



TECHNICAL DATA SHEET PENATECH GROUT LA



DESCRIPTION

High performance, micro concrete, high flow (Class C) cementitious grout designed for large or deep pour applications.

APPLICATION

Application thickness 10mm-800mm in a single application.

FEATURES

- Dual expansion compensates for shrinkage in the plastic and hardened state
- Excellent flow retention, for large application thicknesses
- Ready to use, pre-mixed, and requires only the addition of water
- Can be mixed flowable or fluid
- No metallic content to cause staining

RECOMMENDED USES

- Cementitious grouting where high flow, high application thickness is required
- Heavy duty support beneath machine base plates
- Bridge bearing and crane rails
- Anchoring bolts, bars and fittings
- Underpinning
- Applications subject to continuous vibrations and dynamic loads
- Precision grouting application

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.
- Base plates must be cleared of all rust, oil or grease. It is essential to provide air pressure relief holes for venting.

PRE SOAKING

It is essential to pre-soak the concrete substrate prior to application of **Penatech Grout LA**. Pre-soak substrate with water for a minimum of 6 hours prior to grouting. Immediately before pouring, the excess water should be removed. In the case of bolt/anchor holes, the holes must be blown out to ensure no traces of free water are present whilst grouting.

FORMWORK

Formwork must be constructed to facilitate rapid and continuous filling, whilst remaining leak proof and water tight. Foam rubber strips or suitable sealants underneath the formwork are recommended.

UNRESTRAINED SURFACES

As **Penatech Grout LA** is an expanding grout, unrestrained areas must be kept to a minimum. It is advisable not to leave any unrestrained areas.

LOW TEMPERATURE WORKING

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 **Penatech Grout LA** to 25°C. Do not exceed this temperature.

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. If practical, the installation area should be shaded by erecting shade screens. If ambient temperatures are excessive, grouting should be scheduled for early morning or late afternoon.

MIXING

Penatech Grout LA requires between 2.9 - 3.2L of water per 20kg bag, depending on the desired consistency. For optimum results, mixing should be performed using a forced action high shear stirrer powered by a heavy duty electric mixing drill.

- Add pre-measured water to a clean mixing bucket.
- Gradually add powder into the water whilst continuously mixing the contents of the bucket. When the entire contents of the bags have been added to the water, mix for a further 5 minutes to produce a smooth homogenous consistency.

It is essential that the grouting operation is continuous hence ensure sufficient labour and mixing capacity is available.

CAUTION

DO NOT MIX BY HAND

DO NOT ADD ADDITIONAL WATER

Discard any unused grout that has stiffened or hardened.

POURING

The desired ambient temperature for pouring is approximately 20°C. At this temperature it is essential the grout is placed within 25 minutes of mixing as this will ensure the expansion process is maximised. Ensure the entire area to be grouted is completely filled. We advise the following

- Use a suitable head box to ensure continuous flow of grout.
- Place/ pour grout from one side, minimizing the likelihood of trapped air.
- 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.

CURING

On completion of grouting the exposed area should be covered with wet hessian, plastic sheeting or **Rendergrip A** to prevent excessive moisture loss. At ambient temperature, formwork should be removed no sooner than 24 hours after completion of grouting. The covering should stay in place for a further 6 days. Lack of sufficient curing could result in plastic cracking and drying shrinkage on the surface.

PROPERTIES

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

Litres of water per 20kg bag	Flowable	Fluid
Range	2.5.- 2.9	2.9 – 3.2
Test Levels*	2.7	3.0

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

***For large applications requiring the use of a pump for mixing and placing, additional water may be required; this should only be conducted with consultation of the Aftek Technical Department. Call Aftek for further advice.**

SETTING TIMES

Vicat setting times at 20°C	Flowable	Fluid
Initial Set	4.5hrs	5.5hrs
Final Set	6.0hrs	7.0hrs
Time for Expansion Start (plastic state)	15-25min	15-30min
Time for Expansion Finish (plastic state)	2-4hrs	2 to4 hrs
Unrestrained Expansion	1.5%	1.1%
Bleeding	0%	0%

Tested at 20°C and 50% RH to AS1012.18 for setting times, AS2073 for expansion and AS1012.6 for bleeding.

COMPRESSIVE STRENGTH

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

Age	Flowable	Fluid
1 day	40Mpa	22Mpa
3 days	67Mpa	45Mpa
7 days	75Mpa	59Mpa
28 days	83Mpa	67Mpa

FLEXURAL STRENGTH

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

Age	Flowable	Fluid
1 day	4.1Mpa	3.9Mpa
7 days	10.5Mpa	9.8Mpa
28 days	11.5Mpa	10.5Mpa

BOND STRENGTH

Tested in accordance to ASTM C882-1987 Slant/Shear method.

Age	Flowable	Fluid
1 day	4.1Mpa	3.9Mpa
7 days	10.5Mpa	9.8Mpa
28 days	11.5Mpa	10.5Mpa

DRYING SHRINKAGE

Tested in accordance to AS1012.13

Time (days)	Consistency	Strength
7 days	Flowable	< 350 microstrain
28 days	Flowable	< 350 microstrain
56 days	Flowable	< 500 microstrain



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FLOW CHARACTERISTICS

Using GRD-C flow core (Efflux time) Initial Flow	20-30 seconds
Flow after 15 minutes	25-35 seconds
Flow after 25 minutes	35-45 seconds

YIELDS

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

	Flowable	Fluid
Litres per 20kg bag	12.5	13
Fresh wet density kg/m ³	1900	1918
Bags required per cubic metre	80	77

Density tested to AS1012.5

STORAGE & SHELF LIFE

Penatech Grout LA has a shelf life of approximately eight (8) months if kept in a dry environment completely away from moisture

PRECAUTIONS

- Unrestrained area must be kept to a minimum
- Do not add additional water other than what is specified
- Never apply mixed grout to a dry porous substance
- Refer to MSDS (material safety data sheet) prior to mixing
- Always apply grout in a continuous operation ensure grout head is maintained
- At low temperatures, grout setting time and strength gain will be extended
- At very high temperatures, grout will set and cure faster potentially causing cracking and delamination

For more detailed information, please read the MSDS for this product.

CLEAN UP

Wash all tools and equipment with fresh, clean water immediately after use. Penatech Grout LA can only be removed mechanically.

HEALTH AND SAFETY

Avoid contact with skin. Protective gloves and clothing are recommended when mixing or using this product. Please refer to full MSDS (material safety data sheet) for this product, which is available from Aftek upon request or through www.aftek.com.au

TECHNICAL SUPPORT

Aftek manufactures a comprehensive range of high quality and performance construction products. In addition, ITLS offers technical support and on-site advice to specifiers, end users and contractors.

Please contact your ITLS-Aftek sales representative or Head Office for this service.



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PACKAGING

Penatech Grout LA is supplied in a 20kg polylined bag

VOC – 1 g/Lt

PRODUCT DETAILS

ITEM NO	ITEM NAME	SIZE	COLOUR
206061	PENATECH GROUT LA	20KG	GREY

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