

Features **CARES-approved**
ANCON CXL COUPLER SYSTEM



CB Coupler Box and CS Coupler Strip

Reinforcement Continuity Systems

Fast and safe to install without
manual bar bending

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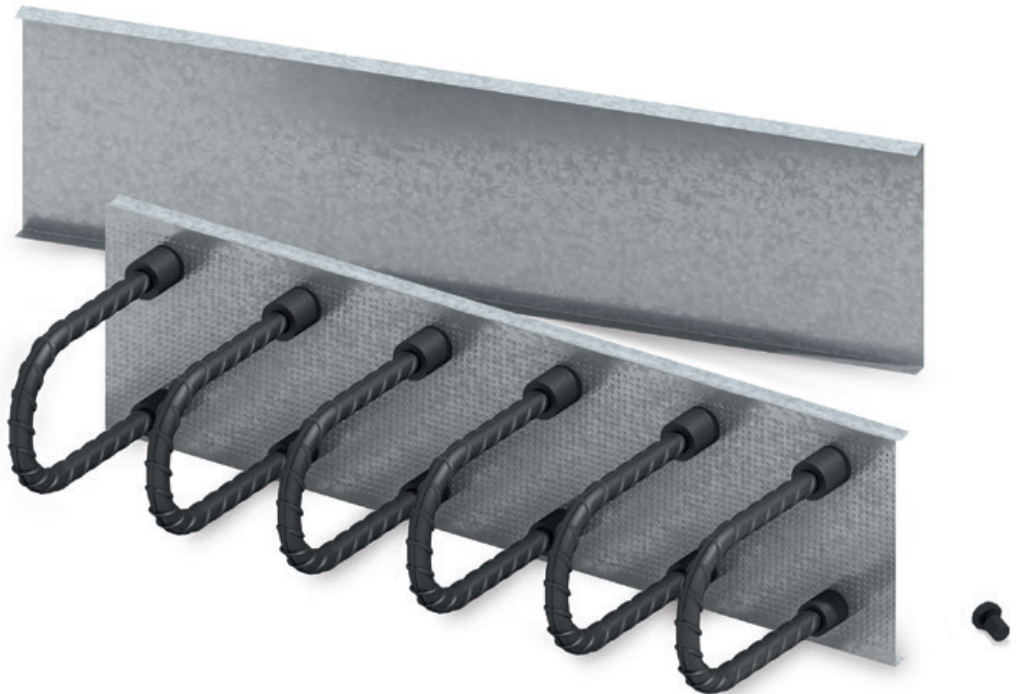
CB Coupler Box

Simple, fast, safe reinforcement continuity

Ancon CB Coupler Boxes simplify the continuity of reinforcement at concrete construction joints. They allow engineers to design slab-to-wall connections without the traditional restrictions on bar length and bar diameter of re-bend/pull-out continuity systems and help contractors to eliminate manual bar straightening on site.

The CB Coupler Box utilises the Ancon CARES-approved CXL mechanical rebar connection system. CXL couplers are integral to the CB box and, once the thread protection is removed, accept CXL parallel-threaded reinforcing bars (see page 5).

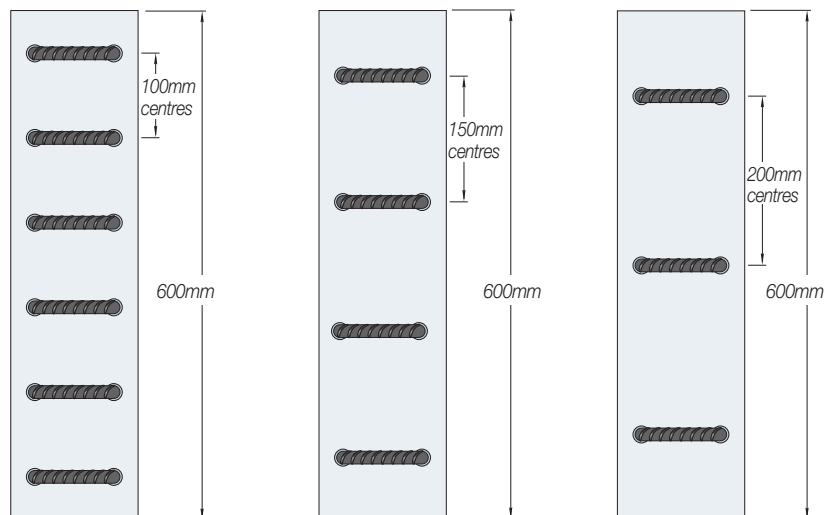
The box is cast into a concrete wall, and when the formwork is struck and the box lid and thread protection are removed, the CXL continuation bars are simply screwed into the CXL couplers when required on site, creating a strong, secure connection with the wall. The steel casing remains embedded in the wall and fills with concrete when the next section is poured; a rebated dimpled surface provides an effective shear key in accordance with EC2.



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Standard Coupler Box Length and Bar Centres

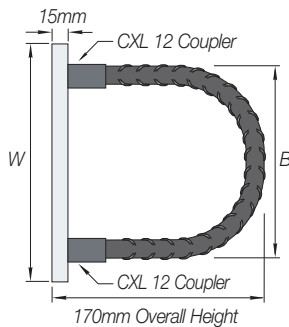


Other box lengths and bar centres are available

Standard Coupler Box Range

Coupler Box 12T/12C

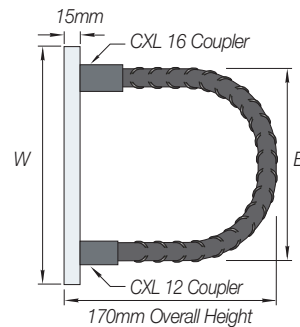
Ø12 Tension Bar
Ø12 Compression Bar



Product Reference	Box Width W	Stirrup Width B
CB150-12T/12C	150	98
CB170-12T/12C	170	118
CB190-12T/12C	190	139
CB220-12T/12C	220	170
CB250-12T/12C	250	200

Coupler Box 16T/12C

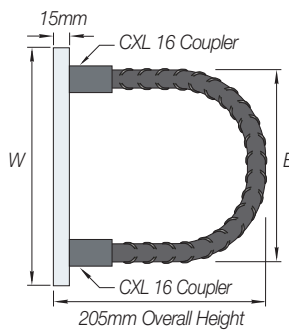
Ø16 Tension Bar
Ø12 Compression Bar



Product Reference	Box Width W	Stirrup Width B
CB150-16T/12C	150	98
CB170-16T/12C	170	118
CB190-16T/12C	190	139
CB220-16T/12C	220	170
CB250-16T/12C	250	200

Coupler Box 16T/16C

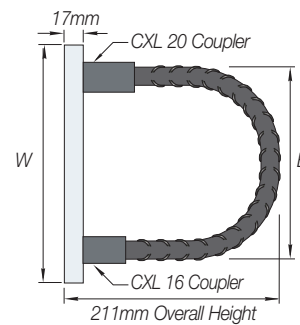
Ø16 Tension Bar
Ø16 Compression Bar



Product Reference	Box Width W	Stirrup Width B
CB220-16T/16C	220	180
CB250-16T/16C	250	200

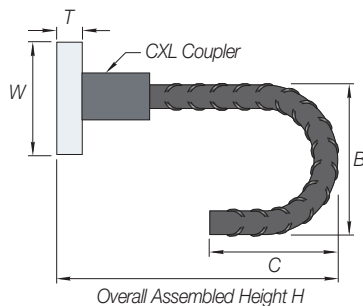
Coupler Box 20T/16C

Ø20 Tension Bar
Ø16 Compression Bar



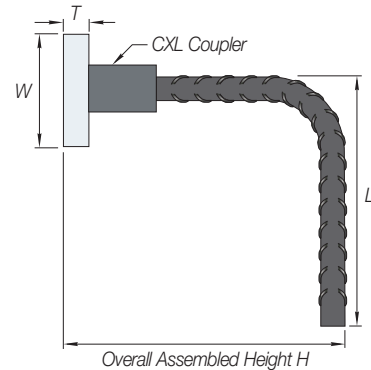
Product Reference	Box Width W	Stirrup Width B
CB220-20T/16C	220	180
CB250-20T/16C	250	200

Coupler Box - Hook Type



Product Reference	Box Width W	Box Depth T	Stirrup Width B	Stirrup Length C	Coupler Type	Overall Height H
CB85-12H	85	15	72	125	CXL12	170
CB85-16H	85	15	96	130	CXL16	170

Coupler Box - RA Type



Product Reference	Box Width W	Box Depth T	Stirrup Length Li	Coupler Type	Overall Height H
CB85-12RA	85	15	200	CXL12	170
CB85-16RA	85	15	380	CXL16	170
CB85-20RA	85	17	570	CXL20	225
CB85-25RA	85	21	1110	CXL25	280

Notes: Li leg lengths based on C32/40 concrete and couplers at 150mm centres.
All dimensions are millimetres

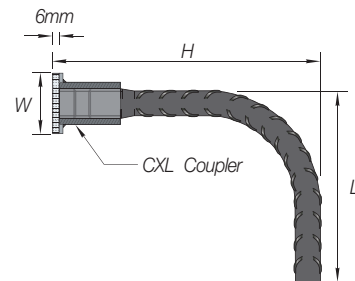
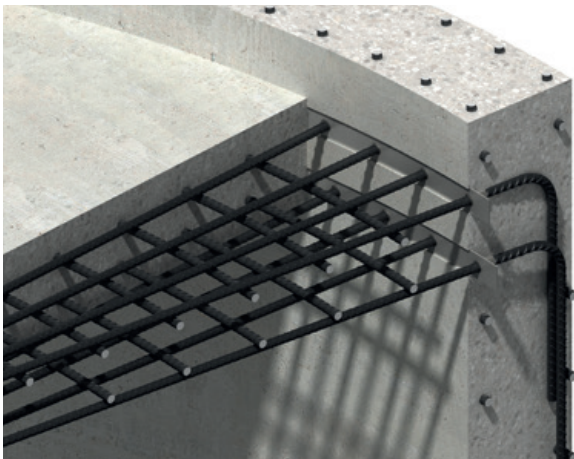
CS Coupler Strip

Simple, fast, safe reinforcement continuity for curved walls

Ancon CS Coupler Strips offer all the benefits of CB Coupler Boxes and are specifically designed to simplify rebar continuity at joints where walls are curved on plan. The flexible steel strip used to carry the couplers is nailed directly to curved shuttering.

The CS Coupler Strip utilises the Ancon CARES-approved CXL mechanical rebar coupler system. CXL couplers are integral to the CS Strip and accept CXL parallel-threaded reinforcing bars.

The strip is cast into a concrete wall, and when the formwork is struck and the 6mm rebate former and thread protection are removed, the CXL continuation bars are simply screwed into the CXL couplers when required on site, creating a strong, secure connection with the wall. The rebate fills with concrete when the next section is poured, providing a shear key in accordance with EC2.



Coupler Strip Range

Coupler Strip ø12

Product Reference	Coupler Type	Width W	Length Li	Height H
CS12RA	CXL 12	50	200	161

Coupler Strip ø16

Product Reference	Coupler Type	Width W	Length Li	Height H
CS16RA	CXL 16	50	380	161

Coupler Strip ø20

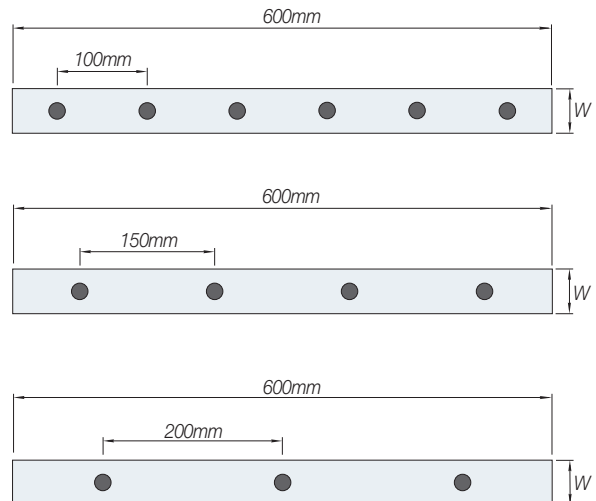
Product Reference	Coupler Type	Width W	Length Li	Height H
CS20RA	CXL 20	50	570	210

Coupler Strip ø25

Product Reference	Coupler Type	Width W	Length Li	Height H
CS25RA	CXL 25	60	1110	265

Notes: Length Li based on couplers at 150mm centres and grade C32/40 concrete
All dimensions are in mm

Standard Coupler Strip Length/Bar Centres

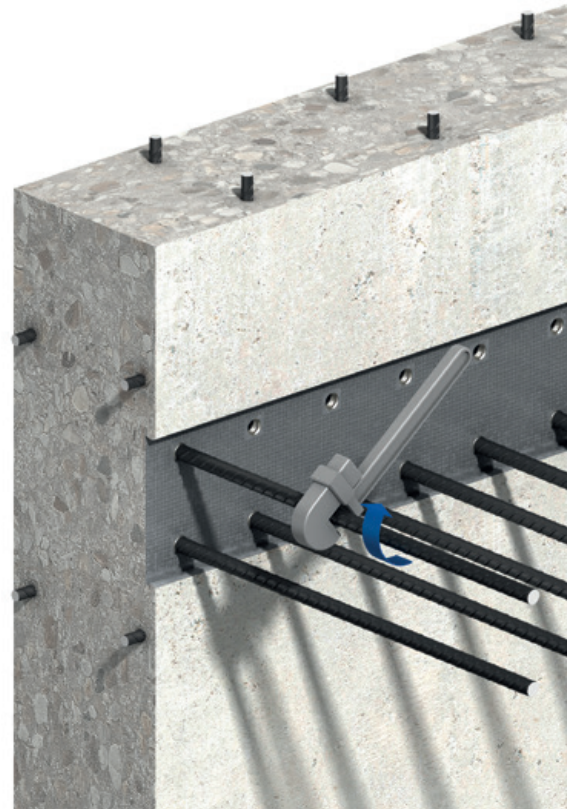


Ancon CXL Continuation Bars

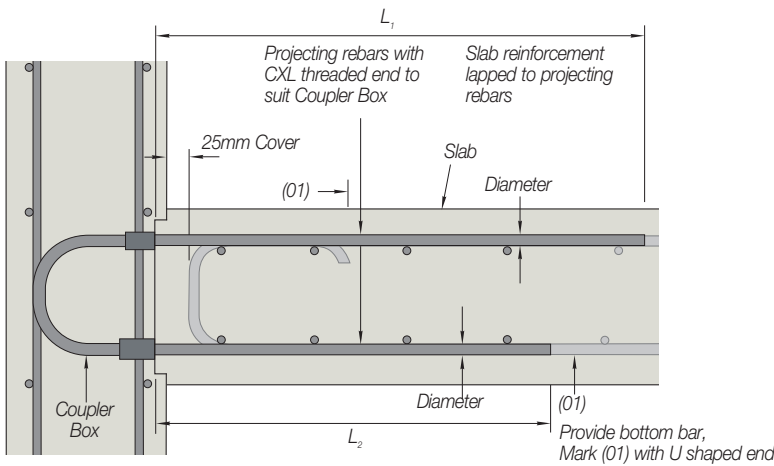
Unlike re-bend continuity systems where bar lengths are restricted to the box dimensions, there is virtually no restriction on continuation bar length with either CB Coupler Boxes or CS Coupler Strips.

Grade B500B or B500C continuation bars, threaded with a CXL metric thread, are supplied by Ancon in 12mm, 16mm, 20mm and 25mm diameter. The CXL system is CARES approved and produces a full strength joint. The bar end is cut square and enlarged by cold forging. This increases the core diameter of the threaded portion of the bar to ensure that the strength of the bar is maintained. A parallel metric thread is applied to the enlarged bar end. A 12mm bar is provided with an M16 thread, a 16mm bar with an M20 thread, a 20mm bar with an M24 thread and a 25mm bar with an M30 thread.

Bar lengths to BS EN 1992-1-1 (Eurocode 2) are given in the tables below.



No on-site bar straightening required



12, 16, 20 and 25mm diameter CXL continuation bars are available in virtually any length, including EC2 lap lengths

Top Reinforcement to Eurocode 2

Bar Diameter	Thread Size	EC2 Full Tension Lap* C32/40		Minimum Length L ₁ Required C32/40		Thread Length	Minimum Bar Length Required Good Bond	Minimum Bar Length Required Bad Bond
		Good Bond	Bad Bond	Good Bond	Bad Bond			
12	M16	630	890	670	930	16	690	950
16	M20	830	1190	870	1230	20	890	1250
20	M24	1040	1480	1082	1522	24	1110	1550
25	M30	1300	1850	1346	1896	30	1380	1930

Dimensions in millimetres.

*Assumes contact lap ($\alpha_2=1$) and 100% of bar lapped at one location.

Bottom Reinforcement to Eurocode 2

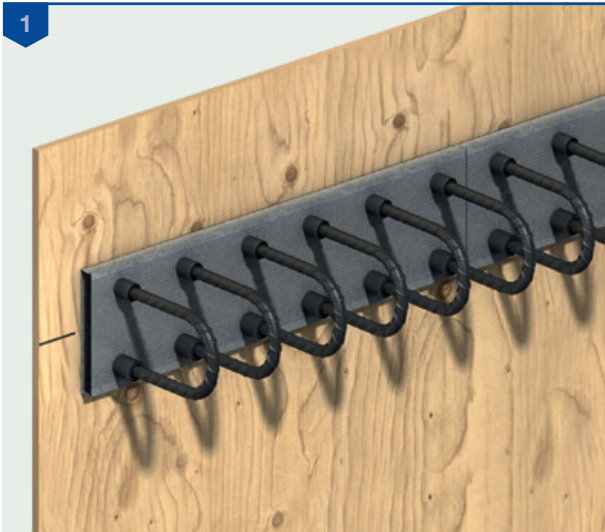
Bar Diameter	Thread Size	EC2 Tension Lap* C32/40	Minimum Length L ₂ Required C32/40	Thread Length	Minimum Bar Length Required
12	M16	630	670	16	690
16	M20	830	870	20	890
20	M24	1040	1082	24	1110
25	M30	1300	1346	30	1380

Dimensions in millimetres.

*Assumes contact lap ($\alpha_2=1$) and 100% of bar lapped at one location.

Note: Good bond and bad bond conditions as defined in BS EN 1992-1-1 figure 8.2. C32/40 concrete and couplers at 150mm centres.

CB Coupler Box Installation Guidance



The Coupler Box should be orientated according to the instructions on the label. Position as required. The complete unit is nailed to the formwork or alternatively wired back to the main reinforcement cage. Other wall reinforcement should be installed to the Engineer's details and the concrete is cast.



Install the Ancon CXL continuation bars ensuring no more than 2-4mm of thread is left exposed.

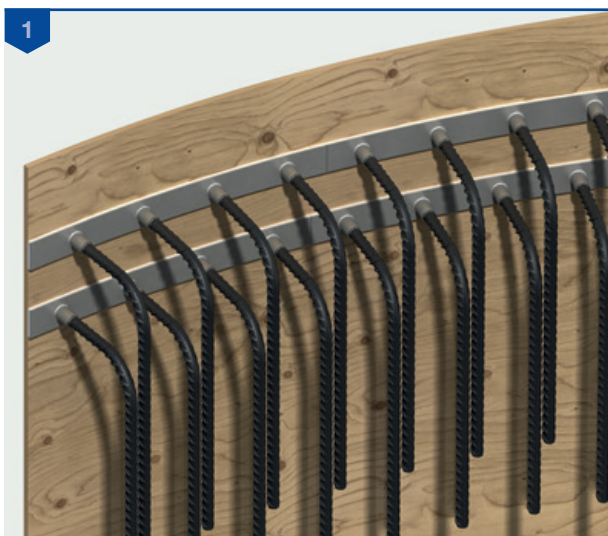


Once the concrete has reached sufficient strength, the formwork is removed to reveal the box face. When installation of the continuation bars is required, the box lid and coupler bolts are removed, revealing the internal threads.

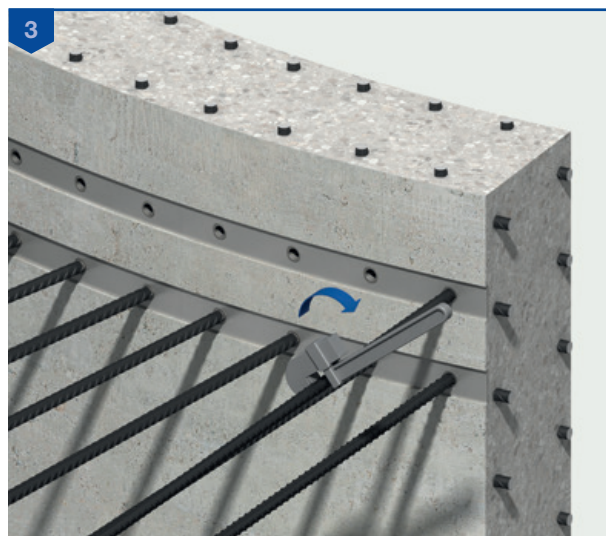


Slab reinforcement should be installed to the Engineer's details and the slab is cast to complete the application.

CS Coupler Strip Installation Guidance



The Coupler Strip should be orientated as required. The complete unit is flexed against the curved formwork and either nailed in position or alternatively wired back to the main reinforcement cage. Other wall reinforcement should be installed to the Engineer's details and the concrete is cast.



Install the Ancon CXL continuation bars ensuring no more than 2-4mm of thread is left exposed.



Once the concrete has reached sufficient strength, the formwork is removed to reveal the 6mm thick corrugated plastic rebate former. When installation of the continuation bars is required, the rebate former and the recessed caps protecting the threads are removed, revealing the internal threads of the couplers.



Slab reinforcement should be installed to the Engineer's details and the slab is cast to complete the application.



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