

# More power, less consumption

## The revolution of centrifugal sludge dewatering

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The dewatering result depends strongly on the properties of the sludge being treated. The existing decanter series from Flottweg already achieves very good results. The new machine concept in the Xellektor system has significantly improved on those results.

The new machine concept achieves a higher dry substance content. That significantly reduces the quantity of sludge. Up to 10% savings in sludge disposal costs are possible. The separation degree stays constantly over 99%. That means there are almost no solids remaining in the separated liquid.

Under experimental conditions at the Rosenheim sewage treatment plant, the Xellektor was able to achieve over 2% more dry substance than the conventional high-performance series. Sewage treatment plants therefore need to dispose of much less sludge.

At disposal costs of about 70 Euro per ton, that means significant savings.

### Polymer savings

A significant portion of the costs of sludge dewatering involve the use of polymer flocculants. The use of these additives is unavoidable in most cases. Polymer floccu-

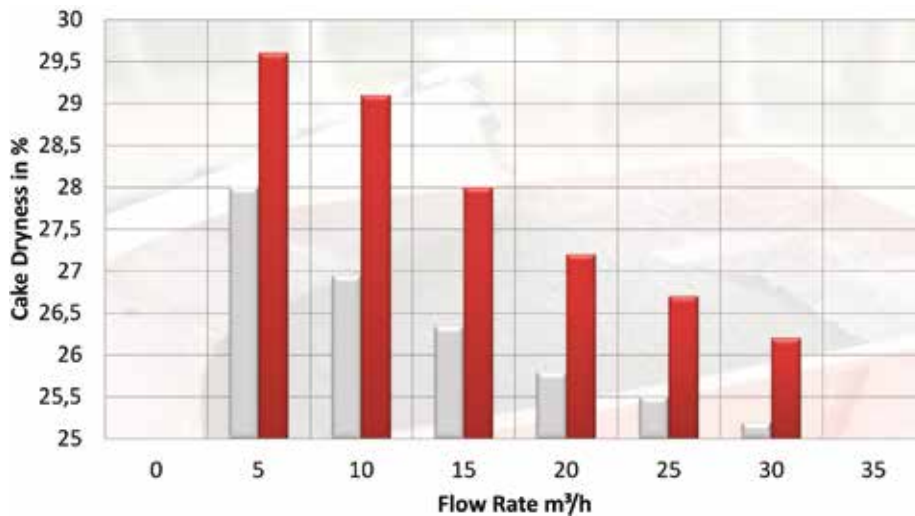
lants enlarge the solid particles, ensuring more efficient dewatering performance. With Xellektor, due to the gentle acceleration of the suspension and the super-deep pond concept, significant polymer savings are possible. In tests under real conditions, polymer savings of up to 25% were possible. And that was with the same dry substance content and the same high separation degree. Here, too, the potential savings are easy to calculate.

### Low energy intake

Decanter centrifuges, due to their robust design, are well known to be long-



Depending on the throughflow, the specific energy consumption for sludge dewatering in the Xellektor series is only 0.7 kWh/m<sup>3</sup> (photo: Flottweg)



Dewatering result of conventional series in comparison with the Xellektor series. Experimental conditions at the Rosenheim sewage treatment plant

distance runners. Many centrifuges from the 80's are still going strong, day after day. So many people still have the high energy consumption of these machines in mind. In comparison with these machines, the energy savings of the Xellektor series can be up to 50%. Depending on the throughflow, the specific energy consumption for sludge dewatering in the Xellektor series is only 0.7 kWh/m<sup>3</sup>.

The savings provided by the Xellektor series are a result of the revolutionary new design principles of the scroll and rotor.

## „Dewatering at the press of a button“

In addition to the pure economic facts, convenience of use also speaks for the centrifuge.

- Fully automatic control of the bowl speed and differential speed. And the resulting continuously optimum dry substance in the dewatered solids, even when there are fluctuations in the feed, thanks to the Flottweg Simp Control.
- Today, it's at 4.0: On demand, all the options for remote monitoring and remote service.
- Optional: Automatic flocculant dosing with real-time monitoring. Also reduces polymer consumption.
- Custom integration of the centrifuge controller into your overall system controller for peak efficiency and operational reliability of your system

- Closed construction. Good shielding of the (workplace) environment against noise pollution and sewage sludge aerosols.

## Conclusion

Extensive testing on multiple sewage treatment plants clearly show: The Xellektor system wins on all definitive requirements, such as dewatering performance, polymer consumption, and energy consumption, significantly topping the old limits. Then there are additional advantages of centrifuge technology, such the low operating overhead and low noise levels typical of centrifuges. An examination of cost-effectiveness also pays off. The new Xellektor system permits enormous savings.



Left: Sludge before dewatering/Right: Centrate after the centrifuge and the discharged solids