Fosroc Supercast PC

constructive solutions

High performance pile top fairing grout and cementitious void filler

Uses

Supercast PC is suitable for use where structural continuity is required in the filling of voids, and is typically applied in the following situations :

- Pile cap reprofiling
- General void filling

Advantages

- **High performance** - rapid strength gain allied with high ultimate strength makes it ideal for structural repairs.
- **Easy to use** - simple addition of water on site produces highly fluid material for placement without vibration.
- **Shrinkage compensated** - can be poured or pumped into restricted access areas with confidence.

Description

Supercast PC is supplied as a ready to use blend of dry powders and selected aggregates, which requires only the addition of clean water to produce a highly consistent, fluid repair material suitable for void filling.

Design criteria

Supercast PC may be applied in sections of between 15 and 250 mm thick. Greater thicknesses may be achievable, depending upon repair configuration and location together with the volume of any reinforcing steel. In conditions at or below the water table, use Supercast PC in conjunction with Supercast EPT and/or Proofex membranes. Consult the local Fosroc office for more information.

Properties

The physical properties shown below were obtained under laboratory conditions at a water:powder ratio of 0.12, and may vary in practice.

Compressive strength (BS EN 196 P1)	:	25 N/mm^2 at 1 day 45 N/mm^2 at 7 days 75 N/mm^2 at 28 days
Flexural strength (BS EN 196-1)	:	> 12 mpa at 28 days
Permeability (BS EN 12390 P8)	:	< 10 mm
Fresh wet density	:	2380 kg/m^3

Instructions for use

Preparation

Saw cut or cut back the extremities of the repair locations to a depth of at least 15 mm to avoid feather-edging and to provide a square edge. Break out the complete repair area to a minimum depth of 15 mm up to the sawn edge.

All surface laitence, dust and other contaminants should be removed. 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.

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.

Formwork

The formwork should be rigid and tight to the substrate to prevent grout loss. Use of silicone sealant, or similar, is also advised around the edge of the formwork.

The internal faces of the formwork should be sealed, using Reebol*† release agent, to ensure that water is not absorbed from the repair material by the formwork.

The formwork should include suitable drainage outlets for pre-soaking and, when filling the repair 'bottom up' (e.g. soffit repairs), should further include provision for air-venting to release trapped air as pouring proceeds.

There must be suitable access points to pour or pump the mixed material in place.

Substrate priming

Several hours prior to placing, the prepared substrate should be saturated with clean water. Immediately prior to placing, any free water should be removed.

Alternatively, all prepared concrete substrates can be primed using Nitobond EP*†, a slow-setting epoxy bonding agent, prior to the erection of formwork.

Mixing

Care should be taken to ensure that Supercast PC is thoroughly mixed prior to application. Supercast PC should be mixed mechanically in a forced action mixer, or using a mixing vessel with slow speed drill (400/500 rpm) plus Fosroc Mixing paddle. Free fall mixers are not suitable.

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Always add the powder to the water. Use 3litres of water for mixing of a 25kg bag. Place the desired quantity of clean, cool water into the mixer and, with the machine in operation, add one full bag of Supercast PC and mix continuously for 3 to 5 minutes until a smooth, even consistency is obtained.

Placing

The mixed material should be placed immediately and continuously- mixing machine capacity and labour availability must enable this to be achieved.

If placing by pump, standard concrete pumping techniques should be employed. The line should first be 'grouted' with a cement slurry, prior to pumping the mixed material.

Curing

In areas where the applied Supercast PC will be receiving a waterproofing treatment, such as pile caps, it is recommended to be cured immediately after striking the formwork with Concure DPM*†. For other applications it is recommended to use Rendercure*† or wet hessian for this purpose; which can be supplemented with polythene taped down at the edges under harsh drying conditions.

High temperature working

It is suggested that, for temperatures above 35°C, the following guidelines are adopted as good working practice:

(i) Store unmixed materials in a cool (preferably temperature controlled) environment, avoiding exposure to direct sunlight.

(ii) Keep equipment cool, arranging shade protection if necessary. It is especially important to keep cool those surfaces of the equipment which will come into direct contact with the material itself.

(iii) Try to avoid application during the hottest times of the day, and in direct sunlight.

(iv) Make sufficient material, plant and labour available to ensure that application is a continuous process.

(v) Water (below 20°C) should be used for mixing the grout prior to placement.

Estimating

Supply

Supercast PC	:	25kg bags

Coverage / Yield

Supercast PC bag(at 10mm thickness)	:	Approx. 1.2m^2 per 25kg (11.6 litres per 25kg bag)

Technical support

Fosroc offers a comprehensive technical support service to specifiers, end users and contractors. It is also able to offer on-site technical assistance, an AutoCAD facility and dedicated specification assistance in locations all over the world.

Storage

Supercast PC has a shelf life of 12 months if maintained in dry storage conditions in unopened bags. This may be reduced to 4-6 months if stored in locations of high humidity.

Precautions

Health and safety

The use of protective clothing and barrier creams such as Kerodex Antisolvent and Rozalex Antipaint is recommended. Ensure adequate ventilation when handling Nitobond EP. If contact with skin occur, wash thoroughly with copious amounts of water. If irritation persist, seek medical attention immediately. Do not induce vomiting.

Fire

Supercast PC and Nitobond EP are non-flammable.

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† **See separate data sheet**

Important note

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard Conditions for the Supply of Goods and Service. **All Fosroc datasheets are updated on a regular basis. It is the user's responsibility to obtain the latest version.**

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