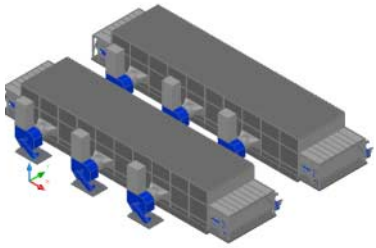
Reference Description Lauterbach

World’s largest belt dryers for biomass
Lauterbach, Germany

The supplied belt dryer for drying sawdust consists of two BDS-110-S-8.0 (belt drying) lines, each with a water evaporation capacity of approx. 11 tons.



The sawdust to be dried is fed into two symmetrically arranged augers that ensure an even height of the moist material across the whole width of the drying belt. The drying belt moves the material through the dryer where it is heated by means of warm air and dried in the process. At the end of the drying belt, the dry product is moved to the conveying units for further transport by means of a screw discharger.

The drying air is indirectly heated by hot water using a suitable number of heat exchangers arranged on two levels above the drying belt. The heated air flows through the material to be dried and absorbs the contained moisture. The fans necessary for this process are arranged along one side of the dryer housing. The thermal energy required for the drying process predominantly consists of waste heat from the power station located in Lauterbach, which means that the belt dryer is conveniently integrated into the local energy network. The utilisation of hot water at low temperature levels (<70°C) lays high demands on the belt dryer.
Each of the two drying lines has an operating width of 8 metres which permits a high output on each line, however, it also is also very exacting on the mechanical design of the system.

The quality standards of the dried material require a low, constant residual moisture content with very limited fluctuations to ensure the uniform quality of the raw material for the subsequent production of blocks. In order to satisfy these requirements even when fluctuations in the raw material and also the energy supply occur, a special control concept has been developed for this belt dryer. Furthermore, the belt dryer is characterised by its high degree of automation. System safety has the highest priority. Its construction and the choice of the equipment strictly adhere to all relevant EU Directives and the design has been subjected to a detailed risk analysis.

The advantages of the system

General

- Modular design
- High performance per line, operational width up to 8 metres
- High degree of automation
- Easy to operate
- Easy to service

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Process and control engineering

- Use of low temperature energy possible (e.g. hot water supply flow temperature <70° C)
- Low moisture content in the dry sawdust (e.g. 2%) achievable at low hot air temperatures (e.g. 65 °C)
- Specially developed control concept for high requirements on low moisture content in the dried sawdust
- High uniform moisture content in the dry sawdust achievable (e.g. +/- 1% point)
- Continuous measurement of the moisture content in the dry sawdust
- Feed control of the wet sawdust with special level measurements in the feeder module
- The quantity of drying air can be varied by means of fans

Mechanical system

- Modular, stable steel structure holding the components, platforms, pipework and ensure accessibility
- Screw conveyors, built-in parts etc. designed for easy removal
- Various adjustment possibilities for the frost-protected sawdust feeder system
- No rotating components or bearings for the wire support in the dryer housing
- Low-wearing wire support, protected from touch
- Airtight separation between the hot air and exhaust air areas, constructed without flange or sealing air openings
- Rubber-coated drive and regulating roll, deflection roll with special coating
- Solid adjustable belt tension for centric wire-run
- Automatic wire guiding system
- Water-saving, automatic belt cleaning system
- Extremely long wire tensioning range for easy mounting of the wire and for the temperature – time – stretching – tensioning properties of the wire
- Anti-static wire with an endless butt connection
- Sprinkler fire extinguishing system according to VDs standard

Technical data

Throughput of wet sawdust (with 50% water content)	2 x 23 t/hr
Water evaporation rate at 70 °C drying temperature	2 x 11 t/hr
Low temperature hot water supply	2 x 12.5 MW
Medium temperature hot water supply	2 x 1.7 MW
Achievable dryness of the sawdust (in % of moisture content)	2 %
Fluctuation in dryness of the sawdust (in % of moisture content)	+/- 1 %
Active operational width (band width) of a line	8 metres

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