

# Oak wood pelleting

Last year, mechanical engineering specialist Rudnick & Enners built a complete plant for pelleting hardwood in Croatia. Contrary to most other pellet production sites, which mainly process fir and spruce, this plant focuses almost exclusively on oak wood.

Rudnick & Enners of Alpenrod/DE is one of the leading suppliers of sawmill and pelleting technology. Last year, the Westerwald-based company planned and installed a pellet plant in Croatia which was started up at the beginning of January. The furniture manufacturer Ciprijanovic from Orahovica wanted to process the wood waste and byproducts which accumulate during the production of high-quality furniture and decided to invest in a pellet production plant by Rudnick & Enners.

What makes this plant so special is the fact that it is used to produce pure oak pellets and, depending on the season and the availability of raw material, it is also possible to produce beech pellets.

## Complete plant delivery

For the owner-managed family company from Orahovica, the main decision criteria were reliable and high-performance machine technology, a high degree of automation and a holistic plant concept. Furthermore, the company wanted to avoid unnecessary interfaces. Rudnick & Enners's goal is to be a one-stop supplier of customized solutions. “

Due to the demanding requirements regarding the quality of the end product as well as the chemical and mechanical properties of the wood, it was necessary to take a number of special features into account in this project. With few extractives and its fiber structure, beech is quite resistant to pressing. The constituents of the Slavonian oak also needed to be considered when designing the plant,” explains authorized representative Sven Rudnick.

Ciprijanovic uses bark-free sawdust, wood chips and wood waste from furniture production as raw material for the new Rudnick & Enners pellet plant. The raw material enters a RE-KB 2.000 x 6.000 infeed container and then passes through a screen. Bigger pieces are crus-

hed with a RE-TH/N drum chipper. Specially toothed feed rollers are used for the infeed. With a trough chain conveyor, the sawdust and wood chips are transported to the following dosing container of the belt dryer.

## Modular structure offers advantages

The pelleting plant consists of several units. The first unit is the material infeed, followed by the screening and crushing, which are done while the material is conveyed on to the dryer. The RE-KBT compact belt dryer developed by Rudnick & Enners in cooperation with Swiss Combi has a modular structure and a belt width of around 2000 mm. Rudnick & Enners emphasizes the flexibility in the drying of sawdust and wood chips (also when mixed) in particular as well as the gentle drying at low temperatures. Also, thanks to its modular design, the belt dryer can be installed quickly. Next, a trough chain conveyor transports the material to the dry chip storage, which is designed as a push floor system. After further processing in the dry chip mill, the fine material is conditioned, with automatic water dosing.

The material then leaves the mixing container and enters the CPM press which can produce up to 2 tons of pellets and more per hour. The finished pellets enter a horizontal cooler with subsequent screening. The cooler is located directly under the press, which is why the building does not need to be particularly high. The location of the cooling system also has a positive effect on the pellets. Thanks to the short distance, fewer pellets break or are abraded. After cooling, the pellets are temporarily stored in a silo and screened once again before they are filled into big bags or sacks for export, for example to Italy. “Our pellets impress with their high calorific value and good mechanical properties,” explains Franjo Kovac from Ciprijanovic. “Our new plant was running in shifts just a few days after the warm start-up.”







pictures: Rudnick & Enners

- 1 In the foreground, the screening in a RE-VR vibrating chute followed by the drum chipper, behind it the feed to the belt dryer's dosing container; small picture: oak pellets
- 2 Press infeed, pellet press and cooler
- 3 Rudnick & Enners's RE-KBT compact belt dryer, optimized for drying hardwood
- 4 Mixing container and press infeed

**No interfaces**

"In this project, we were able to draw on our experience in the field of pure hardwood pelleting and the pelleting of mixtures of hardwood and softwood," explains Rudnick. The customer can control the entire plant technology with the Rudnick & Enners control and visualization system, including remote support. Furthermore, the required low-temperature heat for the belt dryer is generated by the on-site heating plant. Thanks to this one-stop delivery, there are hardly any interfaces from the material infeed to the finished pellets.

As for 2021, Rudnick & Enners already has further pelleting systems in its order book. The Westerwald-based machine and plant manufacturer is going to build pelleting plants in Germany, Austria, France, England and Brazil, for example.

**RUDNICK & ENNERS**

Location: Alpenrod/DE

Managing director: Burkhard Rudnick

Established: 1977

Staff: over 100

Products: chippers, conveyor technology, dryers, separating and screening technology, debarkers, dosing systems



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Tel: +49 2662/80 07-0 • Fax: +49 2662/2613  
[www.rudnick-enners.com](http://www.rudnick-enners.com)