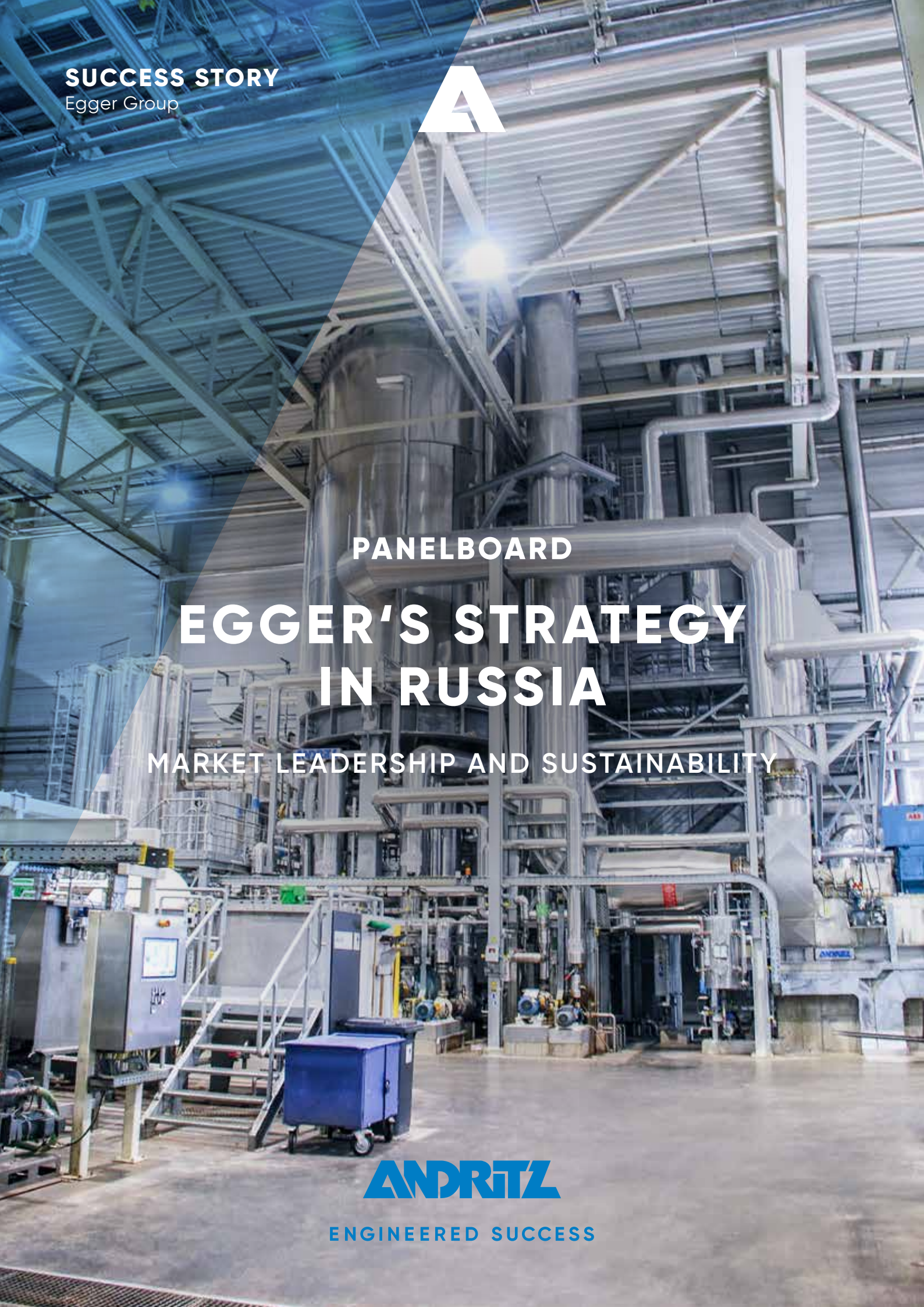
SUCCESS STORY
Egger Group



PANELBOARD

EGGER'S STRATEGY IN RUSSIA

MARKET LEADERSHIP AND SUSTAINABILITY

ANDRITZ

ENGINEERED SUCCESS

Egger's strategy: Market leadership and sustainability

Egger laminates are known for being quick and convenient to install, with an extensive choice of designs featuring different surfaces and formats. Egger Gagarin MDF and HDF are sold on the Russian and European markets. All of the wood supply from the Gagarin area is from certified sustainable forests.

Over the past few years, the Egger Group has invested over 302 milllion euros in their Gagarin plant 150 km west of Moscow in Smolensk, Russia. Building on the purchase of Russian particleboard manufacturer OOO Gagarinskiy Fanerniy Zavod back in 2011, the facility is now also a leading producer of MDF. A comprehensive modernization and expansion project in 2015/2016 included complete pressing, lamination, and fiber line equipment. ANDRITZ delivered the chip washing, pressurized refining system, and other auxiliary equipment, including a zero-effluent evaporation plant for the MDF line.

"Gagarin is an advanced MDF plant equal to our other three facilities in Europe. Our 350,000 m³ line, which was started up in the first quarter of 2016 and produced its first board on April 4, 2016, serves Russia and Eastern Europe, where the market for quality laminate flooring is growing," says Roman Patrakov, Production Manager at Egger. Patrakov points out that the entire fiber preparation system can be notched up to double the current capacity, the foundation for a second pressurized refining system is already in place, and the chip washing structure is designed to take a second set of chip washing equipment.

ANDRITZ 60" - 1CP refiner including C-feeder.

"Our ANDRITZ pressurized refining system and related equipment give us the fiber qualities essential to winning in the marketplace."

ROMAN PATRAKOV
Production Manager at Egger

The Gagarin plant produces an extensive range of laminate designs, featuring a wide range of surfaces and formats. While the strategic focus is on laminate flooring, the wide range of applications for the products manufactured on the new MDF line include furniture, interior design, construction, shop equipment, doors, wall panels, 3D panels, and much more. Patrakov continues, "Our MDF laminate flooring delivers high functionality, durability, and visual appeal for the consumer. This combined with our commitment to sustainability makes us an ideal supplier to gain a leadership position in this part of the world. If the market is soft in Russia, we can sell more to Europe."

Egger's MDF and HDF product range is characterized by high quality that is ideal as a raw material or as a base for lamination. Their MDF has higher bending strength as well as excellent screw holding properties.

FIBER IS THE GOLD

Patrakov believes that the quality of fiber is the gold of a superior MDF product. "Our ANDRITZ pressurized refining system and related equipment give us the fiber qualities essential to winning in the marketplace. We need mechanical, technological, and physical properties comparable to solid wood – which you could call the 'gold standard'. Mechanical load-bearing capacity and resistance is only possible when the fiber is maximized."

For MDF production, Egger uses ANDRITZ refiner plates that provide the best refining combined with low energy consumption and long plate lifetime.

The ANDRITZ decanter removes finest particles from the recycled wash water.

"Unlike gold, however, fiber must be finessed to have high value. It never happens automatically," says Vladimir Kudinov, MDF and Pulp and Paper Sales and Marketing Manager with ANDRITZ in Russia, "The pressurized refining system sets a standard for fiber quality. Our approach includes high dewatering efficiency to save energy in the following process steps. At the plug screw, this means that less water or condensate enters the pressurized part of the process, thus saving energy."

SMOOTH RAMPING UP OF PRODUCTION

Patrakov continues: "Board production went well from the beginning, producing MDF/HDF day and night after only two weeks. You can say that everything started with ANDRITZ. It's the first process equipment in the line. Chips become fiber. Then the fibers go to the blowline where they are combined with glue.

The most critical factor is the precise moisture content in the fiber. Fiber not only determines the quality of our end product, but also the amount of glue required. The better the fiber, the less glue needed and the lower the operating costs. And that's exactly what we are accomplishing." Thomas Nedelko, ANDRITZ Sales Manager, adds: "Making MDF is always about exacting end product properties. We help achieve highly stable process conditions related to fiber and, therefore, the best possible fiber for the MDF and HDF product ranges."

FIBER IN, CONTAMINANTS OUT

The refiner is seriously challenged at Gagarin because of the large amount of mud/soil, including silica, in the wood. Another strange reality is the frequency of bullets from World War II and even Napoleonic times. Patrakov quips: "Our washing plant is bullet-proof – in the truest sense of the word."

WASHING

The chip washing plant removes sand, heavy particles, and even bullets. This stage is essential for fiber quality and also reduces wear on downstream equipment. The ANDRITZ chip pump then removes even finer sand and contaminants. After washing, the chips go to the double dewatering screws. The water is returned to the water cycle, while chips advance to the presteaming bin. At the presteaming bin, production steam is used to equalize the temperature und moisture content of the chips. After this step, the material goes to the plug screw feeder where a novel feature is added: the AdvaDrain, which reduces the moisture content in the chips to the desired level, resulting in lower energy consumption in the digester, where material is then cooked for approximately four minutes under pressure.

ZERO-EFFLUENT PHILOSOPHY

What is known as the EVAP 'zero-effluent' concept is the most complete water treatment system for MDF ever delivered by ANDRITZ. The idea builds upon the company's long history in evaporation for pulp making, but has a different purpose. In the pulp-making process, evaporation is primarily focused on recovering chemicals to be re-used and become fuel for a power boiler. At Egger, evaporation is the main tool in achieving zero-effluent. Patrakov says, "With the help of the evaporation plant, we are able to use water in a closed loop." Water from chip washing is cleaned by the ANDRITZ decanter, a specialty device to take away even finer particles prior to the water entering the evaporation plant."

EASY MAINTENANCE

"The ANDRITZ system is ideal because it's so practical, but also advanced in its design. It produces fiber with consistent quality and runs smoothly. Low energy use and low maintenance are the norm," Patrakov comments, "and also one of the driving factors in deciding again in favor of ANDRITZ and the 4th pressurized refining system at Egger companies."

Egger recently invested over € 302 million at their Gagarin operation. Half was spent on construction and infrastructure, including a new woodyard, and a complete MDF line. (Left to right) Thomas Nedelko, Sales Manager for ANDRITZ, Pulping and Fiber Division, Panelboard, Roman Patrakov, Production Manager with Egger, and Vladimir Kudinov, MDF and Pulp and Paper Sales and Marketing Manager with ANDRITZ in Russia.

Egger harvests wood from their own 30,000 hectares of forest and by purchasing logs from ecologically aware suppliers.

A range of tests is conducted on every batch of MDF or HDF.

EVAP zero effluent - the most complete water treatment system for MDF ever delivered by ANDRTIZ (cover picture)

Patrakov points out that changing of plates can start as soon as or immediately when the steam pressure is gone; you don't need to wait. During maintenance work, the refiner is easy to clean. You can check the ribbon feeder easily with ANDRITZ because you can see it when the refiner door is open.

"The first maintenance priority is to change the refiner plates. We always keep a close eye on fiber quality and energy use. The ANDRITZ design allows us to simply open the refiner door and see all the rotating parts. No crane is needed to change refiner plates, which is another big advantage for us." According to Kudinov, "The Gagarin team can easily remove the wear liner from the refiner door, for example. The liner is an innovation to minimize maintenance effort."

WOODYARD IN A COLD CLIMATE ALL YEAR ROUND

The notable equipment in the Egger woodyard includes two ANDRITZ CenterScrew RCE units for discharge from chip silos. The chips are preheated further in the chip washing system's de-icing bin, allowing full operations even in harsh, cold weather. Screens are in place to guarantee the ideal size of the chips moving forward in the process. The temperature in the chips must be approximately 10 degrees Celsius as a minimum to ensure optimum washing efficiency."

INNOVATIVE PLUG SCREW FEEDING

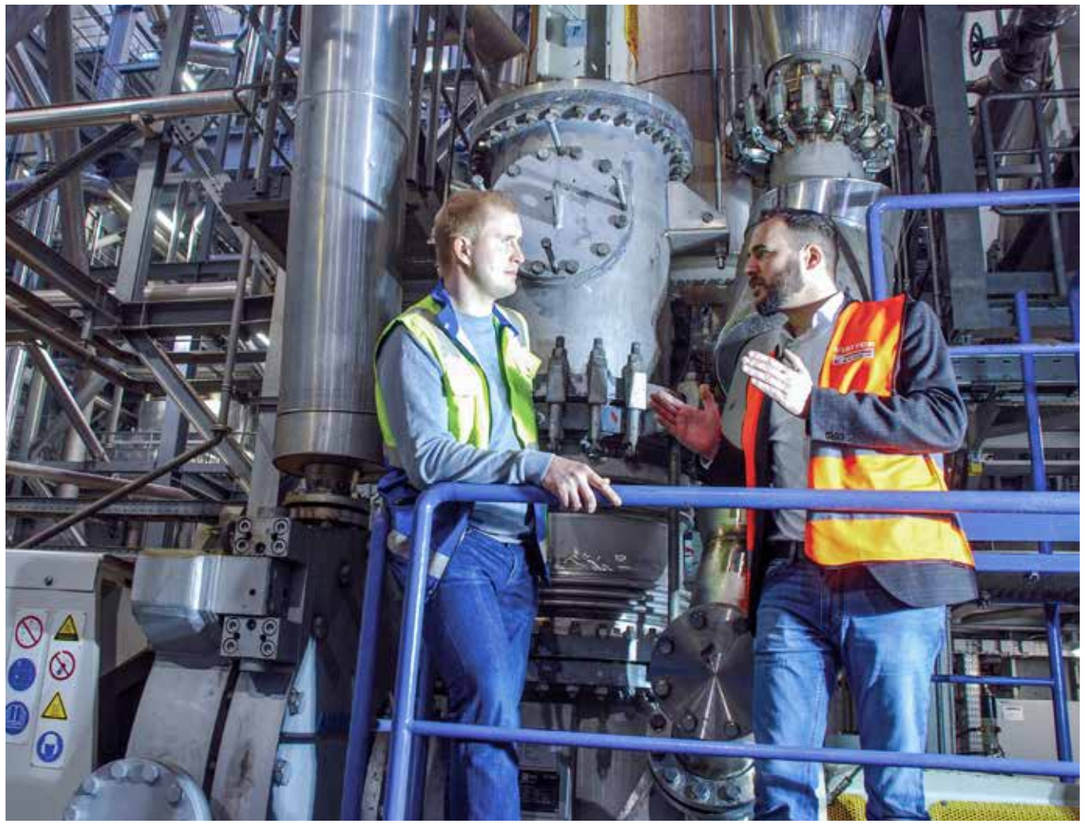
The 24" and 1,100 kW plug screw feeder's hydraulic expansion system is an important innovation to address physical changes in the digester, based on high temperature and pressure. This minimizes structural stress on a daily basis, contributing to the long life of the unit. The plug screw feeder is also equipped with the AdvaDrain system to remove as much water from the chips as possible and reduce overall energy consumption.

TRAINING COMMITMENT

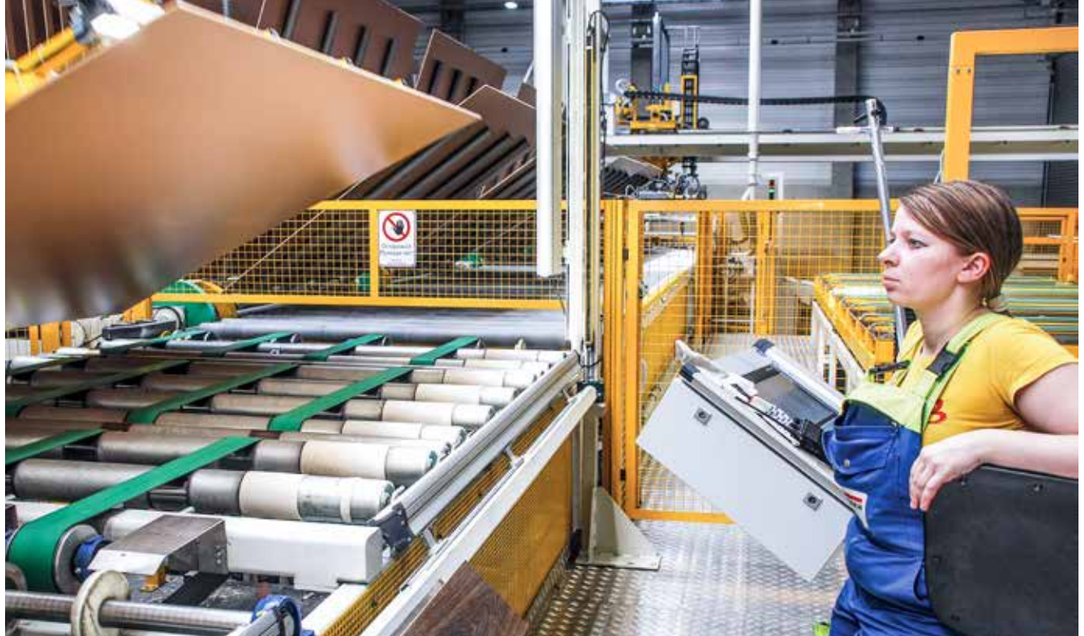
According to Patrakov, all operators were trained by the ANDRITZ staff. "Their team was here as long as we needed them. Their specialized equipment and process require a really good understanding."

Due to the high degree of automation and even though the equipment is operated in automatic mode, operators control all of the parameters. Without a critical knowledge of how refining works, an operator could run the equipment and the process outside the optimum conditions. Every operator develops the skills to respond to the situations that might arise.

The C (Constant)-feeder (behind Roman Patrakov and Thomas Nedelko) provides smoothest possible material flow to the 60" pressurized refiner 1C(P) with a 6,000 kW motor, whether capacity is high or low. This saves energy costs overall for Egger.



ANDRITZ plug screw feeder



The highly advanced MDF/HDF production facility with an annual capacity of 350,000 m^3 was started up in the spring of 2016. About 350 new jobs have been created with the expansion of this plant in the Smolensk region. Egger MDF and HDF board have high pile density in the top layers and are used both laminated and raw.

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ROMAN PATRAKOV
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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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