

BELTDRYER BD 3000/6

Grajewo (POL)



Belt dryer BD 3000/6 with backmixing

Since the end of 2022, the Belt Dryer BD 3000/6 for the full drying of industrial sewage sludge occurring in the biological treatment of dairy wastewater has been in operation in Grajewo, Poland.

The **plant operator SM MLEKPOL** is a Polish dairy cooperative and the largest milk processing group in Poland. MLEKPOL is one of the twenty largest raw milk processing companies in Europe. Approximately 5 million liters of milk from 9,000 milk producers are processed daily. The Polish **engineering company SEEN Technologie** is the general contractor.

The dairy wastewater is treated biologically in the company's own wastewater treatment plant. The sewage sludge created at a rate of 1.2 t/h and dewatered to 16 % DS is dried to 90 % DS with a Belt Dryer of size BD 3000/6 with a **water evaporation rate of 1 t/h**. For an optimum volume/surface ratio, the dewatered sewage sludge is back-mixed to 30% DS with approx. 300 kg/h of dried sewage sludge before it is fed onto the dryer belt. The dried sewage sludge is filled into big bags.

The drying air is heated to approx. 80 - 85 °C in heat exchangers fed with the **90 °C warm cooling water (feed) of a CHP unit**. The return flow of the cooling water to the CHP unit, cooled to 70 °C, is used to preheat the recycled drying air to 50 °C. The recycled drying air is then cooled by the heat exchangers. The recycled drying air is previously dehumidified in a spray condenser and cooled to 30 °C.

The **special process engineering characteristic** of this plant is the use of the warm, humid exhaust air after the drying process and before condensation in a countercurrent column to heat the digested sludge by 5 K for anaerobic treatment in the digester at 36 °C. The biogas generated in this process is used to operate the CHP plant.

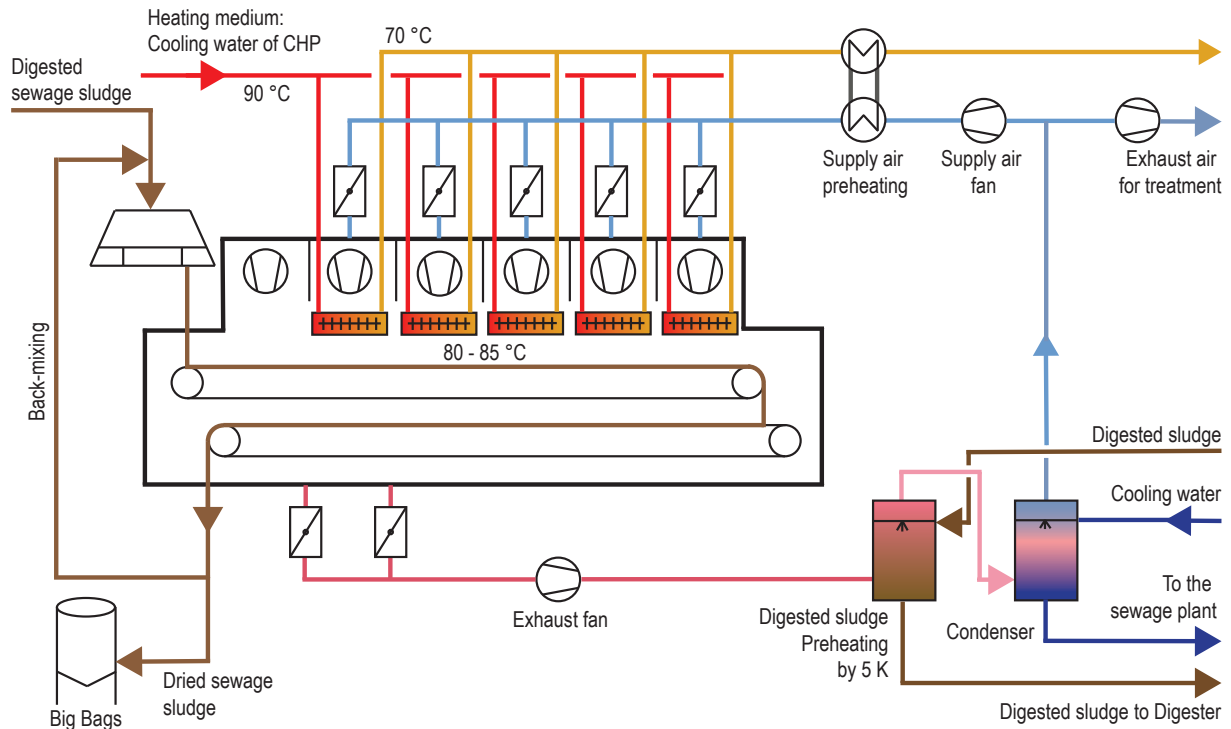


Preheating of the digested sludge in countercurrent column with humid warm exhaust air of the Belt Dryer



Dosing of back-mixed sewage sludge to Roller press

FUNCTIONAL PRINCIPLE



Source: SEVAR AG

TECHNICAL SPECIFICATION

Scope of supply:	BD 3000/6 belt dryer with back-mixing, counter-flow column for heating the digested sludge with warm exhaust air, spray condenser, dry material conveying and filling into big bags.
Type of drying:	Full-drying
Heating source:	Indirect heating with hot water [90/70 °C], cooling water of a CHP (biogas)
Material	Digested industrial sewage sludge from dairy wastewater
DS input:	16 %
DS output:	90 %
Throughput:	10.000 t _{OS} /a (1.200 kg/h) / 1.600 t _{TR} /a
Water evaporation:	1.000 kg H ₂ O/h
Operating hours:	24 h/d, fully automatic
Commissioning:	2022

SEVAR AG

SEVAR AG emerged in 2020 from the environmental technology division of Haarslev Industries A/S. The over 30 years proven **technology of belt drying** is continued under the already well-known name SEVAR with a motivated team. The young German company with headquarters and production near Karlsruhe is supported by an international network of partners and agents.

SEVAR designs and manufactures plants for the **thermal treatment of municipal and industrial sewage sludge**, fermentation residues and wood residues. The treatment of the humid exhaust air resulting from the drying process with condensation and odour treatment is also considered. Reference plants are available for inspection worldwide.

We reserve the right to alter the specifications at any time without prior notice.