

ROCK CRETE 411

Free Flowing Micro-concrete for Grouting and Repair

PRODUCT DESCRIPTION	Rock Crete 411 is a one component, free-flowing, high strength, cement based micro-concrete with a maximum aggregate size of 10 mm. Suitable for use in tropical and hot climatic conditions.
USES	Rock Crete 411 is used for the structural repair of deteriorated concrete. It is ideal for casting sections or members where the volumes required are too large for conventional grouts, and too small and inaccessible for normal concreting applications. A typical application is the re-profiling of damaged concrete members, using formwork. Also suitable for base plate grouting where thickness exceeds 75 mm.

ADVANTAGES

- One component -requires the addition of water only.
- Reduces waste and risk of mixing failures.
- Easy to mix, apply and finish.
- Economical.
- Excellent adhesion.
- Non-shrinkage.
- Rapid strength development.
- Compatible with the properties of typical conditions.
- Vapour permeable.
- High resistance to freeze/thaw cycling.

PRODUCT DATA

Type	Mixture of Portland Cement and graded aggregates
Form	Grey Powder
Packaging	20 kg bag
Storage Condition	Store in a dry area between 5°C and 35°C. Protect from direct sunlight
Shelf life	12 months minimum from production date if stored properly in original unopened packaging

Technical Data

Mixing Ratio	2 – 2.1 liters of water per 20 kg bag or 10 – 10.5 % water by weight of powder.			
Density (at 25°C)	Approx. 2400 kg/m ³ (fresh mortar)			
Mechanical Strengths (at 25°C)	Compressive Strength	1 day	7 days	28 days
	Flexural strength	30-35 N/mm ²	45-55 N/mm ²	60-70 N/mm ²
	Bond Strength (Pull off)			8 -10 N/mm ²
				~3 N/mm ²

Thickness	Minimum 50 mm per pour (100 mm for base plate grouting) Maximum 500 mm per pour
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APPLICATION DETAILS

Substrate Preparation	Concrete surfaces should be clean, sound and free from oil, grease, cement laitance and all loosely adhering particles. Absorbent surfaces should be saturated thoroughly. Metal surfaces (iron and steel) should be free from scale, rust, oil and grease.
Bonding Agent and Steel Protection	Embedded reinforcing steel should be free from scale, rust, oil and grease, and treated with a suitable protective coating. The application of a suitable bonding agent, will improve adhesion on large areas or where particularly dense concrete substrates are involved.

Mixing	Always empty the full contents of the bag into a suitable mixer. Mix DRY for 3minutes before adding the water. Add 2.0 – 2.1 liters of water per 20 kg bag. Mixing can only be achieved using either Add either slow speed drill (400-600 rpm) fitted with a clean, rust free, mixing paddle, or afforced action mixer. DO NOT MIX BY HAND OR USE PART BAG! For best results, first add 1.5 – 1.6 ltr. of water and mix for at least 3minutes or until the larger aggregate has thoroughly dispersed and a uniform, free-flowing consistency is obtained. Then add remaining water and mix for additional 2minutes.
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Application	Dampen the surface thoroughly with clean water prior to the application. Before pouring, however, let the mixed mortar stand for 2 - 3 minutes after mixing with water to allow entrapped air to escape. Maintain sufficient hydrostatic head to keep the product flowing. Provide channels for the air to escape during grouting. Protect from rain until initial set has been achieved.
Curing	Treat exposed surfaces with Curing Compound or use other approved curing methods such as polyethylene sheeting or wet hessian.
Cleaning	Clean equipment and mixer after application with water. Hardened material can only be removed mechanically.
Remarks	Ensure formwork is secure and watertight to prevent movement and leaking during placing and curing. At high temperatures use chilled water for mixing to keep mortar temperature below 30°C. In hot weather, base plates and foundations must be shaded from direct sunlight. Condition bags prior to use. For additional information on Rock Crete 411 or other grouting materials contact our Technical Services Department.
SAFETY	Accidental splashes to the skin must be washed off with water and soap.
INSTRUCTIONS	Accidental splashes to the eyes or mucous membrane must be rinsed with clean warm water.
Precautions	Seek medical attention without delay. Skin barrier cream, safety goggles and rubber gloves are recommended.
Ecology	Do not dispose of into water or soil but according to local regulations.
Toxicity	Non-toxic under the relevant health and safety codes.
Transportation	Non-hazardous



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CONSTRUCTION