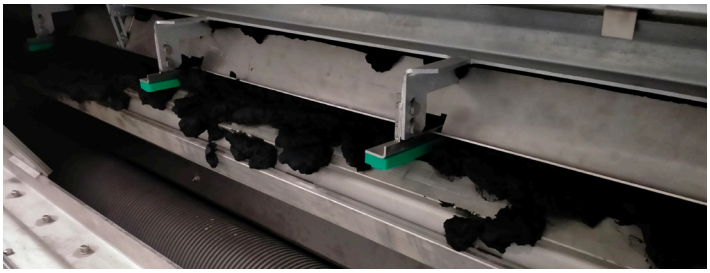
REFERENCE

SEVAR Drying Technologies

BELTDRYER BD 3000/6
Grajewo (POL)

Belt dryer BD 3000/6 with backmixing

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

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 1.3 t/h [2,600 lb/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 1.1 t/h [2,200 lb/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. 185 - 195 °F in heat exchangers fed with the **195 °F warm cooling water (feed) of a CHP unit.** The return flow of the cooling water to the CHP unit, cooled to 160 °F, is used to preheat the recycled drying air to 120 °F. 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 85 °F.

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 97 °F. The biogas generated in this process is used to operate the CHP plant.

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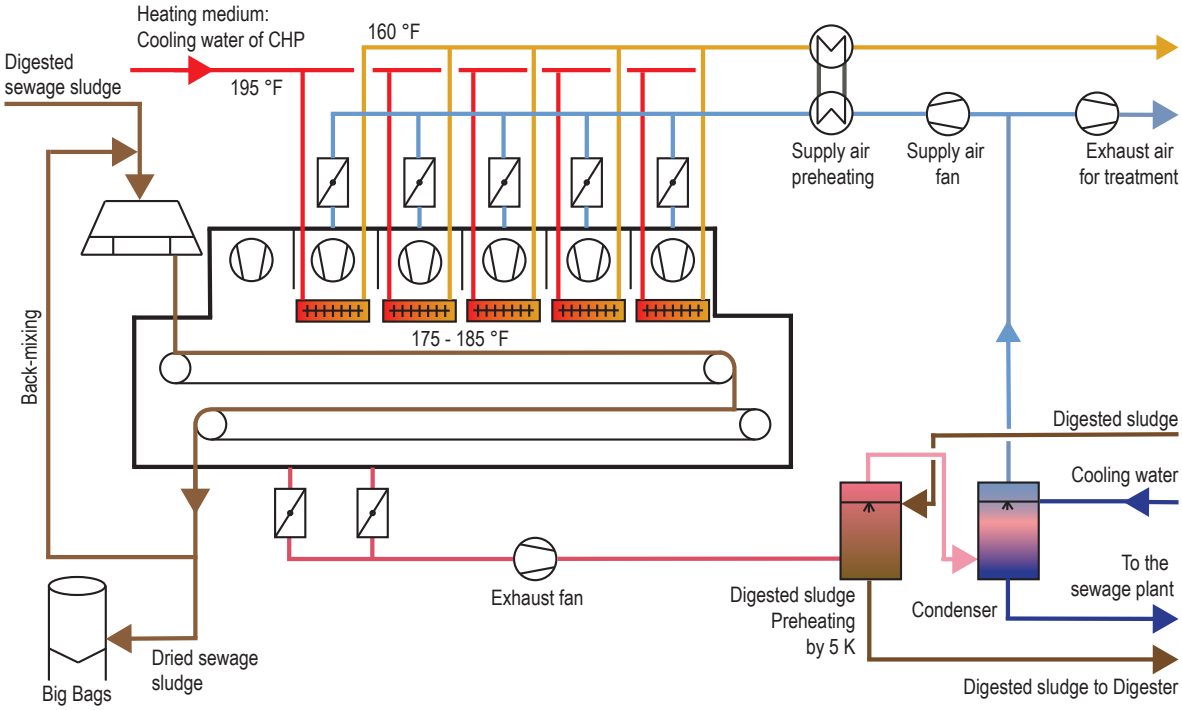
FUNCTIONAL PRINCIPLE



Source: SEVAR AG

TECHNICAL SPECIFICATION

t = tn.sh. (US unit)

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 [195/160 °F], cooling water of a CHP (biogas)
Material	Digested industrial sewage sludge from dairy wastewater
DS input:	16%
DS output:	90%
Throughput_wet:	11,000 t/a (1.3 t/h) [22,000,000 lb/a (2,600 lb/h)]
Water evaporation:	1.1 t H_2O/h [2,200 lb H_2O/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 odor treatment** is also considered. Reference plants are available for inspection worldwide.