

# SpECbuild LWC50

## LIGHTWEIGHT CEMENTITIOUS REPAIR COMPOUND

### DESCRIPTION

**SpECbuild LWC50** is a one component, pre-packed, polymer modified cementitious repair mortar. The product incorporates a blend of selected cements and aggregates, which includes a lightweight filler, giving the product unique high-build characteristics while achieving compressive strengths in the range expected from medium strength concrete.

### TYPICAL USES

**SpECbuild LWC50** can be used in a range of applications such as:

- The replacement of debonded, cracked or damaged concrete
- To repair concrete structures or buildings suffering from carbonation or chloride attack
- The reinstatement of "honeycombing"
- Reprofiling concrete and masonry
- Overhead and vertical situations where the product is particularly suited

### ADVANTAGES

- Provides excellent application and performance characteristics in hot climates
- Pre-packaging and quality raw materials ensure constant performance
- Fast and easy to use, needing only the addition of clean water
- Extremely low permeability thus inhibiting the ingress of carbon dioxide, and chloride ions
- High bond strength to concrete substrates using **SpECbuild Primer E1** or **Primer S1**
- Contains additives to compensate for shrinkage
- Chloride free
- Compatible with the thermal expansion properties of typical structural concrete
- High build properties with excellent compressive strength

### TECHNICAL DATA

#### Typical results @ 20 °C

**(25kg bag + 4.25 litres of water)**

#### Compressive strength (BS 6319-2)

1 day	15 N/mm <sup>2</sup>
3 days	30 N/mm <sup>2</sup>
7 days	33 N/mm <sup>2</sup>
28 days	36 N/mm <sup>2</sup>

#### Flexural strength (BS 6319-3)

28 days	7 N/mm <sup>2</sup>
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#### Tensile strength (BS 6319-7)

28 days	3 N/mm <sup>2</sup>
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**Pull-Off strength (ASTM D4541)** 2.6 N/mm<sup>2</sup>

#### Water absorption ISAT(BS EN 1881-208)

30 minutes	nil
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#### Setting time (BS EN 196-3)

Initial	3.5 hours
Final	4.5 hours

#### Linear shrinkage (ASTM C531-00)

7 days	0.033%
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### APPLICATION

#### Preparation

It is essential that adequate preparation is carried out prior to the application of **SpECbuild LWC50**.

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 10-12mm deep. The area to be repaired may then be broken out up to the prepared boundary.

The resultant surface 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 application of the 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. Allow to dry before commencing the next step.

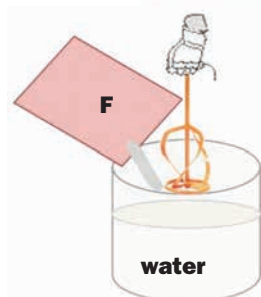
### Substrate Priming

For most situations, the substrate should be primed with **SpECbuild Primer S1**. Initially the surface should be thoroughly saturated without standing water prior to the primer being applied. **SpECbuild Primer S1** should be applied by brush ensuring intimate contact with the substrate. This is best achieved using a circular scrubbing action. **SpECbuild LWC50** can be applied as soon as the primer becomes tacky.

To provide an exceptionally high strength sealed bond to the substrate (e.g. to repair chloride induced corrosion damage) **SpECbuild Primer E1** epoxy resin-bonding agent may be used. One coat should be applied and allowed to gel. A second coat should then be applied and used to provide the bond.

### Mixing

**SpECbuild LWC50** is a one-component cementitious repair mortar.



For mixing a single bag, a 25 litre steel pail is suitable, 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 they do not impart sufficient shear to adequately mix the repair compound.

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

The mixing water used must be in the range of 3.75 litre to 4.2 litre. The quantity used will depend on the type of application and the skill of the applicator.

***This product cannot be mixed by hand.***

### Application

The mixed material should be applied immediately after mixing is completed. The material should be applied by a gloved hand to ensure thorough compaction around the reinforcement and against the edges of the reinstatement area. The repair is then finished by trowel.

The application thickness' will depend on the repair configuration however, as a general rule thickness' of 40mm may be achieved in an overhead situations and 75mm in large vertical repairs. Repairs incorporating supporting formwork may be applied up to 120mm thick. The product must not be applied under 10mm in thickness.

Applications in excess of the thickness quoted above may be achieved by "keying" the compacted layer and then applying **SpECcure WE** as a curing coat. Once this layer has reached sufficient strength, **SpECbuild Primer S1** may be applied as a primer coat and application proceeds as before.

### Curing

The reinstated area must be protected immediately after the completion by the spray application of a suitable curing membrane such as **SpECcure WE**. 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 conditions, which would render the

repair completely ineffective.



### APPLICATION TEMPERATURE RANGE

5°C to 35°C

At temperatures above 35°C the pot life of the material will be reduced.

### EQUIPMENT CLEANING

**SpECbuild LWC50, SpECbuild Primer S1 and SpECcure WE** should be cleaned from equipment using water immediately after application.

**SpEccoat Zn25 and SpECbuild Primer E1** should be cleaned from equipment using **SpECTop Cleaning Fluid**.

### PACKAGING & YIELD

Product	Packaging	Coverage
<b>SpECbuild LWC50</b>	25kg bags	1.6m <sup>2</sup> @ 10mm thick (16 litre of mixed product)
<b>SpECbuild Primer S1</b>	1 & 5 litre tins	5-6m <sup>2</sup> /litre
<b>SpECbuild Primer E1</b>	1 & 5 litre tins	5m <sup>2</sup> /litre
<b>SpEccoat Zn25</b>	1 & 5 litre tins	7-8m <sup>2</sup> /litre
<b>SpECcure WE</b>	200 litre drums	5m <sup>2</sup> /litre

### STORAGE & SHELF LIFE

**SpECbuild LWC50** has a shelf life of 12 months when stored in original containers in a cool, dry environment.

### HEALTH & SAFETY

**SpECbuild LWC50** 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 LWC50, SpECcure WE, SpECbuild Primer E1 and SpECbuild Primer S1** are not flammable.

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

### FLASH POINT

<b>SpEccoat Zn25</b>	>60°C
<b>SpECTop Cleaning Fluid</b>	>40°C

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