

Grout UW

DESCRIPTION

Grout UW is a high strength, cement based grout designed for underwater grouting applications.

This high performance grout contains a blend of Portland cements and special additives which enable it to achieve rapid strength development, complete shrinkage correction and an excellent bond.

Grout UW is supplied as a ready to use powder which, when mixed with water, offers a flowable grout with high resistance to cement wash-out under water.

USES

Grout UW can be used for repairing structures that are fully or partly submerged under water. It is suitable for use in still or tidal water flows and is recommended for:-

- Bridge piers
- Concrete piles
- Jetty pillars
- Harbour and dam walls.

ADVANTAGES

- Shrinkage compensated so that it continues to retain filled volume.
- No risk of significant wash-out.
- Gains full strength even under water.
- High initial flow/excellent flow retention.
- Gaseous expansion system compensates for shrinkage in both the plastic and hardened states.
- Durability, high early strength and low porosity ensures long term life.
- Pre-packed to ensure batching and blending consistency and on-site convenience.
- Chloride free.

STANDARDS COMPLIANCE

Conforms to ASTM C 1107-02 (Type C)

APPLICATION GUIDELINES

SURFACE PREPARATION

All surfaces must be sound, clean and free from loose particles, oil, grease and other contaminants including barnacles. Remove any contaminants with a wire brush or by scabbling and cut back any area which is defective. We recommend sandblasting or high pressure hosing any surface area that will be permanently submerged.

FORMWORK

Formwork must be leakproof, strong and well braced. Seal all gaps in the formwork with a suitable under water setting material.

MIXING

Grout UW should be mixed using a high speed drill and spiral mixer, mechanical grout mixer, or a suitable high sheer drum mixer. DO NOT MIX MATERIAL BY HAND.

Because continuous grout flow is essential, ensure that the mixing method and labour is sufficient to enable continuity of the operation.

Slowly add 4.4 litres of water per 20kg of Grout UW and mix continuously for 3-5 minutes until a smooth and even consistency is obtained.

PLACEMENT

The mixed grout should be placed within 20 minutes to gain the full benefit of the expansion. *Grout UW* can be placed in thicknesses up to 80mm above water and 150mm under water in a single pour. Continuous grout flow is essential to prevent any air or water entrapment.

Slowly, but continuously pour (or pump) the mixed grout through a flexible pipe or tube measuring at least 50mm in diameter to the lowest point in the form.

ESTIMATING

The approximate yield from a 20kg bag of *Grout UW* at a flowable consistency is 11.5 litres.

TEMPERATURE AND WORKING LIMITATIONS

Grout UW should not be applied when the temperature falls below 5°C.

CURING

Curing is not required in under water situations. When used in applications that are above water, cure all exposed areas with wet hessian or continuous water spray.

CLEANING

Due to the water resistant qualities of *Grout UW*, it is necessary to clean all tools and equipment with hot water before it hardens.

TECHNICAL DATA

Form	Grey Powder	
Fresh Wet Density	2200kg/m ³ approx. depending on consistency used.	
Yield (approx. no. of 20kg bags required for 1m ³ of mixed grout)	Flowable	Fluid
	96	93
Potlife at 23± 2°C:	15-20 minutes	

The following results were obtained at 23± 2°C:

Flow Characteristics (AS1478.2 – 2005 Appendix C and D)

Consistency	Water Addition per 20kg bag	Test Method	Range
Flowable	3.5-3.9	Flow Trough	300-500mm
Fluid	4.0-4.4	Flow Cone	60-90 secs

Compressive Strength (AS1478.2- 2005 Appendix A – Restrained)

Consistency	Water Addition /20kg bag (Litres)	Compressive Strength (Mpa)		
		1 day	7 days	28 days
Flowable	3.5-3.9	25	50	65
Fluid	4.0-4.4	20	45	60

Flexural Strength (AS 1012.11 – 2000) tested at Flowable Consistency

Age (days)	Flexural Strength (Mpa)
1 day	2.0
3 days	4.0
7 days	8.5
28 days	10.0

Setting Time (AS2350.4 – 1999)

Initial Set	5.0 – 6.0 hours
Final Set	6.5 – 7.5 hours

STORAGE

If kept dry and stored in its original condition, *Grout UW* will keep for up to 12months. The shelf life of the product may reduce if subjected to high temperatures and high humidity.

HEALTH AND SAFETY

Grout UW contains cement powders which can be harmful to the skin. During use, avoid inhalation of dust and contact with the skin and eyes. Wear suitable clothing, gloves, eye protection and respiratory protective equipment.

If contact with the skin occurs, thoroughly clean the area with plenty of fresh water and soap. In case of contact with the eyes rinse with plenty of fresh water and seek medical advice.

If swallowed, seek medical attention immediately – **Do not** induce vomiting.

For further information consult the **Material Safety Data Sheet** and read the product label carefully before use. **Material Safety Data Sheets** are available by phoning **1800 077 744**.

Please Note:- *The information given in this data sheet is based on our current knowledge of the product when properly stored, handled and applied. We cannot guarantee that the product will be suitable, effective or safe when used for any purpose other than its stated uses.*

To the extent that it is lawful, we exclude warranties implied by law and limit our liability to the cost of replacing the product. We accept no responsibility for loss or injury caused by improper use, incompetent preparation, inexpert or negligent application, or ordinary wear and tear.

Service or advice given by our staff should not amount to responsibility for the project - since the owner, or their contractor (and not River Sands), is responsible for procedures relating to the application of the product.



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