

ICFS 
INDO CONSTRUCTION FASTENING SYSTEMS



CHEMICAL MORTAR
CM350VESF

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Chemical Mortar CM 350VESF

Vinylester Styrene Free



Description

The CM350VESF is a high performance rapid curing styrene free low odor two-component. Chemical injection anchoring system based on high reactivity unsaturated vinylester resin in methacrylate monomers. The co-axial cartridge format comprises of a resin and hardening agent in separate internal compartments which are mixed to the correct proportions in the delivery nozzle when triggered using the required manual dispenser.

Base Material

Recommended for use in reinforced and non-reinforced concrete, rock and stone. It also provides a higher grade bond than standard epoxy acrylate resin in solid masonry, hollow brick-work and pre-cast (requires suitable sleeve) with minimal shrinkage.

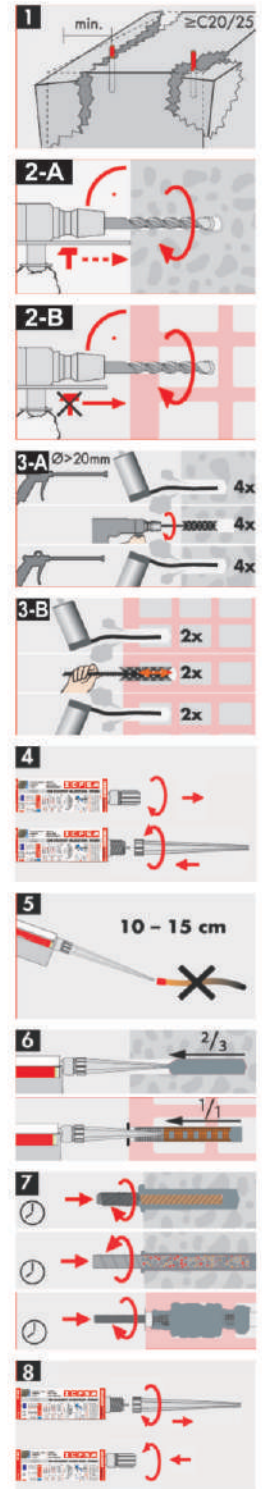
Feature

- Non Flammable.
- Non hazardous environmentally friendly low odor.
- Extreme heat and high chemical resistance.
- High load values in concrete and masonry for medium to heavy duty applications.
- Imparts no expansion stresses on the base material.
- Suitable for close to edge and reduced anchor center fixing.
- Usable in damp and wet environment and submerged drill holes.
- Rapid cure.
- Vibration resistant.
- Corrosion resistant.

Approval :



Tested by :



°C	Typical Gel Time
≥ 0 °C	45 min
≥ +5 °C	25 min
≥ +10 °C	15 min
≥ +20 °C	6 min
≥ +30 °C	4 min
≥ +35 °C	2 min
≥ +40 °C	1,5 min

CHEMICAL MORTER CM350VESF



Variant 350ml co-axial 10.1 ratio cartridge
Material Vinylester Styrene Free

Product code	Content (ml)	Colour when mixed	Package content
CM350 VESF	350	grey	6



Anchorage in concrete with Rebar CM350VESF

Concrete Strength Class : C20/25, (25N/mm² Cylinder : 30N mm² 150mm cube)

High bond Reinforcing Bars FYK = 500N/mm²

Rebar Diameter (mm)	Drill Hole Diameter (mm)	Design Resistance (N _d)																hef failure (mm)	Steel failure load (kN)
		(kN)																	
8	10-12	8.3	9.5	10.7	11.9	13.1	14.2	15.4	16.6	18.6	21.9							180	21.9
10	12-14	10.3	11.9	13.3	14.8	16.3	17.7	19.2	20.7	23.7	28.9	34.1						225	34.1
12	15-16	11.2	12.8	14.4	16.0	17.5	19.2	20.8	22.4	25.6	32.0	38.4	41.8	49.2				300	49.2
16	18-20		16.1	18.1	20.1	22.1	24.2	26.2	28.2	32.3	40.3	48.4	56.5	64.6				423	87.4
20	22-25		17.3	19.4	25.2	23.8	26.0	28.1	30.3	34.6	43.3	52.0	60.9	69.30	86.7			616	136.6
Depth (mm)		70	80	90	100	110	120	130	140	160	180	230	280	320	400	500			
25	30	27.9	30.5	33.0	35.6	40.7	50.8	61.0	71.2	81.4	101.7	127.1						755	196.5
28	35	29.4	32.0	34.6	37.4	42.7	53.3	64.0	74.8	85.4	106.8	133.5	149.6					980	267.8
32	40			39.1	42.7	48.8	61.0	73.2	85.4	97.6	122.0	152.5	170.9	195.3				1120	349.7
36	44				48.1	54.9	68.6	82.4	96.1	109.9	137.3	171.7	192.2	219.7	247.2			1263	443.5
40	50					56.9	71.2	85.4	99.7	113.9	142.4	178.0	199.4	227.8	256.3	284.8		1500	546.3
Depth (mm)		110	120	130	140	160	200	240	280	320	400	500	560	640	720	800			

High bond Reinforcing Bars FYK = 420N/mm²

Rebar Diameter (mm)	Drill Hole Diameter (mm)	Design Resistance (N _d)																hef failure (mm)	Steel failure load (kN)
		(kN)																	
8	10-12	7.1	8.3	9.5	10.7	18.4												102	18.4
10	12-14	8.9	10.3	11.9	13.3	14.8	16.3	28.7										127	28.7
12	15-16	11.2	12.8	14.4	16.0	17.5	19.2	20.8	22.4	25.6	41.3							168	41.3
16	18-20		16.1	18.1	20.1	22.1	24.2	26.2	28.2	32.3	40.3	48.4	73.4					236	73.4
20	22-25		17.3	19.4	21.6	23.8	26.0	28.1	30.3	34.6	43.3	52.0	60.0	69.3	114.8			362	114.8
Depth (mm)		70	80	90	100	110	120	130	140	160	180	200	280	320	380	450			
25	30	27.9	30.5	33.0	35.6	40.7	50.8	61.0	71.2	81.4	101.7	165.1						417	165.1
28	35	29.4	32.0	34.6	37.4	42.7	53.3	64.0	74.8	85.4	106.8	133.5	149.6	225.0				537	225.0
32	40			39.6	42.7	48.8	61.0	73.2	85.4	97.6	122.0	152.5	170.9	195.3	293.7			614	293.7
36	44				48.1	54.9	68.6	82.4	96.1	109.9	137.3	171.7	192.2	219.7	247.2	372.5		735	372.5
40	50					56.9	71.2	85.4	99.7	113.9	142.4	178.0	199.4	227.8	256.3	284.8		815	458.9
Depth (mm)		110	120	130	140	160	200	240	280	320	400	450	500	550	650	800			

High bond Reinforcing Bars FYK = 500N/mm²

Rebar Diameter (mm)	Drill Hole Diameter (mm)	Recommended Resistance (N _d)																	
		(kN)																	
8	10	2.3	6.7	7.6	8.5	9.3	10.1	11.0	11.8	13.2	15.6								
10	12	7.3	8.5	9.5	10.5	11.6	12.6	13.7	14.7	16.9	20.6	24.3							
12	14	8.0	9.1	10.2	11.4	12.5	13.7	14.8	16.0	18.2	22.8	27.4	29.8	35.1					
16	18		11.5	12.9	14.3	15.7	17.2	18.7	20.1	23.0	28.7	34.5	40.3	46.1					
20	24		12.3	13.8	18.0	17.0	18.5	20.0	21.6	24.7	30.9	37.1	43.5	49.5	61.9				
Depth (mm)		70	80	90	100	110	120	130	140	160	180	230	280	320	400	500			
25	30	19.9	21.7	23.5	25.4	29.0	36.2	43.5	50.8	58.1	72.6	90.7							
28	35	21.0	22.8	24.7	26.7	30.5	38.0	45.7	53.4	61.0	76.2	95.3	106.8						
32	40			27.9	30.5	34.8	43.5	52.2	61.0	69.7	87.1	108.9	122.0	139.5					
36	44				34.3	39.2	49.0	58.8	68.6	78.5	98.0	122.6	137.2	156.9	176.5				
40	50					40.6	50.8	61.0	71.2	81.3	101.7	127.1	142.4	162.7	183.0	203.4			
Depth (mm)		110	120	130	140	160	200	240	280	320	400	500	560	640	720	800			



Anchorage in concrete with Threaded rod 5.8 grade CM350VESF

5.8 Grade Studing

Stud Diameter (mm)	Drill Hole Diameter (mm)	Design Resistance (N_{rd})												hef failure (mm)	Steel failure load (kN)	
		(kN)														
8	10	9.6	12.7												77	12.7
10	12		14.0	16.0	20.1										98	20.1
12	14		16.8	19.2	21.6	24.0	29.2								118	29.2
16	18			24.6	27.7	30.8	33.9	37.0	40.0	43.1	54.4				173	54.4
20	24			25.8	29.0	32.3	35.5	38.7	41.9	45.2	51.6	64.6	84.9	256	84.9	
Depth (mm)		70	80	90	100	110	120	130	140	160	200	240	280			
24	28	33.5	36.9	40.2	43.6	47.0	53.7	67.1	80.5	94.3	122.4			357	122.4	
27	32		41.5	45.3	49.1	52.8	60.4	75.5	90.6	105.8	120.8	159.1		412	159.1	
30	35			50.4	54.5	58.7	67.1	83.9	100.7	117.5	134.3	194.5		453	194.5	
33	38				57.2	61.7	70.4	88.1	105.7	123.4	141.0	176.2	240.6	534	240.6	
36	40					64.6	73.8	92.3	110.7	129.2	147.6	184.6	221.5	600	283.2	
Depth (mm)		110	120	130	140	160	200	240	280	320	400	480	540			

A4-80 Stainless Steel Studing

Stud Diameter (mm)	Drill Hole Diameter (mm)	Design Resistance (N_{rd})												hef failure (mm)	Steel failure load (kN)	
		(kN)														
8	10	9.6	11.2	12.8	15.7										95	15.7
10	12		14.0	16.0	17.9	20.0	24.8								121	24.8
12	14		16.8	19.2	21.6	24.0	26.4	28.8	36.1						147	36.1
16	18			24.6	27.7	30.8	33.9	37.0	40.1	43.1	49.3	67.2		213	67.2	
20	24			25.8	29.0	32.3	35.5	38.7	41.9	45.2	51.6	64.6	77.5	317	104.8	
Depth (mm)		70	80	90	100	110	120	130	150	180	200	240	280			
24	28	33.5	36.9	40.2	43.6	47.0	53.7	67.1	80.5	94.0	132.1			384	132.1	
27	32		41.5	45.3	49.1	52.8	60.4	80.2						208	80.2	
30	35			50.4	54.5	58.7	67.1	98.1						229	98.1	
33	38				57.2	61.7	70.4	88.1	121.3					269	121.3	
36	40					64.6	73.8	92.3	110.7	142.8				302	142.8	
Depth (mm)		110	120	130	140	160	200	240	280	320	400	480	540			

5.8 Grade steel Studing

Stud Diameter (mm)	Hole Diameter (mm)	Recommended Resistance (N_{rd})													
		(kN)													
8	10	8.3	9.0												
10	12	10.0	11.7	13.5	14.3										
12	14	14.1	16.1	18.2	20.2	20.8									
16	18		20.7	23.3	25.9	28.5	31.1	33.7	36.2	38.8					
20	24		21.7	24.4	27.1	29.8	32.6	35.2	38.0	43.4	54.2	60.6			
Depth (mm)		70	80	90	100	110	120	130	140	160	200	240	280		
24	28	28.2	31.0	33.8	36.7	39.5	45.1	56.4	67.7	79.0	87.4				
27	32	34.9	38.0	41.2	44.4	50.7	63.5	76.2	88.9	101.5	113.6				
30	35		42.3	45.8	49.3	56.4	70.5	84.6	98.7	112.9	138.9				
33	38			48.1	51.8	59.2	74.0	88.8	103.7	118.5	148.1	171.8			
36	40				54.2	62.0	77.5	93.0	108.5	124.0	155.1	186.1	202.2		
Depth (mm)		110	120	130	140	160	200	240	280	320	400	480	540		



Chemical Anchor Stud CAS

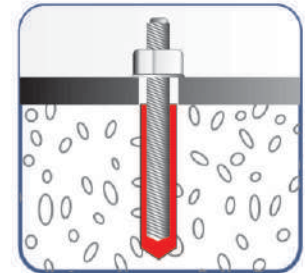
Steel, zinc plated/stainless steel A4-316



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



Accessories for drill hole cleaning

Blow out pump **BP**

Description

The hand operated blow out pump BP is for drill hole cleaning prior to anchor installation.



Blow out pump

Variant Hand Operated
Material ABS

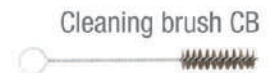
Product code	Overall length (mm)	Package content
BP280	280	1

Important Note :

Performance based on clean holes;

HAMMER DRILLED- blown and then brushed with a still metal brush & blown again.

Cleaning brush **CB**



Cleaning brush CB

Description

Wire brush CB is for thorough cleaning and hole preparation.

Variant Hand Operated
Material Steel body & head

Product code	Overall length (mm)	Overall length (mm)	Package content
CB0816	13	8-16	1
CB1824	18	18-24	1
CB2636	28	26-36	1

Dispenser **DM 300** Steel body and mechanism

Dispenser DM300

Description

The Professional Dispenser DM300 for use with chemical mortar cartridge CM350P & CM350VESF.



Variant 300ml 10:1 ratio cartridge.
Material steel body and mechanism

Product code	Cartridge size (ml)	Package content
DM300	300	1



Mixer Nozzle MN

PLASTIC



Mixer nozzle MN

Description

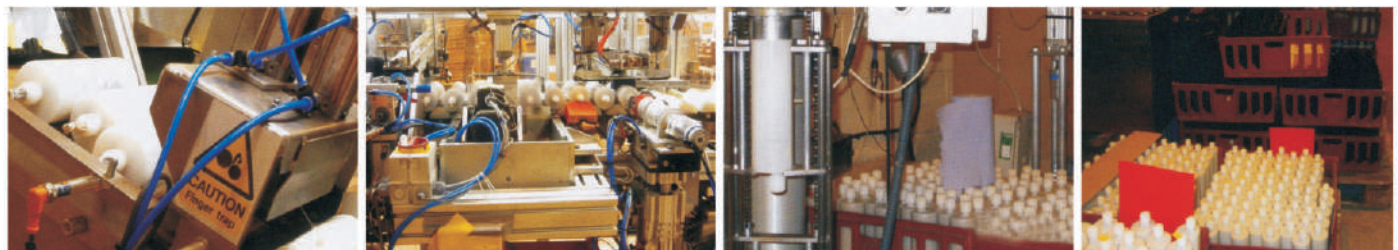
Spare mixer nozzle for use with chemical mortar cartridges CM 300PESF, CM350VESF & CM400PE.

Variant Co-axial
Material Plastic

Product code	Suitable for chemical mortar cartridge	Package content
MN300	CM350VESF	1
MN400	CM400PE	1



ICFS Chemical Production Unit





CHANNEL PARTNER



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