SiGa-Tech
Sludge & biogas systems

Steel, screwed, epoxy tanks

Digesters, sludge tanks gaholder protection silos

- **surface protection by epoxy bonded material;**
- **typical applications: agresive industrial liquids, mesophillic & thermophillic digestrion, landfill leakages, sludge tanks;**
- **resistance pH 2 - 11, temp. < 60°C;**
- **volumes < 10 000m^3.**

Structure:
Steel, screwed tanks, protected by epoxy bonded material.
Tanks consists of protected steel sheets, with construction elements like: roof beams, angles, wind stiffeners etc.

Process:
Steel sheets:
For tanks production high quality materials are used e.g. low carbon mild steel HR4 according to EN 10111:2008 or XF450 according to EN 10149-2:1996 S460MC.

Construction elements:
Construction angles and wind stiffeners made of S275 steel according to EN 10025:2004.
Dimensions and parameters according to EN 10056-1:1999.
A/m.elements are galvanized according to EN ISO 1461:1999.
All construction elements can also be made with epoxy cover technology.

Erection bolts:
In screwed tanks screws with polypropylene copolymer cover are used. They have higher mechanical strength. Screws M12, class 8.8 i 10.9, galvanized according to BS3692:2001.

Preparation of plate sheets surface:
a) surface preparation:
consists of three stages: degreasing together with primary surface cleaning using zirconium phosphate and two stage water cleaning under high pressure;
b) drying the plate sheets in oven.

Preparing protection of the plate sheets:
a) electrostatic coating, under high pressure, with double-sided, double layers:
Epoxy powder and Polyester.
b) changing layers structure in high temperature ~ 200°C, Heating time and process temperature are according to DuPont company guidelines.

Result of process is internal protection layer with thickness about 180µm (top ring/ roof panels and connections about 400µm) and external with thickness about 125µm - Epoxy - Polyester.

Basic tests and parameters:
Epoxy protection system for tanks is designed specially for applications which required higher corrosion and chemicals resistance.

Tests led for steel sheets, protected with epoxy layer 125µm:

Adhesion:
- according to BS3900 E6 - no detachment.

Impact:
- according to ASTM D2794 - pass 100 in/lb.

Bend:
- according to BS3900 E1 - pass 1/4".

Hardness:
- according to Konig - 225 s.

Humidity:
- according to BS3900 F9 - pass 2 000 hours

Salt Spray:
- according to ASTM B117 - 2 000 hours.

More information you can receive on request.

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