

“Blocker” Cement Grout System

Introduction

Multigrout offers a technologically advanced “blocker” cement system which secures a simple, cost-effective solution to stop fluid inflow, a problem often encountered in underground works. The main benefit is the possibility to precisely control the setting time.

The Blocker is a key component of the MultiGrout® injection grouting system – a complete suite of products for most injection grouting applications:

- ✓ Ultrafine & Microfine cements
- ✓ GroutAid®
- ✓ Blocker cement
- ✓ Dispersing Agent

The Blocker system offers benefits over other grouting products:

- ✓ Mineral-based, environmentally friendly
- ✓ Low viscosity, good penetration characteristics
- ✓ Flexible and precise setting time – controlled when mixing
- ✓ Can be mixed with sand or other fillers for heavy inflows
- ✓ Will not pack or segregate
- ✓ Storage life up to 24 months
- ✓ Reacts positively and hardens with Portland cement

Product Description

The Blocker cement system consists of two parts, the “Blocker (Thermax™)” and the “Timer” (C-Max).

The setting time is precisely controlled by varying the mix proportions, and ensures that the grout reaches and stays in its intended location.

Applications

The Blocker cement system can be used in many mining and tunneling applications:

- ✓ Seepage and control of high pressure inflows - including highly saline solutions
- ✓ Rock mass strengthening
- ✓ Void filling

Properties

Appearance	Off-white powder
Particle Size	9.0 microns (mean)
Slurry density	1400-1600 kg/m ³ (depending on mix proportions)
Viscosity	18 – 30 cP
Shrinkage	0.5% or less

Chemical Composition

The Thermax™ is a mixture of inorganic alkaline earth metal compounds and is environmentally safe. Main constituents are calcium and magnesium carbonate, magnesium oxide and magnesium sulfate.

The C-Max consists of magnesium chloride, and must be dissolved in water prior to adding it to the mix.

Packaging

Standard packaging includes:

- ✓ 25 kg multi-walled paper bags for the Thermax™ , palletized & shrink-wrapped, 40 bags per pallet, net weight of 1000 kg
- ✓ 22.7 kg clear plastic bags for the Timer, palletized & shrink-wrapped, 35 bags per pallet, net weight of 795 kg
- ✓ Big bags of 1000 kg are available for bulk applications

Storage & Shelf Life

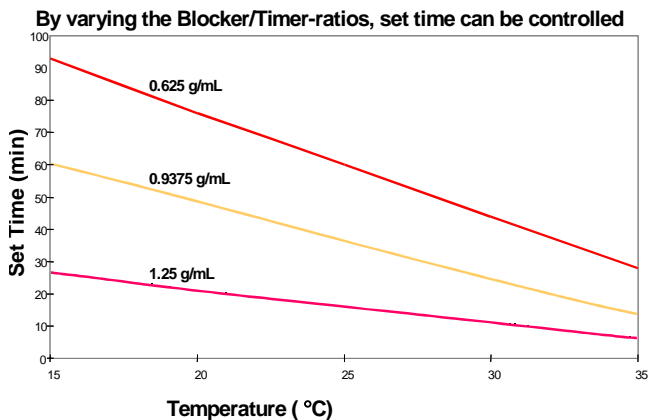
The materials should be stored under normal dry warehouse conditions. Protection from the atmosphere to prevent hydration is recommended.

Stored properly, the shelf life is up to 24 months.

Setting

Mix proportions, temperature and time will influence the setting process. The transition time from liquid to solid state is very short.

For rock injection grouting applications, setting time of 10-90 minutes is normal. However, setting times from 15 seconds to 3 hours can be obtained.



Viscosity

The low viscosity allows minimum pump pressures to be used throughout the process. The grout will not pack or segregate in pressurized grouting lines.

Particle Size

The grout has a particle size distribution that allows it to be injected into fine cracks and low-permeability formations.

DISCLAIMER:

The information given on this data sheet is based on many years of research and field experience and is accurate to the best knowledge of MultiGrout personnel.

However, due to the numerous factors that can affect the performance of injection grouts, with or without our products, MultiGrout offers this information without guarantee and accepts no liability for any direct or indirect damages from its use.

If further information or assistance is required, please contact your local specialist representative or the office number given on this datasheet.

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Strength

The high strength of the grout makes it suitable for applications involving high fluid pressures.

Compressive strength at 24 hours of more than 20 MPa is not uncommon.

Mixing & Use

The Blocker cement system is no more difficult to use than any other cement product. However, because it consists of more than one component, a certain amount of training is needed to achieve optimum results.

The mix design will vary according to the application and desired end result.

GroutAid® is routinely used to further improve the stability and penetration characteristics and to give further flexibility in the grout setting.

Contact your local MultiGrout® specialist representative for advice regarding your particular application.

Handling

The Blocker cement system, like any cementitious product, should be handled by taking appropriate precautions and using the appropriate safety equipment.

Please consult our Material Safety Data Sheet.

The MultiGrout Team

The MultiGrout activities extend well beyond materials supply, and are supported through a world-wide network of representatives.

These activities also involve a core group of technical specialists providing four key service elements to MultiGrout clients:

- Materials supply
- Application methodology
- Education / on-the-job training
- Engineering / design support

MultiGrout® Global Contacts: for all technical & commercial enquiries



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