

MORE FROM LESS

LIMEWHITE-H WHITE LIQUOR DISC FILTER

The pulp making process hasn't inherently changed over the years; however, ANDRITZ has had a lot of success with reinventing processes and technology in and around mills to increase capacity, improve quality, and cut operating costs. The LimeWhite-H White Liquor Disc Filter is another game-changing development.

"Pulp mills are getting bigger and bigger," says Henrik Grönqvist, Sales Director & Manager, ANDRITZ. "At the same time as being a major supplier of large technologies for these mills, ANDRITZ has also been innovating in and around the mills to improve processes and introduce some radical new technologies."

One of the latest developments from ANDRITZ is its new LimeWhite-H, which is a completely remodeled version of the existing LimeWhite filter. The new filter has major benefits including lower investment cost, increased capacity, and a smaller footprint.

The LimeWhite-H includes some important new technical advances including center shaft axial movement, a hollow shaft, a fixed scraper, and a higher vat level.

CENTER SHAFT AXIAL MOVEMENT

One of the major innovations of the new LimeWhite-H is the introduction of a center shaft with axial movement that allows continuous precoat renewal with no moving scraper, thus eliminating the need for low pressure washing.

In the new design, the scraper remains in a static position (as opposed to the previous version that moved), and the center shaft now constantly moves back and forth in an axial direction. The precoat blow-off function has been replaced with water jets that now remove the precoat. During the precoat removal the shaft rotates in a reverse direction ensuring that lime mud falls into the chute instead of the vat. In addition, the new LimeWhite-H filter slurry water is sprayed directly onto the scraper to ensure efficient dilution of lime mud and clean scrapers. This also means that there is better visibility through the sight glass and cleaner filters. The new design also means there is no need to adjust the scraper after filter cloth maintenance.

HOLLOW SHAFT

The LimeWhite-H contains a hollow shaft. This makes a big difference, as the previous filter contained inner piping. This means less flow resistance and therefore greater capacity. Several improvements from a maintenance point of view have also been implemented for the new filter, including the addition of a shaft stub bolted on the filtrate end for easier replacement.

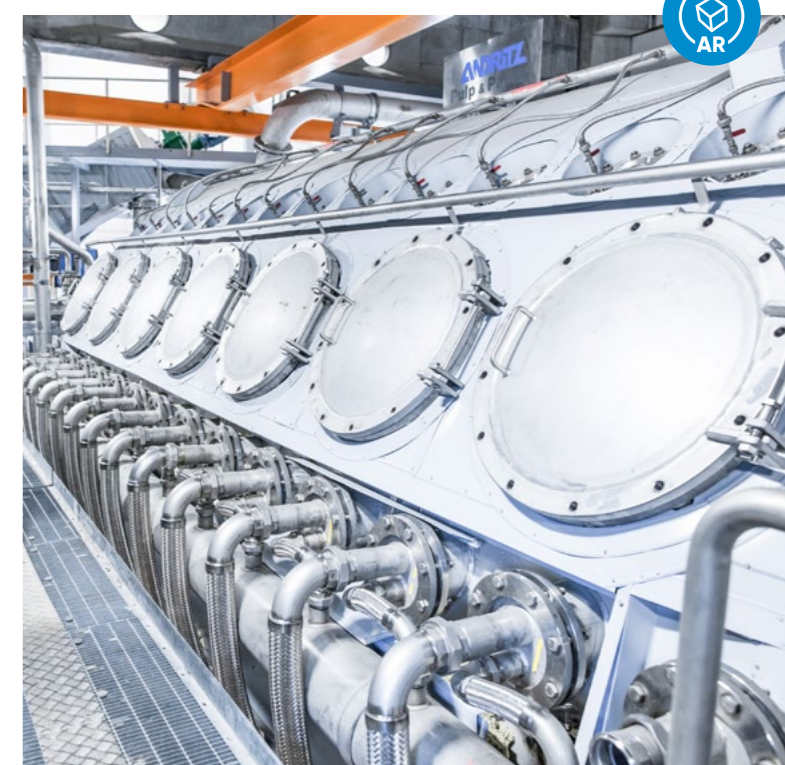
HIGHER VAT LEVEL

Due to the higher vat level, the filtration area is larger in the new design. The vat level can be raised up to half of the center shaft. Over 30% increased capacity has been measured with this new filter design and without any build-up of lime mud on the shaft.

NEW LIME MILK FEEDING POINT

A new lime milk feeding point has been created through the bottom of the filter

through the air agitators. Previously, the feed point was from the side. The new feeding technology means a more efficient mixing of the lime milk, better process operation, no scaling on the central shaft, and no build-up or plugging of the mammoth pumps. In addition, the new feeding system achieves even lime density in the vat, allowing optimal precoat and ensuring a stable and efficient operation.



The new disc filter has much more capacity at the same time as lower operating costs, and a smaller footprint.





The first installation of a LimeWhite-H filter at Metsä Fibre's Äänekoski bioproduct mill in Finland.

THE FIRST INSTALLATION AT ÄÄNEKOSKI

The first installation of a LimeWhite-H filter took place at Metsä Fibre's Äänekoski bioproduct mill in Finland, ready for its start-up in 2017.

"We are utilizing best available technologies in our production to ensure the highest levels of energy, material, and environmental efficiency. This also supports the mill's cost and production efficiency," says Ilkka Poikolainen, Vice President, Äänekoski bioproduct mill.

Ismo Tapalinen, Metsä Fibre's Development Manager, says, "The main advantage of the new LimeWhite-H installed at Äänekoski is that the scraper no longer moves, which has eliminated the problem of the disc coat breaking. This has resulted in much more uptime due to reduced maintenance.

"Also, we are delighted with the capacity increase, which has gone beyond what we expected. The liquor level in the filter vat is now 20 cm higher compared to the previous filter, which has made our

lives easier – we can keep the breaks to a minimum, easily maintain the unit, and then run at full speed as the white liquor tank quickly fills."

Teemu Häkkinen, Project Manager, ANDRITZ Pulp & Paper says, "The LimeWhite-H filter is a completely new design. Together with our customers we have looked at the possibilities to improve the filter, particularly when it comes to efficient operation as well as increased capacity. We have also worked on having a smaller

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footprint of the filter that gives flexibility in regard to mill layout in order to meet our customers' expectations and demands.

"In the case of Äänekoski, it was not simply supplying larger hardware for increased capacity; it was much more about the design of the technology. With the LimeWhite-H filter we have definitely achieved that aim."

Grönqvist concludes, "When compared to the previous model, the new disc filter has much more capacity at the same time as lower operating costs, and has a smaller footprint. Normally to increase capacity a larger footprint is required, but in the case of the LimeWhite-H White Liquor Disc Filter, we have proved that more can be achieved with less. And that means more capacity and more

efficiency, all with a smaller footprint, less steel in construction and, of course, less capital outlay."

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FOR FURTHER INFORMATION SEE PAGE 3

GETTING TECHNICAL

LIMEWHITE-H:

- Capacity range single unit: 2,600 m³/d – 32,300 m³/d WL
- Increased surface loading up to 30%
- High efficiency cloth wash technology
- Minimized footprint
- Utilities consumptions unchanged despite increased WL production m³/d
- Designed for 24 months shutdown periods

