

PATCHROC RSP100

Economic grade, Rapid-setting patch repair mortar for pavement and floor depths up to 200 mm deep with site additional of coarse 8 – 12 mm dry silt free aggregates

Uses

For the emergency reinstatement of damaged or deteriorated concrete. The material is particularly suitable for repairs to areas where wheeled traffic requires fast return to service like in Toll road. It may be used internally and externally.

For the reinstatement of very large areas of concrete pavements and floors, the use of PAVEROC is recommended.

Advantages

- Rapid strength gain
- High strength, abrasion and weather resistance
- Contains no chloride admixtures

Uses

For the emergency reinstatement of damaged or deteriorated concrete. The material is particularly suitable for repairs to airport runways, aprons and areas where wheeled traffic requires fast return to service. It may be used internally and externally.

For the reinstatement of very large areas of concrete pavements and floors, the use of Paveroc is recommended.

Description

PATCHROC RSP100 is supplied as a blend of dry powders which requires the site addition of clean water and dry silt free 0.8 – 1.2 mm aggregates to produce a highly consistent, high strength, free-flowing repair concrete which self-compacts.

The material is a blend of inorganic cements, special fillers and chemical additives to control the rate of strength gain.

Technical Support

Fosroc offers a comprehensive range of high quality, high performance concrete repair and construction products. In addition, Fosroc offers a worldwide technical support and on-site service to specifies, end-users and contractors.

Design Criteria

Patchroc RSP100 is designed for horizontal use but can also be used vertically with the aid of formwork.

It is suitable for use at nominal thickness up to 200 mm with additional of 8 – 12 mm coarse aggregate..

The material should not be applied at less than 20 mm thickness. Horizontal surface areas should be restricted to certain patching area and or good civil road practice to avoid crack. Consult your local Fosroc office for further information.

Typical Properties

The following results were obtained at water: powder ratio of 0.1 and temperature of 25+/-2°C.

No aggregates added.

Compressive strength

ASTM C109/C109M	: 25 - 35 N/mm ² @ 1 days
	36 - 45 N/mm ² @ 7 days

Setting time

Initial set	: 30 - 40 mins
Final set	: 60 - 90 mins

Traffic time :

Pedestrian	: +/- 2 hours
Vehicular	: approx. 4 hours

Compressive strength testing with site additional aggregates & water must be self being done.

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Application instructions

Preparation

Saw cut or cut back the extremities of the repair locations to a depth of at least 20mm to avoid feather-edging and to provide a square edge. Break out the complete repair area to a minimum depth of 20mm up to the 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 scabble or grit-blasting.

Oil and grease deposits should be removed by steam cleaning, detergent scrubbing or the use of a proprietary degreaser. The effectiveness of decontamination should then be assessed by a pull-off test.

The prepared area should be blown clean with oil-free compressed air.

Temporary formwork should be fitted tightly into all existing pavement and floor joints which about the repair zone in order to prevent loss during the repair process.

Substrate priming

Prior to placing, the prepared concrete substrate should be saturated by flooding with clean water. Immediately prior to the application of PATCHROC RSP100, the water should be removed leaving the substrate fully saturated.

Providing the substrate has been properly soaked, further priming is not normally necessary. Where soaking is not possible, the following procedure should be used. The substrate should be well soaked with clean water for as long as possible and any excess removed.

NITOBOND SBR or NITOBOND AR primer should then be scrubbed well into the surface. PATCHROC RSP100 may be applied as soon as the primer becomes tacky.

Note: If the primer dries before PATCHROC RSP100 is applied, re-priming should take place exactly as described above before continuing.

Mixing

After added dry aggregates, Site trial should be done to calculate correct amount of water added in order can have slump flow around 65 – 75 cm, at 25+/-2 °C. The quantity of aggregate should never exceed 1 part aggregate to 1 part PATCHROC RSP100 (by dry weight). Trial mixes should be made in order to ensure the optimum addition of both water and aggregate.

Care should be taken to ensure that PATCHROC RSP100 is thoroughly mixed. A forced-action mixer is essential. Mixing in a suitably sized drum using an approved spiral paddle in a slow speed (400/500 rpm) heavy-duty drill is acceptable. Free-fall mixers must not be used. Mixing of part bags should never be attempted.

It is essential that machine mixing capacity and labor availability is adequate to enable the placing operation to be carried out continuously.

Measure drinking quality water and pour three-quarters into the mixer. With the machine in operation, add one full bag of PATCHROC RSP100 and mix for 1 minute before adding the rest of the water.

Mix for further 3 to 4 minutes until a smooth even consistency is obtained. Note that powder must always be added to water. The quantities mixed may be scaled up as required.

When the drill and paddle mixing method is used, the complete measured volume of water should be placed in the mixing drum. With the paddle rotating, add one full bag of PATCHROC RSP100 and mix for 3 to 5 minutes until a smooth even consistency is obtained.

It is recommended that the mixed product be passed through a suitable coarse metal screen prior to placing or pumping to highlight any unmixed material.

Placing

The mixed material should be placed within 20 minutes of mixing in order to gain the full benefit of fluidity. Each repair should be poured or pumped in a single continuous operation. Repair may be surface finished using a trowel

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or wood float. If a textured surface is required, this can be achieved using a suitable roller or brush as the material begins to stiffen. The completed surface should not be overworked.

The water demand may vary dependent on the condition of the aggregate.

To place the filled PATCHROC RSP100 at the lower water content, the use of a vibrating poker is desirable, to aid compaction.

The quantity of aggregate should never exceed 1 part aggregate to 1 part PATCHROC RSP100 (by dry weight).

Trial mixes should be made in order to ensure the optimum addition of both water and aggregate.

Low temperature working

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

High temperature working

At ambient temperature above 30°C, the material should be stored in the shade and cool water used for mixing. The best application is during night time to avoid over evaporation of water that can cause cracking.

Curing

PATCHROC RSP100 is a cement-based product. In common with all cementitious materials. PATCHROC RSP must be cured immediately after finishing in accordance with good concrete practice.

The use of CONCURE series (like Concure P ,Concure PI), sprayed on to the surface of the finished mortar in a continuous film, is recommended.

In fast drying conditions or hot condition, supplementary curing with polythene sheeting tape down at the edges must be used.

In cold conditions, the finished repair must be protected from freezing.

Cleaning

PATCHROC RSP100 and NITOBOND SBR or AR should be removed from tools, equipment and mixers with clean water immediately after use. Cured material can only be removed mechanically.

Limitations

- PATCHROC RSP100 should not be used when the temperature is below 5°C.
- Do not mix part bags.
- The product should not be exposed to moving water during application. Exposure to heavy rainfall prior to the final set may result in surface scour.

Estimating

Supply

PATCHROC RSP100	: 25 kg bags
Nitobond SBR or AR	: 5 liter drums
Concure P, Concure PI	: 20 and 210 liter

Coverage and Yield

Nitobond AR, SBR	: 6 to 8 m ² liter
Concure	: 3 to 5 m ² liter

Note: The actual yield per bag of PATCHROC RSP100 will depend on the consistency and aggregates used.

The coverage figures for liquid products are theoretical- due to wastage factors and the variety and nature of possible substrates, practical coverage figures will be reduced.



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Storage

Shelf Life

All products have a shelf life of 12 months if kept in a dry store in the original, unopened bags or packs.

Storage conditions

Store in dry conditions in the original, unopened bags or packs. If stored at high temperatures and/or high humidity conditions the self -life will be reduced.

Nitobond AR should be protected from frost.

Precautions

Health and safety

PATCHROC RSP100 contains cement powder which, when mixed or become damp, release alkalis which can be harmful to the skin. During use, avoid inhalation of dust and contact with the skin and eyes. Wear suitable protective clothing, gloves, eye protection and respiratory protective equipment. The use of barrier creams provide additional skin protection. In case of contact with skin, rinse with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately-do not induce vomiting.

Nitobon AR, Concure series should not come in contact with the skin and eyes, or be swallowed.

Ensure adequate ventilation and avoid inhalation of vapors. Some people are sensitive to product. Wear suitable protective clothing, gloves and eye protection. If working in confined areas, suitable respiratory protective equipment must be used.

Fire

PATCHROC RSP100 and NITOBOND SBR or AR are non-flammable.

For further information, refer to the Safety Data Sheet.



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Important note

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