

Technical Data Sheet

Grout MP Plus

High Performance Structural Grout



Product

Grout MP Plus is a high performance, high ultimate strength, non-shrink Class A cementitious grout complying with requirement of SAA MP20 part 3.

Description

Grout MP Plus is based on Portland cement, graded aggregate and chemical additives which impart controlled expansion whilst in the plastic state. The gaseous expansion system compensates for shrinkage and settlement in the plastic state.

Grout MP Plus is supplied as a ready to use dry powder requiring only the addition of a controlled amount of clean water to produce a free flowing non shrink grout for gap thickness from 10mm to 150mm in a single application.

Recommended Uses

- Underpinning foundations.
 - Grouting stanchion base plates.
 - Anchoring a wide range of fixings, anchor bolts, guard rails, masts etc.
 - Heavy duty support where high ultimate strength and load is required.
 - Filling in voids between the base plate and substrate.
 - Areas where subjected to high dynamic loads.
- Applications requiring high compressive strength.

Features & Benefits

- Gaseous expansion system compensates for shrinkage and settlement whilst in the plastic state.
- Economical, low in place cost.
- Can be dry packed, rammed, trowelled, poured and pumped.
- Excellent flow characteristics when used in fluid consistency, fills intricate cavities.
- Ready to use, pre mixed, requires only the addition of water.
- No metallic iron content to cause staining.
- Complete void filling resulting from gaseous expansion in plastic state.
- Lower water/cement ratio reduces drying shrinkage and increases durability and reduces permeability.

Performance Properties

Mixing Consistency

The table is a guide to the typical water addition requirements for various consistencies. Litres of water per 20kg bag

	Dry Pack	Trowellable	Flowable
Range	2.5 - 3.0	3.6 - 4.0	4.2 - 4.5

Typical Compressive Strength

Tested in accordance with AS1012.9 at 20C and AS2073

Age	Dry Pack	Trowellable	Flowable
1 day	>30 Mpa	>25 Mpa	>20 Mpa
7 days	>75 Mpa	>70 Mpa	>60 Mpa
28 days	>85 Mpa	>80 Mpa	>70 Mpa

Typical Flexural Strength

Tested in accordance to ASTM C348 at 20C

Age	Trowellable	Flowable
28 days	>9.0 Mpa	>8.5 Mpa

Typical Bond Strength

Tested in accordance to ASTM C882

Age	Consistency	Strength
28 days	Flowable	>8.0 Mpa

Flow Characteristics

Tested in accordance to AS2073

Flow(Flowable)	20 - 35 Seconds
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Approximate Setting Times

Vicat setting times at 20°C

	Dry Pack	Trowellable	Flowable
Initial Set	3.5 Hours	5.0 Hours	5.5 Hours
Final Set	4.5 Hours	7.0 Hours	8.0 Hours
Time for Expansion-Start (Plastic State)	-	30-40 Minutes	30-40 Minutes
Time for Expansion-Finish (Plastic State)	-	2-3 Hours	2-3 Hours
Unrestrained Expansion	-	1-2%	1-3%
Bleeding	0%	0%	0%

Drying Shrinkage

Tested in accordance to AS1012.13

Time	Consistency	Shrinkage
56 Days	Flowable	<750 Microstrain

Yields

The approximate yields are obtained if mixed in accordance with recommended procedures and accurately measured water content.

	Dry Pack	Flowable	Fluid
Litres/20kg bag	10.0	10.4	10.6
Approx. Fresh Wet Density kg/m ³	2290	2220	2180
Approx Bags required per cubic metre	100	96	93

Density tested to AS1012.5

Packaging

Sure Set Grout MP Plus is supplied in a 20kg polylined bag.

Application Instructions

Substrate and Surface Preparation

The substrate surface must be clean, sound and free from oil, grease, curing compound or any loose materials. It must be mechanically abraded back to a sound concrete. Bolts or anchor holes must be clean and free from dust or loose material. This can be achieved by blowing clean the hole.

Pre Soaking

It is essential to pre soak the concrete substrate prior to application of Grout MP Plus. Pre soak substrates for a minimum of 1 hour prior to grouting. Immediately before grouting the excess water should be removed, all water in the anchor and bolt holes must be blown out and no traces of free water present whilst grouting.

Base Plate

All traces of rust, oil or grease must be removed. It is essential to provide air pressure relief holes for venting.

Formwork

It is essential that the formwork be constructed to facilitate rapid continuous and complete filling at area to be grouted. It is essential that the formwork be constructed to be leak proof and water tight. Foam rubber strips or suitable sealants underneath the formwork are recommended. Formwork should allow gravity flow of grout between the base plate and foundation ensuring grout is kept in full contact with base plate and concrete substrate.

Unrestrained Surfaces

As Grout MP Plus is an expanding grout, unrestrained areas must be kept to a minimum. It is advisable not to have any unrestrained areas.

Low Temperature Working

Normal precautions for winter working with cementitious materials should then be adopted. At temperatures below 5°C the cure rate and strength development rate will be dramatically reduced. If early strength is required it is advisable to use heated water and condition Grout MP Plus up to 30°C. Do not exceed these temperatures.

High Temperature Working

At temperatures above 30°C, it is advisable to use water below 20°C when mixing grout. All materials must be kept cool and away from direct sunlight, and area to be shaded by erecting shade screens. If ambient temperatures are excessive, perform grouting in early morning or late evenings.





Mixing

Grout MP Plus is supplied in a ready to use form requiring only the addition of fresh clean water. For optimum results a Grout MP Plus must be mixed with a mechanical forced action mixer with a high shear stirrer. It is essential that the grouting operation is continuous hence ensuring sufficient labour and mixing capacity is available.
DO NOT MIX BY HAND

The selected water content should be accurately measured into a mixing vessel. Slowly add the dry powder (Grout MP Plus) while mixing. The mixing should continue for a maximum of 5 minutes until a uniform homogeneous consistency is obtained.
DO NOT ADD ADDITIONAL WATER
Discard any material that has hardened or stiffened.

Placing

It is essential that at ambient temperatures (approximately 20°C) the grout is placed within 25 minutes of mixing and this will ensure the expansion process will be maximised. Flowable Grout MP Plus can be placed in thickness ranging from 10mm to 150 in one single application. Where thickness is greater than 150mm, special procedures may be necessary. (Consult Sure Level office for advice).
Avoid trapping air and water by placing grout form on one side only. It is recommended that a suitable head box be used to ensure continuous flow of grout. Ensure entire area to be grouted is filled by bringing level to above underside of machine base plate and remain at this level throughout grout placement. The grout head must be maintained at all times so that a continuous grout front is achieved. Do not use mechanical vibrators to assist in flow as this will cause segregation of aggregate. For large areas it is recommended that Grout MP Plus be pumped. Contact Sure Level office for further information.

Curing

On completion of grouting exposed area should be covered with wet hessian, plastic sheeting or Sure Level Sure Cure to prevent excessive moisture loss. Keep grout covered for a minimum of 24 hours. Remove formwork no sooner than 24 hours after completion of grouting and continue to cure with wet hessian, plastic sheeting, water or Sure Level SureCure curing agent. Lack of sufficient curing could result in plastic cracking and drying shrinkage on surface. The surface should be protected for at least 7 days with either a curing compound (Sure Cure) or wet hessian or plastic sheeting.

Clean Up

Grout MP Plus should be removed from tools and equipment with clean water immediately after use.

Storage

Grout MP Plus has a shelf life of approximately 8 months if kept in a dry environment completely away from moisture.

Health and Safety

This product is classified as hazardous according to criteria of Work Safe Australia. Material containing Portland Cement and sand now fall into this category. Continuous or extended contact with this product may cause irritation as well as respiratory issues such as bronchitis or silicosis.

- During use avoid inhalation of dust, contact with skin and eyes.
- Suitable protective clothing, dust masks, gloves and eye protection should be worn.
- Continual or extended contact with cement products can cause skin irritation.
- If skin irritation occurs, remove contaminated clothing and flush skin thoroughly with water for a minimum of 15 minutes. Contact Poisons Information Centre or consult medical adviser.
- Material Safety Data Sheets (MSDS) are available on request from the office. Read the MSDS and product data sheet carefully before using any product.

Disclaimer

Please Note: Recommendation and advice regarding the use of this product is to be taken as a guide only and Sure Level Pty. Ltd. shall not be liable for any inaccuracy in the information or for any loss, injury or damage whatsoever resulting from its use. To the full extent permitted by law, Sure Level Pty. Ltd. liability is limited at it's discretion, to the replacement of the goods or the supply of equivalent goods.

Fire

Grout MP Plus is non flammable.

Part Number

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