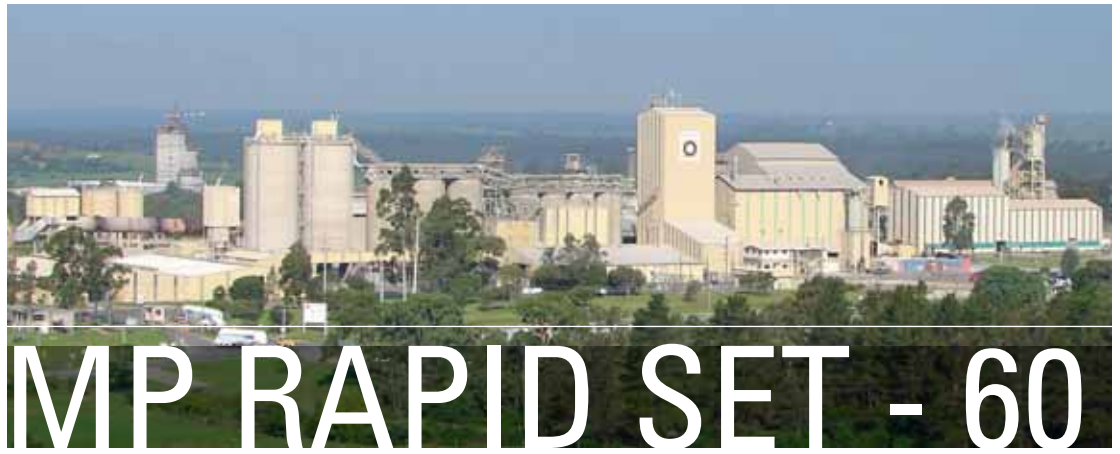


**BLUE CIRCLE
SOUTHERN**



MP RAPID SET - 60

PRODUCT DATA SHEET

Blue Circle Southern MP Rapid Set-60 is a high performance, non-shrink, Magnesium Phosphate grout and mortar.

BCSC MP Rapid Set-60 uses no Portland cement and requires no pre-soak or wet cure. It produces rapid high early strength development and superior bonding to most surfaces. The special additives in the product combine to produce a fast setting grout that can withstand traffic within one day.

Engineering properties of the product such as Modulus of Elasticity, creep and co-efficient of thermal expansion, are similar to those of Portland cement concrete.

Features

- Requires no pre-soaking or post curing.
- Keeps downtime to a minimum, ready to use in hours not days.
- Excellent bond to concrete and steel.
- Comparable in appearance to ordinary concrete.
- Not affected by stray electrical currents.

Additional Advantages

- Some self-levelling properties.
- Outstanding chemical bond ensures superior bonding to existing concrete, masonry, steel and wood.
- Normal 28 day compressive strength of concrete is reached in 3 hours.

Typical Applications

- Bedding machinery with heavy static loads and dynamic operating forces.
- Grouting highly stressed anchorages, bridge supports or bedding plates.
- Rail bedding.
- Rapid repair to all level concrete surfaces.
- Industrial floor repairs.
- Repairs to cold rooms, bridge decks, ramps, runways, loading docks etc.
- Repair of concrete subject to high thermal shock.
- Segmental construction.
- Bridge nosings and repairs.
- Runway lighting installation.

Caution

Do not use MP Rapid Set-60 for applications subjecting the product to immersion in water. Do not re-temper MP Rapid Set-60 by adding water or remixing.

The strength is very sensitive to water addition, so use the minimum consistent with adequate workability (refer to performance data). Both Aluminium and Zinc (galvanising) react with this product causing slight etching and reduced bond strength. The use of a protective coating is recommended.

Hot & Cold Conditions

Hot Conditions (over 40°C): Keep MP Rapid Set-60 cool. Use some iced water to extend working time. Dampen work area to cool the surface by evaporation before application and remove excess water. Shade the area if possible.

NOTE: Hot concrete surfaces may reduce the bond strength. Avoid placing MP Rapid Set-60 in these conditions.

For extreme heat conditions, where service temperatures are in excess of 70°C, strength loss in the order of 50% can be expected. However, the product remains solid and will not break down.

Cold Conditions (below 0°C): Heat the concrete surface until warm to the touch. Warm the product and use some warm water to increase hardening rate and maintain rapid strength development. Insulate worked area where possible.

Typical Performance Data

The following data is typical of the performance which can be expected from using MP Rapid Set-60 when mixed at an ambient temperature of 23°C.

Property	Flowable	
Water Demand @	9%/wt.	1.8 litres
Wet Density	kg/m ³	2320
Initial Set Time @	23°C	19 min.
Drying Shrinkage @	56 days	Nil
Compressive Strength @	3 hours	30 MPa
	24 hours	35 MPa
	7 days	45 MPa
Flexural Strength @	28 days	60 MPa
	3 hours	7.3 MPa
	7 days	8.7 MPa



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Bond Strength:

Pull out tests using no.4 reinforcing bars show a bond strength in excess of 7 MPa.

NOTE: Direct contact with aluminium or galvanised steel is not recommended.

N.B: The above data given is based on laboratory testing under controlled conditions. Variations may occur in the field.

Preparation

Surfaces must be sound, clean preferably dry. Edges must be square and at least 15mm deep (No feathered edges). Remove all dust, grease, any unsound concrete, oil and any substances that may interfere with the bond. The surface can be damp but not wet. No bonding agents are required. Grease all formwork as MP Rapid Set-60 will bond through a film of oil.

Sufficient clearance must be allowed for the grout to flow under machinery and to be strapped or chained. All free water should be removed, particularly in bolt holes. Please note the hole diameter for anchor bolts should be 50mm or twice the diameter of the bolts specified.

Mixing

Positive-action mixing is virtually essential. Such as high shear paddle type mixers. Hand mixing is not recommended. Potable water is essential.

DO NOT ADD SAND or PORTLAND CEMENT TO MP Rapid Set-60.

It is important to use as little water as possible to achieve the desired consistency. Place all the water in the mixing vessel and add the powder in a steady stream while mixing. Two to three minutes mixing is usually sufficient.

The mix will initially appear too dry but will wet up once the chemicals dissolve.

Do not add extra water.

For One Hour Concrete: Up to 10kg of clean, round 10mm aggregate may be added to produce a "One Hour Concrete". Water addition can be up to 2 litres per 20kg bag to reach desired consistency.

Work time

Mixed MP Rapid Set-60 should be placed and finished within 10 minutes. Setting time will vary depending on temperature.

Application

Immediately place the mixed product into prepared area, working full depth from one side to the other. Work in with rodding and tamping as required.

Level off and screed to elevation of existing concrete. Seal edges with slight trowelling. Minimal finishing is required. Flowable grout can be poured from one side only, quickly and continuously. Assist removal of air pockets by "strapping" under base plates.

Curing - No curing required.

Yield

One 20kg bag of MP Rapid Set-60 will yield approximately 10 litres of mixed product. Or 100 bags per cubic metre.

Availability

BCSC MP Rapid Set-60 comes in 20kg plastic lined, multi-walled paper sacks. Stacked 60 bags per pallet.

Cleanup & Storage

Clean all tools and equipment with water promptly after use. MP Rapid Set-60 is extremely hard to remove once it has set.

Contact with air and moisture will cause hydration of the product. The "shelf life" of MP Rapid Set-60 is therefore dependent on storage conditions. It is recommended to retest the product before use if more than 12 months old.

Safe Handling

Manual handling of bagged products without proper training may result in personal injury. Wherever possible you should use mechanical aids or share the load with another person.

The use of goggles, dust mask, barrier cream and rubber gloves is recommended.

Provide adequate ventilation as mixed product produces a strong ammonia smell.

For further safety information consult the Blue Circle Southern Material Safety Data Sheet for the product.



Note: The information stated herein and all advice given should be taken as a guide only. Both are given in good faith and are to the best of our knowledge true and accurate and are intended to give a fair description of the product and its capabilities under specific test conditions. No guarantee of the accuracy or completeness of the information is made and persons receiving the information should make their own tests to determine suitability thereof in all respects for their particular purpose. Revised: March 2009