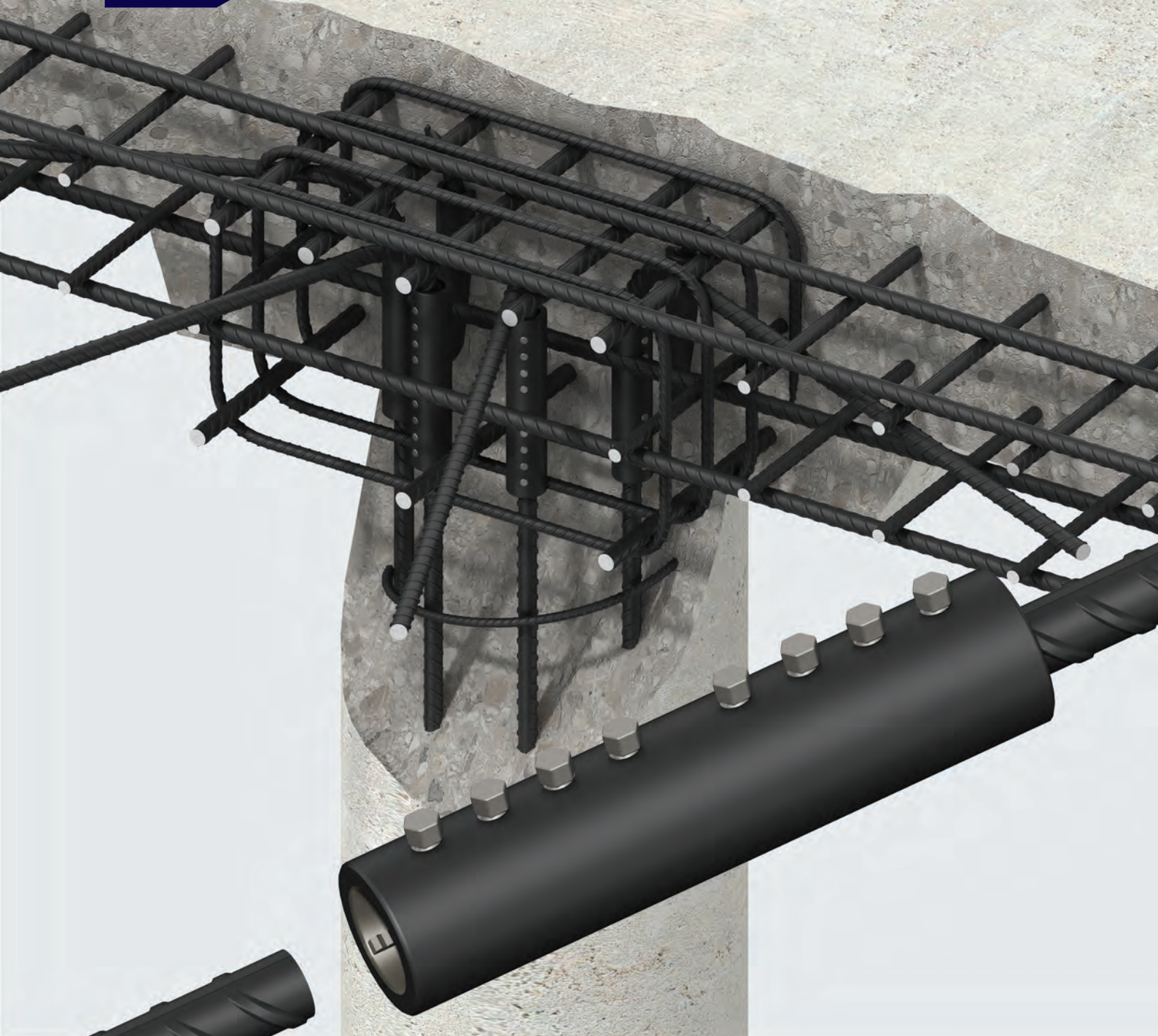


Leviat®

International Version

CI/SfB	(21)	X16	
May 2026			



**Ancon®**

**MBT Mechanically-Bolted Couplers**

for the Construction Industry

# Leviat

We imagine, model and make engineered products and innovative construction solutions that help turn architectural visions into reality and enable our construction partners to build better, safer, stronger and faster.

**Leviat is a world leader in connecting, fixing, lifting and anchoring technology.**

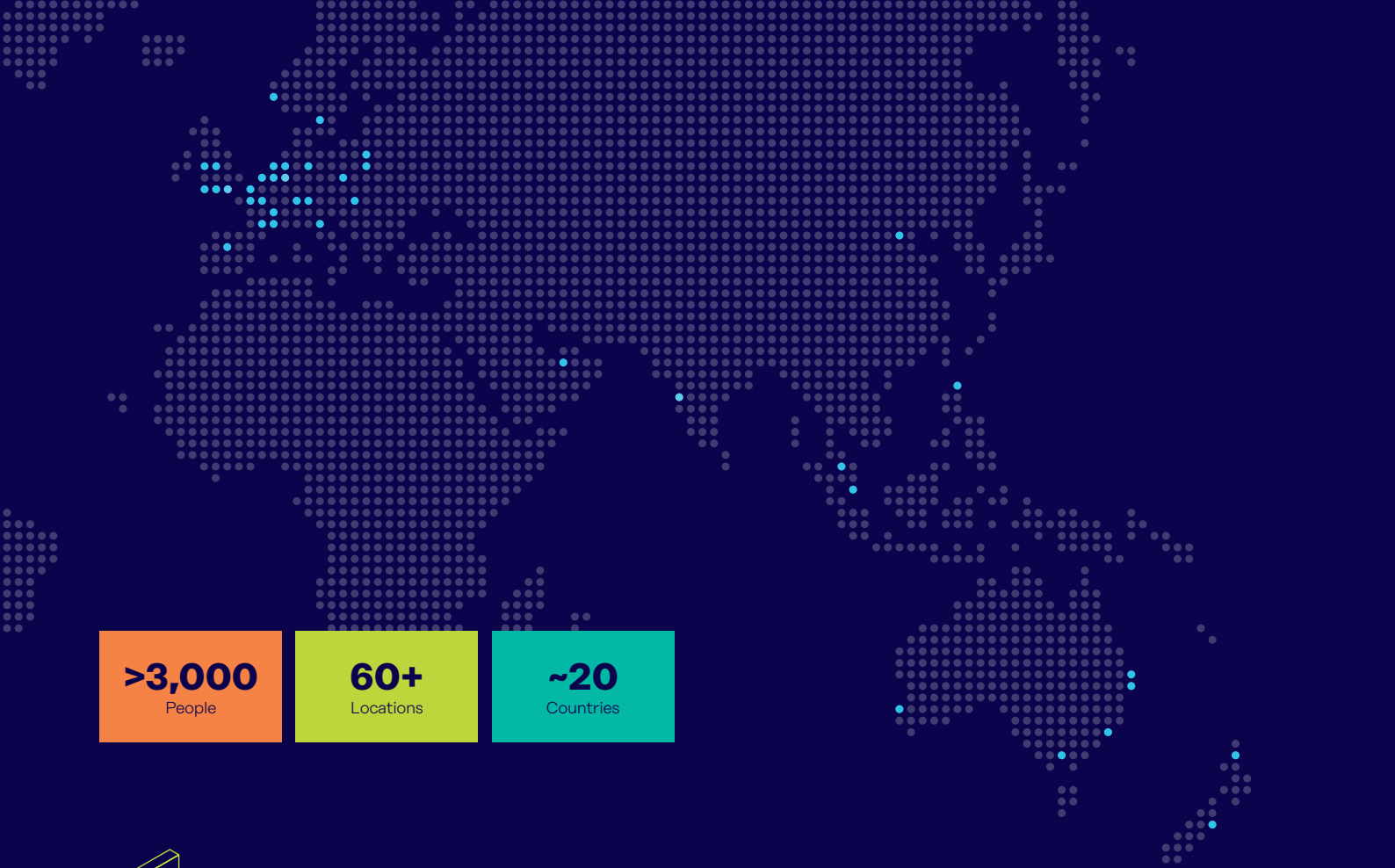
From the build of new schools, hospitals, homes and infrastructure, to the repair and maintenance of heritage structures, our engineering skills are making a difference around the world.

We provide technical design assistance at every stage of a project, from initial planning to installation and beyond.

Our technical support services range from simple product selection through to the development of a fully customised project-specific design solution.

Every promise we make locally, has the commitment and dedication of our global team behind it. We employ almost 3,000 people at 60 locations across North America, Europe and Asia-Pacific, providing an agile and responsive service worldwide.

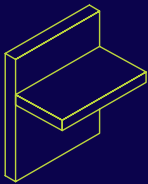




**>3,000**  
People

**60+**  
Locations

**~20**  
Countries

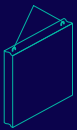


### Structural Connections

Systems to form robust, efficient connections, and continuity of concrete reinforcement as necessary, between walls, slabs, columns, beams and balconies, providing structural integrity as well as enhanced thermal and acoustic performance.

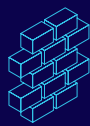
- Insulated balcony connectors
- Reinforcing bar couplers
- Concrete Connections
- Reinforcement continuity systems
- Punching shear reinforcement
- Shear load connectors
- Floor Joint Systems
- Precast / Reinforced Columns
- Infrastructure Products
- Precast Connections
- Acoustic dowels and bearings
- Prestress

### Other areas of expertise:



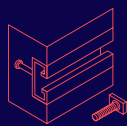
#### Lifting & Bracing

Systems for the safe and efficient transportation, lifting and temporary bracing of cast concrete elements and tilt-up panels before permanent structural connections are made.



#### Façade Support & Restraint

Systems for the safe and thermally-efficient fixing of the external building envelope, including brick and natural stone, insulated sandwich panels, curtain walling and suspended concrete façades, and also the repair and strengthening of existing masonry installations.



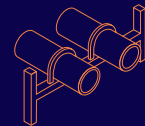
#### Anchoring & Fixing

Systems for fixing secondary fixtures to concrete, including anchor channels, bolts and inserts; also tension rod systems for roofs and canopies.



#### Formwork & Site Accessories

Non-structural accessories that complement our engineered solutions and help keep your construction environment operating safely and efficiently, including moulds for casting standard and special concrete elements and construction essentials such as reinforcing bar spacers.



#### Industrial Technology

Mounting channels, pipe clamps and other versatile framing systems that provide safe fixing in a wide range of industrial applications.

### Leviat product ranges:

Ancon | Aschwanden | Connolly | Halfen | Helifix | Isedio | Meadow Burke | Modersohn | Moment | Plaka | Scaldex | Thermomass

# Reinforcing Bar Couplers

## Simplify the design and construction of concrete

Lapped joints are not always an appropriate means of connecting reinforcing bars. The use of laps can be time consuming in terms of design and installation and can lead to greater congestion within the concrete because of the increased amount of rebar used.

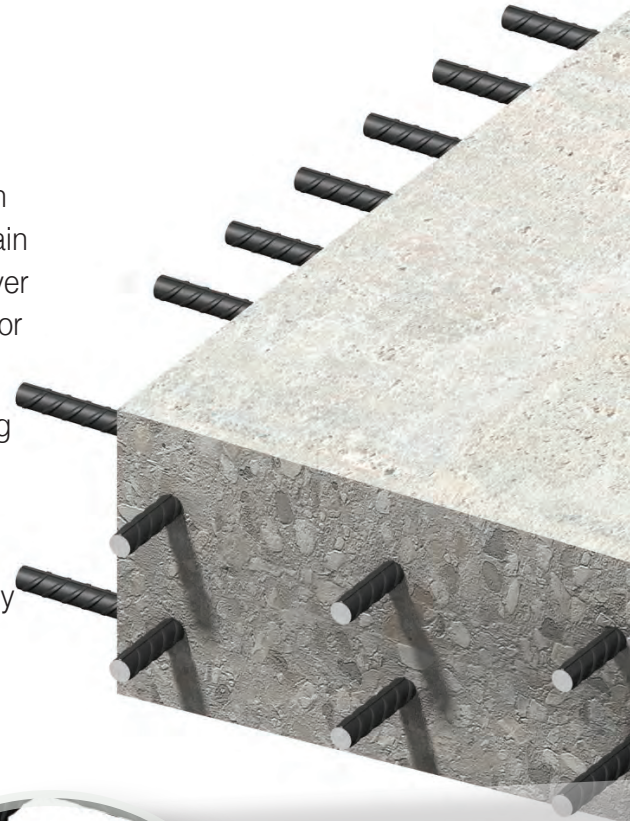
Ancon couplers can simplify the design and construction of reinforced concrete and reduce the amount of reinforcement required.

Lapped joints are dependent upon the concrete for load transfer. For this reason any degradation in the integrity of the concrete could significantly

affect the performance of the joint. The strength of a mechanical splice is independent of the concrete in which it is located and will retain its strength despite loss of cover as a result of impact damage or seismic event.

Our range of Ancon reinforcing bar couplers is the most comprehensive available and includes tapered threaded, parallel threaded, mechanically bolted and grouted couplers.

Couplers for stainless steel and cryogenic-grade rebars complete the range.



## Contents

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<u>HM Grout Sleeve Couplers</u>	<u>8</u>
<u>Other Products</u>	<u>8</u>



Eurocode 2 compliant



Simplify design and construction



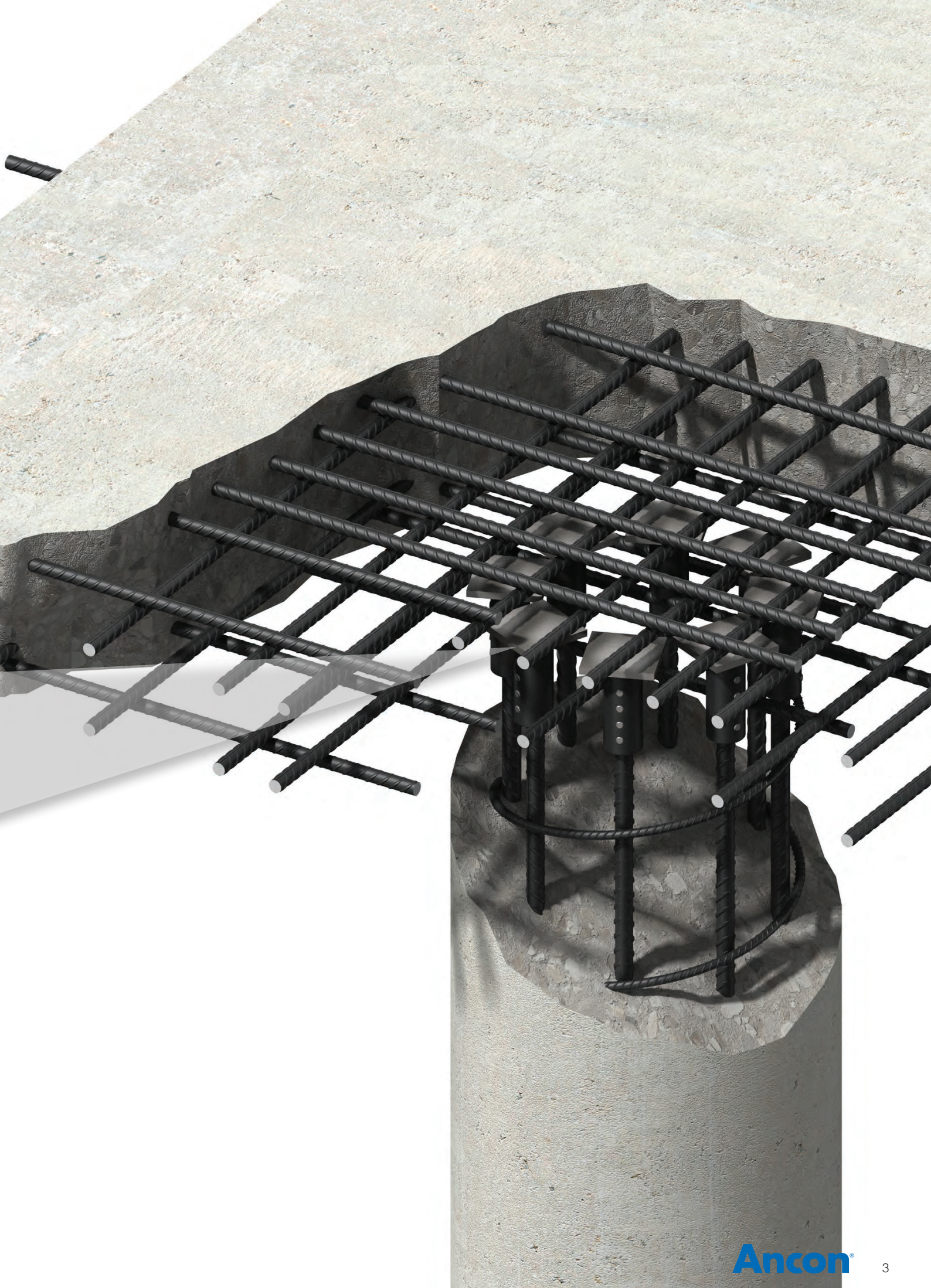
ISO 9001, ISO 14001, ISO 45001



Available through major rebar stockists and approved distributors



Dedicated sales support



# Reinforcing Bar Couplers

## MBT

The Ancon MBT range of couplers provides a cost-effective method of joining reinforcing bars, particularly when the fixed bar is already in place and there is insufficient space for a hydraulic swaging press.

MBT Couplers are easy to install and achieve failure loads higher than 115% of the characteristic yield strength of grade 500 reinforcing bar. Neither bar end preparation to form threads, nor bar rotation are required. MBT couplers can also be used to join imperial, plain round or deformed reinforcing bars.

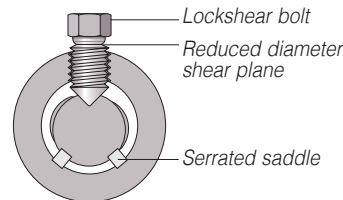
The bar ends are supported within the coupler by two serrated saddles, and as the lockshear bolts are tightened, the conical ends embed themselves into the bar. As this happens the serrated saddles bite into both the bar and the shell of the coupler. The lockshear bolts of couplers up to and including the ET20 can be tightened using a ratchet wrench. For larger couplers a nut runner is recommended.

In all cases heavy duty sockets should be used. When the pre-determined tightening torque for the bolts is reached, the heads shear off leaving the top of the installed bolt slightly proud of the coupler. This provides an instant visual check of correct installation.

**Note:** Impact tools must not be used to tighten lockshear bolts.

### MBT ET Series

The MBT ET series of couplers is used to connect reinforcing bars of the same size.



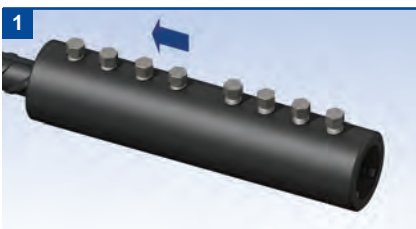
Section showing the embedment of the lockshear bolts and saddles into the bar and the shell of the coupler

### MBT ET Series Dimensions

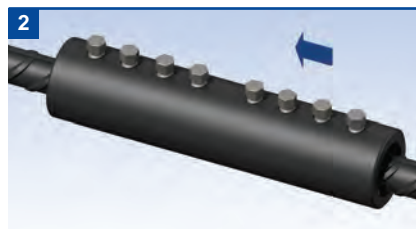
Bar Diameter (mm)	10	12	14	16	18	20	22	25	26	28	30	32	34	36	40
External Diameter (mm) <i>d</i>	33	33	42	42	48	48	48	54	67	67	71	71	75	85	81
Total Length (mm) <i>l</i>	100	140	160	160	204	204	248	258	312	312	312	312	420	484	484
Socket Size A/F (ins)	1/2	1/2	1/2	1/2	1/2	1/2	1/2	5/8	5/8	5/8	5/8	5/8	3/4	3/4	3/4
No. of Bolts	4	6	6	6	8	8	10	8	10	10	10	10	12	14	14
Approx Weight (kg)	0.52	0.72	1.25	1.25	2.0	1.96	2.38	3.00	5.91	5.80	6.68	6.50	8.85	15.30	11.30
Part No.	ET10	ET12	ET14	ET16*	ET18	ET20	ET22	ET25	ET26	ET28	ET30	ET32	ET34	ET36	ET40

**Note:** Dimensions are nominal values and subject to change from time to time. Other sizes available on request. For details contact us.

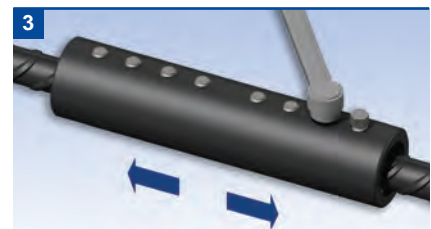
### Installation MBT ET Series



Place the coupler over the end of the bar to half the coupler length +/- 6mm and finger tighten the lockshear bolts onto the bar. Check the alignment and make any necessary adjustments.



Place the other bar end into the coupler until it pushes up against the first bar and finger tighten the remaining lockshear bolts. Check alignment and make any adjustments.



On one half of the coupler, starting from the centre and working outwards, partly tighten the lockshear bolts using either a ratchet wrench or a nut runner as appropriate. Do not use impact tools. Repeat again, this time fully tightening the lockshear bolts until the bolt heads shear off. Repeat the above for the other half of the coupler.

### Testing & Approvals

Full destructive tests are carried out on selected couplers from our stocks. MBT couplers are designed and manufactured in accordance with BS EN ISO 9001. The most common sizes of ET series couplers are approved to UK CARES TA1A & B-5083 and in accordance with the Manual of Contract Documents for Highways Works, Volume 1 Specification for Highways Works, Series 1700 Structural Concrete (Amended March 2020) including the bar sizes featured in the table below.

MBT ET has been tested and approved by the DIBt and is covered by Approval No Z-1.5-10. Further national approvals include Italian IGQ certificate P192, BauCert Steiermark No. R-2.1.9-17-15656, RISE Approval No.0541-95 which covers the ET Series and AFCAB Approval No. M20/023. Each of the approvals mentioned above apply to specific bar sizes and bar grades. For details of bar sizes and grades covered, please refer to the relevant certificate, which is available from Leviat on request.

The full range of MBT Couplers has been tested to show compliance with the following international design codes and standards:- BS EN 1992-1-1: 2004 (Eurocode 2), BS5400, BS8110, BS8597: 2015, NFA35-020, ISO15835 and DIN 1045 German code.

**Note:** Not all coupler types and sizes are relevant to the national approvals shown. For details of coupler types and sizes relevant to each national approval please refer to the relevant approval document, which is available on request.



## MBT Transition Series

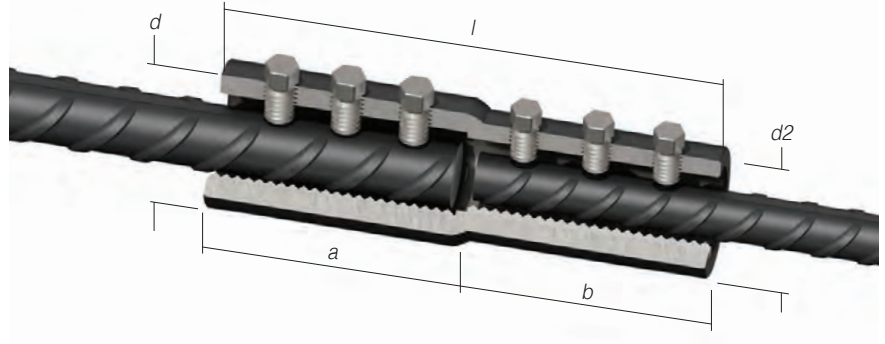
The Ancon MBT Transition series of couplers provides an effective solution for connecting bars of different diameters.

Transition couplers have all of the benefits of the ET series and are designed to achieve failure loads higher than 115% of the characteristic yield strength of the smaller grade 500 reinforcing bar.

They can be installed without any preparation to the bar ends and without any need to rotate bars.

The coupler can be rotated to allow access to the bolts for tightening with either a ratchet wrench or a nut runner. In all cases heavy duty sockets should be used. Transition couplers are non-standard and are made to order.

**Note:** Impact tools should not be used to tighten lockshear bolts.



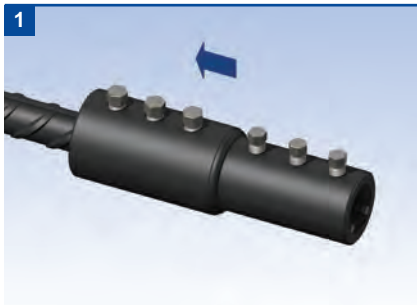
### MBT Transition Series Dimensions

Bar Diameter (mm)	16/12	16/14	20/12	20/16	25/16	25/20	28/20	28/22	28/25	32/20	32/25	32/28	40/32
External Diameter (mm) <i>d</i>	42	42	48	48	54	54	67	67	67	71	71	71	81
External Diameter (mm) <i>d2</i>	26	42	33	48	42	54	48	42	54	48	54	67	71
Total Length (mm) <i>l</i>	160	160	150	160	155	180	204	253	258	177	231	286	335
Individual Lengths <i>a:b</i>	80:80	80:80	80:70	80:80	75:80	90:90	102:102	129:124	129:129	75:102	102:129	130:156	178:157
Socket Size A/F (ins) <i>a:b</i>	1/2:1/2	1/2:1/2	1/2:1/2	1/2:1/2	5/8:1/2	5/8:1/2	5/8:1/2	5/8:1/2	5/8:5/8	5/8:1/2	5/8:5/8	5/8:5/8	3/4:5/8
No. of Bolts <i>a:b</i>	3:3	3:3	3:3	3:3	2:3	3:3	3:4	4:5	4:4	2:4	3:4	4:5	5:5
Approx Weight (kg)	1.30	1.25	1.13	1.56	1.51	2.23	2.94	3.61	3.98	2.55	3.70	5.71	7.47
Part No.	ET16/12	ET16/14	ET20/12	ET20/16	ET25/16	ET25/20	ET28/20	ET28/22	ET28/25	ET32/20	ET32/25	ET32/28	ET40/32

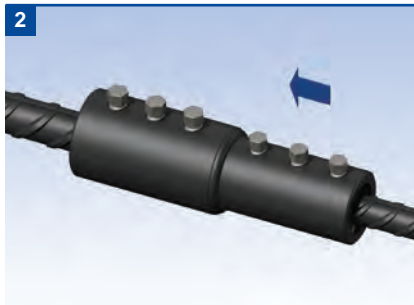
**Note:** Dimensions are nominal values and subject to change from time to time.

### Installation

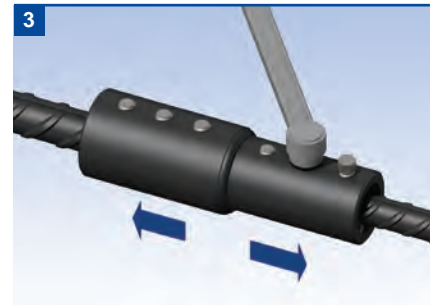
#### MBT Transition Series



Place the coupler over the end of the bar to the appropriate depth +/- 6mm and finger tighten the lockshear bolts onto the bar. Check the alignment and make any necessary adjustments.



Place the other bar end into the coupler until it pushes up against the first bar and finger tighten the remaining lockshear bolts. Check alignment and make any adjustments.



On one half of the coupler, starting from the centre and working outwards, partly tighten the lockshear bolts using either a ratchet wrench or a nut runner as appropriate. Do not use impact tools. Repeat again, this time fully tightening the lockshear bolts until the bolt heads shear off.

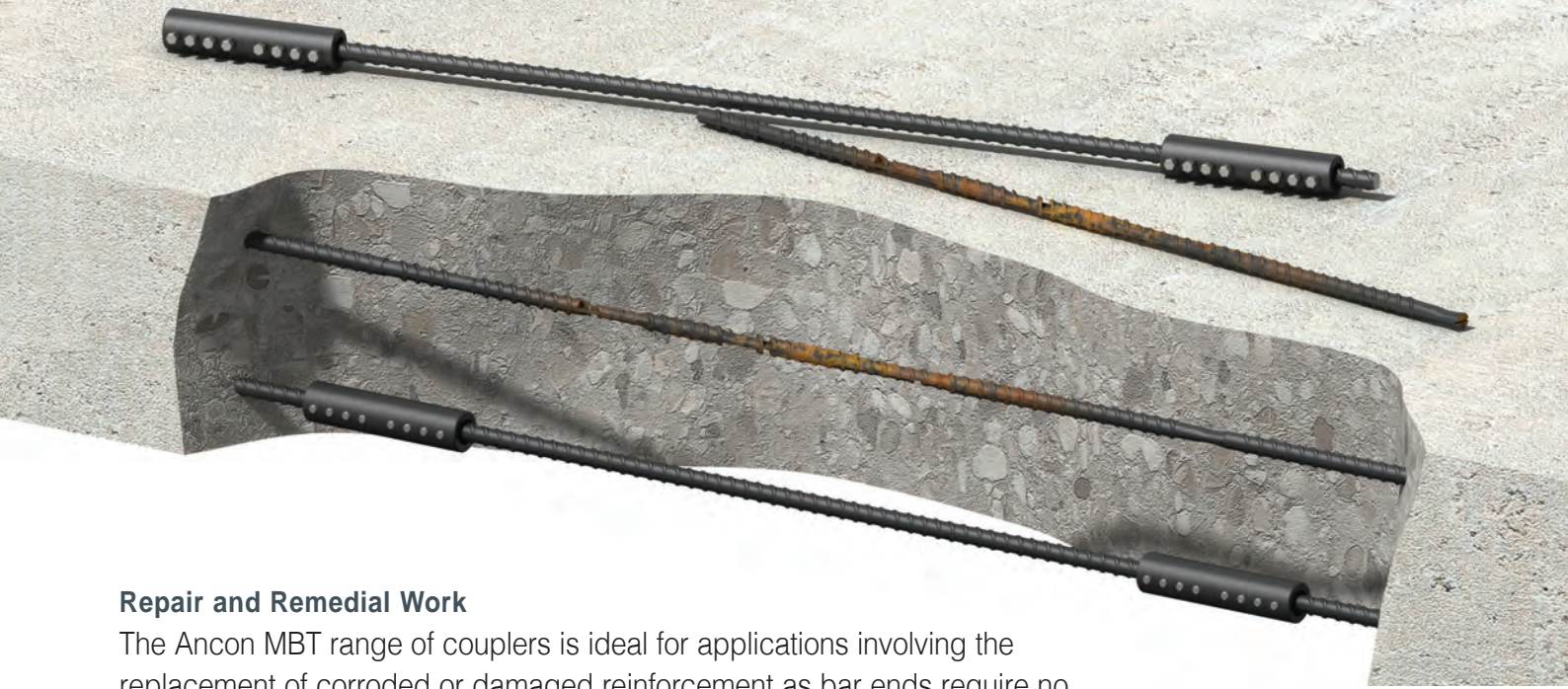
Repeat the above for the other half of the coupler.

### Electric Wrench

Ancon Electric Wrenches are available for purchase or hire. The smooth continuous action of the wrench prevents the early shearing of the lockshear bolts and damage to threads. The wrench is supplied with specially hardened heavy duty sockets. For details please contact us.



# Reinforcing Bar Couplers



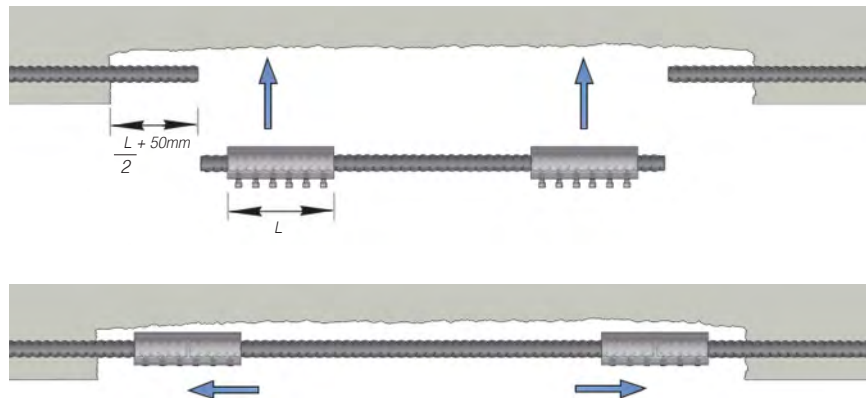
## Repair and Remedial Work

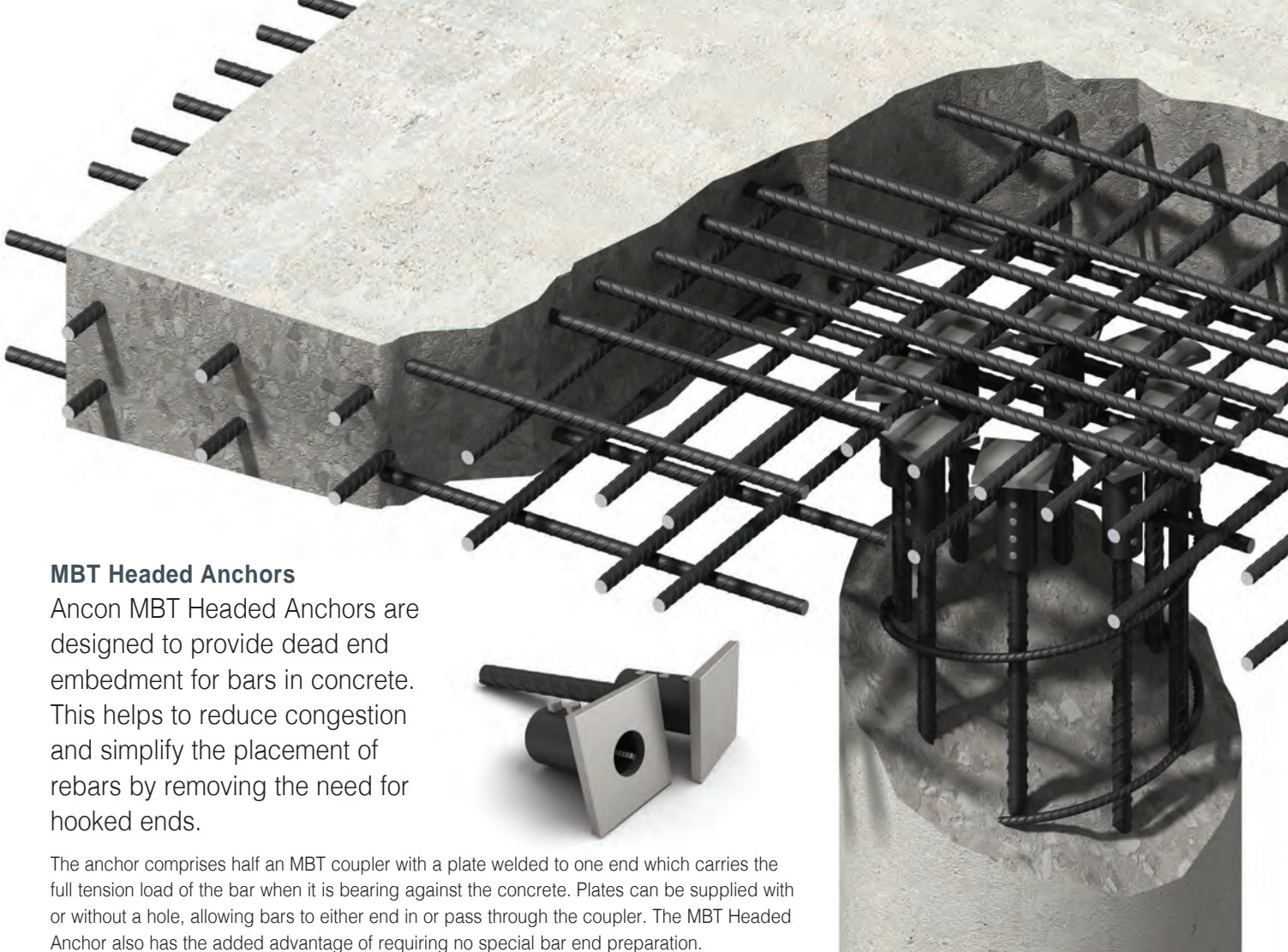
The Ancon MBT range of couplers is ideal for applications involving the replacement of corroded or damaged reinforcement as bar ends require no preparation or rotation.

### MBT ET Couplers

When two MBT ET type couplers are used, the replacement bar is cut approximately 5mm shorter than the original length to allow clearance for insertion between the sound ends of the in-situ bars. MBT ET couplers are pushed fully over both ends of the replacement bar and temporarily held in position. The replacement bar is then correctly positioned and the couplers moved to a previously marked position on the existing bars indicating half the length of the coupler. The lockshear bolts are tightened to complete the installation.

The above application is suitable where the bar being replaced is at least  $2 \times \text{MBT ET coupler length} + 100\text{mm}$ .

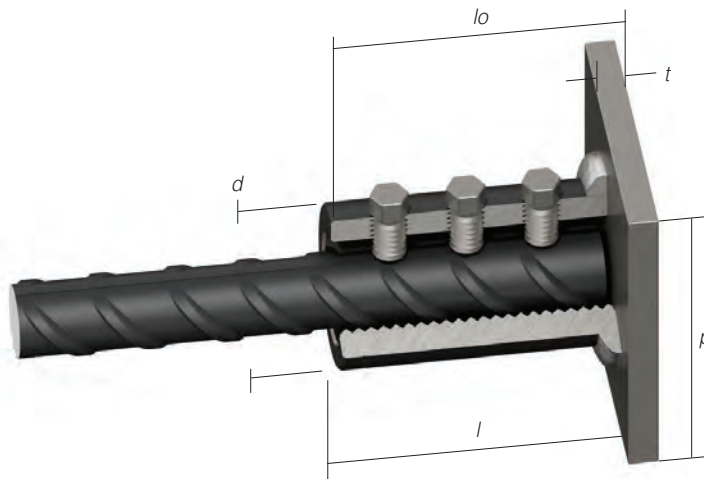




### MBT Headed Anchors

Ancon MBT Headed Anchors are designed to provide dead end embedment for bars in concrete. This helps to reduce congestion and simplify the placement of rebars by removing the need for hooked ends.

The anchor comprises half an MBT coupler with a plate welded to one end which carries the full tension load of the bar when it is bearing against the concrete. Plates can be supplied with or without a hole, allowing bars to either end in or pass through the coupler. The MBT Headed Anchor also has the added advantage of requiring no special bar end preparation.



Bar Diameter (mm)	10	12	14	16	18	20	22	25	26	28	30	32	34	36	40
External Diameter (mm)	$d$ 33	33	42	42	48	48	48	54	67	67	71	71	75	85	81
Coupler Length (mm)	$l$ 55	75	82	82	104	104	126	129	156	156	156	156	215	247	247
Total Length (mm)	$l_0$ 65	85	92	92	114	114	136	139	168	168	171	171	230	262	262
Plate Thickness (mm)	$t$ 10	10	10	10	10	10	10	10	12	12	15	15	15	15	15
Plate w x h (mm)	$p$ 70	70	70	80	90	90	90	100	110	110	130	130	130	150	150
Socket Size A/F (ins)	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$
No of Bolts	2	3	3	3	4	4	5	4	5	5	5	5	6	7	7
Approx Weight (kg)	0.64	0.74	1.01	1.07	1.58	1.58	1.72	2.29	3.81	4.14	5.08	4.72	5.17	9.13	8.30
Part No. (No hole in plate)	ETHA10	ETHA12	ETHA14	ETHA16	ETHA18	ETHA20	ETHA22	ETHA25	ETHA26	ETHA28	ETHA30	ETHA32	ETHA34	ETHA36	ETHA40
Part No. (Hole in plate)	ETHA10H	ETHA12H	ETHA14H	ETHA16H	ETHA18H	ETHA20H	ETHA22H	ETHA25H	ETHA26H	ETHA28H	ETHA30H	ETHA32H	ETHA34H	ETHA36H	ETHA40H

**Note:** Minimum compressive strength of concrete 25N/mm<sup>2</sup>. Dimensions are nominal values and subject to change from time to time.

## Other Products

### Reinforcement Continuity Systems

Reinforcement Continuity Systems are an increasingly popular means of maintaining continuity of reinforcement at construction joints in concrete. Our re-bend systems consist of pre-bent bars housed within a steel casing. Once installed, the bars are straightened ready for lapping with slab reinforcement. A range of headed anchors and starter bars is also available, which once cast in concrete will accept threaded continuation bars. They easily accommodate long lap lengths such as those prevalent in EC2, and eliminate the need for on-site bar straightening. Headed anchors are particularly useful when it comes to minimising rebar congestion in the wall.



### Shear Load Connectors

Shear Load Connectors are used to transfer shear across expansion joints and contraction joints in concrete. They are more effective at transferring loads and allowing movement to take place than standard dowels. The range features rectangular box section sleeves to allow lateral movements in addition to longitudinal movements. A range of lockable dowels is available for temporary movement joints in post-tensioned concrete.



### Channel and Bolt Fixings

Leviat offers a wide range of channels and bolts in order to fix items such as fabricated steel masonry supports and restraints to structural frames. Cast-in channels and expansion bolts are used for fixing to the edges of concrete floors and beams.



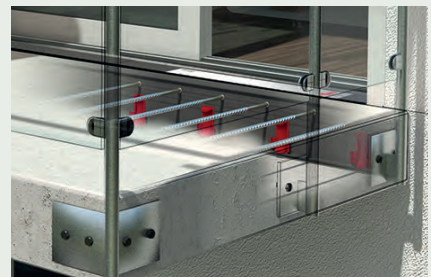
### Punching Shear Reinforcement

Punching shear reinforcement systems are used within a slab to provide additional reinforcement and prevent punching shear around columns. The systems generally consists of double-headed studs welded to flat rails, and are designed to suit the load conditions and slab depth at each column location using free-to-download calculation software.



### Structural Thermal Breaks

Structural thermal breaks minimise heat loss while maintaining structural integrity: for example at balcony locations in externally insulated and cavity insulated buildings, or at slab-to-wall connections in internally insulated buildings. As a critical structural component they transfer moment, shear, tension and compression forces. Standard solutions are available for concrete-to-concrete, steel-to-concrete and steel-to-steel interfaces.





# Leviat<sup>®</sup>

Innovative engineered products and construction solutions that allow the industry to build safer, stronger and faster.



## 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 these products, contact:

**Leviat**

President Way  
President Park  
Sheffield, S4 7UR  
United Kingdom

Tel: +44 (0) 114 275 5224

Fax: +44 (0) 114 276 8543

Email: [info.ancon.uk@leviat.com](mailto:info.ancon.uk@leviat.com)

For sales enquiries:

Email: [reinforcement.uk@leviat.com](mailto:reinforcement.uk@leviat.com)

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