Siempelkamp supplies LVL (laminated veneer lumber) press to Pollmeier:

Advance innovations together

Siempelkamp Maschinen- und Anlagenbau GmbH & Co. KG unites two important factors: 130 years in press construction and innovative technologies. Not without reason our motto is “Innovation is our tradition”. With this mixture of competence we have once again convinced a customer from the wood-based materials industry. In September 2012 Pollmeier Furnierwerkstoffe GmbH & Co. KG ordered for their location in Creuzburg, Germany, a 6’ x 60.3 m ContiRoll® for the production of laminated beech veneer lumber. In close cooperation Pollmeier and Siempelkamp developed the highly modern plant engineering for this innovative product. Construction or furniture industry: laminated beech veneer lumber will stir up the wood-based materials market.

by Jochen Dauter
"To turn trendsetting ideas into action" – this is Pollmeier’s mission. When it comes to innovations, the German company had an experienced partner in Siempelkamp by its side. For two years Pollmeier and Siempelkamp experts tested the design and construction of an LVL press for beech wood in a joint effort, amongst others inside the Siempelkamp testing facilities in Krefeld. With success: The result is the fully-automatic production of an innovative product which has many applications in construction and furniture industries. Next to the Generation 8 ContiRoll®, the scope of supply consists of a high-rack storage system for veneers, the resin storage, the resin preparation and dosing system, a double diagonal saw, a Büttner energy plant with 13 MW heating capacity as well as the measurement and control technology all the way to the saw.

Innovative product for numerous applications

Pollmeier has been operating hardwood sawmills equipped with the latest technology in Creuzburg and Aschaffenburg since 1987. Today these plants are amongst the most efficient in Europe. For the construction of two new production facilities for the new veneer lumber plant on a total area of 27,000 m², the plant operator invested in Creuzburg another 105 million euros in the area of beech wood processing. With the laminated beech veneer lumber, Pollmeier’s objective is to supply the European markets in Germany, Austria, Italy and France as well as the markets in inter-continental destinations.

Highly-stressed component parts such as airplane propellers have been made from laminated beech veneer lumber since the 1930s. This custom work was however relatively expensive. Due to its significantly higher degrees of swelling and shrinking, beech wood also puts increased challenges on processors. With a new continuous production technology, Pollmeier and Siempelkamp allow the economic production of laminated beech veneer lumber at a competitive price.

The consumers for laminated beech veneer lumber are mainly from the area of modern and constructive wood building. Due to the high strength values, even small cross sections of beams allow large spans – without joints a length of up to 18 m. In interior construction laminated beech veneer lumber is used as flooring or furniture board. In this area not only the strength of beech wood proves useful but also its urban look. Due to its knot-free surface and its special color, beech wood is pleasing to the eye. Pollmeier will offer its final products for different application areas with a natural finish, polished or painted.

The strength values for beech wood (70 N/mm²) are three times higher than those of soft-woods such as spruce or fir. With a raw density of 720 kg/m³ it is an extremely heavy hard-wood which is characterized by its homogenous density and high strength. Due to its favorable peeling and bonding characteristics, beech wood is well suited for the production of wood-based products.

Large amounts of beech wood are available in Central Europe from South Scandinavia to Sicily. Its share in the areas of temperate latitudes increases continuously due to the climate change. As the world’s first and only provider of laminated beech veneer lumber, Pollmeier processes only wood from 100% sustainable forest management and primarily from regional PEFC-certified forests.
Siempelkamp technology
– each component a highlight

For the production of laminated beech veneer lumber, Pollmeier first “steams” beech wood trunks with diameters between 25 and 40 cm. Afterwards, the wood is peeled into thin veneer strips with a thickness ranging from 2 to 3.7 mm. Following storage in Siempelkamp’s high-rack storage system, phenolic resin is applied crosswise or parallel to the grain of the veneers. Afterwards, the glued veneer sheets are laid into a package and partly pre-heated via microwaves. The resin storage, preparation and dosing systems are also made by Siempelkamp. With a feed rate of up to 200 mm/s and press forces of up to 500 N/cm², the veneer package is pressed continuously inside the 6’ x 60.3 m Siempelkamp ContiRoll® press. Due to the high press force, even for the extremely dense beech wood there is still potential for higher compression; the special width of the press makes for the high capacity of the plant. An enlarged heating circuit with a booster hotplaten at the press infeed ensures quick heat absorption of the veneer package. The Generation 8 ContiRoll®, however, is especially characterized by its even pressure distribution which is achieved with pressure distribution plates. With this Generation 8 ContiRoll®, Siempelkamp supplied Pollmeier with a press which operates virtually isobaric and produces a first-class product. Because of the even pressure distribution in the press, the adhesive bonds cure homogeneously.

The scope of supply also includes the proven Siempelkamp double diagonal saw combination for the edge-trimming and cutting-to-length of boards. Automatically adjustable trimming units with high cutting speeds result in clean edges which are of finish cut quality. In cooperation with the subsidiary Büttner Energie- und Trocknungstechnik GmbH, Siempelkamp also supplies a 13 MW energy system with grate furnace. The fueling with waste wood from the production process provides further benefits: beech wood is a suitable fuel wood characterized by its long burning time, strong ember generation, and high burning value.

The measurement and control technology for the entire production line is another Siempelkamp product. The process-integrated measurement system SicoScan is used to measure board thickness and detect blows and blisters during production. The control technology system Prod-IQ® includes the areas of production management, quality control as well as maintenance and service. The customer benefits from improved cost transparency, resource savings, and an increase in plant availability. The installation for all heavy Siempelkamp components is already completed. The production of the first board is forecast for January 2014. With the new line, Pollmeier creates approximately 150 new jobs.
Interview with Ralf Pollmeier

Bulletin: Why did you invest 105 million Euro to put a new wood-based product on the market?

Ralf Pollmeier: We are currently building a new plant for the production of laminated veneer lumber made of 100% beech wood in Creuzburg, Germany. Laminated veneer lumber is not a new product, currently it is made of softwood. The market for this product is relatively small and cannot be compared to the development of other wood-based products including particleboard, MDF or OSB. We are the largest manufacturer of solid beech. Two years ago we decided to invest largely in the area of laminated beech veneer lumber because we believe in this product.

1. Due to a new continuous peeling and press technology, veneer wood can be produced economically with standardized quality today. We will introduce the new product to the market at a top price-quality ratio.

2. The outstanding strength values of beech wood are, for the first time, implemented in a panel-type product – for new applications in the area of constructive wood building.

3. Look and feel of beech veneers make it a first choice for a material mix with steel, concrete and glass.

4. The largest advantage of laminated beech veneer lumber is its high strength: the bending strength is three times higher than that of laminated veneer lumber made of coniferous wood.

What different types of products will you offer?

Ralf Pollmeier: We will offer laminated beech veneer panels with a length of up to 18 m and a thickness of up to 85 mm which will be used primarily as posts and bars in modern glass façade construction or as ceiling panels. Compared to rustic softwood, these panels captivate with their elegant and sleek look.

Furthermore, we will offer beams made of laminated beech veneer lumber with a height of up to 1,350 mm. Due to the high strength of beech wood, greater spans with reduced cross sections can be achieved which makes the supporting structures look thinner and more delicate. We will also offer our product for applications in interior construction and for furniture production. Because of its unique look – the veneer plies are arranged perpendicular to the surface – our product
The 13 MW Büttner heating and power station
scores points in this application area. However, not only the look of our product plays a role here; its hard surface opens up new application areas.

How are you going to market these products?

Ralf Pollmeier: The new constructive material appeals primarily to architects for which the product opens up new design opportunities. However, our target group will also include the furniture industry, interior designers and shopfitters. We will distribute the products via wood wholesalers and retailers but also directly.

This concludes my questions about the products and their markets. At the new plant, the installation of all heavy component parts is completed. You expect to manufacture the first board in January 2014. Are you satisfied with the construction progress?

Ralf Pollmeier: We are ahead of schedule when it comes to the completion of the project. Anyway, I think nothing about slavishly keeping to a time schedule. We will do so in a reasonable manner and will not create unnecessary time pressure which will be at the expense of the quality. In December we will prepare the market with a marketing campaign.

How are things at the construction site – after all, there are many machine interfaces?

Ralf Pollmeier: We think everything is going great. This is probably due to the fact that we placed separate orders to the individual suppliers of different disciplines. Peeling, grading, drying, resin application, pressing and handling are self-contained disciplines with defined requirements. We have, however, set great value on the selection of our providers.

According to what criteria did you select your providers?

Ralf Pollmeier: In general, according to their good reputation which is made up of many years of experience in plant engineering and a low error rate. When it comes to Siempelkamp, especially the large number of worldwide installed continuous presses and the company’s experience with especially long presses was convincing to us. After all, our press is 60 m long, such a press is not built every day. When making our buying decision, the quality of the technical solutions and the dedication of the people developing these technical solutions took priority over the price.

We have the impression the mood here on the construction site is upbeat?

Ralf Pollmeier: It is nice that you have noticed that. We can see that all installation teams are making their best effort to perform good work. We place high importance on the feel-good factor at the construction site. The site is clean, we try to provide good food and whoever wants to can use the fitness center in town for free. We think it is important to meet people at eye level. I am convinced this is an investment that will pay off after only a short time.

This interview was conducted by Ralf Griesche, Marketing Siempelkamp, on October 30, 2013.