

Emckrete Aid (Formerly known as NanoGrout Aid)

Plasticising and Expanding Additive for Post-Tensioned Cable Duct Grouting

Description

Emckrete Aid is a non-shrink additive in powder form. It makes the grout mix cohesive and free from segregation and bleeding. It is designed to allow uniform expansion while maintaining high fluidity.

Standards

BSEN 934-4

Advantages

- Improved fluidity at reduced mix water content
- Prolongs workability
- Reduces bleeding and segregation
- Good strength and adhesion
- Improved cohesion
- Protects against corrosion of pre-stressing wires

Application

Areas of application

Used as an additive in cement, concrete to provide non-shrink properties. Applications include grouting of post tensioned cable ducts, bearing plates, tunnel linings, sheet pile anchors, rock and soil anchoring, concrete crack injection, non-shrink concrete, etc.

Surface Preparation

Post-Tensioned Cable Duct Grouting:

Ensure that the metal casing duct is leak-proof. Remove entire amount of water filled in the duct during "pre grouting check" by air pressure. Check that air vents and valves are in good working condition.

Cavity / Baseplate Grouting:

Roughen all concrete surfaces by wire brushing, grinding or other mechanical means to ensure a good bond. Loose or broken concrete should be removed. The concrete surfaces should be saturated with water at least 3-4 hrs prior to the application of grout. Any standing water should be removed prior to the placement of the grout. Leak proof and strong formwork should be in place prior to placement of grout.

Mixing

For best results a mechanically powered grout mixer should be used. For quantities upto 50-60 kg, slow speed drill fitted with a paddle can be

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Mixed grout should be placed by continuously pouring from one side of the formwork. Place the grout within 20 minutes of mixing to gain full benefit of expansion process. Adopt usual placing or pumping procedure ensuring a continuous operation. Retempering of grout by adding extra water after stiffening is not recommended.

For Cable Ducts:

Grouting process should start from one side of the cable duct till homogenous consistency of grout flows from consecutive air vent valves and outlet valves.

Curing

All exposed grout surfaces should be cured by using wet hessian. Alternatively, curing compound from JetCure range can be used.

Note

In case of grouts for post-tension cable ducts, maintain grout temperature at 20 +/-2°C (as per BSEN 445) to ensure better flow and retention properties. Water to powder ratio can be adjusted outside the given range to get the desired flow properties of grout. Depending on fineness and consistency of cement, W/P can vary from 0.26 to 0.40. Dosage of **Emckrete Aid** also can be adjusted accordingly. **Emckrete Aid** should not be used with High Alumina Cement or Cement containing Fly Ash.

used. Water should be measured accurately into mixer. Slowly add cement and start mixing. **Emcekrete Aid** should be slowly added and further mixed for 3 to 4 minutes. Ensure that the grout has a smooth and even consistency after mixing. For high volume grouting, use of high shear vane, professional grout mixer and pumps is recommended.

Dosages

Normal dosage at 4-8% by weight of cementitious material. Actual dosage to be confirmed after site trials.

Grout mixes containing **Emcekrete Aid** should not be used in unrestrained areas as it may lead to the cracking of grout. Gap surrounding the base plate and formwork should be as minimum as possible. **Emcekrete Aid** is also available based on non gaseous expansion system. Consult MC for details..

Yield

OPC	0-5 mm Sand	Water	Emcekrete Aid	Approx. Yield
50 kg	Nil	17 litre	3.00 kg	34 litre
50 kg	50 kg	20 litre	3.75 kg	56 litre
50 kg	100 kg	22 litre	5.00 kg	79 litre

Typical Properties at 25°C

Property	Test Method	Value		
Component	-	Single		
Form	-	Powder		
Colour	-	Grey		
Fresh Wet Density	BSEN 445	2.00 kg/ltr +/- 0.05		
Flow (Marsh Cone)*	BSEN 445	W/P	0.36	0.32
		Initial (t ₀)	15 ± 3 sec.	
		After 30 min (t ₃₀) < 25 sec., 0.8 t ₀ < t ₃₀ < 1.2 t ₀		
Compressive Strength**	BSEN 445	7 Days	40 N/mm ²	50 N/mm ²
		28 Days	50 N/mm ²	60 N/mm ²
Flexural Strength**	BSEN 445	9 N/mm ² at 28 Days		
Expansion**	BSEN 934-4	Upto 2% positive expansion		
Bleeding**	BSEN 934-4	< 2%		
Chloride Content	BSEN 480-10	Nil to BSEN 934-4		
Sedimentation**	CSTR No. 47	< 5%		

*Properties with the use of high shear colloidal grout mixer. Values may change with the type of mixer and cement.

Indicative properties at 5% dosage of **Emcekrete Aid and OPC Type I Cement as per EN 197-1

General Information

Package Size	20kg
Shelf Life	12 months from date of manufacture when stored under warehouse conditions in original unopened packing. Extreme temperature/humidity may reduce shelf life.
Cleaning	Clean all equipments and tools with water immediately after use.

Health and Safety

PPE's	Gloves, goggles and suitable mask must be worn.
Precaution	Contact with skin, eyes, etc. must be avoided. If swallowed seek medical attention immediately.
Hazard	Regarded as non-hazardous for transportation.
Disposal	Do not reuse containers. To be disposed off as per local rules and regulations.
Additional Information	Refer MSDS. (Available on request.)

Technical Support	MC Technical Services are available on request for on site support to assist in the correct use of its products.
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NOTE:

It is the customer's responsibility to satisfy themselves by checking with the company whether information is still current at the time of use. The customer must be satisfied that the product is suitable for the use intended. All products comply with the properties shown on current data sheets. However, MC-Bauchemie does not warrant or guarantee the installation of the products as it does not have any control over installation or end use of the product. All information and particularly the recommendations relating to application and end use are given in good faith. The products are guaranteed against any manufacturing defects and are sold subject to MC- Bauchemie's standard terms and conditions of sale.