

## Excess sludge treatment

Short overview of sludge treatment is enclosed in order to describe the technology and its possible usage. Usage depends on sludge quantity and investor's decision.

The production of excess sludge is minimal, and sludge is adequately and well stabilized. That characteristic enables the usage of excess bio-sludge treatment, e.g. thickening. Excess sludge is normally around 0,6÷0,7 kg per kg of incoming BPK, depending on the temperature, sludge age and requirements on effluent quality. With MBR technology those quantities can be considerably reduced, so the expected excess sludge production is around 0,1÷0,3 kg per kg BOD.

Aerobic sludge digester operates in such a manner that it disintegrates part of material in excess sludge produced in MBR process. That stabilizes the sludge and makes its further treatment easier, thus preventing unpleasant odors of any kind. The period of retention is circa 20 days. Roughly 50-70 % of droplet matter in excess sludge will oxidize during the aerobic digestion since the sludge age itself in MBR is extremely high (SRT > 80 days).

Since expected daily excess sludge quantities are like shown in the table underneath (concentration 20 %), we suggest excess sludge solidification and bagging. In that case there is an indication that bagged excess sludge could be used as compost or it can be simply taken to the landfill as harmless municipal waste.

### Excess sludge quantities with constant operation of MBR plant

	3500 PE	7000 PE		14000 PE		
		Up to	Up to	Up to	Up to	Up to
kg SS/day	21	63	42	126	84	252
m <sup>3</sup> /day	0,11	0,32	0,21	0,63	0,42	1,26

### Comparison of excess sludge quantities

