



INDO CONSTRUCTION FASTENING SYSTEMS

A brand of Indo Spark Group Since 1978



CM585PE-PRO

Chemical Mortar - Pure Epoxy

Chemical Mortar ICFS CM585PE - PRO

EPOXY INJECTION RESIN




Corrosion related Technical compliance for ICFS CM585PE-PRO

ICFS CM585PE conforms to the corrosion requirements as per the relevant regulations and testing Procedures as follows :

- The ETA for CM 585 PE has 100 years of service life and the EAD 330499 standard is the base of the ETA. On the first page of the ETA it is mentioned that the EAD 330499 is the base of the certification. On the EAD330499 you'll find details of the tests made on the product to fulfil all the requests for 100 years of durability, including a high alkaline environment (high corrosion) on pages 30-31. The user needs to use HCR-grade (high corrosion resistance) steel for this type of application. This is part of the ETA too
- **ETA APPROVAL**- CM 585 PE has European Technical Approval - ETA option 1 with C1 & C2 seismic zone compliance. ETA is according to TR023 for stud and rebar. Approval details- ETA 21/0239 of 11/08/2021, Issued in Prague on 11.08.2021 This ETA is issued in accordance with regulation (EU) No 305/2011 - EAD 330087-01-0601
- **Corrosion resistance** - Corrosion resistance test is part of ETA. Corrosion resistance tests for CM-585 PE have already been performed to check the product stability in corrosive environment. Assessment and verification of constancy of performance (AVCP) system applied with reference to EAD-330499 that operates and regulates ETA approval process. ETA approval is provided only when product is fit for all EAD regulations. For ascertaining the corrosion resistance of the chemical anchors, the products are tested for durability tests acc. to EAD330499 including in high pH and sulphurous atmospheres. So, when we offer an ETA certificate for 50 or 100 years of service life, this includes corrosion resistance.
- **Other environmental approvals** - Fire resistance, LEED tested for VOC (LEED 2009), WRAS (potable water) approval (WRAS 1309522)

TYPICAL GEL AND CURING TIME / POT LIFE

 °C	Gel Time (min.)	Cure Time (hrs.)
+5°C (↑ MIN +10°C)	300 min	24 hrs.
+5°C to +10°C	150 min	24 hrs.
+10°C to +15°C	40 min	18 hrs.
+15°C to +20°C	25 min	12 hrs.
+20°C to +25°C	18 min	8 hrs.
+25°C to +30°C	12 min	6 hrs.
+30°C to +35°C	8 min	4 hrs.
+35°C to +40°C	6 min	2 hrs.

PHYSICAL PROPERTIES

Property		Value	Unit	Test Standard
Density		1,5	g/cm³	ASTM D 1875 @ +20°C
Compressive Strength	24 hrs	75	N/mm²	ASTM D 695 @ +20°C
	7 days	95		
Tensile Strength	24 hrs	18	N/mm²	ASTM D 638 @ +20°C
	7 days	23		
Elongation at Break	24 hrs	6,6	%	ASTM D 638 @ +20°C
	7 days	5,9		
Tensile Modulus	24 hrs	5,7	GN/m²	ASTM D 638 @ +20°C
	7 days	5,5		
Flexural Strength	24 hrs	45	N/mm²	ASTM D 790 @ +20°C
HDT	7 days	49	°C	ASTM D 648 @ +20°C
VOC		4,5	g/l	ASTM D 2369



Chemical Mortar CM585PE - PRO

EPOXY INJECTION RESIN



Description

CM585 is a 2 component high strength pure epoxy chemical anchoring resin system. It is designed for deep embedment and large diameter holes due to its zero shrinkage and longer working times. For diamond drilled holes, with rebar, and in areas of high chemical exposure eg. Seasalt and swimming pools.

Available in Sizes: 585ml Cartridge.

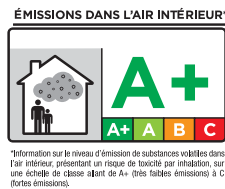
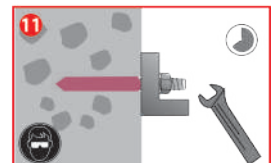
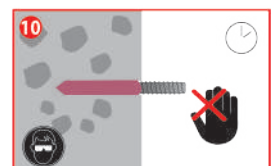
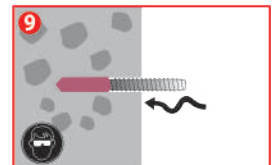
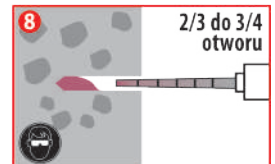
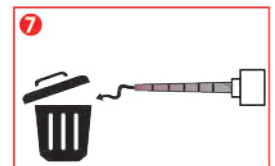
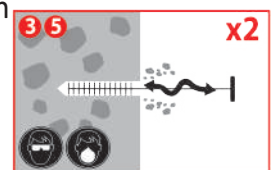
Specific Benefits

- Long working times
- High loads possible
- High chemical resistance
- Use with potable water
- Fixing studs in wood
- 24 Month shelf life
- Corrosion resistance
- Diamond drilled holes
- Zero shrinkage
- European approved
- Fire approved
- Studs and Rebar
- A+ Rating VOC content
- ICFS Anchor design software
- Cracked Non cracked concrete
- Hammer Drilled holes
- Small edge distance and spacing
- Variable embedment depth
- Static quasi load

Approvals

A4 316.webp

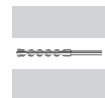
- ETA Option 1 ETAG 001 for cracked concrete with studs and rebar TR029
- ETA Option 1 ETAG 001 for rebar TR023 : Approved for Seismic Loads C2
- F120 Fire Test report • ICC-ES Approval ESR 3853
- BS6920 for use with potable water WRAS Approved 1309522
- ETA approved in flooded holes, wet and dry concrete
- Tested according to LEED 2009 EQ c4.1, SCAQMD rule 1168 (2005)



Concrete (non-cracked)



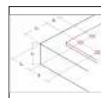
Concrete (cracked)



Hammer drilled holes



Diamond drilled holes



Small edge distance and spacing



Variable embedment depth



Static/quasi-static



Corrosion resistance



High corrosion resistance



ICFS Anchor Design Software



Corrosion resistance



INDO CONSTRUCTION FASTENING SYSTEMS



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Typical characteristic and design resistance performance with 5.8 grade studding and associated installation data

Stud Ø (mm)	Characteristic Resistance (kN)		Design Resistance (kN)		Recommended Load (kN)		Characteristic Distances (kN)			Min Edge & Spacing (mm)	Nominal Embedment (mm)	Hole Diameter concrete (mm)	Hole Diameter fixture (mm)	Max. Torque (mm)
	Tension	Shear	Tension	Shear	Tension	Shear	Edge	Spacing	Edge					
	N _{rk}	V _{rk}	N _{rd}	V _{rd}	N _{rec}	V _{rec}	C _{cr,N}	S _{cr,N}	C _{cr,V}					
M 8	19.00	9.00	12.70	7.20	9.07	5.14	80	160	80	40	80	10	09	10
M 10	30.20	15.00	20.10	12.00	14.36	8.57	100	200	90	50	90	12	12	20
M 12	43.80	21.00	29.20	16.80	20.86	12.00	120	240	110	60	110	14	14	40
M 16	81.60	39.00	54.40	31.20	38.86	22.29	160	320	125	80	125	18	18	80
M 20	127.40	61.00	84.90	48.80	60.64	34.86	200	400	180	100	170	24	22	120
M 24	183.60	88.00	122.40	70.40	87.43	50.29	240	480	220	120	210	28	26	160
M 27	238.00	115.00	159.10	92.00	109.52	65.71	270	540	240	135	240	32	30	180
M 30	292.00	142.50	194.50	114.00	133.33	81.43	300	600	280	150	280	35	32	200
M 33	342.12	173.50	162.91	138.80	116.36	99.14	330	660	310	165	300	37	36	250
M 36	396.07	212.50	188.60	170.00	134.72	121.43	360	720	330	180	340	40	38	300

High bond reinforcing bars Fyk=500N/mm2

Rebar Diameter (mm)	Hole Diameter (mm)	Embedment Depth hef																				h _{ef} failure (mm)	Steel failure load (kN)
		60	70	80	90	100	110	120	130	140	160	200	240	280	320	400	500	560	640	720	800		
8	10	11.7	13.7	15.6	17.6	19.6	21.5	23.5	25.2													129	25.2
10	12	14.7	17.1	19.6	22.0	24.4	26.9	29.3	31.8	34.2	39.1	39.3										161	39.3
12	15		19.1	21.8	24.5	27.2	30.0	32.7	35.4	38.1	43.6	54.5	56.6									208	56.6
16	20			26.8	30.2	33.5	36.9	40.2	43.6	46.9	53.6	67.0	80.4	93.8	100.6							300	100.6
20	25			28.7	32.3	35.9	39.5	43.1	46.7	50.3	57.5	71.9	86.2	100.5	114.9	143.6						438	157.1
25	30					41.1	45.3	49.4	53.5	57.6	65.8	82.3	98.7	115.2	131.7	164.6	205.7					549	226.0
28	35						50.7	55.3	59.9	64.5	73.7	92.2	110.6	129.0	147.5	184.3	230.4	258.1				668	308.0
32	40								68.5	73.7	84.3	105.3	126.4	147.5	168.5	210.7	263.3	294.9	337.1			763	402.1
36	44									79.2	90.5	113.1	135.7	158.4	181.0	226.0	282.8	316.7	362.0	407.2		902	510.0
40	50										95.8	119.7	143.6	167.6	191.5	239.4	299.2	335.1	383.0	430.9	478.8	1050	628.3
Depth (mm)		60	70	80	90	100	110	120	130	140	160	200	240	280	320	400	500	560	640	720	800		

Characteristic and Design Load resistances based on characteristic bond strengths for hef 4d (minimum embedment) to 20d

Stud Ø (mm)	Non Cracked Concrete						Cracked Concrete						Nominal Embedment (mm)
	Characteristic Resistance (kN)		Design Resistance (kN)		Recommended Load (kN)		Characteristic Resistance (kN)		Design Resistance (kN)		Recommended Load (kN)		
	Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear	
	N _{rk}	V _{rk}	N _{rd}	V _{rd}	N _{rec}	V _{rec}	N _{rk}	V _{rk}	N _{rd}	V _{rd}	N _{rec}	V _{rec}	
M 8	30.16	9.00	16.76	7.20	11.97	5.14	Not Applicable		Not Applicable		Not Applicable		80
M 10	42.41	15.00	23.56	12.00	16.83	8.57							90
M 12	62.20	21.00	34.56	16.80	24.68	12.00	31.10	21.00	17.28	16.80	12.34	12.00	110
M 16	87.96	39.00	48.87	31.20	34.91	22.29	42.22	39.00	23.46	31.20	16.75	22.29	125
M 20	138.86	61.00	66.12	48.80	47.23	34.86	63.90	61.00	30.41	48.80	21.72	34.86	170
M 24	190.00	88.00	90.48	70.40	64.63	50.29	85.50	88.00	40.71	70.40	29.10	50.29	210
M 27	244.29	115.00	116.33	92.00	83.09	65.71	107.49	115.00	51.18	92.00	36.56	65.71	240
M 30	316.67	142.50	150.80	114.00	107.71	81.43	133.00	142.50	63.33	114.00	45.24	81.43	280
M 33	342.12	173.50	162.91	138.80	116.37	99.14	140.27	173.50	66.80	138.80	47.71	99.14	300
M 36	396.07	212.50	188.60	170.00	134.72	121.43	154.47	212.50	73.56	170.00	52.54	121.43	340



Bond Strength Factors

Influence of concrete strength on combined pull out and concrete cone resistance

Concrete Strength N/mm ² (Mpa)	C15/20	C20/25	C25/30	C30/37	C35/45	C40/50	C45/55	C50/60
fc =	0.98	1.00	1.02	1.04	1.06	1.08	1.09	1.10

Characteristic and Design Load resistance for Rebar based on characteristic bond strengths for hef 10d (min. embedment)

Rebar Ø (mm)	Non Craked Concrete						Craked Concrete						Nominal Embedment (mm)
	Characteristic Resistance (kN)		Design Resistance (kN)		Recommended Load (kN)		Characteristic Resistance (kN)		Design Resistance (kN)		Recommended Load (kN)		
	Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear	
	N _{rk}	V _{rk}	N _{rd}	V _{rd}	N _{rec}	V _{rec}	N _{rk}	V _{rk}	N _{rd}	V _{rd}	N _{rec}	V _{rec}	
8	22.12	13.95	12.29	9.30	8.78	6.64	Not Applicable		Not Applicable		Not Applicable		80
10	31.10	21.45	17.28	14.30	12.34	10.21							100
12	41.47	31.05	23.04	20.70	16.45	14.79	22.81	31.05	12.67	20.70	9.05	14.79	110
16	59.69	55.50	33.16	37.00	23.69	26.43	28.05	55.50	15.58	37.00	11.13	26.13	125
20	96.13	86.55	45.78	57.70	32.70	41.21	42.30	86.55	20.14	57.70	14.39	41.21	170
25	148.44	135.00	70.69	90.00	50.49	64.29	63.83	135.00	30.40	90.00	21.71	64.29	210
28	209.36	168.75	99.69	112.50	71.21	80.36	87.93	163.75	41.87	112.50	29.90	80.36	280
32	273.44	220.95	130.21	147.30	93.01	105.21	112.11	220.95	53.39	147.30	38.13	105.21	320

Bond Strength Factors - Rebar

Influence of concrete strength on combined pull out and concrete cone resistance

Concrete Strength N/mm ² (Mpa)	C15/20	C20/25	C25/30	C30/37	C35/45	C40/50	C45/55	C50/60	C55/67	C60/75
fc =	0.98	1.00	1.02	1.04	1.06	1.08	1.09	1.10	1.10	1.12

Rebar Diameter (mm)	Rebar Bst 500 to DIN 488		Rebar Bst 500 to DIN 488	
	N _{rk,s}	N _{rd,s}	V _{rk,s}	V _{rd,s}
8	28.0	20.0	14.0	9.3
10	43.0	30.7	21.5	14.3
12	62.0	44.3	31.0	20.7
14	85.0	60.7	42.5	28.3
16	111.0	79.3	55.5	37.0
18	140.0	100.0	70.0	46.7
20	173.0	123.6	86.5	57.7
22	209.0	149.3	104.5	69.7
25	270.0	192.9	135.0	90.0
28	339.0	242.1	169.0	112.7
32	442.0	315.7	221.0	147.3
36	563.2	443.5	281.6	187.7
40	693.8	546.3	346.9	231.3



Application examples of Post-installed Rebar

Figure 1 : Overlap joints in slabs and beams.

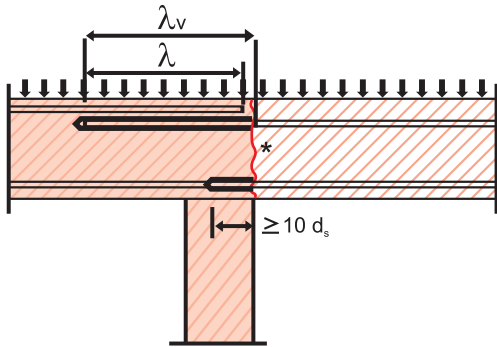


Figure 3 : End anchoring of slabs or beams, designed as simply supported.

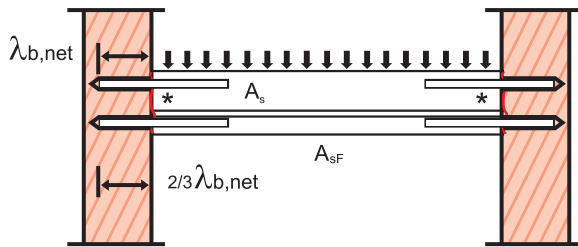


Figure 5 : Anchoring of reinforcement to cover the line of acting tensile force.

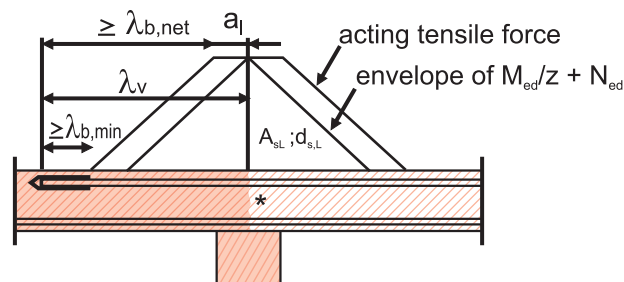


Figure 2 : Overlap joint in foundation of a column or wall where the rebars are stressed in tension.

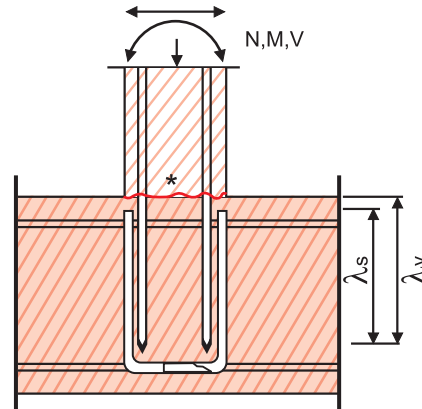
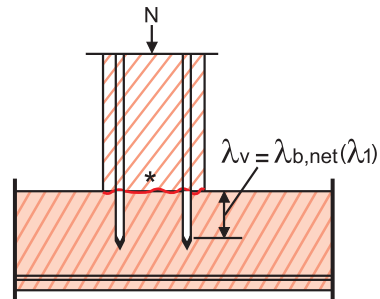


Figure 4 : Rebar connection of components stressed primarily in compression. The rebar are stressed in compression.



Note to Figure 1 to 5 :

In the figures no transverse reinforcement is plotted, the transverse reinforcement as required by EC 2 shall be present. The shear transfer between old and new concrete shall be designed according to EC2. Description of the bonded-in rebars and overlap joints see Annex 4 and 5.

*Roughened joint



Chemical Anchor Stud CAS

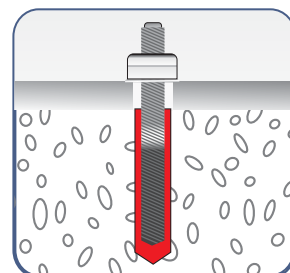
Steel, zinc plated/stainless steel A4-316



Chemical anchor CAS-E

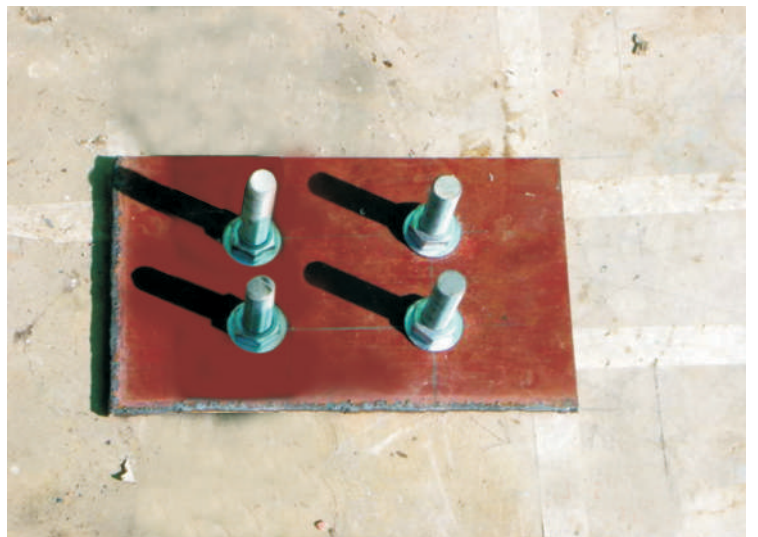
Description

The chemical anchor CAS is a chisel ended anchor for use with any of our injection systems and glass capsules in masonry and concrete. On installation the stud becomes chemically bonded to the base material. Notably the fixing method imposes no expansion stress on the base material and is ideal for shock or vibratory loading and for softer or low density building materials where expansion stresses would normally result in failure. The method also gives exceptional performance for close centre and close to edge fixing. The nut may be removed and replaced without affecting the anchorage. The chemical anchor CAS is supplied complete with high tensile hex nut and plain washer in addition to one external hex drive adapter in each box.



Product code Zinc plated 5.8 Grade	Anchor thread size(mm)	Anchor Length (mm)	Hole Diameter (mm)	Effective anchoring depth (mm)	Max.usable Length (mm)	Width across nut (mm)	Hex nut (mm) SW	Washer in dia (mm)	Washer outer dia (mm)	Washer thickness (mm)	Package content pcs per Box
CAS08110E	M 08	110	10	80	13	5	13	9	15	1	25
CAS10130E	M 10	130	12	90	20	7	17	11	19	2	25
CAS10160E	M 10	160	12	90	52	7	17	11	19	2	25
CAS12160E	M 12	160	14	110	25	8	19	13	19.5	3	20
CAS12220E	M 12	220	14	110	90	8	19	13	19.5	3	20
CAS12250E	M 12	250	14	110	120	8	19	13	19.5	3	20
CAS16165E	M 16	165	18	125	13	12	24	17	29	4	10
CAS16190E	M 16	190	18	125	35	12	24	17	29	4	10
CAS16250E	M 16	250	18	125	98	12	24	17	29	4	10
CAS16300E	M 16	300	18	125	148	12	24	17	29	4	10
CAS16380E	M 16	380	18	125	235	12	24	17	29	4	10
CAS16500E	M 16	500	18	125	355	12	24	17	29	4	10
CAS20170E	M 20	170	25	125	135	12	30	21	30	4	10
CAS20260E	M 20	260	25	170	105	12	30	21	36	4	10
CAS20350E	M 20	350	25	170	155	12	30	21	36	4	10
CAS20500E	M 20	500	25	170	305	12	30	21	36	4	10
CAS24300E	M 24	300	28	210	65	16	36	26	43	5	5
CAS24400E	M 24	400	28	210	165	16	36	26	43	5	5
CAS24600E	M 24	600	28	210	365	16	36	26	43	5	5
CAS27400E	M 27	400	32	210	165	18	41	28	49	5	5
CAS30380E	M 30	380	35	280	65	25	46	33	55	5	5
CAS30500E	M 30	500	35	280	185	25	46	33	55	5	5







A brand of Indo Spark Group Since 1978

CHANNEL PARTNER



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