



The Chemical Company

SHOTPATCH[®] 12

Pre-Bagged, Fine Concrete for “Dry Process” Shotcrete

Description of Product

SHOTPATCH[®] 12 is a ready to use one pack polymer modified fine concrete specially designed for spray application by the ‘dry-mix’ method. It contains fumed silica, high range water reducing admixtures and carefully graded aggregates. The ingredients are carefully selected to give minimum dust during spraying. They are chosen so as to be classified as ‘non-reactive’ and the system developed to have an alkali content (expressed as Na₂O) of less than 3.0kg/m³. SHOTPATCH[®] 12 meets the requirements of Department of Transport Specification Series 1700 (1701, 1704 1993 and BD 27/86 Pt. 5).

All BASF Construction Chemicals Concrete Repair System products are manufactured under procedures independently accredited to BS EN ISO 9001 (International Standard).

Fields of Application

- Large areas of concrete repairs.
- Refurbishment of columns, bridges, tunnels, retaining walls.
- Single high build application.
- Repair of fire damaged structures, marine structures, piers, quays, off-shore platforms, etc.
- Sealing of mine roadways, tunnels, etc.
- Rock and embankment stabilisation, swimming pool construction.

Features and Benefits

- Single component - ready to use.
- Non-reactive aggregate.
- High build - up to 150mm can be applied at one pass.
- Low rebound - grading and formulation allow for excellent application and compaction with minimum loss of aggregate through rebound.
- Low dust - formulation ensures dust is kept to a minimum.
- Safe to handle - no added caustic accelerators.
- Excellent adhesion to concrete and steel.
- Rapid strength gain.
- Low water absorption and chloride ion diffusion.
- High resistance to carbon dioxide penetration.

Technical Data/Typical Properties

Appearance	Grey granular powder	
Densities	Dry bulk: 1500 kg/m ³ Applied: 2200 kg/m ³	
Compressive Strength @ 20°C (BS 1881 Pt 108): 0.40 W/C ratio	(100mm cubes, fully compacted) 18 hours: 8 N/mm ² 24 hours: 20 N/mm ² 3 days: 30 N/mm ² 28 days: 55 N/mm ²	
Tensile Splitting Strength @ 20°C (BS 1881 Pt 117 1983)	>5 N/mm ²	
Flexural strength @ 20°C (BS 6319 Pt 3)	28 days: > 6 N/mm ²	
Tensile adhesion strength to prepared substrate	>2 N/mm ²	
Chloride ion diffusion: SHOTPATCH [®] 12 Typical cement paste	4.9 x 10 ⁻⁹ cm ² /sec 4.0 x 10 ⁻⁷ cm ² /sec i.e. approx. 100 times greater resistance to chloride ion diffusion with SHOTPATCH [®] 12	
Initial surface water absorption (ISAT) (BS 1881 Pt 5)	SHOTPATCH [®] 12	C25 concrete
10 mins	0.020 ml/m ² /sec	0.250 ml/m ² /sec
30 mins	0.010 ml/m ² /sec	0.183 ml/m ² /sec
60 mins	0.010 ml/m ² /sec	0.146 ml/m ² /sec
Alkali content:	<3.0 kg/m ³ (as Na ₂ O)	
Maximum aggregate size	3mm	
Minimum application temp	5 ⁰ C	



The Chemical Company

Application Procedure

Preparation of Substrate

All surfaces to be treated should be sound and clean. All traces of oils, greases, or surface contaminants and laitance should be removed by water or grit blasting or by scabbling.

All traces of rust and corrosion products should be removed by wet or dry blasting from exposed reinforcing steel to achieve SA 2.5 according to Swedish standard SIS05-900 1967 or BS 4232 Ref. 24 Second Quality.

Priming

The prepared substrate should be thoroughly soaked with clean water and all standing water removed before the application of SHOTPATCH® 12. Extra protection can be given to reinforcing steel by the use of MASTERSEAL® 300 ZR dependant upon the circumstances of use and requirement of the client.

Application

SHOTPATCH® 12 should be emptied directly into the hopper of the dry process spraying machine. The amount of water added at the spray nozzle will be controlled by the nozzleman- too low an addition will increase rebound and dust emission; too wet a mix will slump.

Finishing

Any necessary trowelling or profiling should be done immediately after spraying has finished. If overcoating is to follow, finish with wooden float or damp sponge. Over finishing should be avoided to prevent excessive laitance and surface hairline cracking.

Coverage

25kg bag of SHOTPATCH® 12 will yield approximately 12.3 litres and will cover approximately 0.5m² at 25mm thick depending upon the water/powder ratio used.

Curing/After Treatment

Good curing practice is essential. Particular care is required in hot and windy conditions.

Curing can be by the application of a single coat of MASTERKURE® 181 curing membrane which is compatible with most subsequent protective coatings, or by covering the work with a properly secured plastic sheeting.

Cleaning

All spraying equipment should be blown clear of SHOTPATCH® 12 at stopping of work and for extended breaks, trowels etc. should be washed with clean water immediately after use.

Packaging

SHOTPATCH® 12 is supplied in 25kg bags.

Storage

Store as cement in cool, dry conditions.

Shelf Life

Minimum 12 months when stored as recommended in unopened containers.

Watchpoints

Protect newly applied SHOTPATCH® 12 from heavy rain or frost.

Over application should be avoided to prevent slumping away from prepared concrete surfaces or steel.

Movement joints should be continued through the applied SHOTPATCH® 12 and sealed with a suitable sealant from the MBT MASTERFLEX® range.

BASF Construction Chemicals (UK) Ltd

PO Box 4

Earl Road

Cheadle Hulme

Cheadle

Cheshire

SK8 6QG

Tel: +44 (0) 161 485 6222

Fax +44 (0) 161 488 5220

www.basf-cc.co.uk



The Chemical Company

SHOTPATCH® 12 BASF Construction Chemicals UK Ltd Version 7 – January 2007

Health and Safety

*For full information on Health and Safety matters regarding this product the relevant Health and Safety Data Sheet should be consulted.

The following general comments apply to all products.

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs, (which may also be tainted with vapour until the product is fully cured and dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek medical attention. Keep away from children and animals. Reseal containers after use.

Solvent Based Products

Use in well ventilated areas; avoid inhaling. Suitable respiratory equipment may be needed, eg when spraying. Can cause skin, eye irritation. Wear protective eye shields and gloves during use. Do not smoke or allow sparks or naked lights when stored or in use.

Powder Products

Should be handled to minimise dust formation; use light mask if excessive dust unavoidable. Cement powders when wet or moistened can cause burns to skin and eyes which should be protected during use.

Resin Products

Can cause irritation, dermatitis or allergic reaction. Use protective equipment particularly for skin and eyes. Use only in well ventilated areas.

Spillage

Chemical products can cause damage; clean spillage immediately.

Disclaimer:

This information and all further technical advice is based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.