



Pre-Sedimentation Tank Renovation

2024

ABOUT THIS PROJECT:

Market Segment:
Water Treatment Plant

Engineer:
Totech / Xypex
Netherlands

Products Used:
Xypex Bio-San
Xypex Megamix II Bio-San
Xypex Gamma Cure

Location:
Eerbeek, The Netherlands

Owner/Developer:
Industrie Water
Eerbeek (IWE)

General Contractor:
Totech / Xypex
Netherlands

The project involved the urgent restoration of a 36-meter-diameter pre-sedimentation tank at a wastewater treatment plant that processes over 4 million cubic meters of industrial water annually. The tank has been successfully used for decades to treat wastewater from the paper industry.

Recently, the situation reached a critical point when the tank, recently covered to comply with odour regulations, suffered severe concrete deterioration due to trapped hydrogen sulphide (H₂S) gas, as well as condensation water, which reached concentrations of 500 ppm.

Within a short period of time after covering the tank, concrete started to deteriorate very quickly and rebar was completely gone at some places. Leaving the tank, that used to be of good quality, heavily damaged.

The damage was mainly to the outer wall, the overflow edge and the center console. The task was to deliver a sustainable, rapid (not only because of the speed of deterioration but also because the tank could not be taken out of operation for a long period of time), and cost-effective repair solution that could be implemented during the wet autumn season, where traditional epoxy coatings would fail to bond.



Due to the speed with which this happened, a renovation plan had to be drawn up as soon as possible.

To address this, the team used ultra-high-pressure (UHD) demolition to remove damaged concrete, then applied a specialized Xypex system. Initially, the plan was to renovate the tankwalls, overflow edge and center console with a shotcrete layer of Megamix II Bio-San.

When on-site inspections revealed deeper structural damage than anticipated, the team quickly adapted by cutting of rebuilding the overflow edge and center console using concrete treated with Xypex Bio-San C500 additive, while the outer walls were renovated using over 11.000 kilo's of Xypex Megamix II with Bio-San, to restore the tank wall to its original thickness and strength. This approach enabled simultaneous preparation and application, significantly reducing the lead time.

As a result, the project was completed successfully within one month November 2024, receiving a full KIWA audit approval. The integrated crystalline protection ensures that the tank is now permanently resistant to chemical attack and mechanical scraping, providing a long-term solution that was significantly cheaper and faster than conventional coating methods.

