

Injection Cement

DESCRIPTION



TamCrete MFC and TamCrete SFC are Microfine Portland cements for rock injection. The superfine particle size, together with the addition of TamCem Superplasticisers, provides superior penetration into tight joints, fissures, thus providing a water-tight grouted rock mass.

TamCrete MFC and SFC are ground from pure Portland cement clinker to achieve a Blaine surface value of > 625 m²/kg.

All grades of our TamCrete MFC and SFC achieve initial and final set faster than OPC, which reduces the waiting time to a minimum for the next activity to start. This increases productivity in a tunnel grouting operation. The initial set time can be adjusted depending on the level of TamCem superplasticiser or TamCem HCA added to the mix.

KEY BENEFITS

- > Standard cement injection equipment can be used
- > Superior penetration into rock fissures
- > Fast initial gel and setting
- > Higher strengths achievable than with chemical grouts
- > Greater penetration imparts greater water tightness
- > Better working environment and no hazardous components
- > Durable
- > Economical solution

TYPICAL APPLICATIONS

- > Rockmass grouting for tunnels, caverns, mines, etc., used for pre and post excavation injection. Ground water sealing and ground stabilisation.

- > Soil Injection: Ground stabilisation, ground water sealing
- > Concrete crack injection
- > Consolidation of weak and fractured rock
- > Sealing of water channel

TECHNICAL DATA

Particle Size (approx.)				
Grain Size μm	MFC Rapid	MFC Fast	MFC Standard	SFC
<40	100 %	100 %	100%	99
<30	100 %	100 %	99%	97
<20	99 %	99 %	95%	90
<15	95 %	95 %	85%	75
<10	83 %	83 %	70%	60
<5	56 %	56 %	45%	35
<2	30 %	30 %	25%	15
	MFC Rapid	MFC Fast	MFC Standard	SFC
Grain Size d_{50} (μm)	< 5	< 5	< 7.5	< 10
Grain Size d_{95} (μm)	< 16	< 16	< 20	< 25
Run out time after mixing (sec/DM ₃) (Marsh Cone)	31 - 35	31 - 35	31 - 35	31 - 35
Initial Gel (min)	30 - 45	70 - 110	120 - 180	150 - 250
Initial Set (50 kPa shear strength) (min)	45 - 75	90 - 150	180 - 300	200 - 350
Bleeding Maximum	< 2%	< 2%	< 5%	< 5 %
Mud Balance (kg/l)	1.45 - 1.50	1.45 - 1.50	1.45 - 1.50	1.45 - 1.50
CS, 1 day (MPa)	~5	~5	~4	~ 3
CS, 2 days (MPa)	~10	~10	~7	~ 5
CS, 28 days (MPa)	~15	~15	~15	~ 12

All technical data stated herein is based on tests carried out under laboratory conditions. Slurry was 1:1 W/C ratio incorporating TamCem admixture and prepared with a high colloidal mixer (2 litre batches).

Whilst any information and/or specification contained herein is to the best of our knowledge, true and accurate, we always recommend that a trial be carried out to confirm suitability of the product. Please note regional climatic conditions may cause a variation in the performance of the product. No warranty is given or implied in connection with any recommendations or suggestions made by us or our representatives, agents or distributors. The information in this data sheet is effective from the date shown and supersedes all previous data. Please check with your local Normet office to confirm that this is current issue.

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All mix designs incorporated TamCem admixtures. For further information on specific MFC and SFC versions and specific mix design, please contact your local Normet representative.

APPLICATION GUIDELINES

Mixing

Water/Cement ratio (by weight) shall normally be between 0.8 - 1.2.

- > Fill the mixer with water and superplasticizer.
- > Add Cement. Mix for 2 - 3 minutes.
- > Add HCA. Mix for 1 minute (if required).
- > Transfer to agitator tank ready for injection.

For efficient mixing and dispersion of our TamCrete MFC and SFC, a high speed colloidal mixer is recommended. Minimum stirring rate shall be 1500 rpm. Note: Mixing time should be kept to a maximum of 4 minutes.

Pot Life

The mix shall be kept under constant agitation prior to injection. Do not keep grout in agitator for longer than 30 minutes, unless the open time has been extended accordingly with the use of TamCem HCA hydration control admixture.

Injection

High-pressure piston pumps are normally used to pump the suspension into the rock. The grout should be injected within 20 - 60 minutes (depending on grade) after mixing to ensure that it keeps penetrating into the fissures. Longer open times can be achieved with TamCem HCA.

PACKAGING

TamCrete MFC and SFC products are supplied in 20 kg bags or 1000kg bulker bags. Packaging size may vary subject to local regulations and requirements.

STORAGE

TamCrete MFC and SFC products should be stored at room temperature (min 10°C and max 45°C), kept dry and out of direct sunlight. If these conditions are maintained and the product packaging is unopened, then a shelf life of six months can be expected.

HEALTH & SAFETY

TamCrete MFC and SFC should only be used as directed. We always recommend that the Safety data sheet (SDS) is carefully read prior to application of the material. Our recommendations for protective equipment should be strictly adhered to for your personal protection. The Safety data sheet is available upon request from your local Normet representative.