

Ancon[®]

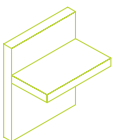
Reinforcing Bar Couplers

for the Construction Industry

Leviat[®]
A CRH COMPANY



Compliant
with
BS 8597: 2015



Structural Connections
Reinforcing Bar Couplers

UK & Ireland Edition

Imagine. Model. Make.

Leviat®

A CRH COMPANY

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.

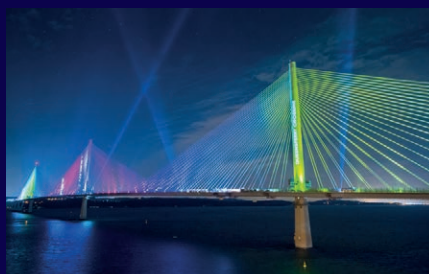
From the build of new schools, hospitals, homes and infrastructure, to the repair and maintenance of heritage structures, our engineering skills are making a difference around the world.

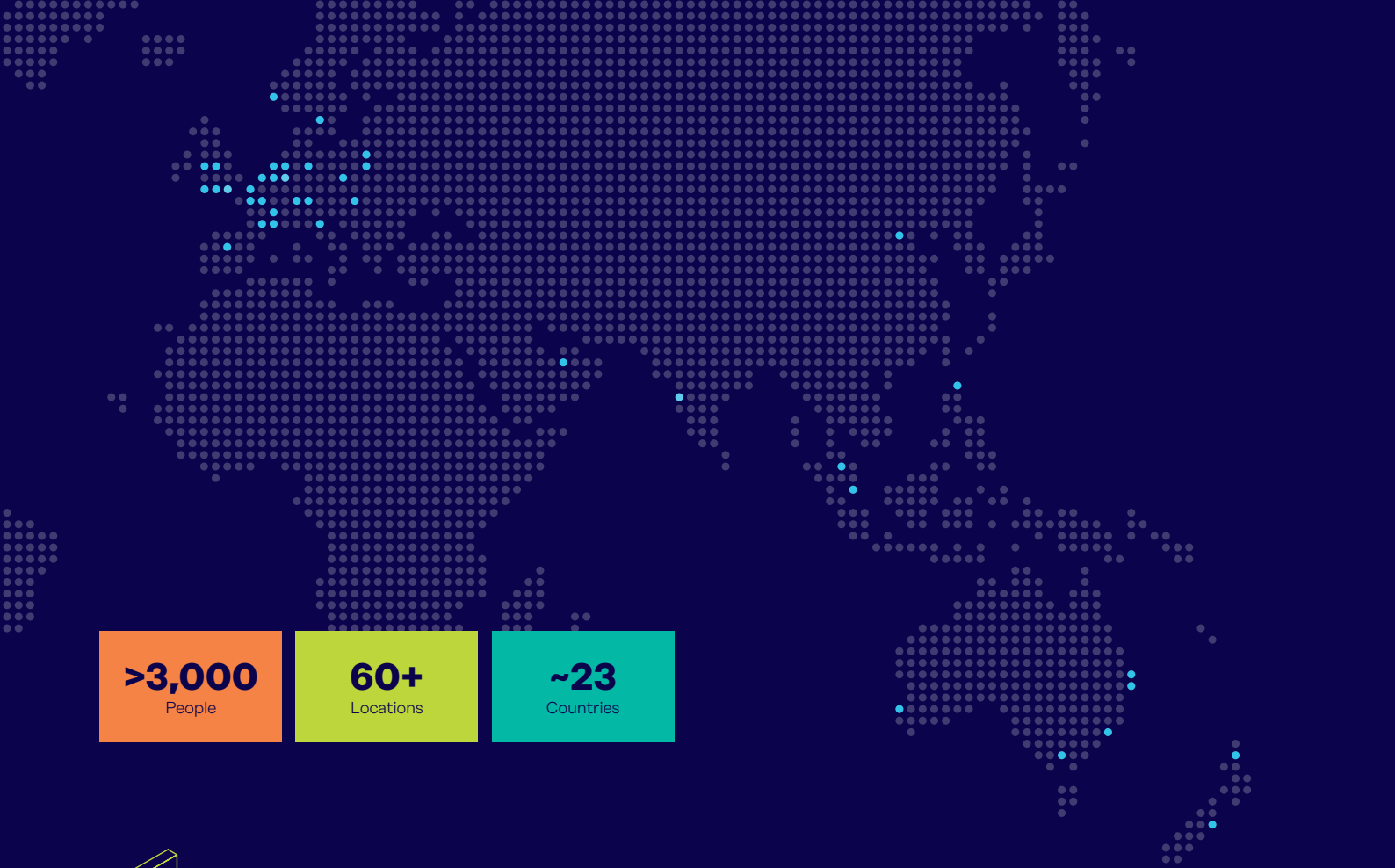
We provide technical design assistance at every stage of a project, from initial planning to installation and beyond.

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.

Leviat, a CRH company, is part of the world's leading building materials business.

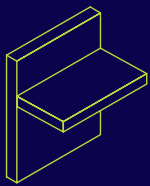




>3,000
People

60+
Locations

~23
Countries

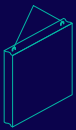


Structural Connections

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:



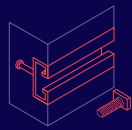
Lifting & Bracing

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.



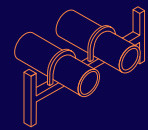
Anchoring & Fixing

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.

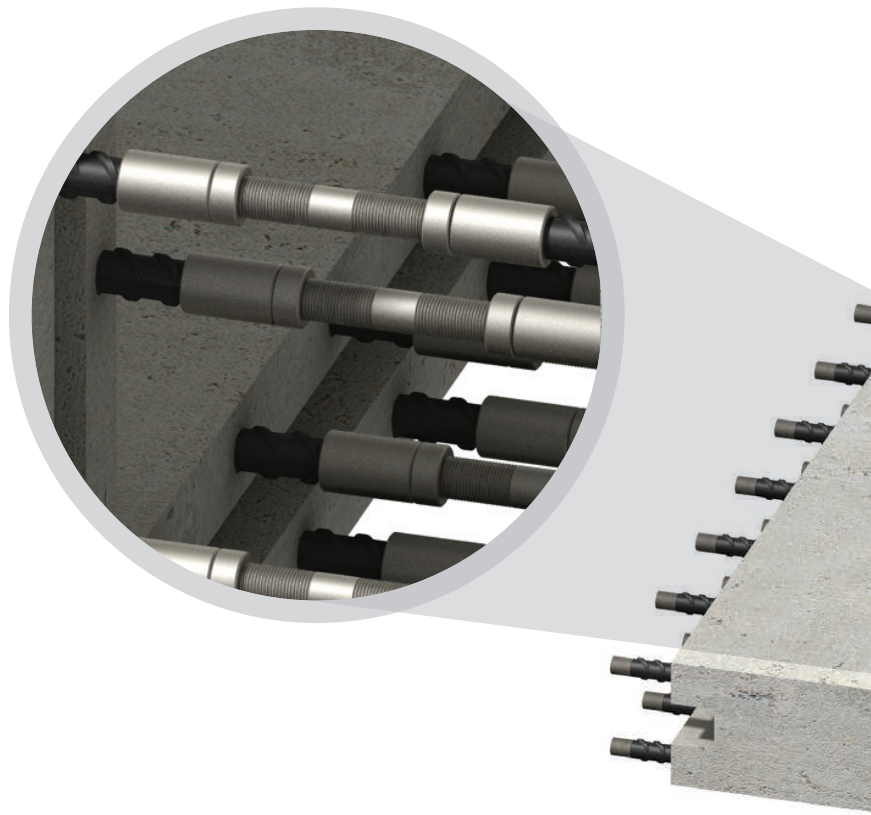
Leviat product ranges:

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

Reinforcing Bar Couplers

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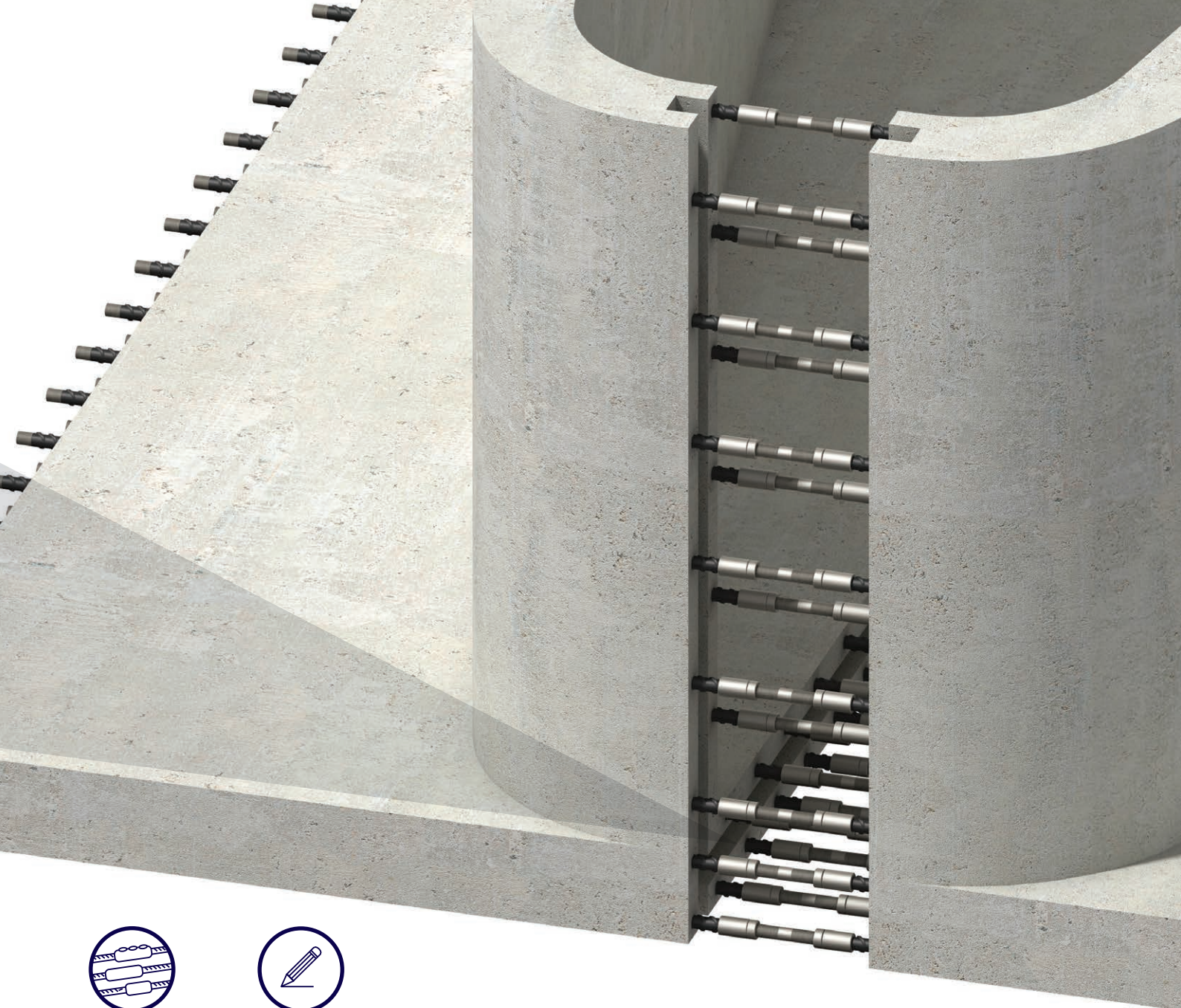
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Simplify the design and construction of concrete

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. The range of 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.



Comprehensive range



Simply design and construction



Reduce amount of reinforcement required



Dedicated sales support



Available through major rebar stockists and approved distributors



ISO 9001, ISO 14001, ISO 45001



Eurocode 2 compliant



BS 85977:2015 compliant



Technical approval TA1-B 5015 for Tapered Thread Couplers



Validate with the CARES Cloud App



Technical approval TA1-A & TA1-B 5083 for MBT Couplers



Validate with the CARES Cloud App



Technical approval TA1-A & TA1-B 5066 for CXL Couplers



Validate with the CARES Cloud App



Technical approval TA1-A & TA1-B 5096 for MBT Headed Anchors



Validate with the CARES Cloud App

Reinforcing Bar Couplers

For many years the use of mechanical couplers to join reinforcing bars has been regarded as a means of reducing the use of long bars. Engineers and contractors now recognise the benefits of using couplers to accelerate the speed of construction, increase productivity and simplify design details.

Sales Support

Our 'Structural Connections' Division provides assistance for clients who require products which are used in concrete construction. These include, but are not restricted to, reinforcing bar couplers, reinforcement continuity systems, punching shear reinforcement and shear load connectors. A dedicated team is available to offer technical advice, pricing information and guidance on the selection of the most appropriate product for a specific application. Enquiries from overseas are also dealt with by the Structural Connections team. To contact the team please email reinforcement.uk@leviat.com or call +44 (0) 114 275 5224.

UK and Ireland Edition

This literature is written for the UK and Irish market. It does not feature the full Ancon range of couplers or national approvals. For other products and bar sizes, please contact Leviaat.

Coupler Selection

The Ancon range of reinforcing bar couplers require different fixing methods. This, together with the quantity to be fixed and the location, will determine which is the most appropriate coupler for a particular situation.

Characteristic Strengths of High Yield Reinforcing Bar				
Diam. (mm)	Area (mm ²)	Grade B500 Fy (kN)	Grade B500B UTL (kN)	Grade B500C UTL (kN)
12	113.1	56.5	61.1	65.0
16	201.1	100.5	108.6	115.6
20	314.2	157.1	169.6	180.6
25	490.9	245.4	265.1	282.3
32	804.2	402.1	434.3	462.4
40	1,256.6	628.3	678.6	722.6



Tapered Thread (pages 8-14)

The Tapered Thread coupler is designed to suit the majority of applications which require the joining of reinforcing bars. The ends of the rebar are cut square and a tapered thread is cut onto the bar to suit the tapered thread coupler. The sleeve is tightened onto the threaded bar end using a calibrated torque wrench.



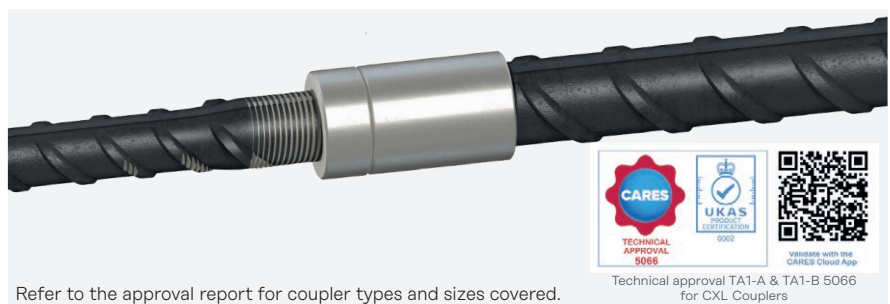
Refer to the approval report for coupler types and sizes covered.



Technical approval TA1-B 5015 for Tapered Thread Couplers

CXL (pages 16-23)

CXL couplers provide a full strength joint and are the smallest couplers in the Ancon range. They are particularly appropriate for applications where fatigue is an issue. The ends of the bars are cut square and marginally enlarged. A parallel thread is then cut onto the ends to suit the threaded sleeve. The coupler is installed using a pipe or chain wrench. Calibrated torque wrenches are not required.



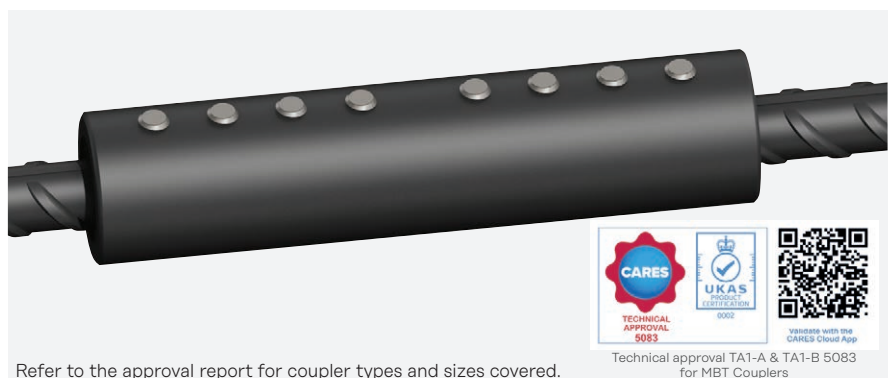
Refer to the approval report for coupler types and sizes covered.



Technical approval TA1-A & TA1-B 5066 for CXL Couplers

MBT (pages 24-27)

MBT couplers are suitable where it is not convenient to have the bar ends prepared for parallel thread or tapered thread couplers. The bars are supported within the coupler on two serrated saddles. Bars are locked in place by a series of special lockshear bolts, the heads of which shear off when the predetermined tightening torque is reached, providing a visual check of correct installation.



Refer to the approval report for coupler types and sizes covered.



Technical approval TA1-A & TA1-B 5083 for MBT Couplers

Stainless Steel Couplers (page 15)

Reinforcing Bar Couplers

Coupler Selection

Range	Tapered Thread					CXL					MBT		
	TTS Standard	TTP Pos.	TTT Trans.	TTW Weld.	TTH Anchor	Type A	Type B	Type C	Weldable	Anchor	ET Series Standard	MBT Trans.	Headed Anchor
Bar Dia. (mm)	12-40	12-40	12-40	12-40	12-40	12-40	12-40	12-40	12-40	12-40	12-40	12-40	12-40
Bar End Prep	Threaded	Threaded	Threaded	Threaded	Threaded	Threaded	Threaded	Threaded	Threaded	Threaded	No	No	No
Bar Rotation	Yes	No	Yes	Yes	No	Yes	Limited	No	Yes	No	No	No	No
Assembly Tool	Torque Wrench					Pipe Wrench					Nut Runner or Socket Wrench		
Minimum Tensile Capacity	Full strength up to 575N/mm ²					Full strength up to 575N/mm ²					Full strength up to 575N/mm ²		
Approval	UK CARES TA1-B Approval 5015*					UK CARES TA1-A & TA1-B Approval 5066*					UK CARES TA1-A & TA1-B 5083 UK CARES TA1-B 5096 for MBT Headed Anchors		

*Refer to the approval report for coupler types and sizes covered.

Availability of Couplers

Bar Diameter (mm)	12	16	20	25	32	40
Tapered Thread Standard	✓	✓	✓	✓	✓	✓
Tapered Thread Positional	✓	✓	✓	✓	✓	✓
Tapered Thread Transition	✓	✓	✓	✓	✓	✓
Tapered Thread Weldable	✓	✓	✓	✓	✓	✓
Tapered Thread Anchor	✓	✓	✓	✓	✓	✓
BT-S Stainless Steel Standard	X	✓	✓	✓	✓	✓
CXL Standard	✓	✓	✓	✓	✓	✓
CXL Transition	✓	✓	✓	✓	✓	✓
CXL Anchor	✓	✓	✓	✓	✓	✓
CXL Weldable	✓	✓	✓	✓	✓	✓
MBT ET	✓	✓	✓	✓	✓	✓
MBT Transition	✓	✓	✓	✓	✓	✓
MBT Anchor	✓	✓	✓	✓	✓	✓

Application Guide

The following table provides a guide when selecting the most appropriate couplers for specific applications. Recommendations are based upon typical usage. Please contact Leviat for further assistance on the correct selection and specification of Ancon couplers.

Application	Tapered Thread	BT-S	CXL	MBT
Wall to slab connection	✓	✓	✓	X
Wall to pre-cast beam connection	✓	✓	✓	X
Column construction	✓	✓	✓	✓
Extension / repairs to existing structures	X	X	X	✓
PC element to PC element construction	✓	✓	✓	✓
Closing of access openings	✓	✓	✓	✓
Rebar cage pre-fabrication	✓	✓	✓	✓
Hook bars to pile connection	X	X	X	✓
Fatigue applications / highway structures	X	X	✓	✓
Bar end terminations	✓	X	✓	✓

Cryogenic Couplers

The Ancon CTT range of tapered-thread couplers has been designed for use where cryogenic-grade reinforcing bar is being used. Typical construction projects include liquefied natural gas (LNG) and liquefied petroleum gas (LPG) storage tanks to EN 14620-3. Contact us for full technical details or download the product brochure online.



Reinforcing Bar Couplers

Tapered Thread

The Ancon range of Tapered Thread couplers is designed to suit the majority of applications which call for the joining of reinforcing bars. Available to suit bar sizes 12mm to 40mm, the couplers are installed quickly and easily on site without the need for specially trained personnel or specialised, expensive machinery.

The compact design of each coupler ensures suitability for use in confined situations where space is restricted or where the loss of cover must be minimised. The couplers are normally supplied fitted to the end of threaded bar, requiring only the engagement and tightening of the adjoining bar on site. In order to ensure correct installation, we specify the use of a torque wrench.

The range of Tapered Thread couplers is available through major rebar suppliers. Please contact Leviat for further details.

Standard Coupler

The Standard Tapered Thread coupler is suitable for connecting two bars of the same diameter, where one bar can be rotated. It comprises an internally threaded sleeve with two right hand threads which are tapered towards the middle of the coupler. The bar ends are square cut and a tapered thread is cut onto the bar. A nominal allowance of +25mm should be allowed per threaded bar end for square cutting the bar end.

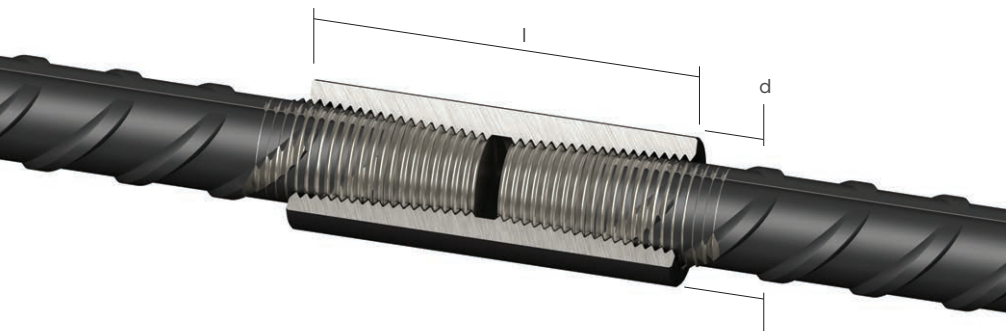
The couplers are generally torqued onto the reinforcing bar in the bar threading shop, the internal threads protected by plastic end caps. The threaded ends of the continuation bar are protected by plastic thread protectors.

Engagement of the bar within the coupler is simplified by the tapered thread design which aids alignment. When the bar is fully engaged within the coupler, the continuation bar is tightened using a torque wrench.

The Ancon Standard Tapered Thread coupler is compliant with BS 8597: 2015 Steels for the Reinforcement of Concrete. Reinforcement Couplers. Requirements and Test Methods.

They are designed to achieve failure loads in excess of 115% of the characteristic strength of grade 500 rebar.

Standard Coupler Dimensions



Bar Diameter (mm)		12	16	20	25	32	40
External Dia. (mm)	d	22	25	30	36	48	60
Coupler Length (mm)	l	58	70	74	90	112	138
Weight (kg)		0.13	0.17	0.25	0.43	0.99	1.90
Torque (Nm)		60	110	165	265	285	330
Part No.		TTS12	TTS16	TTS20	TTS25	TTS32	TTS40

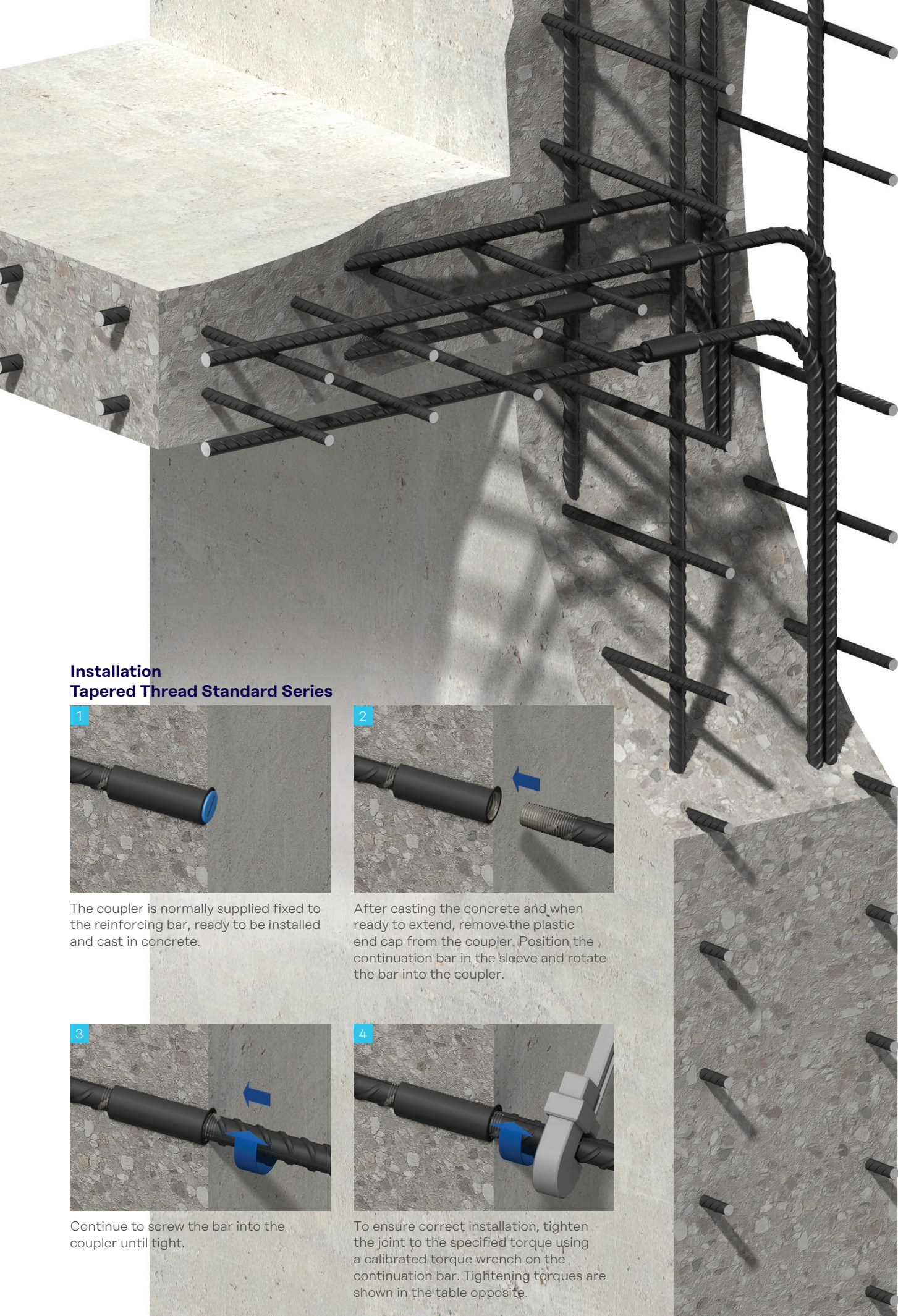
Testing and Approvals

The Standard range of Tapered Thread couplers has been tested and approved by UK CARES to show compliance with the requirements of BS EN 1992-1-1: 2004 (Eurocode 2), BS 8110 and UK CARES TA1-B.



Technical approval TA1-B 5015 for Tapered Thread Couplers

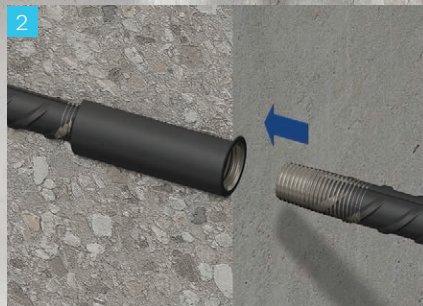




Installation Tapered Thread Standard Series



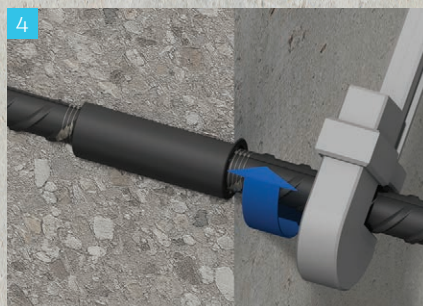
1 The coupler is normally supplied fixed to the reinforcing bar, ready to be installed and cast in concrete.



2 After casting the concrete and when ready to extend, remove the plastic end cap from the coupler. Position the continuation bar in the sleeve and rotate the bar into the coupler.



3 Continue to screw the bar into the coupler until tight.



4 To ensure correct installation, tighten the joint to the specified torque using a calibrated torque wrench on the continuation bar. Tightening torques are shown in the table opposite.

Reinforcing Bar Couplers

Positional Coupler

The Ancon Tapered Thread Positional coupler is designed to be used in applications in which neither bar can be rotated. Having a degree of adjustability, the Positional coupler can also be used as a closer between two fixed bars.

The Positional coupler comprises three components, a male section, a female section and a locking nut. The male component has an internal tapered parallel thread and an extended external parallel thread. The female component has a parallel thread and a tapered thread, both of which are internal. A locknut is used to secure the connection when the correct degree of adjustability has been achieved. All components, including the locknut must be tightened using a torque wrench.

Plastic thread protectors are used to prevent damage to the threaded bar ends and the internal threads of the couplers are protected by plastic end caps. A nominal allowance of +25mm should be allowed per threaded bar end for square cutting the bar end.

Testing & Approvals

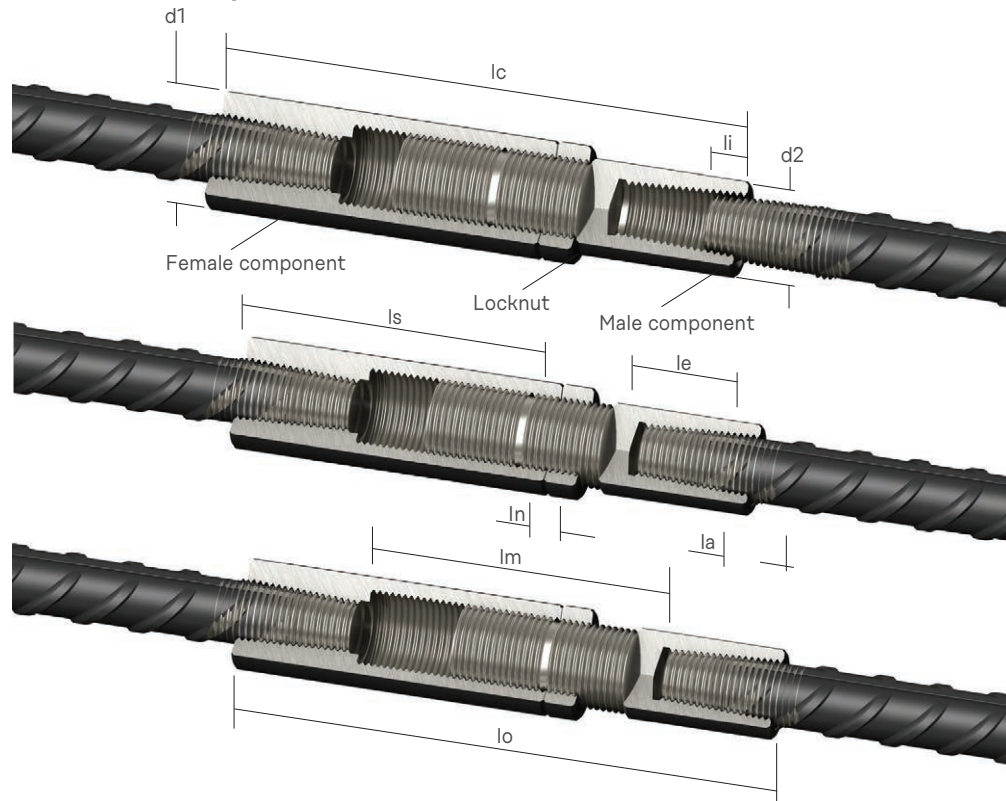
The Positional range of Tapered Thread couplers has been tested and approved by UK CARES to show compliance with the requirements of BS EN 1992-1-1: 2004 (Eurocode 2), BS 8110 and UK CARES TA1-B. This range is also compliant with BS 8597: 2015.



Validate with the CARES Cloud App

Technical approval TA1-B 5015 for Tapered Thread Couplers

Positional Coupler Dimensions



Bar Diameter (mm)		12	16	20	25	32	40
External Dia. (mm)	d1	25	30	36	48	55	70
Coupler Length (mm)	d2	22	25	30	36	48	60
Female Sleeve Length	ls	84	95	112	132	153	190
Locknut Length	ln	13	13	13	13	15	15
Closed Length	lc	138	155	180	207	243	296
Max. Open Length	lo	178	196	231	266	305	374
Bar Insertion Prior to Engagement	li	9	15	8	16	28	40
Bar Insertion Full Engagement	le	26	32	33	42	53	66
Adjustable Length	la	23	24	26	34	37	52
Max Distance between Bar Ends	lm	126	132	165	182	199	24
Weight (kg)		0.44	0.67	1.12	2.21	3.51	6.91
Coupler Torque (Nm)		60	110	165	265	285	330
Locknut Torque (Nm)		20	30	50	70	90	110
Part No.		TTP12	TTP16	TTP20	TTP25	TTP32	TTP40

Installation Tapered Thread Positional Series



The female section of the positional coupler is normally cast flush in the concrete. The installer must take care to protect the internal threads and prevent the ingress of concrete. Once cast and ready to extend, the male end complete with locknut can be screwed into place.

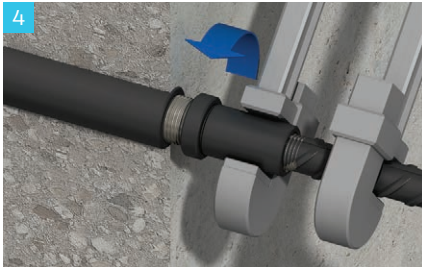


Position the continuation bar as near as possible to the coupler fitted to the cast-in bar.



Run the male component and locknut onto the continuation bar until fully engaged.

Reinforcing Bar Couplers



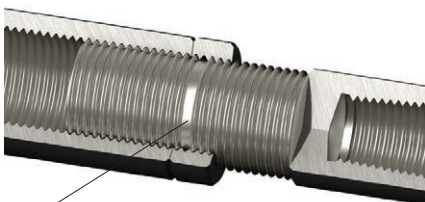
Using a torque wrench tighten the male component on the continuation bar to the specified torque, whilst holding the continuation bar with a second wrench.



Run the locknut along the threaded barrel of the male component to abut the female section. Using the torque wrench, tighten the locknut to the specified torque. Tightening torques are shown in the table opposite.

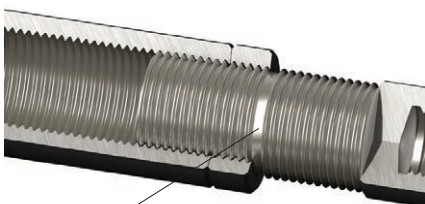
At this point the groove in the parallel threaded section of the male component must be completely covered by the locknut. If any part of the groove is visible beyond the locknut, the degree of adjustability has been exceeded and the installation is incorrect.

Correct Installation

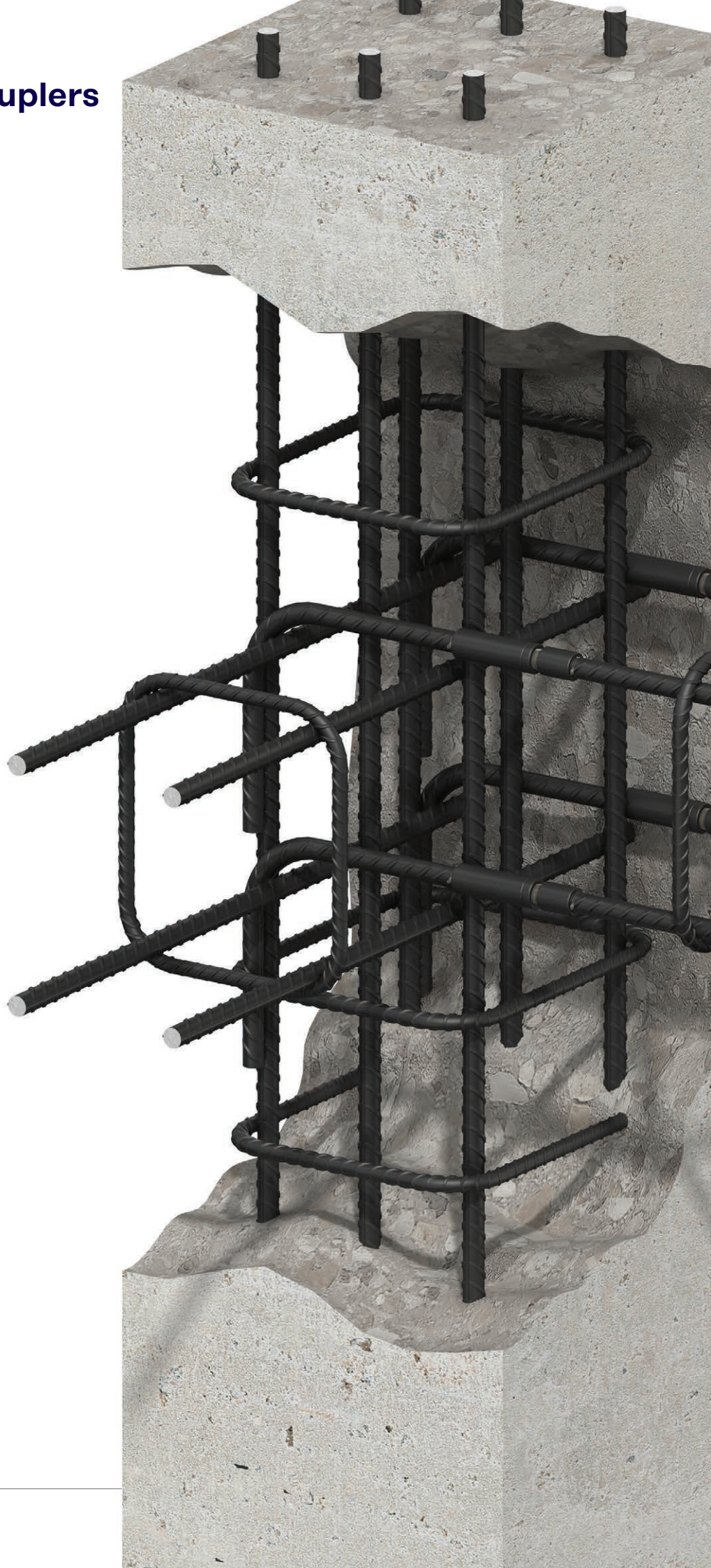


Groove is completely hidden within locknut

Incorrect Installation



Groove is protruding from locknut



Reinforcing Bar Couplers



Transition Coupler

The Ancon Tapered Thread Transition coupler is used to join reinforcing bars of different diameters where one coupler can be rotated.

With all the benefits of the Standard range, Transition couplers are designed to achieve failure loads greater than 115% of the characteristic strength of the smaller diameter grade 500 reinforcing bar.

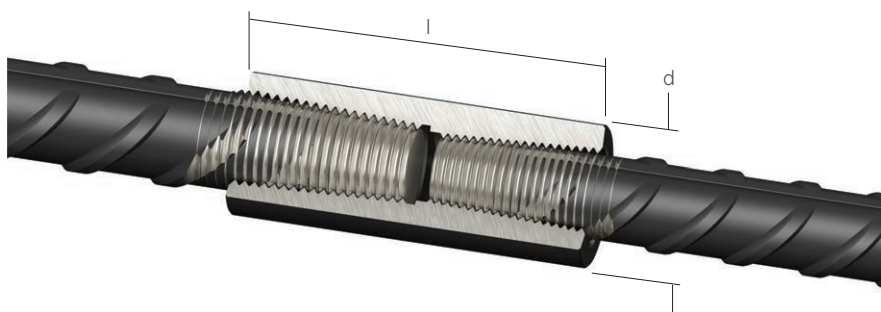
The Transition coupler comprises an internally threaded sleeve with two right hand threads both of which are tapered towards the middle of the coupler. The diameter of each thread corresponds to the appropriate bar size. A nominal +25mm should be allowed per threaded bar end for square cutting the bar end.

Testing & Approvals

The Transition range of Tapered Thread couplers has been tested and approved by UK CARES to show compliance with the requirements of BS EN 1992-1-1: 2004 (Eurocode 2), BS 8110 and UK CARES TA1-B.



Technical approval TA1-B 5015 for Tapered Thread Couplers

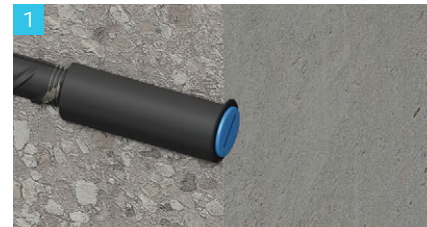


Transition Coupler Dimensions

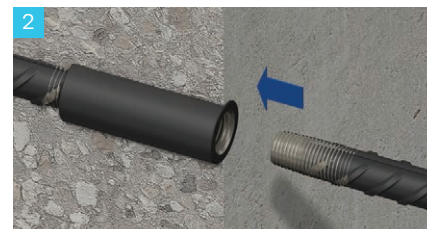
Bar Diameter (mm)		12/16	16/20	20/25	25/32	32/40
External Dia. (mm)	d	25	30	36	48	55
Coupler Length (mm)	l	22	78	90	112	138
Weight (kg)		0.21	0.30	0.48	1.11	1.62
Torque (Nm)		60/110	110/165	165/265	265/285	285/330
Part No.		TTT12/16	TTT16/20	TTT20/25	TTT25/32	TTT32/40

Installation

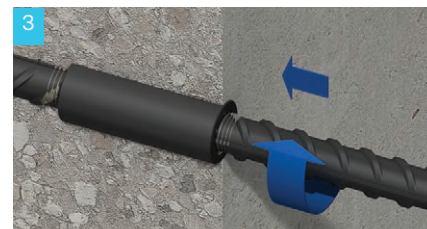
Tapered Thread Transition Series



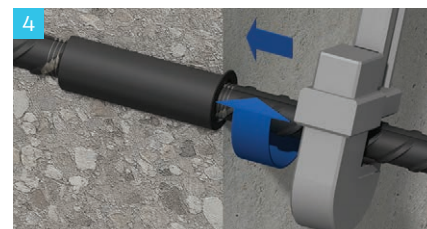
The coupler is normally supplied fixed to a reinforcing bar, ready to be installed and cast in concrete.



After casting of the concrete and when ready to extend, remove the plastic end cap from the coupler. Position the continuation bar in the sleeve and rotate the bar into the coupler.



Continue to screw the bar into the coupler until tight.



To ensure correct installation, tighten the joint to the specified torque using a calibrated torque wrench on the continuation bar. Tightening torques are shown in the table below.

Note: In the event of the coupler being supplied fixed to the smaller bar it is necessary to ensure that when tightening the larger continuation bar, the force is not transmitted through the smaller bar.

Reinforcing Bar Couplers

Tapered Thread Weldable Couplers

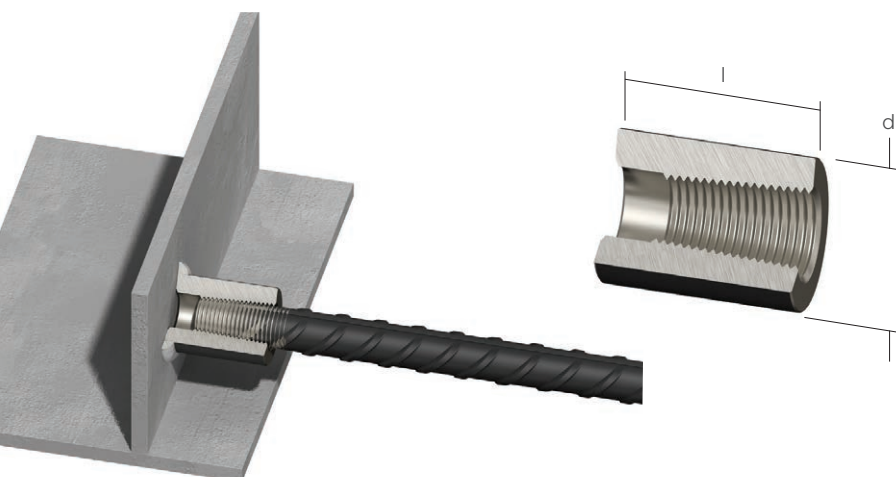
Ancon Tapered Thread Weldable couplers provide a convenient means of connecting reinforcing bars to structural steel plates or sections. Shorter than the standard coupler, it has a tapered thread at one end. The other end is welded directly to the steel. The couplers are manufactured from either Steel Grade 1045 to ASTM A576 or Steel Grade C45R to EN10083.

The Tapered Thread Weldable coupler is suitable for welding to structural steels, Grade S275 or Grade S355. The load conditions at the connection must be determined by the designer along with the type and size of weld required. Another important consideration is the type of electrode to be used, which must be matched to the properties of the plate and tube, and to the site conditions under which the welding will be undertaken. Welders should be qualified for the type of weld required. As a minimum standard, welding of the couplers shall be in accordance with the guidance provided in the following documents:

BS EN 287-1	Qualification test of welders, Fusion welding, Steels
BS EN 9606-1:2013	Qualification testing of welders, Fusion welding, Steels
BS EN ISO 15607:2003	Specification and qualification of welding procedures for metallic materials. General rules
BS EN ISO 15609-1:2004	Specification and qualification of welding procedures for metallic materials. Welding procedure specification. Arc welding
BS EN ISO 15614-1:2004 + A2:2012	Specification and qualification of welding procedures for metallic materials. Welding procedure test. Arc and gas welding of steels and arc welding of nickel and nickel alloys
BS EN 1011-1:2009 Welding	Recommendations for welding of metallic materials. General guidance for arc welding
BS EN 1011-2:2001 Welding	Recommendations for welding of metallic materials. Arc welding of ferritic steels

Carbon Equivalent Value - The Carbon Equivalent value of these couplers may typically vary between 0.50 – 0.75, where the carbon equivalent value is given by $CEV = C + (Mn)/6 + (Ni+Cu)/15 + (Cr+Mo+V)/5$

For further assistance and technical information please contact us.



Weldable Coupler Dimensions

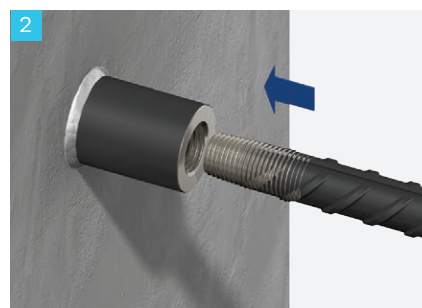
Bar Diameter (mm)		12	16	20	25	32	40
External Dia. (mm)	d	25	30	36	48	55	70
Coupler Length (mm)	l	35	42	47	57	72	89
Weight (kg)		0.11	0.18	0.28	0.63	0.97	1.97
Torque (Nm)		60	110	165	265	285	330
Part No.		TTW12	TTW16	TTW20	TTW25	TTW32	TTW40

Installation

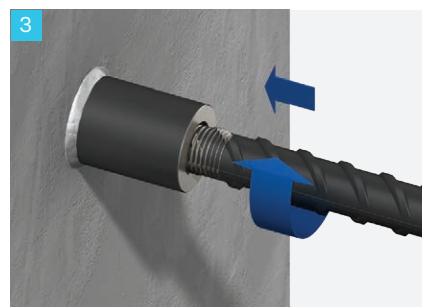
Tapered Thread Weldable Couplers



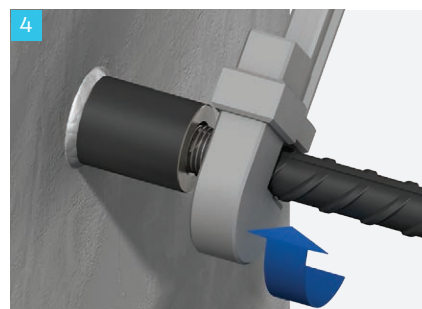
The coupler must first be welded to the steelwork.



When ready to extend, remove the plastic end cap and position the continuation bar into the sleeve.



Rotate the bar into the coupler until tight.



To ensure correct installation, tighten the joint to the specified torque using a calibrated torque wrench on the continuation bar. Tightening torques are shown in the table.

Reinforcing Bar Couplers

Tapered Thread Headed Anchors

The Tapered Thread Headed Anchor provides an effective method of achieving rebar end anchorage within concrete.

Anchorage of rebars within a concrete section is traditionally achieved by means of creating a long hooked end on the rebar. This can lead to problems when positioning the bar and can increase congestion. It can ultimately result in larger than necessary concrete sections at the location of the hooked ends.

Consisting of an oversized coupler, the Tapered Thread Headed Anchor carries the full tension load of the bar when it is bearing against the concrete. The Headed Anchor removes the need for hooked rebar and subsequently reduces congestion and simplifies bar placement. This in turn increases speed of construction and gives greater flexibility in design. Typical applications include pile caps and beam to column connections.

Tapered Thread Parallel Thread Adaptors

The TTA Tapered Thread Parallel Thread Adaptor accepts a standard metric bolt or stud.

It is particularly useful for connecting temporary fixtures to concrete. Once the fixture is removed, reinforcement continuity can be achieved in the second phase construction by using another TTA adaptor and central threaded stud. The TTA is designed to achieve failure loads in excess of 115% of the characteristic strength of grade 500 rebar and meets the requirements of BS EN 1992-1-1:2004 (Eurocode 2) and BS 8110 for mechanical splices.

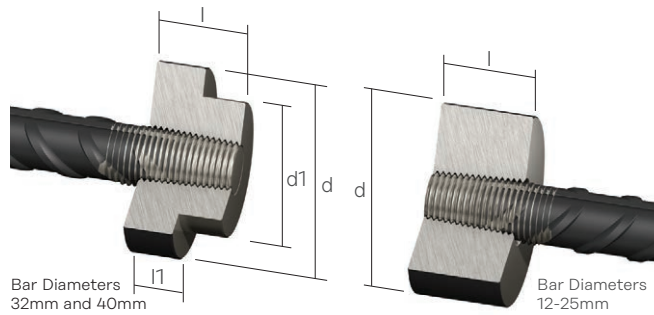
Accessories

Threading Machine

The Ancon threading machine provides a fast, simple and reliable threading operation. The machine is compact, making it completely portable and easy to locate. It is of a robust design to provide a long, low maintenance life.

Threading machines are generally located in stockists' yards. For larger projects our machines can be made available for hire. Please contact Leviat for further information.

Training on the correct usage of the threading machine is provided by our technicians.



Tapered Thread Headed Anchor Dimensions

Bar Diameter (mm)		12	16	20	25	32	40
External Dia. (mm)	d	40	50	65	80	110	135
External Dia. (mm)	d1	-	-	-	-	78	78
Coupler Length (mm)	l	27	33	35	43.5	53.5	67.5
Coupler Length (mm)	l1	-	-	-	-	28.5	42.5
Weight (kg)		0.25	0.46	0.83	1.57	2.81	5.17
Torque (Nm)		60	110	165	265	285	330
Part No.		TTH12	TTH16	TTH20	TTH25	TTH32	TTH40



Tapered Thread Parallel Thread Adaptor Dimensions

Bar Diameter (mm)		12	16	20	25	32
External Dia. (mm)	d	25	28	36	42	55
Coupler Length (mm)	l	56	68	78	95	115
Parallel Thread Length (mm)	lp	24	30	36	45	54
Parallel Thread Size	dp	M16x2.0	M20x2.5	M24x3.0	M30x3.5	M36x4.0
Weight (kg)		0.14	0.21	0.40	0.61	1.37
Torque (Nm)		60	110	165	265	285
Part No.		TTA2	TTA16	TTA20	TTA25	TTA32

Machine Consumables

The following consumables are available:

Chaser Sets

Chaser sets are available on a regrindable or disposable basis. Each set can be reground up to 3 times in order to extend cutting life. Please contact us for details.

Coolant

We recommend the use of Pencool S900 Cutting Fluid or a similar water based coolant.

Thread Protectors

Plastic sleeves are available to protect the tapered threads on reinforcing bars.

Torque Wrenches

In order to ensure the correct assembly of tapered thread couplers the use of a calibrated torque wrench is essential. Details of wrenches are included in the table below. Each Ancon wrench is supplied with a certificate of calibration.



Torque Wrenches

Torque Wrenches for Couplers and Locknuts			
Part No.	E879008	E879009	E879010
Torque (Nm)	60-285	85-350	20-90

Torque Values (Nm)

Bar Diameter (mm)	12	16	20	25	32	40
Standard Coupler	60	110	165	265	285	330
Positional Coupler	60	110	165	265	285	330
Positional Locknut	20	30	50	70	90	110

Bar Diameter (mm)	12/16	16/20	20/25	25/32	32/40
Transition Coupler	60/100	110/165	165/265	265/285	285/330

Reinforcing Bar Couplers

BT Stainless Steel Couplers

The Ancon range of couplers is predominantly designed for the joining of carbon steel bars, however when stainless steel reinforcement is being used the Ancon BT-S coupler is ideal. These couplers are manufactured from 1.4462 duplex stainless steel for optimum strength and corrosion resistance. They are suitable for projects of any size where the strength of the connection is required to match or exceed that of the parent bars, including large scale, high volume coupler applications.

The end of each bar to be joined is cut square and enlarged by cold forging. This increases the core diameter of the bar to ensure that the joint is stronger than the bar.

Parallel metric threads are formed onto the bar ends. The threaded end can

be proof tested to a force equal to the characteristic yield strength of the bar.

The couplers are suitable for splicing BS 6744 Grade 500 stainless steel reinforcing bars.

For further information please contact us.



BT-S Couplers

Bar Diameter (mm)	16	20	25	32	40
External Dia. (mm)	30	35	42	52	65
Coupler Length (mm)	40	48	60	72	90
Thread Form	M20 x 2.5	M24 x 3.0	M30 x 3.5	M36 x 4.0	M45 x 4.5
Weight (kg)	0.14	0.22	0.37	0.72	1.37
Coupler Reference	BTS16	BTS20	BTS25	BTS32	BTS40

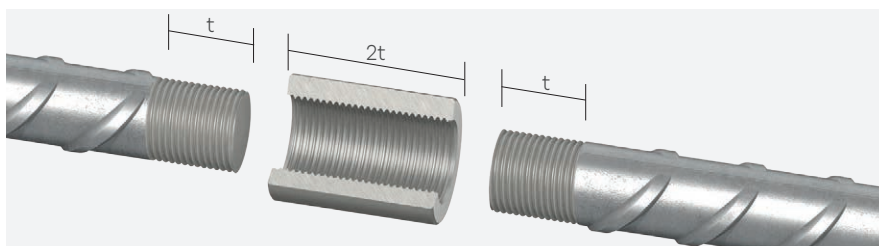
BT-S Locknuts

Bar Diameter (mm)	16	20	25	32	40
External Dia. (mm)	30	35	42	52	65
Locknut Length (mm)	13	16	20	24	30
Thread Form	M20 x 2.5	M24 x 3.0	M30 x 3.5	M36 x 4.0	M45 x 4.5
Weight (kg)	0.05	0.07	0.12	0.24	0.46
Coupler Reference	BTS16LN	BTS20LN	BTS25LN	BTS32LN	BTS40LN

Type A connections use an internal plastic cap to protect the thread in the coupler. In cases such as deep concrete pours, additional protection may be required to prevent the ingress of concrete fines.

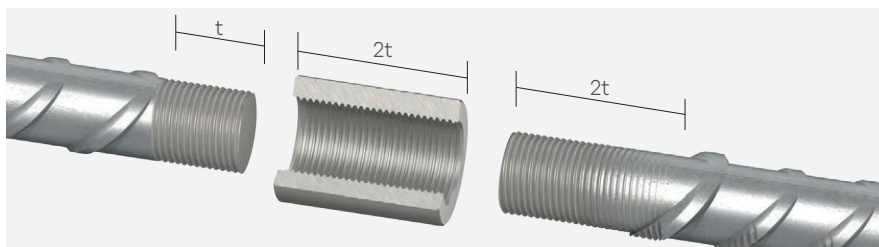
BT Stainless Steel Type A

The Type A connection utilises an internally threaded coupler to join two cold-forged and threaded bar ends together. Each bar end is threaded to half the length of the coupler. Type A connections are used where the continuation bar can be rotated.



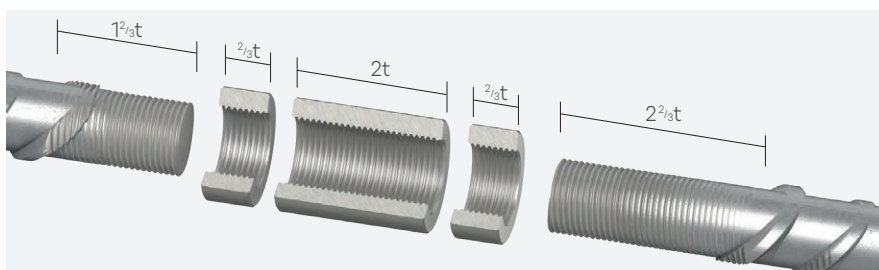
BT Stainless Steel Type B

The Type B connection utilises the same coupler as for the Type A, the difference being one bar end is threaded for the full coupler length. Type B connections are used where the continuation bar can be rotated for no more than one revolution.



BT Stainless Steel Type C

The Type C connection utilises the same coupler as for the Type A, together with locknuts and longer threads to the bar ends. Type C connections are used where the continuation bar cannot be rotated.



Reinforcing Bar Couplers

CXL

CXL couplers produce a full strength joint yet they are among the smallest in the Ancon range, best suited to large scale projects requiring a high volume of couplers.



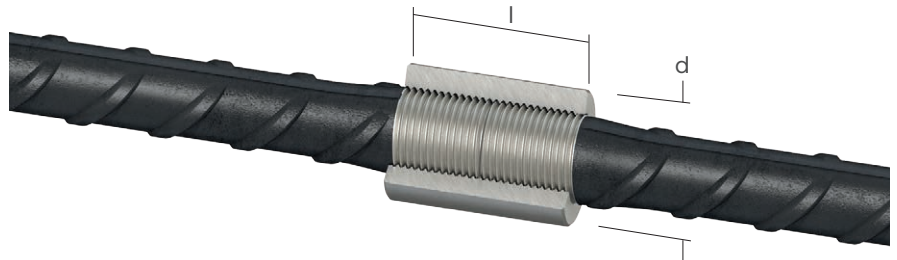
The end of each bar to be joined is cut square and enlarged by cold forging. This increases the core diameter of the bar to ensure that the joint is stronger than the bar.

Parallel metric threads are cut onto the enlarged end. The threaded end is then proof tested to a force equal to the characteristic yield strength of the bar. A nominal allowance of +50mm per threaded bar end should be made for cutting square and cold forging.

The threaded ends of the bars are protected by an external plastic sheath. Couplers, which are usually supplied attached to the bar, have their internal threads protected by an internal plastic end cap. For certain applications, especially where CXL is being used in

deep pours, the coupler end caps may not prevent the ingress of concrete fines. For these applications, further protection may be required.

CXL couplers are also available to join bars of different diameters. For further information please contact us.

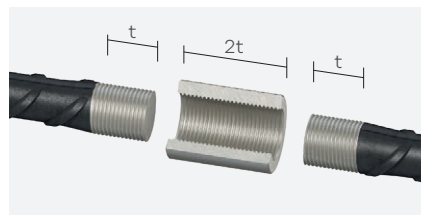


CXL Dimensions

Bar Diameter (mm)		12	16	20	25	32	40
External Dia. (mm)	d	22	30	35	42	55	65
Coupler Length (mm)	l	28	40	48	60	72	90
Thread Size (mm)		M14	M20	M24	M30	M36	M45
Thread Pitch		2.0	2.5	3.0	3.5	4.0	4.5
Weight (kg)		0.04	0.09	0.16	0.32	0.58	1.13
Part No Type A		CXL12/A	CXL16/A	CXL20/A	CXL25/A	CXL32/A	CXL40/A
Part No Type B		CXL12/B	CXL16/B	CXL20/B	CXL25/B	CXL32/B	CXL40/B
Part No Type C		-	CXL16/C	CXL20/C	CXL25/C	CXL32/C	CXL40/C

CXL Type A

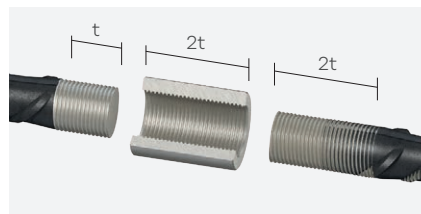
The CXL Type A system utilises internally threaded couplers with a single right hand thread and is suitable for applications where the continuation bar can be rotated. The ends of the bars are upset and threaded for half the length of the coupler.



Technical approval TA1-A & TA1-B 5066 for CXL Couplers

CXL Type B

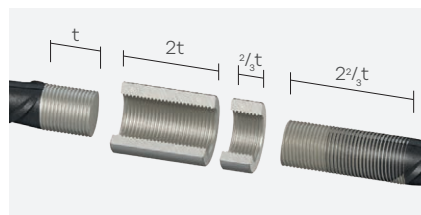
The CXL Type B uses the same coupler as the Type A system, but one bar is threaded for a full coupler length. It is used for applications where it is difficult but not impossible to rotate the continuation bar.



Technical approval TA1-A & TA1-B 5066 for CXL Couplers

CXL Type C

The CXL Type C system has an additional locknut and is used where the continuation bar cannot be rotated. The continuation bar is threaded for the full coupler length plus the length of the locknut.



Technical approval TA1-A & TA1-B 5066 for CXL Couplers

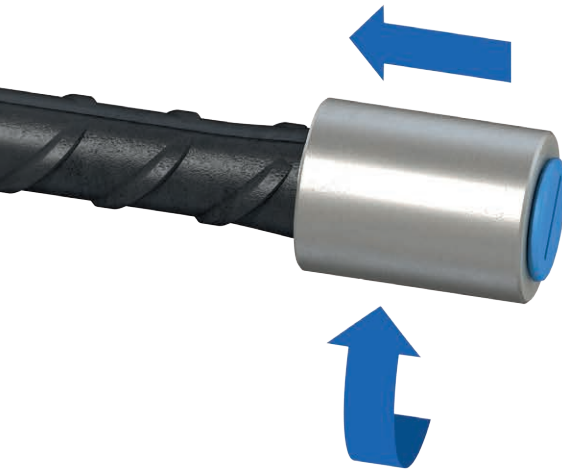
Reinforcing Bar Couplers

Installation

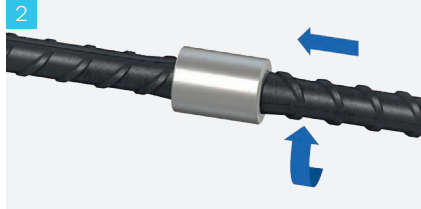
The CXL Type A System

1

Screw the coupler to the rear of the thread on the fixed bar and lock tight. The bar end should be central within the coupler.



2



Remove the plastic cap from the coupler. Position and rotate the continuation bar in the coupler.

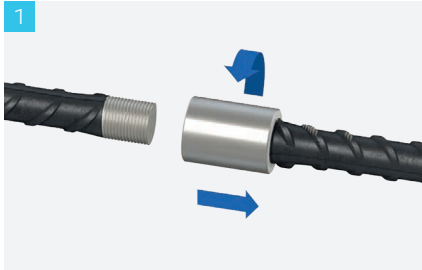
3



Tighten the joint using a wrench on the continuation bar. After tightening there should be no more than 2-4mm of thread exposed, depending on the diameter of the rebar.

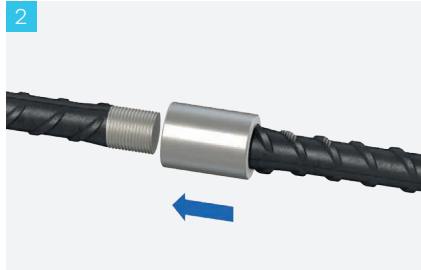
The CXL Type B System

1



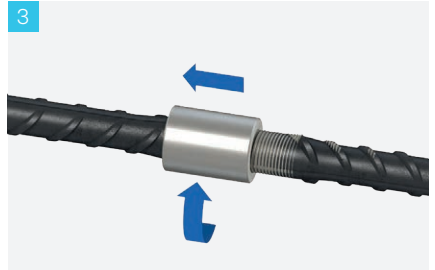
Screw the coupler to the rear of the thread on the continuation bar.

2



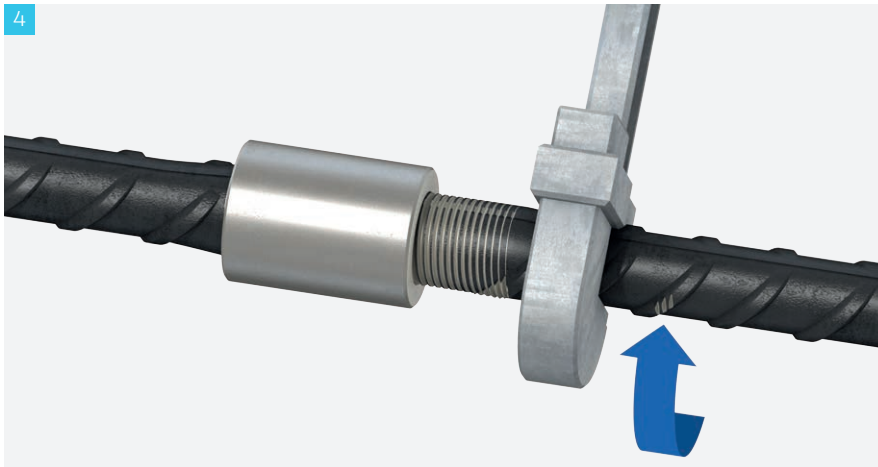
Position the continuation bar with the coupler against the end of the first bar.

3



Rotate the coupler from the continuation bar to engage against the rear of the thread on the opposing bar and lock tight.

4

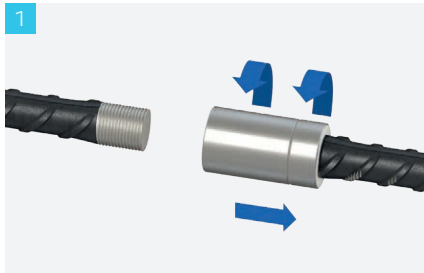


Using a wrench, rotate the continuation bar to lock the two bar ends against each other within the coupler. After tightening, the length of exposed thread should be no more than half of the coupler length plus 2-4mm depending on the diameter of the rebar.

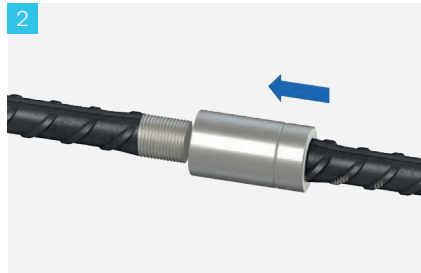


Reinforcing Bar Couplers

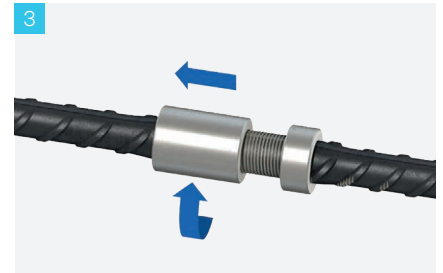
The CXL Type C System



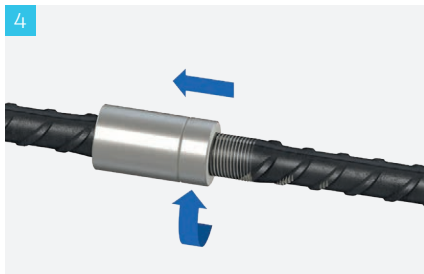
1 Screw the locknut followed by the coupler to the rear of the thread on the continuation bar.



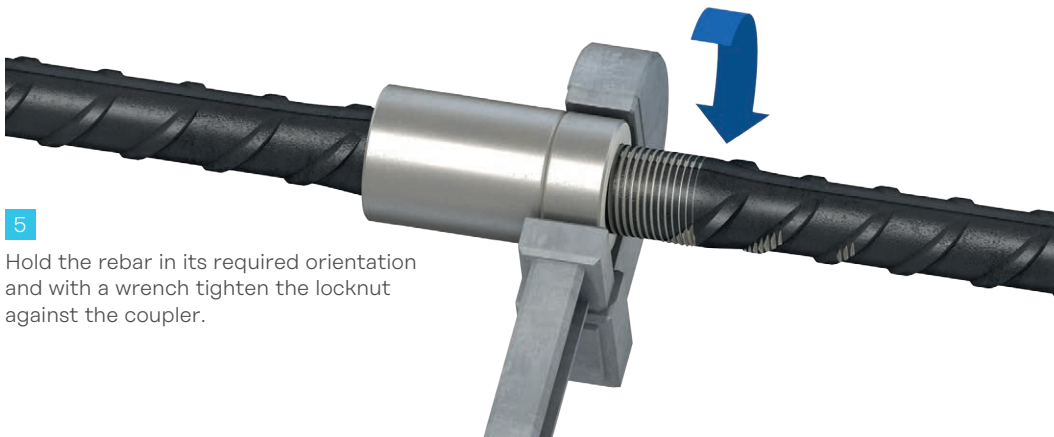
2 Position the continuation bar with the coupler against the end of the first bar.



3 Rotate the coupler from the continuation bar to engage against the rear of the thread on the opposing bar and lock tight.



4 Rotate the locknut along the continuation bar to abut the coupler.



5 Hold the rebar in its required orientation and with a wrench tighten the locknut against the coupler.

CXL Transition Connections*

CXL couplers can be used to connect reinforcing bars of differing diameters, developing the full tensile strength of the smaller diameter bar together with the enhanced fatigue resistance.

CXL threads are used to connect the two bars for all types of transition connections. The thread on the larger bar is undercut to match the thread size and pitch for the smaller bar. For Type A and Type B connections a standard CXL coupler is used; Type A connections use standard thread lengths for both bars corresponding to half the length of the coupler, whereas Type B connections use a standard thread length for the larger bar and a thread length corresponding to the full coupler length for the smaller bar.

For Type C connections a standard CXL coupler and a single locknut are used; a standard thread length is used for the larger bar and an extended thread corresponding to the full coupler length plus the length of the locknut is used for the smaller bar.

The thread is such that the cross-sectional area of the bar end is not reduced beyond that of the smaller diameter bar, thus ensuring the strength of the connection matches or exceeds that of the smaller bar.

As with CXL connections for matching bar sizes, the enlarged and thread-cut end of the smaller bar is proof-loaded to a force equal to the characteristic yield strength of the rebar. It is the combination of these processes that provide the connection with an enhanced resistance.

Type A connections use an internal plastic cap to protect the thread in the coupler. In cases such as deep concrete pours additional protection may be required to prevent the ingress of concrete fines.

Reinforcing Bar Couplers

CXL Transition Couplers

Bar Diameter (mm)		12/16	16/20	20/25	25/32	32/40
External Dia. (mm)	d	22	30	35	42	56
Coupler Length (mm)	2t	28	40	48	60	72
Thread Size (mm)		M14	M20	M24	M30	M36
Thread Pitch		2.0	2.5	3.0	3.5	4.0
Weight (kg)		0.04	0.09	0.16	0.32	0.58
Part No. A		CXL12/A	CXL16/A	CXL20/A	CXL25/A	CXL32/A
Part No. B		CXL12/B	CXL16/B	CXL20/B	CXL25/B	CXL32/B
Part No. C		CXL12/C	CXL16/C	CXL20/C	CXL25/C	CXL32/C

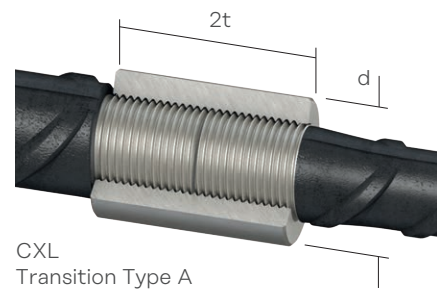
Other sizes available on request. Contact us for more details. Thread incompatible with standard metric bolts/studs.

CXL Transition Locknuts

Bar Diameter (mm)		12/16	16/20	20/25	25/32	32/40
External Dia. (mm)	d	22	30	35	42	55
Locknut Length (mm)	2t	12	13	16	20	24
Thread Size (mm)		M14	M20	M24	M30	M36
Thread Pitch		2.0	2.5	3.0	3.5	4.0
Weight (kg)		0.02	0.04	0.05	0.10	0.19
Part No.		CXL12LN	CXL16LN	CXL20LN	CXL25LN	CXL32LN

Other sizes available on request. Contact us for more details. Thread incompatible with standard metric bolts/studs.

* This detail is to be used with micro-alloy / through hardened rebar only, as threading directly onto rebar produced using the quench and temper or thermo-mechanically-treated methods may result in a disproportionate loss of strength.



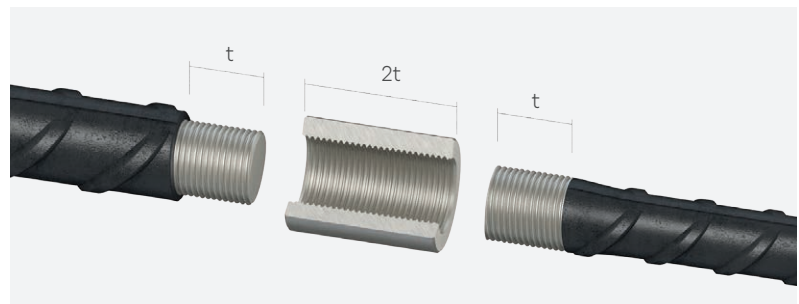
CXL Transition Continuation Bars

Please ensure you specify the larger bar for a smaller thread. Eg. a 16mm bar is required for a 12mm thread which would be a CXL 16/12.

Continuation bars available are: CXL 16/12, CXL 20/16, CXL 25/20, CXL 32/25 and CXL 40/32.

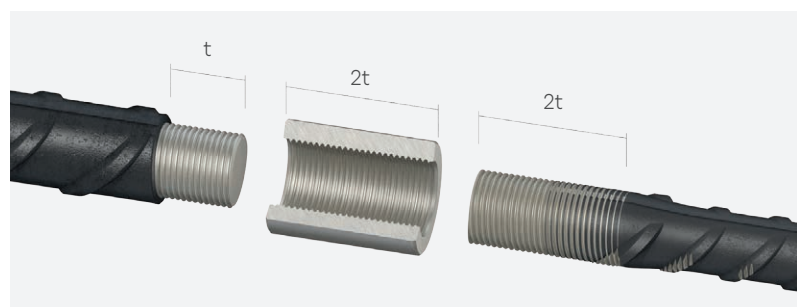
CXL Transition Type A

The Type A connection utilises an internally threaded coupler with a single right hand thread and is suitable for applications where the continuation bar can be rotated. The thread on the larger bar is undercut to match the thread size and pitch for the smaller bar. Both bars use standard thread lengths corresponding to half the length of the coupler.



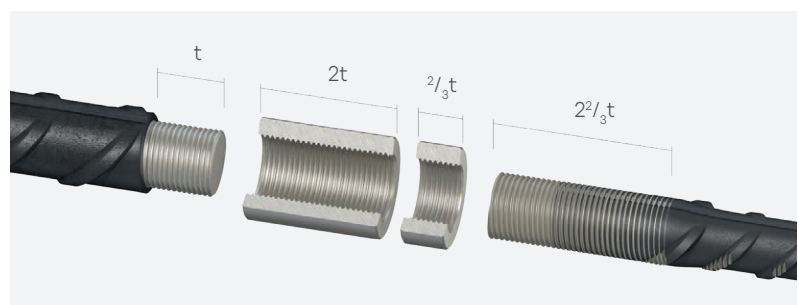
CXL Transition Type B

The Type B connection utilises the same coupler as for Type A, but the smaller bar is threaded for a full coupler length. The larger bar has a standard thread length and is undercut to match the thread size and pitch for the smaller bar. It is usual to rotate the coupler from the smaller diameter bar onto the larger. Type B connections are used where the continuation bar can be rotated for no more than one revolution.



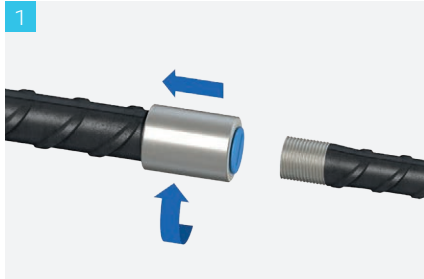
CXL Transition Type C

The Type C connection has an additional locknut. The smaller bar is threaded for the full coupler length plus the length of the locknut. The larger bar has a standard thread length and is undercut to match the thread size and pitch for the smaller bar. It is usual to rotate the coupler from the smaller diameter bar onto the larger. Type C connections are used where the continuation bar is impossible to rotate.

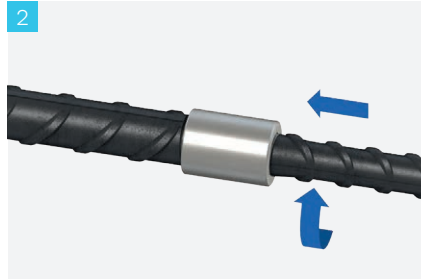


Reinforcing Bar Couplers

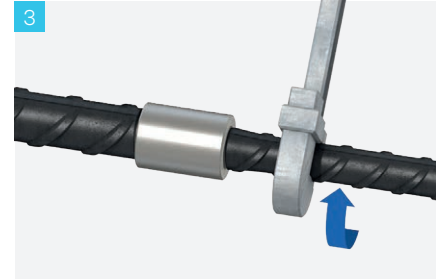
Installation CXL Transition Type A



1 Run the coupler to the end of the thread on the fixed bar.

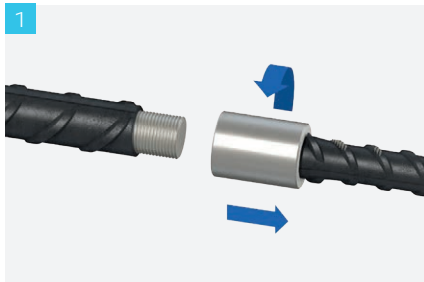


2 Remove the plastic cap from the coupler. Position and rotate the continuation bar in the coupler.

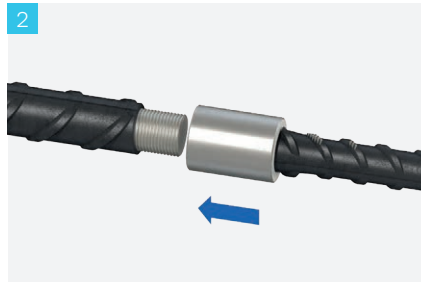


3 Tighten the joint using a wrench on the continuation bar.

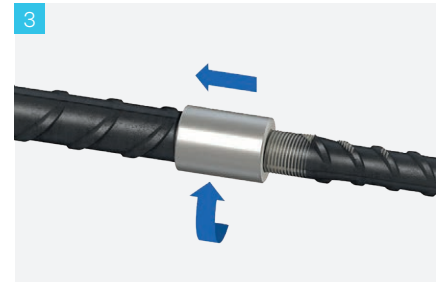
CXL Transition Type B



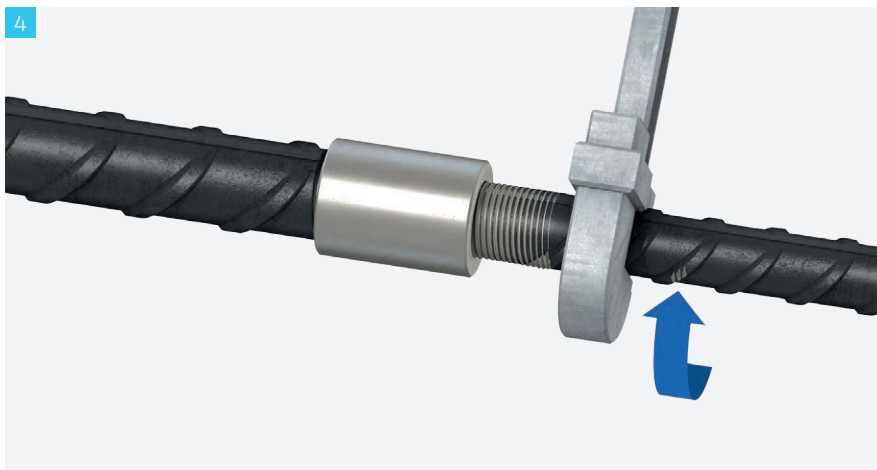
1 Screw the coupler to fully engage on the long thread of the smaller diameter bar.



2 Position the continuation bar with the coupler against the end of the larger diameter bar.



3 Rotate the coupler from the smaller diameter bar to engage against the rear of the thread on the opposing bar and lock tight with a wrench.

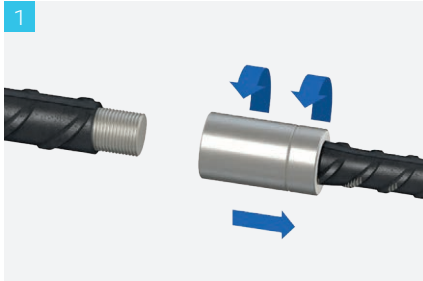


4 Using a wrench, rotate the continuation bar to lock the two bar ends against each other within the coupler. After tightening, the length of exposed thread should be no more than half of the coupler length plus 2-4mm depending on the diameter of the rebar.

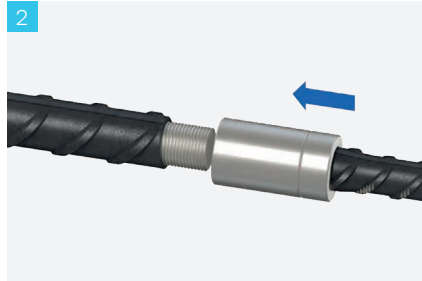


Reinforcing Bar Couplers

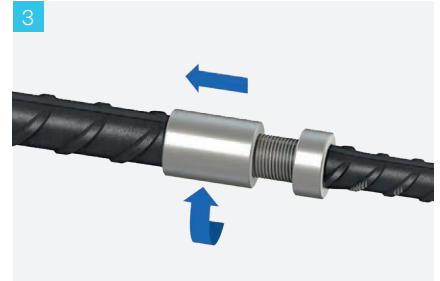
Installation CXL Transition Type C



1 Screw the locknut to engage on the rear of the thread on the larger diameter bar and tighten using a wrench.



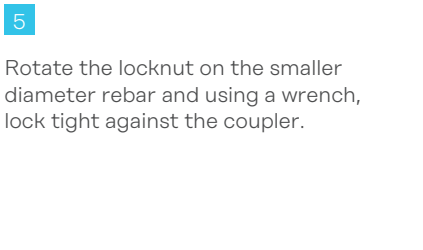
2 Screw the locknut followed by the coupler to fully engage on the long thread of the smaller diameter bar.



3 Position the smaller diameter bar with the coupler against the end of the larger diameter bar.



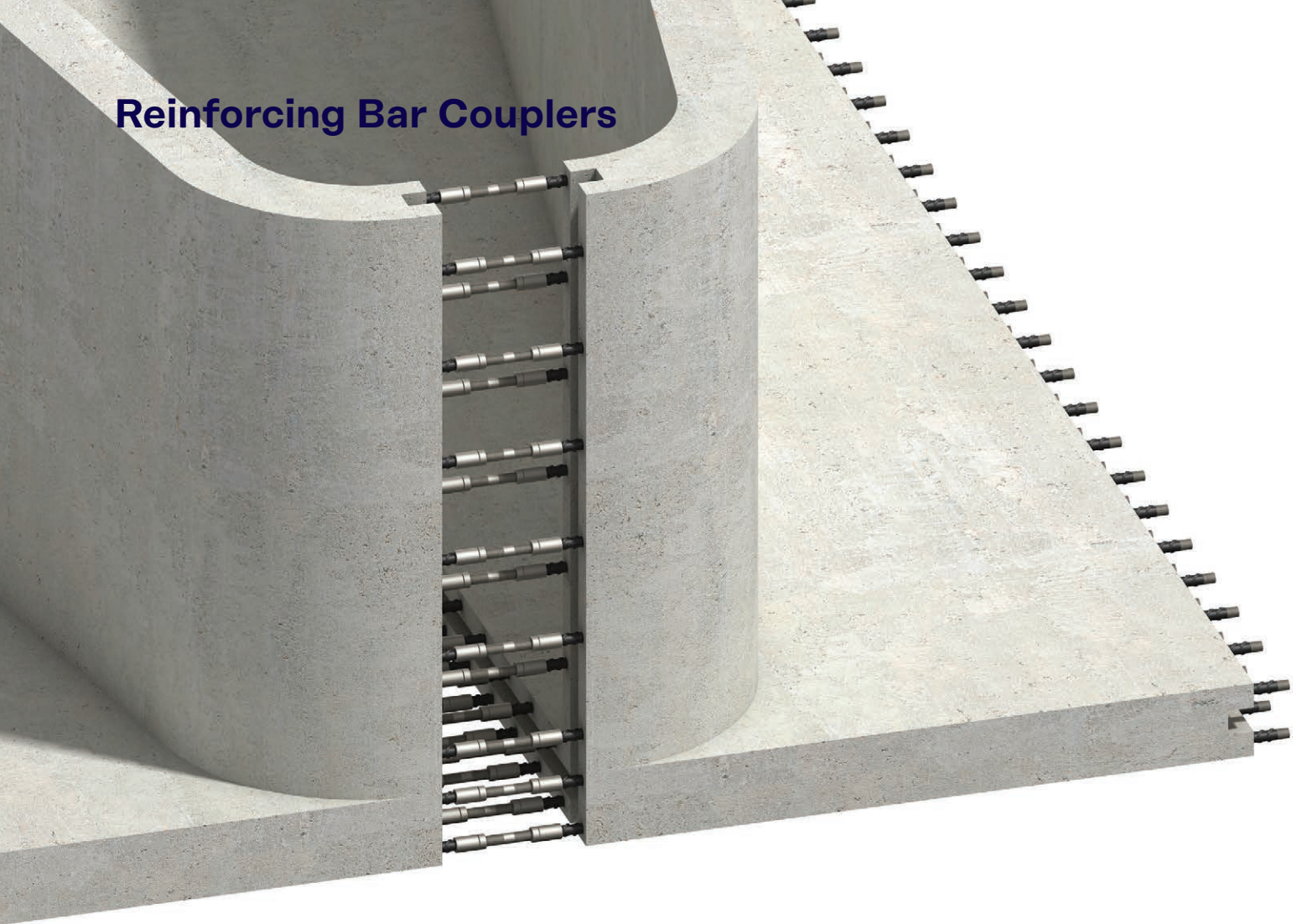
4 Rotate the coupler from the smaller diameter bar and using a wrench, lock tight against the locknut on the larger diameter rebar.



5 Rotate the locknut on the smaller diameter rebar and using a wrench, lock tight against the coupler.



Reinforcing Bar Couplers



CXL Headed Anchor

The Ancon CXL Headed Anchor provides an effective and proven method of achieving rebar end anchorage within concrete.

Anchorage of reinforcement within a concrete section is traditionally achieved by means of creating a long hooked end to the bar. These hooks can lead to problems when positioning the bar and can increase congestion. This can ultimately result in larger than necessary concrete sections at the location of hooked ends.

The CXL Headed Anchor is essentially an oversized coupler capable of carrying the full tension load of the bar when it bears against the concrete in which it is cast. The Headed Anchor removes the need for the hooked rebar end and can subsequently reduce congestion, simplifying bar placement. This in turn increases the speed of construction and gives greater flexibility in design.

Typical applications include pile caps and beam-to-column connections.

To attach the Headed Anchor to the rebar, it is first necessary to enlarge the bar end and then form the thread on the enlarged bar end using a thread cutting machine. As with the CXL coupler connection, the thread is such that the cross-sectional area of the bar end is not reduced, thus ensuring the tensile strength of the connection matches or exceeds that of the parent bar.

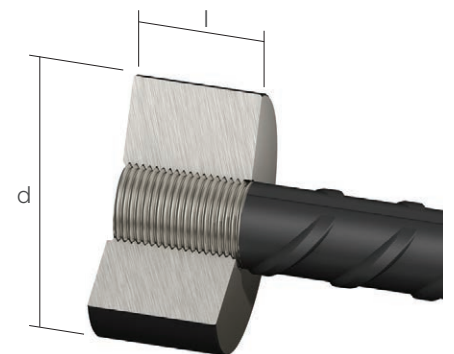
CXL Headed Anchor

Bar Diameter (mm)	16	20	25	32	40
External Diameter (mm) d	52	65	80	110	135
Anchor Thickness (mm) l	20	24	30	36	45
Thread Size	M20	M24	M30	M36	M45
Anchor Weight (kg)	0.27	0.56	1.03	2.43	4.55
Header Anchor Reference	CXL16HA	CXL20HA	CXL25HA	CXL32HA	CXL40HA

Other sizes are available on request. Contact us for more details.

Concrete Strength

When the above sizes of CXL Headed Anchors are used, the compressive strength of the concrete shall not be less than strength grade C32/40 (cylinder/cube). Where a lower concrete stress is required, Headed Anchors can be supplied to a larger diameter to suit the specific application.



Reinforcing Bar Couplers

CXL Welded Couplers

CXL welded couplers provide a convenient means of connecting reinforcing bars to structural steel plates or sections. One end is internally threaded with the CXL thread form; the other end is prepared for welding to the steel.

The coupler is suitable for welding to structural steels EN BS 10025, Grade S275 (43A) or Grade S355 (Grade 50B), however the load conditions at the connection must be determined by the designer responsible for the structural element, along with the type and size of weld required.

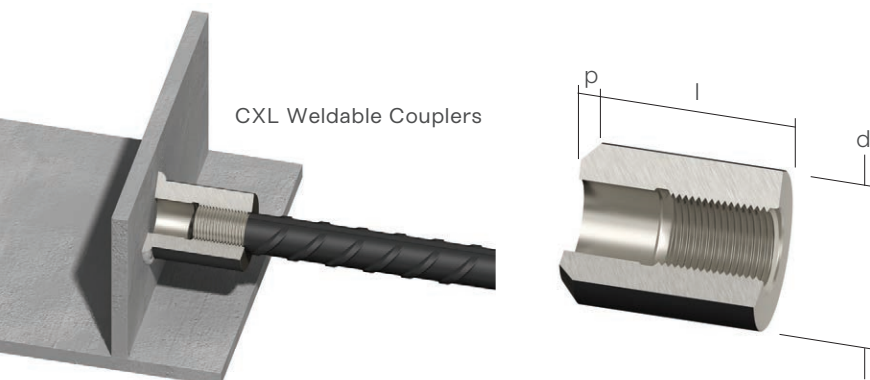
Other important considerations include the type of electrode to be used, which must be matched to the properties of the plate and tube, and to the site conditions under which the welding will be undertaken. Welders should be qualified for the type of weld required.

As a minimum standard, welding of the couplers shall be in accordance with the guidance provided in the following documents:

BS EN ISO 15614-1:2004+A2:2012	Specification and qualification of welding procedures for metallic materials. Welding procedure test. Arc and gas welding of steels and arc welding of nickel and nickel alloys
BS EN 287-1	Qualification testing of welders, fusion welding, steels
BS EN 9606-1:2013	Specification and qualification of welding procedures for metallic materials. General rules BS EN ISO 15609-1:2004 Specification and qualification of welding procedures for metallic materials. Welding procedure specification. Arc welding
BS EN 1011-1:2009 Welding.	Recommendations for welding of metallic materials. General guidance for arc welding
BS EN 1011-2:2001 Welding.	Recommendations for welding of metallic materials. Arc welding of ferritic steels

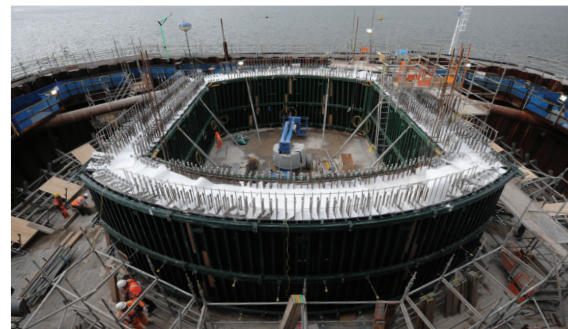
CXL Welded Couplers are manufactured from either Steel Grade 1045 to ASTM A576 or Steel Grade C45R to EN10083.

Carbon Equivalent Value - The Carbon Equivalent value of these couplers may typically vary between 0.50 - 0.75, where the carbon equivalent value is given by $CEV = C + (Mn)/6 + (Ni+Cu)/15 + (Cr+Mo+V)/5$



CXL Weldable Couplers

Bar Diameter (mm)	16	20	25	32	40
Coupler Diameter (mm) d	33	38	48	57	72
Coupler Length (mm) l	40	48	60	72	90
Thread Size	M20	M24	M30	M36	M45
Weld Preparation (mm)	5.5	5.0	5.5	11.0	12.5
Coupler Weight (kg)	0.18	0.30	0.58	0.96	1.91
Coupler Reference	CXL16W	CXL20W	CXL25W	CXL32W	CXL40W



CXL Type A and Type C Couplers, Queensferry Crossing, UK (Photo courtesy of Transport Scotland)

Reinforcing Bar Couplers

MBT

The 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.

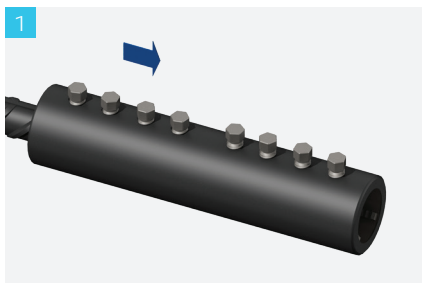
In all cases heavy duty sockets should be used. When the pre-determined tightening torque for the bolts is reached, the heads shear off leaving the top of the installed bolt slightly proud of the coupler. This provides an instant visual check of correct installation.

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.

Installation MBT ET Series



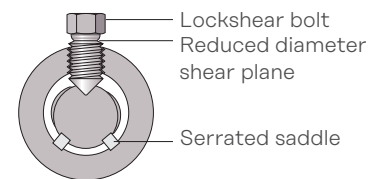
Place the coupler over the end of the bar to half the coupler length +/- 6mm and finger tighten the lockshear bolts onto the bar. Check the alignment and make any necessary adjustments.

Testing & Approvals

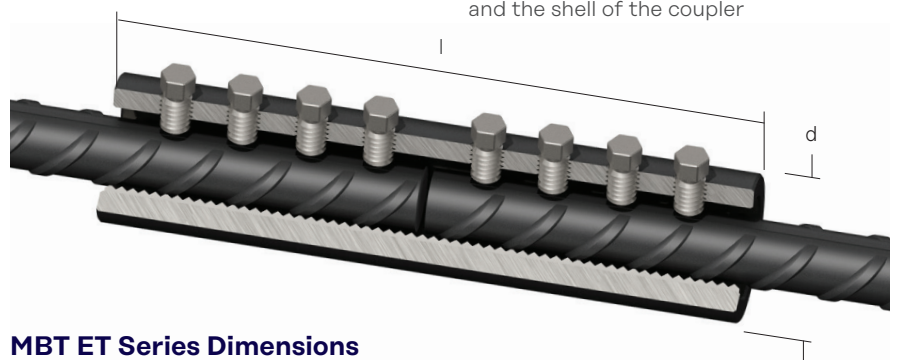
Full destructive tests are carried out on selected couplers from our stocks. MBT couplers are designed and manufactured in accordance with BS EN ISO 9001. The most common size of ET series couplers are approved to UK CARES TA1-A & TA1-B 5083 and in accordance with



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. This range also complies with BS 8597: 2015.



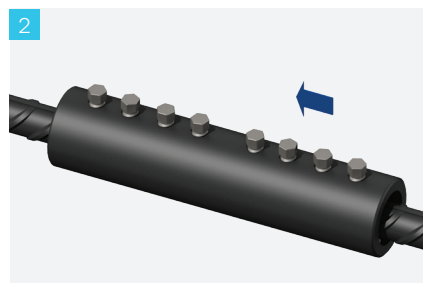
Section showing the embedment of the lockshear bolts and saddles into the bar and the shell of the coupler



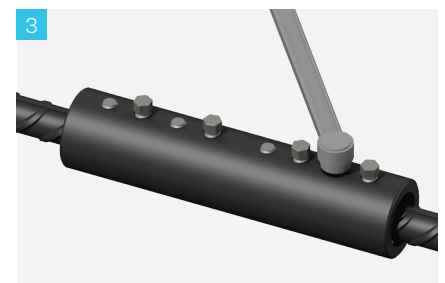
MBT ET Series Dimensions

Bar Diameter (mm)		12	16	20	25	32	40
External Dia. (mm)	d	33.4	42.2	48.3	54.0	71.0	81.0
Total Length (mm)	l	140	160	204	258	312	484
Socket Size A/F (ins)		1/2	1/2	1/2	5/8	5/8	3/4
No. of Bolts		6	6	8	8	10	14
Approx Weight (kg)		0.72	1.25	1.96	3.00	6.50	11.30
Torque (Nm)		55	108	108	275	360	525
Part No.		ET12	ET16	ET20	ET25	ET32	ET40

Note: Other sizes are available on request. Contact us for more details.



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.

Reinforcing Bar Couplers

MBT Transition Series

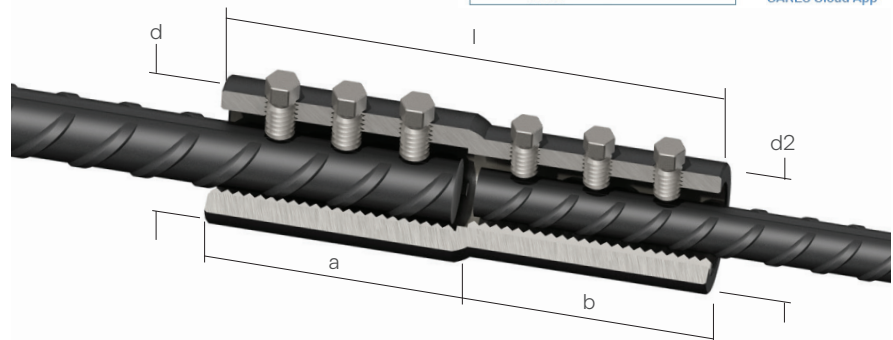
The MBT Transition series of couplers provides an effective solution for connecting bars of different diameters.

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.

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

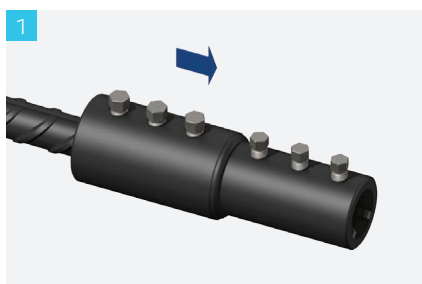


MBT Transition Series Dimensions

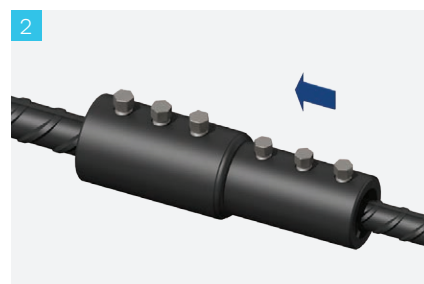
Bar Diameter (mm)		16/12	20/12	20/16	25/16	25/20	32/20	32/25	40/32
External Dia. (mm)	d	42.2	48.3	48.3	54.0	54.0	71.0	71.0	81.0
External Dia. (mm)	d2	42.2	33.4	48.3	42.2	54.0	48.3	54.0	71.0
Total Length (mm)	l	160	150	160	155	180	177	231	335
Individual Lengths (mm)	a:b	80:80	80:70	80:80	75:80	90:90	75:102	102:129	178:157
Socket Size A/F (ins)	a:b	1/2:1/2	1/2:1/2	1/2:1/2	5/8:1/2	5/8:1/2	5/8:1/2	5/8:5/8	3/4:5/8
No. of Bolts	a:b	3:3	3:3	3:3	2:3	3:3	2:4	3:4	5:5
Approx Weight (kg)		1.30	1.13	1.56	1.51	2.23	2.55	3.70	7.47
Torque (Nm)		108:55	108:55	108:108	275:108	275:108	360:108	360:275	525:360
Part No.		ET16/12	ET20/12	ET20/16	ET25/16	ET25/20	ET32/20	ET32/25	ET40/32

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.



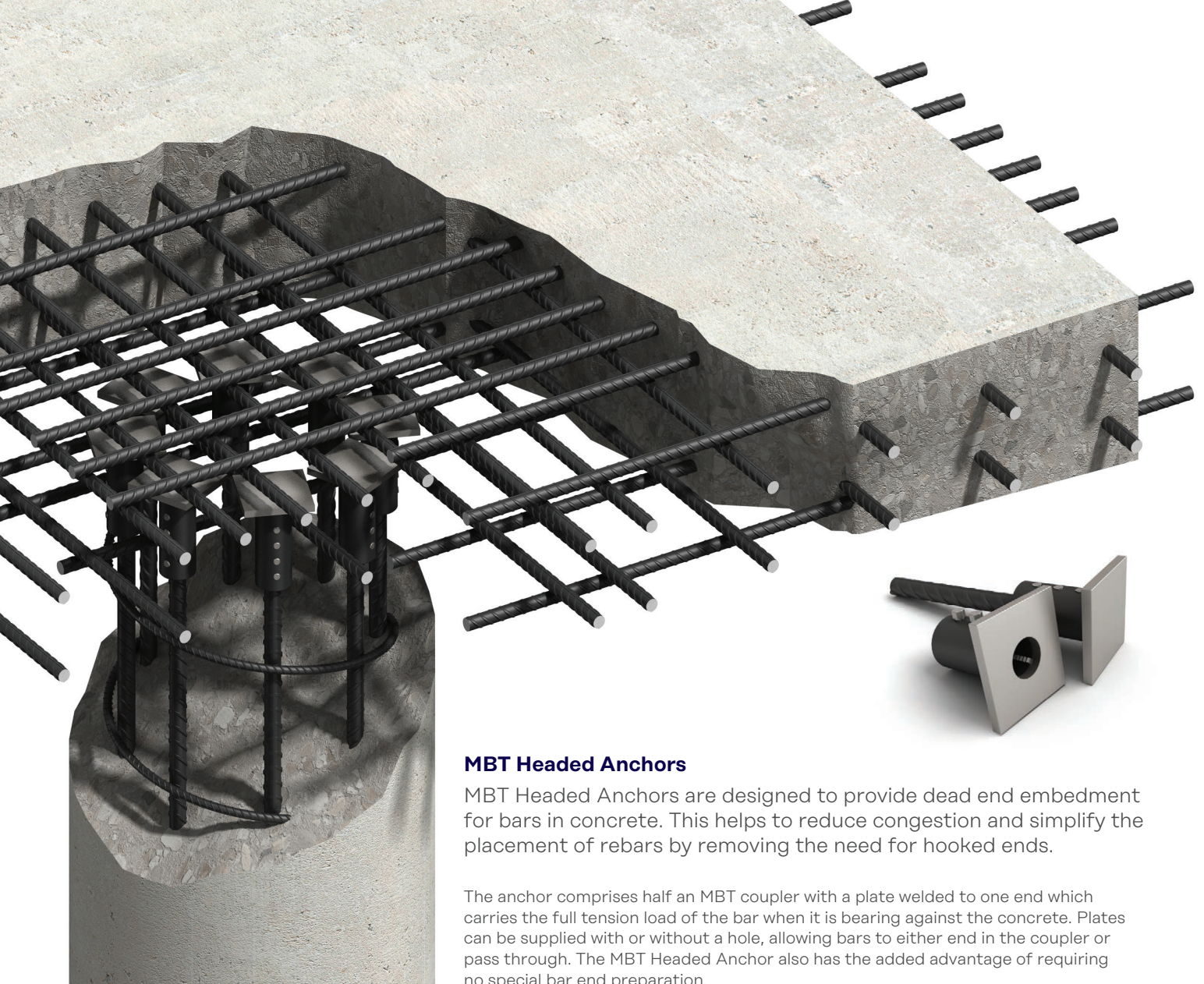
On one half of the coupler, starting from the centre and working outwards, partly tighten the lockshear bolts using either a ratchet wrench or a nut runner as appropriate. Do not use impact tools. Repeat again, this time fully tightening the lockshear bolts until the bolt heads shear off.

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 Leviat.





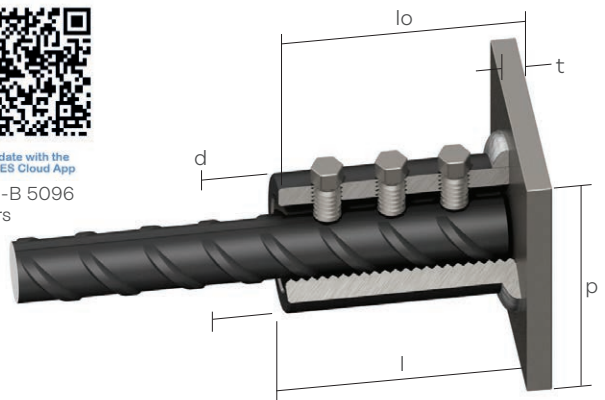
MBT Headed Anchors

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 the coupler or pass through. The MBT Headed Anchor also has the added advantage of requiring no special bar end preparation.



Technical approval TA1-A & TA1-B 5096 for MBT Headed Anchors



Bar Diameter (mm)		12	16	20	25	32	40
External Dia. (mm)	d	33.4	42.2	48.3	54.0	71.0	81.0
Coupler Length (mm)	l	75	82	104	129	156	247
Total Length (mm)	lo	85	92	114	139	171	262
Plate Thickness (mm)	t	10	10	10	10	15	15
Plate w x h (mm)	p	70	80	90	100	130	150
Socket Size A/F (ins)		1/2	1/2	1/2	5/8	5/8	3/4
No of Bolts		3	3	4	4	5	7
Approx. Weight (kg)		0.74	1.07	1.58	2.29	4.72	8.30
Torque (Nm)		55	108	108	275	360	525
Part No. (No hole in plate)		ETHA12	ETHA16	ETHA20	ETHA25	ETHA32	ETHA40
Part No. (Hole in plate)		ETHA12H	ETHA16H	ETHA20H	ETHA25H	ETHA32H	ETHA40H

Note: Minimum compressive strength of concrete 25/mm². Other sizes are available on request.



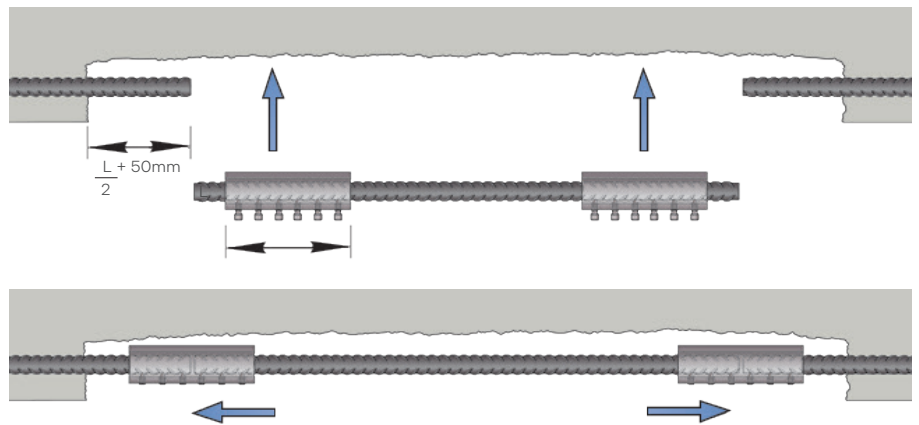
Repair and Remedial Work

The 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 $2 \times$ MBT ET coupler length (see page 22) + 100mm.



Bar replacement using two MBT ET Couplers

Reinforcing Bar Couplers



Reinforcing Bar Couplers

Other Leviat Products

Reinforcement Continuity Systems

Reinforcement Continuity Systems are an increasingly popular means of maintaining continuity of reinforcement at construction joints in concrete. The Ancon Eazistrip re-bend system is approved by UK CARES and consists of pre-bent bars housed within a galvanised steel casing. Once installed, the bars are straightened ready for lapping with slab reinforcement. Ancon KSN Anchors and Ancon Starter Bars are cast into a concrete wall and accept threaded continuation bars. They easily accommodate long EC2 lap lengths and eliminate the need for on-site bar straightening. KSN Anchors minimise rebar congestion in the wall.



Shear Load Connectors

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



Design Program Available

Channel and Bolt Fixings

We offer a wide range of channels and bolts in order to fix stainless steel masonry support, restraints and windposts to structural frames. Cast-in channels and expansion bolts are used for fixing to the edges of concrete floors and beams.



Punching Shear Reinforcement

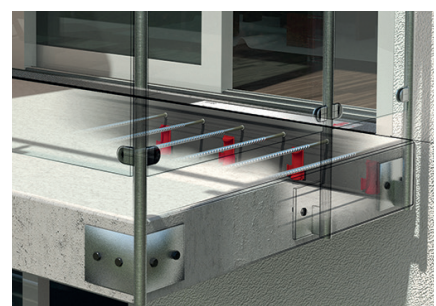
Ancon Shearfix is used within a slab to provide additional reinforcement from punching shear around columns. The system is approved by UK CARES and consists of double-headed steel studs welded to flat rails. Shearfix is designed to suit the load conditions and slab depth at each column using free calculation software from us.



EC2 Design Program Available

Halfen HIT Concrete-to-Concrete Balcony Connectors

Our thermally insulated connectors minimise heat loss at balcony locations while maintaining structural integrity. They provide a thermal break and, as a critical structural component, transfer moment, shear, tension and compression forces. Standard HIT Elements fulfill the requirements for the highest fire protection classification REI 120. Offering 2 hours fire resistance.



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