

1. Description

Chem-Crete Pavix® CCC100 is a crystallising pore lining hydrophobic impregnation material. It operates by a hydrophilic action in which it seeks moisture and hygroscopically combines with it to form strong, permanent, tightly bonded, insoluble crystals within the pores and capillaries of concrete surfaces.

Chem-Crete Pavix® CCC100 cures to form a permanent water repellent but vapour permeable layer that inhibits the ingress of water and/or chloride and sulphate ions.

Chem-Crete Pavix® CCC100 is the only product currently available that delivers combined moisture blocking and repelling mechanisms. The very low viscosity of **Chem-Crete Pavix® CCC100** ensures its penetration into the concrete surface where it forms its protective crystals.

Chem-Crete Pavix® CCC100 is a unique water-based chemical product that gives permanent treatment and ultimate protection of large-scale concrete surfaces against moisture associated problems.

Chem-Crete Pavix® CCC100 gives excellent protection against the effects of cracking damage caused by repeated freeze/thaw cycles, chloride ions penetration and alkali reactions.

2. Function

Chem-Crete Pavix® CCC100 must be absorbed by the substrate for optimal impregnation. For this reason the substrate must be dry at the time of application. Where surfaces are dusty, blowing down with compressed air or brushing with a broom is recommended as a means of unblocking surface pores and removing surface dust. The impregnant is applied undiluted in a one single coat operation to the substrate using the most efficient and appropriate of the above equipment. If it should rain during application of the impregnant, work should stop immediately. However, there is no need to take any action to cover surfaces that have already been treated with **Chem-Crete Pavix® CCC100**. Impregnation work can resume once the surface is completely dry. The impregnant must not be applied at temperatures lower than 5°C. **Chem-Crete Pavix® CCC100** can be applied to new concrete substrates after 7 days.

If allowed to cure, **Chem-Crete Pavix® CCC100** may form a thin layer of crystals on over sprayed non-cementitious surfaces.

Chem-Crete Pavix® CCC100 will have no adverse effect on bituminous materials or protective coatings. Where aluminium, galvanized steel or non-cementitious material are likely to be affected by over-spray, these should be protectively covered or washed down immediately with clean water on becoming contaminated. Due to the non-toxic and water-based nature of **Chem-Crete Pavix® CCC100**, special measures are not necessary in respect to disposal of the wash water.

Part used containers of **Chem-Crete Pavix® CCC100** are to be kept tightly closed at all times during use and when not in use. **Chem-Crete Pavix® CCC100** oxidises aluminium and galvanized steel and it should not be stored in containers made of such.

3. Advantages

Chem-Crete Pavix® CCC100 will prevent penetration of chlorides ions from de-icing salts. It will protect against damage caused by repeated freezing/thawing cycles and provide a permanent internal waterproofing and moisture blocking function from both positive and negative sources.

Chem-Crete Pavix® CCC100 has excellent repelling properties against water, jet fuel and oil. It will resist aggressive chemical attack from acids, caustics jet fuels and oil.

Chem-Crete Pavix® CCC100 is resistant to jet fuel, oil, acid and de-icing salts.

Chem-Crete Pavix® CCC100 will protect the reinforcing steel bars against corrosion without any negative effect on any existing steel cathodic protection.

Chem-Crete Pavix® CCC100 will reduce Alkali Silica Reactions (ASR) thus eliminating Silica dusting and increase concrete hardness.

Chem-Crete Pavix® CCC100 will not adversely affect adhesion for subsequently applied surface coating systems.

Chem-Crete Pavix® CCC100 seals and protects hairline and thermal cracks up to a width of 1.4mm.

Chem-Crete Pavix® CCC100 is water-based, non-toxic and totally environmentally safe. It is also completely safe for use over rivers and clean water.

A single application treatment will ensure a permanent waterproofing of all cementitious surfaces.

Chem-Crete Pavix® CCC100 cures with a thick crystal structure and is thus more durable against wind driven and other erosion sources than traditionally used impregnates.

4. Users

Chem-Crete Pavix® CCC100 can be used as a treatment and protection against all water and moisture associated problems for all concrete and cementitious surfaces. It is effective for new and refurbished concrete structures alike.

It is a highly cost effective treatment for treating:- airport runways, aircraft hard standings, taxiways, bridges and highway structures multi story car park decks and structures. In fact, all concrete can be effectively treated with **Chem-Crete Pavix® CCC100**.

5. How to Use

Concrete surfaces must be clean, dry and sound prior to applying **Chem-Crete Pavix® CCC100**.

The use of compressed air or brushing is recommended to remove all loose particles and dust from the surface.

If the surface to be treated is heavily contaminated it is recommended that cleaning be carried out by using high pressure steam cleaning. The use of special concrete cleaning agents may be necessary for areas contaminated with oil.

Chem-Crete Pavix® CCC100 should be applied in one single coat only by means of spraying, sweeping or brushing. For large-scale applications it is recommended using the computerised **Chem-Crete Pavix® CCC100** application equipment.

6. Application

Chem-Crete Pavix® CCC100 is supplied on site in sealed containers. The product is applied evenly to the surface either by spray or brushing. The surface is to be completely covered with the impregnant at a dosage rate of 200ml/m².

Chem-Crete Pavix® CCC100 must not be applied if the temperature falls below 5°C or if raining. It is recommended that all surfaces being treated must be completely dry at the time of application.

As with all impregnation materials and processes, surface must be free from any contaminate that might reduce uptake of the impregnate. A visual check for contamination will normally suffice. Where the history of the structure is unknown and the presence of surface contamination is in question, absorption can be confirmed by applying a pure water spray and observing its normal take up into the porous concrete surface. Water will tend to run off rather than be absorbed on adversely contaminated surfaces. Whilst there are no accepted specific values, tests methods such as ISAT (BS 1881 Part 208: 1996) can be used to investigate and compare surface absorption characteristics.

Wearing and trafficked areas can be opened for use within 1 hour of application.

Full detailed instructions are available in the process "Method Statement".

7. Materials Information

- Water-based crystal forming moisture-repelling chemical.
- **Chem-Crete Pavix® CCC100** conforms to the requirements of Highways Agency Design Manual for Roads and Bridges. Volume 2: Highway Structure Design. Section 4: Paints and other Protective Coatings. The impregnation of reinforced & pre-stressed concrete highway structures using pore lining impregnants. BD43/03.
- Test report is available on request
- Test Institute: School of Engineering City University London England.
- Test Report: ESRC/2003/CP/01 by Professor Denis A. Chamberlain
- American Society for Testing and Materials (ASTM)
- ASTM: C666, C672, C1218, C944, D4541 (reports available on request)
- **Chem-Crete Pavix® CCC100** is safe for workers and is environmentally friendly.
- Refer to Material Safety Data Sheet

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