



PULP & PAPER

AIR AND STEAM DRYING SOLUTIONS FOR TISSUE

PrimeLine TECHNOLOGIES FROM
ANDRITZ NOVIMPIANTI

ANDRITZ

ENGINEERED SUCCESS

PrimeDry technologies for better drying performance and lower energy usage

Tissue production is an energy-intensive process. ANDRITZ Novimpianti offers state-of-the-art technologies to improve Yankee drying efficiency at a lower overall energy cost. These technologies include steam-condensate systems and systems for heat recovery.

On a tissue machine, the Yankee is a key component due to its consumption of energy and its impact on the quality of the final product. Therefore, it is essential to operate the Yankee in the most efficient and economic means possible. The critical parameters are air impingement speed, wet- and dry-hood temperatures, exhaust humidity, and steam pressure in cylinder.

A TRADITION OF HIGH QUALITY COMBINED WITH MODERN INNOVATION

ANDRITZ Novimpianti, a global innovator in drying technologies, has modeled the critical parameters of Yankee drying and designed technical solutions for Yankee and paper machine hoods, handling steam-condensate, and recovering heat that would otherwise be lost to the atmosphere.



The result is a high-performing and heavy construction system with achievement of the highest drying capacity and lowest energy consumption. Each system is engineered to meet the requirements of each application, including special layout restrictions and adaptations for alternative fuels (Syngas, biomass, and indirect diathermic oil for example).

PrimeDry Hood OIL- OR GAS-HEATED YANKEE HOODS

A high-performance hood is today a must on all Yankees in order to achieve maximum production at the lowest cost. It is estimated that the sheet contact with the Yankee itself accounts for about 30-50% of total drying, while the hot air impinged by the hood provides the remaining 50-70%.

Depending upon the fuel source available, ANDRITZ Novimpianti supplies oil- or gas-heated hoods that typically operate in a range of 530° C (*PrimeDry Hood HT*) to 650° C (*PrimeDry Hood TT*).

PrimeDry Hood ST STEAM-HEATED YANKEE HOODS AND COMBO

When steam is available and cheaper, and preferred over oil or gas, ANDRITZ Novimpianti supplies the *PrimeDry Hood ST*, which is engineered with a steam-heated air system.

The *PrimeDry Hood ST* operates in a temperature range around 200° C of impingement air temperature, which can provide an additional 15-25% of drying capacity compared to the Yankee cylinder alone.

The Yankee hoods are manufactured at the ANDRITZ Novimpianti workshop in Lucca, Italy.

State-of-the-art solutions for energy savings for tissue production

PrimeDry Hood CHP

COGENERATION GAS-HEATED YANKEE HOODS

The installation of systems to cogenerate electricity and heat is becoming more prevalent in the tissue industry, due to the availability of gas turbines of a suitable size and efficiency. The exhaust gas from these turbines has sufficient enthalpy that it can be utilized to feed the *PrimeDry Hood CHP* for a Yankee dryer. Operating in a temperature range of 400-510° C, the *PrimeDry Hood CHP* can provide up to 60% of the drying capacity required.

PrimeDry SC SYSTEM

STEAM-CONDENSATE SYSTEM

To achieve maximum drying capacity and efficiency on a tissue or MG machine, the high-pressure steam introduced into the Yankee cylinder must be properly controlled. In addition, the condensate formed inside the Yankee must be removed and prepared for reuse in the mill. ANDRITZ Novimpianti supplies the *PrimeDry SC* system which regulates steam supply, properly distributes the steam inside the Yankee, removes the condensate, and controls reuse of the condensate and blow through steam. The system works in an integrated mode with the Yankee hood as well as a heat recovery system to result in an optimum solution for drying performance and energy usage.

PrimeDry YES

"YANKEE ECO STEAM" SYSTEM

Steam for tissue machines is typically produced by the mill's boiler system. There are some technical issues with this arrangement: older, less energy-efficient steam production equipment, long steam piping layout, and excessive losses of steam pressure and energy. ANDRITZ Novimpianti's solution to solve this problem is the *PrimeDry YES* steam generator that utilizes exhaust air from the Yankee hood. Depending from the application, the *PrimeDry YES* can produce in the range of 25-40% of the steam required for the Yankee, which can save up to 15% in energy costs.

In special applications it could fully replace the conventional steam generator (produce 100% steam required).

ANDRITZ NOVIMPIANTI

ANDRITZ Novimpianti has more than 30 years of experience designing, installing, and servicing drying technology for all kinds of tissue, MG, and specialty paper installations around the world.

The company provides the tissue industry with innovative, heavy construction, competitive, and eco-friendly Yankee hoods, steam-condensate systems, heat recovery units, dust control, mist elimination, and ventilation systems – for new machines or modernizations of existing machines.

It is part of the technology Group ANDRITZ, a leading global supplier of plants, equipment, and services for the pulp and paper industry. Combining ANDRITZ Novimpianti's expertise in air and energy systems with ANDRITZ's expertise as a manufacturer of tissue machines and related equipment, gives customers a superb range of engineered solutions for productivity, quality, economy, and sustainability.

ANDRITZ Novimpianti has a strong, customer-centered approach to engineering, manufacturing, installation, start-up, and service to enable its customers to maximize their return on investment as quickly as possible.

PrimeDry Heat Recovery HEAT RECOVERY SYSTEMS

Recovering and reusing the heat that is generated during the tissue drying process, which is often lost to the atmosphere, results in significant energy savings.

ANDRITZ Novimpianti offers a range of heat recovery solutions: air-to-air indirect, air-to-water direct scrubbing, air-to-water indirect, and even a sequential arrangement (tower) of two or more *PrimeDry Heat Recovery* units.



DISCOVER OUR FULL-RANGE PORTFOLIO FROM FIBER PROCESSING TO PAPERMAKING

An outstanding paper product requires outstanding production – matched with the particular needs of the raw material and final product. Discover the full-range portfolio from ANDRITZ: Excellent stock preparation that allows best fiber development according to furnish and with economical use of resources. *PrimeLine* paper machines that are a synonym for producing top-quality tissue, paper, and board grades. Complete lines or single units, upgrades, and modernizations. Contact us and benefit from your individual package in papermaking technology.

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