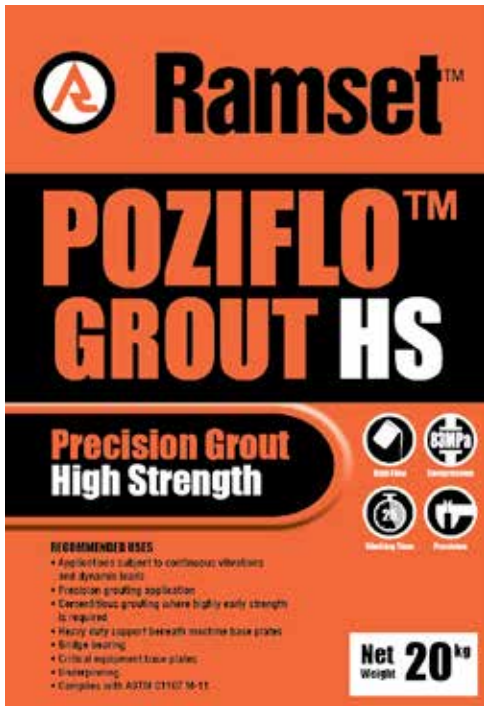


POZIFLO™ GROUT HS



PRODUCT DESCRIPTION

POZIFLO Grout HS is a Dual Expansion, High Strength, Precision (Type C) cementitious grout which complies with ASTM C1107 M-11. POZIFLO Grout HS also offers the added features of High Early Strength and High Flow properties.

The free flowing grout is a carefully formulated blend of Portland cement, graded aggregates and chemical additives that impart a controlled dual phase expansion. This two stage process compensates for shrinkage often associated with cementitious products by providing positive expansion in the plastic state and shrinkage compensation in the hardened state.

POZIFLO™ Grout HS 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 grouting gap distances 10mm to 140mm in a single application.

RECOMMENDED USES

- Precision grouting.
- Bridge bearing.
- Heavy duty support beneath machinery base plates.
- Underpinning.
- Applications subject to vibration and dynamic loads.
- Applications requiring high early strength.
- Applications subject to continuous vibrations and dynamic loads.
- Anchoring bars and fittings.

FEATURES

- Dual expansion system compensates for shrinkage in both the plastic and hardened states
- Very high final strength, 83 MPa flowable consistency.
- High early strength, 40 MPa @ 24 hours flowable consistency.
- High flow properties, fine grade aggregate.
- Excellent flow retention - 35-45 seconds at 25 minutes (ASTM C 939 10).
- Pour depths 10mm - 140mm.
- High yield, approx 10.7L/20kg flowable consistency
- Non metallic iron content eliminates staining.
- Low water/cement ratio increases durability and reduces permeability

Table 1. Mixing Consistencies

This table is a guide to the water addition requirements for various consistencies

Litres of water per 20kg Bag	Dry Pack	Flowable	Fluid
Water Range	2.8 - 3.1	3.2 - 3.5	3.6 - 4.0
Test Levels*	3.1	3.5	4.0

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

Accurately measure water, do not exceed maximum water volumes

Table 2. Setting Times

Vicat setting times at 20°C	Dry Pack	Flowable	Fluid
Initial Set	3.0 Hrs	4.5 Hrs	5.5 Hrs
Final Set	4.0 Hrs	6.0 Hrs	7.0 Hrs
Time for expansion start		15-25 min	15-30 min
Time for expansion finish		2-4 Hrs	2-4 Hrs
Unrestrained expansion		1.5%	1.1%
Bleeding	0.0	0.0	0.0

Tested at 20°C and 50% RH to AS1012.18 for setting times, ASTM C 940-98a for expansions

Table 3. Compressive Strength

Age	Dry Pack	Flowable	Fluid
1 Day	44 MPa	40 MPa	22 MPa
3 Days	72 MPa	67MPa	45 MPa
7 Days	83 MPa	75 MPa	59 MPa
28 Days	90 MPa	83 MPa	67 MPa

Tested in accordance with ASTM C 109M-08

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Table 4. Flexural Strength

Age	Flowable	Fluid
1 Day	4.1 MPa	3.9 MPa
7 Days	10.5 MPa	9.8 MPa
28 Days	11.5 MPa	10.5 MPa

Tested in accordance to ASTM C348-08 at 20°C

Table 5. 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 6. Yields

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

	Dry Pack	Flowable	Fluid
Litres per 20kg Bag	10.2	10.7	11.0
Fresh wet density kg/m ³	2265	2196	2181
Bag per cubic metre	98	93	91

*Density tested to AS1012.5

APPLICATION INSTRUCTIONS

SUBSTRATE AND SURFACE PREPARATION

The substrate 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 with compressed air or a Ramset hole cleaning pump.

PRE SOAKING

It is essential to pre-soak the concrete substrate prior to application of POZIFLO™ Grout HS. Pre soak substrates for a minimum of 6 hours 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 hole for venting.

FORMWORK

Construct formwork so that it is watertight and leakproof using Ramset FormSeal Silicone or using Ramset Fomofill or FomoPlus self-expanding polyurethane foams. Design formwork to enable rapid, continuous and complete filling of area to be grouted.

Design formwork to 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.

UNRESTRAINED SURFACES

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

LOW TEMPERATURE WORKING

Normal precautions for winter working with cementitious materials should then be adopted. At temperature 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 POZIFLO™ Grout HS to 25°C. Do not exceed these temperatures.

HIGH TEMPERATURE WORKING

High temperatures may result in weak or cracked concrete due to excessive moisture loss or excessive internal heat generation (Exotherm) 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 with the installation area shaded by erecting shade screens. If ambient temperatures are excessive, perform grouting in early morning or late evenings.

MIXING

For optimum results, POZIFLO™ Grout HS must be mixed with a mechanical forced action mixer with a high shear stirrer. It is essential that the grouting operation is continuous therefore; ensure sufficient labour and mixing capacity is available.

DO NOT MIX BY HAND. The selected water content should be accurately measured into a mixing vessel (refer table 1 or product packaging). Slowly add the dry powder, POZIFLO™ Grout HS 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 unused grout that has stiffened or hardened in the mixing bucket.

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PLACING

It is essential that at ambient temperatures (approximately 20°C) the grout is placed within 25 minutes of mixing as this will ensure the expansion process is maximised. POZIFLO™ Grout HS can be placed in thickness ranging from 10mm to 140mm in one single application. Where thickness is greater than 140mm, special procedures may be necessary. Consult your Ramset office for advice.

Avoid trapping air and water by placing grout from one side only. It is recommended that a suitable head box be used to ensure the void is completely filled and to ensure the continuous flow of grout.

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

CURING

Evaporation of water will result in reduction of final hardened grout properties. Prevent moisture loss of hardened grout by applying water to the surface or covering exposed grout with wet hessian, plastic sheeting or Ramset curing compounds.

Keep grout covered for a minimum of 24 hours to prevent drying shrinkage and cracking. If required remove formwork after 24 hours and protect exposed grout from moisture loss as described above.

Refer to table 3 for compressive strength development.

IMPORTANT NOTES

- Do not add additional water other than specified
- For large areas apply grout in a continuous operation
- Do not apply in areas less than 10mm depth
- Unrestrained areas must be kept to a minimum
- Cure time and set will be extended when applied at temperatures lower than 5°C

CLEAN UP

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

PACKAGING

POZIFLO™ Grout HS 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:

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