

TARPO

spol. s r.o., Pražská 346, 270 01 Kněžves
Tel.: +420 774 416 003, E-mail: obchod@tarpo.cz, [http://: www.tarpo.cz](http://www.tarpo.cz)

TARPO BS Block dryer for wood chips



Input tray



Displaceable floors



Belt conveyor



Dune



Dried chips



Dryer and ventilation

TARPO Ltd. is a Czech company without foreign participation, which operates in the Czech and European market for 25 years. Our area of interest is the development and production of energy equipments (gasification complexes, drying lines). Specialization is drying of biomass in various forms: wood chips, sawdust, draff, solid digestate from Biogas stations, grains and sewage sludge.

The purpose of our device is drying wood chips for energy purposes, to increase its calorific value, while using of the low-potential waste heat. The drying line output can be designed in a large power range, depending on customer's requirements, i.e. from tens kilograms up to tens of tons per hour. Line controls the control system with PLC so as to minimize maintenance. At the same time, the operator has access to accurate information about the operational status of the whole complex.

Our drying technology is industrially protected. Delivery time is about 3-4 months, depending on the type and size of the dryer. As a part of delivery can be also silo with displaceable floors, transportation paths, sorters, etc.

Example of the model equipment parameters:

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|---|---------------------------|
| • wet material weight - dryer's input | 1700 kg/h at humidity 50% |
| • evaporate water weight | max. 700 kg/hour |
| • inlet temperature of the drying medium | 90-100°C |
| • mass-flow of the drying medium (air) | 8,2 kg/sec. |
| • required heating power of source | 760 kW |
| • installed power input (whole line incl. ventilator) | 45 kW |
| • dryer weight BS-48/2 | 12000 kg |
| • dryer dimensions BS-48/2 w x l x h | 2,2 x 13 x 4,3 m |

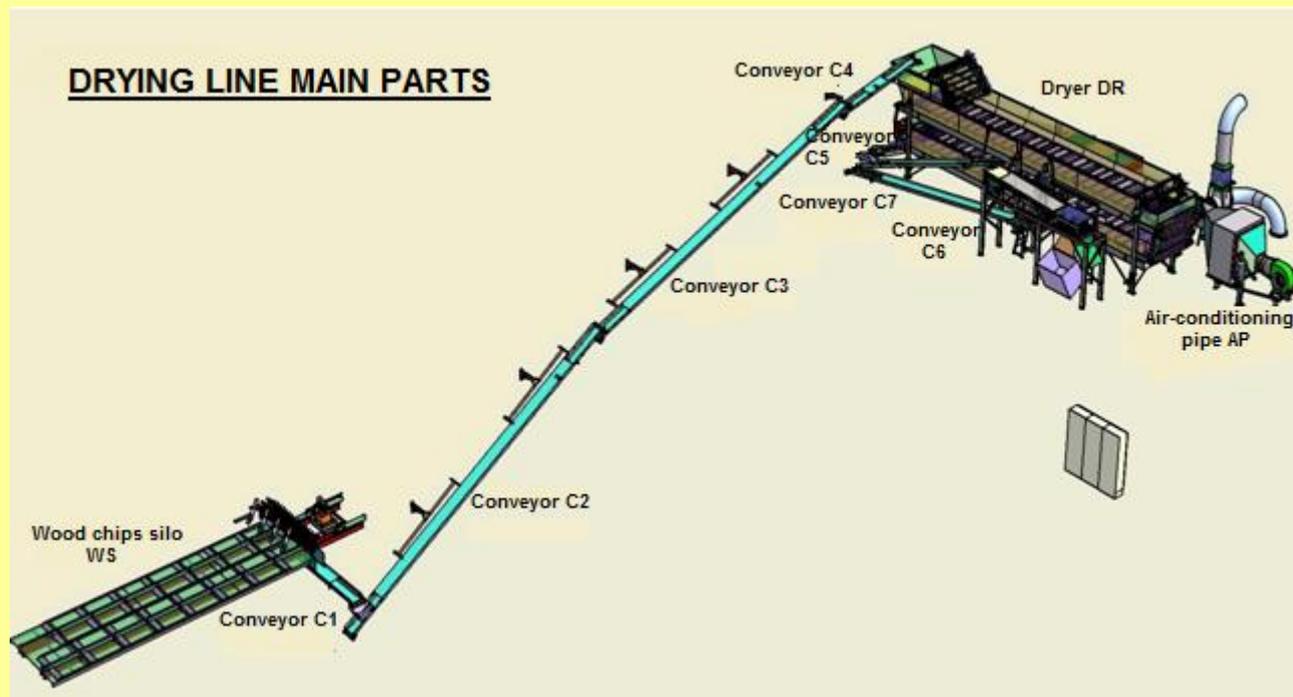
Wood chips characteristics

Wood chips of the each particle size: 10 – 100 mm.

Average calorific value: 9,5 MJ/kg (7-13 MJ/kg) of a single dose.

Average water contents: 50% (summer 40%, winter 60%)

Max. dimensions of a unique chip on a input of storage tank in one direction does not exceed 100 mm and sum of all three dimensions does not exceed 160 mm.



Description of activities model drying line

Input tray is filled with wood chips on the side of the front loader. The minimum level of chips, which require to refill the tray, is 0,8 m.

The material is moving by means of displaceable floors to the outlet conveyor C1, the chips are pushing away by means of rotary rake for smooth supplying.

Material is relocate on conveyor C2, C3, C4 and then into the hopper of dryer DR. During the simultaneous movement of rakes and dryer returnable are chips combing into the right drying height, which is about 0,5 m.

Rakes at the bottom of dryer DR slowly moves the chips to the other end of dryer, which is designed as a two-storey, so the wet chips is fed to the upper floor of hopper, chips falls down into the lower level at the end of dryer and returns to the point of entry, but on the floor below. Warm air flows through the perforated dryer's bottom into the dried material and removes moisture from it. Warm air is supplied into the dryer by means of air-conditioning pipes VP. Heating and air filtration is carried out in a lamellar exchanger, into which is pushed by a ventilator. At the output of the exchanger are regulate supplied the combustion products from cogeneration unit into the inflow pipes to dryer, so as the drying medium was at optimum level (90-110 °C).

At the end of the dryer are dried wood chips with the aid of plough push off on the conveyor C5 and move away through the transport path across the conveyor C6 into vibration sieve. From vibrating sieve go dried chips on the disc sorter and subsequently the chips falls down into reactor skip. Undersize of the vibration sieve is taken by means of conveyor C7 into pellets production space.