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CONCRESIVE® 1418

High strength polyester resin for grouting in dowel pins, starter bars and for repairs to concrete

Description

CONCRESIVE® 1418 is a two-component polyester resin compound consisting of a liquid resin and a powdered hardener filler system in one container. It is a grouting, bonding and repair material.

Primary uses

- Grouting in dowel pins, rag bolts, holding down bolts and starter bars.
- Fixing tiles, slabs, pre-cast facings, etc.
- Bedding and sealing concrete units, steelwork, road furniture, etc.
- Repair of worn or damaged concrete.
- Repair of pre-cast concrete units.

Advantages

- Easy to use - economical and fast.
- Simple to batch and mix.
- Versatile - has many applications.
- Mix consistency can be varied at will.
- Excellent adhesion to most building materials (ceramics, wood, metal, stone, concrete, quarry tiles, asphalt, mortar, etc.).
- Excellent chemical resistance.
- High early and ultimate strengths.
- Due to the nature of the resin system, the mechanical and chemical resistance of CONCRESIVE® 1418 is constant irrespective of the volume of filler added provided adequate compaction can be achieved.
- CONCRESIVE® 1418 has low shrinkage properties and does not shrink at the bonded surface. No shrinkage occurs once hardening has taken place.
- Will cure underwater and at temperatures below 0°C.
- Extra sand can be added for bulk filling.

Packaging

CONCRESIVE® 1418 is supplied in 15kg containers. Each container contains resin and adequate powder for normal use.

Action

The action of mixing the powder and liquid components of CONCRESIVE® 1418 results in a chemical reaction producing a material of exceptional strength and chemical resistance.

Typical properties

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

Density	25°C	Approx. 1920kg/m³
Setting times	25°C	Approx. 40-50 minutes
Pot life	25°C	Approx. 20 minutes

Results are based on normal 3.2 to 1 mix by volume:

	Temp	Strengths in N/mm²		
Strength Property	°C	3hrs	24 hrs	7 days
Compressive	25	24	75	98
Tensile	25			14
Flexural	25			28

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Adhesion to sound concrete:	In excess of the tensile strength of concrete
Adhesion to shot blasted or heavily scored steel:	9N/mm²
Chemical resistance:	resists attack by sugar, salt, sewage, dairy produce, oil, petrol, lactic acid, etc.

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

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
Drill bit diameter (mm)	10.0	14.0	16.0	18.0	20.0	25.0
Section (mm²)	50.3	78.5	113.0	154.0	201.0	314.0
Ultimate Tensile Load (kN) Maximum embedment depth	27.0	43	62.0	84.0	110.0	172.0
Ultimate Shear Load (kN) Maximum embedment depth	12.6	16.5	27.3	35.9	41.6	66.7

Working load in concrete

Resin **CONCRESIVE® 1418** – rebar HA Fe E500

		Concrete C25/30				**Concrete C35/45**			
Ø of rebar (mm)	Ø of hole (mm)	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

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

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Application procedures

Surface preparation:

Ensure surfaces are free from oil, grease paint, curing compound, etc. remove dust laitance and friable materials by wire brushing, bush hammering or acid etching. It is preferable to abrade and roughen smooth surfaces prior to application of CONCRESIVE® 1418.

Mixing:

Mixes normally used vary from 2:1 powder to resin up to 4:1 powder to resin by volume. The resin rich mixes are flowable and the leaner mixes are trowellable. Mixes as lean as 5:1 can be used as space fillers but these will not necessarily develop the full properties.

Pour required quantity of resin into a clean plastic bucket and add powder filler stirring continuously until desired consistency is reached and the mixture is smooth, lump free and uniform in colour.

Do not mix more material than can be used within 20 minutes.

Application:

Hole preparation and formation:

Drill the correct size hole in the concrete base material. Clean the hole thoroughly. The mixed grout should be placed into the prepared holes. Insert the rebar or threaded rod into the hole. The bar should be left undisturbed in the required position until the grout has hardened fully. For threaded rods, apply the correct tightening torque only after the curing time specified for the resin.

Concrete repair use:

CONCRESIVE® 1418 should not be applied in coats thicker than 20mm. Where repairs are to be above 20mm, it is preferable to apply CONCRESIVE® 1418 in layers each with a maximum thickness of 20mm. Apply successive coats after the previous coats have hardened.

When using material of flowable consistency, ensure material is given time to settle and self-level before proceeding. When using material of trowellable consistency work it well into the surface to be prepared. Build up layers ensuring good contact and adhesion between coats.

Finishing is best effected by applying a little hydrocarbon solvent, to the trowel. Use clean smooth tools. Coat thickness depends on location and substrate. A general guide is up to 20mm on horizontal applications, 12mm on vertical applications and 4-6mm per coat on soffits.

Coverage

The following coverage rates are indicative for a 15kg pack of CONCRESIVE® 1418:

mix by volume	yield litres (approx.)
4:1	7.5
3:1	7.0
2:1	5.5
Sufficient filler is supplied for mixes up to 5:1	

Equipment care

Clean all equipment with CLEANING SOLVENT before it sets.

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Specification clause
CONCRESIVE® 1418:
CONCRESIVE® 1418, as manufactured by BASF, or similar approved, complying with the following specifications shall be used where indicated:

Composition: A 2-component, polyester resin and accelerator filler system. Density with 3.2 to 1 mix filler to resin ratio: 1920kg/m³.

The material should be applied as directed by the manufacturer.

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

Storage
Store under cover out of direct sunlight and protect from extremes of temperature. In tropical climates the product must be stored in an air-conditioned environment.
Shelf life for this product is 3 months from date of manufacture when stored below 25°C.

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.

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