COMAX® UK
A BETOMAX® Company

REINFORCED CONTINUITY IN THE UK



www.comax-uk.co.uk

ABOUT COMAX® UK

COMAX® UK now manufactures fully CARES-compliant reinforcement continuity systems from our facility in Rotherham, South Yorkshire. We are focused on supporting the reinforced concrete and civil engineering sectors with a reliable, UK-manufactured solution, backed by strong technical expertise, responsive customer service and competitive lead times.

We are committed to building long-term partnerships with contractors, frame specialists, civil engineering companies, consulting engineers and distribution partners across the UK construction industry. Our aim is to combine high-quality products with practical technical support and a service that our customers can rely on – from initial enquiry through to delivery.

SERVICES

DESIGN & CALCULATION SOFTWARE

COMAX® CC – making design easier

Our free COMAX® CC design and calculation software supports the structural design of reinforcement continuity systems in accordance with CARES requirements. It also provides ready-to-use DWG and DXF files, helping engineers and designers save valuable time during the planning process.

SIMPLE, FAST ORDERING

Order exactly what you need

Our interactive COMAX® Order Form makes specifying and ordering straightforward. Simply provide the required quantities, stirrup types, case widths and bar lengths, and we will take care of the rest – helping to make the ordering process quick, simple and efficient.

TECHNICAL SUPPORT

Expert support when you need it

From initial planning through to project delivery, our technical team is here to help. Whether you need support with design, product selection, technical specifications or a specific project requirement, we provide practical advice and responsive support.

CARES APPROVAL

Proven compliance. Trusted performance.

Our reinforcement continuity systems are covered by CARES Approval Report TA2 5072, Issue 3. This provides independent confirmation of compliance with the relevant requirements and gives our customers confidence in the quality and performance of our systems.

THE BETOMAX® GROUP

TRIED AND TRUSTED SINCE 1963

As a new independent company in the UK and a proud member of the BETOMAX® Group, COMAX® UK combines local expertise and service with the strength, experience and proven capabilities of an international group.

Always the MAXimum in quality, individuality and service BETOMAX® has been supplying intelligent products and solutions for structural concrete and civil engineering for more than six decades. Today, BETOMAX® is present in over 25 countries and is one of the leading suppliers in the fields of reinforcement technology, formwork technology and bridge construction technology. As an experienced and innovative system supplier, BETOMAX® is the ideal partner for site managers, planners, structural engineers and manufacturers of precast concrete elements. The proven foundation for every project is a comprehensive consultation that is perfectly tailored to all specific requirements. The result is always an individually optimized complete solution for concrete reinforcement directly on site.



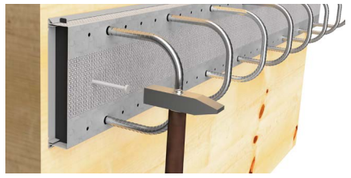
Another particular strength of BETOMAX® is that our team is not only consistently customer-oriented but also works with MAXimum speed and flexibility. Thanks to our lean, medium-sized organisational structure, including direct sales with field service, we deliver within 24 to 48 hours in most cases - even when it comes to demanding special solutions.

ALL ABOUT COMAX®



PRODUCT DESCRIPTION

COMAX® is a prefabricated rebar continuity system for reinforced concrete construction. It provides a simple and cost-effective method of reinforcement continuity across concrete joints.



AREA OF APPLICATION

The COMAX® system is used for rebar connections under static or quasi-static loads in reinforced or non-reinforced normal concrete of strength class no less than C20/25 according to BS EN 206-1:2026-03-11‘Concrete - Specification, performance, production and conformity’.



MATERIALS

COMAX® consists of pre-bent reinforcement bars and a casing manufactured from galvanised sheet steel, with a PVC cover for lower weight, easier handling and reduced risk of injury. COMAX® X will be produced with additional steel bolts in the casing to enhance shear force resistance in both wall to wall and wall to slab connections.



The galvanised sheet steel casing is perforated to ensure a superior bond to the adjacent concrete by comparison to ordinary dimpled casings. The more efficient shear bolts of COMAX® X are therewith provided for connection with the subsequently poured concrete member.

The reinforcement used is grade B500B and B500C which complies with the requirements of the CARES Technical Approval TA2 5072, Issue 3.
COMAX® systems UK Ltd. also offers COMAX® products manufactured using alternative grades of reinforcement steel in compliance with differing national standards of other countries.



BENDING

The formed bars for re bending are manufactured in accordance with CARES and the applied approval. The CARES approval can be downloaded here: »



QUALITY ASSURANCE

COMAX® systems UK operates a certified steel bending facility and is regulated and monitored by external bodies. COMAX® is fully compliant with CARES Technical Approval Report TA2 5072, Issue 3. Our production site is subject to regular compliance audits.

TECHNICAL DATA

Shear force capacities can be requested from COMAX® systems UK or alternatively can be calculated using our software tool which is available online.

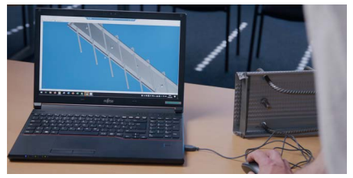


SHIPPING

Nationwide shipping is available from COMAX® systems UK – in Rotherham to all destinations. Pricing and terms & conditions are available on application.

SERVICE

The COMAX® systems UK technical support team is always on hand to assist with advice, planning, specification at all stages in the project, working with in house teams or full collaboration with project specific teams and consultants.



DESIGN

Rebar connections made with COMAX® reinforcement continuity systems are designed in compliance with the Technical Approval Report TA2 5072, Issue 3 by CARES as well as to engineering standards according to BS EN 1992-1-1:2004.



DIMENSIONING

Rebar connections made with COMAX® reinforcement continuity systems are designed in compliance with par. 3.2 of the CARES Technical Approval TA2 5072, Issue 3.

The classification of protective casing type COMAX® CC to determine the longitudinal and transverse shear capacity is made using the following coefficients in compliance with par 3.2 of the CARES guideline.

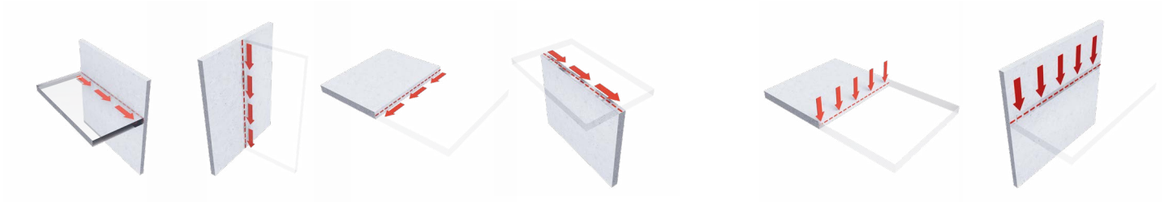
The shear strengths of the slabs without shear reinforcement can be safely calculated in accordance with EC2 (eqn 6.2a). The flexural strengths and modulus of rupture of the wall/floor connections could be safely calculated on the basis of EC2´s section 6.1 (Bending with or without axial force) and section 8 (Detailing of reinforcement).

$V_{Rd} = 0.035\ f_{ck}2/3 + 0{,}5\ \rho\ f_{yd} \leq 0.1\ (1 - f_{ck}/250)\ f_{ck}$

Where:

- V_{Rd} is the design shear resistance (stress in MPa)
- ρ is the ratio of continuity reinforcement, with both V_{Rd} and ρ calculated with reference to the area of the back face of the casing
- f_{ck} is the design yield stress of the reinforcement, which should be adequately anchored at both sides of the casing

Typical examples of shear force:



longitudinal to the concrete joint

transverse to the concrete joint



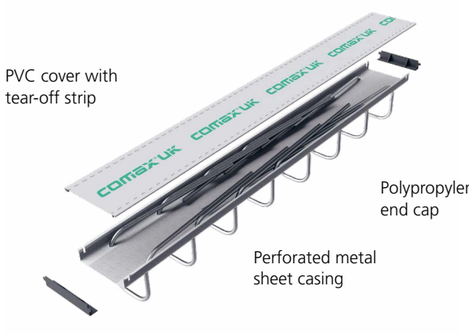
PRODUCT SELECTION

We recommended to use the COMAX® calculation software to make a qualified selection of COMAX® continuity reinforcement according to EC2 and in compliance with the relevant approval. The software can be downloaded and has a print/pdf function allowing users to reliably archive results for verification and to fulfil construction regulation requirements. In the software you can specify different casing and stirrup types, varying bar diameters and concrete grades for the first and second pour. Any specified COMAX® CC and COMAX® X type is ready to extract as a dwg and dxf file.

CERTIFICATION

CARES UK approval report TA2 5072, Issue 3

COMAX® CC



COMAX® CC with perforated steel sheet casing for faster execution of reinforcement joints. The perforated sheet steel casing creates an excellent bond to adjacent concrete therewith providing a significant design advantage.

The PVC Zip cover allows speedier completion of the process, providing building sites with time-saving advantages.

Excellent all-round performance for a wide range of situations. COMAX® CC utilises CARES approved reinforcement steel B 500B or B 500C and fulfils all requirements on bending radii and lap lengths.

DIMENSIONS

Box height: 3 cm, Standard element length: 120 cm

COMAX® CC STANDARD MEASUREMENTS FOR UK

Standard bar lengths L:

Ø 10	L = 400 mm	H = 170 mm
Ø 12	L = 500 mm	H = 170 mm
Ø 16	L = 650 mm	H = 170 mm

Re-bent bar lengths l may be less than in above table due to dense reinforcement.
Please check also our dimensions table or with our technical department for other feasible re-bent bar lengths (L).

COMAX® CC LOAD TABLE CALCULATED BY:

CARES Technical Approval Report TA2 5072, Issue 3 and BS EN 1992-1-1:2004

BETOMAX COMAX® CC TRANSVERSE SHEAR CAPACITY, VRD (KN/M) FOR CONCRETE GRADE C32/40

Effective Depth d (mm)		*80*	*100*	*120*	*140*	*160*	*180*	*200*	*220*	*240*
Rebar Diameter	Spacing									
10	200	48.1	56.0	67.2	78.4	89.6	100.8	109.0	109.0	109.0
10	150	52.9	61.4	69.4	78.4	89.6	100.8	112.0	118.9	125.7
12	200	54.3	63.0	71.2	78.9	89.6	100.8	112.0	118.9	125.7
12	150	59.8	69.4	78.3	86.8	94.9	102.6	112.0	118.9	125.7
16	200	65.8	76.3	86.2	95.5	104.4	113.0	121.2	126.1	130.9
16	150	72.4	84.0	94.9	105.1	114.9	124.3	133.4	138.8	144.0

The COMAX®-UK dimensioning software according to the UK design codes will calculate the producible and necessary anchoring height h in the first pour and lap length l in the second pour for a large variety of configurable types of COMAX® CC.

COMAX® CC

STANDARD TYPES AND DIMENSIONS

ITEM CODE	Casing width	Casing type	Stirrup type	Bar diameter ø	Stirrup distance	Stirrup width	Anchoring depth	Lap length
	B (mm)	*CC*	*13/13D/21*	*10/12/16*	*e (cm)*	*b (cm)*	*h (cm)*	*l (cm)*
CC081015	80	CC	13	10	15	6	17	40
CC081020	80	CC	13	10	20	6	17	40
CC111015	110	CC	21	10	15	9	17	40
CC111020	110	CC	21	10	20	9	17	40
CC111215	110	CC	13	12	15	9	17	50
CC111220	110	CC	13	12	20	9	17	50
CC141015	140	CC	21	10	15	12	17	40
CC141020	140	CC	21	10	20	12	17	40
CC141215	140	CC	21	12	15	12	17	50
CC141220	140	CC	21	12	20	12	17	50
CC161015	160	CC	21	10	15	14	17	40
CC161020	160	CC	21	10	20	14	17	40
CC161215	160	CC	21	12	15	14	17	50
CC161220	160	CC	21	12	20	14	17	50
CC161615	160	CC	13D	16	15	14	17	65
CC161620	160	CC	13D	16	20	14	17	65
CC191015	190	CC	21	10	15	17	17	40
CC191020	190	CC	21	10	20	17	17	40
CC191215	190	CC	21	12	15	17	17	50
CC191220	190	CC	21	12	20	17	17	50
CC191615	190	CC	13D	16	15	17	17	65
CC191620	190	CC	21	16	20	17	17	65
CC221015	220	CC	21	10	15	20	17	40
CC221020	220	CC	21	10	20	20	17	40
CC221215	220	CC	21	12	15	20	17	50
CC221220	220	CC	21	12	20	20	17	50
CC221615	220	CC	13D	16	15	20	17	65
CC221620	220	CC	21	16	20	20	17	65
CC241015	240	CC	21	10	15	22	17	40
CC241020	240	CC	21	10	20	22	17	40
CC241215	240	CC	21	12	15	22	17	50
CC241220	240	CC	21	12	20	22	17	50
CC241615	240	CC	13D	16	15	22	17	65
CC241620	240	CC	21	16	20	22	17	65

- Special bar types and measurements on request.
- COMAX® CC continuity strips can be easily configured to any maintainable specifications in our free downloadable static design software for COMAX® UK.

COMAX® X



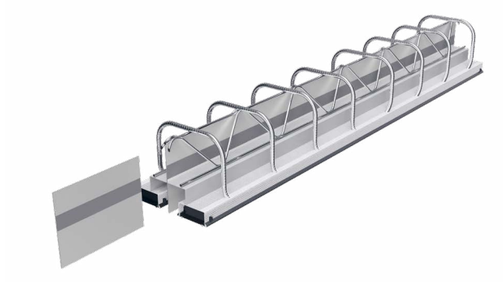
COMAX® X with perforated steel sheet casing with additional steel bolts is specifically designed to accomodate maximum shear loads in the transverse and longitudinal direction to the joint simultaneously. COMAX® X has so far been tested in respect to the German DIN 1992-1-1 + DIN EN 1992-1-1/NA to meet keyed joint load capacities in longitudinal and transverse direction of the concreted joint section.

STANDARD TYPES AND DIMENSIONS

Casing width	Casing type	Stirrup type	Bar diameter ø	Stirrup distance	Stirrup width	Anchoring depth	Lap length
B (mm)	*X*	*13/21*	*10/12/16*	*e (cm)*	*b (cm)*	*h (cm)*	*l (cm)*
110	X	21	10	15	9	17	40
110	X	21	10	20	9	17	40
110	X	13	12	15	9	17	50
110	X	13	12	20	9	17	50
140	X	21	10	15	12	17	40
140	X	21	10	20	12	17	40
140	X	21	12	15	12	17	50
140	X	21	12	20	12	17	50
160	X	21	10	15	14	17	40
160	X	21	10	20	14	17	40
160	X	21	12	15	14	17	50
160	X	21	12	20	14	17	50
190	X	21	10	15	17	17	40
190	X	21	10	20	17	17	40
190	X	21	12	15	17	17	50
190	X	21	12	20	17	17	50
220	X	21	10	15	20	17	40
220	X	21	10	20	20	17	40
220	X	21	12	15	20	17	50
220	X	21	12	20	20	17	50
240	X	21	10	15	22	17	40
240	X	21	10	20	22	17	40
240	X	21	12	15	22	17	50
240	X	21	12	20	22	17	50

- Special bar types and measurements on request.
- COMAX® X continuity strips can be easily configured to any maintainable specifications in our free downloadable static design software for COMAX® UK.

COMAX® WP



Incorporating twin case and COMAX® Board splice plate with integrated DF water barrier (DF strip B2 150 mm) to protect the concrete joint against the ingress of water. Test report available.

COMAX® WP is a bespoke product which is manufactured upon customer request. Please order the COMAX® element and the water barrier separately using the following codes and indicating the requested dimensions on the order form.

DIMENSIONS
Box height: 3 cm, Standard element length: 120 cm

CHARACTERISTICS
The perforated sheet steel casing creates the highest achievable load capacities in longitudinal and transverse direction to the concrete joint as tested to DIN EN 1992-1-1 - 2011-01! The PVC zip cover with tear-off strip allows fast completion of the process, providing building sites with time-saving advantages.



BOX TYPE:
Stirrup height (h): min. 18 cm **Height (h):** approx. 13–14 cm
Stirrup width (b): min. 14 cm **Width (b):** approx. 10 cm
Lap length (l): max. 53 cm

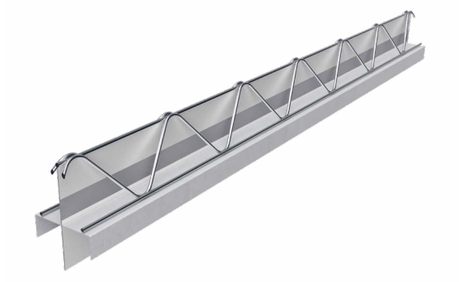
COMAX® WP

Box width	Possible stirrup widths *cm*
2 x	14–17
2 x 80	16–21
2 x 110	22–27
2 x 140	28–33
2 x 160	32–37
2 x 190	38–43
2 x 220	44–49
2 x 240	48–53

Item no.	Description
41299999	COMAX® WP B
30791634	AF 100 FB k = 30

Box widths to be chosen in accordance with desired stirrup widths.

COMAX® BOARD CJ



DIMENSIONS
Box height: 3 cm
Standard element length: 120 cm

COMAX® GTB



THE INDUSTRIAL PREFABRICATED COMAX® GTB coupler box system element is a combined application for structural and dynamic load transmission. It is the logical extension of our wellknown reinforcement technologies that combines both the broad range of diameters of our coupler system GripTec® GTB and the surplus of the joint design of our continuity strip system COMAX®.

COMAX® GTB offers the possibility of providing longer lap lengths and a wide range of high-scaled diameters (Ø 12 mm – 25 mm). Further, it does not affect the profile of reinforcing steel and guarantees full force transmission in tensile and compression. COMAX® GTB is also approved for structural and dynamic load applications

COMAX® GTB is a highly economic solution, which is particularly suitable for a quick and fast installation of huge coupler quantities with a pre-defined spacing on site. The prefabricated elements lower the installation time significantly by guaranteeing a structural joint design at the same time (acc. to EC 2 “smooth” or “keyed”).

COMAX® NON-STANDARD AND BESPOKE TYPES

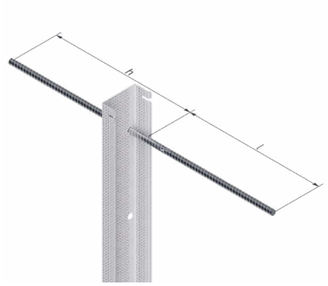
COMAX® supplies various non-standard and bespoke types of COMAX® on request, with the following characteristics:

- CARES Technical Approval TA2 5072, Issue 3
- COMAX® CC element lengths up to 2.50 m
- COMAX® X element in lengths of 80 cm and 1,2 m
- COMAX® CC box widths (B) 60, 80, 110, 140, 160, 190, 220 and 240 mm
- COMAX® X box widths (B) 110, 140, 160, 190, 220 and 240 mm
- COMAX® CC and COMAX® X casing depth 30 mm
- Rebar steel Ø 10 mm, 12 mm & 16 mm for COMAX® CC
- Rebar steel Ø 10 mm and 12 mm for COMAX® X
- Stirrup spacing (e) 10, 15, 20, 25 and 30 cm
- Customised stirrup spacing (e) for type COMAX® CC on request
- COMAX® CC and COMAX® X standard stirrup width (b) always 2 cm less than element width (B) for double row types
- COMAX® CC with CARES certificate
- COMAX® CC and COMAX® X with German building authority DIBt approval no. Z-21.8-2056 and KOMO certificate upon request

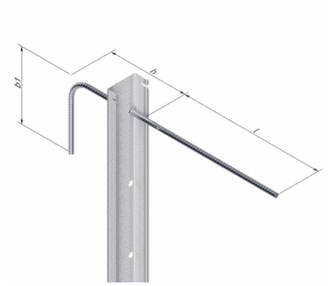
ROW TYPES

SINGLE ROW TYPES

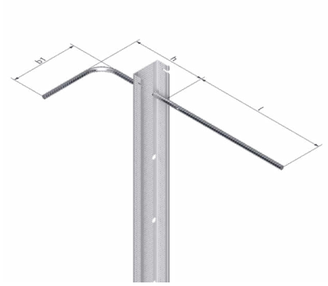
All single row type configurations shown on the following page are available as COMAX® CC and COMAX® X.



Type 00



Type 11H



Type 11V



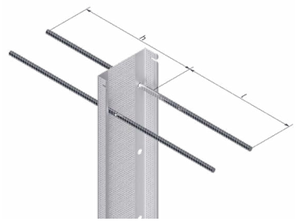
Type 13



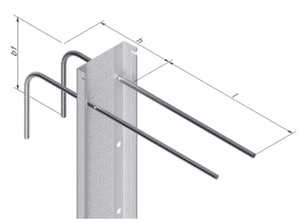
Type 12
(mandrel dia $d_{br} = 10d_s$)

DOUBLE ROW TYPES

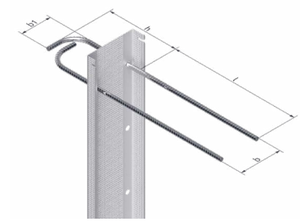
All double row type configurations shown on the following pages are available as COMAX® CC and COMAX® X.



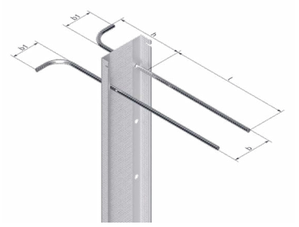
Type 00D
double row



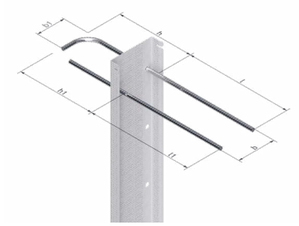
Type 11DH
double row



Type 11DV
double row



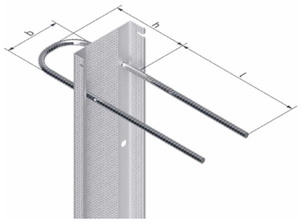
Type 11DV (special configuration)
double row hooks facing outwards



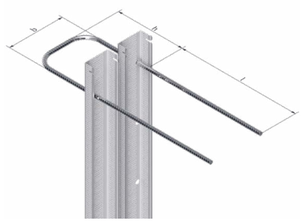
Type 11V - 00
double row



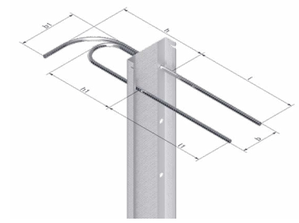
Type 13D
double row



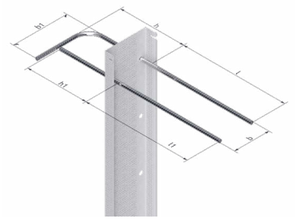
Type 21



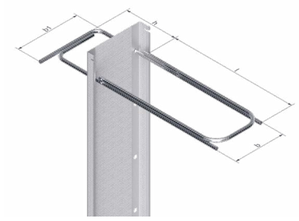
Type 21 - 2C



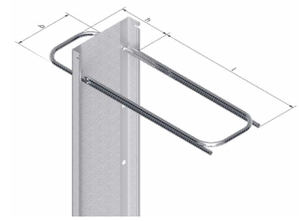
Type 12T - 13B



Type 12T - 00



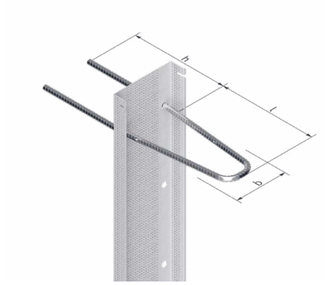
Type 12T - 11VA
with additional stirrup



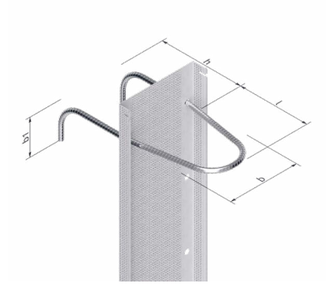
Type 21A

Type 12T – 11VA and Type 21A are console types for long cantilevers with additional separate stirrup, which is supplied together with the element and must be connected after bending out the bars.

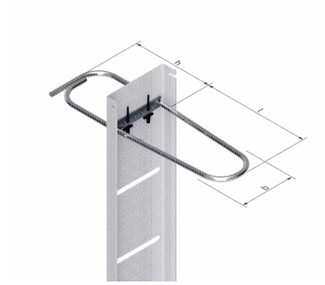
CORBEL TYPES



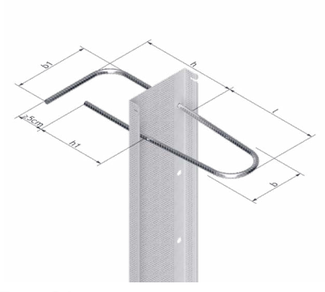
Type 21L



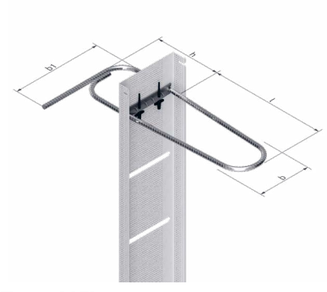
Type 21L H
with hooks



Type 41

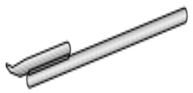
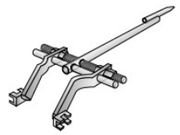


Type 31
optionally with $d_{br} = 10d_s$



Type 41FL
optionally with $d_{br} = 10d_s$

ACCESSORIES

COMAX® TOOLS	Item no.	Description	Packing *unit/piece*	Weight *kg/piece*
	43980100	COMAX® Rebending tool with prong	1	1.180
	43982000	COMAX® Rebending tool for console types	1	3.100

INSTALLATION

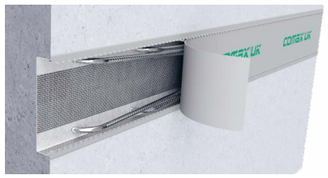
(Generally applicable for types CC, X and WU)



FIX TO FORMWORK

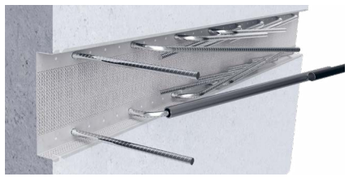
COMAX® can be quickly and easily installed prior to concreting by either nailing through the casing to wooden formwork, by using magnets to attach to steel formwork (see accessories on p.14) or by otherwise securely tying protruding stirrups to the main reinforcement.

Ensure that the COMAX® element is installed securely enough to avoid being dislodged from it's position during concreting work, and that the casing is tight enough against the formwork to prevent concrete ingress between casing and formwork during the pouring process.



REMOVE COVER

After striking the formwork, remove the tear-off strip from the PVC cover along the perforations using a claw hammer or similar tool, to reveal the reinforcement bars which are ready to be straightened.



STRAIGHTEN REINFORCEMENT BARS

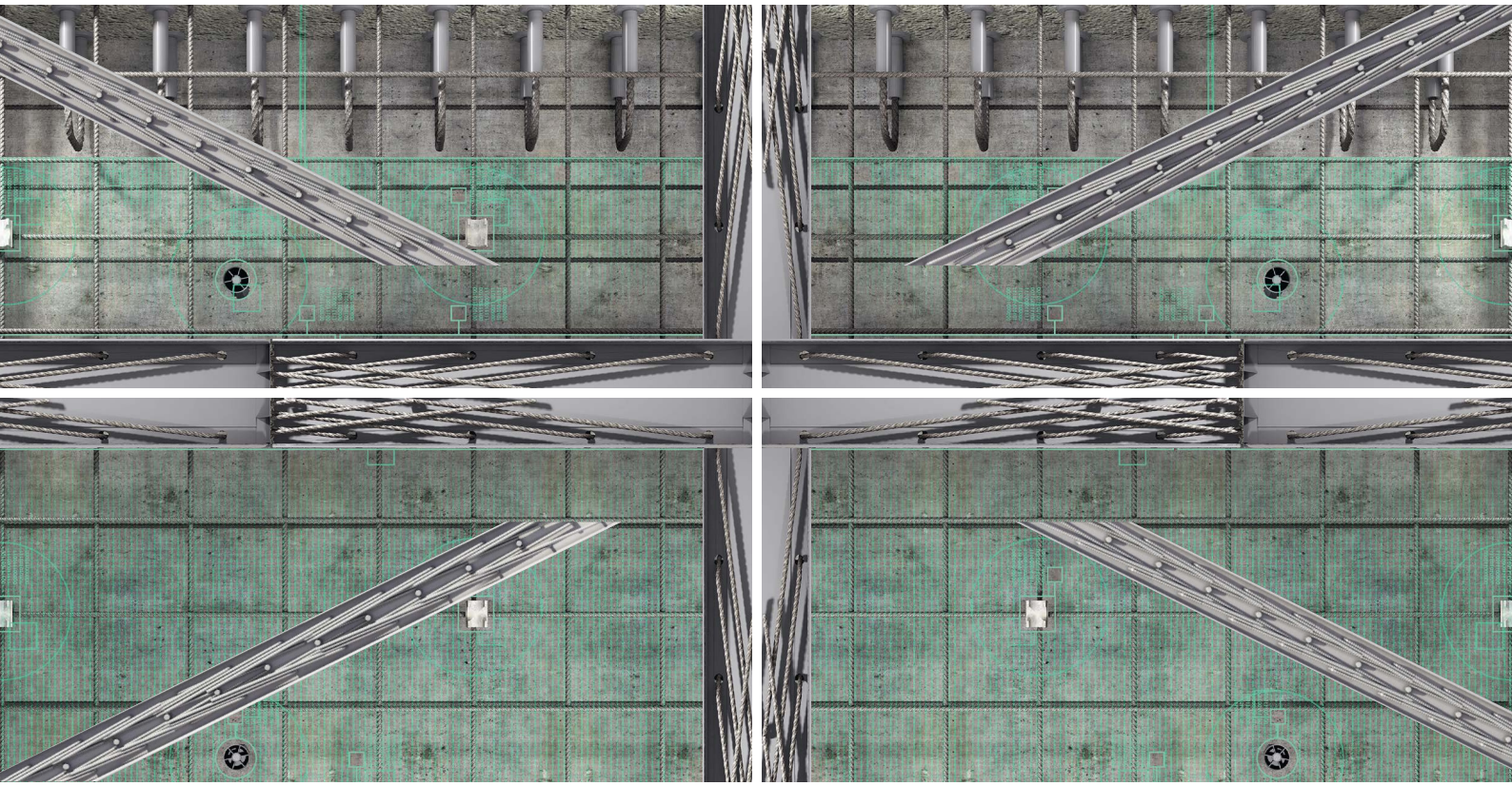
Bend out the reinforcement bars using a COMAX® rebending tool, which is designed to maintain minimal point contact to the reinforcement bar, and allows rebending to be performed in a smooth and continuous manner. Do not use additional force by hitting with a hammer.

Pull each bar slightly past it's final position to compensate for rebound movement of the reinforcement steel after releasing the rebending tool. Plan sufficient space accordingly.

Reinforcement bars may only be bent and subsequently rebent once. Repeated bending and rebending at the same location is not permitted.

The rebending of reinforcement steel (cold bending) should only be performed at ambient temperatures above -5°C

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