Xerium INSIGHT

True pioneers keep pioneering.
True pioneers keep pioneering.

At Xerium, we pioneer innovations that improve performance and deliver results!

Innovation is in our DNA. For over 200 years, Xerium has patented more than 370 innovations that affect you everyday. Today, we have another 50 currently under development to help you with what matters most — results.

Innovation doesn’t happen without analysis. With a heritage like ours, analytics are a core competency. We put that competency to work every day helping our customers simulate and analyze machine performance data through our Rezolve simulation technology. The result is machine clothing and roll technology which are specifically engineered for your performance goals using your unique operational parameters.

We are so confident in our approach that we guarantee it, in writing, through our ValueResults program. Imagine the impact on profitability and your operation’s future when you work with a company that can show you what to expect and be accountable for it. You will feel like a kid again, ready to soar.

Challenge us to figure it out. We’re pioneers.

Contact Xerium today to learn how innovation can deliver results for you!

XERIUM.COM

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Xerium Participation -
ANEX 2015 Nonwovens Exhibition and Conference in Shanghai, China

ANEX 2015 Nonwovens Exhibition and Conference was held in Shanghai, China, May 13-15. Xerium showcased its latest machine clothing and rolls technology at Booth W11 in Hall 1 at the Shanghai World EXPO Exhibition and Convention Center. In addition to the exhibit, Xerium presented a technical paper titled “Xerium Engineered Fabrics, Belts, and Roll Products for Enhanced Web Production.” The company’s newly developed SMART® Technology operational for nonwoven converting applications was also introduced during the exhibition. With over 600 SMART Technology installations worldwide on paper, packaging, and other industrial machines, Xerium has now successfully applied the real-time dynamic nip monitoring technology on nonwoven fabric machines.

Xerium Participation -
RISI Asian Conference

The sixteenth RISI Asia Annual Conference was held in Shanghai, China, June 1-3, 2015. There are more than 200 customers from Asia Pacifica participated this event. Bill Butterfield, Executive Vice President and CTO of Xerium, presented a paper of “Improving Machine Performance for Success in Today’s Challenging Market.”

Bill presented that Xerium could provide solution to help customers to face challenges in order to remain globally competitive. Xerium helps each particular customer understand the complex optimization process for clothing & rolls which are critical to machine performance and cost objectives. Xerium’s portfolio of proprietary clothing, rolls, SMART Technology, and Rezolve machine simulation system uses sophisticated predictive analysis coupled with real-time monitoring to provide customers with innovative decision-making tools to significantly enhance machine performance while minimizing downtime and cost-per-ton. The Rezolve system will utilize hundreds of variables on a paper machine and develop fact-based technical recommendations on clothing and roll cover technology rather than relying on sales-driven opinions. Ultimate, customized solutions for each machine deliver documented improved machine performance, while supporting sustainability and reductions in energy, fiber and specialty chemicals.

Xerium Participation -
TAPPI in Niigata, Japan

Xerium participated in the TAPPI Conference, in Niigata, Japan, from Oct 7th to 9th. Xerium participated with a booth.
Xerium Marks Successful Startup of New Press Felt Plant in Kunshan with Technical Seminar & Opening Ceremony

Xerium held a Technical Seminar & Celebration of their newly commissioned New Press Felt Plant in Kunshan, China, from Oct 26th to 28th, 2015. The event brought together around 150 participants from paper mills, industrial media, as well as local government officials.

The Technical Seminar was held on Oct 27th at Kunshan Swiss Hotel. During the seminar, Mr. Harold Bevis, President and CEO of Xerium, presented Xerium's next steps in the Asian market. He highlighted that Asia is extremely important to Xerium, as the Asia paper industry will grow to produce nearly half of the world’s paper-based products by the year 2020! Xerium’s new Kunshan plant positions the company to be a Technology Leader in The Asian Market to help customers achieve best-in-world machine performance.

Xerium experts shared their experience of how the best combined paper machine clothing and roll cover technology assists our customers to improve paper machine performance for success in today’s challenging paper market. Xerium works diligently to develop new products and analytic tools to deliver real documented savings to papermakers. Xerium’s ValueResults platform connects our technical innovations, proprietary tools and products with documented & sustainable financial results for our customers. Xerium’s Rezolve computational machine modeling system measures over 400 variables and optimizes clothing and rolls applications before a trial is ever installed! Furthermore, Xerium’s SMART® Roll is the industry recognized best dynamic nip analysis system, and it could be used in all paper grades and it could also be used on suction rolls too.

In addition, Mr. Yang Shu Mu, Production Manager of Asia Symbol Shandong, and Mr. Ding Ming Qi, Executive Vice President of Zhejiang Jingxing Paper made the compliment for their great cooperation with Xerium.

The inauguration of the new Kunshan press felt plant was conducted on the morning of Oct 28th. After the inauguration, all guests were invited to tour the plant. The customers were all impressed with the state-of-the-art manufacturing equipment. Production at the Kunshan plant began in July 2015. Now the production of press felts is going full speed and is expected to have a capacity of 270 tons in the first term, and a total of 450 tons. Xerium has significantly increased its competitive position with this plant and will now be able to more closely partner with customers in China and the rest of the world.

Xerium Participation - Fibre Value Chain 2015

The Annual Conference of APPTA was held in Melbourne, from November 11th to 12th. Xerium Asia was one of the sponsors of the event.

Xerium Participation - China PPI Technical Forum

The 6th China PPI Technical Forum was held in Yanzhou, Shandong, from Nov 15th to16th. There are more than 150 customers participated the forum from all around China. Mr. Park Wang, Sales & Service Engineer from Xerium presented “SMART Technology – the innovative intelligent nip technology.”
Xerium Announces New Business in China - Two Plants, New Headquarters, New Supply Chain, $60 million Investment

YOUNGSVILLE, NC, July 22, 2015

(BUSINESS WIRE) — Xerium Technologies, Inc. (NASDAQ:XRML), a leading global provider of industrial consumable products and services, has announced that it has materially completed the $60 million successful restructuring of its business in China. The business is now in a position to locally serve customers in China, Asia, and also export certain products globally. The make-over of its China and Asian business has taken over 3 years to complete with a number of key aspects required for full implementation. Xerium has implemented an all-Asian business model and will now run its entire Asian business from Shanghai. Highlights of the repositioning of Xerium’s Asia business are as follows:

- Production has begun at Kunshan, China Press Felt Plant – Xerium completed a 2 year, multi-million dollar construction project to build and equip a brand-new press felt plant in Kunshan, China. This greenfield plant is located in the heart of the Yangtze River paper-making region, which is at the center of the largest paper-making region in the world - China. It took over 2 years to design, build, equip, and commission. Until this new plant began production, Xerium served this region mainly as an exporter of products made in Europe. Xerium has significantly increased its competitive position with this plant and will now be able to more closely partner with customers in China and the rest of the world. For the first time ever, customers in China will receive locally provided and optimized state-of-the-art press felt solutions from Xerium. Xerium will conduct business in local currency and local languages. The Kunshan plant will be able to service the largest pulp, paper, paperboard, and tissue machines in the world, as the main machine in the plant is greater than 15 meters wide. This central machine and its foundation weighed almost 1 million pounds at installation, and is one of the largest of its type in the world. For some press felt designs, the company will be able to make 3 pieces simultaneously - a first for the company. The plant has state-of-the-art information systems and supply chain interfaces along with real-time operational communication systems throughout the site. It is conducting business from a new Infor® information technology platform. The company is moving a large portion of its press felt production to this plant in China. The plant has initiated production.

- Renovated Changzhou, China Rolls Plant – Xerium completed a 2 year, multi-million dollar investment program to completely renovate its rolls and mechanical service plant in Changzhou, China. This plant is located in the Yangtze River paper-making region. Until this renovation was completed, Xerium had served this region for many decades by exporting high-end working rolls from Europe. Xerium has now transferred all of its technology to this plant – SMART™ Roll production cell, spreader roll production cell, polyurethane production cell, suction box production cell, upgraded extrusion and drilling equipment. The plant can now produce all of Xerium’s designs. The plant recently received ISO-9000 quality certification.

- Implemented new Asia Headquarters in Shanghai - Moved and reincorporated Xerium Asia headquarters into the Shanghai Free Trade Zone. This special Chinese government approval allows Xerium to import/export at the lowest possible cost, expedite customs processing, provide shorter lead times for materials transfer, enables maximum leverage of working capital for Xerium across Asia, and receive improved tax treatment as a local Chinese business entity. The entity is now in place.

- Implemented new Chinese Capital Structure – Implemented a local capital structure and banking relationship by moving a portion of the Xerium corporate debt structure to China. The company has implemented a multi-million RMB on-going loan in China with ICBC, the largest bank in the world. Xerium will now conduct local business in local currency (RMB), finance and fund its China business locally in RMB. This will also enable Xerium to both secure a natural business hedge and receive local entity tax treatment. The new loan and new ICBC financial relationship are complete and in place.

- Localized all Asian Leadership - Moved its Asia business leadership from the United States and Europe to China. The key top personnel moves were: moved President and CFO positions from the US to Shanghai, moved Sales leadership from Europe and Australia to Shanghai, moved technical leadership from Europe to Shanghai. All of these personnel moves are complete.

- Implemented Chinese IT structure - Moved its IT and data support from Europe to Shanghai. The company has completed its data center in Shanghai and is partnered with SAP as its provider for rolls plant information technology, and is partnered with Infor® for machine clothing plant information technology. Both technology providers have huge businesses in China and are also located in Shanghai.

- Implemented Contemporary Asian Supply Chain - Moved its Asia supply chain and warehousing activities from in-house/locally provided into a global partnership with Panalpina. Panalpina is one of the world’s leading providers of end-to-end supply chain solutions. Xerium is connecting its internal systems with Panalpina to give its customers a seamless electronic supply chain. The supply chain moves are in place.

Mr. Harold Bevis, President and CEO of Xerium, made several comments regarding this business realignment. “Competing and winning in China and throughout Asia is central to Xerium’s corporate repositioning. Xerium’s legacy markets in North American and European newspaper print, printing and writing are all under pressure. These market segments are going through permanent reconfiguration. Several years ago, the Board of Xerium decided to tackle this situation head-on and reposition its assets and commercial profile directly into growth markets globally.

"These China investments have taken a few years and a lot of money to implement. We are very happy that these new investments are coming on line now. The commercial objective is to provide machine optimization solutions with world-class technology and shorter lead times, at a local cost structure. Customers will immediately benefit from improved costs, better lead times, better technology, and better service. This new business start-up is a key part of Xerium’s investment strategy to realign its global business model and global factory locations to line up with growth markets in the world. This business restructuring is an important part of the business strategy being deployed at Xerium – to reposition the company into growth markets. We are excited about our new future in Asia. This restructured business is now underway producing and selling machine clothing, performing on-machine service, and performing in-factory rolls and mechanical service.” added Mr. Bevis.
Xerium Completes Renovation Program at 4 Machine Clothing Plants, Further Optimizing Global Footprint, Cost Structure and Lead Times

YOUNGSVILLE, NC, October 22, 2015
(BUSINESS WIRE) — Xerium Technologies, Inc. (NYSE:XRM), a leading global provider of industrial consumable products and services, has announced that it has completed the renovation program at four ma-

chine clothing plants that took over two years to design, construct, equip and commission. The Company is aggressively pursuing growth in its popular products, growing grades and regions that are outpacing global in-
dustry growth. This global renovation program, involv-
ing facilities in North America, South America, Europe and Asia reconfigures its 10-plant machine clothing 
clothing footprint to serve its customers more effectively with better lead times and global availability of its innovative and rapidly-growing portfolio of patented technology.

Key highlights of these projects:

- **North America** – the expansion of the Kentville, Canada forming fabric plant to manufacture woven dryer fabrics in North America for the first time in over a decade. The expansion transitions Xerium from a position of being competitively disadvantaged in dryer fabrics to improved responsiveness to customer quality and delivery expectations. The existing sales force can now leverage relationships in complementary products to accelerate penetration in this currently underserved market. The commissioning of this newly expanded fa-
cility and the installed assets was completed in Q3 2015.

- **South America** – the renovation and expansion of the Piracicaba, Brazil plant to manufacture spiral dryer fabrics. Xerium previously manufactured spiral dryer fabrics at its smaller and higher cost Argentina plant. Upon closure of this facility, Xerium made the strategic decision to purchase all new production equipment and modernize its product technology. This initiative, the largest of the four, will enable Xerium to offer both higher quality products and shorter lead times, while operating under a significantly more advantageous cost structure and was fully operational in Q3 2015.

- **Europe** – the expansion of the Gloggnitz, Austria plant to produce belts and fabrics for nonwoven fabrics ma-
cines. Xerium has installed special-purpose machines, which will more than double its global capacity for its nonwoven products portfolio. Concurrent with this expansion, Xerium enhanced its product technology to deliver higher levels of performance on the most mod-
ern nonwoven production lines and will provide global support for a variety of product types from this site. This expansion further leverages one of Xerium’s most cost competitive and high quality facilities. The expansion is on schedule to reach its full production rate capability by year-end 2015.

- **Asia** – the expansion of the Asahi, Japan plant to produce Xerium’s most advanced forming fabrics for containerboard machines. Xerium has historically man-
ufactured machine clothing for large containerboard machines in its European plants and shipped them to Asia. This investment enables Xerium to serve the Japan-
ese and the entire Asian markets locally with shorter lead times, significantly lower shipping costs to the cus-
tomer while delivering Xerium’s most modern product portfolio. The expansion and commissioning is underway and remains on schedule to reach its full production rate capability by year-end 2015.

Mr. Harold Bevis, President and CEO of Xerium, commented regarding these business transformation projects: “Xerium is committed to quantifiably increas-
ing profits of its customers. These investments enable Xerium to strengthen our partnerships by being closer to its customers with transformative innovation, on-
site product experts, and in-region short lead times. The pace of technical breakthrough requests from our customers continues to quicken. We must have shorter product life cycles and faster supply chains to compete and win. Our products and services make a difference for owners of sophisticated large machines, and these machines are dispersed globally. We are very optimistic that these machine clothing programs will be another successful step in our transformation to deliver better fi-
nancial and operational results and continue to improve our growing stature of supplier of choice in the most attractive regional markets. We do not expect to achieve sales growth by waiting for, and then riding, a global GDP growth cycle. With uncertain global economic conditions, we are strategically deploying our people, in-
ovation, and know-how into expected growth regions.”

Xerium Named by Triangle Business Journal as one of the Healthiest Employers for 2015

YOUNGSVILLE, NC, December 4, 2015
(BUSINESS WIRE) — Xerium Technologies, Inc. (NYSE:XRM), a leading global provider of industrial consumable products and services, recently was honored by Triangle Business Journal as one of the top 25 Health-
est Employers for 2015.

For the 2nd consecutive year, Xerium is proud to be recognized by the Triangle Business Journal as one of the Healthiest Employers. This award presented by the Tri-
angle Business Journal, recognizes companies and non-
profit entities that commit to making wellness a priority while proactively shaping the health of their employees.

Xerium invests in its corporate-wide wellness programs with a comprehensive program. Key attributes on the program are:

- incentives on medical plan premiums aligned with employee participation in biometric screenings
- weight management program
- stress management program
- fitness program
- gym membership reimbursement
- annual wellness fair
- healthy food and snacks in the workplace
- regular newsletters on a variety of different topics ranging from personal finance to meditation
- free flu shots

“We are committed to the health of our employees. It is a process to install this type of culture. Each year, we will continue to build upon the successes and learnings that preceded it. It is our goal to be one of the healthiest companies. We care about the health and well-being of our employees and their families. Our health & wellness benefits promote wellness, encourage healthy lifestyles, and provide flexibility to our employees and their fami-
lies while mitigating rising medical costs, driven by the Affordable Care Act,” said Mr. Mike Bly, Global Leader of Human Resources for Xerium.

“We are strong advocates of wellness programs in the workplace,” continued Mr. Bly, “Xerium is a great organization filled with exceptional employees and we want to do our part to foster personal wellness. It is an investment into our people. We are proud to receive this Healthiest Employer recognition from the community.”
Xerium Technologies is excited to introduce a true game-changing innovation. SMART® Technology for suction roll applications builds upon the highly successful SMART® roll technology already deployed to hundreds of customers around the world on practically every paper grade and machine type. This unique technology enables paper makers and tissue makers to better understand complex roll nip conditions in real-time on vacuum assisted suction rolls, thereby making critical decisions and adjustments to improve machine efficiency and product quality while reducing production cost. SMART® roll technology is the industry's most comprehensive tool that identifies, predicts, and helps prevent potential operating problems before they occur.

The SMART® suction roll system is available for all single and multi-nip suction roll applications with the ability to profile both nips in a multi-nip application, and make necessary crown or load corrections to maintain a uniform nip profile.

It is ideal for tissue suction roll applications operating directly against the Yankee dryer, and for the first time enables real-time correlation of:
- profile vs Yankee temperature
- nip pressure vs crepe and hand feel
- nip pressure, nip width and MD pressure profile
- profile vs Yankee steam pressure
- nip width vs sheet properties
- the influence of vacuum on pressure roll deflection

**Application**
- for tissue, paper, paperboard, and most all suction roll applications
- for all machine positions, not just the press
- equally effective for wet or dry applications
- single or multi-nip positions

**Benefits**
- improved pressing uniformity
- improved roll and Yankee crown precision
- improved moisture profile
- improved dewatering efficiency
- reduced energy costs
- monitor independently or directly through mill DCS systems
- remote monitoring option
- improved overall efficiency of roll cover and machine clothing
- increased life for roll covers and machine clothing
Blue Diamond

New-generation polyurethane roll technology for superior groove stability, chemical resistance, and operational life.

SUPERIOR PERFORMANCE STABILITY

Blue Diamond

Technology

Developed by Xerium’s Stowe Woodward global research and product engineering team, Blue Diamond represents an entirely new generation of superior performance in polyurethane roll technology. Today’s covers must run in the harshest nip environments including: aggressive venting patterns increase the amount of cover surface in contact with process chemistry, higher nip dewatering increases hydraulic action on the cover surface, longer run times at higher speeds cause greater chemical impact, and cover swelling (without significant wear) actually results in many covers being removed at a larger diameter than when installed, and causes groove closure and other problems.

Xerium focused on three key properties to overcome these limitations: 1) Increasing the Dynamic Modulus at 4 P&J to resist groove closure within the nip, 2) improving hydrocarbon resistance to better tolerate oils, pitch, and other chemicals in the pulp stream, thereby reducing swelling, and 3) reducing material compression set to prevent permanent deformation of land areas for grooved rolls.

The result is the new Blue Diamond with exceptional stability in the nip for consistent, long running dewatering performance and superior resistance to groove closure.

Application

• grooved and/or drilled covers
• high speed and high performance applications
• available in 3 to 14 P&J hardness

Benefits

• Superior groove stability
• Superior resistance to hydrocarbons and other chemical attack which contributes to cover swelling
• Improved dynamic modulus for improved performance on the hardest nips
• Includes FUSION bonding for 15% additional bond strength
Xerium Packaging – one system meshing with the next

Meeting new market requirements by rapidly developing profitable product concepts is a guiding principle followed by all departments at Xerium: R&D, product management, applications, technical service and sales. Interdisciplinary teams working closely with customers develop innovative end-to-end solutions that offer all papermakers attractive paybacks through improved efficiency and lower costs.

Xerium's new “Xerium Packaging” product package speaks to the needs of the packaging papers growth segment. For example, the trend toward printed packaging papers, some of which specify ever lower grammages, demands not only finer paper quality to improve printability, but also comes along with adapting machine layouts and often rebuilding machines that were previously used for newsprint or graphic papers. In order to be able to guarantee measurable product advantages, developers therefore sharpened their focus on detailed application analyses at site when designing the new product lines. The result is a product package consisting of numerous new forming fabric, press felt and roll technology designs.

The challenge in the packaging sector is in the wide range of paper types that must be covered by a single paper machine. Printability, machine speed and a wide range of basis weights are key specifications that can only be satisfied by advanced PMC technologies. New product structures, material and polymer development are important input variables. The performance attributes of the individual product groups are not only tuned to the particular target machine, but also interact in such a way that their individual benefits cumulate along the key drainage sections, which makes the final consolidated value added quite respectable.

Packaging Forming: New product lines designed to maximize drainage performance and optimize sheet forming

In order to meet the papermakers’ stricter specifications, Xerium focused its forming fabric design efforts on the fabric surface and material development. Drainage, sheet formation and running life are still the three most important parameters for efficient paper production. The fabric design aims to balance these parameters in a way that maximizes the performance of the particular application. To achieve this, it is essential that developers have detailed knowledge about each and every paper machine position, even the most specialized. For example, the EDC concept (Engineered Drainage Channels) successfully used in the past on graphic paper machines can now also be applied to packaging machines. Special material developments combined with innovative running side structures guarantee the required stability without restricting drainage.

Packaging Pressing: Cutting edge product technology with a top performance reputation

Rising machine speeds are also causing a change of heart in the packaging machine sector. Uhle box drainage is increasingly being replaced by nip drainage because Uhle box dwell times are too short to achieve optimum drainage. Here the strengths of Xerium’s designs are also applicable to packaging machines, especially the single base concepts.

Xerium’s extensive web technology expertise, which is based on graphic segment applications, provides a host of advantages, especially when it comes to basis weight variations and printability. In fact, basis weight variations are the most challenging design parameter for press felt developers. Water volume at the press nip varies as a function of basis weight. If the press felt and roll covering system volume is too high, drainage performance suffers. Too low volume can lead to paper deformation and web breaks. The developers’ combined expertise in press felts and roll coverings enables them to achieve the best set up for a particular paper machine position. The “Rezolve” product and service program has proven to be a helpful tool and theoretical basis for process optimization and top packaging paper machine performance.

A combination of reduced pore volume before and a higher pore volume at the press nip itself is one of the most important features of the newly developed single base press felt designs. Compared to the tried and true standard laminated design concepts, the new single base designs offer defined drainage channels that provide better drainage performance and improved self-cleaning. Increased cross machine stability complements the innovative spectrum of attributes of the new press felt technologies for high-speed machines in the packaging sector.
Xerium's patented and exclusive dynamic nip analysis SMART® Technology continuously measures the nip pressure profile and width in real time. The performance of the system, which has already been used in over 600 installations across the globe, has been outstanding in press section, size press and calendar applications. The data delivered by the system is not only used to fine-tune the machine, but also for optimizing roll geometry, clothing, cover hardness, etc.

SMART® Technology is now also available for suction rolls. A few months ago in Europe, renowned modern machines equipped with suction press rolls fitted with the unique instrumentation were successfully started up for the first time.

Xerium's SMART® opens a completely new chapter in its history as the company ventures deep into the instrumentation field. Development of the new system was triggered by the lack of data for certain development projects and the resulting realization that the full performance potential of the equipment could often not be exploited without this information. Equipping suction press rolls with SMART® Technology represents another step forward for the company. The positive feedback from customers that regularly report outstanding performance on demanding presses with several press nips on a roll are a further testament to the acceptance of Xerium's new system.

Choosing the optimum roll cover and matching it with the right clothing is essential to optimizing advanced high-performance paper machine operation. Years of experience have taught us that the process can be optimized by changing the roll cover type. But in addition to the applied technology, proper tuning is of key importance when it comes to maximizing machine performance.

Nowadays, paper machines are continuously fine-tuned on the basis of online process data measurements. Online readings provide a better insight into the process. Feedback is available almost immediately and operators can see the main impact of an adjustment on the entire process in real time. One key piece of information that is available online nowadays is the dynamic status at the press nip.

Kunshan Made Products

Shorter Lead Time
Easier Logistic
Better Service
Superior Quality

Made at Xerium Kunshan
The Kunshan made Stratatwin 2F with Huyperm, ran at the 3PB position at the Board & Packaging machine with the machine speed at 500 m/min, and width of 4.1 m, produces SBS paper at 225 gsm.

The felt had run 43 days on machine and was removed on schedule. The machine was running trouble free during the entire life time. It provided good paper formation, bulkiness, smoothness and two-sideness. Customers were satisfied with the products made from Xerium Kunshan facility, and they ordered three pieces of repeat order in the same position.
Flomaxx ES Case Study
High Void Volume, More Compaction Resistance

Construction
The Flomaxx ES laminated base structure is engineered to withstand the compressive and hydraulic forces on demanding high load, high impact presses, while also delivering excellent mid-nip pressure uniformity. The three layer base structure combines a relatively fine single layer to fabric for pressing uniformity with a rugged, high void volume all solid monofilament double layer bottom fabric.

Design Specifications
MD Yarns:
- Top Base: Plied monofilament
- Bottom Base: Single monofilament
CMD Yarns: Single monofilament

Benefits
- Large void volume felt
- Constant high level dewatering throughout felts life, low flow resistance
- Maintains caliper under pressure
- High incompressible design
- Easier to keep clean and open

Field Application
Due to high Void Volume, Flomaxx ES designed felt is mainly applied on BP machines/positions with high water removal demanding; high press loading and Shoe presses.

In the past, the mill encountered some problems seriously, such as sheet creasing, low press loading and the latter influenced lower sheet dryness out of press. To solve those issues, Xerium proposed Flomaxx ES on all positions with open batt layout to achieve sheet dryness. Running together with re-covered Xerium PU roll on 1P:
- Sheet creasing disappearing;
- More dewatering and sheet dryness improvement: due to high Void Volume, it offers lower flow resistance for more dewatering. From measurement, sheet dryness is improved 0.5%. It’s reported: “Since from 1P felt installation on Sept. 21, we took felt measurement after 4days. Uhle Box dewatering of 1T felt is 155gsm, 1B is 76gsm, while press loading is 170kN/m. Compared with measured historic data, it achieve the highest level.” “ In DCS, the dewatering figure is read 35m3/hr from EcoFlow, it’s the highest, too.”
- Higher press loading: from previous 120kN/m to 170kN/m
- Quick Break-In-Time and less sheet breaks:

The customer started the machine up at 840 m/min and within 7 and a half-hours they were able to reach a machine speed of 920 m/min. Another advantage, there were no sheet breaks while the machine was speeding up. In addition, the mill was able to observe nip dewatering after the second day of operation. Competitive felts take one week to break in to achieve nip dewatering.
**Axxelerator QS and Booster-Winning Combination**

Axxelerator plus Booster is proving to be a winning combination in Japan. Over the past year a mill in Japan has been working with our sales and application team to improve machine start up. The machine is a Tri-Vent with a 4th press making LWC with a basis weight range of 52 to 157 gsm.

Typical machine speed at start up with competitive felts is 900 meters per minute (mpm) with a maximum speed of 1000 mpm. The mill is able to reach maximum speed after 5 to 6 days with the competitive felts on the machine. The Sales and Application team in Japan proposed an Axxelerator QS plus Booster to enhance the Nip dewatering on the third press at Start up. The first two trials were a huge success. Nip dewatering could be seen immediately at start up and the mill was able to reach maximum speed in three days. The first two felts ran to life and Axxelerator plus Booster are now the standard for the machine.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Basis Weight Range</th>
<th>3rd Press Felt</th>
<th>SU Speed</th>
<th>Days to 1000 mpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>LWC</td>
<td>52 - 157</td>
<td>Competitive</td>
<td>900 mpm</td>
<td>5 to 6</td>
</tr>
<tr>
<td>LWC</td>
<td>52 - 157</td>
<td>Axxelerator QS + Booster</td>
<td>950 mpm</td>
<td>3</td>
</tr>
</tbody>
</table>

In addition, with the success of the 3rd press felt, the mill purchased and ran an Axxelerator plus Booster on the Pick Up position. The mill was so pleased that the performance of the first felt that they placed an order for a second trial. The second trial was scheduled to be installed during the October shut down. Due to a scheduling change, the second trial Pick up felt was not installed so we will have to wait for the installation of the Pick Up and 3rd Press felt combination in early 2016.

**SMART® Roll Case Study**

Xerium supplied Xtreme TS roll cover with the SMART™ Technology for Suction Roll Application to a Tissue Mill in Australia. It ran on PM1, with the machine speed of 1,650m/min, producing tissue at 17 gsm.

SMART™ Technology provides online Dynamic Nip Condition/Analysis which the Mill was able to pin point contact related issues. SMART™ Technology is used to aid in felt performance, Machine runnability and performance. Therefore, Xerium received repeat order of 2 SMART™ roll for other tissue machines in the Group.
Harold Bevis became the new CEO of the 203-year-old Xerium in 2012. When he unveiled the world map for this transnational corporation, he immediately set his eyes to the east, where the Asia Pacific region lies, and where a huge population guarantees a consecutively growing economy. Most importantly, it has half the world’s paper-making production lines and China produces and consumes the most paper and paperboard, which make it a hot battleground of global paper products suppliers.

When turning to look at Xerium’s financial reports, Harold Bevis might well frown, however. The Asia Pacific region, which accounts for half of the global paper-making industry, contributed less than 20% of Xerium’s business, far less than its business in Europe or America. Xerium operated machine clothing and roll covers businesses there for several decades, but most of the business involved imports. When most of Xerium’s competitors delivered products from their China plants directly to customers, products from Xerium’s world-famous Huyck Wangner machine clothing plant had to travel from overseas. Stowe Woodward roll covers, which took the biggest global market share, began to be produced in China only five years ago. Moreover, while Xerium’s competitors had made their brands very popular, many Chinese clients did not even know that Stowe Woodard and Huyck Wangner were sub-brands of Xerium. Even to a few who did, the pronunciation of Xerium is difficult. When many transnational corporations are well localized, Xerium was barely on its way.

"This has to be changed!" Harold Bevis and senior management from the Board of Directors established a brand new strategy for Asia and began to implement it. He appeared in an interview with China PPI, and said assertively: “China will be Xerium’s core theme of investment.” He was serious. The Board soon decided to adjust the global business structure. In the following two years, Mr. Bevivs made many more business trips to China, making Xerium well on its way to localization.

In 2013, Xerium closed several plants in Europe and U.S. and began to expand business and production scale in the Asia Pacific region, especially in China. They would move new processing equipment to this region, promote technology and apparatus of its Changzhou plant, and invest 60 million dollars to establish its machine clothing plant in Kunshan—its first one in China.

In 2014, Xerium started construction of the Kunshan plant, completed Changzhou plant’s first polyurethane roll covers production line and declared its Chinese name: Zhirui (we could finally write the name in Chinese). At the same time, Xerium employed an Asian senior leader, the first one in its 203 year history. Mr. Wang Wenlin, a management veteran from International Paper, took the position as the new President of the Asia Pacific region.

In 2015, the Kunshan plant went into production. As Mr. Bevis recounted, the new plant adopted brand new technology and equipment, with raw materials, technology and manufacturing processes all from Europe. It became Xerium’s best plant in the world and would attract most of Xerium’s felt production here. When establishing the Kunshan plant, Xerium also redesigned its China-centered business structure in this region: a new Asia Pacific headquarters relocated to the China (Shanghai) Free Trade Zone, an adjustment of capital structure was made, local trade with RMB began, and cooperation with ICBC. With the headquarters being relocated, key positions were also relocated — the region’s President, Vice President of Finance, Vice President of Sales and Marketing, and some senior technology positions — from U.S., Europe and Australia to Shanghai, a total localization of the financial department, and a relocation of network and data center assets from Europe to Shanghai. A modern supply chain in Asia was being deployed — supply chain, storage and warehouse operations moved from internal control to Xerium’s new partner Panalpina, creating a seamless digital supply chain for customers.

Mr. Bevis said: “Our business structure has long been designed as an import company, after moving into the Shanghai Free Trade Zone, our Asia Pacific branch will generally control all Asian business as an independent Chinese enterprise.”

However, Mr. Bevis stressed: “Meanwhile, our sales team and technology and application engineers in Asia will not be a secluded team, but will collaborate with our teams in other plants throughout the world. We want to share the most modern product applications and use cases that occur everywhere in the world.”

He is right by saying “independent yet not alone.” Maybe this is best for a localized transnational corporation.
Interview with Xerium’s Global President and CEO Harold Bevis

“Another two plants will be established in China”

Hi Mr. Harold Bevis! Thank you for talking with “China Pulp & Paper Industry” again. Congratulations on the successful opening of Xerium Kunshan plant. This is the third consecutive year that China PPI has interviewed Xerium. In the 2013 interview, you mentioned that “China is the core investment theme”. Two years later, we noticed that the series of investment plans are accomplished. What is your view of China’s position within Xerium and its contribution to Xerium?

Harold Bevis:

First, China has a well-developed market in the paper industry. Many paper mills have been equipped with the most advanced production lines, on which machine clothing, roll covers and chemicals from top suppliers have been put to use. Most of these international suppliers have already set up factories in China.

Markets in Asia Pacific, especially in China, has attracted most of our attention, and it leaves no doubt that we should enter into this competition and try to stand out. Our investment in China aims to satisfy the market and introduce technologies above the current industrial standard, as well as the most advanced processing equipment, to produce the most sophisticated products for customers and to help them with machine efficiency, power-saving, and product quality. We are doing all these to build up a dominant position in this market.

In the past three years, we have updated technology and equipment in the Changzhou roll cover plants and have established a brand new Kunshan machine clothing plant. In total, we now have more than 500 patented technologies, which are a 200-year treasure of our company. We have also sent our Chinese staff to the most competitive plants overseas for the best training. Our Chinese plants follow the top global standards and have the best machines and systematically trained employees. It is the top manufacturing base of our group.

For instance, one of the major machines in the Kunshan plant has a 15-metre width, being able to serve the largest papermaking machine. Its total weight—including its pedestal—is as much as a million pounds, one of the biggest of its type in the world. For certain types of felts, we can produce three at the same time. Additionally, the Kunshan plant has the most advanced information technology systems and best supply chain interface with real-time data system.

In our Changzhou roll cover plant, we have transferred all of our most modern technology here, including the SMART® roll production unit, spreader roll production unit, polyurethane roll covers and suction box refurbishment capability. We have also updated cover grooving and drilling equipment. This plant can produce all of Xerium’s roll cover designs.

Our commercial goal is to combine the best technologies in the world to provide solutions that promote machine efficiency and optimize our cost structure while shortening delivery cycles. Our customers will soon be benefited with lower costs, quicker delivery and better service. In terms of Xerium’s investment strategy to adapt itself with the global market, the steps taken in our Chinese plants are key to the re-design of our global business model and plant allocation.

China PPI:

How will Xerium adjust the layout of the global division? What will be the development plan for Xerium Asia Pacific? What specific goals do you have for the development of Xerium in the Asia Pacific region?

Harold Bevis:

One of our five Asia Pacific plants is in Japan, another one in Australia, with the other three in Xi’an, Changzhou and Kunshan. By our plan, we will invest in setting up another three plants, one for machine clothing and two for roll covers. So the updating of the Changzhou plant and setting a new one in Kunshan serve as only the first step, and the bigger plan is to become Asia Pacific region’s most substantial supplier of machine clothing and roll covers. Of course, it will take another few years, and we want to take careful but sure steps to realize the goal.

China PPI:

Where would you locate these three new plants?

Harold Bevis:

Apart from the consideration of cost, we also want to be closer to our customers to provide better service. Two of our three new plants in the Asia Pacific region will be in China, one for machine clothing and one for roll covers. We are considering building another roll covers plant in Southeast Asia, which is also a very promising emerging market.

China PPI:

Where would the two China’s plants be located?

Harold Bevis:

In deciding to set up the Kunshan plant, two plans came into our consideration: to invest in a brand new plant or to take over a local clothing plant. The second plan required the need to update its technology infrastructure to meet our group’s standard in order to make top quality products. After comprehensive evaluation, we decided to go by the first plan, to invest in a brand new plant. We will still choose from these two plans in making policies to set up the two new plants in China. Talking about the location, we have a ten-year cooperation—from 2013 to 2023—with Kunshan Government, and we have set up a new plant in the past two years. Now we can see that the two new plants have a big chance to be part of the ten-year plan.
Harold Bevis:

I know the “New Normal” theory. My understanding is that policies will put more force in motivating terminal consumption, which is closely related to the papermaking industry. Therefore, this industry will be bolstered along with consumption. Moreover, as China has such a considerable volume in paper making and consumption, a very slow growth, even as slow as less than one percent, means a substantial increase in demand.

There are about 8500 papermaking machines in the world, of which more than 4000 are located in Asia. Papermaking machines have a productive life of 45 years, while in Asia, especially in China, papermaking production lines have been used for only 10 years in average, thus have many years before obsolescence. Over time, papermaking plants will increasingly focus on the overall efficiency of production lines, with stable quality, and they will need to optimize their equipment even more. Xerium will then come into play, with our cutting-edge technology, we will help them with better efficiency and better quality. So even with a zero grow in China’s paperboard production, we still have a huge market opportunity here.

In the meantime, globally speaking, we have seen an increase of new pulp making production lines in South America, which helps Chinese papermaking plants to get cheaper and better market pulp. Export of Chinese papermaking plants will be motivate by policies of “going global” and the appreciation of RMB, and become more competitive in the global market. These are all good signals. Moreover, China’s papermaking industry is experiencing a storm of updating and transition, during which time many old machines are about to be scrapped and discarded. Novel technologies are urgently needed to fill in the gap and the more advanced papermaking production lines could be our clients too. We are quite optimistic about our future clients.

China PPI:

Chinese government raised the “New Normal” theory, at the same time, the growth of China’s paper and paperboard production has slowed down to a near-stop. What is your view of this phenomenon? Under such macro economic and industrial situation, Xerium still sticks to big investment plan. How would you estimate the risk?

Harold Bevis:

We understand these difficulties— that capacities of almost all types of paper productions are more or less excessive— making the competition even harsher. Relatively speaking, small or outdated machines cannot guarantee stable quality, they will face bigger pressure with less competitiveness. Competitiveness in this industry can be summarized into two words: volume and quality. In manufacturing, competitiveness depends on the handling of raw materials such as pulp and waste paper and the technologies of those processes. Both will have an effect on the cost and the profit.

Let’s take clothing and roll covers as an example. Costs on these two account for about 3% of the general cost in papermaking, a very small fraction, while the two materials have a considerable effect on machine efficiency. In fact, when cost pressure is low, decision makers tend not to take risk by buying from new suppliers out of concerns about stability of paper products. Yet with fierce competition nowadays, the refusal of new technology or advanced products will be a huge risk in itself. In this way, it has become a new challenge for managers in papermaking plants to innovate and to find more trustworthy suppliers.

Xerium never builds “standard” products. All of our products are engineered according to each order, whether it is machine clothing or roll covers. Every single product needs to meet the client’s real demands, and every demonstration of our products has two goals: to improve our clients’ products; or to lower their cost. In other words, our goal is to create new value.
Localization is very important in the papermaking industry. China has the most advanced machines in the world, which means it needs staff with complete technology. As for our products, clothing and roll covers are industrial consumer products and need quicker, more professional full range of services, and we need to arrange manufacturing case-by-case to meet the urgent delivery. All these require a general localization. The cost of our products are roughly the same in any plant in the world, but being local can bring us nearer to the clients, be more familiar with them and provide local supply and service. Our operational goal is to set up plants near every important papermaking region, to provide quick service.

Our Kunshan plant is not only a new factory but also a structural change of the Asia Pacific region. Our headquarters of the region is located in the China (Shanghai) Free Trade Zone, we have reached a Bank & Enterprise cooperation with ICBC, and our financial team in this region has been fully localized. In the past 40 years, our major business in Asia, especially that in clothing, was based on import, and our enterprise structure was designed in line with an import company. From now on, Xerium’s Asia Pacific region will carry out its business as a localized and independently-operated enterprise.

Meanwhile, our staff in Asia, including sales, engineers and manufacturing staff, will not operate unconnected, but will cooperate on a platform for this region. We will be able to share product applications and successful references that have occurred anywhere in the world.

According to our plan, we are very honored to have Mr. Wang Wenlin as our new president of our Asia Pacific region. With an educated background in both eastern and western countries, Mr. Wang is familiar with corporate governance in both cultures and has good sense for the industry around the world. With his great leadership, Xerium will surely bloom in this region.

Can you introduce Xerium’s goals in different phases under Wang’s leadership?

The Asia-Pacific team’s goal is as follows: currently, nearly half of the global paper products are manufactured in Asia. According to this proportion, we are expecting roughly the same percentage of sales and profit, yet the current number is 18%. Thus, we have a two-step goal: first, make Asia the biggest share in the global business; second, to be a dominant technological leader in Asia.

China PPI: We understand that Xerium’s investment in China is not only reflected in the construction of the Kunshan plant and renovation of the Changzhou plant, but also include the adjustment of Xerium organization, management team, as well as capital structure, which means the adjustment will be for both software and hardware facilities. What are the reasons for Xerium to make the series of big adjustment in Asia, and what is the strategic objective of it?

China PPI: Can you introduce Xerium’s goals in different phases under Wang’s leadership?

The first one involves designing and research of certain core raw materials. We put significant effort into estimating, designing and research into our core materials. We carefully evaluate chemical types, brands and formulae of fibers, synthetic rubber and polyamide. From the very first stage, we begin to consider what we can do to help with the papermaking machines’ efficiency. This is a fundamental advantage.

Regarding products, our advantage lies in unique patented technologies and software systems. For instance, as for the retention in the forming section phase, which is critical to paper quality, we design with 3D or 4D technology according to pulp types adopted by our customers; and to lower cost to make each ton of
paper products, we will optimize dewatering by designing several weaving patterns to create the best drainage channel; in the press section we will use software simulation and sophisticated base structures and batt technology to insure the ideal combination of water removal and sheet quality, in the drying section, we use the optimum dryer fabric structures to control air flow and lower energy consumption. These are all part of our unique technologies which many are patented.

As for roll covers, we can guarantee peak performance and stable quality with our formulae and unique technology.

China PPI:
This would be the last question. Xerium did not make big investment during the fastest-growing years of paper-making industry. Yet after you became Xerium’s CEO, we see a dramatic acceleration in China. How would you comment on this? Does this reflect a management style under your leadership? What are your prospective of Chinese markets?

Harold Bevis:
My style is like this. First we need patience. To get each client is to win a war of technology, and we cannot win by destroying the market and undermining our brand, but to be patient in achieving our financial goal. Second, we should employ those who are able to understand the market and put them in the right position.

You were right about us not making a big investment when the market was growing at its fastest. But our business in Asia did make great progress then, and we have an even greater opportunity for the future...now is the right time for Xerium we believe. Moreover, although we were not the first to enter into China, we do have the late-mover advantage to learn from others' mistakes and make sure our new plants are technologically the most advanced.

To conclude, I want to mention that Asia is the biggest region and the world needs Asia to lead the papermaking industry. As the market grows, Asia, especially China will be more focused on technology, power saving and efficiency, and become the world's best-developed region in this industry. We are confident we can contribute to this growth with our technology, products, and teams of experts to help Asia and China move to a new stage. It is our pleasure and we believe we can make it happen.

TO ALL CUSTOMERS
WE WISH YOU
A PROSPEROUS NEW YEAR
IN 2016