

Technical Data Sheet

Rapid Set Patch

High Strength Repair Mortar



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Product

Rapid Set Patch is a high strength polymer modified cementitious structural repair mortar.

Description

Rapid Set Patch is a heavy duty polymer modified structural repair reinstatement mortar with high adhesion qualities, ultimate compressive strength and abrasion resistance. The product is shrinkage compensated which allows it to be used for vertical, horizontal and overhead application for large or small repairs.

Recommended Uses

- Patching and repairing damaged concrete.
- Structural repairs in horizontal, vertical and overhead surfaces subjected to high load bearing.
- Terraces, balconies and facades.
- Repairs where high compressive strength and abrasion resistance is required.
- Repairs to Spalled concrete caused by corrosion of steel reinforcement.
- Repairs to damaged industrial flooring.
- High build application for repairs 10mm to 40mm on vertical substrates.
- Reprofiting of worn areas.
- Repairing concrete areas subject to chemical corrosion.
- For below or above ground structures.
- In repairs where high resistance to chlorides and carbon dioxide is required.

Features & Benefits

- Shrinkage compensated allows for long term dimensional stability.
- One component product, just add water and mix.
- High ultimate strength. Ideal for structural repairs.
- High build repairs can be completed in a single application.
- Excellent workability.
- Easy to use.
- Excellent bond strength to concrete substrates.
- High abrasion and impact resistance.
- Extremely durable.
- High build repairs with exceptional performance characteristics.
- Reduces the need for formwork.

Performance Properties

Typical Compressive Strength

Tested in accordance with AS1012.9 at 20°C

Age	Mouldable	Trowellable
1 day	>40 Mpa	>30 Mpa
7 days	>50 Mpa	>40 Mpa
28 days	>60 Mpa	>50 Mpa

Typical Flexural Strength

Tested in accordance to ASTM C348 at 20°C

Age	Trowellable	Flowable
28 days	>8.0 Mpa	>6.0 Mpa

Typical Bond Strength

Tested in accordance to ASTM C882

Age	Trowellable Strength
28 days	>10 Mpa

Typical Working Time

Temperature	Flowable
10°C	10-15 minutes
20°C	5-10 minutes
30°C	5 or less minutes

Application Thickness

	Vertical	Horizontal
Minimum	10 mm	10 mm
Maximum	40 mm	100 mm

Approximate Fresh Wet Density

2130 kg/m³ approx. (Tested in accordance to AS1012.5)

Typical Traffic Time 20°C (Mouldable)

Foot Traffic	30 mins approx.
Vehicle Traffic	1-2 hours
Time to cover with protective Coating	30 minutes

Application Temperature

Minimum	5°C
Maximum	30°C

Drying Shrinkage

Tested in accordance to AS1012.13

Time	Shrinkage
56 days	<300 microstrain

Approximate Water Requirement

4.0 - 4.4 Litres of water

Approximate Water Requirement for Small Batches

Weight of Powder In Kg	Approximate Water for Trowellable Consistency
1	200 ml
2	400 ml
3	600 ml

Packaging

Rapid Set Patch is supplied in a 20kg polylined bag.

Application Instructions

Substrate and Surface Preparation

Saw, cut or cut back the extremities of the repair locations to a depth of at least 15mm to avoid feather-edging and to provide a square edge. Break out the complete repair area to a minimum depth of 15mm up to sawn edge. Clean the surface and remove any dust, unsound or contaminated material, plaster, oil, paint, grease, corrosion deposits or algae. Where breaking out is not required, roughen the surface and remove any laitance by light scabbling or gritblasting.

Oil and grease deposits should be removed by steam cleaning, detergent scrubbing or the use of a proprietary degreaser. Expose fully any corroded steel in the repair area and remove all loose scale and corrosion deposits. Steel should be cleaned to a bright condition, paying particular attention to the back of exposed steel bars. Gritblasting is recommended for this purpose.

Priming

The substrates should be thoroughly soaked with clean water and any excess removed prior to applying one coat of Sure Level Surecure primer and scrubbing it well into the surface. Rapid Set Patch can be applied as soon as the primer becomes tacky. If the Surecure is too wet, vertical build up of the Rapid Set Patch mortar may be difficult.

In exceptional circumstances, where the patch is to be subjected to damp or immersed conditions frequently or repair remains permanently wet, use Sure Level Moisture Barrier as a bonding agent.





Mixing

Care should be taken to ensure that Rapid Set Patch is thoroughly mixed. Rapid Set Patch must be mixed with a mechanical forced action mixer with a high shear stirrer. Add drinking quality water into the mixing vessel and, with the mixer in operation, add Rapid Set Patch and mix for 3 to 4 minutes until fully homogeneous.

Note that powder must always be added to water.

Dependant on the ambient temperature and the desired consistency, the amount of water required may vary but should not exceed 4.4 litres per 20kg bag of Rapid Set Patch.

DO NOT MIX BY HAND UNLESS SMALL QUANTITIES ARE USED - 1-3KG MAXIMUM AND VIGOROUS MIXING/STIRRING IS APPLIED

Placing

Exposed steel reinforced bars should be firmly secured to avoid movement during the application process as this will affect mortar compaction, built and bond. Apply the mixed Rapid Set Patch to the prepared substrate by gloved hand or trowel. Thoroughly compact the mortar on to the primed substrate and around the exposed reinforcement. Rapid Set Patch can be applied to 40mm thickness in vertical sections, but up to 60mm thickness in smaller pockets or with the use of formwork.

If formwork is used, it should have properly sealed faces to ensure that no water is absorbed from the repair material. In horizontal locations, Rapid Set Patch can be applied up to 100mm in thickness. If sagging occurs during application to vertical surfaces, the Rapid Set Patch should be completely removed and reapplied at a reduced thickness on to the correctly reprimed substrate. Note: The minimum applied thickness of Rapid Set Patch is 10mm.

DO NOT ADD EXCESS WATER

Pot Life

Setting begins after 5-10 minutes (at 25°C substrate and ambient temperature). Rapid Set Patch should not be used after 30 minutes from time of mixing.

The addition of water to the mortar after it has started to stiffen is not recommended, and the product should be discarded.

Finishing

Rapid Set Patch is finished by striking off with a straight edge and closing with a steel float. Wooden or plastic floats, or damp sponges, may be used to achieve the desired surface texture. The completed surface should not be overworked.

Low Temperature Working

In cold conditions down to 5°C, the use of warm water (up to 30°C) is advised to accelerate strength development. Normal precautions for winter working with cementitious materials should then be adopted. The material should not be applied when the substrates or air temperature is 5°C and falling.

High Temperature Working

At ambient temperatures above 35°C, the material should not be used as this will cause premature setting and make working with the product difficult unless iced mixing water is used.

Curing

All cementitious based mortars have to be protected against too rapid surface drying and evaporation. Rapid Set Patch must be cured immediately after finishing in accordance with good concrete practice. The use of Sure Level Surecure sprayed, brushed or rolled on the surface of the finished Rapid Set Patch in a continuous film, is recommended. The Surecure should be applied at a coverage of 4-5m² per litre. Surecure should be applied immediately after final trowel. In extreme temperatures and drying conditions, supplementary curing with polythene sheeting, taped down at the edges, may be required. Large areas should be cured as trowelling progresses (0.5m² at a time) without waiting for completion of the entire area.

Application of Coating

Rapid Set Patch, when cured, has excellent resistance to water penetration. However, if areas are subject to chemical attack from solvents or acids etc., an Epoxy or Acrylic coating will act as a sealer and dust proofer which may be easily cleaned and is resistant to oil or chemical spills. To ensure a long lasting highly protective coating, it is recommended that two coats be applied. The first coat should be applied 24 hours after Rapid Set Patch. The second coat may be applied the following day or as soon as the first coat has dried.

Precautions

- Rapid Set Patch should not be used when the temperature is below 5°C.
- Rapid Set Patch should not be used in temperatures greater than 35°C.
- Rapid Set Patch should not be applied less than 10mm thickness unless patching area is limited to a similar dimension.
- For concrete substrates subject to rising damp or moisture, a water proof membrane is required.
- It is recommended that Sure Level Moisture Barrier be used as a primer (consult technical data sheet or Sure Level office).
- New concrete surfaces must be at least 14 days old prior to application of Rapid Set Patch.
- To avoid too rapid drying protect Rapid Set Patch from direct sunlight or drying winds during actual application, and while curing for up to 24 hours.
- If the substrate on to which Rapid Set Patch is applied moves or cracks, reflective cracking will occur in the Rapid Set Patch.

Yields

The approximate yields are obtained if mixed in accordance with recommended procedures and accurately measured water content. A 20kg bag of Rapid Set Patch with 2.4 litres of water will yield approximately 8 litres. 125 bags required per cubic metre. The recommended application thickness of Rapid Set Patch is 10mm to 40mm for vertical application and 10mm to 100mm for horizontal applications.

Storage

Rapid Set Patch has a shelf life of approximately 8 months if kept in a dry environment completely away from moisture.

Clean Up

Rapid Set Patch should be removed from tools and equipment with clean water immediately after use.

Storage

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Health and Safety

This product is classified as hazardous according to criteria of Work Safe Australia. Material containing Portland Cement and sand now fall into this category. Continuous or extended contact with this product may cause irritation as well as respiratory issues such as bronchitis or silicosis.

- During use avoid inhalation of dust, contact with skin and eyes.
- Suitable protective clothing, dust masks, gloves and eye protection should be worn.
- Continual or extended contact with cement products can cause skin irritation.
- If skin irritation occurs, remove contaminated clothing and flush skin thoroughly with water for a minimum of 15 minutes. Contact Poisons Information Centre or consult medical adviser.
- Material Safety Data Sheets (MSDS) are available on request from the office. Read the MSDS and product data sheet carefully before using any product.

Disclaimer

Please Note: Recommendation and advice regarding the use of this product is to be taken as a guide only and Sure Level Pty. Ltd. shall not be liable for any inaccuracy in the information or for any loss, injury or damage whatsoever resulting from its use. To the full extent permitted by law, Sure Level Pty. Ltd. liability is limited at it's discretion, to the replacement of the goods or the supply of equivalent goods.

Fire

Rapid Set Patch is non flammable.

Part Number

SLF3009

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