

## Intercrete® Products Specified for Major Concrete Repair Project at Ford Wastewater Treatment Works

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A major maintenance programme has been carried out at Ford Wastewater Treatment Works in Arundel, West Sussex, using AkzoNobel's range of Intercrete concrete repair materials.

In excess of 42 tonnes of **Intercrete 4801** repair mortar has been applied to repair concrete on the tanks and channels of the plant inlet works at Ford Wastewater Treatment Works by specialist asset maintenance contractor, Concrete Repairs Limited (CRL). Operated by Southern Water, the work has been carried out on behalf of CMDP, a joint venture between Costain and MWH and one of Southern Water's three business partners delivering AMP6 improvements until 2020.

The Intercrete range has been expanded following AkzoNobel's acquisition of Flexcrete Technologies Ltd in July 2017 with Flexcrete products becoming known as Intercrete, part of the International brand. On this project the Intercrete products were all applied by CRL's highly experienced and trained in-house operatives, and approved supply chain partners.

Southern Water's Ford Wastewater Treatment Works dates back to 1999 and treats up to 62 million litres of wastewater from more than 130,000 people every day. The plant inlet works required concrete repair intervention as the asset was showing signs of deterioration due to attack from hydrogen sulphide (H<sub>2</sub>S) gas and sulphuric acid. It is vital that reinforced concrete structures in the wastewater sector are effectively maintained and refurbished, as chemical and mechanical influences can severely degrade concrete over the years. Maintenance and refurbishment are essential in order to ensure that water processes are not interrupted and that structural integrity is maintained.

## High Strength Concrete Repair

CRL used hydro demolition methods to remove the defective concrete first before a dry spray application of Intercrete 4801 – a high strength, waterproof, class R4 structural repair mortar which exhibits extremely low rebound when applied either by dry or wet spray techniques. Suitable for the structural repair, rendering and profiling of vertical, overhead and horizontal surfaces, it has outstanding resistance to abrasion and the physical demands of general trafficking. Intercrete 4801 is easily trowellable, has excellent low sag properties and can be applied up to thicknesses of 80mm in a single application.

The high bond strength of Intercrete 4801 exceeds the tensile strength of concrete and its dense matrix offers low permeability to water, even at 10 bar pressure, and very high diffusion resistance to acid gases and chloride ions. Non-toxic when cured, the product is supplied as a single component system ready for on-site mixing and use, requiring only the addition of clean water. It is CE marked in accordance with BS EN 1504, the pan European standard for concrete repair.

Following the application of Intercrete 4801 by CRL, the specification for this project involved a final coating of **Intercrete 4840**, an innovative, two component, water based cementitious coating that benefits from modification with both a thermoplastic polymer as well as an epoxy resin to provide a hard wearing surface with greatly enhanced chemical and abrasion resistance. The product is very versatile with the ability to be applied to both concrete and ferrous metals without a primer and has a long track record of successful use in digester tanks where the most onerous conditions are found.

This combined Intercrete 4801/4840 system was chosen on the basis of the rapid curing properties and speed of reinstatement between application of the mortar and coating as there is no need for a skim coat due to the high quality finish of the mortar. The system also minimises environmental impact due to the fact that both products are water-based, ultra-low odour and solvent-free, making them safe to apply even whilst facilities are in operation.