

Concrete Repair, Additives and Grouts



**Product description**

Premier Grout MP is a multipurpose non-shrink Class A cementitious grout complying with requirements of Gas Generating, Shrinkage Compensating grout according to AS1478.1 - 2000.

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

Premier Grout MP 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 20mm to 100mm in a single application.

**Recommended uses**

- All general purpose grouting
- Grouting under precast and tilt slab panels
- Grouting ducts in post-tensioned concrete panels
- Grouting in column bases
- Filling core holes, rod holes and defects in concrete
- Fill-in grout for hollow concrete block walls
- Joints between precast panels and other joints
- Caulking of joints and pipes

**Features and benefits**

- Non-shrink
  - Good dimensional stability
  - Complete void filling
- Versatile - Can be dry packed, rammed, trowelled, poured and pumped.
- Economical, low in-place cost.
- Ready to use, pre mixed, requires only the addition of water.
- Non-staining – iron free
- Lower water/cement ratio
  - Reduced drying shrinkage
  - Increased durability
  - Reduces Permeability

**Typical properties**

**Mixing Consistency**

The table is a guide to the typical water addition requirements for various consistencies.

**Table 1**

Consistency	Dry pack	Trowellable	Flowable
Range	2.5 - 2.9	3.0 - 3.4	3.6 - 4.0
*Test levels	2.9	3.4	4.0

\* Refers to the water content used to carry out performance testing as indicated in the tables below.

**Table 2 - 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)	-	15 - 25 minutes	15 - 30 minutes
Time for expansion - finish (plastic state)	-	2 - 4 hours	2 - 4 hours
Unrestrained expansion	-	1.5%	1.1%
Bleeding	0%	0%	0%

Setting times were tested at 20°C and 50% RH to AS1012.18 for setting times, AS2073 for expansions and AS1012.6 for bleeding.

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**Table 3 - Compressive Strength**

Tested in accordance with AS1012.9, AS2073 at 20°C

Age	Flowable
1 day	20 MPa
7 days	45 MPa
28 days	55 MPa

**Table 4 - Flexural Strength**

Tested in accordance with ASTM C348-86 at 20°C

Age	Trowellable	Flowable
1 days	2.9 MPa	2.0 MPa
7 days	9.5 MPa	8.7 MPa
28 days	12.0 MPa	10.8 MPa

**Table 5 - Bond strength**

Tested in accordance with ASTM C882-1987 Slant/Shear Method

Age	Consistency	Strength
7 days	Flowable	>5 MPa
28 days	Flowable	>10 MPa

**Table 6 - Drying shrinkage**

Tested in accordance with AS1012.13

Time (Days)	Consistency	Shrinkage
7 days	Flowable	<350 microstrain
28 days	Flowable	<600 microstrain
56 days	Flowable	<600 microstrain

**Table 7 - Flow characteristics**

Using CRD-C flow cone (Efflux time)

Initial flow	20-30 seconds
Flow after 15 minutes	25-35 seconds
Flow after 25 minutes	35-45 seconds

**Table 8 - Yield**

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

	Dry pack	Trowellable	Flowable
Litres per 20kg bag	10.0	10.5	11.0
Fresh wet density* kg/m <sup>3</sup>	2,290	2,220	2,180
Bags required per cubic metre	100	95	91

\*Density tested to AS1012.5

### 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 sound concrete. Ensure bolt and anchor holes are clean by blowing out dust and debris using compressed air or Ramset Hole Cleaning Pump (Part Number HCP).

### Pre-Soaking

Pre-soak concrete prior to application of Premier Grout MP for a minimum of 6 hours prior to grouting. Immediately before grouting remove excess water and blow all water out of anchor and bolt-holes.

### Base Plate

Remove all traces of rust, oil and grease. Provide air pressure relief holes in the base plate to allow venting so air is not trapped.

### Formwork

Construct formwork so it is watertight using Ramset Form Seal Silicone or similar or using Ramset FomoFill or FomoPlus self-expanding polyurethane foams.

Formwork must be designed to facilitate rapid, continuous and complete filling of area to be grouted.

Formwork should allow gravity flow of grout between the base plate and foundation and ensure grout is kept in full contact with base plate and concrete substrate.

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### Unrestrained surfaces

To prevent gaps forming, ensure the grout is restrained on all sides so that it expands against all surfaces.

### Low temperature working

Cure rate and strength development rate is substantially reduced below 5°C. If early strength is required add water at 25°C to Premier Grout MP. Do not exceed 25°C.

### High temperature working

High temperatures may result in weak or cracked grout due to moisture loss or excessive internal heat generation (exotherm). At temperatures above 30°C, use water below 20°C to mix grout. Keep all materials cool and away from direct sunlight, and shade area to be grouted with shade screens. If ambient temperatures are excessive, perform grouting in early morning or late evenings.

### Mixing

Select the quantity of water for the desired consistency (See table 1. or product packaging). Measure the quantity of water accurately and add to a container with at least 15 L capacity per bag of grout. **DO NOT MIX BY HAND.** Mix Premier Grout MP using a mechanical forced action mixer with a high shear stirrer such as Ramset LSMP. Slowly add the dry Premier Grout MP powder while mixing. Continue for a maximum of 5 minutes after all grout powder is added, until a uniform homogeneous consistency is obtained. **DO NOT ADD ADDITIONAL WATER.** Discard any unused grout that has stiffened or hardened.

### Placing

To ensure maximum expansion, place grout within 25 minutes of mixing at 20°C. Premier Grout MP can be placed in thickness ranging from 20mm to 100mm in one single application.

Avoid trapping air and water by placing grout from one side only. Use a suitable head box to ensure void is completely filled and to ensure continuous flow.

To assist flow, rod the grout while pouring. Do not use mechanical vibrators to assist grout flow, as this will cause segregation of the aggregate and bleeding.

### Curing

Prevent moisture loss by covering exposed grout with wet hessian or plastic sheeting or other curing compound.

To prevent drying shrinkage and cracking, keep grout covered for a minimum of 24 hours. If required formwork can be removed after 24 hours and protect exposed grout from moisture loss as described above.

Refer to table 3 for compressive strength development.

### Clean up

Clean uncured Premier Grout MP from tools and equipment with clean water immediately after use.

### Packaging

Premier Grout MP is supplied in a 20kg poly-lined bag.

### Storage

Store in a cool, dry place and prevent exposure to moisture and humidity. Shelf life is 8 months in a dry environment.

### Health and safety

Cement products are classified as non-hazardous under General Health and Safety guidelines, and materials containing Portland cement are alkaline in nature.

- During use avoid inhalation of dust, contact with skin and eyes.
- Suitable protective clothing, dust masks, gloves and eye protection should be worn.
- Repeated or prolonged 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 Poison Information Centre or consult medical adviser.
- Material Safety Data Sheets (MSDS) are available from Ramset. Read the MSDS and product data sheet carefully before using any product. MSDS available from [www.ramset.co.nz](http://www.ramset.co.nz) or call 0800 726 738.

### Part number

RPGMP