

HPRG GROUT

DESCRIPTION

A grout suitable for cable bolting should have some expansion to enhance bond and anchorage. It should provide protection to the bolts and cables in aggressive ground condition, have an early gel time and achieve a rapid strength development for early support.

WYKAMOL HPRG is specially formulated using cement, fillers and special additives to fulfill the above criteria.

USES

With modern mining techniques slowly replacing the use of steel work with other means of support the need for a high strength bolting grout becomes ever more prevalent.

It is well known that rock is relatively strong in compression and weak in tensile, shear and flexural strengths and often requires reinforcing. Further to this, excavated rock and coal surfaces often deteriorate on exposure. Bolting overlapping zones can safely and securely contain rock and coal within the vicinity of the bolts.

The effective anchorage and bonding to the rock by the roof bolts, cable bolts and dowels is achieved by grouting. Thus the selection of the right grout is of paramount importance.

MIXING AND PLACING

WYKAMOL HPRG Grout powder should be added steadily to the required volume of water and mixed thoroughly using a high shear grout mixer. (The best results are achieved by using high shear mixing techniques for at least five minutes in order to adequately disperse the additives and to produce a creamy homogenous mix).

This should then be pumped and injected by means of a wide throat pump such as a Mono cable bolting pump or similar.

WYKAMOL HPRG Grout requires only the addition of clean potable water before use, (no adverse effects have been noted to date using mine water). The recommended water to total solids ratio is 0.30 when it is of a thixotropic consistency capable of being pumped a distance of 30m into a hole and remaining there without the need to seal the hole.

TYPICAL PERFORMANCE

When checking the compressive strength of site mixed material, the correct size of test cube and the appropriate curing regime should be employed. Departure from this practice may lead to wide variations in apparent compressive strengths.

It should be noted that grout/ground bond stress is of vital importance and is greatly enhanced by the expansive properties of the grout.

Curing Period	Strength N/mm ²	BS 7861 Pt2 Min. Requirements
24 hours	35	30
3 days	55	50
7 days	65	60
14 days	75	70
28 days	85	80

Initial Set (typically):	4.0 hours
Final Set (typically):	5.0 hours
Working Time:	20/30 mins
1 Day Set Density:	2020-2040 Kg/m ³
28 Day Set Density:	2040-2080 Kg/m ³
Yield per 25Kg Bag:	15.8 litres @ 0.30 WSR

SYSTEM STIFFNESS

Tests on HPRG have been carried out to BS7861 Pt. 2. The results were: s Tendon	Max Load (kN)	System Stiffness (20-400Kn) (kN/mm)
HPRG Grout Double bird caged Cablebolt	624	111.2
BS7861 Part 2 Lower Limit	560	100

PACKAGING AND STORAGE

HPRG Grout is available in 25kg sacks, palletised and shrink wrapped.

Palletised **HPRG Grout** should be stored in cool dry areas clear of the ground sheeted or under cover and stacked not more than two pallets high.

The product should be used on a first in - first out basis.

Shelf life is minimum 3 months but could be in excess of 6 months subject to temperature and humidity.



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