Right fabric choices

save energy

Emin Leydier: “Tamfelt is a good listener”

Enersec sectors go green

Brazilian ethanol – truths and myths
Dear Reader,

2009 has been a year of many changes in Tamfelt. We, as well as our customers, had to find ways to respond to the dramatically changed market environment. Order inflow has been far from what we were used to in earlier years. Luckily this is now recovering little by little. The changed situation forced us to look at many functions and in-house processes in a new way, and to think how to make things in a more efficient way. But no doubt, we believe in the future of the right fabrics, overall machine and equipment efficiency can be improved, higher machine speeds achieved, energy saved, and end product quality improved.

Each encounter with the customer is a moment of truth for us. It’s the moment when our competence, know-how and flexibility are tested and proved. We have to convince the customer of our ability, experience and knowledge to help improve the performance of their process with our products and service skills. Also, it is very important for a fabric supplier to be proactive and try to forecast customer needs better than ever. A good example of a successful cooperation is the work we have done with Emin Leydier of which you can read more about on the next page.

However, the most interesting news in our business this year was certainly the announcement of the combination agreement between Metso Corporation and Tamfelt signed on November 5, 2009. More details on the right. I am sure that the combination when realized will improve the competitiveness of both companies. Together with Metso, Tamfelt will have a stronger global service network and more comprehensive product offering. In addition, the combination provides opportunities for more efficient product development for the benefit of us all.

I wish you pleasant moments with this Innofabrics Now issue and a prosperous, successful New Year 2010.

Reima Kerttula
President & CEO

Metso and Tamfelt combination agreement

Mr. Mikael von Fruckenell, Tamfelt’s Chairman of the Board (left) and Mr. Jorma Eloanta, President and CEO of Metso.

Tamfelt Corp. and Metso Corporation have on November 5, 2009 agreed to combine their operations under a combination agreement. As a result, Metso has made a public tender offer to purchase all of the issued and outstanding shares in Tamfelt. The combination will strengthen Metso’s services business especially in the pulp and paper industry. For Tamfelt, the combination creates new growth opportunities especially outside Europe, where Metso has an extensive installed base and wide sales and services network.

The public tender offer is carried out in the form of a share exchange. Metso offers Tamfelt’s shareholders 3 new shares issued by Metso for each 10 of Tamfelt’s shares. The offer period under the Share Exchange Offer commenced on November 23, 2009 and is expected to expire on or about December 18, 2009. As of December 4, 2009, shareholders whose aggregate ownership in Tamfelt is 68.01% have accepted Metso’s exchange offer. Metso estimates that the combination will be closed in the first quarter of 2010 at the latest. The combination is subject to competition authority approvals in Finland and some other countries.

“The focus of the markets is shifting increasingly outside Europe. We believe that Metso’s global network and strong position also in the emerging markets will further strengthen Tamfelt’s competitiveness also in these areas. The combination is a continuation to our long-term and successful cooperation. As both companies are technology leaders in their respective areas, we believe it will accelerate technological development in the future,” states Mr. Mikael von Fruckenell, Tamfelt’s Chairman of the Board.

“We highly value the competencies and long history of Tamfelt and welcome Tamfelt shareholders to continue the tradition as Metso shareholders,” says Mr. Jorma Eloanta, President and CEO of Metso.

According to Mr. Bertel Langenskold, President of Metso’s Paper and Fiber Technology segment, “Tamfelt is a profitable company with a long heritage, and a top-of-the-line product portfolio and production facilities. We have had close, long-term cooperation with Tamfelt, especially in product development, and we know each other very well. We expect that through the global combination of Metso’s and Tamfelt’s operations and knowledge, the growth of our services business will exceed the average paper machine market growth rate. In recent years, the change in the pulp and paper industry especially in Europe and North America has directed our customers’ demand towards service, maintenance and optimization of their production processes. In emerging markets, such as China and South America, our installed base has rapidly increased, which provides exciting opportunities for our services and optimization business.”

Metso’s goal is to consolidate the know-how of these two companies that are steeped in tradition and thereby create a strong, new player for the pulp and paper industry’s technology and services markets in particular. The kind of player that benefits both companies’ customers, personnel, partners and shareholders alike.
Emin Leydier Group was established in 1975 when two family-owned French mills, Papeteries Leydier and Cartonnerie Emin, merged. Headquartered in Lyon, it is now one of the leaders in the European brown paper and packaging industry. In 2008, its turnover reached 330 million euros.

“Our cooperation with Tamfelt started with the erection of our new paper mill at Nogent-sur-Seine near Paris in 2005. We appreciated their ability to listen to us and their capacity to meet our requests,” Mr. Leydier recalls. “Tamfelt’s offer included all the key points we wanted: help in training our inexperienced staff, help in the start-up, and a start-up team for the pre-start-up, start-up and post-start-up periods. Little by little, through gaining experience, their support has turned to help in improving our process. Consequently, Tamfelt is still our almost exclusive supplier of forming fabrics and press felts.”

Since the start-up of PM 7, Tamfelt has supplied to it Champion forming fabrics, Porostar pick-up felts and Ecomax 1PRB and 3PRT press felts. "Our target is to strengthen the philosophy that drives our relationship: to work together on efficiency and lower paper production costs for the benefit of the both companies. In my opinion, we are on the right track to reach the target," comments Purchaser Christophe Leydier at Emin Leydier.

In today’s difficult economic times, the partnership between the two companies has become even more important. The strong link – based on the PM 7 experience, the close relationship and the technical cooperation – helps a lot in facing the crisis together. For example, very good results have been reached in reducing the number of clothing failures and machine breaks as well as in increasing the lifetime of clothing at Emin Leydier’s Nogent-sur-Seine mill.

According to Pascal Jacquot (above left), David Vallet and Delphine Martinez of Emin Leydier, Tamfelt’s high technical expertise in paper machines makes discussions constructive and efficient. Christophe Leydier (above) appreciates the supplier’s ability to listen and capacity to meet requests.

Emin Leydier, Nogent-sur-Seine:

“Tamfelt is a good listener”

Since its start-up, PM 7 at Emin Leydier’s Nogent-sur-Seine mill has run the forming and press section with 100% Tamfelt clothing: Champion forming fabrics, Porostar pick-up felts and Ecomax 1PRB and 3PRT press felts.
What then makes the research environment so unique?

As the physical size of the forming section is smaller than those in other present pilot machines, it is possible to use smaller amounts of furnish and thus carry out studies cost-effectively. The forming section can be run either as a gap former or as a hybrid former, with a sheet width of 300 mm and a maximum speed of 2,500 m/min. The most essential difference to today’s paper machines are the versatile measurement possibilities. For example, water amounts drained can be measured for each element separately, which makes it possible to study the water and furnish balances in detail.

The name SUORA is an abbreviation of the words ‘drainage’ and ‘forming’ in Finnish (SUOtautuminen and RAinaus). It is a unique research environment for studying drainage and forming in the forming section. Some projects are joint efforts within the Forest Cluster, and others are consortium projects with UPM, Metso Paper, Metso Automation and Kemira, in addition to Tamfelt and the VTT Technical Research Centre of Finland, Jyväskylä unit, as research partners.

The versatile online measurements on the former provide quick feedback on the effect of parameter adjustments to, for example, sheet formation (Fig. 1). Trials have shown that SUORA is a viable research environment for developing fabric structures and materials. It allows us to gain deeper knowledge of the features of the forming process and of the influence of fabrics on drainage, retention, energy consumption and formation. The SUORA project continues with building a press section. In spring 2010, it will be possible to study the features of the press section in detail as well as the joint operation of the forming and press sections.

One of the many trial runs carried out in the SUORA environment focused on finding out how the forming fabrics affect energy consumption. Two thin SSB fabrics, HiSpeed and Prime, both with a warp ratio of 1:2 (top:bottom), were tested. The HiSpeed fabrics have been successfully run on many demanding paper machines, whereas Prime is a further developed new-generation fabric for printing and writing papers. In it, both the weft ratio and fabric structure differ from those of HiSpeed. During the trial runs, the power intake of drive rolls in the forming section was recorded at all test points. Similar 15-point test runs were conducted with both bottom fabrics on a gap former concept. The paper grade was 56 g/m² SC, and the machine speed was 1,500 m/min. The variables included the vacuums on drainage elements and fabric tension.

The friction between the bottom fabric and the horizontal suction boxes was measured, too. The suction box has sensors to measure the horizontal and the normal forces against the box, which then can be used to calculate the friction coefficient between the fabric and the suction box. In addition, fabric bending at the suction box slots was measured using laser light, see Fig. 2. Fig. 3 shows the averages of the 15 measurements. The figure shows that the energy needed to run the Prime fabric is reduced by more than 10% when compared to HiSpeed. The friction coefficient is also smaller with Prime, and bending at the suction box slots is lower. Dry content development at the measuring points on various elements was also monitored. With Prime, the drainage was efficient, and the dry content was about one percentage unit higher after the forming section.

The first Prime fabric will be run on an SC machine in late 2009. The trial will show how well the pilot machine results correlate with the real paper machine world.

**PMC research environment**

**SUORA provides a unique research environment**

**Fabric choice affects energy consumption**

![Fig. 1.](image)

![Fig. 2. Bending measurement.](image)

![Fig. 3. Energy consumption, friction and bending.](image)
Energy savings through fabric choices

You don’t have to be a clairvoyant to predict that energy will be even more expensive in the future than today. A lot more expensive. There’s a continuous discussion about whether a correct fabric choice could reduce power consumption on paper and board machines. Yes, it definitely could as our cases show.

Let’s look at the first case. A high-quality folding boxboard maker in Western Europe recently selected Tamfelt as its new supplier. “We considered what kind of a press felt would be better than the mill’s existing felts and would also yield the best possible advantage for the customer. Our choice was the non-woven base Aquamaster 2417X felt with Tamfelt-developed TMO surface treatment,” explains Mr. Mikko Blom, Sales Manager at Tamfelt PMC.

The end result was interesting. The customer had never seen nip dewatering in the bottom position. But now they could, and a lot of it! At the same time, the dry content after the press went up so that they could lower the temperature of the first dryer cylinders, resulting in energy savings.

The cherry on top of the cake was that the sheet moisture profile improved significantly, which is typical for the non-woven Aquamaster base and TMO treatment. The customer’s satisfaction has shown in repeat orders.

Up with dry content and runnability

Another case involves a North American board machine. The mill had earlier run Tamfelt’s SeamMaster Open (SMO) fabrics on the press in bottom positions and had experienced improved board smoothness. In May 2009, they simultaneously installed five SMOs in the machine – one in each press position – and the results were excellent.

The draw from press to dryer section went down, as did the steam pressure by 50-150 KPa depending on the grade. At the same time, drainage dropped.

Tamfelt has launched new seamed press felts for pulp machines. The initial trials commenced last year, and the new felt styles have gained a steady foothold on the market.

**Pulpseam** is a seamed marking felt that gives a larger drying surface on the pulp sheet in impingement drying. **Seamstar DS** is a seamed felt with two seam channels. It features excellent seam tenacity and a long running life.

Running results with both of these felt styles have been very good, resulting in reorders from customers. With the new styles we have gained many new press positions on the growing pulp market.

The best proof of the good results was the reorder for five SMO fabrics placed by the customer.
Our aim is to keep on manufacturing our main product Tamstar locally both in Europe and Asia," points out Mr. Olof Siljander, Vice President, Dryer Fabrics, Tamfelt PMC. "In order to make production more efficient, we will concentrate the manufacturing of our special products in two locations. Through this specialization we will be able to make also the products with a lower total volume more efficiently.

In future, Tamfelt’s Tamstar, Tamsoft, Silverstar, Saunastar and Goldstar will be manufactured in Tampere, Finland. The Tianjin factory in China will manufacture the Tamstar, Tamdry, Unistar and Optimax dryer fabrics.

"Our strategy is based on manufacturing the main product Tamstar locally and being able to provide added value to the customer through fast deliveries. In urgent needs, we can supply a fabric to the customer within 10-20 days. Through our fast delivery capability, the customers are able to reduce the number of fabrics in their inventories by one fabric per position. The running life of a dryer fabric is approximately one year, so the tied-up capital reduction saving is near to 10% of the fabric price."

It's the total cost that matters the most

On the other hand, production costs can be reduced by moving some production to Asia where the labor cost is essentially lower. In total cost, the difference is, however, reduced due to the freight and customs duties both for the raw material and the ready-made fabric. It has already been proven that the quality of Tamfelt’s products made in China is as high as that of the products made in Finland.

"Swimming upstream benefits everybody"

For customers, the total cost is thus almost the same regardless of the place of manufacture. In the present situation, strong purchasing organizations tend to concentrate on comparing the purchase price only, instead of the total cost. When you additionally consider the fact that according to the statistics the Tamstar fabrics run 15-25% longer than other suppliers’ fabrics, it’s difficult to understand why fabrics should be purchased based only on lower price.

The next few years will show if Tamfelt’s strategy will be successful. The decision is made by customers who should see the advantages of local manufacturing and who should accept slightly higher purchase prices; considering that the actual total costs will not be any higher," concludes Mr. Siljander.

Dryer fabrics to be manufactured in Tampere, Finland:
- Tamstar
- Tamsoft
- Silverstar
- Saunastar
- Goldstar

Dryer fabrics to be manufactured in Tianjin, China:
- Tamstar
- Tamdry
- Unistar
- Optimax

In order to survive with the drastically falling demand and customer prices, all dryer fabric manufacturers have moved their production to low-cost countries in Asia. Tamfelt, however, has chosen a different strategy.
BlackBelt now available

with spiral grooves, too

The grooved BlackBelts have since the very beginning had parallel grooves, i.e. every single groove makes a full round. The idea behind this solution was to eliminate any forces that would move the belt sideways.

(See the table below showing the most common groove/land alternatives with the resulting void volumes.)

The almost non-existent polymer wearing, excellent pressure resistance and the well-working groove shape have, in many positions, shown the best water removal in the market. For example, on a double shoe machine with a BlackBelt, the draw between the press and dryer sections went down from 2.30% to 2.15%. After the belt was changed to another type, the values went back to the original level. A correctly applied BlackBelt saves costs!

The new polymer used in BlackBelt has proven to be very wear resistant. In some positions, the result has been exceptional wear in the belt doctor blade. The belt has not worn, but there has been grooved wear in the doctor blade similar to the grooves of the belt. The belt doctors do not oscillate, so the position of the doctor on the belt is always the same. As the belt is moved sideways (indexed), the doctor blade stays in the original position, posing a risk for both the belt and the doctor blade.

When the grooving is made into a single long spiral along the belt, this wearing will not occur. Pictures 2 and 3 show the difference between these groove alternatives. In pilot machine runs or on production-scale trial runs, the spiral groove has not had any effect on the guiding of the belt or the felt in the nip. In theory, the spiral groove would also yield a better pressure profile through the felt.

There is no other difference between the two groove alternatives. Their groove shape is the same patented V shape typical of Tamfelt’s belts. The standard void volumes between 130 ml/m² and 510 ml/m² are available as before.

<table>
<thead>
<tr>
<th>STANDARD GROOVES</th>
<th>Groove width mm</th>
<th>Groove depth mm</th>
<th>Land width mm</th>
<th>Open area %</th>
<th>Void volume ml/m²</th>
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</thead>
<tbody>
<tr>
<td>0.7</td>
<td>1.1-1.3</td>
<td>1.8</td>
<td>28</td>
<td>280-320</td>
<td></td>
</tr>
<tr>
<td>0.9</td>
<td>1.1-1.3</td>
<td>1.8</td>
<td>33</td>
<td>340-400</td>
<td></td>
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<tr>
<td>0.9</td>
<td>1.1-1.3</td>
<td>2.0</td>
<td>31</td>
<td>320-370</td>
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<tr>
<td>0.9</td>
<td>1.1-1.3</td>
<td>2.2</td>
<td>29</td>
<td>300-350</td>
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<tr>
<td>1.1</td>
<td>1.1-1.3</td>
<td>1.8</td>
<td>36</td>
<td>390-460</td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>1.1-1.3</td>
<td>2.0</td>
<td>36</td>
<td>370-430</td>
<td></td>
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<tr>
<td>1.3</td>
<td>1.1-1.3</td>
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<td>42</td>
<td>440-510</td>
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</tr>
<tr>
<td>1.3</td>
<td>1.1-1.3</td>
<td>2.0</td>
<td>39</td>
<td>410-480</td>
<td></td>
</tr>
<tr>
<td>1.3</td>
<td>1.1-1.3</td>
<td>2.2</td>
<td>37</td>
<td>390-450</td>
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<table>
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<tr>
<th>SPECIAL GROOVES</th>
<th>Groove width mm</th>
<th>Groove depth mm</th>
<th>Land width mm</th>
<th>Open area %</th>
<th>Void volume ml/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG</td>
<td>1.6</td>
<td>0.5</td>
<td>4.3</td>
<td>27</td>
<td>140</td>
</tr>
<tr>
<td>DG</td>
<td>0.9</td>
<td>1.1-1.3</td>
<td>1.8</td>
<td>33</td>
<td>340-400</td>
</tr>
<tr>
<td>DG</td>
<td>1.3</td>
<td>1.1-1.3</td>
<td>1.8</td>
<td>42</td>
<td>400-460</td>
</tr>
</tbody>
</table>

SG=Semigrooved
DG=Discontinuous groove

SDG-belt with discontinuous grooves is developed for shoe presses where water backflow (nip rejection) is a problem.

SG-belt with shallow and wide grooves is specially developed for pulp machines for improving dryness.
By far, the most important dryer fabric measurement consists of an air permeability measurement and a fabric condition check-up during a shutdown. It’s thus no wonder that customers have become accustomed to seeing Tamfelt’s technical service staff working on the machine particularly at that time.

“A condition check-up during a shutdown is important because it enables us to detect problems that may cause premature damage to the fabrics. It also reveals wear stripes on the fabric and shows air permeability levels, which are important in terms of energy economy in the dryer section and for paper machine runnability,” states Mr. Toni Pennanen, Product Manager for dryer fabrics at Tamfelt PMC. Traditionally, air permeability has been measured with spot checks, that is, by testing it at 8-12 points across the fabric. “This method, however, does not give a complete picture of the air permeability profile. This is why we now measure the whole air permeability profile,” he adds.

Some of the sheet moisture profile problems are caused by plugged stripes on the dryer fabrics due to extensive wear or dirt. Evaporation of moisture through the plugged areas is weaker than elsewhere through the fabric. With modern techniques, the profile meter now takes readings at every five centimeters. This means that on a wide machine there can be over 200 measuring points to determine the air permeability profile. “Getting rid of the plugged stripes on a dryer fabric means better energy economy for the paper machine as the paper sheet does not need to be overdried to eliminate the moisture profile variation,” Mr. Pennanen explains.

New profile measurements enhance energy economy in the dryer section

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Tamfelt PMC start-up orders 2009–2010*

<table>
<thead>
<tr>
<th>Country, company</th>
<th>Machine</th>
<th>Grade</th>
<th>Supplier, start-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUSTRIA</td>
<td>SCA Laakirchen</td>
<td>PM 10, rebuild</td>
<td>LWC, Metso, January 2009</td>
</tr>
<tr>
<td>AUSTRALIA</td>
<td>Anchor</td>
<td>PM 9, new</td>
<td>Testliner, Metso, 2010</td>
</tr>
<tr>
<td>CHINA</td>
<td>Anhui Shanying</td>
<td>PM 9, new</td>
<td>Linerboard, Metso, February 2009</td>
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<tr>
<td></td>
<td>Bohui</td>
<td>PM 7, new</td>
<td>FBB, Metso, 2009</td>
</tr>
<tr>
<td></td>
<td>Hebei Yongxin</td>
<td>PM 6, new</td>
<td>Testliner, Metso, 2010</td>
</tr>
<tr>
<td></td>
<td>Sun Paper</td>
<td>PM 23, new</td>
<td>Fine, Metso, 2010</td>
</tr>
<tr>
<td></td>
<td>Lingjing Yinhe</td>
<td>PM 1, new</td>
<td>Fine, Metso, 2009</td>
</tr>
<tr>
<td></td>
<td>MCC Paper YinHe</td>
<td>PM 1</td>
<td>Fine, Metso, July 2009</td>
</tr>
<tr>
<td></td>
<td>Nanning</td>
<td>PM 6</td>
<td>Pulp, Metso, 2009</td>
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<tr>
<td></td>
<td>April Richao</td>
<td>PM 2+3</td>
<td></td>
</tr>
<tr>
<td>FINLAND</td>
<td>Stora Enso, Imatra</td>
<td>BM 4, rebuild</td>
<td>Liquid board, Andritz, Metso, Vaathe, November 2009</td>
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<tr>
<td>GERMANY</td>
<td>Pro Papier</td>
<td>PM 2, new</td>
<td>Liner, Metso, 2010</td>
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<tr>
<td>INDIA</td>
<td>Servalakshmi</td>
<td>PM 1, second hand</td>
<td>Printing &amp; writing, June 2009</td>
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<tr>
<td></td>
<td>Westcoast Paper</td>
<td>PM 6, new</td>
<td>Fine, Voith, March 2010</td>
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<tr>
<td>POLAND</td>
<td>Mondi Savecze</td>
<td>PM 7, new</td>
<td>Liner, Metso, 2009</td>
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<tr>
<td>PORTUGAL</td>
<td>Setubal</td>
<td>PM 4, new</td>
<td>Fine, Metso, August 2009</td>
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<tr>
<td>RUSSIA</td>
<td>Karnabumprom</td>
<td>PM 7, rebuild</td>
<td>LWC, Vaathee, 2010</td>
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<tr>
<td>USA</td>
<td>Pratt Industries</td>
<td>PM 15, new</td>
<td>Linerboard, Overmeccanica, February 2009</td>
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</tbody>
</table>

* As of November 2009.
Good news for Tamfelt PMC's customers in Latin America! Tamfelt has signed an agreement with TFP Productec of Buenos Aires, Argentina, over the representation and partial finishing of paper machine clothing. For the customers, the deal stands for better local services.

TFP Productec has been dealing with paper machine clothing for over ten years. It's an ideal partner for Tamfelt since it has both the equipment for and the know-how of seaming and finishing forming and dryer fabrics up to five meters in width.

According to the agreement, Tamfelt will deliver high-quality forming and dryer raw fabrics from Juankoski, Finland, and Tianjin, China, to Argentina where they will be seamed and finished for the customers’ use. The fabrics in question are the modern Gapmaster and Packmaster SSB forming fabrics, the more traditional Optistar and Champion forming fabrics, as well as the Tamstar, Silverstar and Tamdry dryer fabrics.

In addition, TFP Productec will represent Tamfelt PMC's press felts and shoe press belts as well as wider forming and dryer fabrics in Latin America, excluding Chile, Mexico and Brazil. This arrangement provides Tamfelt with competent local expertise and technical service on the entire South American continent.

From now on, the pulp and paper customers in the area will have access to a complete package of forming fabrics, press felts, shoe press belts and dryer fabrics from one source, including technical and measurement support services for all machine widths.

High Tamfelt quality made locally
The founders of TFP Productec, Ramon 'Mel' Masllorens, Antonio Foti and Miguel Castellan, have all been involved in the paper machine clothing business for a long time. In fact, they have a joint experience of over fifty years.

According to the agreement, Tamfelt PMC will also assist the company in transferring technology to its facilities. Intensive cooperation and training in seaming and heat setting will ensure that the product quality in Buenos Aires will reach the high level of Tamfelt plants in Tampere, Juankoski, and Tianjin.

"Tamfelt will also get additional resources in other South and Central American markets. We will be able to serve all machines locally which will provide us with new opportunities when large paper and pulp companies look for partners in the future. The two biggest pulp producers in the area are Brazil and Mexico. We now have a full-time sales and service engineer in both of these countries, representing both Tamfelt and TFP Productec," says Mikko Blom, Sales Manager of Tamfelt PMC.

Chile, Mexico and Brazil already covered
Since 2008, Tamfelt PMC has employed a full-time sales and service engineer, Sr. Juan Carlos Ruiz, in Chile to improve the technical support services offered to local customers. The results have been excellent; Tamfelt's sales have been growing nicely.

In Mexico, Tamfelt PMC is represented by Sr. Javier Angeles and his company, Sr. Angeles has 25 years of experience in paper machine clothing and clothing measurements prior to Tamfelt. In addition to his solid expertise, he also has active contacts with the Mexican paper industry.

In Brazil, Sr. Daniel Nogueira has started to work for Tamfelt. He is a member of Tamfelt Ltda’s organization (part of Tamfelt Filtration) but works full time in Tamfelt PMC's sales and service division. Sr. Nogueira has earlier worked in the paper machine clothing business as well as in technical projects dealing with paper and pulp machine analyses and optimization.

TFP Productec and Tamfelt PMC in Buenos Aires.
Here’s something that the environmentally conscious mining customers have been waiting for: the new Enersec sectors and filter surface elements supplied by Tamfelt for drum filters can be incinerated.

“Our customers have been interested in finding new ways of disposing of used sectors. Although part of our products can be combusted, our sectors have not been accepted at waste incineration plants due to their raw material,” says Mr. Anssi Rantala, Product Manager, Tamfelt Filtration.

The problem has been the glass fiber in the materials. Some waste incineration plants don’t accept glass due to the technology they use. In some countries, legislation prevents the combustion of materials that contain glass and other materials suitable for recycling.

“Our customers have so far been made of glass fiber reinforced EPP material. In the past few years, the competition has tightened so it was time to seriously consider the disposal aspect as well.”

New: natural fiber reinforced plastic material

In 2008, Tamfelt applied for a patent for using natural fiber reinforced plastic material in making the Enersec sectors and filter surface elements of drum filters. The patent is pending, and positive signs for getting it soon have been received from the patent authorities.

“The purpose of the fiber is to strengthen the structure. The raw material we use has wood-based fiber reinforcement, which seems to be suitable for replacing glass fiber in most applications in terms of its technical properties and based on initial test results,” Mr. Rantala explains. “Our competitors’ faces will provide a suitable color for the new product: envy green,” he adds with a twinkle of humor in his eye.

Tamfelt has been supplying Enersec sectors to the mining industry for the past thirty years around the world. The sector moulds are used in Tamfelt’s plants both in Finland and Brazil.

At the moment, the market for FFP filters is still small but already in 2010 the demand is expected to grow strongly along with new projects. Essential for the performance of the new generation large filter presses are the fabrics designed especially for them, and Tamfelt has invested a lot in the development of these special fabrics,” says Mr. Atte Koskela, Sales Manager at Tamfelt Filtration.

Cooperation between Larox and Tamfelt has lasted for over thirty years and proven its strengths. According to Mr. Koskela, “Thanks to seamless cooperation, an equipment manufacturer, an equipment manufacturer, an equipment manufacturer, and a fabric supplier together with the customer make such a good team that it is difficult for any outsider to improve the filtration process any further.”

Maximum capacity, lowest operating costs

The fabric supplier faces many challenges: the large size of the FFP filters and the versatile demands to ensure an uninterrupted mining process. Different applications create very different demands on filter fabrics.

“We visit customer mines continually to stay up to date with filter needs and to hear the customers’ wishes about filter fabric properties. Face-to-face meetings create good relationships based on which it is easy to communicate common interests and ways to reach the targets. Judging from the feedback we have received, this has proven to be the right approach,” Mr. Koskela comments.

Based on the experiences gained from plants already in operation, Tamfelt will develop its filter fabrics further in intensive cooperation with both the customers and Larox. For the customers, this close cooperation stands for the optimum products that enable maximum production capacity at the lowest possible operating cost.

“The year 2010 will be a most interesting one as several new FFP filters will be started up all over the world. Also, the slowly recovering world economy will probably give rise to new mining plans. The machinery chosen for them will have an effect on Tamfelt’s filter fabric product range.”

Large chamber presses, also known as fast-opening filter presses (FFP), developed by Larox have recently become a hot topic in the mining world after being introduced in some new mining projects. The filtration surfaces in the largest presses are up to 8.5 m² per chamber. Tamfelt has been closely involved by supplying filter fabrics to various applications.

New: fabrics for fast-opening filter presses

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What is ethanol?
Ethanol or ethyl alcohol is the name of the substance better known as alcohol. It can be produced from corn, cereals, beet, sugar cane, etc.

What is a flex fuel car?
A flex fuel car is a vehicle capable of using pure gasoline, pure alcohol or a mixture of both in any proportion as a fuel. Today, about 90% of the Brazilian cars are flex fuel cars.

Ethanol or gasoline?
Alcohol has many advantages over gasoline such as:
- It’s cheaper than gasoline.
- It’s a renewable source of energy.
- Global warming emissions with alcohol are about 85% smaller than the emissions from fossil fuels.
- The balance of CO₂ is zero, since cultivation absorbs CO₂.

Food and energy for all
Many questions about Brazilian sugar cane cultivation have been discussed recently. Here are some of them.

Does sugar cane cultivation in Brazil diminish food cultivation and result in high food prices?
False. The total sugar cane area is less than 1.5% of all cultivated areas in Brazil, and only 2% of the cultivated area in Brazil is enough to produce fuel for the whole Brazilian fleet, which is today over 51 million vehicles.

Is the Amazon forest being devastated by sugar cane production?
False. The climate and soil in the Amazon forest region are unfavorable for sugar cane cultivation. Also, the Amazon is a region far from seaports with a poor rail and road network, so it’s unprofitable to produce alcohol there. The production of alcohol is nowadays concentrated in the south-east region, close to large cities, railroads, roads and seaports.

Development generated by the sugar cane industry
Brazilian ethanol generates economic gain for the Brazilian people, and the cities closer to alcohol mills have developed faster than others. Many of the top 100 human development index (HDI) cities in Brazil have received an important contribution from the alcohol industry. The average salary paid by the alcohol industry is the second highest in the Brazilian agronomic industry. Furthermore, the major alcohol mills have many projects contributing to social welfare in areas like health, life quality, environment, sports, education, culture, and work capacititation.

The Brazilian Market
The Brazilian market is widespread and located in two major geographical areas in the south-east and the north-east of the country. The areas differ in harvesting seasons. In the south-east the crop is harvested from March to October, while in the north-east harvesting takes place from August to February. The illustration above shows that around 70% of the alcohol and sugar mills are located in the south-east of the country.

The Amazon region in the north-west has only one alcohol mill, which produces alcohol mainly for Manaus, the capital of the state of Amazonas.

There are more than 500 mills in Brazil, about 40% of which have dewatering presses using spiral fabrics. In a smaller quantity, the mills also use ash filters and syrup filters, which also demand technical fabrics. Tamfelt has solutions for all of them.

The Brazilian experience with sugar cane ethanol presents the most successful renewable fuel program in the world today. Even so, there are many myths and doubts about it. Let’s make things clear now.
Appendix: Appointments at Tamfelt

Mr. Jani Hämmäläinen has been appointed General Manager in charge of Tamfelt's operations in China as of July 1, 2009. He will also continue as General Manager of Tamfelt Technical Textiles Shanghai Co., Ltd.

Mr. Charles Cai has been appointed Sales Director in charge of Tamfelt’s PMC & Filtration sales (mining & chemical, dry traction) in China as of September 1, 2009.

Mr. Turku Niemi has been appointed Sales Director in charge of Tamfelt's PMC & Filtration sales (pulp & paper) in China as of September 1, 2009.

Mr. Juha Mettälä, Group Quality and Environment Manager, has been appointed Vice President, Technology, in Tamfelt Group as of August 21, 2009.

In Brazil, Mr. Daniel Nogueira started with Tamfelt in September 2009. He is a member of Tamfelt Ltda's organization (part of Tamfelt Filtration) but works full time for Tamfelt PMC as Sales and Service Engineer.

Mr. Alexandr Popov has been appointed Sales and Service Engineer for filter fabrics to the pulp and paper industry in Russia as of December 3, 2009.

Appointments as of October 2009

Mr. Juha Konvenneni, Export Manager, has been appointed Business Development Manager for Printing Grades in PMC. Juha will be in charge of further strengthening Tamfelt’s image and position as the specialist in the clothing for printing paper machines. He also continues to be responsible for PMC’s sales to the Hallstavik mill in Sweden.

Mr. HansAndresen, Product Manager, has been appointed Sales Manager for PMC in Scandinavia. In addition to his new duties, Hans will continue as Press felt Product Manager for Scandinavia, Northern Germany, Benelux and France.

Mr. Mikko Blom, Sales Manager, will focus on sales in South America. Mikko will also continue as Product Manager for all PMC product groups in this area.

PMC has signed an agency agreement in South Africa, and Mr. Ville Lahdensuo, Product Manager, has been appointed responsible for the sales in this area. Ville continues as Product Manager for belts in various areas, too. In Russia he takes care also of the press felt product manager duties, and in South Africa he will carry product manager responsibility for all products.

Mr. Seppo Somero, Press felt Product Manager, will also be the Product Manager for belts in various North American areas. In addition to his tasks as Product Manager in North America, he will continue as Press felt Product Manager in Finland, France, Southern Germany, Austria, Switzerland and Italy.

Mr. Daniel Nogueira (left), Purchase Manager, and Mr. Jöran Sopo, President, both from OMG Kokkola.

OM Group is the world’s leading supplier of cobalt-based chemicals. The company employs about 2,100 people and has production facilities in America, Asia and Europe. The largest of them, OMG Kokkola Chemicals, is located in Kokkola, Finland, and is one of Tamfelt Filtration’s most important Finnish customers.

The world’s largest cartonboard machine, APP Ningbo PM 6 in Xiaogang, Ningbo, China, has now been running for almost five years. Ever since its start-up in November 2004, the mill has relied on Tamfelt as one of the main clothing suppliers.

The huge line was designed to produce 700,000 tons of coated board per year in a basis weight range of 250 to 450 g/m² at a design speed of 900 m/min. The line has a forming fabric width of 8.8 m and a trim width of 8.1 m. Ningbo’s giant five- ply board machine has a very impressive forming section. It has, for example, the largest forming fabric in the world in the back layer position: almost 150 m in length and 1,314 m² in size.

As an acknowledgement of reliability and delivery accuracy as well as good cooperation and quality, OMG Kokkola Chemicals Oy rewarded Tamfelt Filtration with its 2008 supplier prize.

Coated board quality has exceeded industry standards, especially the gloss and smoothness properties of the surface have been excellent. Not only does the machine produce very high-quality coated board, but it is also capable of producing over one million tons of board per year. PM 6 has repeatedly broken world records both in speed and daily production. Tamfelt, as a clothing supplier, is very happy and proud having had the opportunity to contribute to the great success of the Ningbo Xiaogang mill’s enormous project.

Mr. Rauno Nordfors (center) receives the supplier prize on behalf of Tamfelt Filtration. Also pictured, Mr. Kenneth Higlund (left), Purchase Manager, and Mr. Jöran Sopo, President, both from OMG Kokkola Chemicals.

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