



The Chemical Company

CONCRECISE[®] 1450i

High performance styrene free epoxyacrylate based fixing compound

Description

CONCRECISE[®] 1450i is a 2 component advanced epoxyacrylate fixing & anchoring mortar. Supplied in a self mixing cartridge CONCRECISE[®] 1450i combines predictable high performance with safety & application convenience.

Primary uses

Heavy duty & critical anchoring such as rebars & threaded anchor rods/bolts in rock & concrete and reinforcing dowel bars

Used in wet environment, at low to very low temperatures & wherever solvents or styrene are unacceptable

Used in high temperature applications

Anchoring with sleeves in hollow brick or concrete

Specified fixing media for Watson Bowman Acme joints & neoprene ancillaries

Advantages

- Solvent free
- Styrene free
- Non flammable (no methyl-methacrylate)
- Rapid curing – cures below 0°C (when freezing)
- Conforms with French norms NF P18-831 & NF P18-836 (for rebars)
- Suitable for wet environment
- Used in diamond drilled holes
- Virtually no wastage

Packaging

Two-component cartridges: 400 ml side by side cartridges.

Typical properties*

Resin	Beige
Hardener	White or Black
Mixed product	Beige or grey thixotropic soft paste
Mixing ratio by volume	1:1

Setting times

Temp	Working Time	Curing time
-5°	120 min	7 h
0°C	60 min	4 h
5°C	20 min	120 min
20°C	7 min	30 min
30°C	4 min	25 min
40°C	2 min	15 min

Application procedures

1. Drill the correct size hole in the concrete base material.
2. Clean the whole thoroughly.
3. Fix the mixer nozzle to the front end of the resin cartridge.
4. Fit the resin cartridge into the special dispenser gun and apply the correct number of trigger pulls starting at the far side of the drilled hole.
5. Insert the rebar or threaded rod into the hole.
6. For threaded rods, apply the correct tightening torque only after the curing time specified for the resin.

CONCRECRESIVE[®] 1450i

Working Load in Concrete C35/45 – Steel Rod

Steel Rod 8.8	M8	M10	M12	M14	M16	M20
Ø of insert (mm)	8.0	10.0	12.0	14.0	16.0	20.0
Ø of hole D (mm)	10.0	12.0	14.0	16.0	20.0	25.0
Embedment depth (mm)	80.0	100.0	120.0	140.0	160.0	200.0
Ultimate Tensile Load value in kN	21.2	29.3	37.5	45.1	62.9	77.3
Ultimate Shear Load value in KN	14	18.3	31.2	35.0	43.5	71.3
Tensile Working Load value in KN	4.4	6.2	7.3	9.1	12.8	18.5
Shear Working Load value in KN	5.0	6.7	10.2	12.8	15.0	25.4
Tightening torque in Nm	12.0	26.0	44.0	75.0	85.0	115.0
Consumption Volume in number of trigger pulls	1	2	2	3	4	5

One 400ml cartridge has approximately 50 pulls on the trigger of the dispenser

Post-installed Rebars

The test results per NF Norms P 18-831 & NF P 18-836 have confirmed that bonding between resin & the concrete is equal to the bonding a steel bar of HA quality (high adherence) in the concrete i.e. if the concrete is poured directly around the rebar, it is not more effective than using resin.

Rebar HA Fe E 500

Concrete C35/45

Re = 500 N/mm² (yield point)

Rm = 550 N/mm² (tensile strength)

Rebar Diameter (mm)	8.0	10.0	12.0	14.0	16.0	20.0	25	32	40
Drill bit diameter (mm)	10.0	14.0	16.0	18.0	20.0	25.0	30.0	40.0	48.0
Section (mm ²)	50.3	78.5	113.0	154.0	201.0	314.0	490.0	803.0	1256.0
Ultimate Tensile Load (kN)	27.0	43	62.0	84.0	110.0	172.0	234.0	309.0	430.0
Maximum embedment depth									
Ultimate Shear Load (kN)	12.6	16.5	27.3	35.9	41.6	66.7	102.9	168.6	263.7
Maximum embedment depth									
Consumption Volume in number of trigger pulls on dispenser for minimum embedment	2	3	3	3	4	5	7	9	12

One 400ml cartridge has approximately 50 pulls on the trigger of the dispenser



The Chemical Company

CONCRECRESIVE[®] 1450i

Working Load in Concrete

Resin CONCRECRESIVE[®] 1450i – rebar HA Fe E500

Ø of rebar (mm)	Ø of hole (mm)	Concrete C25/30				Concrete C35/45			
		Length of embedment (mm)		Tensile working load (kN)		Length of embedment (mm)		Tensile working load (kN)	
		L Min	L Max	F Min	F Max	L Min	L Max	F Min	F Max
8	10	80	285	4	16	80	222	5	16
10	14	100	357	7	25	100	277	9	25
12	16	120	428	10	36	120	333	12	36
14	18	140	510	13	50	140	396	17	50
16	20	160	580	17	65	160	451	23	65
20	25	200	728	28	102	200	566	36	102
25	30	250	805	45	146	250	683	53	146
32	40	320	910	66	193	320	803	80	193
40	48	400	1100	91	269	400	930	123	269

For different concrete strengths, multiply the working loads by a factor which is $\mu = \text{working load} \times \{1 + (\text{Actual concrete strength} - 40) / 50\}$

Reduction factors for edge distance δ_1

Edge distance in terms of embedment depth L	0.6L	0.7L	0.8L	0.9L	1.0L	1.1L	1.2L
δ_1	0.48	0.55	0.65	0.7	0.8	0.9	1.0

Reduction factors for anchor spacing (rebar spacing) δ_2

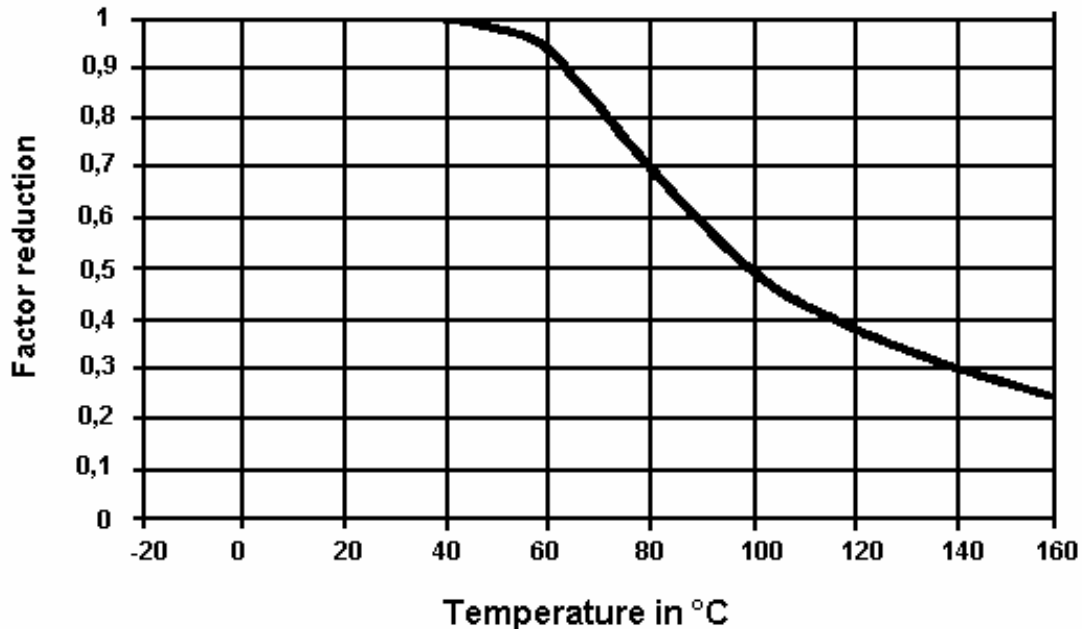
Anchor (rebar) spacing in terms of embedment depth L	0.5L	0.6L	0.7L	0.8L	0.9L
δ_2	0.8	0.85	0.9	0.95	1.0

Effective working load = $\delta_1 \times \delta_2 \times$ recommended working load from the table

Reduction factors are applicable to all sizes since they are expressed in terms of embedment depth which varies from size to size.

CONCRECRESIVE[®] 1450i

Effects of Temperature on CONCRECRESIVE[®] 1450i



Reduction factor to be applied on the working load beyond 40°C. **CONCRECRESIVE[®] 1450i** has proved to be fully effective even when tested at 150°C.

CONCRECRESIVE[®] 1450i is in conformity to the French Norm NF P18-836

Norm NF P18-836 (French norm) is one of the most constraining for testing an anchoring resin that we know:

- Anchoring under water for 6 months.
- Diameter of the hole 6 mm higher than the diameter of the steel rod.
- Applied load 30 kN.
- Displacement stabilized after 4 months.
- Final displacement of the rod lower than 0.6 mm.

CONCRECRESIVE[®] 1450i has been tested in an independent laboratory, the CEBTP & the **CONCRECRESIVE[®] 1450i** perfectly meets the requirements of the Norm.

CEBTP: Centre d'Essais pour le Bâtiment et les Travaux Publics – Test Centre for Construction & Public Engineering.

CONCREACTIVE[®] 1450i

Chemical resistance of CONCREACTIVE[®] 1450i

Products	Long term immersion	Temporary immersion	Short term immersion
Fresh water	✓		
Sea water	✓		
Hot water < à 60°C	✓		
Petrol	✓		
Jet fuel (kerosene)	✓		
Gasoil	✓		
Methanol		✓	
Ketone		✓	
Soda (50%)		✓	
Chlorhydric acid (20°C)		✓	
Sulfuric acid (20°C)			✓
Citric acid	✓		
Chlorinated water			
White spirit		✓	

Tests have been made to evaluate chemical resistance of anchors using **CONCREACTIVE[®] 1450i**.

The conclusions show that anchoring can be in contact with the above listed aggressive liquids without losing its original properties.

Once fully cured the resin is completely free of any toxic risk to the environment & or in contact with drinking water.

Safety precautions

As with all chemical products, care should be taken during use & storage to avoid contact with eyes, mouth, skin & foodstuffs. Treat splashes to eyes & skin immediately. If accidentally ingested, seek medical attention. Reseal containers after use. Use in well ventilated areas & avoid inhalation.

Storage

Store under cover out of direct sunlight & protect from extremes of temperature. In tropical climates the product must be stored in an air-conditioned environment. Shelf life for this product is 12 months from date of manufacture when stored as above.

Note

Field service, where provided, does not constitute supervisory responsibility. For additional information contact your local BASF representative.

BASF reserves the right to have the true cause of any difficulty determined by accepted test methods.

Quality and care

All products originating from BASF's Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001, ISO 14001 and OHSAS 18001.

05/2004 BASF_CC-UAE revised 02/2005

*Properties listed are only for guidance and are not a guarantee of performance

Saudi BASF For Building Materials Co, .Ltd. (Saudi Arabia)

P.O Box-1884 Al-Khobar 31952 Tel: +966 3 8121140 Fax: +966 3 8121822

Web: www.saudi-basf.com

e-mail: enquirycc.saudi@basf.com

Whilst any information contained herein is true, accurate and represents our best knowledge and experience, no warranty is given or implied with any recommendations made by us, our representatives or distributors, as the conditions of use and the competence of any labour involved in the application are beyond our control.

As all BASF technical datasheets are updated on a regular basis it is the user's responsibility to obtain the most recent issue.