

# Briquettes from "roundwood" residues

**Ortinger is a German "roundwood" producer that keeps both his neighbours and bottom-line happy by pressing production residues into rectangular briquettes. And when it was time to increase briquette production, it was simply a question of going larger with the same brand.**

**ORTINGER E. K., IS A FAMILY-BASED** wood processor located in the Bavarian forest in Germany. The company specialises in producing "roundwood" in the form of rods, rails, dowelling and poles from 3 mm to 80 mm in diameter from beechwood (*Fagus silvatica*) boards and planks. These hardwood products are used in a wide range of items such as skewers, Mikado-sticks, curtain rails, for handicraft work as well as table-top flagpoles and banisters. In addition the company produces rectangular and other profiles and will take over further processing steps such as painting on request. And although the Scandinavian countries may be home to the wood industry, the Lower Bavarian company has continuously succeeded in exporting to this region. The reasons for this makes itself apparent as Tobias Mayerhofer, Managing Director and fourth generation family member, shows the way through his facilities:

## Residues to revenues

During the production a significant volume of residues in the form of chips, sawdust and shavings are generated. Instead of disposing of them as waste, Ortinger presses them into briquettes, which are then sold as fuel. In doing so a residue stream is converted into a revenue stream.

The company works with flexibility, high quality and efficiency. But the Mayerhofer family not only convinces with their extensive know-how in wood processing, but it has also proven early on how an economy and environment win-win situation can be reached.

In 1994 the family business invested in its first RUF briquetting press, to produce a briquette fuel from shavings and sawdust accumulated during production. These production residues were previously used to fuel a woodchip heating system at the manufacturing plant. But with increasing production, the boiler was not

using up nearly as much material as was accumulated. To dispose of the excess, a service delivery company collected the material for delivery to a panel-board manufacturer.

– At first we earned a bit of money but in the end we had to pay for it. Also the disposal collection itself was always associated with dust and shavings flying around, Tobias Mayerhofer recalls.

## Over two decades of pressing

The RUF 100 briquetting press changed the situation for the better in an instant with the residues contained in a closed system. Some of material is fed from the silo to the heating system with the remainder fed directly into the briquetting system. The only thing that comes out is heat for the plant and wood briquettes, which are then sold off as fuel.

The original briquetting press from 1994 is still in use but at a facility in an Austria. Mayerhofer sold the machine in 2011 when it had become too small for his company.

– Back then we achieved a strong jump in sales. As a result the volume of residues from production also increased, so much so that we

needed additional briquetting capacity, Mayerhofer explained.

After having had positive experiences with the RUF 100, it was clear to Mayerhofer that he would buy the new press from the same company.

– In fact we didn't even invite tenders from other manufacturers, in part because our customers exclusively want RUF briquettes as they appreciate the quality, Mayerhofer revealed.

## Rapid return on investment

Mayerhofer has also heard that his fellow entrepreneurs in the region praise the RUF systems.

– Every wood processor in our vicinity has one or two of these presses and, like us, they are very content with them, said Mayerhofer.

Along with Ortinger, there are another four companies in the Freyung-Grafenau region that between them, operate eight briquetting presses. With the RUF 400, Ortinger produces on average around 700 tonnes of wood briquettes annually from about 5 000 m<sup>3</sup> of residues.

It was clear from the start that the machine would pay itself off quickly. Based on the amounts, which accumulate at Ortinger and the briquette sales price, an amortisation period of >>

*"Our customers want exclusively RUF briquettes as they appreciate the quality"*

**TOBIAS MAYERHOFER**  
Manager Director, Ortinger





A “roundwood” producer, Ortinger manufactures a wide variety of dowelling, rods, rails and poles from 3 mm to 80 mm in diameter. Approximately one-third of production is exported.

>> one and a half years was calculated. Market observations showed that in the past years briquette prices of EUR 130 – 150 per tonne had been obtained.

### High heating value

The press is powered with 22kW motor that compresses the material to a specific pressure of 1700 kg/cm<sup>2</sup>. The high pressure ensures that the briquettes maintain their form without the need for binders. The machine produces briquettes with a cross section of 150 x 60 mm and an average weight of 830 g.

According to RUF, wood briquettes offer end-users a high heating value, around 5 kWh/kg, as the pressing process increases the density of the woody material to about 1 kg/dm<sup>3</sup>. This is considerably higher than that of uncompressed beech wood at the same moisture content, about 10 percent or less and just slightly lower than that of lignite briquettes 5.6 kWh/kg.

Another advantage of the Ortinger hardwood briquettes is that they emit warmth continuously and consistently because the ember traverses the wood slowly.

### Soon fully automatic

At Ortinger the briquetting process runs almost fully automatically. All of the 30 or so wood processing machines that saw, plane, mill, drill and sand the wood products and components as they go through the facility are connected to a central dust, shavings and chip extraction unit. The residues are collected and deposited into a single 200 m<sup>3</sup> storage silo. The boiler unit and the briquetting system are located together under the central silo and draw from the silo.

### FACTS

Founded in 1921, Ortinger e.K. is a family-owned and run wood processing business based in Hinterschmiding, Grafung-Freyenau the most easterly district of Bavaria, Germany. With 35 employees, the company is specialised in the production of beech wood (*Fagus silvatica*) profiles, rails and rods supplied as uncoated, polished, oiled, stained or lacquered in furniture grade coatings. The main focus lies on the production of “round wood” in the 3 to 80 mm diameter range for products such as dowelling, banisters, skewers, cocktail sticks and potted plant sticks produced with round-bar-milling-machines. The products are used in the interior decoration, furniture, DIY, handicraft, toy and food industries. Approximately one third of its annual production is exported to other countries in the EU and Norway.

Both the boiler in-feed and press in-feed are equipped with optical sensors that register the volume of feedstock in the each in-feed. If more material is needed, the systems automatically “call in” for more from main silo. A transporter system similar to a scraper floor then moves the material from the silo to the boiler in-feed and/or the briquetting press in-feed.

However, the heating system takes priority ensuring that sufficient heat is available for the facility. This priority process still requires manual intervention in that Mayerhofer usually takes a look into the main silo during the course of the afternoon. If the material supply is sufficient for both heating and briquetting, Mayerhofer turns on the press manually. If not, only the boiler will be supplied. When production is at its high point, it generates such an amount of residue that both the heating as well as the press can operate around the clock. The activation will also be automated soon: A fill level sensor in the main silo delivers information as to whether there are sufficient chips for the parallel operation of heating and briquetting.

### Local production, local consumption

In a separate room, the packaging of the finished briquettes into 25 kg units is done completely manually. The two discharge chutes of the briquetting press were extended significantly for use at Ortinger. They now extend to a building situated higher up, where the finished briquettes fall onto an inclined plane. From there, they slide down to an employee who packs 30 briquettes in a bag and stacks the bags onto a pallet. The customers are mostly local fuel dealers, who



A compact system: The RUF press (left) is installed in a cellar room next to the woodchip boiler.

supply their regional customers. Local private customers buy smaller amounts. The short transportation routes ensure that the good environmental balance isn't spoiled.

*Text: Alan Sherrard  
Photos: courtesy RUF  
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### ABOUT RUF

Founded in 1969 by Hans Ruf, RUF is a family owned and run engineering business based in Zaisertshausen, Germany. Over 100 employees develop and produce briquetting systems in modular construction for a range of materials such as wood, metals and other recycled materials. The smallest machine type SZ1 for wood processes 20 kg/hr with a 3kW motor. RUF's biggest system (RUF 90) with 90 kW processes up to 1.5 tonnes/hr depending on material and chip size. The first dedicated briquetting press for wood was developed in 1985 for a woodworking firm and still in operation. Currently there are over 3 700 briquetting systems running in over 100 countries.