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Solutions for Motorways & Highways Structures

CONCRETE REPAIR



Prevents Chlorides
for Over 25 Years



Non-Hazardous,
Water-Based Products



Meets Highways Agency
Specification Clause 1770

Keeping Motorway & Highway Networks Moving

The pressure to provide safer, less congested travel for motorists poses ever more engineering challenges. The durability of both new and existing structures must be assured by protecting and reinstating the assets with materials capable of achieving the required design life.

Reinforced concrete structures are extensively used on motorways and highways but their durability is constantly threatened by exposure to chloride attack from de-icing salts, as well as freeze-thaw attack, water ingress and carbonation. Engineers need to use the most advanced materials available to reinstate the integrity and durability of these structures, whilst also meeting the current and future demands of our ever-evolving highway infrastructure.

Reinstating Structural Integrity

Flexcrete has spent over 30 years developing a comprehensive suite of materials that are regularly specified by Highways Agencies and local authorities for reinstatement and protection projects. Incorporating the latest cementitious and polymer technology, Flexcrete products are proven to perform in even the most demanding situations and offer rapid, straightforward application. They

are also CE Marked in accordance with BS EN 1504 and meet the high performance standards required by Highways Agency Specification Clause 1770.

Flexcrete offers practical, economic solutions which meet the needs of both existing motorway structures and new construction developments. This includes the latest SMART motorway schemes and other widening projects which are being introduced to manage increasing levels of traffic and congestion. Such schemes may involve alterations to existing structures as well as new construction (e.g. gantries) which may require low cover issues to be addressed or additional chloride protection in order to reinstate their durability.

Minimising Disruption

With environmentally friendly, water-based formulations, Flexcrete's range of engineered products enable repair and protection projects to be carried out in a sustainable, long-term manner. What's more, they are quick and easy to apply direct to concrete without the need for a primer, ensuring that minimal disruption is caused to motorway users.

One-Stop Solution

Flexcrete provides a comprehensive range of engineering quality mortars and high performance cementitious and anti-carbonation coatings. They are perfectly suited to reinstating and protecting a wide range of motorway and highway structures, including;

- Gantries & Vehicle Restraint Barriers
- Overbridge Decks & Concrete Elements
- Concrete Hard Shoulder Areas
- Transit & Freight Rail Bridges
- Drainage Kerbs & Channels
- Culverts & Retaining Walls
- Foot Bridges & Cycle Bridges



Flexcrete's repair & protection solutions are ideal for use on SMART motorway construction.

Concrete Repair & Protection Challenges for Highways Structures

Flexcrete's innovative solutions help to maintain a safe, efficient and reliable road network, which in turn can help cut both costs and congestion.

▶ SMART Motorways & New Construction

PROBLEM:

Work on SMART Motorway upgrades and widening schemes can reveal areas of low cover which require remedial work. If left untreated, this can lead to chloride ingress which in turn can severely compromise the intended design life.

SOLUTION:

Flexcrete cementitious coatings and mortars are ideally suited to reinstating the durability of reinforced concrete in order to ensure that the design life is achieved. They are totally impermeable to water and have excellent resistance to both chloride and carbon dioxide ingress. A 2mm coating of **Cementitious Coating 851** provides the equivalent of 100mm of good quality concrete cover.



Cementitious Coating 851 effectively reinstates cover & protects from chlorides.

▶ Repairs to Decks, Kerbs & Channels

PROBLEM:

Structural repairs and refurbishment are regularly required on trafficked concrete decks, as well as drainage kerbs and channels. A reliable, fast-setting material is required in order to minimise disruption to road users.

SOLUTION:

Trafficked areas can be quickly repaired and strengthened using **Fastfill** repair mortar. This rapid hardening, fibre reinforced, polymer modified repair mortar is based on Portland cement technology and achieves a compressive strength of 14MPa in just 1 hour at 20°C. **Fastfill** can also be used to reinstate concrete surfaces prior to surface dressing with asphalt or a waterproofing membrane, allowing the road to be rapidly returned to service.



Fastfill sets in just 10 minutes & can achieve a final strength of over 60MPa.

▶ Concrete Repair & Protection

PROBLEM:

Reinforced concrete elements on bridges and other highway structures are constantly exposed to an aggressive environment whereby the passivating layer around the steel is broken down leading to corrosion and spalling.

SOLUTION:

Monomix HD is a structural repair mortar, CE Marked to EN1504-3 and compliant with the requirements of with Highways Agency Specification BD27/86. Its physical characteristics are similar to bridge quality concrete and it can be built up to 80mm even on soffits. **Monodex Smooth** is a high performance coating that provides a decorative finish with excellent protection from carbonation and ingress of chlorides from salt-spray.



Monodex Smooth has an anticipated lifespan of at least 15 years.

▶ Protection from De-Icing Salts

PROBLEM:

Bridges and other reinforced structures that are exposed to de-icing salts can be severely damaged by chloride attack. This can cause extensive corrosion, loss of steel section and large areas of spalled concrete.

SOLUTION:

Cementitious Coating 851 offers exceptional protection from chloride ion ingress and is ideal for use on both new and existing structures. Independent tests have confirmed that it will provide an effective barrier to chlorides for at least 27 years. **Cementitious Coating 851** also provides outstanding resistance to freeze-thaw cycling, and its innovative formulation allows the product to behave in a similar manner to the parent concrete.



Flexcrete products conform with Highways Agency Specification Clause 1770.



Structural Repair & Protection Technology from Flexcrete

- ▶ Concrete Repair & Protection
- ▶ Protective Coatings
- ▶ Structural Waterproofing
- ▶ Enhanced Durability for Concrete & Steel
- ▶ Waterproofing of Roofs & Floors

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Members of the

