

What's new at Labora.Energy

Operating costs in pellet factories will be higher due to rising electricity and fuel prices. Labora.Energy constantly optimizes its processes so that the customer gains the most benefits by using machines and devices from our company.

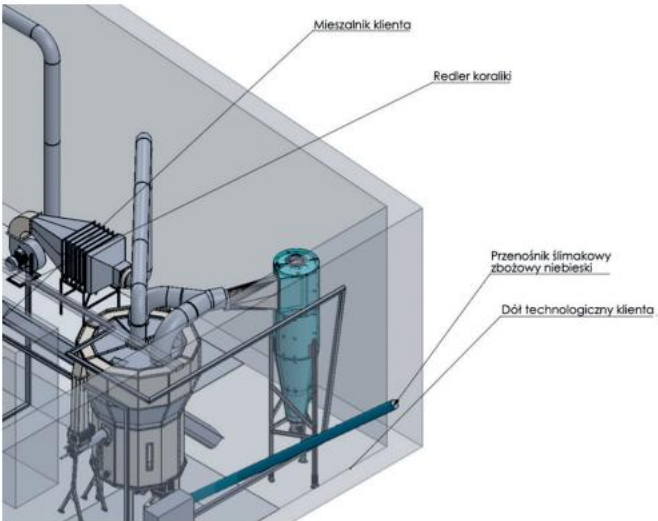
The most energy intensive process in technology is the drying of pellets. The first aim of the process is to protect the sawdust against unfavorable weather conditions, such as rain or snow, and the second is to dry it as cheaply as possible.

Two years ago, Labora.Energy introduced a solution using waste heat from chimney losses (photo 2).

Any machine can recover heat from recuperation, but this heat has value when it has the highest temperature to be used. The heat from the LE chimney loss is 200 kW of heat at a temperature of 170°C from each dried ton. This amount allows you to dry an additional 250 kg/h in the second LE dryer - Eco Air Dryer, in cascade operation.

Such parameters can be achieved by using dry fuel.

The R&D department operating at Labora.Energy, after its successes with the hybrid system of Magnum and Eco Air Dryer dryers, has developed additional heat recovery from steam condensation with parameters of 300 kW of heat at a temperature of 80°C from each dried ton. This is only possible because the Magnum dryer releases heat through contact (exchange) and does not dilute the fumes. This heat can be used, depending on the need, to heat the hall, board dryers in the sawmill, dry sawdust on the Eco Air Dryer or other thermal processes. Such an investment is currently being implemented in one of the wood plants in the province. Podkarpackie.



/ 1. Diagram of a dryer with heat recovery

To sum up - when drying on Magnum with dry fuel in order to phase change water into steam, we need to input 600 kW of heat for 1 ton of dried raw material, while by reusing the phase change, in this case as a result of condensing the water vapor contained in the vapor in the heat exchanger, we recover over 50% of the heat input to the drying process. Overall, heat consumption is lower than expected because the second phase transformation is used.

Another implementation of Labora.Energy in the wood industry is the Eco Air Dryer in a furniture factory in the province. Greater Poland Voivodeship, where it was used to add weight to the boiler room. All boiler rooms in woodworking plants are selected so that there is enough power to heat, for example, board dryers in the worst conditions. After heating all the drying chambers, the boiler



/ 2. Recuperator that recovers 200 kW of heat at a temperature of 170°C



/ 3. A palletizer that automatically places bags on a pallet minimizes the operator's work to collect pallets

operator supervision. After such a process, the operator of the pellet line has dry raw material for production. Just as in the drying process the costs are heat and electricity, in the entire pelleting line you can save by optimizing the packaging process by eliminating unnecessary handling to a minimum. For this purpose, Labora.Energy increased the efficiency of its packaging machines from 4 packs/min to 8 and even 10 packs/min for 15 kg pellet bags. The final stage of the line with a capacity of 2t/h is a put-to-use lift/shelf palletizer (photo 3), with an optional automatic machine for applying hoods that protect the entire pallet against rain and snow.

The R&D team employed at Labora.Energy is constantly looking for areas in pellet production technology in which the process can be optimized to make the operator's work light and easy, and at the same time - to keep as much money as possible in the business owner's wallet.

goes into standby mode because it is underloaded. Labora.Energy is in the process of launching such a system which, when heating up the board dryers, uses all the heat in this place. After warming up, the heat is collected by the Eco Air Dryer. This solution is not only automated, but also autonomous and does not require constant monitoring

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