LOW TEMPERATURE BELT DRYING FOR WOOD

PRODESA

Low temperature belt drying enables the use of waste energy from other processes such as hot air (direct), hot water or steam (indirect). It works at atmospheric pressure with a maximum temperature at the drying inlet of 120 ºC.

As it works at low temperatures, VOCs emissions are negligible and it is possible to keep the lignin content in the product. This is an important advantage when the dry product is used to produce pellets.

Process Description

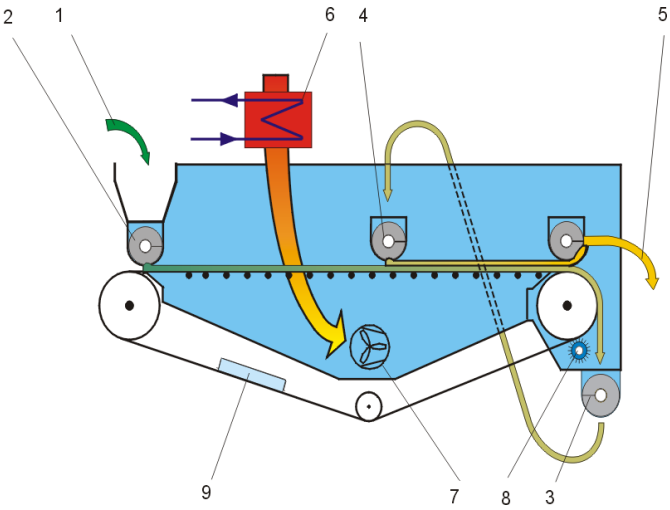
The wet material **(1)** is evenly distributed onto the belt conveyor by means of the feeding screw **(2)**.

The product layer is transported through the dryer on the belt before being discharged into the first discharge screw **(3)**. Via an additional screw, this product is recycled to the second feeding screw **(4)** where the second layer is placed onto the first. After passing through the dryer a second time, the dried product is discharged **(5)** for further processing.

Working with a two layer system, maximum saturation of the exhaust gas and therefore maximum energy efficiency is reached.

By measuring the moisture content at the discharge it is controlled the belt speed. The drying capacity and therefore the material passage depend on the energy available.

The extractor fan **(7)** sucks ambient air through an air-water heat exchanger **(6)** where the air is heated up before passing through the belt and evaporating the product water content. The fan capacity is controlled via a frequency converter according to the energy available at the heat exchanger. To ensure an optimal operation, the belt is cleaned by a rotary brush **(8)** as well as a high pressure device automatically activated **(9)**.



1 Wet product
2 Feeding screw 1
3 Discharge screw 1
4 Feeding screw 2
5 Dry product discharge
6 Heat exchanger
7 Fan
8 Rotary brush
9 Belt washing device

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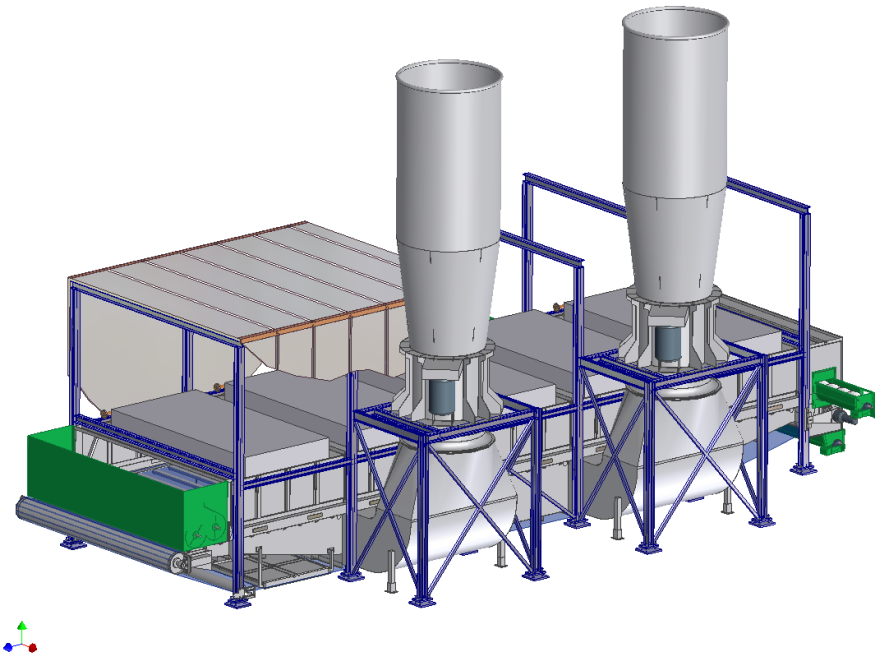
Belt Drying Advantages

- ✓ **Low emissions** < 15 mg/Nm3 (without further emission reduction)
- ✓ Use of **waste energy at low temperature**. This enables combining belt drying with **cogeneration plants**: gasification, Organic Rankine Cycle (ORC), etc.
- ✓ **Minimum fire risk**
- ✓ **Automatic operation**
- ✓ **Optimum product quality**: as it is an indirect drying, the drying air is clean and no particle enters from the open air. Besides, working with low temperatures keeps all the wood properties.

BELT DRYING SETS THE BENCHMARK IN THE WOOD PELLETS MARKET



More than **500** Swiss Combi **drying plants are operating** in more than **40 countries** all over the world

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