

ROCKMAX[®] GROUT UW

CEMENT BASED GROUT FOR UNDERWATER APPLICATION



INTRODUCTION

Rockmax Grout UW is a cementitious grout formulated especially for underwater application. It can be applied by both pump and pouring. The material used for repair the concrete structure underwater or pile restoration underwater. Grouts meet performance requirement of ASTM C1107.

AREA OF USES

Rockmax Grout UW can be used to repair and restoration on concrete structure underwater such as piles, spillways, concrete dams, bridge columns, foundations, wharfs.

ADVANTAGES

- Design to use for underwater application.
- Non-shrink from time of placement.
- Non-metallic.
- High early strength development.
- High ultimate strength.
- Non-corrosive.
- Good flowability
- Pumpable.
- Can placement via tremie method.

TECHNICAL PROPERTIES

| | |
|---|-------------------------|
| Form: | Cement powder |
| Color: | Grey |
| Mix density: | 2000 kg/m ³ |
| Compressive strength: (Water content 20-22%) | |
| 1 day: | 18-20 N/mm ² |
| 7 days: | 40-42 N/mm ² |
| 28 days: | 45-50 N/mm ² |
| Bond Strength to concrete: | |
| 28 days: | > 8 N/mm ² |
| Expansion rate: | 1-3% |

APPLICATION PROPERIES

| | |
|--------------------------|-------------------------------------|
| Working time (30°C): | 30 minute |
| Full cure (30°C): | 28 days |
| Mix ratio (by weight): | 20-22% of water |
| Consumption: | 1800 kg per m ³ of grout |
| Minimum thickness: | 25 mm |
| Maximum thickness: | 150 mm |
| Application Temperature: | 0 to +35°C degree |

PREPARATION

Concrete substrate must be clean, free from oil, grease, mould oil, dust and loose particles. Steel plate must be clean and no rust. Ensure there is no crack on concrete surface. Dry concrete substrate must be saturated with clean water prior to pour grout. Metal surfaces must be free from rust, oils, paints.

FORMWORK

Formwork must be clean and watertight. All joint must be protected from leakage of grout and rigid to prevent the expansion of grouting. Formwork should be applied mould release agent for easily remove. In case of special formwork, please consult **Rockmax**.

MIXING

Mixer must use low speed drill mixer (500 rpm) with and including good quality steel paddle. Make sure all tools and equipments are in good conditions and clean. Measure 5.25 litre of clean water (21%). Temperature of water should be approximate 15°C – 25°C degree. Powder must be added to the clean water slowly and continuous mixing for approximate 3 minute (max 4 minute). Mix all material of grout in one bag per time. No partial mix. In case of large volume of grout. Mixing method must use pan mixer. Please consult **Rockmax** for further advice.

APPLICATION

Pour grout after mixing immediately after mixing to the prepared substrate. Working time approximate 15-30 minute depend on temperature. Inspect the grout must free flow and homogeneous. When grout underwater by tremie pipe, ensure the pipe is immerse in grout during placing. Raise the pipe slowly while pouring. Check the thickness per layer of each pour (not more than 150mm thickness).

CURING

Keep grout surface moist to prevent rapid drying. Use plastic sheet to wrap around grouting area. Curing compound should be use to avoid shrinkage crack.

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CLEANING

Clean all tools and equipments immediately with water. Hardend material can be removed by mechanical means.

LIMITATIONS

- Large volume of grout can be over heat of hydration process. Consult **Rockmax** for more information.
- Do not exceed the amount mixing of water.
- The grout must be curing by water or curing compound at minimum 3 days after application.
- Do not pour grout when the ambient or material temperature over 35°C degree.

PACKAGING

25kg bag.

STORAGE

Storage in shade and dry condition free from frost, water, moisture, UV and high temperature.

SHELF LIFE

12 months if kept follow instructions.

PRECAUTIONS

Avoid contact with skin and eye as **Rockmax Grout UW** is cement base contain Alkaline. Goggle and glove must be use while application. Clean with plenty of water when contact with grout and see doctor as quick as possible. MSDS is available upon request.

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IMPORTANT NOTE!!

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