

ROCKBOND UNDERWATER GROUTS AND CONCRETES

Polymer modified cementitious materials

DESCRIPTION

ROCKBOND UNDERWATER GROUT (RB 4.03) powder is a pre-mixed cementitious powder specially formulated for underwater applications. The material contains a blend of fine and ultra-fine cements, a high quality graded sand, and a union of admixtures. The grout powder, when mixed with water, material that is cohesive, mobile and displays an excellent resistance to washout when brought into contact with water. ROCKBOND UNDERWATER CONCRETE (RB 4.04) contains an aggregate, and is applied to sections greater than 60 mm. The powders are packed in 25 kg durable bags and the concrete is also available in 4 kg plastic buckets, with a shelf life of 2 years. These products can be ordered for winter type applications, ie: temperatures below 10°C. The references for these are ROCKBOND UNDERWATER ACCELERATED GROUT (RB 4.05) and ROCKBOND UNDERWATER ACCELERATED CONCRETE (RB 4.06).

SPECIAL PROPERTIES

- Incorporates several anti-wash-out agents.
- Extremely high wash-out resistance.
- No “fog” or dispersion when placed or poured underwater.
- Extremely stable and will not segregate or bleed.
- Readily pumpable and stable under pressure.
- Self-levelling and self-compacting.
- Excellent underwater bond to brick, steel, and concrete surfaces.
- High ultimate compressive and tensile strengths.
- Can be used above or below the waterline.
- Non-flammable, non toxic, user friendly and safe to use.

USES

- General underwater void filling applications.
- Marine and fresh water concrete repair and protection.
- For use in hostile locations such as tidal and splash zones.
- Seawalls, harbours, quays and jetties.
- Fortification and repair of river and sea defences.
- Repair and consolidation of water retaining structures, dams, pillars and bridge columns.

MIXING INSTRUCTIONS

ROCKBOND UNDERWATER GROUT (RB 4.03) powder is mixed with water using a suitable container, a pneumatic or electric drill (1 Kw), and a Rockbond Stirrer. Larger amounts of material may be mixed using a forced action paddle mixer.

Add 5.00 litres of water to the container or mixer.
Pour 25 kg of the grout powder onto the water while mixing.
For batches of 2 or more bags, repeat the procedure.
After all the powder has been added, mix for 30 seconds.
The grout is now ready for use.

ROCKBOND UNDERWATER CONCRETE (RB 4.04) powder is mixed with water at 14% water content: 3.50 litres of water/25 kg bag.

Alternatively, small amounts of the material can be prepared by slowly adding the powder to a quantity of water and mixing to required consistency.

APPLICATION PROCEDURE

All necessary preparatory work must be completed before the grout or concrete is mixed. Ensure that all surfaces with which the material comes into contact are clean and free of marine growth. The use of a water jet will produce a good and strong substrate on which to apply the material.

Use ROCKBOND UNDERWATER ACCELERATED MORTAR (RB 4.03) to seal shutters. Make sure joints are watertight and shutters are strong enough to contain and support the material. The grout or concrete can be pumped or tremied into place. Make sure the flow is continuous and that air is not introduced into the material.

For sections greater than 60 mm thick, ROCKBOND UNDERWATER CONCRETE (RB 4.04) should be used.

After the application has been completed, any exposed grout or concrete above water must be cured immediately with ROCKBOND CURE (RB 7.12) at the rate of 10m²/litre. During adverse weather conditions, such as high temperatures and drying winds, repeat the procedure after the first application is dry.

HEALTH AND SAFETY

Rockbond Special Concrete Products are non-toxic and safe to use. However, use the same precautions as with any cementitious product, wear goggles, protective clothing and a dust mask while mixing and applying the material.

TECHNICAL DATA

TYPICAL DATA for UNDERWATER GROUT at 20% water/powder ratio at 20°C.

CONSISTENCY: Mobile grout
CONSISTENCY LIFE: 30 minutes
DENSITY: 2020kg/m³

MINIMUM COMPRESSIVE STRENGTH:

1	7	28	Days
12	30	60	MPa

YIELD: 25 kg of grout powder yields 13.75 litres of mobile grout. 1 m³ of mobile grout requires 1.800 tonnes of powder.

TYPICAL DATA for UNDERWATER CONCRETE at 14% water/powder ratio at 20°C

CONSISTENCY: Mobile concrete
CONSISTENCY LIFE: 30 minutes
DENSITY: 2160 kg/m³

MINIMUM COMPRESSIVE STRENGTH:

1	7	28	Days
10	30	60	MPa

YIELD: 25 kg of concrete powder yields 14.0 litres of mobile concrete. 1 m³ of mobile concrete requires 2.100 tonnes of powder.

TECHNICAL INFORMATION

Should you have any queries, or require further information, please contact our Technical Sales Team:

CONTACT DETAILS

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