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Flexcrete

Solutions for Infrastructure - Concrete Repair & Protection

5-100mm
5mm-100mm Build in Single Application

Non-Hazardous, Water-Based Products

2mm Coat = 100mm Quality Concrete Cover

Reinstating Structural Integrity

When subjected to the elements and environmental attack, even the most well designed structures, constructed using the best quality concrete, need repair and protection in order to ensure that the intended design life can be achieved.

Factors such as carbonation, water penetration, chemical or chloride attack, and freeze/thaw cycling can all lead to significant deterioration of precast and in-situ concrete, quickly leading to corrosion of the steel reinforcement. It is therefore essential to carry out periodic maintenance in order to keep these structures in a serviceable and, above all, safe condition.

Impacts of a Changing World

Concrete was once regarded as a low maintenance or maintenance-free material. In reality, structures which were originally created with an anticipated design life of 60, or even 120 years, can quickly show signs of degradation. In addition to aggressive environmental factors, there are increasing demands placed on modern infrastructure that can push the performance of concrete structures to their absolute limits.

Solving Complex Structural Problems

Older bridges and highway structures can often need urgent remedial action to reinstate their structural integrity. In such instances, Flexcrete provides a one-stop refurbishment solution with a full range of engineering quality mortars and high performance cementitious and anti-carbonation coatings.

Flexcrete products have an impressive track record of international performance in some of the world's harshest conditions, spanning over 30 years. They have been successfully used to weatherproof airports, bus stations, tunnels, rail structures, roads and other infrastructure in highly demanding environments such as nuclear power stations and chemical facilities.

Our range of advanced repair and protection systems provide durable, engineered solutions to concrete repair problems. Structural integrity and the original design life can be restored, whilst the overall appearance of ageing concrete structures can be significantly improved with Flexcrete's weatherproof decorative finishes.

Engineered to Perform

Flexcrete's concrete repair mortars have been designed to offer class-leading performance. They incorporate the latest cementitious and polymer technology to provide many important benefits:

- Excellent low sag properties enabling high build application in vertical, horizontal and overhead situations
- Exceptionally high bond & tensile strength
- Low permeability to water, even at 10 bar negative pressure
- Quick to install and non-toxic when cured

Flexcrete's concrete repair solutions are chosen because of their reliability and proven performance.

Concrete Repair & Protection Challenges for Infrastructure

Flexcrete's cementitious technology is regularly applied to solve challenging structural problems experienced by concrete infrastructure.

Corrosion of Reinforcement

PROBLEM:

Due to carbonation, localised corrosion of the reinforcement can occur, resulting in spalling of the concrete cover. If left untreated, the design life of the structure can be shortened significantly.

SOLUTION:

Following removal of unsound concrete and preparation of the steel, **Steel Reinforcement Protector 841** is applied by brush. Missing or removed concrete can then be reinstated using **Monomix,** a high build structural repair mortar. Afterwards, **Monolevel FC** may be applied to all surfaces using a bag rubbing technique to achieve a fair-faced finish, prior to the application of an anti-carbonation coating such as **Monodex Smooth**.

Monomix can be applied in thicknesses of up to 80mm in a single layer.

Chloride Ingress

PROBLEM:

Chloride attack is a major cause of damage on bridges and other reinforced concrete structures that are exposed to de-icing salts. The result can be extensive corrosion, loss of steel section and large areas of spalled concrete.

SOLUTION:

Cementitious Coating 851 is an advanced, polymer modified waterproof coating that provides exceptional protection against water ingress, chloride attack and carbonation. It is quick, simple and safe to apply without the need for a primer, ensuring that any disruption is kept to a minimum. Independent ongoing tests demonstrate that **851** continues to provide an effective barrier to moisture, chloride ions and carbon dioxide after well in excess of 25 years.

851 meets the standards required by Highways Agency Specification Clause 1770.

Reinstatement of Runways & Bridges

PROBLEM:

Roads, runways and bridges are often subject to heavy wear, and cannot be taken out of service for long periods of time. Repairs to voids or worn trafficked surfaces therefore require a fast-track, high strength solution.

SOLUTION:

Where speed of reinstatement is important, all voids and removed concrete should be reinstated with **Fastfill**, a shrinkage compensated, polymer modified, Portland cement based repair mortar. **Fastfill** sets in just 10 minutes and, when bulked out with aggregate, achieves a strength of over 30N/mm^2 in just 2 hours. Where an additional friction wearing course is required, **Cemprotec E-Floor** can be installed at a thickness of 2mm.

Fastfill is a quick-setting repair mortar that enables a rapid return to service.

Lining of Concrete Bunds

PROBLEM:

Concrete bunds often surround storage tanks containing highly hazardous chemicals. To ensure their structural integrity and eradicate the risk of harm to the environment from spills and leaks, a chemically resistant lining is required.

SOLUTION:

Cemprotec E942 provides a highly effective solution for waterproofing and protecting chemical bunds. Applied by brush or spray, it cures rapidly to form an exceptionally tough and chemically resistant finish. **E942** has a waterborne formulation, and therefore releases no hazardous solvents or heavy odour during application. **Cemprotec 2000-S** can also be embedded into the coating over live cracks and expansion joints, providing permanent elasticity.

E942 has excellent resistance to water, chloride ions and aggressive chemicals.

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