

TECHNOLOGY OFFER: VALMET ULTRAFILTRATION FOR TISSUE MILL

OVERVIEW

Category: Technology , Process , Service , Method , R&D knowledge , Other

Benefit summary: Ultrapure water is produced with the new designed Valmet's Cross Rotational Ultrafilter. Permeate water is used to replace fresh water and decrease the water and energy consumption at the tissue paper production. Also, process cleanliness is maintained or improved.

Development status: First prototype has been designed and it is in manufacturing and testing phase in the workshop and it will be ready for mill installation during the 2018.

NOVELTY

» Technology benefit description:

Valmet Ultrafiltration Tissue process produces high quality ultrapure water (Permeate) for the paper machine's wire section high-pressure showers to decrease the fresh water consumption. Permeate can also be used for paper machine's other showers on wire and press sections as well as for the dilution of chemical additives.

The Permeate produced with Valmet Ultrafiltration technology is:

- Free from solid substances
- Free from colloidal material
- Free from turbidity
- Free from bacteria
- Free from secondary and micro sticky
- 50-70 % less anionic trash

When the Permeate is used for replacing the warm fresh water there are also savings in the energy used for heating the water and the PM processes. Removing trash material from process water also help maintaining good paper making performance and efficiency.

The feed water is normally paper machine white water, e.g. clear filtrate from fiber recovery disc filter.

The benefit of Valmet CR (cross rotational) ultrafilter is the low operating pressure difference and thus no clogging of the membrane. This results in high and stable capacity as well as long membrane life time.

» Technology uniqueness and comparison vs state-of-the-art: Valmet Ultrafiltration Tissue is the first new designed cross rotational ultrafiltration system for Tissue mills white water recycling and purification. State of the art nowadays is the warm fresh water for the critical consumption points.

DEVELOPMENT

- » Technology Readiness Level: TRL 1 2 3 4 5 6 R; 7 8 9
- » Development status: First proto type unit has been designed and is in manufacturing and testing phase in the work shop and it will be ready for mill installation and during the 2018.

TECHNOLOGY PROVIDER

- » Technology provided by:
Valmet Technologies Inc.

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TECHNICAL DETAILS

» Description:

Valmet Ultrafiltration Tissue process is a factory built and IO-tested fully automated modular system. The heart of the process is the new CR1010/30 ultrafilter. The membrane area is 42 m² with 30 filter cassettes and its dimensions are 2.3 m x 2.1 m x 1.4 m (height x width x length). The modular system can easily be extended by adding filter units to increase the membrane area.

With the typical tissue machine (100-300 t/d) the Ultrafiltration process including one or two CR ultrafilters can reach the fresh water reduction of 1-2 m³/t of produced paper.

The process is designed to be service friendly and with exchange filter cassettes the membrane change is fast, easy and economical.

Valmet Ultrafiltration process is also feasible to other application within Pulp & Paper industry and outside of it.



EXPLOITATION/LICENSING

Valmet Ultrafiltration Tissue process will be part of Valmet Water Management portfolio and thus available through on Sales activities.

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