

## **SUCCESS STORY**

Fenglin, China



**PANELBOARD**

# **FAST GROWTH AT FENGLIN**

**PERFECTLY REFINED LOCAL EUCALYPTUS  
FOR PREMIUM MDF AND HDF GRADES**

**ANDRITZ**

**ENGINEERED SUCCESS**



# Perfectly refined local eucalyptus for premium MDF and HDF grades

One of China's leading wood-based panelboard producers inaugurates a new MDF/HDF facility featuring ANDRITZ pressurized refining technology.

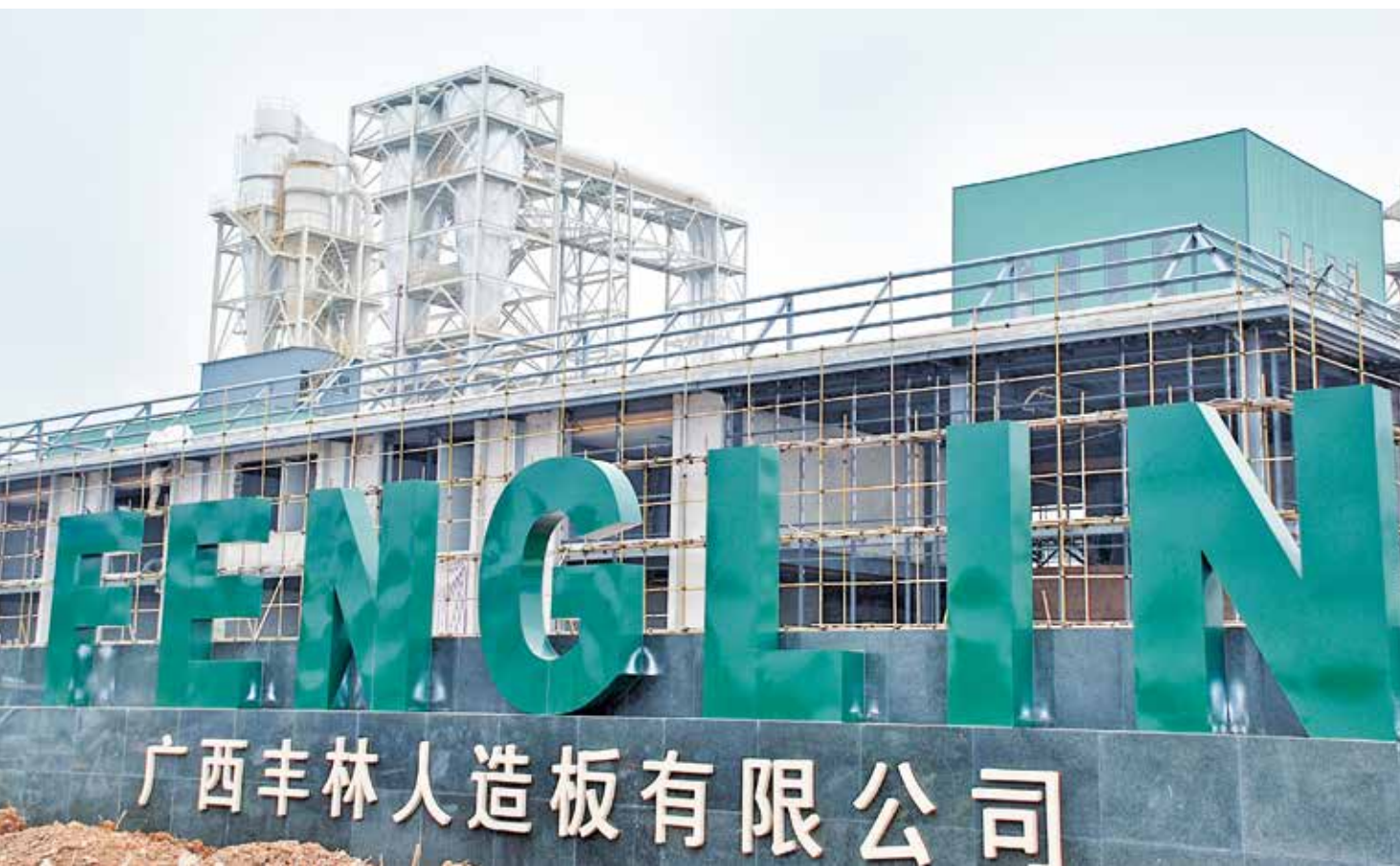
Situated in South China, Guangxi Fenglin Wood Industry Group Co., Ltd. (Fenglin) has done a superb job of maximizing the productive value of local forests. This is demonstrated through the company's ownership of 53,000 ha of eucalyptus plantation, its program to provide seedlings to other local farmers, its sawmills, and its extensive MDF (Medium-Density Fiberboard) and HDF (High-Density Fiberboard) facilities.

This productivity and emphasis on sustainability has a special meaning for Wang Gaofeng, General Manager at Fenglin, who harvested trees in the nearby forests as a university student. "I learned a lot about nature from my time in the forests," he says. "Forests have become a part of the landscape here since they were planted in Guangxi in the 1950s. It is rewarding when business builds

upon nature in such a direct way. Industrial production is good for families. And just as vegetable and rice farming have been here for many generations, forests will be part of our sustainable way of life for a long time to come."

Fenglin's latest project is a new MDF/HDF line that was started up in October 2013. Wang Gaofeng explains that the pressurized refining technology from ANDRITZ is critical to ensuring that home-grown eucalyptus is perfectly prepared to exacting requirements for a wide range of premium MDF and HDF grades. This is actually Fenglin's second ANDRITZ system as a predecessor company installed a Sprout Bauer refiner over 20 years ago. The Sprout (now ANDRITZ) refiner is still operating reliably with excellent availability, according to the plant's personnel.

Fenglin began operation of its new MDF/HDF facility near the airport in Nanning, Guangxi, China in October 2013.



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**WANG GAOFENG**

General Manager at Fenglin

Fiber is refined to exacting specifications for a range of grades. Preset grade formulations allow this to be done quickly and easily. Fenglin products are manufactured and controlled according to technical standards that are higher than international standards. Fenglin has obtained ISO9001 certification for quality control, ISO14001 for environmental control, and OHSAS18001 for health and safety control.

"This new ANDRITZ technology runs with much higher throughput, while consuming less energy than before," Wang Gaofeng says. "We are maximizing the full value of our wood resources, using the best part of the tree for plywood and the rest for panelboard." Li Jun, Fenglin's Vice General Manager and Project Manager for the new plant, adds, "The ANDRITZ system is practical and proven. We have consistent-quality fiber and stable operation at reduced energy consumption. Maintenance is seldom necessary and very easy. In addition, we were able to work with a friendly and responsive ANDRITZ team during the project. That is why we were able to achieve such a fast start-up. And the technical support from ANDRITZ after start-up has given us the foundation to further optimize."



Ancient farming techniques continue next to the new Fenglin MDF/HDF factory.



Chen Zhuo, ANDRITZ China Sales Manager for Panelboard Systems (left), with Lin Lisheng, Workshop Manager at Fenglin, holding the „gold“ that makes the Fenglin chips from its own specially developed eucalyptus plantation unique.



#### A SOUGHT-AFTER PRODUCT

Fenglin's panelboard grades are widely used in construction, decoration, furniture, and specialty applications in China and Asia. Technical standards make Fenglin the preferred supplier for many top brands. "Our panelboard products are sought after by Chinese and Asian customers. We consistently meet or exceed the structural, surface and special properties requested by our customers. Important innovations from our side include fire-retardant and extremely moisture-resistant products," says Wang Gaofeng.

Founded in 1995 and based in Nanning, Fenglin owns three factories with seven MDF/HDF production lines and a large plywood factory. In 2014, the company's annual production reached 650,000 cubic meters of board and 30,000 to 50,000 cubic meters of plywood per year.

#### SUSTAINABILITY MATTERS

As Fenglin's Chairman of the Board, Yichuan Liu, says, "Fenglin's capital comes from society. 'Giving back to society' is our motto. By using the world's best tech-

nologies for water and energy conservation, we are committed to low consumption, low emissions, and low pollution. This provides consumers with safe, low-carbon, and environmentally friendly products."

#### FAST AND RELIABLE INSTALLATION

Construction for the new line began in the spring of 2013, and the line was started up in October of the same year. Lin Lisheng, Fenglin's Workshop Manager, comments, "The technical and service support we received for the ANDRITZ system was ideal. The ANDRITZ team also shared our sustainability philosophy, which contributed to our ongoing success, including good jobs for the local community."



The eucalyptus forests start very small at Fenglin. Seedlings are developed in the laboratory.

**"The ANDRITZ system is practical and proven. We have consistent-quality fiber and stable operation at reduced energy consumption. Maintenance is seldom necessary and very easy."**

#### LI JUN

Fenglin's Vice General Manager and Project Manager for the new plant



Li Jun and Dieter Höllmüller at the successful start-up of the new pressurized refiner.



FENGLIN, CHINA

Refining facility supplied by ANDRITZ





Dieter Höllmüller points out the importance of the C-feeder.

**"One of our greatest accomplishments at Fenglin has been delivering a system that is extremely stable and efficient over the plant's complete product range and under all process conditions."**

**DIETER HÖLLMÜLLER**  
ANDRITZ Senior Project Manager  
for Panelboard

#### **PRESSURIZED REFINING**

The pressurized refining process at Fenglin begins when eucalyptus chips are fed into the ANDRITZ pre-steaming bin. A vibrating discharger ensures that a continuous flow of softened, heated chips runs into the plug screw feeder. After the feeder, the raw material moves to a vertical digester, where the material is compressed and the moisture content is stabilized. Such factors as moisture content, bulk density, and capacity are adjusted for each panelboard grade to achieve the highest quality very efficiently.

After digesting, the discharger system controls the flow of feedstock to the pressurized refiner. At Fenglin, a C (Constant)-feeder provides smooth flow and energy-efficient operations. According to Lin Lisheng, the C-feeder maintains smooth and constant flow, even when the throughput volume fluctuates. "Production is rarely exactly the same," he says. "The C-feeder keeps things running smoothly, no matter what the level of flow is." The refiner itself is fed by a ribbon feeder screw, which operates at constant, high speed. Steam from the refining process flows back to the digester via the ribbon feeder. "Maintenance is quite simple, even though the refining system operates continuously," Li Jun says. "The mechanical seals are long-lasting. Changing refiner discs is very easy due to the swing-door design of the refiner."



Dieter Höllmüller, ANDRITZ (left); Wang Gaofeng (center), and Chen Zhuo from Fenglin with end products made from Fenglin MDF and HDF. Fenglin's flame-retarding board is widely applied in important public buildings, including many Beijing facilities built for the Olympics, as well as the National Library of China.

According to Wang Gaofeng, "Stability and control of the raw material are what matter most for a consistently superior product. This is the basis for the structural integrity and appearance of our fiberboard products. The pressurized refining system from ANDRITZ plays a vital role in achieving this."

#### **UNIQUE PROPERTIES ARE AN ADVANTAGE**

Chen Zhuo, ANDRITZ China Sales manager for ANDRITZ Panelboard, notes, "Fenglin has a unique system. The hardware and software have been configured to maximize their grades, including flame-retardant MDF, which has a different formulation. The people here value our input as team members, so we don't feel like vendors. The partnership is real, and it has worked to their advantage."

Dieter Höllmüller, ANDRITZ Senior Project Manager for Panelboard, adds, "The fact that our technology is able to dewater the feedstock very efficiently contributes greatly towards the reduced energy consumption here at this plant. One of the greatest accomplish-

ments at Fenglin is the extraordinary stability and efficiency of our system over the plant's complete product range and under all process conditions. This imparts considerable qualities to Fenglin's panelboard products that give them an advantage in the marketplace."

MDF producers around the world trust ANDRITZ to provide technically advanced and reliable fiber preparation systems for panelboard. The front-end packages we supply are extremely reliable and energy-efficient. We also produce individual machines, including laboratory-scale systems.

Our machines utilize any species of wood or annual fibers, such as bagasse and straw. In addition to technical leadership, ANDRITZ supports each customer with responsive service, replacement parts, and upgrades to existing machines. What we have done for MDF producers around the world – thereof over 150 in China – we can do for you. Choose ANDRITZ as your technical and service partner for this challenge.



## FULL-RANGE CAPABILITIES FROM ANDRITZ PANELBOARD

ANDRITZ Panelboard supplies innovative single equipment and complete front-end packages, ranging from debarking, chipping and screening, to chip handling, as well as from chip washing to pressurized refining systems, including waste water evaporation. Our machines process any species of wood or annual fibers, such as bagasse, bamboo or straw. Extensive system and process know-how for panelboard fiber preparation is the technological basis of our solution, which also comprises responsive service, replacement parts, and upgrades to existing machines. Low electrical and thermal energy consumption with best performance is the driving factor for the design of each individual machine in the system and the process.

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