

Ford Wastewater Treatment Works

Case study 2019

Focus products: Intercrete® 4801, Intercrete 4840

Location: Arundel, UK

Type of asset: Wastewater Treatment Works

Client: CMDP (Joint venture between Costain and MWH) on behalf of asset owner Southern Water

Contractor: Concrete Repairs Limited (CRL)



Problem

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 (H₂S) gas and sulphuric acid.

The solution

Concrete Repairs Limited 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, 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.

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.