

TissueMAG

This issue is distributed to Tissue Paper Mills and Tissue Converters in **Europe, Middle East, Africa + bonus countries**



■ NCR Biochemical headquarter
in Bologna province, Italy.

“ Pulp & Paper - **The specialists**
in papermaking chemicals ”



INNOVATION COULD HELP TO SAVE MONEY AND IMPROVE TISSUE PRODUCTION QUALITY

By: N.C.R. Biochemical SpA



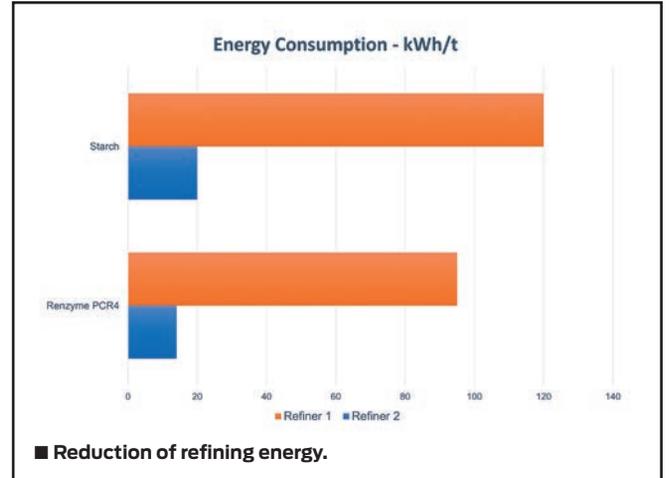
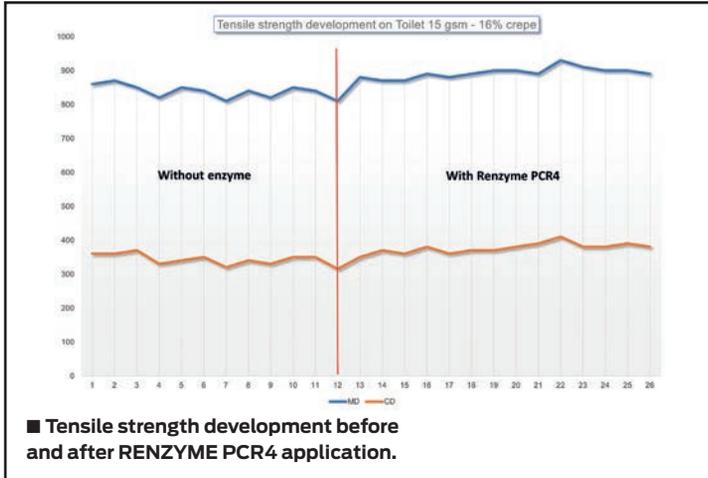
NCR Biochemical has recently developed a new specific line of additives, mainly based on modified Enzymes, able to bring in the tissue pulp and water circuit a much friendly environment to get technical results, enhancing the specific mechanical characteristics intrinsically already present inside the pulp. This new type of additives, named RENZYME, in particular the RENZYME PCR 4, could allow the tissue paper sheet to be produced having:

- Better absorbency.
- Better mechanical strength.
- Reduced production energy.
- Lower impact on costs, then allow higher profits for the tissue producer.

How to get these advantages?

The obtention of specific technical advantages is in the aim of all the process additives that **NCR Biochemical** group and our R&D department study and implement on our customer's facilities. The new line of RENZYME additives, with innovative Enzymatic character, has the ability to refine the cellulose fibers in a very selective way, opening the active sites allowing the creation of a networking of connections between them; the implementation of number and connecting energy between the inter-fiber bonds is the real innovation we can apport. The below details could better explain how the innovative production process impact the application in the tissue production and is able to carry out the required performances.

“FIBRILLATION EFFECT” - RENZYME PCR 4 opens up hornified regions in the dried pulp fibers, allowing better fibrillation, that



lead to strength benefit and consequently stronger paper.

“DRAINAGE EFFECT” - RENZYME PCR 4 disintegrates colloidal material, then the water can fall freely, increasing drainage and sheet porosity.

“FIBRE COLLAPS” - By penetrating fibres walls, RENZYME PCR 4 encourages internal fibrillation, bringing to fiber collapse that increases surface area of the fibres, with better sheet formation & mechanical strength.

Tissue applications

The below information came from a specific application of RENZYME PCR 4 made in a customer facility and are reported as a *case study*. The customer, located in South-East Europe, produce toilet paper, towel and napkins, with 100% virgin fiber. With a production of approx. 28.000 ton/year, the customer uses Starch to improve the strengths of the paper. However, this caused an increase in picking and dusting. Furthermore, it failed to reduce the degree of refining, such as to provide significantly economic savings. The targets of the tissue mill were to eliminate Picking and Dusting, reduce specific refiner energy and improve paper strength without losing hand-feel softness. Following careful evaluation of the characteristics of the machine and the wide variety of grades being produced, an alternative solution was proposed which involved the use of a modified enzyme, specifically designed to provide a chemical refining: RENZYME PCR4. After replacing the starch with RENZYME PCR 4, the customer met the requested goals:



elimination of Picking and Dusting, reduction of specific refiner energy to get the same strength values and improvement of paper strength by average 10-15%. In addition, the customer faced an increase in the drainage, with a consequent increase in the average speed of the machine by approximately 5 - 6%, also improving paper softness. Last but not least, the lower energy consumption of the refiners has allowed an average saving of around 6,000 €/month, also being able to benefit from the complete replacement of the starch. ●

▲ Renzyme PCR 4 involving Fiber refiner.

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Global coverage for Tissue sector



Italian expertise, know-how and technology: thanks to strategic collaborations worldwide from North America to South-East Asia, NCR Biochemical is able to offer the best solutions in problem solving, supporting all producers' needs in papermaking process and creating added value for customers

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