

# SHOTPATCH<sup>®</sup> 10

## Micro concrete for dry process shotcrete application of repairs and CP overlays

### Description

SHOTPATCH<sup>®</sup> 10 is a ready to use cement based single component shotcrete mortar modified with microsilica. The formulation is designed to match the requirements for a dry process shotcrete applied mortar. It gives high early strength, reduced rebound and maximum application thickness, coupled with resistivity values commensurate with accepted criteria for cathodic protection (CP) overlays.

### Primary uses

- Large area concrete repairs.
- Refurbishment of columns, bridges, tunnels and retaining walls.
- CP overlays
- Single application, 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.
- Cathodic protection overlays.

### Advantages

- Single component - ready to use.
- High build - up to 150mm can be applied at one pass.
- Low rebound - grading and formulation allow for excellent penetration 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.

### Packaging

SHOTPATCH<sup>®</sup> 10 is supplied in 25kg bags.

### Typical properties\*

Appearance:	Grey granular powder
Densities:	Dry bulk: ~1700kg/m <sup>3</sup> Applied : 2400kg/m <sup>3</sup>
Compressive Strengths BS 4551 at 20°C and 0.085 w/p ratio	24 hours 15N/mm <sup>2</sup> 28 days 40N/mm <sup>2</sup>
Chloride permeability: AASHTO T277 93:	Very low
Resistivity:	<50,000Ωcm
Maximum aggregate size:	5mm

### Guide to application

#### Surface preparation:

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, grit blasting or scabbling. All traces of rust and corrosion products should be removed by wet or dry blasting from exposed reinforcing steel to achieve SA 2½ according to Swedish standard SIS 055900.

The prepared substrate should be thoroughly soaked with clean water and all standing water removed before the application of SHOTPATCH<sup>®</sup> 10. Extra protection can be given to reinforcing steel by the use of CONGRESIVE ZR (see separate data sheets).

#### Application:

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SHOTPATCH<sup>®</sup> 10 should be emptied directly into the hopper of the dry process shotcrete pump. The amount of water added at the spraying 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 a wooden float or damp sponge.

## Curing:

Normal good practice is necessary. Curing can be by use of hessian maintained in a damp condition by properly secured plastic sheeting. The most convenient method is by spray application of a film forming curing membrane from the MASTERKURE range.

For intra-layer curing, consider the use of MEYCO TCC 735. A multi-role admixture that enhances hydration of the cement, increases bond to steel, reduces shrinkage and eliminates the requirement for curing between layers. In high ambient temperatures or hot drying winds, MEYCO TCC 735 treated SHOTPATCH<sup>®</sup> 10 will still require shading and sheltering.

## Coverage

A 25kg bag of SHOTPATCH<sup>®</sup> 10 will yield approximately 11.3 litres. Site trials are advisable to obtain accurate wastage factors due to variances in surface preparation, equipment and nozzle men.

## Watchpoints

- Protect newly applied SHOTPATCH<sup>®</sup> 10 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<sup>®</sup> 10 and sealed with a suitable sealant from the MASTERFLEX range.

## Equipment

An extensive range of dry and wet process shotcreting and ancillary equipment is available from BASF affiliate MEYCO. Your representative will provide details and assistance with equipment selection on request.

## Equipment care

All tools and equipment should be cleaned with water immediately after use.

SHOTPATCH<sup>®</sup> 10 must not be left in spraying equipment or delivery hoses. Hardened SHOTPATCH<sup>®</sup> 10 can only be removed by mechanical means.

## Other products

For applications requiring increased toughness and flexural strength, consider the use of SHOTPATCH<sup>®</sup> SFR. Steel fibre reinforced shotcrete mortar can often replace welded wire fabric (mesh) in swimming pool construction, rock support and many other applications which will be subject to flexural loading. SHOTPATCH<sup>®</sup> SFR is especially beneficial for rock support in underground construction where fracture capability is an important criteria.

See separate technical data sheet.



The Chemical Company

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## Storage

Store out of direct sunlight, clear of the ground on pallets protected from rainfall. Avoid excessive compaction. Shelf life is 12 months when stored as above.

## Health and safety

As with all chemical products, care should be taken during use and storage to avoid contact with skin, eyes and mouth. Pump operators should handle the product to minimise dust formation and wear a light mask during shotcrete operations. For specific storage and disposal instructions refer to the Material Safety Data Sheet.

## Note

Field service, where provided, does not constitute supervisory responsibility. For additional information contact your local BASF representative.

BASF reserves the right to have the true cause of any difficulty determined by accepted test methods.

## Quality and care

All BASF Products are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health and safety standards of ISO 9001 and BASF ESHQ recommendations.

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\*Properties listed are only for guidance and are not a guarantee of performance

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