.

The products you know and trust will remain an integral part of Leviat's comprehensive brand and product portfolio. As Leviat, we can offer you an extended range of specialist products and services, greater technical expertise, a larger and more agile

supply chain and better, faster innovation.

By bringing together CRH's construction accessories family as one global organisation, we are better equipped to meet the needs of our customers, and the demands of construction projects, of any scale, anywhere in the world.

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# Ancon EdjPro Lifting Systems

## Why Choose Ancon EdjPro?

- ✓ EdjPro anchors have a removable plug to prevent concrete entering the lifting hole
- ✓ Recess formers fit like a glove, providing a gap between the anchor and concrete
- ✓ The clutch is clear of the concrete edge and has a safer locking ring design
- ✓ Clutches are compatible with previous anchor versions
- ✓ EdjPro systems are compliant with AS 3850.1:2015

## Conventional Lifting Systems

Worn or poorly fitted conventional recess formers frequently cause lifting holes to become blocked. The use of Ancon EdjPro lifting systems prevents this and avoids difficult and time consuming on-site hole cleaning, reducing installation costs.



Examples of blocked lifting holes



On-site maintenance work required to clean lifting holes

## Ancon EdjPro Lifting Systems

An integrated plug prevents concrete ingress into the lifting hole. The plug is simply removed on-site.



Clean, maintenance-free lifting holes

## Our aim:

**No cracking, no spalling, no patching.**  
Faster, safer manufacture,  
handling and installation

## The Ancon EdjPro Range

Anchor code	System colour	Compatible clutch code	Compatible recess code	Head style	Maximum WLL (tonnes)	Anchor length (mm)	Anchor width (mm)	Recess width (mm)
EPA04	Silver	EPLC04	EPRF04	Classic Flat	4	200	40	55
<b>NEW</b> EPHIMini	Purple	EPLCMini	EPRFMini	HI	8.5	200	40	50
EPNA10	Green	EPLCMax	EPNRF10	Classic Flat	10	275	70	70
<b>NEW</b> EPHIMax	Green	EPLCMax	EPRFMax	HI	15	250	55	65

Detailed design specifications are provided in the EdjPro Design Guide, including dimensions for all components and tension bars.

# Ancon EdjPro Lifting Systems

## Ancon EdjPro EPA04 Edge Lifting System

The EdjPro EPA04 Edge Lifting System is the smallest anchor in the EdjPro range. The narrow system components provide a Working Load (WLL) of 4 tonnes in tension for panels as thin as 100mm. All components are designed around the thin EPA04 anchor to provide the maximum possible concrete cover while ensuring the required clearance to the surrounding concrete. This avoids concrete spalling during the introduction of shear loads.

### Reliable

- ✓ All the benefits of the established EdjPro system with a narrow 4T WLL anchor & recess for thin panels from 100mm

### Strong

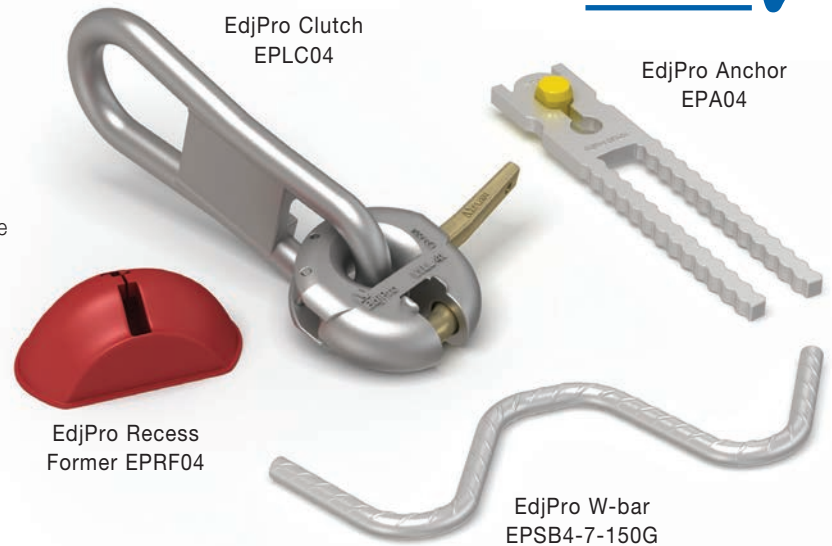
- ✓ Up to 4T WLL when used with a 12mm tension bar

### Versatile

- ✓ The EdjPro clutch and EPA04 provide high performance for edge lifting in the factory, during transportation and erection

### Safe

- ✓ Anchor code, WLL and batch number are clearly visible when cast into concrete
- ✓ Complies with the requirements of AS 3850.1:2015



For light precast panels from 100mm thickness

COMPLIANT AS 3850.1:2015 ✓

## Ancon EdjPro EPA10 Edge Lifting System

The EdjPro EPNA10 Edge Lifting System provides a Working Load (WLL) of up to 10 tonnes when used with 20mm tension bar for panels as thin as 125mm. All components have been designed to provide the maximum clearance from the clutch to the concrete panel edge to avoid concrete spalling. For step-joint panels the anchor can also be used in combination with the EdjPro EzyTurn Clutch.

### Reliable

- ✓ All the benefits of the established EdjPro system with a narrower anchor and recess for thin panels from 125mm
- ✓ Ideal for thin panels with step joints

### Strong

- ✓ Up to 10T WLL when used with a 20mm tension bar

### Safe

- ✓ Anchor code, WLL and batch number are clearly visible when cast into concrete
- ✓ Complies with the requirements of AS 3850.1:2015



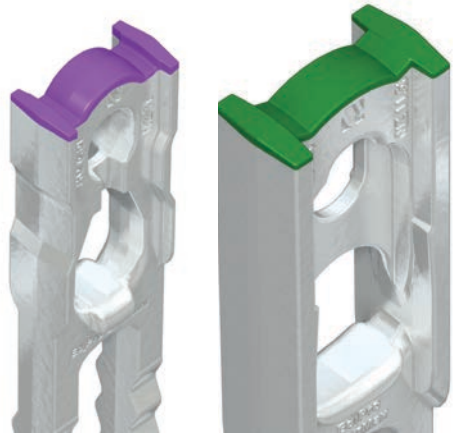
For light precast panels from 125mm thickness

COMPLIANT AS 3850.1:2015 ✓

## Ancon EPHIMini and EPHIMax Lifting Systems

The Ancon EdjPro EPHI range offers ultra-slim, high load edge lifting solutions for thin precast concrete elements. Our range has been specifically designed for the Australian construction industry and comprises the EdjPro EPHIMax, which allows two-point lifts of precast panels of up to 21.7 tonnes, and the EdjPro EPHIMini which is suitable for panels up to 12.3 tonnes when lifted with 2 anchors and incorporating a sling angle of 60°.

**COMPLIANT**  
**AS 3850.1:2015** ✓



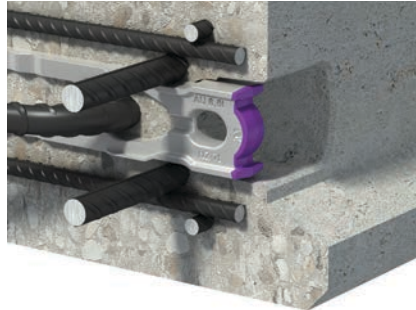
### Ultra-slim, high working loads

- ✓ Easily fits into double layer congested reinforcement



### I-beam shear foot

- ✓ No need for shear bars in most applications



### EdjPro EPLCMini Clutch

The EdjPro EPHIMini Anchor works in conjunction with the EdjPro EPLCMini Clutch



Patented

### Unique I-beam heads

- ✓ Exceptional stiffness & load transfer
- ✓ Prevents head distortion or shear failure
- ✓ Interlocks with the clutch to limit rotation
- ✓ Prevents bearing, concrete cracking and spalling



### Easily identifiable

- ✓ I-beam head is unmistakable - identification is easy for clutch compatibility. Integrated plug prevents concrete ingress into clutch holes.

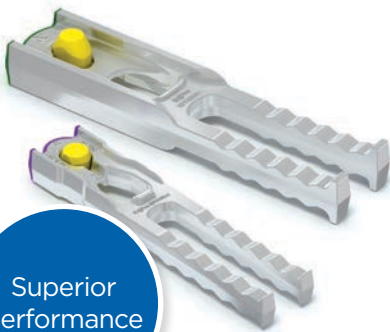


### Clutch clearance even in step-joints



### Ultra tough forged alloy steel

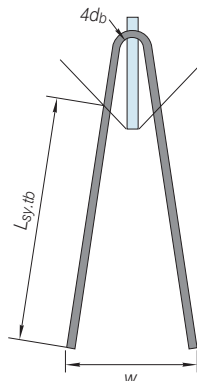
- ✓ Hot dip galvanised high strength alloy steel



Superior performance

### Optimised tension bar WLLs

- ✓ New anchor shape maximises tension bar WLL and reliability



### Fast lifting off the bed

- ✓ No need to creep the crane when lifting off the bed

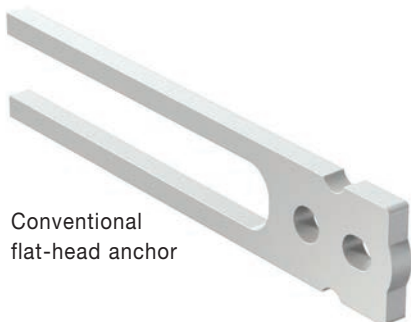


# Ancon EdjPro Lifting Systems

## How EdjPro Systems Prevent Cracks

Conventional flat-head systems can spall edges. Ancon EdjPro lifting systems provide fast, clean, safe connections in all directions including clutch and anchor concrete clearance.

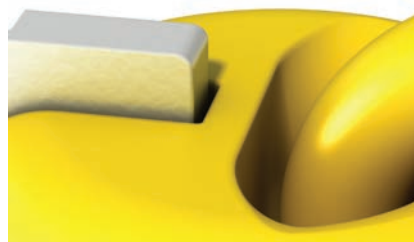
### Conventional flat-head anchor systems



Conventional flat-head anchor



Conventional clutch has a round locking ring so the clutch is free to rotate around the anchor under shear load.



Rotation causes the side of the clutch to bear against the top of the anchor causing a shearing force to the side.

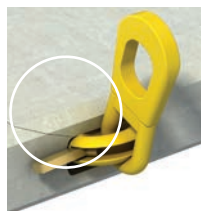
Clutch shear load deforms the anchor to the side.



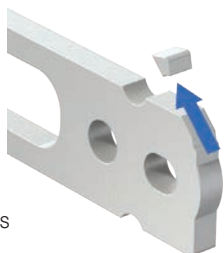
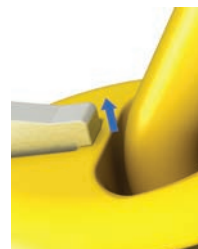
The deformed anchor bears on the concrete resulting in cracking, causing further rotation. This results in the clutch torus and handle spalling the concrete.



Anchor bearing crack



Clutch bearing crack



The clutch fully rotates and the concrete spalls away.



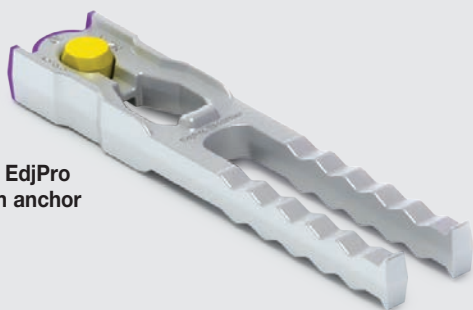
Anchor sheared by the clutch



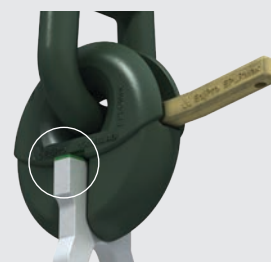
Complete rotation and failure

## The EdjPro Solution

### Ancon EdjPro I-beam anchor



The locking ring is not round therefore restricts rotation.



EPNA systems have more distance between the clutch and anchor sides which increases shear resistance.



The gap allows the anchor to deflect under load without concrete contact, preventing cracking. All EdjPro systems have a gap between the anchor and concrete.

Anchor flanges limit rotation, prevent concrete contact and cracking. The ultimate solution EPHI I-beam head.



Clutch bears on the anchor flanges, avoiding shear failure.

## Ancon EdjPro Anchor Systems comply with AS 3850.1:2015

AS 3850 Clause	Requirement	
1.4.35	A lifting insert is a component or a system. EdjPro Anchors and tension bars are two components of a lifting insert system.	✓
1.4.12	A tension bar (component reinforcement) is a component which is required to achieve the working load of a lifting system.	✓
1.4.37	EdjPro Anchors are plate style inserts, essentially planar in form.	✓
2.2	The Working Load Limit (WLL) has a factor of Safety of 2.25 against the critical characteristic strength $R_u$ (effectively the minimum breaking strength), determined by testing according to Appendix A.	✓
2.5.2.1	EdjPro EPHI Anchors are forged from fully killed steel with grain size less than 6 (AS 1733), elongation not less than 15% for martensitic or 20% for pearlitic steels, and a 100% fibrous failure surface consistent with ductile failure when loaded in tension.	✓
	EdjPro Anchors are tested in and out of concrete in accordance with Appendix A and are marked for visible confirmation of compatibility.	✓
	EdjPro Anchors and Recess Formers are marked for compatibility.	
Table 2.2	Maximum Carbon 0.25%, Phosphorous 0.05%, Sulphur 0.05%.	✓
2.5.2.2	Plate style inserts must have a tension bar (component reinforcement). EdjPro Anchors are designed to always be used with a tension bar.	✓
2.5.2.2 C2.5.2.2	An edge lift insert must be tested in accordance with Appendix A, with and without its tension bar to determine the characteristic strength $R_u$ and WLL.	✓
	The tension bar is one component of the lifting insert system, the other component is the plate style insert. The WLL for the system is based on the minimum characteristic strength of the system.	✓
	The critical mode of failure of tension bars is “double shear” at the anchor aperture. $R_u$ of tension bars is limited to the tested shear strength of AS 4671 N class bars manufactured with the minimum tensile strength (540MPa).	✓
	When tested in concrete of the design lifting strength, the $R_u$ of the anchor without the tension bar is not less than the anchor WLL.	✓
Appendix A	Anchor testing must conform with Appendix A, parts A1, A2, A3, A4, A6 & A7.	✓
Appendix A1.5	$R_u$ is the critical characteristic strength which has a 95% probability of being exceeded at a confidence of 90%, of a component or system.	✓
Appendix A3.1 Appendix A6	Each component and the insert system (plate style insert + tension bar) to determine the critical mode of failure and critical characteristic strength.	✓

**COMPLIANT**  
**AS 3850.1:2015** ✓

## Worldwide contacts for 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 - 31 750 3030  
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

### United States of America

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

### For countries not listed

Email: info@leviat.com

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**For more information on the following products, please contact:**

**Masonry, Structural and  
Precast Concrete products:**

Tel: 1300 304 320  
Email: [info.ancon.au@leviat.com](mailto:info.ancon.au@leviat.com)  
Web: [Ancon.com.au](http://Ancon.com.au)

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products:**

Tel: 1800 335 215  
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Web: [Connollykeyjoint.com](http://Connollykeyjoint.com)

**Remedial Masonry  
products:**

Tel: 1300 667 071  
Email: [info.helifix.au@leviat.com](mailto:info.helifix.au@leviat.com)  
Web: [Helifix.com.au](http://Helifix.com.au)

Email: [info.isedio.au@leviat.com](mailto:info.isedio.au@leviat.com)  
Web: [Isedio.com.au](http://Isedio.com.au)

**General Enquiries**

Tel: 1300 304 320  
Email: [info.au@leviat.com](mailto:info.au@leviat.com)  
Web: [Leviat.com](http://Leviat.com)

**Sales Offices and Production**

**New South Wales, Sydney**

98 Kurrajong Avenue  
Mount Druitt | Sydney  
NSW 2770

**New South Wales, Casino**

10 Irving Drive  
Casino  
NSW 2470

**Victoria**

9/63-69 Pipe Road  
Laverton North | Melbourne  
VIC 3026

**Queensland**

4/15 Terrace Place  
Murarrie | Brisbane  
QLD 4172

**Western Australia**

18 Tennant Street  
Welshpool | Perth  
WA 6106

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