SpECbuild MC500

HIGH FLUIDITY MICRO-CONCRETE

DESCRIPTION

SpECbuild MC500 is a one component, pre-packed, micro-concrete. On the addition of the specified quantity of clean water, the product produces a highly fluid micro-concrete, suitable for the repair of concrete structures. **SpECbuild MC500** incorporates additives, which control shrinkage and reduce water demand.

TYPICAL USES

SpECbuild MC500 is designed to reinstate large concrete sections, or to be used where access is difficult or congestion of reinforcement limits the use of traditional materials. The product may be used to provide repairs in a variety of situations, such as:

- Structural repairs to columns
- Replacing sections of concrete beams
- Making good areas of honeycombed concrete

ADVANTAGES

- No compaction required
- Low permeability inhibits the ingress of chlorides and carbon dioxide
- Excellent bond strength to adequately prepared concrete substrates
- May be placed by concrete pump
- Chloride free

TECHNICAL DATA

Typical results @ 20 °C

Compressive strength (BS 6319-2)	
1 day	22 N/mm²
3 days	55 N/mm²
7 days	65 N/mm²
28 days	80 N/mm²
Flexural Strength (BS 6319-3)	
28 days	8 N/mm²
Tensile strength (BS 6319-7)	
28 days	3 N/mm²
Water absorption ISAT (BS EN 1881-208)	
10 minutes	0.025 ml/m²/sec
30 minutes	nil
Setting time (BS EN 196-3)	
Initial	2.0 hours
Final	4.0 hours
Linear shrinkage (ASTM C531-00)	
7 days	0.060%
Fresh wet density	2290 kg/m³

APPLICATION

Preparation

It is essential that adequate preparation is carried out prior to the application of **SpECbuild MC500**.

The boundary of the repair area should be cut using a concrete saw to provide a neat edge to the repair with no feather edging. It is recommended that the saw cut be approximately 50mm deep. The area to be repaired may then be broken out up to the prepared boundary.

Repairs using **SpECbuild MC500** should be generally at least 50mm as a minimum depth with a maximum of 200mm, although greater depths may be applied depending on the design of the structure being repaired. The substrate should be cleaned thoroughly to ensure the complete removal of dust, reinforcement corrosion products, oil and grease. The prepared surface should be protected if any delay is anticipated prior to the application of the repair compound.

All reinforcement, which shows signs of corrosion must be fully exposed to an adequate depth behind the bar, to allow ease of access for the fluid repair compound. The steel should be grit blasted to bright metal immediately prior to the application of **SpECcoat Zn25** zinc rich protective coating. Apply one coat of **SpECcoat Zn25** to the cleaned steel ensuring full coverage, and allow to dry before commencing with the repair application.

Substrate Priming

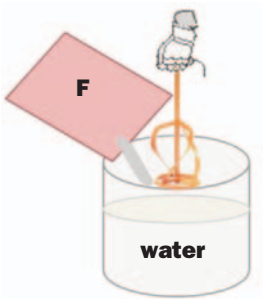
Normally, it will only be necessary to pre-soak the substrate with clean water for a period of at least one hour, prior to the application of the repair compound. All water should be drained from the formwork prior to commencing the application of the repair material.

SpECbuild MC500 should be applied while the substrate remains damp.

Where it is deemed necessary to seal in chlorides, which could not be removed during the preparation stage, the use of **SpECbuild Primer E1** is recommended. **SpECbuild Primer E1** is a high-build epoxy primer, which completely seals the substrate. The product is applied for a dry substrate as a two-coat system, the second coat being applied as soon as the first is tack-free. Subsequent application of **SpECbuild MC500** must be carried out while the second coat of primer is still tacky.

Mixing

SpECbuild MC500 is a one-component micro concrete product.



For mixing of single bags, it is acceptable to use a 25 litre steel pail as a mixing vessel, and mixing carried out using a slow speed electric drill (350/600rpm) fitted with a **SpECbuild** Mixing Paddle. Where larger quantities of material need to be mixed at one time, a compulsory mixer is required. Do not attempt to use free-fall mortar mixers as the shear imparted is insufficient to adequately mix the repair compound.

Place the accurately measured 3.3 litres of clean mixing water into the mixing vessel and slowly add the contents of the bag of repair compound, while the mixing paddle is running.To ensure complete and thorough dispersal, the product must be mixed for 5 minutes minimum. Mixing of part bags is not recommended.

The mixing water addition should be exactly 3.3 litres.

This product cannot be mixed by hand.

Application

The mixed material should be applied immediately after mixing is completed to obtain the full benefit of the fluidity provided. Placement by pump requires the usual pre-grouting of the pump line prior to pumping the repair compound.

Curing

Any exposed areas not protected by formwork must be cured using a proprietary curing compound, such as **SpECcure WE**. Once the formwork is removed, the total repair area should be cured by the same process.

This is of extreme importance at temperatures in excess of 30°C and secondary protection should also be considered to completely seal the repair area against drying winds, which could render the repair completely ineffective.

EQUIPMENT CLEANING

SpECbuild MC500 and **SpECcure WE** should be cleaned from equipment using water immediately after application.

SpECbuild Primer E1 and **SpECcoat Zn25** should be cleaned from equipment using **SpECtop Cleaning Fluid**.

PACKAGING & YIELD

SpECbuild MC500
25kg bags
@ 12.3 litre of mixed product (0.0123m³)

SpECbuild Primer E1
1litre & 5litre tins
@ 6m²/litre

SpECcoat Zn25
1litre & 5litre tins
@ 7-8m²/litre

SpECcure WE
200 litre tins
@ 5m²/litre

STORAGE & SHELF LIFE

SpECbuild MC500 has a shelf life of 12 months

when stored in original packaging in a cool, dry environment.

HEALTH & SAFETY

SpECbuild MC500 contains alkalis and protection should be provided to prevent contact with skin and eyes. Inhalation of dust must be avoided whilst mixing.

Gloves, goggles and a dust mask must be worn. If skin contact occurs, wash with plenty of soap and water. Contact with the eyes should be treated by immediately washing with copious amounts of clean water followed by medical attention.

FLAMMABILITY

SpECbuild MC500, SpECcure WE and **SpECbuild Primer E1** are not flammable.

SpECcoat Zn25 and **SpECtop Cleaning Fluid** are flammable. Do not expose to naked flames or other sources of ignition.

FLASH POINT

SpECcoat Zn25	>60°C
SpECtop Cleaning Fluid	>40°C

Issue 9: 01/2011

QA-054

SPECIALITY ENGINEERING CHEMICALS
PO Box 61347, Dubai, United Arab Emirates. Telephone: +971 4 883 6662, Fax: +971 4 883 7696
E-mail: info@spec.ae; Skype ID: spec.sales
www.spec.ws