



M&E Tissue

Issue 30 • 2016

**TISSUE INDUSTRY IN THE
MIDDLE EAST AND NORTH AFRICA:
A ROLLERCOASTER OF CHANGE**

NONWOVENS INDUSTRY OUTLOOK

**SALIM KARADSHEH: THE WORK
AHEAD FOR FINE HYGIENIC
HOLDING**

LIFE+ PROJECT

as natural as we can



INTRODUCING FLS GLUELESS™ LAMINATING SYSTEM FOR ELASTIC SIDE PANELS ON BABY AND ADULT DIAPERS



FLS laminating system is a stand-alone machine for the main GLUELESS™ lamination of elastic, breathable material for Side Panels with ultrasonically bonded transpiring spots (Fameccanica patent).

Laminated web is rewound in reels, ready to be used on baby or adult diaper converting machines. Rewinding system is available in two versions: in reels (pancakes), where final web is a dual lane side panel material; in spools, including longitudinal splitting and rewinding of individual lanes of side panel material.

One FLS laminator can normally serve up to 8 baby diaper machines.

FLS GLUELESS™ lamination is the first achievement of Fameccanica "Life+ Project" for cost saving in diaper production processes and environmental impact reduction.

Fameccanica.Data S.p.A. - Italy Headquarters and Plant
Tel. +39 085 45531 - Fax +39 085 4460998
staff@fameccanica.com - www.fameccanica.com

Fameccanica Machinery (Shanghai) Co., Ltd. - china@fameccanica.com
Fameccanica Ind. e Com.do Brasil - staff@fameccanica.com.br
Fameccanica North America, Inc - usa@fameccanica.com



ANDRITZ Hydro pumps

We move the pulp and paper industry



ANDRITZ Hydro deals with the development and manufacture of pumps used in many different areas of pulp and paper mills.

We provide you with a series of high-performance and reliable centrifugal pumps,

such as fan pumps, medium-consistency pumps, single-stage, multi-stage pumps, self-priming, and sump pumps.

Decades of experience in building hydraulic machines as well as our research and development work enable us to serve our

customers with pumps for the entire pulp and paper industry. Our comprehensive know-how provides efficiencies of up to 90% and higher, long life cycles, and high cost-effectiveness.



MIAC

International Exhibition of Paper Industry

2016

INTERNATIONAL EXHIBITION OF PAPER INDUSTRY

12.13.14

OCTOBER 2016

LUCCA | ITALY

www.miac.info


At MIAC 2016 you will find machinery, plants and equipment for the production and for the converting of paper and paperboard. The Visitors of MIAC 2016 will be able to meet, during the 3 days of Exhibition, the leader suppliers of the Paper Industry sector which will present the latest developments in machines, systems and avant-garde solutions.

ME Tissue

ISSUE 30
Jan/Feb/Mar 2016



Passion for tissue!

- **Editorial Office**
METissue
P.O.Box: 45-134
Hazmieh – Lebanon
Tel: 961 3 590 529
E-mail: info@metissue.com
www.metissue.com
- **Editor- In-Chief**
Carol Dib
carol.dib@metissue.com
- **Assistant Editor**
Joy Jadam
joy.jadam@metissue.com
- **Advertisement enquiries**
marketing@metissue.com
- **Layout/Design**


ME Tissue is licensed under the
number: 935/2007

CONTENTS

4	NEWS	
15	EVENTS	15 - RISE® CONFERENCE INSPIRES NEW THINKING ABOUT ENGINEERED FABRICS 19 - INTERNATIONAL WOOD BIOPROCESSING WEEK, 24-26 MAY 2016, STOCKHOLM
22	OUTLOOK	22 - NONWOVENS INDUSTRY OUTLOOK
25	INDUSTRY ISSUES	25 - TISSUE INDUSTRY IN THE MIDDLE EAST AND NORTH AFRICA - A ROLLERCOASTER OF CHANGE
29	SUCCESS STORY	29 - SALIM KARADSHEH: THE WORK AHEAD FOR FINE HYGIENIC HOLDING
37	NONWOVENS TECHNOLOGY	37 - SOLUTIONS FOR INCREASED FIT AND COMFORT OF MODERN BABY AND ADULT INCONTINENCE DIAPERS

UAE

Fine Hygienic Holding new tissue mill,
Al Nakheel, to start production in 2017

Valmet has been awarded a repeat order of an Advantage DCT 200TS tissue production line to Fine Hygienic Holding (FHH), one of Nuqul Group's companies. The new line, including a complete delivery package from stock preparation equipment to rewinder, will be installed at FHH premises at Al Nakheel mill in Abu Dhabi and is planned to commence operation on the first quarter of 2017.

The long partnership between FHH and Valmet goes back to 1988. Three Valmet tissue machines have already been installed at the FHH mills - Al Bardi Paper Mill and Al Sindian Paper Mill in Egypt and Al Snobar Paper Mill in Jordan.

"We at Fine Hygienic Holding, do not only look for technology when choosing our suppliers, but for forging strong long-term partnership that will enable us to grow together. Our long-term relationship with Valmet and their Advantage tissue technology convinced us that we will have the best conditions to meet the market's challenging requirements for high quality facial tissue produced with lowest possible energy consumption," says Hani Nuqul, the Chief Officer of Strategic Industries at FHH.

"We are proud to work in partnership with FHH and fulfill their demand of a complete package of tissue making equipment from stock preparation to rewinder. We are excited to be part of their expansion plans and together we will make this project a benchmark in the tissue market," says Jan Erikson, VP Tissue Sales at Valmet.

Ittihad International Investment acquires
Crown Paper Mill

Ittihad International Investment has finalized its acquisition of Crown Paper Mill. Crown Paper Mill is a tissue paper manufacturing company located in Abu Dhabi, United Arab Emirates. The company was established in 1996 and was formerly owned by the Gulf Investment Corporation (GIC).

Since 2010, Crown Paper Mill operates two tissue machines PM1 and PM2 with a total capacity of 30,000

tons/year of tissue produced from 100% virgin pulp. Ittihad International Investment is a private holding, engaged in a wide spectrum of economic activities. Established in 2008, Ittihad group governs several companies in the Middle East and maintaining a focused approach towards Greenfield projects.

Headquartered in Abu Dhabi, the United Arab Emirates, Ittihad has succeeded in enhancing its competitive positioning through a well-defined and integrated approach towards lucrative investment decisions. The acquisition of the Crown Paper Mill is part of the group's strategy of establishing and operating economically diversified portfolios, either independently or in collaboration with leading companies.

Abu Dhabi National Paper Mill starts-up
NTT machine

Abu Dhabi National Paper Mill (ADNPM), a member of Abu Dhabi Industrial Projects Company, has recently started up its new Valmet NTT tissue machine at its mill location in the Abu Dhabi Industrial City.

The mill already houses two tissue machines with a total output of 63,000 tons per year. The PM3 start-up will increase ADNPM production capacity to 90,000 tons a year of high-quality facial, toilet and towel grades.

Abu Dhabi National Paper Mill LLC (ADNPM) is a subsidiary of Abu Dhabi National Industrial Projects Co. (ADNIP), a prominent private industrial investment group. The company was established in 2001 and is continuously expanding its activity in the different tissue paper products.

EGYPT

Habibco Trade Company acquires Handy-
Alex Converta

Habibco Trade Company has completed the acquisition of the Egyptian tissue manufacturer, Handy-Alex Converta.

Handy - Alex Converta started operating in 1978 as a tissue converting factory in Alexandria, Egypt. In 1989 the company established a tissue paper mill in Borg El Arab, El Guedeeda city, and transferred all its converting activities there.

In 2015, the company stopped its production activities and was sold to the Habibco company, Egypt. Habibco is involved in the paper trading business and already has plans to invest in new equipment to improve the mill's production and output quality.

MOROCCO

A new handkerchief line from Christian Senning Verpackungsmaschinen to Novatis Group

Christian Senning Verpackungsmaschinen GmbH started up its new handkerchief line at Novatis Group plant in Morocco.

The Handkerchief Folding and Wrapping Line S.PM 805 and 662TG is the first complete line by Senning. The machine is currently running smoothly and achieving the required quality at the industrial zone of Berrechid, Morocco.

Established in 2003, the Novatis Group has continued its development into a strong national group, comprising 4 innovative companies with over 200 employees. Novatis is regularly launching new quality products on the Moroccan market and has recently introduced the handkerchief product.

Novatis Group is a leader in the Moroccan market, producing baby diapers, tissue paper, napkins and wipes with the well-known brands Dalaa, Calin, Winny, Prima, Nova and Harmonia.

Christian Senning Verpackungsmaschinen GmbH & Co. KG is a medium-sized company with over 90 employees at its headquarters in Bremen, Germany. The company has more than 60 years of experience in the development and construction of packaging machines with a reliable and innovative solution for the wrapping of paper and tissue products.

Senning is exporting 80% of the packaging machines to international markets all over the world.

The strength of the company is based on long-standing excellent connections with its customers which allowed for the buildup of a reliable system of commercial representations and After-Sales-Service all over the world.

ITALY

Synergo SGR acquires a minority stake in Toscotec S.p.A

Sinergia II, a closed-end fund managed by Synergo SGR, has acquired a minority stake in Toscotec S.p.A, the Mennucci family will remain as majority shareholder.

Toscotec is a world leader in the design and production of turnkey plants and machines, as well as a first class supplier for components and services dedicated to the global paper and tissue industries. With innovative technological process solutions and a wide products portfolio the Group has gained, through the years, a significant position in the worldwide market.

Synergo aims to support Toscotec further growth, both organically and through selective strategic addition acquisitions.

The group, based in Lucca, Italy, has doubled the EBITDA since 2011, and recorded over EUR 100 million in total revenues in 2015, out of which approximately 90% generated abroad.

Alessandro Mennucci, shareholder and CEO, with an experience of more than 20 years in the industry, will continue to lead the Group. Mr. Mennucci commented: "As of today, the group has been able to build a strong brand in terms of quality and reliability, and has become one of the leading companies in the global reference market. With this new "synergy" we will have the possibility to further enhance our organization and strengthen our business activity worldwide. We want to continue to develop high technology products and to export the Italian excellence, providing first class services to our customers".

Paolo Zapparoli, Synergo CEO, further explained: "It is a real pleasure to partner with Toscotec and its shareholders; the undisputed technological capabilities that the Group has developed over the years offer the opportunity to further extend its leadership in its reference industry. We look forward to working closely with Alessandro Mennucci and his management team to fulfil Toscotec's growth ambition".

OverMeccanica is now OVERMADE

At the end of November 2015 Overmeccanica SpA - in temporary operation since September 2014 after entering bankruptcy proceedings - was finally acquired by OVERMADE Srl, a new company of Italian investors headed by ex OVER managers.

The exclusive property of OVERMECCANICA's assets including brand, know-how, references, drawings, patents, stocks, tools and equipment has been transferred to OVERMADE srl, that will continue to supply machinery and services to the paper industry in the track of OVER tradition.

WEPA chooses again Toscotec to upgrade Cassino tissue plant

This new project will complete the multiple steps of the plant upgrade assigned to Toscotec and started in 2010 with the rebuild of the original machine into crescent former and continued in 2013 with the installation of Toscotec-Milltech Yankee Hood complete with Heat Recovery system, and in summer 2015 with the optimization of the stock preparation lines including a Toscotec TT SAF® concept delivery.

The Cassino plant is located in the Centre of Italy, close to Rome; it is part of WEPA Group – a European leading company in tissue manufacture. The mill is an important and modern facility, which is completely integrated with a tissue machine, converting lines and automatic storage system. Its capacity is more than 60,000 t/year.

The new rebuild is featuring a double layer fully hydraulic TT Headbox-MLT including polished pipes, a TT SYD-18FT with deckle insulation and the Yankee steam & condensate removal system.

The supply will be provided on a turn-key basis including engineering, supervision and installation. The startup is scheduled on late summer this year.

This investment will allow WEPA to have a state of the art machine with the best available technology. The mill will optimize the production cycle (enlarging also the trim width at the reel) and achieve a real improvement in paper quantity and quality, while decreasing energy consumption and therefore the environmental impact.

The new TT SYD will be the largest steel dryer ever installed in Europe on a tissue machine.

The project has been assigned to Toscotec considering the good cooperation since several years, Toscotec high level of professionalism and the excellent project handling during the construction and start-up of two new paper machines in the WEPA plants in Lille/France and Giershagen/Germany last year.



Toscotec has been awarded to provide a major rebuild to the WEPA PM#13 machine located in Cassino, Italy.

Lucart completes rebuild of its PM4 at Porcari facility

The Italian tissue producer Lucart has successfully started-up its PM4 tissue machine in Porcari (Lucca) after the rebuild completed by Toscotec S.p.A.

The upgrade included a modification of the forming section and the complete replacement of the old hood with a new Toscotec MONO Yankee Hood (TT Milltech -MYH) fed by natural gas and complete with relevant Air System and Heat Recovery System. The upgrade of the Wire section consists of the replacement of the forming roll and of the main white water saveall, as well as relocation of the headbox and breast roll.

PM4 is a Twin wire former with double press configuration for a 2,7 m sheet width, dedicated for the white and coloured tissue paper jumbo reels.

The aim of the investment is to increase the operating speed by 20%, the production capacity up to 90 tpd and improve the formation quality and reducing the energetic consumptions.

Lucart upgrades unwinding unit

In June 2015 A.Celli Paper concluded negotiations with Lucart Group to upgrade an unwinding unit on the rewinder installed at the Avigliano mill.



TISSUE WORLD ISTANBUL 2016

Tradeshow & Conference

Date: 27 - 29 September 2016

Venue: Istanbul Congress Center (ICC) Istanbul, Turkey

Web: www.tissueworld.com/Istanbul

Now a
full-fledged
trade show!



Your gateway to the growing tissue industry in
Eastern Europe, Russia, CIS, Middle East, Central Asia & Africa.

"The show (Tissue World Istanbul 2014) exceeded our expectations, it was a resounding success. We received many enquiries and issued several quotations as a direct result of the event."

Ian Padley
Tissue Applications Manager
BTG Group

Mark Your Diary!

Tissue World Istanbul 2016 will feature a 3-day trade show and a conference alongside. With outstanding business opportunities in this region, Tissue World Istanbul will be the ideal meeting point for all tissue industry players.

Visit www.tissueworld.com/Istanbul for more information or contact the Tissue World team at info@tissueworld.com.

Portfolio



Organised by



Official Magazine



www.tissueworld.com/Istanbul

Two interventions were scheduled. The first concerned total rebuilding of the unwinder arm to guarantee a 30% increase in the diameter of the parent reel supported. The second was oriented towards making the motorisation of the unwinder independent, thanks to the complete supply of the new drive.

In the month of August, a team from A.Celli Paper's Customer Service department dismantled and reassembled the unwinder in just three days of machine downtime and two days of product testing, allowing the customer to return to regular production regime with no complications or delays, concluding the intervention on the rewinder with excellent results in terms of production.

Lucart Group has grown through the years, becoming the main producer in Europe of thin MG paper for flexible packaging, and is among the top 10 producers in Europe of tissue papers and products. The production facilities located in the various Group plants allow Lucart to manufacture a wide range of products in pure cellulose or recycled paper. The production capacity of the Lucart Group is of 300,000 tonnes/year, divided among 10 paper machines and 54 converting lines on a total of 750.000 m² of production facilities.

POLAND

VALMET TO SUPPLY AN ADVANTAGE NTT TISSUE PRODUCTION LINE TO SOFIDEL

Valmet will supply a complete automated tissue production line to Sofidel's Delitissue mill in Ciechanów, Poland. The delivery includes an Advantage NTT 200 tissue production line with a design speed of 1,800 m/min in textured mode and 2,000 m/min in plain mode.

Sofidel and Valmet have a long history in working together and Valmet has previously delivered eleven tissue lines to Sofidel mills in various countries in Europe. The up-coming new line in Poland is the first Valmet Advantage NTT tissue technology based line in Sofidel's machine fleet. Start-up of this new line is scheduled for fourth quarter 2017.

"We see this as an investment of the future for several reasons. Sustainable production with low energy and fiber consumption is a success factor where the new line fits well in line with our targets to reduce environmental impact. The energy and fiber saving

Valmet Advantage NTT technology will support Sofidel's environmental strategy. The Advantage NTT technology also allows us to take next step into the premium quality segment and differentiate our product offering in the tissue market," says Luigi Lazzareschi, CEO of Sofidel

"We share a long history with Sofidel, and are proud that they have selected our Advantage NTT technology for their path forward. We are facing an increasing interest in this technology from all markets, due to its flexibility to produce both conventional and premium products with low energy and fiber consumption. And we are convinced that it will be a success also for Sofidel," says Jan Erikson, Vice President, Sales, Valmet.

ROMANIA

Double record for Metalicplas A.Celli Paper Tissue Machine



After the record-breaking startup, another first for the turnkey tissue machine at the Dej facilities in Romania: the maximum production speed target was achieved in just four weeks.

On December 19, 2015, A.Celli Paper successfully concluded the start-up of the new high-speed Tissue Machine with a production capacity of 34,000 tons per year (110 tons per day) at Metalicplas.

On February 1st, 2016, TM2 was already running at the max production speed of 1800 meters per minute. A figure that, just such a short time after the startup, underscores the level of commitment, participation, passion and enthusiasm with which the A.Celli team worked on the project of the Romanian Group Pehart Tec, supporting the customer at each step. Following the recent entry of Abris Capital Partners (May 2015),

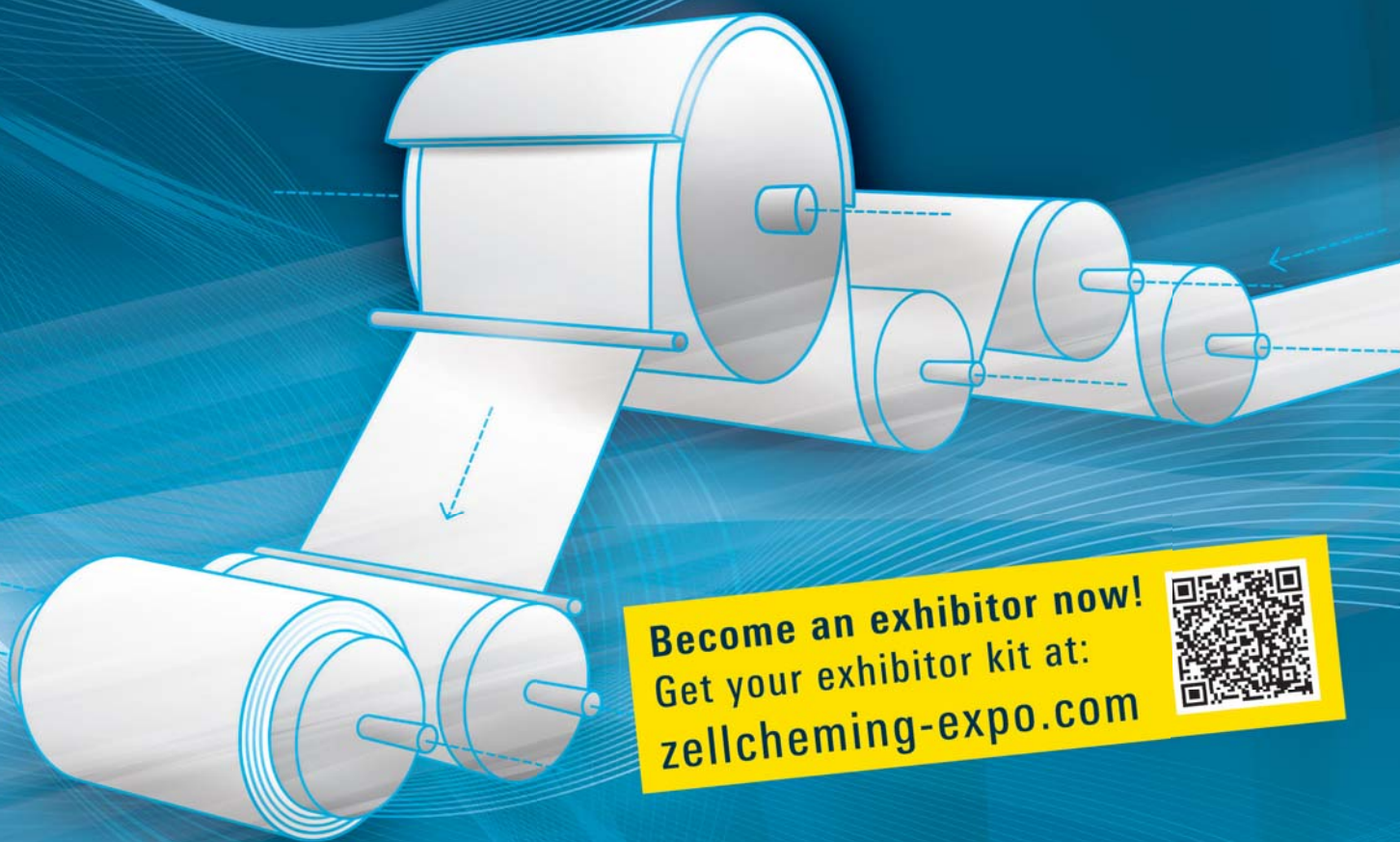
ZELLCHEMING-Expo



Fibers in Process

Exhibition and Congress with 111th Annual General Meeting
Frankfurt a.M., Germany, 28 – 30 June 2016

The platform for the European pulp,
paper and supplier industry



Become an exhibitor now!
Get your exhibitor kit at:
zellcheming-expo.com



The exhibition topics at a glance:

- Raw materials, additives, preparation
- Machine clothing, equipment
- Machines, mounting
- Automation, process optimization
- Cleaner production
- Energy management, energy efficiency
- Industrial service
- Maintenance
- Industrial IT, communication
- Measurement & control technology
- Paper production
- Converting and coating
- Logistics, intralogistics
- Engineering and design, trade agencies

Patron:
ZELLCHEMING e.V.

mesago
Messe Frankfurt Group

the romanian Group set plans to increase production capacity in order to confirm itself as a leader in the manufacture of tissue products in Romania and South-East Europe. The company is expanding the production sites in Dej and Petresti, which will increase the group's a total production capacity to 100,000 tpy of tissue parent reels.

The new Tissue Machine, with a 2.800-mm width at the pope reel, is part of a complete turnkey project that includes all ancillary equipment as well as the latest-generation hood design by A.Celli. A 100% pure cellulose pulp preparation system designed to process long and short fibres, a reel handling system and a slitter/rewinder complete the supply.

HUNGARY

Sofitel new acquisition in Hungary

Sofidel Group strengthens its presence on the European market by closing an important operation in Hungary. The operation, made with Forest Papir Kft, involves:

- The acquisition of new customers and the Forest brand, finished product sales (brand segment and private label segment).
- The Piszke plant (with a Futura line for toilet paper rolls) north-west of Budapest near the Slovakian border.
- The line in the Lábatlan plant (one, Perini, for toilet paper and kitchen rolls) and the lines in the Leányvár plant (several lines, for folded product: handkerchiefs and paper napkins), and the rent of the relative plants for 3 years.
- Approximately 90 thousand square metres of land next to the Piszke production site.

The acquired overall converting production capacity is equal to 30,000 tonnes.

CHINA

Vinda invests in three new Toscotec's tissue lines

Vinda Group ordered three tissue machines from Toscotec, scheduled for start-up in the second half of 2016.

Two AHEAD-2.0M will be installed at its Sanjiang facility in Guangdong province, where Vinda already

has eight Toscotec-supplied tissue machines running, to attain a total mill capacity of 250,000 t/y. This also represents a record-breaking achievement for the Italian manufacturer, who will accomplish start-up of its tenth tissue line on the same production base over the course of just four years.

The third machine will be installed in Vinda Shandong, where Toscotec has already supplied three lines in three years. This AHEAD-1.5M is identical to the machine fired up last August in Laiwu mill, with design speed of 1700 m/min and a production capacity of 30,000 t/y, same as the Guangdong tissue lines.

ANDRITZ to supply two tissue machines with 20 ft steel Yankees to Guizhou Chitianhua

International technology Group ANDRITZ has received an order from Guizhou Chitianhua to supply two tissue machines (TM5, TM6) with steel Yankees for a mill in Chishui city, Guizhou Province, for the production of high-quality facial wipes, toilet paper, and handkerchief paper. The start-up of TM5 is scheduled for the end of 2016 and of TM6 for the beginning of 2017.

The new PrimeLineST tissue machines have a design speed of 2,000 meters per minute and a paper width of 5.6 meters. The machines of this type are currently unique on the market because they combine a high-performance Yankee with a steam-heated hood. Both Yankees for Guizhou Chitianhua are made entirely of steel, have a diameter of 20 feet, and hence are among the largest in the world. They enable a high drying capacity and achieve remarkable cost savings compared to systems operated with gas because of usage of steam.

Both Yankees will be manufactured at the ANDRITZ steel Yankee business center in Foshan, China.

Seven PMP tissue machines in YFY's fleet

PMP (Paper Machinery Producer) has been supporting one of the leading Asian papermakers – Yuen Foong Yu Corporation for the last 20 years, executing projects both in the tissue and paper field.

At present, YFY owns 7 PMP Intelli-Tissue® 1600 lines – all are installed in Mainland China: in Beijing, Yangzhou and Dingfung, reaching total capacity of

TAPPI TISSUE 360° FORUM

MAY 16-18, 2016 – CINCINNATI, OHIO

The world's **ONLY** peer-reviewed non-commercial program of tissue technology.

Practical, Applicable Solutions for Tissue Makers

- Softness Measurement - Which Method to Use?
- Steel Yankee Dryers - Hear from the Experts
- Energy Saving Ideas
- Yankee Metallization - When and How
- Alternative Fiber Experiences



What they said about the Tissue360° Forum in 2015:

"Great technical sessions and an ideal platform for networking"

Steven W. Pearson, Manufacturing Manager, Wausau Paper Towel and Tissue, LLC

"Vast amounts of information, knowledge and experience. I took several ideas back to the mill."

Andy Chorney, Technical Services Manager, SCA Americas

"I learned a lot about tissue from the technical sessions. Sending some of my young engineers next year."

Bill Oliver, PM Superintendent, Clearwater Paper, Consumer Products Division

Tissue360Forum.org

CO-LOCATED WITH:

May 15-18
PaperCon 2016
Cincinnati, Ohio





TM1 startup in Dingfung

300,000 t/a. 1st CF Intelli-Tissue® machine (2.4 m wide) was launched in 2008 in Beijing, China. 2nd and 3rd (PM5 & PM6) 2.8 m wide CF Intelli-Tissue® were started-up in 2012 in Yangzhou, China. After successful start-ups in Beijing and Yangzhou mills, in spring 2013, PMP has been chosen again to support YFY's development, this time adding (4) more tissue making lines.

At the end of March 2013, YFY officially announced a massive expansion plan which included investing over 260 mln US dollars in Taiwanese and Chinese plants. At the same time PMP has been awarded a project for (4) new complete CF Intelli-Tissue® 1600 machines.

To optimize the investment, YFY followed the scenario of 2012 (PM#5 & PM#6 Yangzhou project) and cloned the same concept for an Integrated Tissue Mill: two tissue machines with rewinders, with a common control room in the same building, as well as a warehouse and converting area.

The concept of the Integrated Tissue Mill was implemented both in Yangzhou mill (PM7 & PM8) and in Dingfung mill (TM1 & TM2) ensuring staff & space optimization, high production flexibility and a significant operation cost reduction.



TM2 startup in Dingfung

On 3rd July 2014 (PM7) and on 28th August 2014 (PM8) in Yangzhou, China, 4th and 5th machine fully designed and produced by PMP started-up easily. Then, on 8th December 2015 (TM1) and on 14th January 2016 (TM2) in Dingfung, China, the 6th and 7th machine were successfully brought on stream bringing all involved satisfaction & pride.

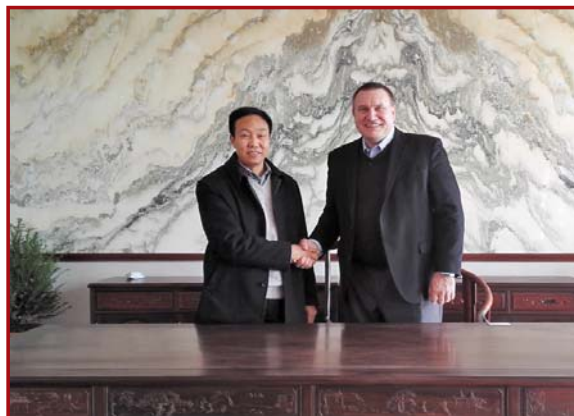
All recent (4) tissue machines are 2.8 (110 inch) reel trim Crescent Former (CF) type tissue machines with an operating speed of 1,600 mpm (5,250 fpm) and daily capacity of 80 tpd each. Machines are producing virgin fiber-based tissue in the basis weight range at the reel from 13 to 31.3 gsm (8-19.1 lbs/3000 ft²) for conversion into facial tissue, toilet rolls and kitchen towels. The project goals were a significant increase of capacity and the production of a final product of premium quality. In addition, it was important to minimize investment costs.

Hebei Jinboshi Group orders two PMP tissue machines

On 22nd January 2016, Paper Machinery Producer (PMP) signed a contract with Hebei Jinboshi Group CO., LTD. for the delivery of (2) Intelli-Tissue® 1200 EcoEc lines.

The (2) Intelli-Tissue® 1200 EcoEc machines with a 3650mm reel trim, operating speed of 1200 m/min, daily capacity of 75 t/d and a basis weight 12.5-25 gsm each. This project will be based on a PMP Integrated Tissue Mill concept, which means 2 machines (left-hand and right-hand) in the same building, a shared control room as well as a warehouse.

The start-up is scheduled at the end of 2016 for the 1st machine and the middle of 2017 for the 2nd machine.





Hebei Xuesong Paper starts-up two tissue machines under the picture in order to know it belongs to the news below

Hebei Xuesong Paper starts-up two tissue machines

PMP successfully started up 2nd Intelli-Tissue® 1200 EcoEc at Hebei Xuesong mill. TM2 (twin sister line to PMP TM1) is characterized by reel trim of 2850 mm, design speed of 1200 m/min and daily capacity 60 t/d (basis weight 12.5-20 gsm). Hebei Xuesong Paper two machines (right and left hand) are installed in the same building based on an Integrated Tissue Mill concept.

New solutions for high-capacity and sustainable production of ultralight fabrics:

As the hygiene market today requires lighter spunlace fabrics with perfect uniformity, ANDRITZ Perfojet has developed new solutions for the production of ultralight fabrics. Thanks to its broad inhouse expertise in the drylaid and hydroentanglement processes, ANDRITZ can offer the perfect combination of the Isoweb TT card and the Jetlace hydroentanglement unit as a currently leading technical solution to process ultralight spunlace products at very high speed. Nonwovens producers are now able to achieve weights of 20 gsm and even less for their ultralight spunlace fabrics.

Along with highest productivity, sustainability is also a constant stimulus for development at ANDRITZ Nonwoven. As experts in full line engineering, ANDRITZ has developed technologies that contribute remarkably to reducing energy consumption and waste while keeping spunlace productivity at the highest level. Pre-wetting configuration, design of the injectors, neXecodry system for drying, water filtration recycling, or compact machine design are all unique advantages of ANDRITZ neXline spunlace.

Cost-efficient, flexible, reliable, and robust needlepunch lines:

ANDRITZ offers cost-efficient, flexible, reliable, and robust turnkey needlepunch lines from opening and blending as far as the winder. The neXline needlepunch range covers technologies for a wide spectrum of nonwoven end-uses, such as geotextiles, automotive, filtration, roofing felts, and coating substrates.

The neXline needlepunch eXcelle range provides individual solutions to meet producers' requirements in terms of fabric characteristics, such as weight evenness, tensile strength, and homogeneity at high production capacity, which can amount to between 4,500 and 9,000 tons per year. ANDRITZ Asselin-Thibeau supports its customers with technical line configuration and provides associated services to optimize their lines' performance.

USA

ANDRITZ Nonwoven introduces latest innovations at IDEA16 in Boston

ANDRITZ Nonwoven, part of international technology Group ANDRITZ, will present its latest innovations at IDEA16, the major event for the nonwovens industry in the USA (May 3-5, 2016 in Boston; booth 801). Whether the requirement is for drylaid, wetlaid, spunbond, spunlace, or needlepunch, ANDRITZ Nonwoven offers integrated in-house solutions from forming to finishing.

ANDRITZ neXcal quadriga thermobonding calender: More capacity, process stability, and product quality

In a continuously changing hygiene market, a multitude of new engraving patterns as a result of increasing demands on surface structures or fabric properties is a big challenge to nonwovens producers' flexibility. The outstanding new 5-roll calender concept is a milestone regarding increasing capacity, process stability, and product quality. ANDRITZ Küsters' neXcal quadriga is equipped with the proven Hot S-Roll and four embossing rolls with fully automated production change.

Senning to showcase its latest generation of wrapping machines

During the Drupa 2016, Senning customers will have the opportunity to visit Monheim am Rhein (about 30 minutes by car from Düsseldorf), to see the latest generation of the Wrapping Machines in connection with the SDF Digital Printing Machine DigiPlus 430 S-125 with a production speed of 125 m/min.

The SENNING Wrapping Machine type SE 662-V for napkins (flat pack), facial tissues and hand-towels: for the production of premium-quality, individual napkins, and in connection with the SDF Flexo-Printing Machine OmegaPlus 500/8 with 8-colour print for the production of premium-quality napkins.

The In-House Show will take place at the same time as the DRUPA, from May 31 to June 10, 2016, opening hours from 08.00 a.m. - 5.00 p.m. every day.

INDA Names Finalists for IDEA16 Achievement Awards

INDA, the Association of the Nonwoven Fabrics Industry, has announced 15 leading companies are finalists in five categories for its IDEA16 Achievement Awards, in partnership with Nonwovens Industry magazine. Voting is now open online at: www.nonwovens-industry.com/idea16-achievement-awards. The awards recognize the brightest innovations from the leading companies, individuals, and new products in the nonwovens and engineered fabrics industry. Winners will be announced and honored at IDEA16, the World's Preeminent Event for Nonwovens & Engineered Fabrics, May 2-5, at the Boston Convention and Exhibition Center (BCEC) in Boston, Mass.

INDA's Technical Advisory Board has selected the finalists. Industry professionals can now select their top choices in each category on the magazine's website. Finalists range from a new patterning process to form special and unique artwork within flushable wipes substrates, and a laminate that passes the highest level of protection against viruses in the surgical gown and protective apparel industry to a fluff pulp made of 100 percent highly sustainable Eucalyptus planted and harvested in Brazil. The finalists are:

IDEA16 Equipment Achievement Award – Best new equipment introduction

- Andritz: Flushable Substrate Patterning Process
- ITW Dynatec: Ultra Strand Coating System

- TECHNOplants s.r.l.: MULTiline Pre-Card

IDEA16 Roll Goods Achievement Award – Best new roll goods introduction

- AVINTIV/PGI: AAMI 4 Laminate
- Freudenberg: Evolon 3D
- Jacob Holm: Softlite™ lightweight nonwovens

IDEA16 Raw Material Achievement Award – Best new fiber/raw material introduction

- BASF: Saviva™ SAP Technology
- Kelheim Fibres: Viloft® Short-Cut (cellulosic short-cut fiber for flushables)

- Suzano Pulp and Paper: EucaFluff fluff pulp

IDEA16 Short-Life Product Achievement Award – Best new disposable product utilizing engineered fabrics

- Chicopee: DuraDry®
- McAirmaid's: X-Top® Pouch for Men
- WipeMeWorld: WipeMe® flushable wipe on a roll

IDEA16 Long-Life Product Achievement Award – Best new durable product utilizing engineered fabrics

- Impossible Objects, LLC: CBAM 3D printed pieces
- TiGUARD: Vibrance® Nonwoven-Membrane Carpet Backing

- UltraTech International: Evershield® Durable Omni Repellant formula

Full details on each of the finalists are available on the Nonwovens Industry website. Votes will be accepted until April 1.

IDEA16, the world's preeminent event for nonwovens and engineered fabrics, is expected to attract more than 7,000 attendees and over 450 exhibitors from 70-plus countries. For more information on attending and exhibiting, visit www.idea16.com.

BRAZIL

Suzano Papel e Celulose to start tissue production

Suzano Papel e Celulose has contracted with Voith to deliver two tissue machines. The machines will be installed at the company's Imperatriz and Mucuri locations. The machine located in Imperatriz is scheduled for start-up in June 2017, whereas the one located in Mucuri is expected to go on-line in September 2017.

Each machine will have a manufacturing capacity of nearly 220 metric tons of paper daily, at a speed of 2,000 meters per minute.

Suzano Papel e Celulose is a forestry-based company and one of the largest producers of pulp and paper in Latin America. Its annual production capacity amounts to 4.7 million metric tons of paper and pulp.

RISE® Conference Inspires New Thinking about Engineered Fabrics

INDA Event in New Orleans Demonstrates Innovative Future for Industry

Technology scouts attending INDA's Research, Innovation & Science for Engineered Fabrics (RISE®) left inspired by the valuable connections, solutions and new ideas they discovered at the recently concluded conference.

The Jan. 25-28 event at the Le Meridien Hotel in New Orleans drew 100-plus technical professionals to network and learn from industry experts, scientists and R&D specialists on leading-edge topics with the potential to change the future of nonwovens and engineered fabrics.



“RISE is unlike any other event in our industry with its focus on ‘what’s next,’” said INDA President Dave Rousse. “In that way it is an eye-opener and gets people to think about applications and possibilities for the future they perhaps never imagined had they not attended.”

Jim Robinson, Technical Services Manager of BASF Hygiene Products said he came to RISE expecting a more traditional conference with a list of people he wanted to meet and valuable sessions to attend.

“What I didn’t expect was the fact that, over the two-and-a-half days of the conference, I would find solutions that I could apply to at least four current projects, each with different technical and market needs, and that the unplanned contacts would turn out to be so valuable to making progress on these projects in a timely fashion,” Robinson said.

Tony Wu, Senior Scientist at Owens Corning Science & Technology Center praised RISE as “a good platform for nonwoven technical exchange and learning on industrial trends.”

Topics that got attendees thinking differently included such concepts as rebuilding fibers and fabrics using revolutionary self-healing bio-formation structures; making lighter weight, economic and sustainable nonwovens from eucalyptus and milkweed materials; and recycling carbon fibers in the auto industry, among others.

RISE DURABLE PRODUCT AWARD PRESENTED

The prestigious RISE® Durable Product Award as presented to Suominen for Fibrella™ Lite, a nonwoven product for absorbent hygiene products. RISE attendees selected Fibrella Lite over finalists Groz-Beckert's Gebecon Needle and ITW Dynatec's Ultra SCS.

"Suominen is honored to receive the prestigious RISE Award for Fibrella® Lite, a lightweight nonwoven spunlaced product which offers softness, strength and high elongation made with 100 percent thermoplastic fibers," said Lynda A. Kelly, Senior Vice President, Care Business. "We thank INDA, the RISE committee and attendees of RISE for this recognition."

INDA also announced the next RISE conference – the seventh edition – will be held Jan. 23-26, 2017 at the Sugar Land Marriott Town Square in Sugar Land, Texas, near Houston. ■

ABOUT INDA

INDA, the Association of the Nonwoven Fabrics Industry, serves hundreds of member companies in the nonwovens/engineered fabrics industry in global commerce. Since 1968, INDA events have helped members connect, learn, innovate and develop their businesses. INDA educational courses, market data, test methods, consultancy and issue advocacy help members succeed by providing them the information they need to better plan and execute their business strategies. For more information, visit www.inda.org, or download the INDA mobile app for immediate updates.



THE BIG IDEAS START HERE

MAY 2-5, 2016

WELCOME RECEPTION:

Monday night, May 2, 2016

CONFERENCE & EXPOSITION:

May 3-5, 2016



IDEA[®]16
BOSTON

The World's Preeminent Event for
Nonwovens & Engineered Fabrics

300+

EXHIBITORS

attendees and companies from

70

countries

7,000+ ATTENDEES

MAKE IDEA16 A MUST FOR 2016!

Meet the inventors of the next generation of nonwovens. Connect with exhibitors who have the potential to be your collaborators. Engage with the brightest minds in the nonwovens industry.

QUESTIONS?

On registration details

Tracie Leatham
tleatham@inda.org
T: +1 919 459 3726

On exhibit sales

Marilyn Bellinger
mbellinger@inda.org
T: +1 919 459 3718

To register
online, visit
IDEA16.com

ONE WEEK. THREE EVENTS. INSIGHTS, NETWORKING, BUSINESS.

Innovation and sustainability are changing the wood-based biorefining industry

INTERNATIONAL
PULP &
PAPER
WEEK



BIOECONOMY
INNOVATION
FORUM



WORLD
BIOENERGY

STOCKHOLM 24–26 MAY 2016 iwbweek.com

Be part of the next generation of wood-based biorefining solutions

IWB Week is a leading international event for the innovative and sustainable wood-based biorefining industries. During three days crammed with exhibitions, seminars and networking, we dig deep into the future challenges of the forest industry, including pulp, paper, bioenergy and new wood-based products.

Join us today for new business, valuable networking and industry insights.

Book your stand at International Wood Biorefining Week at iwbweek.com

iwb
International Wood Biorefining
week

organizers



conference organizers



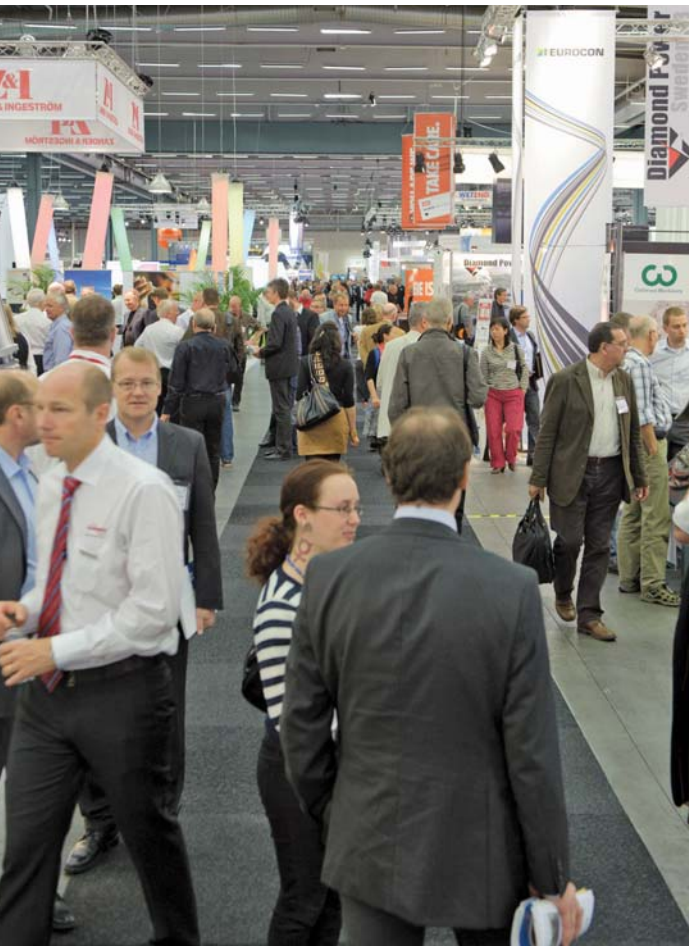
conference partners

Innventia VTT

main media partners

Nordisk Papperstidning Bioenergy International

International Wood Biorefining Week, 24-26 May 2016, Stockholm



IWB Week is the leading international event for the wood based biorefining industries. The event combines three strong events for the forest industries focusing on the pulp, paper, bioenergy, new biobased innovations and products. IWB Week is organized in Stockholm, 24-26 May 2016.

THE CONFERENCE

IWB Week will host four parallel conference tracks focusing on bioenergy and biobased products and innovations. The entire conference program will be released in March 2016.

The conference starts with an opening ceremony where you will have the possibility to listen the Swedish Minister of Rural Affairs, Sven-Erik Bucht. In the afternoon session about Biomass Markets you will meet Matthew Rivers from Drax biomass talking about “Wood pellet sourcing and use at Drax , UK’s largest Power production unit”.

At the Bioeconomy Innovation Forum you can for example listen to Lars Axrup, project director at Stora Enso giving a presentation about Micro fibrillated cellulose in packaging applications. In the “From Wood to Loom” session, Hans Grundberg from Domsjö will give a presentation about production and applications for dissolving cellulose.

The program for World Bioenergy will be divided into Advanced Biofuels and Power & Heat from the forest. The different sessions will focus on “from demo to commercial”, Block pellets & torrefaction, Advanced biofuels, Bioenergy from the forest industry, Bio power from forest biomass and Biofuels in aviation & marine applications.

The Bioeconomy Innovation Forum will focus on Carbon fibres from the forest, Packaging, Nanocellulose, Bio-plastics, Constructions and on the Food- and Textile industry.

The conference will end by a focus session on the future of the industry.

IWB Week also hosts an open seminars stage in the exhibition area where the exhibitors can present their solutions and products. Apart from the conference and seminars, the event hosts a lot of interesting activities in order to enable matchmaking and new business contacts like a large media center, after work, company visits and other social events.

Meet the leading companies of the bio-based industry at IWB Week

A large amount of companies have already signed up for IWB Week. Among the companies there are service and equipment suppliers like Omya, Kemira, ÅF, SSG, VTT, Raumaster, Cellwood, Christian Berner, as well as forest industry performers like Stora Enso, UPM, Arizona Chemicals and Sveaskog. The leading forest industry clusters in Sweden, Paper Province and BioBusiness Arena will also be present with a large number of member companies. There will also be national pavilions from Canada and China. The event is supported and promoted by approximately 30 different trade magazines and associations from all over the world. In total around 150 exhibiting companies are expected to take part in the event. ■



Second hand equipment supply



**The expert in searching, locating and providing
the best 2nd hand equipment.**

Design, revamping, commissioning and spare parts supply.

Email: office@mepapermachinery.com - www.mepapermachinery.com

ASIAN PAPER

Premier Asian Event for Pulp, Paper, Board,
Packaging, Print and Corrugated Industries

1 - 3 June 2016
BITEC, Bangkok

17-19 May 2017
JI Expo, Jakarta

EVENT HIGHLIGHTS:

- Asian Paper Conference
 - Packaging Zone
 - Corrugated Zone
 - Printing Zone

For booth reservation, please contact:
asianpaper-sg@ubm.com

www.asianpapershow.com

Organised by



Nonwovens Industry Outlook

- Production is forecast to increase 5.7 percent annually through to 2020
- China will lead the growth in production, adding an additional 1.2 million tons from the end of 2014 through to 2020, representing a 7 percent annual growth rate
- Across the nonwoven technology methods, drylaid/ carded hydroentangled production will expand at the fastest rate, adding 7.6 percent annually

It is amazing to believe this multi-billion dollar industry had its modern start only fifty years ago. Until the last decade, the nonwovens industry was primarily based in Europe, North America, and Japan. It is in those three regions that modern nonwoven technologies were conceived and developed. Now, nonwovens are produced on thousands of lines around the world. The nonwovens industry is now truly global. The worldwide nonwovens industry's prospects continue to be favorable, and it remains a rewarding and dynamic industry in which to be involved.

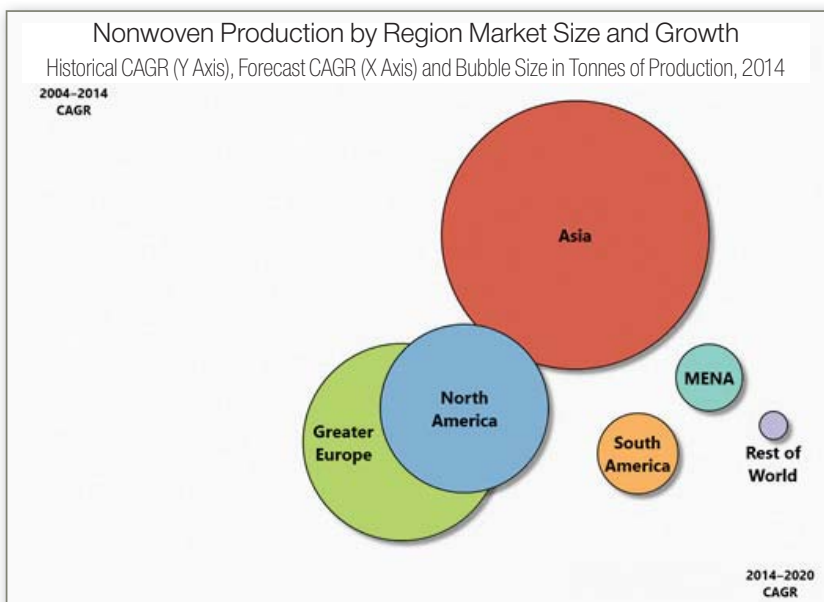
The strength of the economy and demographic trends are the significant drivers of demand within the nonwovens industry. Consumer discretionary spending and business investment — both correlated to the strength of the economy — drive demand in nearly every nonwoven end use category, while certain demographic trends — such as births and aging — drive demand in the remaining end use categories. The basic building blocks of nonwovens demand are thus based upon the global economic and population forecasts.

The worldwide production of nonwoven roll goods reached 8.9 million tonnes in 2014, equivalent to

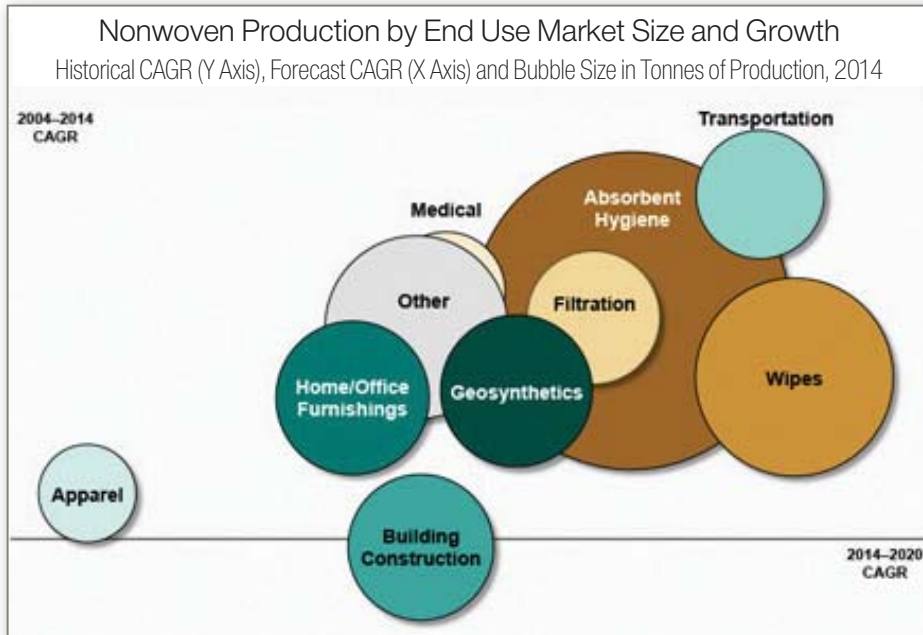
US\$35.6 billion. The tonnage volume was equal to about 262 billion square meters in 2014. EDANA and INDA forecast worldwide nonwovens production will continue to grow, and expect that in the period from 2014 through 2020 the industry will expand at an annual average rate of 5.7 percent and reach a volume of at least 12.4 million tonnes.

Asia is now the dominant nonwoven producing region, accounting for 42 percent of the world's production in 2014, up from 32 percent in 2004. China accounts for a significant proportion (66%) of the Asia volume and is now the most important nonwovens producer worldwide with production volume in 2014 estimated at 2.4 million tonnes and equivalent to more than a quarter (27%) of global nonwovens production in 2014.

In 2014, the production of nonwovens in North



America reached 2.1 million tonnes, an increase of 356,000 tonnes from 2009 (+3.9%), a period that included the recession years and the continued tepid economic environment since then. Greater Europe's production of nonwovens grew in the 10-year period



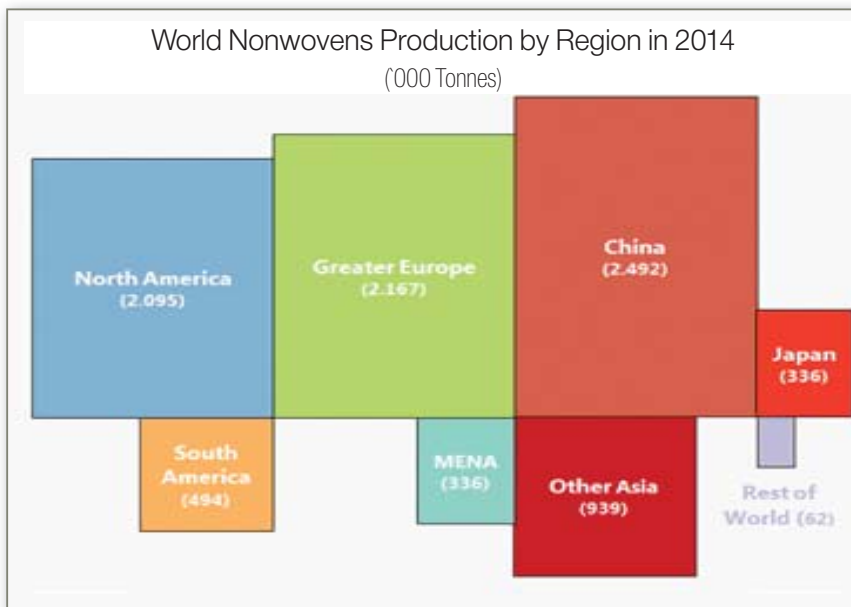
of 2004-2014, rising from 1.3 million tonnes in 2004 to over 2.2 million tonnes in 2014. This represents an average annual growth rate of 5.0 percent over the 10-year period despite the 2009 downturn.

In 2014 the Middle Eastern & North African (MENA) countries, In 2014, the MENA countries produced about 336,000 tonnes of nonwoven materials and are forecast to reach half a million by 2020. The nonwovens output of this region, after experiencing an average growth of 6.6 percent over the last decade, will keep growing by 7.1 percent annually through the forecast period (2014-2020).

Despite the slowdown recorded in 2009, the trade in nonwoven roll goods has been steadily growing over

the past decade. In 10 years, the big picture of the worldwide trade of nonwovens has been modified quite significantly. The evolution of nonwoven exports in both volumes and value has been impressive. In 2014, if we take into account trade flows within the European Union, more than 3,150,000 tonnes of nonwovens valued at around €11,300 million were exchanged worldwide. The same calculation for 2004 showed an approximate 1,750,000 tonnes valued at €6,000 million. ■

Source: INDA/EDANA, Worldwide Outlook for the Nonwovens Industry, 2015



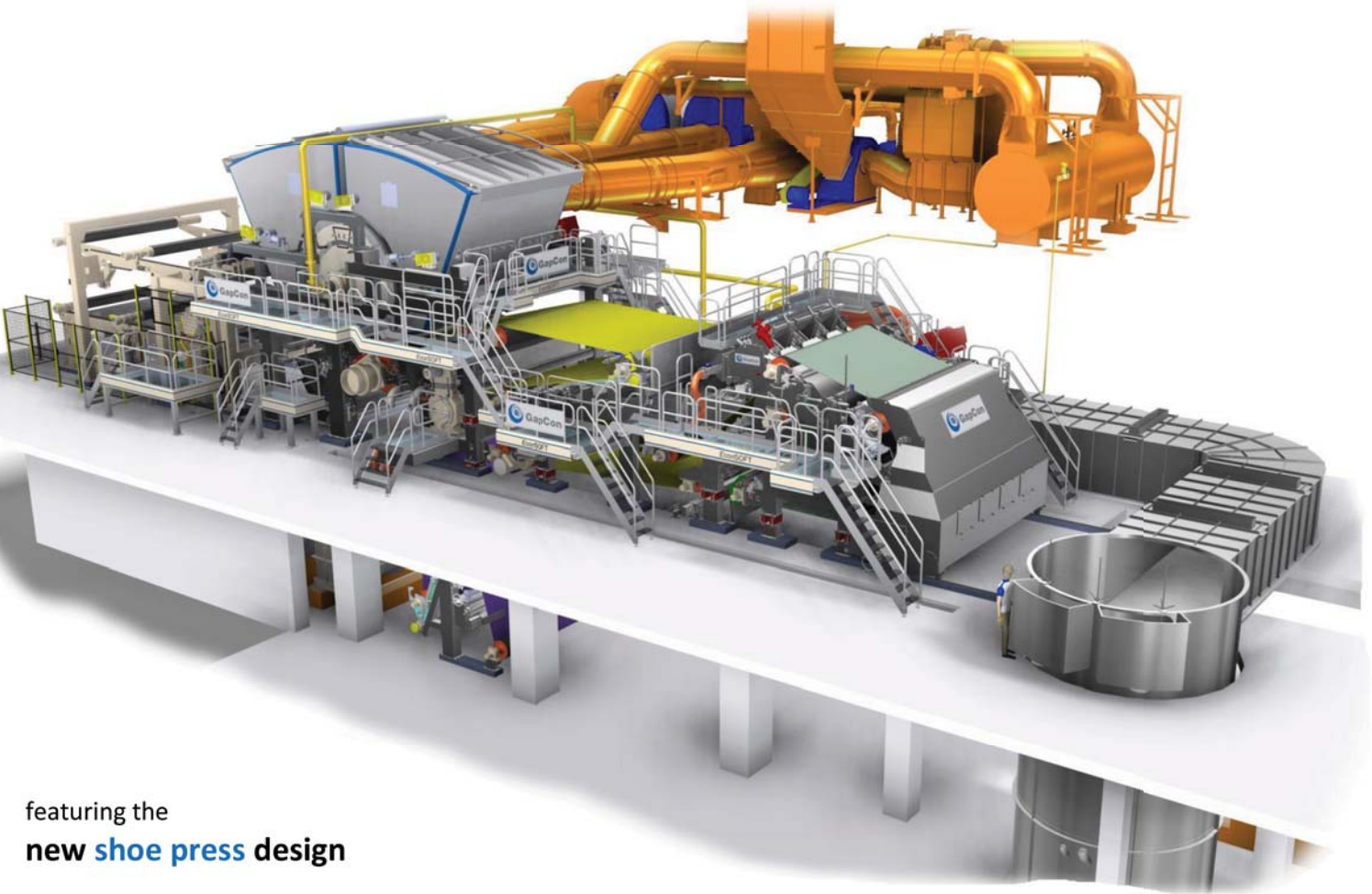
**HIGHEST
EFFICIENCY**



introducing high performance tissue machine

EconSOFT™ ERS

Energy and Resources Saving



featuring the
new shoe press design

EconPRESS™ NEXT

New Extended nip concept for Tissue

- and
- EconFLOW™ HC** high consistency hydraulic headbox
 - EconDRY™** steel Yankee Dryer with enhanced stiffness
 - EconREEL™** increased efficiency pope reel

GapCon Tissue S.r.l.
Via Mirandola, 13
37026 Settimo di Pescantina (VR)
ITALY

Phone: +39 045 6700298
Email: info@gapcon-tissue.com

www.gapcon-tissue.com



Tissue Industry in the Middle East and North Africa

A Rollercoaster of Change

While 2015 was a busy year in terms of projects and startups, there is not a doubt that 2016 is going to be a hard-hitting year for tissue producers in the Middle East and North Africa. The winds are indeed blowing where the ships do not wish to go, and a general sense of uncertainty and vulnerability has started to sink among the industry's major players in the region. Head-to-head competition already started with the ongoing decline in tissue jumbo rolls prices.

2015 was marked by major startups established by Faderco in Algeria, Hayat, Tezol and Ipek in Turkey and Abu Dhabi National Paper Mill in the United Arab Emirates:

- Algeria's Faderco, remains the most active in the local hygiene industry. Founded as a converting factory for tissue and absorbent hygiene products, the company came into tissue manufacturing with a 30,000 tons per year tissue machine that started in the last quarter of 2015.
- Hayat Kimya has started its fifth tissue machine at its new location in Tarsus/Mersin, south of Turkey, with a production capacity of 70,000 tons per year.
- Ipek chose to install its fourth tissue machine at the Manisa converting facility in Turkey, adding another 70,000 tons per year of tissue.
- Tezol started its third tissue machine at the Mersin Tezol Kagit location, boosting its existing production capacity by an additional 30,000 tons per year.
- With the new NTT machine at Abu Dhabi National Paper Mill in Abu Dhabi – UAE, the mill is going to increase its current production capacity to 93,000 tons per year. The NTT machine can deliver high absorbency, high softness and high bulk products, however the market is not yet prepared for these quality specifications. Therefore there is a possibility it will be operated as a conventional machine while waiting for the market demand to mature.

Despite a currently uneasy market, many companies are still looking into different expansion projects and options:

- The acquisition of the Crown Paper Mill in Abu Dhabi, UAE, by Ittihad International Investment,

is the first milestone in what is seen as a new trend that may develop further in the coming years with many other acquisitions currently being discussed. Crown Paper Mill was established in 1996 and partially owned by the Gulf Investment Corporation (GIC). Since 2010, the mill operates two machines with a total capacity of 30,000 tons of tissues per year. With this acquisition, Ittihad group secures an immediate position in the regional tissue market despite being a new joiner. The company plans further expansion in tissue manufacturing in 2017.

- Nuqul Tissue project in UAE, under the name of Al Nakheel Paper Mill is already in the pipeline, with some delay that may occur in its startup at the end of 2017. The new machine will produce 60,000 tons of tissues per year, thus boosting Nuqul Tissue existing production capacity of 155,000 tons per year by an additional 70,000 tons.
- The Expansion plans of Hayat Kimya Group in Egypt are on track with a 70,000 tons per year Valmet tissue machine being installed at the group's new site in Ain Sokhn. The startup of the tissue machine is scheduled at the end of 2016. Hayat Kimya operates in Egypt since 2012, as Hayat Egypt Hygienic Products S.A.E producing baby diapers under the Moflix brand.
- The tissue converting company, Al Faris Group in Saudi Arabia, has already contracted Papcel for the supply of its new tissue machine.
- Handy – Alex Converta in Egypt stopped its production in 2015 and the ownership of the mill has been transferred to the Habibco Trade Company.

Other projects are in the idle phase, including Gulf Paper Industries Factory project in Saudi Arabia, PMI project in Algeria and Ackef Pack project in Egypt.

It is difficult to predict when we will see an end to this rollercoaster of change, especially with the region's ongoing social and economic unrest. However and although the ripples of regional struggles have reached the tissue market, the situation has not been drastically affected and growth is still seen in some parts. In such conditions, many operators and investors would try to quietly observe the situation and potentially move any plans until after the second quarter of 2016. ■

	Company	Tissue Machine	Operating Speed (m/min)	Width (m)	Production Capacity (tons/year)	Supplier	Startup Year
Lebanon	Unipak Tissue Mill	PM1	1500	2.7	22,000	Beloit	1995
	Sanitary Paper Co - Mimosa	PM4	700	2.3	7,000	Toscotec	1992
		PM5	850	2.1	8,000	Toscotec	1995
Jordan	Al Keena Hygienic Paper Mill	PM1	1650	3.67	30,000	Voith	1995
	Al Snobar Hygienic Paper Mill	PM1	2000	5.4	54,000	Metso	2007
Syria	Saffoury Paper Mill Industries	PM1	800	2.6	Closed	-	2002
	Oriental Paper Manufacturing Lanatex	PM1	600	2.7	11,000	Recard	1995
		PM2	1100	2.72	17,000	Over Meccanica	2000
UAE	Dinatex Paper Manufacturing	PM3	1800	2.72	30,000	Over Meccanica	2007
		PM2	900	2.25	Closed	Toscotec	2011
		PM1	1900	2.75	28,000	Over Meccanica	2002
KSA	Abu Dhabi National Paper Mill	PM2	2000	3.6	35,000	Over Meccanica	2007
		PM3	2000	2.7	27,000	Metso	2015
		PM1	1100	1.86	11,000	Beloit	2000
Kuwait	Crown Paper Mill Ltd FZC	PM2	1700	2.75	24,000	PMT	2007
		PM1	1800	2.85	30,000	Over Meccanica	2012
		PM1	1500	2.8	28,000	Over Meccanica	2007
Bahrain	Saudi Paper Manufacturing Co.	PM1	1200	2.7	18,000	Recard	1991
		PM2	1500	2.7	25,000	Recard	1995
		PM3	1600	3.6	30,000	Recard	2001
		PM4	2000	5.5	60,000	Metso	2008
Iran	Gulf Paper Manufacturing Co.	PM2	1200	2.25	12,500	Carcano	1982
		PM1	1250	2.6	14,000	Y.K.	1990
		PM2	2000	2.8	28,000	Voith	2011
Morocco	Pars Hayat Saglik Urunleri S.H	PM1	2200	5.6	70,000	Metso	2013
		PM1	2000	5.6	60,000	Metso	2014
		PM1	1000	2.7	15,000	Voith	1995
		PM2	1400	2.7	18,000	Andritz	2010
Tunisia	Zarrin Barg Persia Paper Industry	PM1	500	2.8	10,000	-	2014
		PM1	1400	2.75	18,000	Over Meccanica	2014
		PM1	1500	2.75	20,000	Recard	2013
Algeria	Harir Khuzestan Co	PM2	1100	2.7	16,500	PMT	2002
		PM3	1600	2.76	26,000	GapCon	2014
		PM1	1500	2.7	20,000	Metso	2006
Morocco	Faderco SPA	PM1	2000	2.8	30,000	Metso	2015
		PM1	600	1.8	5,000	Toscotec	1978
		PM2	1300	2.75	16,000	Toscotec	1995
Morocco	Sipat	PM1	2000	2.8	30,000	Metso	2013
		PM1	2000	2.8	30,000	Metso	2013

	Mill Name	Tissue Machine	Operating Speed (m/min)	Width (m)	Production Capacity (tons/year)	Supplier	Startup Year
Egypt	Al-Bardi Paper Mill	PM1	1600	2.25	17,000	Valmet	1991
	Al-Sindian Paper Mill	PM1	2000	5.4	54,000	Metso	2005
	Al Zeina Tissue Mill	PM1	2000	2.75	30,000	PMT	2008
	Alex Converta	PM1	800	1.85	Closed	Recard	1989
	Carmen Tissues	PM1	800	1.7	6,000	ACelli	1995
	Interstate Paper Industries	PM1	1800	2.86	25,500	ACelli	2008
		PM2	1800	2.86	25,500	ACelli	2010
		PM3	1000	2.7	12,500	Recard	2012
	Hayat Kimya Egypt	PM1	2200	5.6	70,000	Valmet	2016
	Mediterranean Paper Company	PM1	1500	1.8	15,000	Beloit	2011
		PM2	1400	2.75	25,000	Over Meccanica	2014
	Pyramids Paper Mills	PM1	1000	2.5	10,000	Over Meccanica	1988
		PM2	1400	2.6	19,000	Voith	1995
		PM4	1200	2.5	12,500	Over Meccanica	2007
PM1		2200	5.6	60,000	Metso	2011	
Turkey	Aktul kagit Uretim Pazarlama A.S.	PM2	2200	5.6	60,000	Valmet	2016
		PM1	2200	5.45	60,000	PMT	2006
	Hayat Kimya San ve Tic. A.S.	PM2	2200	5.6	70,000	Metso	2010
		PM5	2200	5.6	70,000	Valmet	2015
		PM1	2200	5.64	70,000	Metso	2007
	Lila Kagit San. ve Ti. A.S.	PM2	2200	5.64	70,000	Metso	2011
		PM1	900	2.2	12,000	ER-WE-PA	1970
	Ipek Kagit Tissue Paper Co.	PM2	1600	2.7	27,000	Beloit	1991
		PM3	2000	5.4	55,000	Beloit	2000
		PM4	2200	5.6	70,000	Valmet	2015
		PM2	1400	4.32	24,000	Voith	2002
	Parteks Kagit	PM2	900	2.75	6,000	Beloit	1996
		PM3	1600	2.85	26,000	Toscotec	2014
		PM1	1200	2.68	18,000	Escher-Wysss	2004
Tezol Tutun ve Kagit A.S.	PM2	1800	2.9	36,000	Recard	2009	
	PM3	1800	2.85	30,000	Valmet	2015	
	PM1	550	4.5	15,000	ER-WE-PA	1971	
Viking Kagit ve Seluloz A.S.	PM2	1500	2.76	27,000	Valmet	1999	
	PM1	1600	2.8	25,000	ACelli	2006	
Essel Cellulose	PM2	1800	3.2	30,000	Recard	2015	
	PM2	1500	2.85	25,000	Over/ABK	2014	
Eka Kagit	PM3	2000	2.85	30,000	Over	2016	



The answer is right **here.**

Smart chemistry doesn't have to be complex.

Sometimes all it takes is a conversation. So we work closely with you to analyze your process and water chemistry challenges. Then we connect with the right technologies that can help you achieve your goals.



Experience the simplifying power of collaboration at [solenis.com](https://www.solenis.com)

Salim Karadsheh: The Work Ahead for FINE Hygienic Holding

Today, Salim Karadsheh, CEO of Fine Hygienic Holding, has a considerable challenge on his hands to uphold a successful brand given regional political turbulences, oil price decline, and a global market still recovering from recession. He tells METissue how Fine has evolved from one small converting plant in Amman's Souq Al Sukkar, to a word that is synonymous with tissue paper in regional households.

HUMBLE BEGINNINGS

Elia Nuqul, the founder of Nuqul Group, first set foot in the hygienic paper products industry by importing toilet paper from London in the 50's. Originally a refugee from Palestine in 1948, Elia started a food trading business in downtown Amman called Nuqul Bros. In its infancy, the company traded imported household goods and an assortment of foods from Europe.

On one of his business trips to London, Elia found out that the toilet paper he was importing to Jordan



Salim Karadsheh, CEO of Fine Hygienic Holding

through England was actually manufactured in Sweden. This logistical ineffectiveness bothered Elia and forced him to take matters into his own hands: what started out as a modest trading operation soon expanded into Elia deciding to buy his own toilet-paper manufacturing and converting machine.



Elia Nuqul, founder of Jordanian-based Nuqul Group

“It was the first one in the region,” Salim Karadsheh said, speaking about the toilet paper machine in Amman’s Souq Al Sukkar, adding that “the regional



Fine first factory opens in Marka in 1962

demand did not justify a need for selling raw material just yet, leading to the company selling toilet paper under its own brand”. A few turbulent years of losses followed, but on another business trip abroad, Elia defiantly came back with three new machines, and tried again. In following years, the company had installed two mills in Jordan, and two in Egypt, and converting lines in Lebanon and Kuwait.

What started out as a toilet paper machine experiment soon expanded into mass production and conversion of hygienic products such as kitchen towels, coasters, table napkins, diapers, feminine sanitary items and the staple Fine facial tissues. By the mid-1980s, this operation had expanded into all regional markets, and included all of Elia’s children, of whom Ghassan Nuqul still runs the business as Chairman today.

THE BUSINESS TODAY

Elia – who is currently in his 80s – remains the Godfather of Nuqul Group, while Ghassan and his brother Marwan sit on FHH board. Little over a decade ago, the company’s family-run business model gave into a family-owned business model, and today, the CEO of Fine Hygienic Holding is not from the family itself. At the time of the decision in 2004, almost all privately held Jordanian businesses were family owned, but the group’s expansion required that each company hired talent with fresh approach towards corporate governance, while maintaining a firm commitment to the company’s core values.

Most family-run businesses simply cannot expand past a certain point, explains Karadsheh, as they “lack the accountability, experience and subject matter experts” needed for medium sized firms to grow into multinational businesses.

Corporate governance has unquestionably been a driving factor in the company’s stability and momentum towards the global market. Decentralization of roles has allowed the company to protect the interests of stakeholders, clarify the overall group strategy, and even facilitated loan processes with banks, who were more comfortable in dealing with outsourced management than a family-run business. Delegating authorities down the ranks expands accountability, creates faster speed, reduces cost and removes bottlenecks. It further enhances the ownership level and generates loyalty and makes a better work environment.

The head office in Amman currently



On the occasion of King Hussein's accession to the throne, FINE participates in a parade marking the silver jubilee celebrations in 1977

employs over 100 professionals who “are responsible for setting the strategic direction and following up on the performance of all FHH companies”. Globally, the group employs some 4,200 staff members, located across the Middle East and North Africa. In 2014, FHH launched a new 5-year business plan, with a vision set on further growth both regionally and internationally. Karadsheh explained how the company takes pride in their work environment and the company's diversity. FHH has employed professionals from 33 different nationalities working across their MENA facilities, with an average age of 37 years old. FHH prides itself in the job market for the fact that their code of conduct enforces equal opportunity for employees regardless of gender, ethnicity or religion. In fact, working mothers who have been employed with FHH for more than 5 years are allowed to work a reduced number of working hours per day to enable them to enjoy a better home-work balance. Education and training granted to FHH employees enable them to grow and follow their dreams. On top of all of that, it is one of the few companies with mandatory safety inductions and employee training courses.

Current FHH products have expanded from facial tissues, napkins, and baby diapers, into commercial, industrial, and medical sectors through their Fine Solutions brand, which provides “superior products engineered for uncompromising hygiene, optimized cost, and performance efficiency”.

The company is not limited to hygienic tissue converting; FHH has also dabbled in the realm of non-woven manufacturing via their (SPIC) Specialised Industries Co. Ltd operation, and currently also runs a packaging and printing press called Perfect Printing Press (PPP).

AGAINST ALL ODDS

When asked about how he came to be the CEO of FHH, Salim Karadsheh mentioned that it was pure coincidence. “I was actually educated as an Electrical Engineer, and worked in that field for 6 months, but was not enticed by it. I then had a career shift and diverted into Oil & Gas in the GCC to gain experience for a short while, but did not find myself there either.”

In 1986, Karadsheh came across a job opening in operations and maintenance. “Like the vast majority of regional companies at the time, there were no specific departments or job roles and descriptions. My first impression is that I would try it out for a couple of years, and it's been 30 years since then.”

At the time, employees simply did their routine tasks day in, day out. The company simply reacted to the market's needs as they came along. That was the area where Karadsheh saw an opportunity to be proactive, and as he became more and more involved with the company's affairs, the higher-ups gave him an opportunity to grow. “One job led to another, and at one stage, the leadership decided to separate the management from the ownership, which is when I was invited to lead the core business, and here I am today.” Karadsheh goes into detail explaining how the ability of business to grow today has changed dramatically since it had been before the 2008 crisis. “Earlier the banks played a role that fueled the growth of companies such as ours. We had the ability to replace a loan with another loan, and as the business grew and profits skyrocketed, we had the ability to shrink the debt margin, allowing us to take another loan and grow.” Banks, having learned their lesson from 2008, no longer operate under such a relaxed model, and newer rules and regulations have caused companies to look for alternative paths to drive their development. The company's cash generation ability was eroded around that same time, when the Jordanian government changed its policy regarding fuel, and hiked up the prices of energy. The price of energy soar was triggered by the disruption of the gas line from Egypt, which provided over 80% of Jordan's energy at the time. With these unexpected changes, less cash flowed towards company investors and expansion.

FHH faced yet a third major obstacle in 2011, due to the Arab Spring, which the regional market has yet to

recover from. “The political and civil unrest in Syria, Iraq, and Egypt caused unexpected major disruptions in FHH’s growth in these regions, and across the Middle East as a whole.”

Despite all of the above, tissue consumption in the Middle East has been growing steadily over the years. Given these circumstances, and in a bid to meet the group’s former growth expectations, investors were invited to hold a stake in the company led by Standard Chartered Private Equity.

A strategic approach to the relation between FHH, its suppliers and customers created a “Growing Together” mentality. “Collaboration between two-entities in the modern day market is a no-brainer,” describes Karadsheh, where companies the size of FHH often might require even three, or four-entities to collaborate along “the supply chain of hygienic paper production all the way from the forest to the toilet flush.”

THE TECHNOLOGY

Time and time again, FINE was the first to introduce brand-new technologies to the region. In 1991, the company introduced the first fully-automated paper mill in Egypt. “At the time, it was also the largest capacity machine in the Middle East,” added Karadsheh. Around 1996, FHH founded yet another paper mill, which surpassed the size of the first one, becoming the new largest paper mill in the Middle East. The need to meet consumer demand was followed by introducing yet two more paper mills in 2005 and 2007. Every time a mill was built, older ones were rebuilt to bridge the gap in technology. At the moment, there are four major virgin pulp tissue mills, two in Egypt and two in Jordan.

The company’s fifth major tissue mill, Al Nakheel, is currently being built in Abu Dhabi with a cost of \$90 million and estimated production of 60,000 tons of tissue paper per year. Planned to start operation in 2017, the machine used is supplied by Valmet, who

will also handle setting up the machine, from stock preparation to rewinder.

The Valmet Advantage DCT TS machine will feature cutting edge technologies such as ViscoNip press, AirCap hood and a SoftReel reel. With a width of 5.6m, and design speed of 2,200 m/min, the new line will be installed in the FHH grounds at Al Nakheel mill in Abu Dhabi’s industrial area. The tissue machine also comes armed with an OptiFlo II TIS headbox and a cast alloy Yankee cylinder.

The rationale behind building a mill in Abu Dhabi resolves a serious logistical challenge the company is facing: “The Egyptian mills cover North Africa, and our mills in Jordan produce paper for the Levant,” elaborated Karadsheh. “At first, we could get a license to produce in Saudi, and we assessed the transportation costs, working capital and the opening and closing of borders, and determined that the risk of producing in Jordan for the GCC outweighs the pros. Demand is growing and what was needed was a choice of where to locate the new supply.”

“Our manufacturing model requires us to produce closely to where we are converting, as opposed to have goods taking a long time on the way.”

This is especially the case where we want to inject a product quickly into the market without having to wait days for it to be transported across borders. In other, rarer cases, if for some reason the jumbo reels did not meet strict quality standards, the speed to react and cost of returning them, overhauling them did not fit our business model.”

FHH revolutionized the industry with its own sterilization methodology called SteriPro™. The innovative technology is utilized in their manufacturing process using ultra violet sterilization, by methods of fully automating the manufacturing process, thus drastically reducing the hazard of contact with germs. They were the first to also introduce the WetPro™ technology to the Middle East. Karadsheh describes WetPro as a technology that allows end user tissues to handle substantial quantities of water and remain intact, but fully disintegrate when flushed, thus eliminating the need for a toilet dust bin, and enabling the use of the product in western type and squat type toilets for cleaning and drying purposes.

FHH also has a system called Idea-T, which is an Arabic-English play on words translating to “My Idea”. The concept behind Idea-T is to allow



Al Snoabar tissue machine



Inside the Fine factory

THE BUSINESS SIDE

Despite all of the variables the regional economy has gone through in the last few years, FHH has remained buoyant as a business, recording a total revenue of \$688 million in 2014, down from \$701 million in 2013 – the drop comes from exiting disrupted and sanctioned markets and divesting the feminine care business. The governmental taxation laws and regulations have fluctuated as well, where government’s growing budget deficits are leading them to encroach more and more on the private sector in this politically charged and oil price challenged time.

employees to innovate by proposing new ideas that the company could utilize. These ideas are then presented to a senior committee, and if accepted, the employee gets rewarded and the idea is taken into the next stage of execution.

When asked about the company’s research and development side, Karadsheh said that “we don’t need any more inventors here. We need innovators. Inventors can come up with solutions for a problem, but innovators are the ones who create radical technologies by addressing the consumer needs and challenges”. He elaborated on the fact that FHH’s size and market influence in the region do not allow them to conduct pure, independent research.

“What we do, instead, is collaborate with research entities, suppliers and consultants to adapt to new technologies; it’s like a jig saw puzzle where we fill in the pieces we have and engage partners to fill the ones we do not ” adding an example of how FHH would take inspiration from the methodology chemical plants depend on to sterilize their products, and then modify them to suit the tissue conversion industry. These adaptations, according to Karadsheh, allowed FHH to stand out among its peers in efficiency resulting in “less downtime, value creation, more efficient use of capital, and enhanced ease of maintenance.”

Regarding innovation in terms of energy, Karadsheh mentioned that FHH had brought three existing parties to create a self-sufficient model, which has become a new standard in power cogeneration in the industry. According to Karadsheh, the power generation capabilities are so competent, that global firms visited Egypt to see how it works.

Following the \$175 million investment for a significant minority stake in Fine, Standard Chartered Private Equity (SCPE) was granted two seats on FHH’s board, marking SCPE’s second investment in a Jordanian-headquartered company. This move was meant to allow FHH to expand into Africa and lead to an eventual IPO for FHH. An independent member of the board was also invited to add industry knowledge to the board. The change thus created is adding value to operations by offering challenge to old set norms in FHH and questioning attributes that otherwise may have passed unquestioned.

FIERCE INTERNATIONAL COMPETITION

In the wake of lower-quality East Asian – mainly Chinese – hygienic tissue products flooding the market at absurdly cheap prices, many regional companies had to cut corners and reduce costs as well as quality to match their competitors. Some measures, which Karadsheh considers questionable at best, included tissue producers “selling two-ply 150 tissue boxes labeled as 300 sheets, along with other debatable measures like actually delivering lower counts, or copying successful brands”

When asked about how Fine handles this challenge, Karadsheh seemed unaffected. “It’s all about the brand quality at the end of the day. We are long termers and not seeking short cuts, and finally the proof is in the pudding. Our customers know what they are buying and the last moment of truth is when a consumer experiences the product. Also, Fine sells a plethora of products under different brands with multiple levels of excellence for all segments of the regional markets,” he

adds that FHH follows certain ethical and sustainability responsibilities that other companies might not have the luxury of considering. “There is a legacy to our brand. Even our products of similar price range as the Chinese ones follow the strictest manufacturing and environmentally friendly requirements.”

SUSTAINABILITY

Karadsheh is proud of the financial direction the group has taken under his lead, but ask him about his most important decisions, and you’ll get an answer about sustainability. As Fine is the Middle East’s largest tissue manufacturer, the responsibility of FHH in preserving the world’s forests is one with the group’s brand value. Having started their Sustainability Report in 2008, the company has academically studied all environmental and social aspects of the business from sustainable forestry to efficient sizing of products, energy consumption and water use.

At the cost of hampering profits, Karadsheh tell us that Fine relies on pulp that “is sourced from well managed forests, which follow tough third party forest certification systems such as the Forest Stewardship Council (FSC) or the Program for Endorsement of Forest Certification Schemes (PEFC).” In 2014 alone, 38.4% of the company’s purchased pulp was FSC/PEFC certified, seven times more than what it was in 2012. All comes from sustainable forestry.

Last year, FHH in Egypt acquired the capability to use 100% Eucalyptus pulp, a feat the company presented at the Tissue World Conference 2014. The reasoning behind using Eucalyptus as opposed to other sources of pulp is because Eucalyptus has a much shorter life cycle – almost 1/4th that of a soft wood tree. This allows FHH to streamline the process of tree reforestation at a quicker pace, while generating higher volumes of end-product with a peace of mind.

In an effort to become more efficient and reduce their carbon footprint, the company followed the ISO 50001 in its Egyptian and Jordanian mills. The ISO certificate represents efficient energy management systems, and has since then reduced their total operation and distribution fuel consumption from almost 2 million Giga Joules in 2013, to 1.6 million Giga Joules in 2014, effectively cutting greenhouse gas emissions by 8.25%.

THE FUTURE OF THE INDUSTRY

If the past 8 years have been challenging for regionally based companies, the next few years might require the most delicate forecasting the region has faced to date. Oil price volatility and currency deflation put aside, the region’s geopolitical disruptions have resulted in new target audiences of varying needs, priorities and budgets.

When asked about his estimations for the future of the industry, Karadsheh paused and then said truthfully that “nobody knows. All of the forecasts of yesteryear are being challenged today. For example, when preparing our budget plan for this year, our reports and forecasts assumed the price of oil would be \$60 USD, this was then revised to \$50 early January, only for January to average below \$35 a barrel. The Euro parity to the dollar is not going towards the convergence people expected – or is it, and the American economy did not jumpstart the way everyone thought it would. All major corporations have over-built, over-consumed and over-borrowed, and we’re still feeling the consequences of that until now.”

Despite all of the odds, Karadsheh is hopeful. “The world is changing fast. We will always be ready for worst-case scenarios with proper expectation management and adapting to the consumer needs at all times. Flexibility, adaptability, speed and lean management commands more significance than at any other time” ■

Fact Sheet

Nuqui Tissue has five major production units:

Al Bardi PM1 (6th of October City, Egypt)

Supplier: Valmet Width: 2.25 m Operating speed: 1600 m/min Capacity: 17,000 tons/year Startup: 1991

Al Keena PM2 (Amman, Jordan)

Supplier: Voith Width: 3.65 m Operating speed: 1650 m/min Capacity: 30,000 tons/year Startup: 1995

Al Sindian PM3 (6th of October City, Egypt)

Supplier: Valmet Width: 5.4 m Operating speed: 2000 m/min Capacity: 54,000 tons/year Startup: 2005

Al Snobar PM4 (Amman, Jordan)

Supplier: Valmet Width: 5.4 m Operating speed: 2000 m/min Capacity: 54,000 tons/year Startup: 2007

Al Nakheel PM5 (Abu Dhabi, UAE)

Supplier: Valmet Width: 5.6 m Design speed: 2200 m/min Capacity: 60,000 tons/year Startup: 2017



SVECOM P.E.

Paper and Tissue World

Pneumatic Shaft



Pneumechanical Core Plug

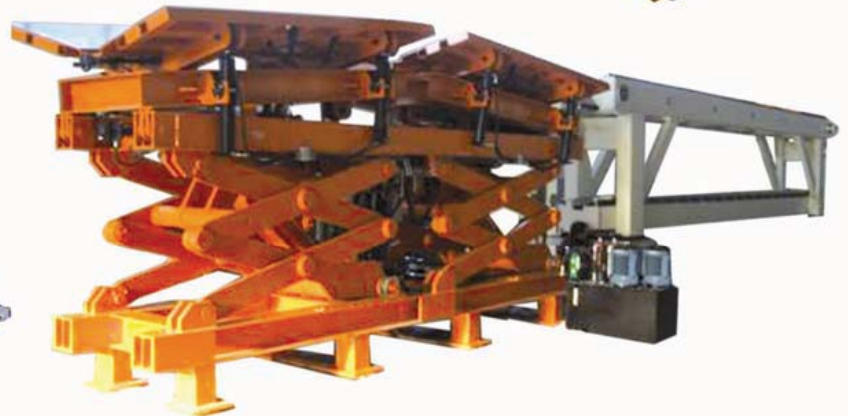


NEW



Electric Trolley 401BA

Shaft Puller



Agents and distributors all over the world.
SVECOM P.E. Srl - Via della Tecnica, 4 - 36075 - Montecchio Maggiore - VICENZA - ITALY
Tel. (+39) 0444.746211 - Fax 0444.498098 - e-mail: svecom@svecom.com

For U.S.A market requests contact the affiliated Company Goldenrod Corp. - www.goldrod.com



www.svecom.com

TISSUE-ME 2016

PAPER-ME 2016



The **8th** International Exhibition for
Paper, Board, Tissue & Hygiene Products

October 22-24, 2016

Cairo International Convention Centre (CICC), Halls 1,2,3
Cairo - Egypt



Tel. : +202 26 7052 39 / 26 7122 87 - +2010 017 55 321 Fax : +202 22 7536 34

E-mail: paper@nilefairs.com - tissue@nilefairs.com

Website: www.papermideast.com - www.tissueme.com

Scan with
Smart Phone



Solutions for Increased Fit and Comfort of Modern Baby and Adult Incontinence Diapers: Different Opportunities for “Open” or “Pant” Diapers

Fameccanica operates in the production of disposable absorbent sanitary products. It designs, manufactures and installs complete lines for the production, stacking and packaging of diapers for babies, training and youth pants, lady napkins, pantliners, products for incontinent adults including briefs, pull-ups, bed underpads in addition to light incontinence pads and male guards.

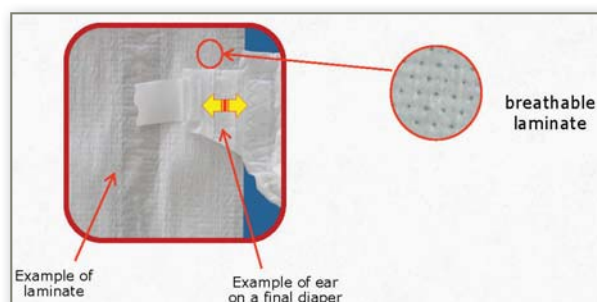
Fameccanica offer includes not only high performance machines, but also entry-level and medium speed platforms to support the growth of customers during their different business stages as well as when they are differentiating their business across the developed and developing markets.

NEW METHODS FOR LAMINATION OF DIAPERS' ELASTIC BACK EARS

GLUELESS™ LAMINATION OF DIAPERS BACK EARS

An opportunity for baby and adult diapers elasticization and better fit comes from Fameccanica's known patented solution for a unique technology for the processing of elastic breathable laminates with ultrasonically bonded transpiring spots.

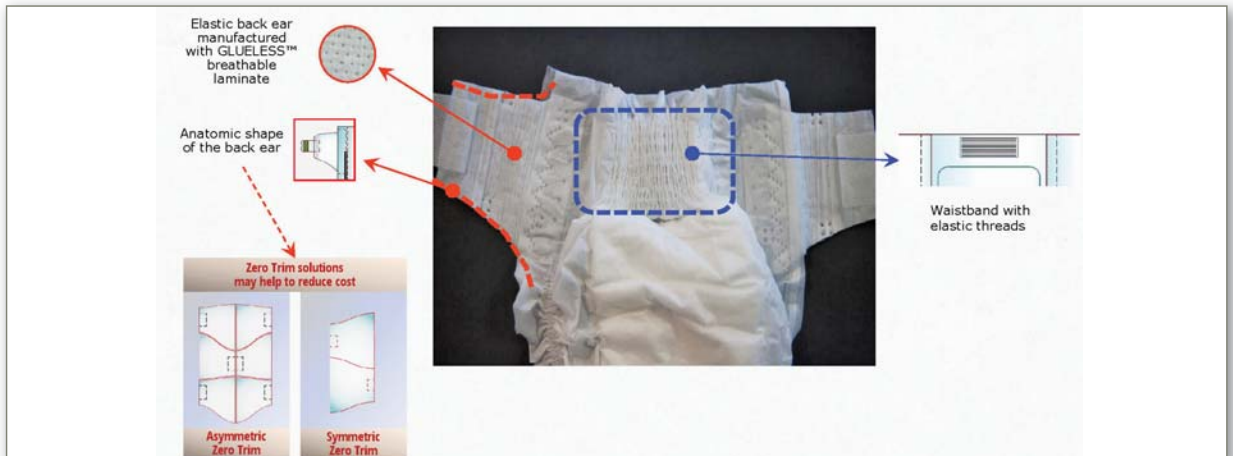
This is an opportunity for a convenient solution to introduce the back ears elasticity at a reasonable cost, as diaper manufacturers can produce this material in-house, with estimated material saving of 30 to 40% compared to common premade materials available in the market today.



Example of real application on a baby diaper

One of the key characteristics of this process is the absence of glue in the laminate.

In fact, the latest improvement for Fameccanica



The waist band can provide additional elasticity thanks to the adoption of solutions for “in line” manufacturing solutions with elastic threads. This is another example of convenient solution to introduce the waist elasticity with a reasonable cost impact on diaper.

consists of the complete elimination of the glue applications in this laminate and this is by itself, an evident step in the direction of cost saving in diaper production processes and environmental impact reduction.

Another characteristic of this process is the material breathability.

This is the result of the specific patented process adopted, where the “point-through bonding process” simultaneously creates transpiring spots.

The comparative tension-elongation tests show

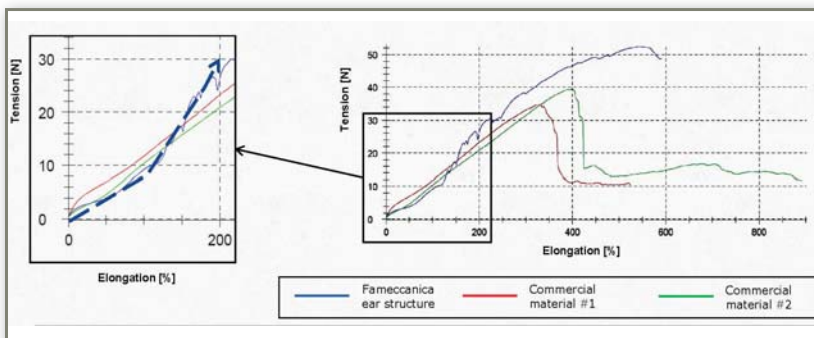
a substantially equivalent result of Fameccanica GLUELESS™ Ear structure vs. commercial materials in the area actually performed by the end user. It also highlights a peculiarity of Fameccanica ear structure, where the force increases with elongation higher than 100%.

PRODUCT PERFORMANCES INITIAL TEST RESULTS

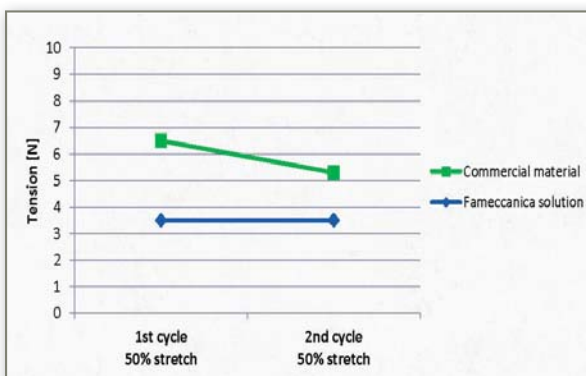
In case of multiple cycles conducted at the reference elongation of 50%, the comparative tension-elongation tests show a more

stable behaviour of Fameccanica GLUELESS™ Ear structure vs. commercial materials.

This behaviour is related to the specific structure adopted for Fameccanica solution, where the performance of the internal elastic film in such elongation range is independent from the activation of the external nonwovens.



Example of structure for baby diaper ears



Comparative tension-elongation tests

FLS LAMINATION SYSTEM

A typical manufacturing plant uses 1 FLS Laminator to serve 4 baby diaper machines or more (often up to 8).

Estimated saving for each baby diaper machine using the Fameccanica laminate is in the range of 200.000 to 300.000 US\$ per year per year compared to common premade materials available in the market today.

In case of feeding 4 baby diaper machines saving can exceed 1 Million US\$ per year.

This solution can be achieved either off-line with stand-alone systems or in-line into the diaper converters.

SOLUTION 1: OFF-LINE WITH STAND-ALONE SYSTEMS



Fameccanica laminating machine model FLS is a stand-alone machine for the lamination of material for Elastic Side Panels for baby diapers. Laminated web is rewound in reels or spools ready to be used on baby diapers converting machines.

SOLUTION 2: IN-LINE INTO THE DIAPER CONVERTERS



The in-line solution is normally preferred for the high speed converters.

The system can be installed in a dedicated area of the machine, with limited impact on machine layout and overall machine footprint.

NEW WAIST ELASTICIZATION FOR BABY AND ADULT PANTS

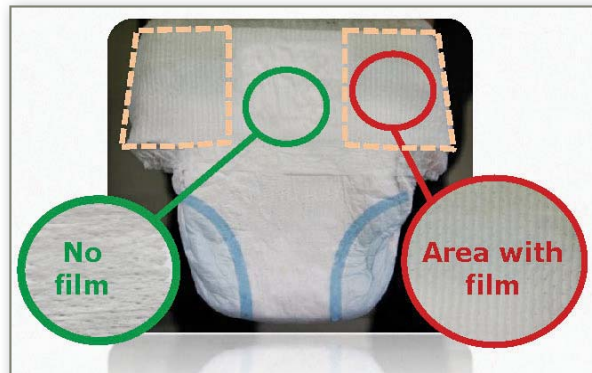
This new waist elasticization system is an alternative to standard elastic threads which are replaced by an elastic film.

The in-line lamination of nonwoven and elastic

film creates transpiring spots making the material breathable and comfortable. The result is a soft and comfortable waist band.

Intermittent film application

The waist elasticization with elastic film can also be obtained in selected targeted zones.



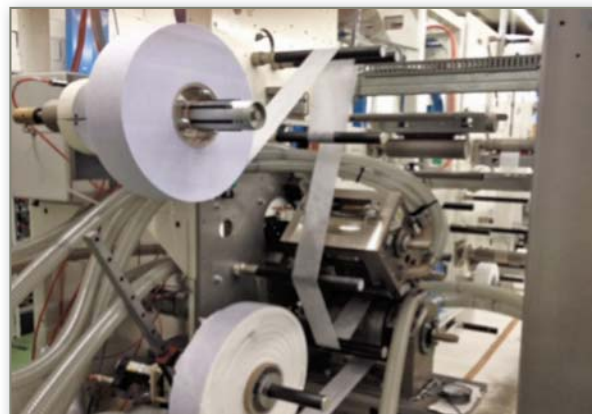
With this process solution, the “panel-type” version can be manufactured in “CD-manufacturing-process” machines.

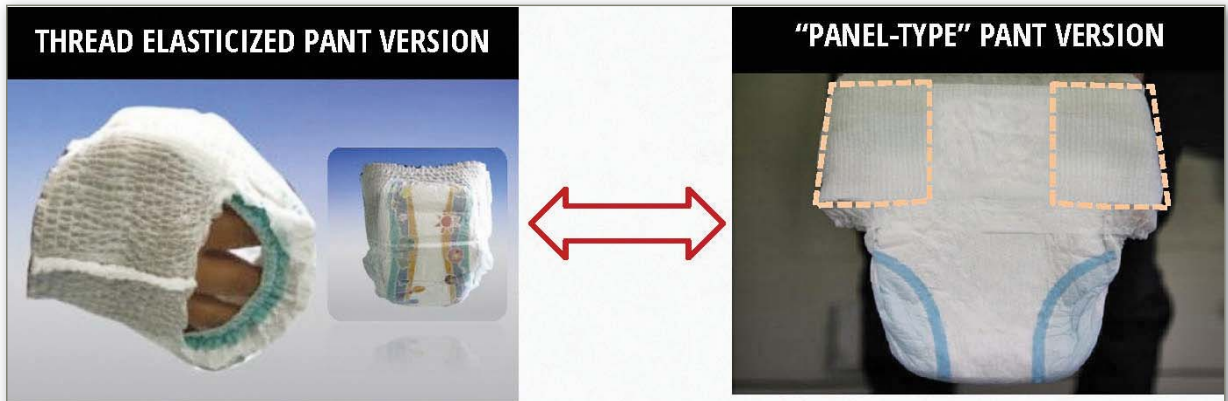
Key advantages of the solution:

- Introduce on the market a product that looks like a MD product but produced on a CD converter.
- Overall reduction of the glue and elimination of the majority of the lycra strands.

The availability of this solution makes possible the manufacturing of both thread elasticized pant version AND “panel-type” version on the same machine platform thus providing to manufacturers the flexibility to switch between versions and adapt the solution to the preferred actual market trends.

The system is normally installed in a dedicated area of the machine, with limited impact on machine layout and overall machine footprint compared to the machine with standard threads elasticization only. ■





GLUELESS™ APPLICATION OF ELASTICS

GLUELESS™ application of elastics is part of the "LIFE+GLUELESS" project today being carried out in Fameccanica, aimed at reducing the environmental impact of Absorbent Hygiene Products (AHP) and supported by the European Union.

GLUELESS™ application of elastics identified as an opportunity, not only for its potential lower environmental impact, but also as it shows a potential cost saving in the range of 80.000÷200.000\$ per year for each baby diaper machine.

Fameccanica has started the qualification of its GLUELESS™ application of elastic strands and the initial lab test demonstrated that the equipment utilized by Fameccanica on the basis of a patent owned by Cera Engineering France is appropriate to realize this type of application at the target performance.

Followed by the engineering phase, aiming to reach a proven technology capable of fitting the real production conditions and requested speed of Fameccanica high performance converters, an innovative system for the intermittent elastic application was identified. The new system has been laboratory-tested with successful results and the solution confirmed to be a clear step change in the processing of this application vs. the known art in the field, thus providing the evidence that the identified solution was adequate to reach the target production speed.

The comparative tests of product performance vs. traditional technologies shows that the GLUELESS™ solution offers equivalent results in terms of tension-elongation of the final diaper element assembly.

