

Project Profile - Buildings & Commercial Construction



PROJECT

Marina Leisure and Fitness Centre, Great Yarmouth

SUMMARY

Chloride protection of pool retaining walls

PRODUCTS

Steel Reinforcement Protector 841, Monomix, Cemprotect EF Primer, Monolevel 844SP, Cementitious Coating 851

CLIENT

Great Yarmouth Borough Council

CONSULTANT ENGINEERS

H A Engineers

CONTRACTOR

Prestec UK

BACKGROUND ▶

Marina Leisure and Fitness Centre is a local-authority owned seafront facility which was originally opened in 1981 and has Great Yarmouth's largest leisure pool. It has a unique beach like, walk in entry, a six lane 25 metre pool, wave machine and slide. In 2012, a major refurbishment of the facility was carried out.

Very high chloride levels of up to 2% were found in the pool retaining walls as a result of overflow from the perimeter scum drainage channels servicing the main swimming pool and the shallower beach entry section. Over time, chloride laden water had penetrated into the unprotected concrete, corroding the reinforcement and spalling the concrete. The refurbishment was carried out over the Christmas period and the pool was closed for a limited period, therefore it was essential that the repair and protection work was undertaken quickly and safely.

THE SOLUTION ▶

In order to provide a durable, long-term solution, a complete Flexcrete repair and protection system was specified for application to the retaining walls. Following thorough preparation, **Steel Reinforcement Protector 841** was applied to the rebars to provide a corrosion preventative coating and the concrete was built back to profile with **Monomix**, a high performance, waterproof repair mortar which can be applied up to 80mm in a single application. Due to high localised chloride levels, an embedded anode system was installed, offering the benefit of both impressed current and galvanic cathodic protection. Following this, **Cementitious Coating 851** was applied overall to vulnerable surfaces to provide a permanent barrier to future chloride ingress.

The failed coating in the scum drainage channel was removed and **Cemprotect EF Primer** was applied to all surfaces prior to **Monolevel 844SP**, a waterproof engineering quality fairing and levelling coat. After which **Cementitious Coating 851** was applied throughout the scum channel and drainage ports. This was specified as it forms a hard alkaline coating, resisting positive and negative pressure under a 100m head and a 2mm application of **851** provides equivalent cover to 100mm of good quality concrete. As **851** is water-based, it exhibits minimal hazard during application, is virtually odour free and is non-toxic when cured. Such is the chloride resistance of **851** that Flexcrete has received official confirmation it will resist chloride penetration for at least 26 years. In 1988, a 2mm thick film of **851** was applied to a concrete slice and sealed in a chloride ion diffusion cell in the laboratory at the VINCI Construction Technology Centre and it is still going strong some 26 years later.



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