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## Coatings for Biogas Applications:

### Development of solvent-free, chemically and organic resistant internal coating for fermentation plants

[www.ceramic-polymer.de](http://www.ceramic-polymer.de)

Ceramic Polymer GmbH has been advanced to an expert-company of internal coatings for biogas plants! In cooperation with the DBU (Deutsche Bundesstiftung Umwelt) we accomplish a development project, which is specially aligned for fermentation plants!



Soon we will start with the serial production of the best product available at the market! We can already affirm by an internal comparative test, that our PROGUARD CN product-range achieves a better performance than all competitor products!

*In biogas plants it can come – often even after a short operating time - to damages on concrete and steel due to high chemical attack. The formed biogas as well as the “fermenting” biomass is heavy corrosive, most of the times with a temperature of 37 °C in the “mesophilic” region. Apart from the end-products (components of biogas) are the following substances problematic:*

- **Ammonia, gaseous and liquid (problem: high pH-value)**
- **Sulfuric acid in the upper area of the plant (problem: low pH-value and oxidative)**
- **Hydrogen sulfide in the bottom of the plant (problem: reducing effect)**
- **Organic acids (problem: low pH-value, complexing agents)**



#### What happen to concrete?

There are two different kinds of attack:

- **Expanding chemical attack:** *Mainly in the fermenter the sulfate solution soaks into the concrete and dispread due to the poor sulfate constancy of the concrete -> „bloating appearance“*
- **Solving chemical attack:** *Because of low acid resistance Ca-minerals are dissolved away out of the concrete -> „washed-out concrete effect“*

#### What happen to steel?

*The multiple higher corrosion rate of steel in biogas plants is sufficiently known. The reason refers to the low pH-value in some areas at the plant as well as the impact of oxidative substances. Also heavy damages occur by microbe affected corrosion.*



#### Do you plan or run biogas plants?

**We appreciate to give you technical advice and provide you a product, which fulfills all conditions!**