SHOTCRETE 513

Product Data Sheet

Description

SHOTCRETE 513 is an environmentally friendly, fast-setting dry-spray concrete with rapid strength gain. The product is suitable for installation up to any thickness from a **minimum of 10mm and** consists of a blend of Natural Cement binder and specially selected graded aggregates, all passing a 2mm sieve.

SHOTCRETE 513 is suitable for the following applications:

- Horizontal and vertical repairs
- Repairs to sewers
- Work around the sea including piers
- Quay walls & off shore platforms
- Repairs to bridges
- Repairs to dams & viaducts
- Tunnel repairs
- Retaining wall repairs
- Where high early strength is required
- Where pollution & chemical attack is likely.

Properties

- Fast set with rapid strength gain
- Only requires the addition of water
- Sulphate resistant
- Resistant to chloride penetration
- High chemical resistance
- Waterproof
- Approved for use in Public Water Supplies
- Can be used to stop running water
- Can be used down to 0°C
- Environmentally friendly
- High compressive strength
- Fast cure, can be over-coated one hour after set

Yield

Generally, 1 x 25kg bag of SHOTCRETE 513 mixed with 3.6 litres of water will produce 12.5 litres of finished mortar.

Setting time & Strength Gain

Start Set **End Set**	**4 Min** **10 Min**	**at 20°** **at 20°**
	Flexible Strength (Mpa)	Compressive Strength (Mpa)
5 Mins	1.7	6
1 Hour	2.2	9
3 Hours	2.5	12
24 Hours	3	20
7 Days	4.8	26
28 Days	7	45
Strength continues to develop thereafter.		

Setting Times

SHOTCRETE 513 is designed to commence setting at **4 minutes and finish setting at 10 minutes** at 20°c.

In Winter SHOTCRETE 513 can be used down to 0°C. The set will be slower but can be accelerated with warm water. In very hot temperature the set will be faster and can be slowed by using cold water.

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Method of use

Preparation

Do not use on frozen or overheated substrates (0°C–30°C). Prepare the surface in advance, ensuring it is well roughened to provide an adequate key. Any adhesion-reducing substances such as oil, paint, bitumen, grease or laitance must be removed by suitable means. On glazed brickwork, the joints should be raked out and the surface bush hammered to form a key. The surface to which the SHOTCRETE 513 is applied should be clean, free from dust and thoroughly dampened. Where necessary, steel or aluminium mesh can be used.

Mixing

For optimum results mix using conventional dry spray mixing machines. The optimum water to cement ratio of 3.6 litres per bag should be aimed for. Exceeding this ratio will lead to lower strength, longer setting time and the risk of surface cracking appearing. SHOTCRETE 513 should be added to the dry spray shotcrete machine and transported by dry air to the nozzle where the water is added. To obtain low dust levels and better, more consistent mixing qualities, it is advisable that the water is added to the SHOTCRETE 513 approximately 1.5 metres from the end of the nozzle.

Once setting has started DO NOT attempt to remix or to smooth the surface. This will cause the mechanical properties in particular strength and adhesion to be lost. Do not premix SHOTCRETE 513 with water before placing in the dry spray machine.

Priming

There is no need to prime any exposed reinforcement but if priming is preferred, a conventional system may be used.

Placing

Carry out the removal of all loose material from the concrete and reinforcement. It is only necessary to remove rust from the reinforcement. Prepare the surface as described previously, ensuring the surface is well dampened but also ensuring there is no standing water. Fix any necessary reinforcement, movement joints, and formwork. Ensure that the SHOTCRETE 513 is worked around any reinforcement.

A 10mm minimum thickness of the material is always necessary. Protect the surface of the SHOTCRETE 513 from direct sunlight or wind until setting has completed. Once the SHOTCRETE 513 has set allow at least 1 hour before applying any finishes.

Precautions & Storage

We strongly recommend the use of GLOVES, GOGGLES and MASKS. Full details are provided in the Safety Data Sheet. Clean all tools with water immediately after use.

SHOTCRETE 513 is packaged in a polythene inner bag with a resealable tie within a stitch-sealed woven polypropylene outer bag that should be stored in dry conditions and will last for at least twelve months.

Approved for use in Public Water Supplies

DWI Reg.31 Approved ref Number: 56/4/1089

Scan to see Application Video:

ISO 9001 QUALITY MANAGEMENT

ISO 45001 HEALTH & SAFETY MANAGEMENT

ISO 14001 ENVIRONMENTAL MANAGEMENT

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