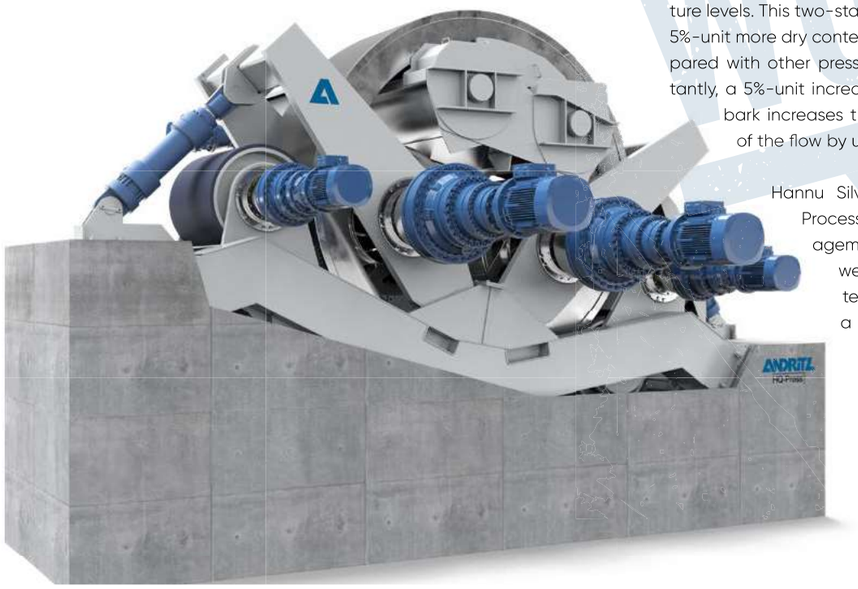
THE HQ-PRESS

BREAKING WORLD RECORDS IN BARK PRESSING

Fitting firmly into the ANDRITZ CircleToZero™ initiative, the HQ-Press bark press has evolved into a "must have" at pulp mills as it lowers carbon footprint, saves on energy costs, and considerably improves power boiler efficiency.

Bark is an important side stream for pulp mills as it is burned in the power boiler to create energy for self-sufficiency as well as exporting excess electricity to the grid. To maximize the performance of the burning of the bark, it is essential to reduce the water content as much as possible, which is where the ANDRITZ HQ-Press comes in.

With a lot of experience in the pressing of bark at pulp mills, ANDRITZ technical expertise and know-how came into its own around eight years ago with the launch of the HQ-Press. The system is designed for the dewatering of bark in the most efficient way, increasing boiler performance by dramatically improving the heat value in the power boiler.



TWO HIGH PRESSURE STAGES TO OBTAIN MAXIMUM HEATING VALUES

The HQ-Press uses two high-pressure stages with two directional water removal systems, which provides for higher dry solids content at higher capacities and less sensitivity to incoming moisture levels. This two-stage approach leads up to a 5%-unit more dry content of the bark stream compared with other presses on the market. Importantly, a 5%-unit increase in dry solids content of bark increases the net green energy value of the flow by up to 15%.

Hannu Silventoinen, Director, Wood Processing Go-to-Market Management at ANDRITZ, explains, "If we compare traditional systems on the market, we get a lot more water out due to the two stages of pressing, which means more dry bark with higher heat value going in to the power boiler. Furthermore, in traditional systems the water is only taken out in one direction. The HQ-Press takes water out from both inside and outside the drum and removes it away from the bark completely."

Due to this high efficiency of the two-stage process, the HQ-Press has achieved a world record in the dewatering of bark. From incoming 28% dry solids content (DSC) results reach over 40% DSC, meaning that in one press unit we gain moisture removal capability of greater than 10%-unit.

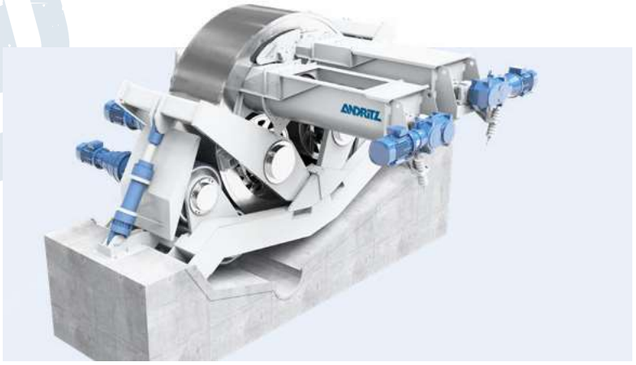
"This result makes a huge impact on the efficiency of burning the bark in the boiler. We estimate that the additional energy produced for steam generation on high capacity debarking line adds up to 832,000 EUR a year, and represents an excellent return on investment," continues Silventoinen.

The press operates autonomously with the bark being fed by an infeed screw conveyor to the first pressing stage in the drum and then immediately onto the second pressing stage. The pressed bark is extracted with a screw conveyor for use in the boiler.

THE BENEFITS – AND MORE EVOLUTION

The first four ANDRITZ HQ-Presses were installed at Metsä Fibre's Äänekoski mill in Finland in 2017, and since then 20 systems have been put into operation around the world including recent installations at Nordic Paper Bäckhammar in Sweden and Arauco's eucalyptus mill at Mapa in Chile.

"Due to the eight years of experience with our installation of the first systems at Äänekoski, we have been able to gain much more knowledge about the lifecycle of the HQ-Press," says Silventoinen. "We have noted that the main drum is still in good condition in the first installation, and we estimate that it will go beyond 10 years before it needs replacing. We have evolved the system further when it comes to other wear parts, and have also improved the maintenance procedure since the first installations."



To go along with the HQ-Press, ANDRITZ has also devised a dedicated steam injection system for increasing the temperature of the bark before pressing it. Silventoinen says, "By increasing the temperature of the bark bark, for example, to 45-50°C, the viscosity of the water in the bark will be lower and we can obtain a better pressing result. Our steam injection solution can also be used to ensure that the bark always reaches a minimum of 15°C before pressing."

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