

THREE REASONS TO CHOOSE

# LAMELLA EVAPORATION

ANDRITZ's lamella evaporation technology is preferred by pulp producers across the globe due to its resistance to plugging, cleanability, and the ability to maximize condensate reuse. These features combined give a remarkable boost to mill uptime when compared to other technologies in the market.

The secret lies in the lamella-type heating surfaces. Lamella evaporators typically feature inclined plates that provide a large surface area for heat exchange. The mechanical structure is designed to minimize scaling on heating surfaces.

If scaling still occurs, lamella heating surfaces cope well even in the most severe scaling conditions and often tolerate even non-soluble scaling (Ca, Si, etc.) without the need for mechanical or acid cleaning.

## CLEANABILITY

Lamella units are also easy to wash. Vilma Kultalahti, Sales Manager, Evaporation Plants at ANDRITZ explains, "Shutdowns for mechanical cleaning can be avoided and scaling can be dealt with while the evaporation plant is still running. This also includes full evaporation unit boil-outs."

Bruno Tocchio, Senior Process Engineer, Evaporation Plants at ANDRITZ adds, "With lamella evaporators a small amount of low-solids liquids is introduced – ideally weak black liquor – and it effectively washes away water-soluble fouling

without interrupting operations. This means mills can maintain continuous operation while ensuring stable black liquor properties."

Continuous running is a major advantage compared to other evaporation solutions available.

## MAXIMIZING CONDENSATE REUSE WITH LAMELLA TECHNOLOGY

Reducing washing frequency improves black liquor dry solids stability, which directly impacts the quality and reusability of secondary condensates. This is a key advantage in modern pulp mills, where water conservation and effluent reduction are top priorities.

High purity of the recovered condensate is a major advantage. Tocchio explains, "The evaporated water returned to the process as 'secondary condensate' is of such high quality that it can be fully reused, eliminating effluent discharge and reducing overall freshwater consumption. This translates into significant operational savings and improved environmental performance."

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**Vilma Kultalahti**

Sales Manager, Evaporation Plants at ANDRITZ



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Senior Process Engineer, Evaporation Plants at ANDRITZ

One of the enablers of the full condensate reuse is the low vapor velocity design. This minimizes liquor carryover, reduces the COD (Chemical Oxygen Demand) load in the produced condensate, and improves the system's resilience to black liquor foaming. Even under non-ideal conditions, the process prevents liquor carryover into the condensate streams, ensuring consistently clean water for reuse.

With lamella evaporation, pulp mills not only achieve higher operational efficiency, they also meet stringent environmental regulations and achieve lower production costs.

## LAMELLA TECHNOLOGY HAS BEEN PROVEN OVER DECADES

ANDRITZ started manufacturing lamella evaporation plants in Finland in the 1980s. Due to increased

demand and modernized fabrication methods, production was increased and transferred to a new lamella workshop in Hungary in 2009. Recently manufacturing capacity was increased further with the construction of a state-of-the-art facility in Foshan, China, which began production in 2022.

Over the decades, and with hundreds of references worldwide, ANDRITZ has proven the success of its lamella technology and is now market leader in the supply of evaporation systems to pulp mills.

"Mills frequently consult us to provide the best solutions and optimal outcomes. Customers return even after decades for new plants, upgrades, and rebuilds. They trust us to make their processes successful and profitable," concludes Kultalahti.

## CONTACT

Bruno Tocchio  
bruno.tocchio@andritz.com

## MAJOR TECHNICAL BENEFITS OF LAMELLA TECHNOLOGY

### HIGH AVAILABILITY:

- Lamella-type heating surfaces are ideal for falling film evaporators and concentrators.
- ANDRITZ's lamella evaporation minimizes scaling and washing needs.
- The most severe scaling can be removed by boil-out during operation without a need for shutdown for mechanical cleaning.

### HIGH AND STABLE PRODUCT LIQUOR DRY SOLIDS:

- High and stable product liquor dry solids enhances recovery boiler operation and ensures maximized electricity generation.

### CLEAN CONDENSATES AND REUSABILITY:

- Unique heating element design ensures the cleanest condensates 100% reusable in the pulping process, e.g., in fiberline and white liquor plants.
- ANDRITZ's lamella design with low vapor velocities and efficient segregation combined with duct strippers support highest secondary condensate purity.