

## BELTDRYER 3x BD 3000/12

### Jebel Ali Dubai (ARE)



One line of the Belt Dryer BD 3000/12 with dryer inlet unit



Trough chain conveyor for dewatered sewage sludge to the inlet unit (3x)



Burner (red) with combustion chamber and supply air fan

SEVAR was contracted in 2009 to install **three (3) lines of Belt Dryer BD 3000/12** with 12 drying modules for full drying of 123,500 t/a [247,000,000 lb/h] of digested sewage sludge. The sewage sludge is accumulated at the municipal wastewater treatment plant of Dubai in the Jebel Ali district with a connected size of 1,500,000 PE.

The dry product is bagged and **used as fertilizer**. The requirement for the dried sludge was to produce a granular dry product with low dust formation.

The sewage sludge is dried using **hot gas with drying temperatures up to 265 °F**. The biogas produced during anaerobic sludge digestion at the WWTP is combusted and the resulting hot gas is mixed with fresh air and recycled gas to the drying temperature. If there is not enough biogas available, fuel oil can alternatively be used to generate the hot gas.

The sewage sludge, mechanically pre-dewatered with a centrifuge to approx. 22 % DS, is temporarily stored in two silos, each with a volume of 60 m<sup>3</sup>, and distributed to each of the three dryer lines via a trough chain conveyor. Via the dosing and distribution unit, the sludge is evenly fed onto the 3 m wide **perforated stainless steel belt**. At the end of the upper belt, the drying temperature is approx. 130 °C and the sludge is dried to a DS content of approx. 50 %.

On the lower belt, which runs more slowly and in the opposite direction, the sludge is further dried to a DS content of at least 92 % and leaves the belt dryer via a screw conveyor and a pneumatic transport device to the storage silo. During this process, the sewage sludge is cooled down from approx. 175 °F to below 120 °F. The dried sludge is then transported to the storage silo.

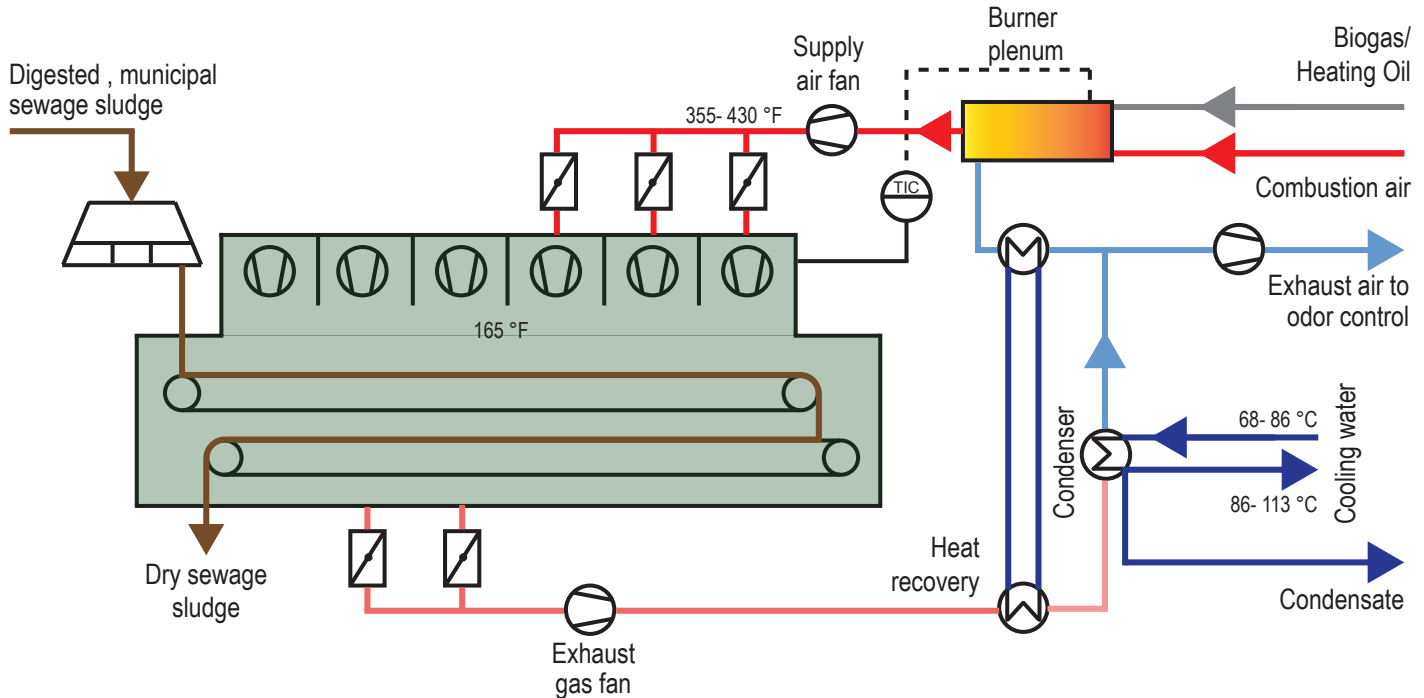
The hot, humid exhaust air from the dryer, which is loaded with water, is passed through a water-operated **heat exchanger** to preheat the supply air and is then condensed in a **spray condenser** cooled with effluent from the wastewater treatment plant.



# SEVAR

## Drying Technologies

### FUNCTIONAL PRINCIPLE



### TECHNICAL SPECIFICATION

Source: SEVAR AG

t = tn.sh. (US unit)

Scope of supply:	3 lines of Belt Dryer BD 3000/12 with exhaust air treatment system (chemical scrubber for 12,000Nm <sup>3</sup> /h exhaust air), condenser
Type of drying:	Full-drying
Heating source:	Direct Heating: Hot gas by combustion of biogas (alternative: fuel oil), Drying temperature ranges between 185 - 265 °F
Material:	Digested municipal sewage sludge
DS input:	ca. 22%
DS output:	> 92%
Throughput_wet:	123,500 t/a (15.4 t/h) [247,000,000 lb/a (30,900 lb/h)]
Water evaporation:	11.6 t H <sub>2</sub> O/h [23,100 lb H <sub>2</sub> O/h]
Operating hours:	24 h/d, fully-automatic
Commissioning:	2012

### 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.