



SIKA AT WORK

LA WANTZENAU WASTEWATER TREATMENT PLANT, FRANCE

REFURBISHMENT: CONCRETE REPAIR SOLUTIONS USING Sika® Monotop® 4400MIC

BUILDING TRUST



WASTEWATER TREATMENT PLANT OF THE EUROMÉTROPOLE OF STRASBOURG



PROJECT DESCRIPTION

La Wantzenau WasteWater Treatment Plant is the 5th largest wastewater treatment plant in France, with a hydraulic capacity of 240,000 m³/d and up to 380,000 m³/d in rainy weather.

Approximately ~64 million m³ of water was treated in 2019 in the Activated Sludge Treatment Plant with prolonged aeration. The plant was originally commissioned in 1988, and there were works bringing it up to a better standard between 2005 and 2007, prior to this major renovation.

Due to the biogenic corrosion activities on the overhead areas of the upstream screw reducers, the concrete in the screw/oil separators connecting channel and fine grid, was severely damaged.

To refurbish these concrete structures, firstly the surface preparation was carried out by hydro-jetting the concrete at 3000 bars, and the pH of the concrete was measured to ensure it was >10. Reprofiling to replace the concrete lost from corrosion was then done dry mix concrete. Thereafter, the protection against biogenic corrosion was done using Sika® MonoTop®-4400 MIC calcium aluminate mortar, conforming to EN 1504-3 (R4) & -2, and applied by dry spray technique to a thickness of ~25 mm.

The calcium aluminate mortar prevents the transformation of H₂S into sulfuric acid, thus stopping biogenic corrosion. In some parts, the damage to the structure was so great that the full concrete had to be replaced completely with new ready-mixed concrete. Prior to pouring, a surface retarder act-



ing as a mould released agent was applied on the formwork. When the formwork was removed, immediate water jetting of the surface was done at ~150 bars to expose the aggregates, providing a perfect surface for the application of the biogenic corrosion protective mortar.

In other parts of the structure, concrete reprofiling was done with a traditional repair mortar complying with EN 1504-3 as an R4 mortar, followed by the calcium aluminate mortar to protect against the biogenic corrosion.

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SIKA PRODUCTS

- Calcium aluminate mortar: Sika MonoTop®-4400 MIC
- Surface hardener: Sikagard®-230 MIC
- Surface retarder & mould released: Rugasol®-3W Paste
- Repair mortar: Sika MonoTop®-410 R
- PU Sealant resistant to biogenic corrosion: Sikaflex® TS Plus

PROJECT PARTICIPANTS

Owner: Eurométropole of Strasbourg

Operator: Suez

Main contractor: Sotravest

Specialist Applicator: SIRCO

Material supplier: Sika France SA



Our most current General Sales Conditions shall apply. Please consult the most current local Product Data Sheet prior to any use.



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