We create chemistry that makes complexity love new perspectives.
The revolutionary 4-in-1 solution in papermaking

1. Striking simplicity
2. High stability
3. Increased productivity
4. Improved cost-efficiency
In the paper industry, diverse challenges must be faced every day. Fibers and fillers require proper balancing. A variety of chemicals adds extra complexity, and sophisticated dosage equipment needs to be managed. You strive to keep breaks to a minimum. Constant monitoring of your fixed costs and energy as an important cost driver is a matter of course. Finally, you strive to meet your customers’ rigorous demands in terms of strength and visual properties, as well as environmental and health aspects. XELOREX™, the 4-in-1 solution for papermaking, is your way out of this complexity.

Take the easy way out and go for simplicity.

The multifunctionality of XELOREX™ simplifies your operations in many ways:
- REDUCED WET-END COMPLEXITY
- EASY HANDLING
- ENHANCED DRY STRENGTH
- SUPERIOR EHS PROFILE

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With XELOREX™, you have access to the only available wet-end chemistry on the market that brings out the best of your paper machine to make your life easier.

Retention Drainage Fixation Strength

4-in-1

XELOREX™
Take the easy way out and go for simplicity.

Your demands in terms of productivity and quality are constantly increasing. Meanwhile, the share of fillers, and low-quality and recycled fibers in paper is rising, accompanied by the heavier use of various process chemicals. To save you additional complexity, XELOREX™, with its revolutionary ability to provide a 4-in-1 solution, enables 1 retention, 2 drainage, 3 fixation and 4 strength (RDFS) all at once and eliminates other wet-end chemicals – by as much as 100%. The strength effect applies to both dry strength and initial wet web strength (IWWS). The RDFS performance itself is fully maintained, or even improved, with XELOREX™.

The XELOREX™ portfolio consists of various aqueous solutions that can be metered directly from the storage tank. These liquids are easy to dilute and can be dosed with a simple metering pump. For optimal performance and greater flexibility, the addition of this chemistry can be split between thick stock in the machine/mixing chest and thin stock in the stock approach flow system.

In packaging, this enables you to run your size press in a single-sided manner – resulting in positive effects on drying without compromising on dry strength performance.

Government regulations, consumers, and manufacturers of paper and board require products with the smallest possible impact on health and the environment.

XELOREX™ is a prime example of EHS compliance. It contains no mineral oil and only lowest amounts of residual monomers. It is FDA and BfR-approved for contact with food and fulfills Nordic Swan award criteria.

This way, you can employ best-in-class wet-end chemistry regarding performance and sustainability.
Higher operational speeds combined with more fillers and the use of more economical raw materials put considerable stress on the initially formed sheet. This needs to be compensated for. Reduced water usage, and the greater use of fillers and recycled fibers lead to more detrimental substances in your water circuits. A finished product with stable converting and printing properties is key for success with your customers.

XELOREX™ is the lever to help you carry your operations to higher levels of stability with its outstanding contribution to IWWS and fixation as another of its 4-in-1 properties.
Clean water circuits
Detrimental substances cause holes, deposits and sheet breaks, which lead to downtimes and productivity losses. In order to obtain clean water circuits, you need to treat them efficiently. XELOREX™ does just that through its multiple modes of action: it neutralizes anionic trash, improves charge control and reduces stickies.

Further, the agglomeration tendencies of white pitch and resin particles are suppressed, and detrimental substances irreversibly fixed.

Fewer breaks
In papermaking, the most critical point for wet web breaks is at the sheet release of the press section. At this point, IWWS must be high enough to bear the applied strain.

XELOREX™ boosts IWWS to an unrivaled level and significantly reduces the number of breaks. Fewer of these unforeseen interruptions mean higher stability and productivity for your paper machine.

Better paper and board properties
In packaging, the dry strength capabilities of XELOREX™ enable you to apply the size press in a single-sided manner. You thus achieve optimum converting properties and still obtain the desired strength parameters.

For graphic papers, XELOREX™ positively influences pressroom runnability and print quality. Your paper receives significantly better visual properties through the higher filler content. Dusting and linting are noticeably reduced. The wet tensile strength can be stepped up by as much as 30% to improve printability.

In both packaging and graphic paper, you can benefit from lowering the basis weight, with XELOREX™ preserving the required dry strength.
Discover new directions and boost your productivity.

With XELOREX™, you will break new ground in terms of productivity and achieve:

- HIGHER EFFICIENCY
- INCREASED MACHINE SPEEDS
- SINGLE-SIDED USE OF THE SIZE PRESS

Enhanced productivity is a major objective in the paper industry and covers different dimensions, such as developments in cost structure over time, manufacturing concepts, and business processes. In production, the basic variables for raising productivity are higher speeds and higher availability of the paper machine.

XELOREX™ sets benchmarks in terms of web speed and runnability in order to boost your productivity.
Discover new directions and boost your productivity.

As a manufacturer of packaging or graphic paper, you benefit from the productivity increases created by XELOREX™ in different ways.

**Higher efficiency**

The availability of your machine is significantly enhanced, as XELOREX™ is able to transform your standard process chemicals and strength performance to an integrated chemistry approach. With the increase in IWWS, both the draw and the susceptibility to breaks are considerably reduced. Your press and dryer sections are less obstructed by stickies, water circuits are cleaner, and downtime is therefore reduced.

**Increased machine speeds**

Increased paper machine speeds are a real productivity booster. XELOREX™ reduces the draw through higher IWWS, which allows you to tap the unutilized mechanical potential of your machine and achieve speeds that are up to 10% higher. Overall, this results in additional salable production with a lower total cost of operation.

XELOREX™ enables significant improvements in dry strength properties. In packaging especially, you can use the size press half-sided without compromising on the dry strength of the finished product. Consequently, there is less rewetting of the paper web, which reduces the risk of breaks. In terms of productivity, the single-sided use of the size press provides the additional advantage of higher machine speeds compared to a two-sided size press application.

**Dosage Rate**

XELOREX™ yields clear advantages in drainage performance with a corresponding impact on energy savings and productivity gains.

**Single-sided use of the size press**

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Apply visionary solutions to cut your costs.

Slashing your total cost of operation with XEOREX™ means running your business smartly with:

- A LOWER-COST FIBER MIX
- INCREASED FILLER LOADING
- STEAM SAVINGS
- FIXED COST DILUTION

When it comes to cutting variable costs, you soon run into limitations in terms of runnability and strength — be it the switch towards a cheaper fiber mix, the replacement of fibers with cheaper fillers or steam savings.

The possibility for a higher dilution of your fixed costs by increased output is determined by the speed at which you can safely run the paper web in your machine.

As XEOREX™ targets a whole range of your cost drivers, you can apply this unique chemistry to exploit previously untapped potential in terms of optimizing your total cost of operation.
Apply visionary solutions to cut your costs.

**XELOREX™** helps you to overcome current limitations in variable cost reduction and offers opportunities for saving costs in various ways. Through its multifunctional performance spectrum, it enables a redesign of the raw materials composition, which eventually leads to savings in the costs of materials and energy. At the same time, you do not have to compromise on output quality and quantity in any way.

**Increased filler loading**

In graphic papers, increased filler loading has been of interest for many years as a cheaper way of replacing fiber material and improving printing properties. XELOREX™ causes a better integration of filler particles into the paper web. You can significantly improve linting and dusting – and pressroom runnability of your paper takes a major step forward. Losses in dry strength, which usually come along with increased filler content, can be compensated for to meet your specifications. Again, just as with lower-quality fiber, XELOREX™ helps you prevent any significant impact on formation that may arise from a higher filler content.

**Lower-cost fiber mix**

XELOREX™ supports you in using low-cost fiber in different ways. Through its powerful dry strength performance, it compensates for the replacement of expensive long fiber with lower-cost short fiber. It also makes up for increased usage of recycled fiber, even in the face of deteriorating recycled fiber quality during recent years. The negative impact on drainage that is caused by low-cost eucalyptus pulp is also eliminated by XELOREX™ – while still ensuring perfect formation.

**Steam savings**

XELOREX™ accelerates drainage tremendously and supports press-dewatering to significantly save on steam. As XELOREX™ allows increased filler loading, it indirectly helps you to save steam since less fiber needs to be dried. Similarly, the substitution of internal starch performance through XELOREX™ leads to improved drainage and, subsequently, to energy savings.

Finally, through the one-sided application of the size press in packaging, you reduce rewetting of the web and need less after-drying. Dry strength is wholly taken care of by XELOREX™.

**Fixed cost dilution**

Through its IWWS performance, XELOREX™ strengthens the never-dried paper web and allows you to speed up your paper and board machine by up to 10% depending on your production environment. This speed increase leads to significant fixed cost dilution without compromising on paper and board quality, and of course more salable paper and board.

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21% ash content in paper without filler treatment (1) compared to 30% ash content in paper (2) with high XELOREX™ leads to significant improvement of filler distribution in the z-direction.
Please note:
The data contained in this publication are based on our current knowledge and experience. They do not constitute the agreed contractual quality of the product and, in view of the many factors that may affect the processing and application of our products, do not relieve processors from carrying out their own investigations and tests. The agreed contractual quality of the product at the time of transfer of risk is based solely on the data in the specification data sheet. Any descriptions, drawings, photographs, data, proportions, weights, etc. given in this publication may change without prior notice. It is the responsibility of the recipient of our product to ensure that any proprietary rights and existing laws and legislation are observed (03/2015).