

WWTP Bad Münster am Stein-Ebernburg

Successful conversion of a *SCHREIBER* Aeration Tank

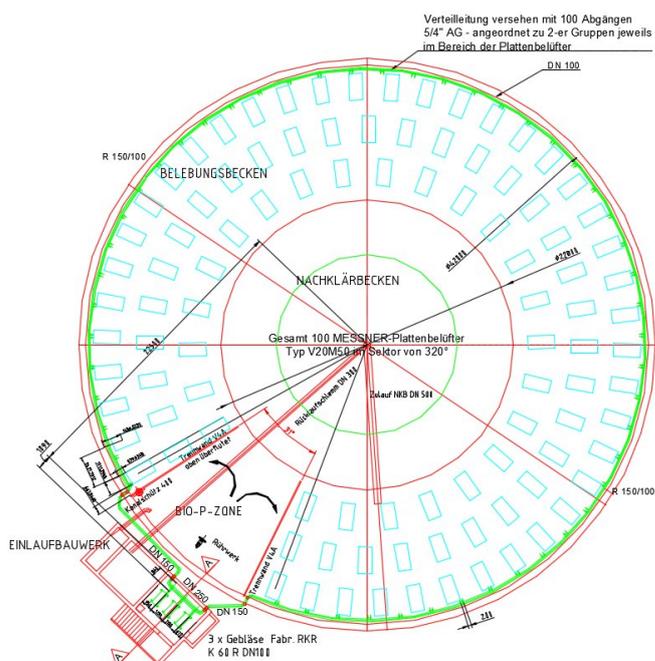
Already in continuous operation since 1999 - minimal maintenance!

The wastewater treatment plant in Bad Münster am Stein-Ebernburg is extendible to a capacity of 9,980 PE and is mainly treating the wastewater from the municipalities of Bad Münster am Stein and Ebernburg.

Initial Situation

The single-line wastewater treatment plant was originally operated with a so called *SCHREIBER* Continuously Sequencing Reactor Aeration. This *SCHREIBER* system is characterised by a fast rotating bridge with attached aeration grids. A projecting shield, which is also mounted to the bridge, simultaneously provides the circulation in the activated sludge basin. The secondary sedimentation is generally centred in the inner segment of the circular ring tank and is operated with a separate scraper.

A shortcoming of the rotating aeration bridge is often the centred swivel joint with integrated central air feed. Bearing, seals and electrical sliding contacts usually wear out over the years and must be replaced at relatively great expense in time and money. For single-line systems, a sudden defect can jeopardise the operational safety with lasting effect. Due to the structural situation, the number of aeration elements on the bridge and thus the aeration efficiency are limited. In many cases, the high overall mass of the rotating bridge also results in the bridge continuing to advance up to several meters, even after activating the emergency stop switch. This safety hazard should not be underestimated. Furthermore, a restoration of the worn out running surface on the top of the tank can be very costly.



Successful update of the old aeration system

In 1999, the operating company of the wastewater treatment plant decided to carry out a fundamental change of the aeration system. The rotating bridge was decommissioned and the aeration grids removed. With the installation of two partition walls in the infeed area of the circular ring tank, a small Bio-P zone was set up. In the remaining activated sludge tank a total of 100 MESSNER Aeration Panels were spread evenly and mounted directly on ground level.

(Please turn over)

The complete and newly installed ring line made from stainless steel supplies each individual aeration panel with air separately. Due to the RMU Plug Flow Technology, agitators are no longer needed in the entire activated sludge tank.

During the unaerated denitrification phases, the activated sludge is circulated extremely gently for a complete thorough mixing every 15 minutes initiated by a short air pulse to keep it fully mixed.

Results and Benefits

The new aeration system of the wastewater treatment plant in Bad Münster am Stein-Eberburg has meanwhile been running without any interruptions since 1999. All 100 MESSNER Aeration Panels are still in perfect condition. Costly and time consuming aerator replacements have not been necessary so far. The large scale and at the same time ground level configuration of the aeration panels (approx. 50 cm deeper fine bubble distribution in comparison to the previous system) in combination with ideal fine bubbles results in a high energy efficiency and thus related greater energy savings. Apart from the small agitator in the Bio-P zone, additional mechanical equipment is no longer required. Wear parts are therefore reduced to a minimum. In general, the described conversion will already pay off after a few years only and from then on will continuously save money and provide the operating company with many years of highest operational safety.



RMU Plug Flow Technology without agitators - wastewater treatment plant Bad Münster am Stein-Eberburg