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THE ONLY WAY IS UP

Stora Enso Imatra in eastern Finland, is one of the world's largest producers of liquid packaging board. Now, thanks to the latest ANDRITZ flash drying technology, the mill is also able to fully utilize its BCTMP plant, which can now produce dry pulp for its internal use, as well as for the market.

In late 2017, and after a lot of deliberation and analysis, it was decided that Stora Enso's Imatra Mill could better utilize its BCTMP plant. What was needed was the flexibility to be able to

feed the board and paper machines with whatever capacity they needed, and then any extra could be diverted to a drying line. This would then get the needed result of the extra baled pulp, which could be used internally, or sold on the market. But there were challenges; the new drying line would have to be squeezed into a tight space between the BCTMP plant and the board machines. This meant a lot of creative engineering design, as really, the only way was up.

"Before we installed the Flash Dryer from ANDRITZ we had a lot of capacity in the BCTMP plant that we were not using," explains Kalle Mäkelä, Production Manager, BM4 and BCTMP, Stora Enso Imatra Mills. "We were feeding wet pulp straight to the board and paper machines, but because of the extra capacity we knew we could be doing more and, of course, that meant making more pulp."

"We needed to be extremely creative when it came to finding space for a drying line."





Close cooperation is vital in order to secure a successful execution and operation of the installation: Magnus Holmqvist, Area Sales Manager, ANDRITZ and Kalle Mäkelä, Production Manager BM4 and CTMP, Stora Enso.



The ANDRITZ Twin Wire Press has been proven in many applications for all pulp types and is the best suited thickening equipment prior to a Flash Dryer.

A TRIO OF TOP DEWATERING AND DRYING TECHNOLOGY

ANDRITZ has had vast experience designing Flash Dryers for different types of fibers with each installation optimized according to its application. The focus in terms of operating efficiency centers on low and optimum energy consumption, heat recovery, and low environmental impact, as well as providing parts for complete systems to ensure short start-up and ramp-up times.

As the leading supplier of flash drying systems with numerous installed bases around the world, ANDRITZ was selected by Stora Enso to deliver the latest in drying technology for the project. The scope of supply included a Twin Wire Press, HC-Fluffer, and Flash Dryer – all well-proven ANDRITZ technologies.

In the case of the Flash Dryer, ANDRITZ technology gives maximum energy efficiency and minimum environmental impact. "One reason for this is the steam

heat exchangers used, which give a possibility to combine steam and gas heating," says Ola Larsson, Director of Technology and R&D, Pulp Drying, ANDRITZ. "And in order to meet the high environmental requirements, including dust emissions, a scrubber system handles the exhaust air before release to the atmosphere. The design is also ready for future requirements such as low NOx emission."

The Twin Wire Press and the HC-Fluffer combined with the Flash Dryer make the



Stora Enso Imatra and ANDRITZ together developed how to locate the Flash Drying plant in an efficient space in the mill. The new Flash Drying Line was fitted into the overall layout.

perfect combination when it comes to consistent and high-quality pulp drying. The Twin Wire Press has been proven in many applications for all types of pulp and is particularly pulps that are difficult to dewater and to reach high discharge dryness – a prerequisite for obtaining lower thermal energy consumption in the flash dryer.

The HC-Fluffer breaks up fiber particles with very low energy input, and thus has no negative impact on fiber properties.

The fluffed pulp, with its large accessible fiber surface, is a crucial requirement for high and even dryness out of the subsequent flash drying stage.

"STORA ENSO KNEW WHAT THEY WANTED FROM BEGINNING TO END"

Stora Enso made the decision to go ahead with the new drying line at the mill in November 2017. Heikki Kangas, Project Manager, Technology & Investments, Stora Enso, says, "We selected a team of engineers and then

started the works; we were determined to be involved as much as possible and that our ideas be taken into account.

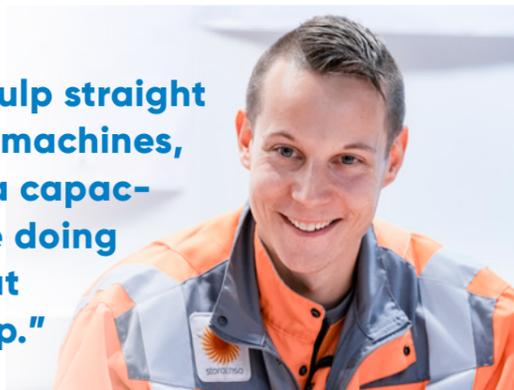
"This project was a challenge due to the tight space we had, and really the only way was up in the design of the drying line in terms of making it fit the space. It was also a project that would mostly take place in the middle of the Finnish winters."

Stora Enso employed 3D modelling technology for the project, involving suppliers,



KALLE MÄKELÄ
Production Manager,
BM4 and CTMP,
Stora Enso

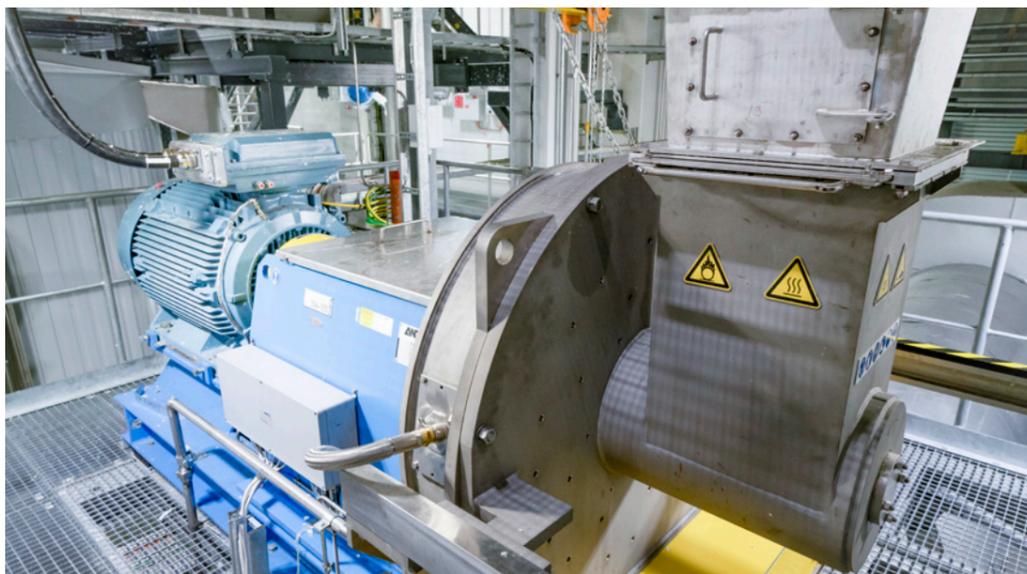
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The HC-Fluffer breaks up fiber particles. The fluffed pulp is well-prepared for the further drying process.



Equipment is easily accessible for service and maintenance, despite the tight space available.

operators, and consultants to make sure that all future needs were also taken into account. "We had a lot of meetings, and we asked our operators to come up with all the ideas and needs they might have for the new line," adds Mäkelä. "We asked them to compile a list of requirements in a spreadsheet detailing where any losses or disruption may take place on the new line. In the end, there was a list of over 200 requirements that we then sent on to the suppliers to the project.

"The 3D design technology came in very useful during our meetings and discussions, ensuring that we didn't miss any vital equipment of pipework, due to the tight space."

Franz-Peter Kittel, Senior Product Manager, ANDRITZ says, "Of course, it is always better to find out early what is needed on these projects and, in this particular project, Stora Enso had a lot of good ideas. The operators at the

mill really knew what they wanted, from beginning to end."

FLEXIBILITY IS THE KEY

Commissioning and start-up of the new drying line took place in early January 2019 and went mostly according to plan, with the start-up of the Twin Wire Press and Flash Dryer, particularly going well according to Mäkelä, who said, "What we were most impressed with was the start-up curve; we quickly ramped up production to

maximum level, and the quality of the pulp we are producing is superb.

"The most important feature for us is the one of flexibility, as we were very dependent on what happened on the board

and paper machines. We now have a BCTMP plant that we can run continuously at high capacity, which is a lot more economical than increasing or decreasing capacity, depending on the demand of the board machines."

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Pulp Drying, Project
Manager, ANDRITZ

"The equipment we have supplied to Stora Enso comes with the very latest in safety technology and is the safest drying line around."



THE VERY LATEST IN HEALTH AND SAFETY TECHNOLOGY

A key area of the project was the Health & Safety factor, of not only the whole project, but of the drying line itself. ANDRITZ has paid specific attention to added safety features on its latest drying lines, including the wire changing procedure that has been changed from a manual to a semi-automatic system.

Thomas Hallberg, Pulp Drying, Project Manager, ANDRITZ, says, "The equipment we have supplied to Stora Enso comes with the very latest in safety technology and is the safest drying line around."

This fits well with the serious culture Health & Safety rules when working with Stora Enso, and the attention to detail when carrying out this project was very impressive.

"We have the same culture at ANDRITZ when it comes to Health & Safety, which extends beyond our projects and into our technology and equipment."

ANDRITZ statistics from the project, which ran from August 2018 to January 2019 in an outdoor, winter environment involving challenges from heavy lifting to snowy and slippery conditions, amounted to zero accidents, injuries, and medical or first aid treatments.

Kangas adds, "The safety statistics from across this project were very impressive; in fact, the safety record during the project was even better than for the mill itself."