

Coatings for Biogas Applications:

## Restoration of ensilage tank with Proguard CN-1M – effective protection against chemical influences and abrasion

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Extreme concrete erosions, induced by biogenic sulfuric acid attack (BSA)

Heidelberg/Germany: The ensilage tank of a huge biogas plant showed extremely heavy concrete erosions due to high chemical attack from the fermentation material. The concrete substrate had to be refurbished urgently to ensure the functionality of the tank and prevent disastrous leakages. Henceforth, our product PROGUARD CN-1M protects the concrete reliably against chemical attack.



Restored concrete surface

It is a fact; uncoated concrete does not suffice for long-term operation against chemical attack! Through the microbiological decomposition process and the acidic environmental conditions ensilage, biogas and biomass cause an extreme chemical load for the concrete substrate. A high performance coating is required to protect against serious concrete damage.

The ensilage tank showed advanced concrete erosions down to the steel reinforcement, induced by biogenic sulfuric acid attack (BSA). Thus, the steel was exposed to high corrosion risk; immediate action was required.



Coated surface

### Technical details

**Project:** Refurbishment of a concrete tank for biogas ensilage

**Size of the tank:** Height of 5 m, diameter of 4.5 m

**Storage medium:** Renewable raw materials, manure, slurry with a pH-value of 4-5

**Coating product:** PROGUARD CN-1M

**Application of the coating:**

K. H. Strohbeck GmbH & Co. KG, Kernen-Stetten/Germany



Our application partner for professional coating application:

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**Our Products:**

- CP-Synthofloor Beta 8016
- Proguard CN-1M



"Washed-out-concrete-effect" - caused by aggressive acids in the ensilage



Primed wall area, sprinkled with quartz sand



Coated wall and floor



Coated wall area

Firstly, the surface was grit blasted to remove loose concrete. Then the tank could be restored with conventional concrete grout.

Afterwards the walls were undercoated with our concrete-primer CP-SYNTHOFLOOR BETA 8016 and lightly sprinkled with quartz sand to achieve an anchorage profile for the protective coating.

The application of the high-grade chemically resistant coating PROGUARD CN-1M was conducted by airless spraying in a single layer with a thickness of 600 µm. One application procedure is enough to accomplish a reliable protection against aggressive chemical attacks and abrasion damages.

The further process within this extensive restoration was the floor treatment. The repaired concrete was also primed and sprinkled with quartz sand. In this area our product PROGUARD CN-1M was easily applied with a rubber squeegee.

**Do you need resistant coatings for the prevention of chemical attack and abrasion?**

**We provide ideal product systems with targeted advice to solve problems!**