

CWC® Smartcem PMC20

Single component polymer modified cementitious pinhole filler

Description

Smartcem PMC 20 is supplied as a ready to use blend of dry pow- ders which requires only the site addition of clean water to produce a highly consistent cementitious mortar.

Smartcem PMC 20 exhibits excellent thermal compatibility with concrete, and is fully compatible with other Smartcem PMC* mortars and protective coatings.

Properties

The following results were obtained at a liquid:powder ratio of 0.3:1 by weight or 1:3 by volume.

Test method	Typical results	
	@ 20°C	@ 35°C
Coefficient of thermal expansion :	7 to 12 x 10 ⁻⁶ /°C	
Working life (Approx.) :	45 mins	20 mins
Setting time (BS 5075) :	60 mins	45 mins
Fresh wet density :	2000 kg/m ³	
Compressive strength @ 28 days :	20 N/mm ²	

Note: Working life and setting time will vary dependent on ambient and substrate temperatures.

Uses

Smartcem PMC 20 is designed for application to minor imperfections in concrete and masonry surfaces. It is suitable for application in the range 0 to 3 mm, and can be used in the following situations :

- Filling pinholes prior to overcoating
- General reprofiling over large areas, up to 3 mm depth
- Fairing coat, in association with other Smartcem PMC 20 mortars

Advantages

- Cost effective - no independent primer necessary
- Time saving - curing not necessary
- High performance - excellent bond to the substrate

Typical Application of Smartcem PMC 20

Specification

The filler for minor surface imperfections (up to 3 mm depth) shall be Smartcem PMC 20 - a single component, polymer modified, cementitious mortar. The material shall be capable of use without the need for an independent primer or curing system.

Standards compliance

Smartcem PMC 20 has been approved by the British Board of Agre- ment, under Certificate No. 98/3461.

Design criteria

Smartcem PMC 20 is designed for vertical and overhead use in fill- ing voids up to a depth of 3 mm. It can also be used to render over large areas, from a feather-edge up to 3 mm thickness.

Anti-dusting properties may be imparted upon the mix by the addition of Smart Latex*† to the gauging water. This will also enhance other performance properties; but should not be viewed as mandatory for every application. However, where subsequent coatings are to be applied, it is important to produce a dust-free surface upon which to apply the coating.



Instructions for use

Preparation

Clean the surface and remove any dust, unsound material, plaster, oil, paint, grease, corrosion deposits or algae. Roughen the surface to remove any laitance and expose the fine aggregate by light scrubbing 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.

Smartcem PMC 20 repair mortars require no additional preparation prior to the application of Smartcem PMC 20.

The cleaned areas should be blown clean with oil-free compressed air before continuing. All prepared areas should be thoroughly soaked with clean water immediately prior to the application of Smartcem PMC 20. Any residual surface water should be removed prior to commencement.

Mixing - small quantities

Care should be taken to ensure that Smartcem PMC 20 is thoroughly mixed. Small quantities (up to 5 kg) can be mixed using a suitable mixing drum or bucket. Greater quantities should be mixed using a forced-action mixer. Mixing in a suitably sized drum using an approved spiral paddle attached to an approved slow speed (400/500 rpm) heavy-duty drill is an acceptable alternative.

If mixing small quantities by hand, Smartcem PMC 20 should be volume-batched. Add 3 volumes of the Smartcem PMC 20 powder (loose-filled to excess and struck off level with the top of the measuring container) to one volume of potable water. This should be mixed vigorously until fully homogeneous.



Mixing - large volumes

For larger volumes, place 6.0 litres of cool, potable water into the mixer and, with the machine in operation, add one full 20 kg bag of Smartcem PMC 20 and mix continuously for 3 to 5 minutes until fully homogeneous.

Water addition may vary slightly according to both the ambient temperature and the desired consistency of the mix, but it should not exceed 6.0 litres.

For additional anti-dusting, or enhanced performance properties, add 0.6 litres of Smart latex SBR to the gauging water until the desired consistency is achieved.

Note: In all cases Smartcem PMC20 powder must be added to the water.

Application

Apply the mixed Smartcem PMC20 to the prepared substrate, up to 3 mm thickness, by steel trowel. It should be applied with the minimum of working and be allowed to partly set before finally trowelling to a smooth finish.

If a very smooth finish is required, a small amount of water may be flicked on to the surface of the Smartcem PMC20 with a paint brush prior to final trowelling.

Do not proceed with the application when rainfall is imminent unless in a sheltered or protected situation.

Finishing

Smartcem PMC 20 is finished by striking off with a straight edge and closing with a steel or plastic float. Note that water can be drawn to the surface if 'overworking' with the float occurs, and an unsightly finish may result.

Damp sponges or plastic floats may be used to achieve a desired surface texture, but care should again be taken not to overwork the surface.

Curing

Curing is not generally required. However, under extreme conditions - high temperatures and drying winds - it may be prudent to use Smart AR*† as a curing agent.





Smart AR does not require mechanical removal prior to overcoating.

Cleaning

Smartcem PMC 20 should be removed from tools, equipment and mixers with clean water immediately after use. Cured material can only be removed by mechanical means.

Overcoating with protective/decorative finishes

Smartcem PMC 20 may be overcoated with a protective /decorative coating after about 48 hours, depending on ambient conditions. CWCC recommend the use of the Dekguard range of protective, anti-carbonation coatings. These products provide a decorative and uniform appearance as well as protecting parts of the structure which have not been repaired and might otherwise be at risk from the environment.

Note: In all cases Smartcem PMC 20 powder must be added to the water.

Limitations

- Smartcem PMC 20 should not be used when the temperature is below 5°C and falling.
- Do not proceed with the application when rainfall is imminent unless in a sheltered or protected situation.
- The product should not be exposed to moving water during application or prior to initial set.
- If any doubts arise concerning temperature or substrate conditions, consult the local CWCC office.

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.

For additional anti-dusting, or enhanced performance properties, add 0.6 litres of Smart Latex to the gauging water until the desired consistency is achieved.

Estimating

Supply

Smartcem PMC 20	: 20 kg & 25 kg bags
Smart SBR	: 25 and 200 litre drums
Smart AR	: 1 and 5 litre packs

Coverage and yield

Smartcem PMC 20	: 4.0 m ² at 3 mm thick (approx. 12.0 litres/bag)
Smart AR	: 6 to 8 m ² per litre

Note : Actual coverage of Smartcem PMC 20 will be wholly dependent upon the general substrate condition. It is recommended, therefore, that site trials over a typical area are carried out to determine actual usage.

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 @ 25°C.



Concrete Works
Construction Chemicals
Private Limited



Storage conditions

Store in dry conditions in the original, unopened bags or packs. If stored at high temperatures and/or high humidity conditions the shelf life may be considerably reduced to 4 to 6 months.

Health and safety

Smartcem PMC 20 contains cement powders which, when mixed or become damp, release alkalis which can be harmful to the skin. Smart AR and Smart SBR are slightly alkaline.

During use, avoid inhalation of dust and contact with skin and eyes. Wear suitable protective clothing, gloves, eye protection and respiratory protective equipment.

