Project Report/July 2021

Bio P Basin, Bensheim: StoConcrete Repair Resist and StoConcrete Protect Elastic FB

The Bensheim (Germany) group sewage treatment plant was put into operation in 1974 and has been subject to a continuous process of modernisation, expansion and conversion since then. The focus is set on the target of enabling a biological process for nitrogen and phosphate degradation. At the end of 2020, the plant's Bio P clarifier basins were refurbished.

"In a Bio P clarifier basin, phosphates are removed from the water by means of biological phosphorus elimination. In the past, phosphorus mainly got into the wastewater through cleaning agents before the phosphate content was restricted by law." (Source: www.kmb-bensheim.de/reise-durch-das-klaerwerk/)

Bio P basins such as those at the Bensheim municipal sewage treatment plant are constantly exposed to chemical attacks. To repair and protect such water-contacting components, mortar systems are required that are characterised by excellent resistance to sulphuric acid, ammonium and sulphate-containing water.

Mortar System Solutions for Exposition Classes XWW1-3

StoCretec mortar systems are tested and precisely coordinated. They have an optimised mortar structure because of their special formulation. In combination with a highly resistant special cement as a binding agent, the concrete repair system is ideal for refurbishing concrete components in municipal sewage treatment plants due to its high chemical resistance.

Properties of **StoConcrete Repair Resist**

- System solution for exposition classes XWW1-3
- Sulphate-resistant
- Resistant to rising damp
- Resistant to frost / de-icing salt
- Resistant to water penetration
- Low water diffusion resistance

The investors target is a long-term service life of his facility. The basins' crests therefore received an additional mineral coating with StoCrete FB.

The proven surface protection system prevents water and the pollutants dissolved in water, as well as carbon dioxide, from penetrating the concrete. Chloride and carbonation-induced corrosion of the steel reinforcement is prevented. Surfaces coated with StoCrete FB are much less prone to soiling and they are easier to clean. The labour-intensive cleaning effort is significantly reduced.

Properties of **StoConcrete Protect Elastic FB**

- Very easy to clean
- Maximum resistance to soiling
- Permanently water-resistant
- Tested waterproofing for building elements in contact with the ground in accordance with DIN 18533
- Tested waterproofing for containers and tanks in accordance with DIN 18535
- Surface protection system OS 5b/OS-DI
- Crack-bridging (-20 °C): Classes B 3.1 and A3 (0,5 mm) in accordance with DIN EN 1062-7
- Water vapour permeable
- Suitable for application by machine and by hand
- Slip-resistant
- Fully resistant after only 7 days

Who & What

Project:	Bio P basin, municipal sewage plant Bensheim, DE
Investor:	Kommunalwirtschaft Mittlere Bergstraße, Bensheim, DE
Planner:	UNGER ingenieure Ingenieurgesellschaft mbH, Darmstadt, DE
Applicator:	Wayss & Freytag Ingenieurbau AG, Frankfurt, DE
Realisation:	12/2020
Systems/Products:	**StoConcrete Repair Resist**
	Repair mortar — StoCrete TG 252
	Wet-mix sprayed mortar — StoCrete TS 250
	Fairing coat — StoCrete TF 250
	Bonding agent — StoCrete TH 250
	Korrosion protection — StoCrete TK
	StoConcrete Protect Elastic FB
	Coating — StoCrete FB

Photo: Thomas Neu

(Photos: StoCretec GmbH)

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