

CASE STUDY

New Sulzer Mixer Improves Treatment Process

Sulzer was asked to attend Anglian Water's Southend Sewage Treatment Works in the United Kingdom to carry out a survey of the existing mixers on site. The two sludge mixers installed had been switched off for a long period of time due to continual issues with blocking and failing.



The condition of the Sulzer mixer once lifted out of the tank after 90 days

“ The performance of the mixer has been very good. No trips or problems, it seems to cope very well with rags etc. When integrated into our PLC system, it can be seen on the HDMI screen and telemetry will pick up on any alarms. ”

Tony Smith, Site Optimizer, Anglian Water

The challenge

The site was not running correctly with the mixing process switched off. Also, the site was costing considerably more to run as a direct result of the extra tankers required.

The customer was expecting new mixers that would not require excessive call outs due to blockage, and therefore would reduce the operation cost of the site.

The solution

Sulzer offered to install a new prototype of the submersible mixer type ABS XRW 480. It has the XRW 650 permanent magnet motor frame, but with a RW 480 propeller fitted. This mixer is best suited for heavy rag/sludge tanks.

The old mixer was removed and the size and dimensions were checked prior to the installation of the new mixer on site. The mixer was fitted onto the existing guide rail setup, with the variable frequency drive (VFD) connected to the existing panel.

The XRW 480 mixer was installed and tested and found to be operating at a P1 value of around 3 kW. This was providing adequate mixing in the tank, and the crust on top soon disappeared.

After 90 days of trouble-free operation the mixer was lifted and checked. There were no signs of wear. To date the XRW 480 mixer has run continuously since July 2014 without any problems.

The Sulzer difference

- The innovative new Sulzer mixers with an XRW 650 permanent magnet motor frame and a RW 480 propeller reduce blocking in heavy rag/sludge tanks.
- Lower operational costs due to lack of breakdowns and call outs.
- IE3-equivalent permanent-magnet motors with the lowest possible energy consumption.
- The market's best ongoing energy performance and best life-cycle cost.



The condition of the tank after the XRW 480 had been installed for 90 days



Tank before the Sulzer mixer was installed

Customer benefit

The new installation offers reliable equipment that subsequently reduces the operational costs. A premium efficiency motor also contributes to high energy savings. The payback period for the installation is calculated to be 2.1 years.

Product data

Sulzer submersible mixer type ABS XRW 480		
Variable Frequency Drive (VFD)	B	C
Rated power (kW)	7.5	11.0
Rated current (A) at 400 V	15.8	26.4
Total system efficiency (%)	90.3	91.0

Mixer performance		
Hydraulic no.	Mixer power P_p in kW	Motor kW
4811 B	5.5	7.5
4812 B	6.0	7.5
4813 B	6.5	7.5
4814 B	7.0	7.5
4811 C	7.5	10.0
4812 C	8.0	10.0
4813 C	8.5	10.0
4814 C	9.0	10.0
4815 C	9.5	10.0
4816 C	10.0	10.0

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Applicable markets

Wastewater treatment

Applicable products

Submersible mixer type ABS XRW 480