TECHNICAL DATASHEET

PLAKA - COUPLERBOX

Coupler jointing system

REF 01.02.01 - Version V02 - 19/04/2021

Description

The connection of two steel rebars can be realized by mean of the Couplerbox jointing system. The assembled system guarantees the nominal resistance of a continuous bar. The bar is provided with a parallel thread at the end of the reinforcement bars. The two bars are connected together by mean of a threaded coupling sleeve. The rolled thread is formed by displacing the material radially outward to form the crests without causing any crack initiation (fatigue). Thread rolling makes the actual section larger and increases the strength and the hardness of the thread.

Application fields

The Couplerbox jointing system can be used for all types of connections between slabs, walls, beams,... It can also be used for slurry walls and diaphragm walls, or to extend bars in a construction work without having to overlap bars. These jointing systems with coupling sleeves can be used in static and dynamic applications.

Properties

Materials and mechanical properties	
Steel quality of the bars ϕ12, 14, 16, 20, 25, 28, 32 et 40mm	Steel B500B
Steel quality of the coupling sleeves	Steel CK45
Criterions: • Strength criterion Following ISO 15835-1 and 2 • Plastic deformation criterion • Creep criterion	• The failure occurs at minimum 95% of the effective strength of the weakest bar of the assembly. • The deformation of the assembly under maximum load is minimum 4%. • After 3 load cycles at 60% of the yield strength and then back to the initial position, the device has a maximum permanent creep ≤ 0,1mm

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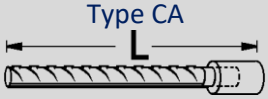
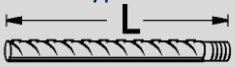
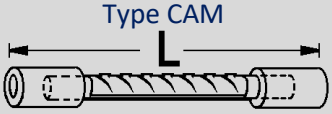
Dimensions

	Geometry	Standard Length	Code	Code for special length
Type CA 	ϕ [mm]	L [cm]		
	12	62	PLCA12060	PLCA12(Lmm)
	14	72	PLCA14070	PLCA14(Lmm)
	16	82	PLCA16080	PLCA16(Lmm)
	20	103	PLCA20100	PLCA20(Lmm)
	25	128	PLCA25125	PLCA25(Lmm)
	28	256	PLCA28253	PLCA28(Lmm)
	32	203	PLCA32200	PLCA32(Lmm)
	40	404	PLCA40400	PLCA40(Lmm)
Type CR 	ϕ mm	L cm		
	12	60	PLCR12060	PLCR12(Lmm)
	14	70	PLCR14070	PLCR14(Lmm)
	16	80	PLCR16080	PLCR16(Lmm)
	20	100	PLCR20100	PLCR20(Lmm)
	25	125	PLCR25125	PLCR25(Lmm)
	28	253	PLCR28253	PLCR28(Lmm)
	32	200	PLCR32200	PLCR32(Lmm)
	40	400	PLCR40400	PLCR40(Lmm)
Type CAM 	ϕ mm	L cm		
	12	/	/	PLCAM12(Lmm)
	14	/	/	PLCAM14(Lmm)
	16	/	/	PLCAM16(Lmm)
	20	/	/	PLCAM20(Lmm)
	25	/	/	PLCAM25(Lmm)
	28	/	/	PLCAM28(Lmm)
	32	/	/	PLCAM32(Lmm)
	40	/	/	PLCAM40(Lmm)

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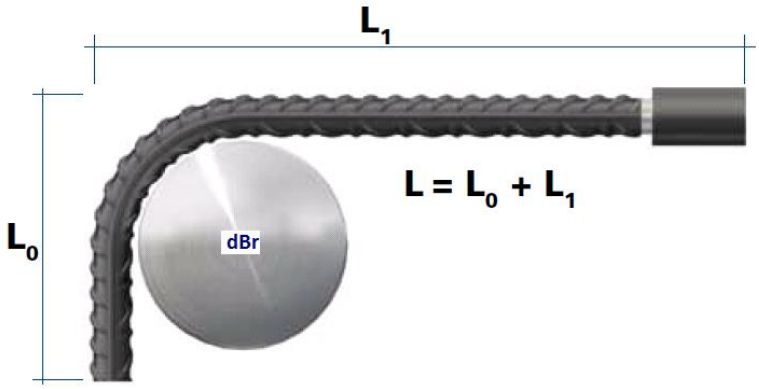
	Geometry	Code	Code for special length
	ϕ [mm]		
	12	/	PLCAF12(Lmm)
	14	/	PLCAF14(Lmm)
	16	/	PLCAF16(Lmm)
	20	/	PLCAF20(Lmm)
	25	/	PLCAF25(Lmm)
	28	/	PLCAF28(Lmm)
	32	/	PLCAF32(Lmm)
	40	/	PLCAF40(Lmm)

Dimensions - Type CAC



Bar diameter [mm]	dBr * [mm]	$L_1 min$** [mm]	$L_O min$** [mm]	Reference code for special lengths []
12	100	140	210	PLCAC12(Lmm)
14	100	150	210	PLCAC14(Lmm)
16	100	180	210	PLCAC16(Lmm)
20	150	210	260	PLCAC20(Lmm)
25	200	260	300	PLCAC25(Lmm)
28	200	260	300	PLCAC28(Lmm)
32	250	300	300	PLCAC32(Lmm)
40	300	410	400	PLCAC40(Lmm)

* Other bending diameters are possible.

** Coupler type CAC is folded consistently with abovementioned folding mandrels with diameter dBr. This results in a minimum length L_1min and $L_o min$.

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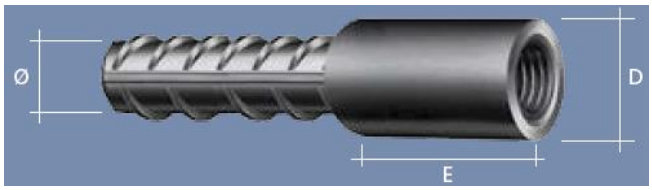
Dimensions Coupler



Diameter [mm]	D [mm]	E [mm]	Thread []	Coupler Weight [kg]	Tightening torque* [Nm]	Length of the adapted wrench** [cm]
12	22	43	M13 x 1,75	0,09	60	20
14	22	47	M15 x 2	0,09	100	30
16	32	47	M17 x 2	0,22	100	30
20	32	55	M21 x 2,5	0,22	200	60
25	40	64	M26 x 3	0,39	250	80
28	45	69	M29 x 3	0,53	280	80
32	50	80	M33 x 3,5	0,73	280	80
40	60	110	M41 x 4	1,46	340	100

* The tightening torque must only be applied to the 2nd phase bar.

** The tightening torque is reached with a 35kg force, applied when using a well-adapted wrench. For higher safety make usage of a torque wrench.

Dimensions Couplerbox screw nut

Metric []	s [mm]	e [mm]	m [mm]	Code []
M13	19	22	11	NIE13
M15	22	25	12	NIE15
M17	24	28	13	NIE17
M21	30	34	14	NIE21
M26	36	41	19	NIE26
M29	41	47	22	NIE29
M33	50	57	25	EEE33B
M41	59	68	32	NIE41

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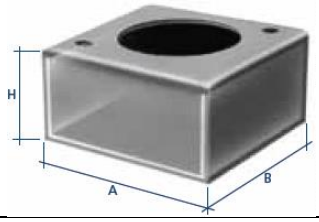
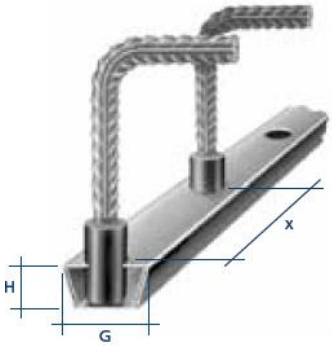
Dimensions Monobox



ϕ bar [mm]	A x B [mm x mm]	H [mm]	Weight [kg]	Code []
12	70 x 70	25	0,08	PLCBOXS12
14	70 x 70	25	0,08	PLCBOXS12
16	70 x 70	25	0,08	PLCBOXS16
20	70 x 70	25	0,08	PLCBOXS16
25	70 x 70	25	0,08	PLCBOXS25
28	70 x 70	25	0,07	PLCBOXS28
32	70 x 70	25	0,07	PLCBOXS32
40	70 x 70	25	0,07	PLCBOXS40
Cover				
12-40	70 x 70	20	0,02	PLCBOXVPM

Dimensions Multibox (Length = 1,2m)



ϕ bar [mm]	G [mm]	H [mm]	Weight (cover included) [kg/1]	Reference code []
12	60	28	0,50	PLCBOX12...**
14	60	28	0,50	PLCBOX12...**
16	60	28	0,50	PLCBOX16...**
20	60	28	0,50	PLCBOX16...**
25	60	28	0,50	PLCBOX25...**
28	60	28	0,50	PLCBOX28...**
32	60	28	0,50	PLCBOX32...**
40	90	28	0,50	PLCBOX40...**

* ... = centre distance holes [mm] (x = 100, 150 or 200mm)

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ACCESSORY	Torque wrench		Reference code
	Diameter 12-32mm	ϕ12-32mm	EEMOM2
	Diameter 40mm	ϕ 40mm	EEMOM1

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