

fibers and filaments

the experts' magazine

issue 22 – september 2015

50 years ago, Oerlikon Barmag established its first US subsidiary

50 years as the technological ambassador to the USA

The American Barmag Corporation and the Neumag USA Corporation have been important cornerstones of our foreign business for many years now.



EvoQuench makes it possible

Spun-dyed polyester microfiber yarns

EvoQuench system offers the most innovative quenching technology available.



"Our customers benefit from our sustainable e-save solutions for the production of manmade fibers within growth markets like textile and apparel, infrastructure, transportation, food, energy and electronics."

Georg Stausberg,
CEO Oerlikon Manmade Fibers Segment

From Melt to Yarn, Fibers and Nonwovens

It all starts with a few chemicals. Transforming these into smart clothing, technical textiles or tire cord requires great ideas, outstanding equipment and sophisticated processes.

Oerlikon Manmade Fibers engineers support you in ensuring that your entire project is a total success. We will accompany you on your journey from chemical product to manmade fibers. From engineering and polycondensation to spinning, texturing and nonwoven production.

From Melt to Yarn, Fibers and Nonwovens.

**Oerlikon welcomes you to ITMA 2015, Milan, Italy, 12-19 November 2015.
We are located in Hall 4, Booth A 105.**



For further information visit us at
www.oerlikon.com/manmade-fibers



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In focus



The US fiber industry – focus on non-commodity yarns

The bellwether market for US manmade fiber is the carpet industry.

8



50 years as the technological ambassador to the USA

The American Barmag Corporation and the Neumag USA Corporation have been important cornerstones of our foreign business for many years now.

14

"Sustainability is mainstream"

Three questions for Unifi Manufacturing Inc. **18**

Innovation and technology



Bicomponent yarns offer diverse application possibilities

A huge range of possible cross-sections provide a variety of yarn properties.

20



WinFors – special winder for delicate materials ensures stable processes

Oerlikon Barmag is expanding its family of winders to include a further member.

23

EvoQuench makes it possible

Spun-dyed polyester microfiber yarns **24**

In brief

News and reviews **4**

On the markets

Oerlikon's Manmade Fibers segment and Huitong Chemical Engineering establish joint venture **26**

ITMA Milan: From Melt to Yarn, Fibers and Nonwovens **27**

Oerlikon Barmag pumps – focus on the US-American market **28**

Service

Original parts: new components for spun-dyed yarns. **30**

Oerlikon's Manmade Fibers segment opens new Service Center in Dalton, USA **31**

Imprint **32**

Editorial



Dear Customers, dear Readers,

Our company has had a presence in the US for 50 years now. 50 years – half a century. The world has changed dramatically during this time – with the US-American market also undergoing something of a metamorphosis. At the same time, the USA remains one of the major players in the textiles world. A major share of global production for carpet yarn in particular originates from the USA. Following our Turkey showcase in the last edition of Fibers & Filaments, the focus of the autumn edition is now on the US.

A further topic of interest this autumn is the ITMA, the leading trade fair for all textile machine and systems constructors. And we too are feverishly looking forward to this event. What will we be showcasing for you in Milan? Well, we do not wish to give away too many details at this point in time. But suffice it to say: we have prepared several technical innovations for you and will be unveiling solutions for the various yarn manufacturing processes and exhibiting our comprehensive services portfolio.

We will be presenting you with a little foretaste in this edition of Fibers & Filaments: with the WinFors, we have added a new special winder for delicate yarns such as seatbelt, airbag and mother yarns to our portfolio. Particularly interesting: the WinFors is also an outstanding solution for modernizing existing spinning systems.

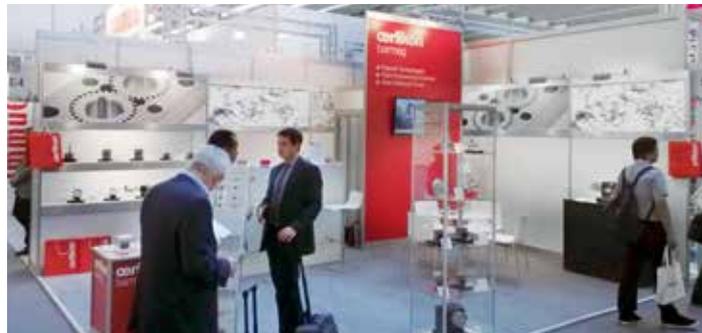
Bicomponent yarns are just as en-vogue as spun-dyed yarns. Here, we also have solutions available for you and which needless to say guarantee both yarn quality and efficiency. Have we piqued your interest? Then visit us at the ITMA – we look forward to talking to you. But first, I hope you will enjoy reading this edition of Fibers & Filaments.

With my best regards,

Georg Stausberg
CEO Oerlikon Manmade Fibers Segment

ACHEMA 2015 well attended

The ACHEMA trade fair took place in Frankfurt between June 15 and 19 with a record number of more than 166,000 visitors. For five days, visitors and exhibitors provided for an excellent atmosphere at the event. The offerings of the 3,813 exhibitors from the chemical, pharmaceuticals and food industries aroused considerable interest among the trade visitors. "It was above all our existing customers within the chemical industry who were hugely interested in the precision, metering and gear pumps. However, we also conducted numerous fruitful conversations with new international customers", reports Thorsten Wagener, Pumps Sales Manager at Oerlikon Barmag, talking about the ACHEMA trade show.



The Oerlikon Barmag stand featured the entire portfolio: spinning pumps, precision and metering pumps and the hot-melt adhesive pump – everything was on show.

Furthermore, visitors were also able to extensively inform themselves about polycondensation systems solutions. (sh)

Oerlikon's Manmade Fibers segment at the SHANGHAITEX exhibition

The 17th International Textile Industry Exhibition (SHANGHAITEX 2015), which has now been held for almost 30 years, was grandly staged at the Shanghai New International Expo Centre, Pudong, Shanghai, between June 15 and 18, 2015. More than 1,000 exhibitors from 23 countries and regions displayed their latest products and services at the exhibition spread over 103,000 square meters of space. The 'Made in China 2025' and 'One Belt And One Road' mottoes provided an excellent backdrop for continued innovation and the successful staging of the SHANGHAITEX 2015. Oerlikon's Manmade Fibers segment presented its leading products and technologies – such as spinning, texturing, nonwovens and key components – at the SHANGHAITEX 2015 with its Oerlikon Barmag and



Oerlikon Neumag competence brands. The Manmade Fibers segment introduced its sustainable development strategy and the 'e-save' program by organizing joint activities between the Chinese and foreign media over the period of the exhibition. (jli)

Indian journalists visit Oerlikon



Oerlikon was the destination for a delegation of journalists from India at the end of April. The six-person group, all editors of well-known Indian trade and business journals, visited the company headquarters in Pfäffikon, Switzerland, Oerlikon Balzers in Liechtenstein, Oerlikon Metco in Wohlen, Oerlikon Leybold Vacuum in Cologne and the Manmade Fibers segment in Remscheid. Oerlikon has been present in India since 1984; for the Manmade Fibers segment, India is one of the most important markets, along with China, Turkey and the USA. (aw)



Techtextil 2015 – a complete success

This year's globally-leading trade fair for industrial textiles and nonwovens – the 'Techtextil' in Frankfurt – ended not only with record numbers of new exhibitors and visitors, but also in Oerlikon's opinion with the successful presentation of its business activities within this sector of technology. Over four days in May, Oerlikon presented solutions for the sustainable production of industrial yarns, fibers and nonwovens, which provide the basis for virtually all industrial textiles used within the electronics, energy, food, functional apparel, infrastructure and transport growth markets. (aw)



The main focus at the Oerlikon Barmag and Oerlikon Neumag booth was on sustainable solutions for the man-made fibers production.



Events

Bondexpo

October 5-8, 2015, Stuttgart, Germany

www.bondexpo-messe.de

International Nonwovens Expo & Forum

October 14-16, 2015, Shanghai, China

www.cine-shanghai.hk.messefrankfurt.com

Hofer Vliesstofftage

November 4-5, 2015, Hof, Germany

www.hofer-vliesstofftage.de

3rd International PET Industry Forum and RPet Trade Fair

November 5-6, 2015, Hangzhou, China

www.ccfgroup.com

ITMA Milano

November 12-19, 2015, Milan, Italy

www.itma.com

World Textile Summit

November 13, 2015, Milan, Italy

www.worldtextilesummit.com

Nonwovens Forum

November 16, 2015, Milan, Italy

www.itma.com/conferences/nonwovens-forum-at-itma

Filtration

November 17-19, 2015, Chicago, USA

www.inda.org

Aachen Dresdener International Textile Conference

November 26-27, 2015, Aachen, Germany

www.aachen-dresden-itc.de

Domotex

January 16-19, 2016, Hanover, Germany

www.domotex.de

New technology center at the Chemnitz site opened

Oerlikon Barmag conducting research and development over 1,600 m²

Following just ten months of construction, the new technology center of the Chemnitz-based machine and systems builder Oerlikon Barmag was opened on July 2. In the future, the 1,600-m² new-build on Zwickauer Straße will be the venue for the development and testing primarily of extrusion systems for tapes and monofilaments along with winding/texturing machines, twisting machines and carbon fiber winders. Furthermore, the new, attractive building will be used as a showroom for Oerlikon Barmag innovations.

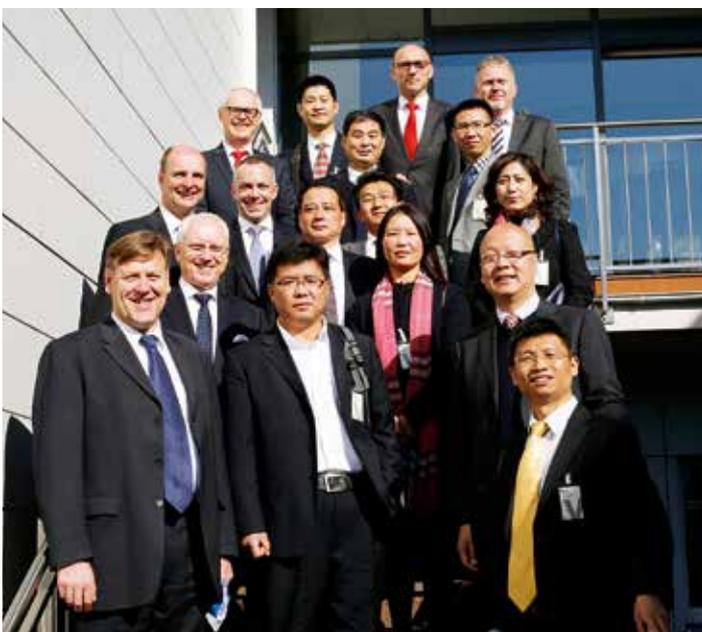
In the presence of Berthold Brehm, the Deputy Mayor of Chemnitz, and many of the 160 employees, the responsible Oerlikon Manmade Fibers segment employees symbolically cut the red ribbon on Thursday afternoon. "Today is a very special day for all of us. With our investment in the new technology center, we are sustainably strengthening the Chemnitz site as a center of innovation



Cut the ribbon to start a new era in research and development at the Chemnitz site: (from left to right) CFO Ralf Schilken, Steffen Husfeldt, Managing Director of Oerlikon Barmag in Chemnitz, and CEO Georg Stausberg.

in the area of tape and monofilament systems", explained Steffen Husfeldt, who has been successfully managing the Chemnitz site for decades now. (bey)

The CCFA visits Remscheid



The government of the People's Republic of China is currently preparing the 13th five-year plan for the country, which defines the general conditions for the economic development of the country for the 2016-2020 period. Together with representatives of the China Chemical Fiber Association (CCFA), the Oerlikon Group Manmade Fibers segment management discussed the future possibilities for the development of Chinese market players within the global textile industry.

The CCFA regards technology solutions from Oerlikon Barmag and Oerlikon Neumag as benchmarks and as the basis for investment recommendations for their around 400 members. (aw)



Oerlikon Neumag at the ANEX and SINCE in Shanghai Focussing on technical nonwovens applications

The requirement for technical nonwovens accounts for approx. 60% of the entire nonwoven market worldwide. About half of these nonwovens are now produced in Asia. Oerlikon Neumag's focus at this year's ANEX and SINCE, from May 13 to 15 in Shanghai, is therefore on spunbond and meltblown plants for technical applications. The company registered a high visitor resonance. "Visitors were extremely interested, and I am thrilled with the quality of discussions conducted with visitors at this exhibition," states Senior Sales Manager Hallwean Zhang from Shanghai.

Weight and production costs play an increasingly important role in the production of technical nonwovens. Thinner, lighter, more efficient materials are demanded by the market. Oerlikon

The Oerlikon Neumag sales team was very pleased with the high visitor count.



At this year's ANEX and SINCE Oerlikon Neumag focused on spunbond and meltblown solutions for technical applications.



Neumag's one-step spunbond process meets these demands and convinces with a combination of effectivity and productivity. Production costs can be reduced by up to 20%.

The optimized meltblown technology defines new demands in the production of nonwovens for filtration. "Whether as a stand-alone mono and bicomponent plant, or as "Plug & Produce" installations (retrofits) in already existing plants, our meltblown process today enables the cost-efficient production of meltblown nonwovens with quality requirements of tomorrow", sums up Ed McNally, Sales Director Nonwovens. (che)

The US fiber industry – focus on non-commodity yarns

The US manmade fiber industry is performing quite well as it serves its textile customers in the Western Hemisphere, by most accounts. Industry observers say the sector is generally healthy with several capacity expansions under way or planned. While the US industry is small compared to its global counterparts, it is a vital part of the US economy.

The bellwether market for US manmade fiber is the carpet industry. The US is the world's major player here, with most of the industry located in or around Dalton. However, results of carpet submarkets have been mixed. The commercial market has performed well over the past three years as the US pulled out of the Great Recession. That has not been the case with the residential market with housing starts far below traditional yearly levels. Carpet has also been losing market share to hard surfaces such as hardwoods.

Much of the downstream processing of textiles into apparel and home textiles happens in NAFTA and CAFTA regions of Latin America. The US industry focus in textile applications tends to be at the extrusion and yarn processing levels with downstream processes performed in lower labor cost countries.

Fiber industry consultant Alasdair Carmichael of PCI Fibres says advantages of fiber manufacturing in the US include low-cost and reliable energy. This is especially true in extrusion, but also in yarn processing where energy is a significant cost and running efficiency is vital. Labor

costs are not usually a major factor, allowing US operations to compete on a cost basis.

There are some challenges, however. The US suffers from a disadvantaged raw material cost basis. Asia, and particularly China, has a surplus of raw material and fiber capacity, and is prepared to offer at very low prices, making it tough for the US producers to compete on many commodity products.

“US industry fragmentation is also a negative, compared to the highly integrated large plants in China, where raw materials, fiber extrusion and yarn processing are all carried out by one company, in some cases including fabric formation,” Carmichael says.

Carpet industry maintains strong position by integrated process chain

The US industry is fragmented into different operations at the various steps in the chain. One of the successes of the carpet industry over recent years has been the integration of filament extrusion into the carpet companies. PCI Fibres notes that the majority of manmade fiber production is based on polymer spinning. For textile applications into apparel and home textiles most of the processing into finished goods is done in CAFTA or NAFTA, so yarn and in some cases fabric is exported. In carpet manufacturing, most of the volume is produced by plants





The success of polyester DTY in performance apparel has been an important part of the recent recovery in the US market.



that are integrated through to finished carpet for domestic distribution. Invista is an exception where they produce Nylon BCF for sale to carpet mills, according to Carmichael and PCI.

Filament yarn finds its niche in performance apparel and technical applications

The leading polyester textile filament producers in the US are Nan Ya and Unifi. Unifi has recently added DTY capacity in the US and in its Central American operation. The success of polyester DTY in performance apparel has been an important part of the recent recovery in the US market, according to PCI. Much of the apparel is produced in free trade partner countries in Central Americas (CAFTA) or in Mexico under the NAFTA. Nylon is a relatively small-capacity polymer into textile applications; it remains in some performance wear, lingerie, swimwear and hosiery applications, but is constantly fighting against polyester, which is typically 50 percent of the price of nylon at polymer level.

In high tenacity, both polyester and nylon have good volumes into automotive applications and the current success of North American auto production has been beneficial, PCI reports. Applications in tires, hoses, air bags and seat belts have all grown. There is only one remaining polyester industrial manufacturer in the US – DuraFibers (formerly Performance Fibers) - and they closed one of their three US plants in 2014. As



a result, imports now exceed domestic production in 2015. Nylon has seen some small additions in capacity to supply increased air bag demand (PHP) and also in sewing thread. Invista has also increased capacity for air bags in its Canadian plant. The air bag market has traditionally been a Nylon 6,6 business, but polyester is making some progress in entering this market due to lower costs.

Staple fibers profit from high shipping costs

In contrast to the carpet industry, most of the other manmade fiber sectors are more affected by imports at the fiber, yarn and finished good levels. For example, in polyester staple for fiberfill PCI estimates that US production was 198,000 tons in 2014 and imports were 252,000 tons. PCI notes that such demand for fiberfill in the US may seem surprising, as it tends to be a commoditized product and supplied from recycled polyester (rPET). Applications are in pillows, comforters, furniture, pet beds, stuffed toys and insulated apparel. However, it is cheaper to ship pillow covers, dog bed covers and comforter covers from Asia and fill with fiberfill in the US, as the volume required for shipping a filled pillow from Asia offsets the cost of filling in the US



Differentiation as key to success

Another astute observer of the US fiber-manufacturing sector is Frank Horn, president of the Fiber Economics Bureau, which is affiliated with the American Fiber Manufacturers Association (AFMA). Horn says the US fiber manufacturing industry will remain viable and important, because it is local to the US market and it is out from under the cloud of overcapacity and competition from cheap imports.

Horn offers these observations regarding individual fiber areas for the first half of 2015:

- Nylon industrial shipments are down 16 percent, largely due to Kordsa shutting its plant for maintenance. Automobile air bag business remains strong. While polyester is viewed as a threat for some applications, the outlook for nylon is good.
- Carpet shipments were up about 4 percent. The commercial market is strong while the weakness continues to be new housing.
- The nylon textile market is about 7 percent behind, as it's under attack by polyester filament on a price basis.
- Polyester BCF is running about 20 percent ahead.

Horn says the fiber industry is being well managed with manufacturers acknowledging they can't compete in the commodity business. Instead, they depend on specialty technology. Expansions are under way that will boost capacity by about 20 percent by May 2017. "When you look at the

distant future, the industry is saying we will have highly favorable energy and labor costs." Trade pacts such as CAFTA and NAFTA are keeping the apparel industry alive and well for now. Longer term, Horn believes manufacturers will continue to look at the US for possible investment due to low energy costs and improved labor costs, due to automation. "It's a consistent story. If you carry this further to the yarn spinning level and in texturing, there is a lot of investment going on."

Southeast remains textile hub

Compiling a comprehensive listing of all the fiber-producing plants in the US requires a bit of research and estimating. PCI lists 52 polyester plants, owned by 44 companies and 40 nylon plants owned by 30 companies. However, some plants run both nylon and polyester, and are counted in both totals. PCI estimates there are 18 plants owned by 16 companies running aramids, carbon fibers and specialty engineered fibers and viscose. There are 27 polypropylene plants in the US, according to the AFMA.

The US textile industry remains largely located in the Southeastern US, its historical base for more than 150 years. Much of the manmade fiber industry is also based in the South, strategically located to serve its textile customers. While the sector is considerably smaller than it was 15 or 20 years ago, it remains a formidable economic engine. Capital spending has been on the rise



The US textile industry remains largely located in the Southeastern US, its historical base for more than 150 years.

the past few years, topping \$1.5 billion in 2014, according to US Census Bureau figures.

The National Council of Textile Organizations (NCTO) reports that the US textile and apparel industries employed 372,400 people in 2014. Shipments from the sector were valued at \$56.7 billion. Exports in 2013 reached nearly \$18 billion.

The strength of today's US textile industry lies with its yarn manufacturers. This is where most of the industry's facility and capacity expansions have happened in recent years. A cross-section of executives with well-known spinning companies offers a good barometer of the industry's health.

Rich Pattinson, president of Pharr Yarns' carpet yarn division, says the US carpet industry, which is primarily located in and around Dalton, GA., is highly automated and benefits from an efficient supply chain. He says Pharr has been a big participant in the growth of polyester in BCF carpet. Pharr, based in North Carolina, services its own yarn needs through its extrusion equipment, and about 30 percent of its fiber production is sold to US carpet mills. Pattinson

says the higher-end carpet market has performed much better than the lower end, as it is less influenced by economic issues. However, the trend toward hard surfaces in flooring has eaten into the carpet market.

"Companies that make better products have been stable as far as demand goes," Pattinson says. "Carpets have been relegated into the bedrooms and family rooms, with hard surfaces on the first floor. The trend has stabilized, so carpet still does pretty well."

Three factors have helped improve polyester carpet yarn manufacturing over the last several years:

- The ability to buy vastly improved equipment off the shelf.
- A POY supply chain comprised of 150 billion pounds of polyester that allows the purchase at competitive prices.
- Improved resins.

Pharr uses Oerlikon equipment and Pattinson says it's "the best off-the-shelf equipment there is." Improvements in resin production through the use of co-polymers have benefited the yarn industry even though the improvements were aimed at the packaging industry. "The yarn guys all use bottle-grade resin," Pattinson says. "They [polymer suppliers] didn't do it for us, but we benefit from it." Pattinson says there is a lot of





The main market for manmade fibers in the US is the carpet industry. Most manufacturers are located in or around Dalton, GA.

capacity in the industry, but Pharr uses modern equipment and is pushing the edge with new products, which bodes well for the company's future.

Davis Sasso, vice president of sales for Buhler Quality Yarns in Jefferson, GA., says commodity producers are faring quite well, but that has little bearing on Buhler, which produces higher-end yarns. In general, business is great with brands and retailers seeking faster response to market. That helps bring business back to the US, but that type of business is more short term than long term.

"We are used to long-term business to project our fiber needs, but those days seem to be long gone," Sasso says.

"Consumers are showing no focus on any certain trends. That's the nature of today's market. With the explosion of online sales, there are options for so many different types of products. Who can predict what will happen?"

North Carolina-based Parkdale Mills, the largest US producer of spun yarns, will observe its 100th anniversary in 2016. The venerable spinner has grown rapidly through the years, both organically and through acquisitions. Dan Nation, president of Parkdale's International Division, says current conditions are favorable, but fragile. Investment in textile manufacturing has peaked overall. While yarn manufacturing has seen a surge in investment, there has been very little investment in downstream processes. "Fabric



production in North America has actually declined," Nation says, noting that the strong dollar is adversely affecting exports. Nation believes the Trans Pacific Partnership trade deal brings uncertainty, and no one is quite sure where in the world it will displace business. "We estimate this can easily displace 15 percent of the US market, due to the tremendous cost differentials between the US and TPP countries, particularly, Vietnam. China will lose market share to Vietnam, as will the US"

Nonwovens with solid growth rates

Nonwovens is another significant user of manmade fibers. Researchers at North Carolina-based INDA, (the Association of the Nonwoven Fabrics Industry), like to refer to nonwovens as "engineered fabrics." As Jim Loftus, INDA's director of education and technical affairs, puts it, "it's more about what the final system has to do."

Some of the fiber trends within nonwovens include more usage of recycled polyester and increased usage of some of the viscose fibers such as Tencel. Another polymer gaining use, but still in small volumes, Loftus says, is polylactic acid (PLA). But the two workhorse fibers used in nonwovens remain polyester and polypropylene.

"Bicomponent fibers represent a smaller portion, but those have a greater growth rate than other fibers,"



“We are used to long-term business to project our fiber needs, but those days seem to be long gone”

says Brad Kalil, INDA’s director of market research and statistics. Most of the current advancement in fibers is in research labs and a lot of it involves multicomponent fibers. An example is islands-in-the-sea fibers. “These fibers are called splittable fibers and under the right conditions, you can end up with a much smaller nanofiber,” Kalil says. “The folks who manufacture the end products are always looking for advancements.”

Disposable products are by a wide margin the biggest category of nonwovens with population (babies and the elderly) and the economy being the major drivers. In 2013, about 2.5 million tonnes were produced, with about two-thirds going into the disposable categories. Nonwovens producers are investing in facilities. Kalil says 23 new production lines have been built over the past

four years. Nonwovens producers, like other segments of the textile industry, are concentrated in North Carolina, South Carolina and Georgia. That is due to the relationship with the textile and papermaking industries.

INDA estimates that the nonwovens sector will grow by 5.1 percent annually over the next five years.

Some durable goods categories such as automobiles will drive demand as the economy continues



Technical and industrial applications of man-made fibers expand their shares. In the field of automotive, for example, airbags and safety belts require high performance industrial yarns.

to rebound. The growth in automotives will not only be driven by the number of cars produced, but also the taking away of market share from components made of foam, plastic and other materials.

Technical and industrial applications expanding their shares

The wide array of industrial fabrics made in the US also use a large amount of manmade fibers. Jeffrey Rasmussen, market research manager for Minnesota-based Industrial Fabrics Association International, says marine and tarpaulins, and truck covers have been traditional markets for fabric producers over the years. Growth has been solid for the past few years, as the economy has improved.

“The improved construction and housing market has helped the tarpaulin and truck cover market a lot,” Rasmussen says. “The marine market has improved vastly since the recession of 2009. Consumer confidence is up, and a much improved job market has helped fuel healthy growth of 5 to 7 percent per year for the marine market over the past three years.”

Slower growth areas include tent manufacturing, awnings and canopies, and narrow fabrics. The military shows a negative 6 percent growth rate versus years past mainly because of the troop withdrawals from Iraq and Afghanistan over the past few years, Rasmussen said. (jm)



50 years

as the technological ambassador to the USA

Products such as nylon stockings and denim jeans, brands such as Lycra® and companies such as DuPont are global landmarks in US-American textile history. However, for the last 50 years – and this is not an overstatement – two German ‘imports’ have also made invaluable contributions to the success of this region of the textile world so dominant for many years: Barmag and Neumag, today part of Oerlikon Manmade Fibers, with its US activities and subsidiaries. The American Barmag Corporation and the Neumag USA Corporation have been important cornerstones of our foreign business for many years now – and have been technology ambassadors to the ‘Land of the Free’.

Many things change over time, but some things remain the same. With a service station in Dalton,

GA that opened in 2015, Oerlikon Manmade Fibers is making a clear statement about the high value it attributes to customer support in the Land of the ‘Stars and Stripes’. “We wanted to strengthen our service offerings and Dalton is an important step towards achieving this goal”, states Chip Hartzog, President of Oerlikon Textile Inc. in the USA. “And our customers are also investing in this region.”

Exactly 50 years ago, Barmag decided – for the very same reasons – to establish its first US subsidiary. In 1965, the USA was the largest manufacturer of manmade fibers, producing one-third of global output. Barmag’s business activities in the US were still limited to occasional deliveries. In 1958,



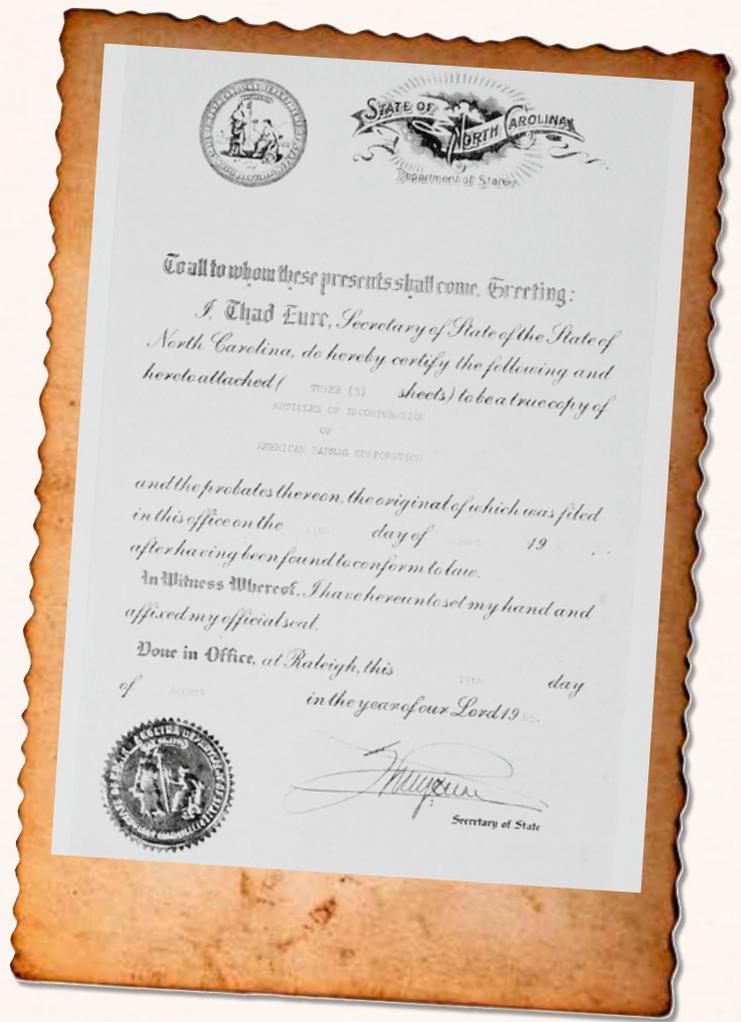
The company had signed a license agreement with a US partner for the manufacture of extruders and extrusion systems

Barmag decided to establish its first US subsidiary. The USA was the largest manufacturer of manmade fibers, producing one-third of global output. A veritable success story began with the founding of the American Barmag Corporation (ABC) and initially just two employees.

The US became Barmag’s largest export customer and remained in the top group in the following years as well.

ABC generated a quarter of all Barmag turnover with receipts totaling 71 million Deutsch Marks.

the company had signed a license agreement with a US partner for the manufacture of extruders and extrusion systems – a new production segment at the time. However, the US market was now awarded ‘special attention’, as outlined in the Barmag company chronicle: to secure its position as a machine supplier, ‘its own company in the USA’ was required, comprising sales, customer service and technical support. As the US textile industry has been traditionally concentrated in the cotton centers in the southeastern states, the economically-strong Charlotte site in North Carolina was chosen as the base. From here, the company wanted to show its presence and compete with local players in the USA, Canada and Mexico.



A veritable success story began with the founding of the American Barmag Corporation (ABC) and initially just two employees. Over the three following years, US imports of textile machines rose to a ratio of 27 percent, whereby Germany alone accounted for well in excess of one-third of these imports. The reasons for this were seen in the high quality and performance standards achieved by the German technology. And Barmag also assumed an increasing share of this: over time, successful products, such as the FK4, and later the FK6, the FK6M80 all the way through to the AFK and eAFK texturing machines, polyester and nylon spinning machines, winders and take-up machines, opened up – and then conquered – the hitherto natural fiber-dominated US market for manmade fibers.

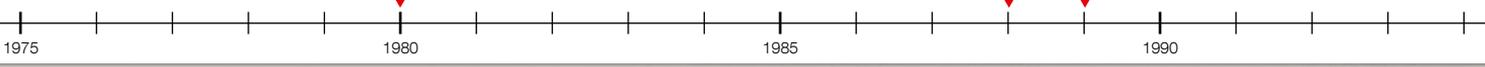
In the first ten years, the ABC staff had already expanded to include 76 employees. On its own 80,000-square-meter industrial plot, the company site was successively expanded to more than 5,000 square meters – providing premises for workshops, mechanical manufacturing, warehousing, offices and exhibitions rooms. In 1968, the US became Barmag's largest export customer and remained in the top group in the following years as well. In 1971, ABC generated a quarter of all Barmag turnover with receipts totaling 71 million Deutsch Marks. The key to this success were sales and service, according to the company chronicle: “A machine is only as good as its service – nowhere does this apply more than in the US.”

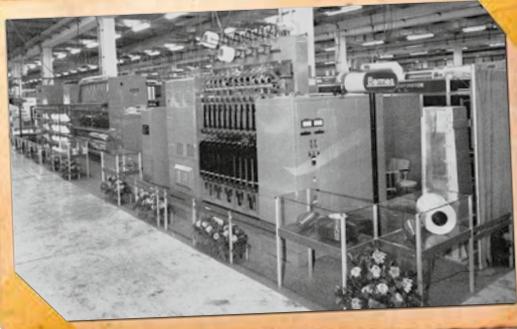
The laying of the foundation stone for the American Barmag Corporation on August 16, 1965 marked the beginning of the successful 50-year presence of the current Oerlikon Manmade Fibers segment in the USA.

The 1980s saw the launch of the Barmag Hydraulics division with a shareholding in a US specialist manufacturer – and a global recession, a strong US dollar and growing textile imports, all of which were huge setbacks for the US textile industry.

1988 proved to be the hitherto best year for ABC, with turnover reaching US\$ 55 million.

The Neumag USA Corporation was founded in 1989, also headquartered in Charlotte.





The 1980s saw the launch of the Barmag Hydraulics division with a shareholding in a US specialist manufacturer – and a global recession, a strong US dollar and growing textile imports, all of which were huge setbacks for the US textile industry. Barmag nevertheless continued to be successful: 1988 proved to be the hitherto best year for ABC, with turnover reaching US\$ 55 million. Two reasons were quite possibly decisive for this development: firstly, natural and staple fibers experienced market falls. Secondly, the textile sectors in the US underwent a sea change in view of the growing competition from low-cost Asian countries: manufacturers tried to lower costs through automation as well as increase the production speeds and the quality of the machines – the perfect scenario for ‘made in Germany’ technologies!

Neumag USA Corporation: founded in 1989

In this timeframe, a new player entered the stage: the Neumag USA Corporation was founded in 1989, also headquartered in Charlotte. Two employees were responsible for the US and Mexico markets, while the most important spare parts were stored at the depot for fast delivery. Even decades earlier, the German parent company was, above all, successful as a supplier of staple fiber lines – a status that continues to this very day. The early-1980s saw the beginning of the activity for which the name Neumag is today decisively known in the US: the BCF systems business. US customers

were secured in particular for draw-texturing machines for manufacturing BCF carpet yarn made from polypropylene.

In the 1990s, Neumag secured itself a market share of around 40 percent in the US with its BCF business – above all thanks to the new company in Charlotte. Neighbor and competitor Barmag was also successful: ABC repeatedly reported record sales, increased its staff to 240 employees and influenced the entire US manmade fiber and textile industry with such developments as draw-texturing and fast-speed spinning for POY. The company took over Bouligny, a US manufacturer of spin beams and creels, became the exclusive supplier to DuPont and sold a ‘100-year system’ with 16 machines and 384 positions for the production of more than 100,000 tons of the highest-quality polyester POY per annum to the at the time largest US producer of polyester filament. With Unifi, ABC also acquired the most important US texturing company as a customer and supplied it with 71 AFK and 13 POY machines.

Dawning of a new age with Saurer and Oerlikon

A new age of textiles began at the turn of the millennium. The global textile industry was increasingly shifting to the Far East, with the major players reorienting themselves – also in the direction of manmade fibers. In 2000, the Swiss Saurer Group acquired Barmag and Neumag, with the Oerlikon Group taking over the textiles division of Saurer six years later. During these years, the businesses were consolidated and

In the 1990s, Neumag secured itself a market share of around 40 percent in the US with its BCF business – above all thanks to the new company in Charlotte.

The Swiss Saurer Group acquired Barmag and Neumag, with the Oerlikon Group taking over the textiles division of Saurer six years later.

1995

2000

2005

2010

restructured: Neumag assumed the BCF activities and increasingly focused on the newly-oriented nonwovens division; Barmag concentrated its attention on the filament business. Here, the high-performance technologies of both companies complemented each other and resulted in superior products and, in part, high market shares. To this end, Neumag secured the lion's share of the entire US BCF market with its S5, S+ and Sytec One BCF platforms and simultaneously supported the increasing polyester boom. Today, Neumag is the premium BCF brand throughout the world and is admired by its American clientele for its high quality at reasonable costs as well as for its local service and support offerings.

However, the modern US textile market, once the birthplace of many commercial manmade fibers, has reoriented itself – creating a mix of commodities, specialty goods and products for local requirements or goods with high value-added. Sustainability and recycling are playing an increasingly major role. And

while labor costs elsewhere are rising, certain US regions with low energy costs are once again becoming more interesting as manufacturing sites. Add to this the fact that many of the machines installed over the course of the past 30 years are still in operation.

This creates opportunities for Oerlikon Manmade Fibers with its current tally of 51 employees in the USA. “We are adding BCF, IDY, FDY and texturing capacities in North America and are also modernizing equipment delivered many years ago. We recognize an opportunity to better support our industry partners, further decrease their lead times for parts and services and provide highly-specialized repair services to keep them competitive in the worldwide marketplace. This was a primary reason for our investment in the new Dalton Service Center”, states Chip Hartzog – and adds: “We have been the technological ambassador to the US for 50 years now – and we are prepared to continue that tradition.” (tho)



50 years after establishing the first subsidiary of what is today the Oerlikon Manmade Fibers segment, the filament and BCF yarn manufacturing machine and systems construction market leader opened a further service station in Dalton, GA.

Opening of a new service station in Dalton, the center of carpet yarn production.

2015

Three questions for ...



“Sustainability is mainstream”

The focus of this issue of Fibers & Filaments is on the US. What is more reasonable than a conversation with the management of Unifi Manufacturing Inc., a filament yarn producer who primarily gets in the news as a trendsetter? Chip Hartzog, President of Oerlikon Textile Inc., posed three questions to Roger Berrier, President & Chief Operating Officer, Vice President of Manufacturing Tom Caudle and Mark McNeill, Vice President of Technology & Business Development.

- » You have a long tradition of producing manmade fiber yarns and you also export your yarns all over the world. The discussion over sustainability has increasingly moved into the foreground over the past few years. Do you perceive any changes or trends, and to what extent does the topic feature in your daily business?

Deriving value from sustainability-based products and initiatives is one of Unifi's core strategies for growth. Sales of our REPREEVE recycled yarns are growing at double-digit annual rates and it is a growing global brand preferred by major consumer brands in the apparel, footwear, automotive, and furnishings sectors.

We believe sustainability is now mainstream. Rising consumption and shrinking resources will limit the ability of the increasing global population to attain, or maintain, a more comfortable standard of living. Therefore, an increasing number of consumers across the globe believe it is important to purchase products made from recycled materials. Unifi is always looking for innovative ways to make better products and minimize our environmental impact. At Unifi, sustainability goes beyond just manufacturing recycled products. It has become part of our culture. We are actively engaged in eliminating waste



Mark McNeill, Vice President of Technology & Business Development (left), Roger Berrier, President & Chief Operating Officer (not pictured) and Tom Caudle, Vice President of Manufacturing (right), talked to Chip Hartzog, President of Oerlikon Textile Inc.

and reducing consumption across all our facilities with regards to packaging, energy, labor and transportation. As a further demonstration of our commitment to sustainability, we have completed the installation of our solar farm in Yadkinville, North Carolina, which could provide roughly 10% of the energy at the REPREEVE Recycling Center.





The share of REPREVE yarns represents approximately 30% of Unifi's revenue with a growing trend. The company just started with the expansion of its REPREVE recycling capacities.

Today, REPREVE and our other premier value-added products represent approximately 30% of our consolidated global revenue and this segment trend continues to grow. To support the growth of REPREVE, we broke ground last month – initiating the expansion of our REPREVE recycling capacities from 72 million pounds to over 100 million pounds, with construction to be completed by mid- to late-2016. We are also investing in backward integration in plastic bottle processing, which will generate 75 million pounds of clear polyester bottle flake per annum to supply our REPREVE Recycling Center.

» Your spinning and texturing plants primarily comprises Oerlikon Barmag systems and equipment. Why did you select Oerlikon Barmag as a partner? Oerlikon Barmag is a leader in technology. Machines are very durable and reliable. Over the years, as product needs have changed and we created new, innovative products using Barmag equipment, it has proven capable of adapting. Sometimes additional investment was required, but many times none was necessary. As we continue to focus on adjusting the capability of our manufacturing process to meet market requirements,

Oerlikon Barmag equipment and systems support our increasing need for flexibility in our assets to effectively react to the requirements of our broader, more specialty-product offerings.

» How do you envisage the yarn business developing over the coming years? What is going to change and how will you react to the way the sector develops? Do you see yourself as a trendsetter?

We continue to see growth of manmade fibers around the world, including North and Central America. We work closely with major global consumer brands to understand their product needs and are committed to investing and servicing their global requirements for both virgin and recycled manmade yarns.

In the coming years, the market will continue to move towards more specialty and sustainable products. Apart from specialty needs, the market will continue to move towards smaller order sizes and higher quality, especially in North and Central America. With our flexible infrastructure, specialty product offering and our diversified and integrated manufacturing process (Bottle Processing – rPET – Spinning – Texturing – Twisting – Beaming – Covering – Dyeing), we are well positioned to better service customers and handle increasingly complex product-mix requirements.

Bicomponent yarns offer diverse application possibilities

Although bicomponent yarns have been around for about 50 years now and they are not a new phenomenon, there has been a clear trend towards rising demand for them over the past few months. One reason for this development is that the market for commodity yarns is currently considered saturated and many yarn manufacturers are searching for niche markets.

Bicomponent yarns offer a huge range of possible cross-sections. In general, these yarns comprise two different polymers, which give them specific properties.

Bicomponent yarns with the corresponding cross-sections are manufactured depending on the desired application. Here, the four best-known cross-sections are core-sheath, side-by-side, segmented-pie and islands-in-the-sea.

Core-sheath and side-by-side cross-sections are staple fiber yarns, while the other two cross-sections are predominantly filament yarns. While core-sheath bicomponent yarns are frequently processed as bonding fibers for nonwovens, the focus when manufacturing side-by-side bicomponent yarns is on the desired self-crimping effect. Segmented-pie and islands-in-the-sea cross-sections are mainly manufactured for producing microfibers.

Diverse cross-sections ensure diverse yarn properties

In the case of core-sheath bicomponent yarns, a polymer – or one component – forms the core of the fiber, while the other polymer – or the other component – forms the sheath around the core. This cross-section is the preferred option when shine or good polymer dyeability is required for the fiber surface. The core then is merely for the purpose of stability or, if a less-expensive polymer is used, to cut costs. If the yarn is to have a specific functional property, the core polymer includes the corresponding additives.

And other special effects can also be achieved: if, for instance, a carbon core is used, the yarn becomes anti-static as a result of the carbon component within the core. Core-sheath bicomponent yarns are frequently also used as self-adhesive fibers in nonwovens. The sheath has a lower melting point than the core of the fiber, so that the sheath melts and melds with the surrounding

Bicomponent overview

Type	1	2	3	3a	4	5	6	7	8	9	10	11	12
	core/sheath	core/sheath eccentric	side by side full	side by side full	side by side hollow	side by side hollow eccentric	orange type with center 16 segments	orange type w/o center 16 segments	striped fibers	conductive fibers	island in the sea	profile bico	mixed fibers
Materials	RPET / PET PET / CoPET PET / PE PP / PP	RPET / PET PP / PE PP / PP PET / CoPET	PET / PET PP / PE PP / PP PET / CoPET R-PET / R-PET PET / PE	PET / PET PP / PE PP / PP PET / CoPET R-PET / R-PET PET / PE	PET / PET PP / PE PP / PP PET / PE	PET / PET PP / PE PP / PP PE / PE	PET / PA6 PET / PA6.6 PET / CoPET	PET / PA6 PET / PA6.6 PET / CoPET	PET / PA6	PA6 / MB	PA6 / CoPET PET / CoPET	PP / PA6 PA6 / PA6 PET / R-PET PTT / PET	PET / PET PP / PP PA6 / PA6 PA 6.6 / PA 6.6 PET / CoPET
Final titer [dtex]	1.7 - 20	1.7 - 20	2 - 20	2 - 20	2 - 20	2 - 20	0.1 - 0.2	0.1 - 0.2	0.1 - 0.2	25 - 30 undrawn	< 0.05	15-20	-
Ratio [%/%]	30/70 - 70/30 90/10	30/70 - 70/30	50/50	50/50	50/50 - 70/30	30/70 - 70/30	50/50 65/35	50/50 65/35 80/20	50/50 70/30	50/50 70/30	80/20 50/50 70/30	50/50 30/70	

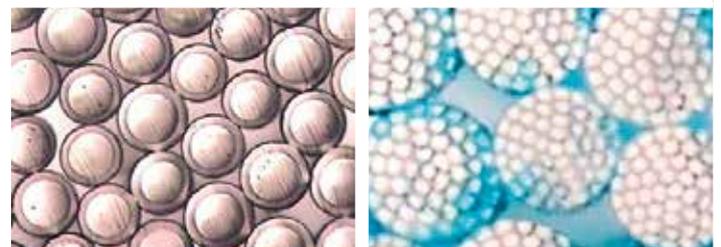
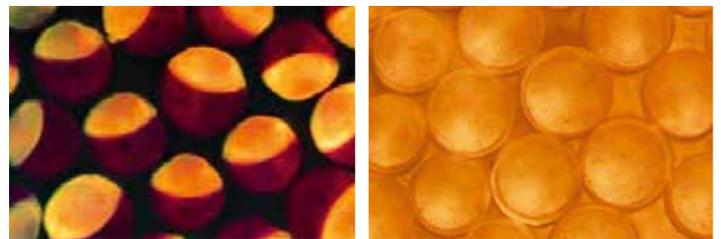
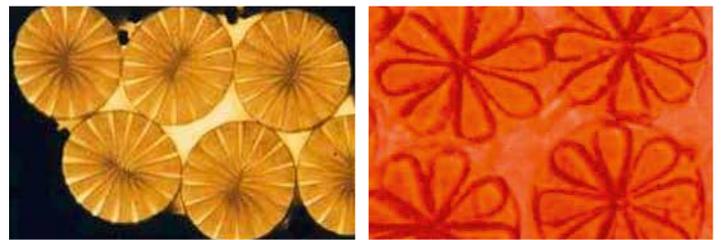
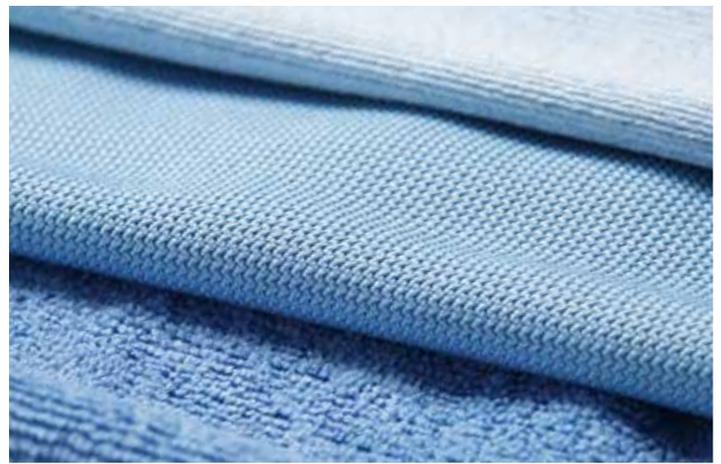
* different colors, different materials, different dtex, different profiles

Each cross-section provides specific properties for the bicomponent yarn.

fibers in the event of a temperature increase (low-melting sheath, high-melting core). Here, the polymer ratio is frequently 70/30. The most often used polymer combinations are polypropylene (PP) with polyethylene (PE) and polyester (PET) with co-polyester (CoPET). In this case, the CoPET forms the sheath and the PET the core of the bicomponent fiber.

A side-by-side bicomponent yarn comprises at least two (different) polymer components, which split into two halves. The two components must have particularly good adhesion properties to ensure that they become a fiber and two separate fibers with different polymers are not created in parallel within a fiber. Generally, the same polymers with different viscosities are combined; a widespread alternative is to combine polyester with PTT. Side-by-side bicomponent fibers can be manufactured either as hollow fibers or as solid fibers. As a result of the different polymer properties – which the various polyesters reveal, for example – the two polymers within the fiber shrink differently, resulting in a self-crimping effect. This makes the bicomponent yarn fluffy, which can be used as a filling fibers for sleeping bags or pillows and also as structured yarn for seating/ upholstery covers, among other things.

The segmented-pie cross-section is usually selected when manufacturing bicomponent filament yarns. The cross-section looks like an orange and typically comprises 16 segments. The segments are alternately polyester and polyamide. There is not a high level of adhesion between the two polymers, so that both components – unlike with other cross-sections – can be easily separated. Due to the relatively simple manufacturing process, this fiber type is mainly used in the production of standard yarns. As a result of their high water absorption capacity, these filaments are used for wiping cloths



and lens cleaning cloths, for example.

A more complex process is required for manufacturing an islands-in-the-sea bicomponent filament. For this reason, these cross-sections are predominantly used in higher-end fibers and staple fiber nonwovens. As a result of their specific structure, islands-in-the-sea cross-sections can be used to manufacture microfilaments (smaller than 0.05 dtex). The islands in the cross-section are frequently polymers such as polyamide, polyester and polypropylene and the sea comprises polystyrene, water-soluble and non-water-soluble polyesters and polyvinyl alcohols, for example. In the case of non-water-soluble polyesters,



the polyester must be extracted using solvents, something that is extremely environmentally-unfriendly. The microfilaments are created by extracting the sea. Generally, an islands-in-the-sea bicomponent filament yarn has 37 islands, which correspondingly produce 37 microfilaments. For some applications, it is actually possible to spin 51 islands, hence extracting 51 microfilaments. The applications are very similar to those of segmented-pie bicomponent filaments. Furthermore, a large proportion of these microfilament yarns are used to make imitation leather.

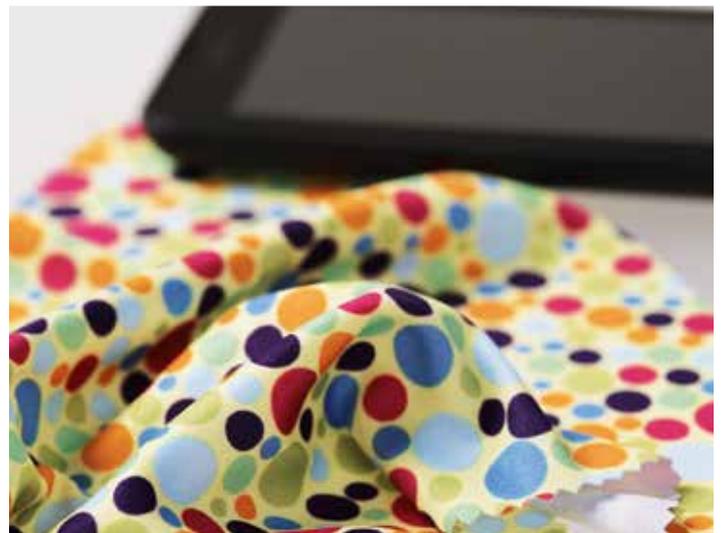
Demanding technology for demanding yarns

Oerlikon Barmag and Oerlikon Neumag have been supplying systems for the manufacture of bicomponent staple fiber yarns and filament yarns since the mid-1980s and are hence able to draw on extensive process know-how and expertise. The Oerlikon Manmade Fibers segment's manmade fiber systems constructor has already equipped both staple fiber systems and systems used for the manufacture of BCF, POY, FDY and spunbond with bicomponent spinning machinery. Here, the primary focus was on the four cross-sections already mentioned.

The requirements for the systems and processes are becoming increasingly complex. Mixing ratios of 70/30 have long been standard now, with larger mixing ratios – such as 90/10 for core-sheath bicomponent yarns – increasingly shifting into the foreground. Correspondingly, separate special temperature controls for each polymer type and an expanded process window are standard for the two spinning systems construction market leaders.

Capacities are concentrated in Asia

If we take a look at the geographic distribution of bicomponent yarn manufacturers, it becomes clear that



production predominantly takes place in Asia. China has the largest capacities for bicomponent yarns. Further countries manufacturing bicomponent yarns are Japan, India and Indonesia.

As a result of their high water absorption capacity, segmented-pie cross-sections are often used for wiping and lens cleaning cloths.

As a result of the different manufacturing variants and the numerous resulting applications, bicomponent fibers and filaments are an interesting alternative in standard yarn production.

Oerlikon Barmag and Oerlikon Neumag identified this trend early on and have consistently optimized and further developed the manufacturing processes with their extensive experience and expertise. (jh)

WinFors – special winder for delicate materials ensures stable processes

With the new WinFors reversing winder, Oerlikon Barmag is expanding its family of winders to include a further member. The specialist for especially delicate yarns reveals its potential in particular when winding materials such as microfilaments, mother yarn, airbag yarns and seatbelt yarns.

Deployable in the POY, FDY, industrial yarn and BCF processes, WinFors can be used as standard for polyamide, polyester and polypropylene polymers, while other polymers – such as PVA, for example – are also not a problem. In concrete terms, WinFors offers a considerably larger process window for seatbelt yarn applications than alternative winders. For manufacturers of airbag yarns, the longer chuck – measuring 1200 mm in length – is a more efficient solution for producing yarn. And the new development from the R&D departments in Chemnitz and Remscheid promises a more stable process for the manufacture of mother yarn. Successful endurance tests for all processes – POY, FDY, IDY and BCF – have confirmed that WinFors is ready for the market. “With this, WinFors is more versatile than any other winder on the market”, states Peter Steinke, Head of Development at the Chemnitz site.

Reversing shaft ensures gentle yarn treatment

The winder – which was unveiled at the Techtexsil trade fair in Frankfurt for the very first time – is based on the WINGS and ACW platform, but relies on the reversing shaft in terms of

its traverse system. With this, the yarn is laid in a particularly gentle manner, albeit not at the speeds common in birotor traverse systems. Nevertheless, speeds of between 2500 and 4000 m/min are possible depending on the process.

Flexible and versatile

A further benefit of the new WinFors winder is its flexibility: to this end, it can be converted from a 4-end to an 8-end winder without much effort by simply exchanging the traverse system. “This is particularly relevant for spinning polypropylene. Here, the systems are usually smaller with mostly just four spinning positions. To nevertheless be able to flexibly react to customer requirements, manufacturers must be able to cover the broadest-possible titer range with their system. However, to ensure that the package size is nonetheless the right fit for downstream processes, easy conversion from 8 packages for fine titers to 4 packages for

coarser titers makes the system considerably more cost-efficient”, explains Peter Steinke.

WinFors can be fitted under virtually every older spinning system.

But its flexibility not only makes WinFors interesting to investors in new systems and equipment: this all-rounder is also

perfect as a retrofit solution. 4-, 6- and 8-end and equipped with a 1200-mm chuck, WinFors can be fitted under virtually every older spinning system. Its huge process window and its versatility with regards to polymer processing and spinning processes make it the prudent solution for system modernization.

As in the case of all Oerlikon Barmag winders, WinFors is controlled by the multiply tried-and-tested Guide system as well as the current Siemens electrical system for the required ribbon breaking methods. WinFors will be exhibited at the ITMA in Milan. (bey, hmü)



Oerlikon Barmag's new WinFors winder is a specialist for delicate yarns such as seatbelt, airbag or mother yarns.

EvoQuench makes it possible

Even in the case of the last five-year plan tabled by the Chinese government, the focus was on sustainable and innovative technologies. Only systems that promise technological and ecological value-added are approved for import. And the same applies to the provision of loans. With this, the highest-capacity market for manmade fiber manufacturing has set an extremely high standard for spinning technologies.

The decommissioning of numerous dye works in China no longer complying with ecological standards increased the demand for spin-dyeing solutions. The most important benefits of spin-dyeing lie in the evenness of the dyeing results and in the ecologically considerably cleaner process.

Spin-dyeing – the clean solution

Energy efficiency and CO₂ emissions are important factors for the filament yarn spin-dyeing process using the Oerlikon Barmag 3DD: to this end, a piece dyeing process requires around 30 times as much energy as the masterbatch dyeing process, while also emitting approx. 30 times more CO₂. Furthermore, the spin-dyeing process uses no water and hence creates no corresponding waste water whatsoever. In addition to this, masterbatch dyeing results are also more even, which is why textiles dyed using this method are preferred in the particularly critical automotive sector as well. The only disadvantage: the flexibility with regards to the color diversity is not as great as in the case of piece dyeing. However, there are also solutions available for this. With the help of additive injection and mixing systems, masterbatches and additives can be introduced into the melt path at various points between the reactor and the spinning positions. Thus, the variety of yarn to be simultaneously manufactured can be increased dramatically.

EvoQuench – the core component when spinning microfibers

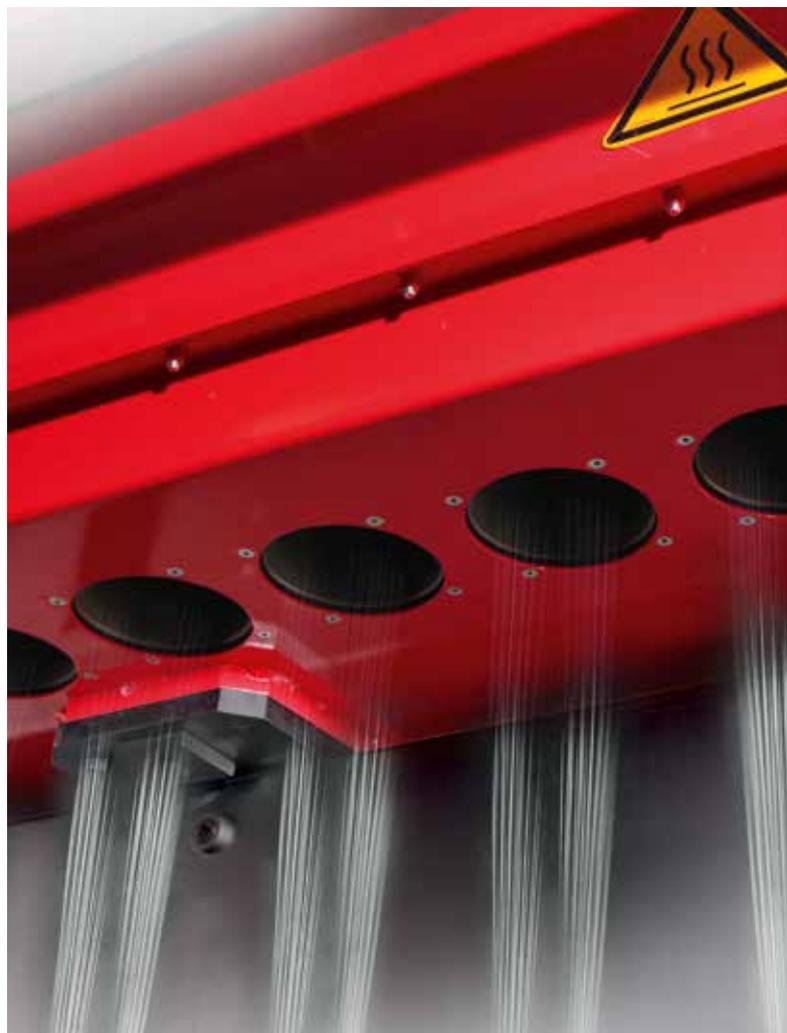
Microfilament yarns are yarns with filament titers of less than 1 dpf. Those with individual filaments of less than 0.5 dpf are described as super-microfilament yarns. Conventional melt spinning processes currently permit process-reliable and simultaneously efficient filament titers of down to 0.3 dpf.

The spinning system determines the quality of the microfilaments. Here, it is above all the quality of the spinning unit and the quenching unit that plays a decisive role. The shortest possible residence time for the polymers in the spinning beam is also important.

A decisive success factor is even yarn cooling: the thinner the filaments, the more difficult it is to guarantee this. Radial quenching systems such as EvoQuench create an even, turbulence-free air flow and hence guarantee gentle yarn

handling and even quenching. Among other things, this results in excellent uster values, hence extremely even filament yarns. Perfect downstream performance and uniform dye pickup are the benefits.

To this end, the EvoQuench system offers the most innovative quenching technology available. In contrast to standard cross-flow quenching, the air is symmetrically guided from the outside to the inside of the filament bundle. This is particularly successful due to the twin-chamber system used in the EvoQuench unit: the first chamber carries out the pre-distribution of the air, while the second chamber then gener-



ates the optimum uniformity of the air intake from all sides. For this reason, the filaments are particularly evenly cooled along the entire length of the yarn surface.

A further benefit of EvoQuench is its considerably lower energy consumption: radial quenching consumes 60-80% less process air than cross-flow quenching. Oerlikon Barmag's radial quenching units can be used for manufacturing microfilaments and commodity yarns from 0.3 dpf up to 3 dpf. Hence, the component is e-save certified and makes a sustainable contribution towards the ecological balance sheet of the spinning system.

Spin-dyeing with EvoQuench

In the case of spin-dyeing polyester POY or FDY using the EvoQuench system, the particular focus lies on the long, stable duration of use for the sieves installed in the EvoQuench. This ensures a highly-consistent yarn quality over long production periods and makes a considerable contribution to reducing downtimes and consumption costs.

The dyes deployed in spin-dyeing are – with the exception of black – generally azoic dyes or organometallic complexes. These aromatic-based molecule systems can, in part, decompose at the high melt temperatures and evaporate directly underneath the spinneret. While this evaporation does not result in lower durability and evenness when using a cross-flow quenching system, increased contamination of the sieves could well result in lowering their service life and the evenness of the yarn.

For this reason, the special design for spun-dyed yarn protects the sieves against contamination caused by evaporating dye particles. Important design criteria was easy and fast cleaning during the routine pack wipe cycles.

This new development from Oerlikon Barmag now makes spin-dyeing polyester POY and FDY possible and efficient under practicable marginal conditions when using the EvoQuench radial quenching systems. (bey, sfa)



Radial quenching systems such as EvoQuench create an even, turbulence-free air flow and hence guarantee gentle yarn handling and even quenching. This makes it the perfect system for microfiber spinning.



Spun-dyed yarns are color-fast and more even than yarns dyed using other methods. Furthermore, the process is considerably more ecological; tighter environmental rules and regulations for dyeing plants are increasing the global demand for solutions for manufacturing spun-dyed yarns.



Expansion of business activities promises cost benefits for systems operator

The polycondensation business of Oerlikon's Manmade Fibers segment is being sustainably ramped up: in July, the company entered into a joint venture with the Chinese chemical group Huitong Chemical Engineering Technique Co., Ltd., with the Chinese authorities having already given the project the green light.



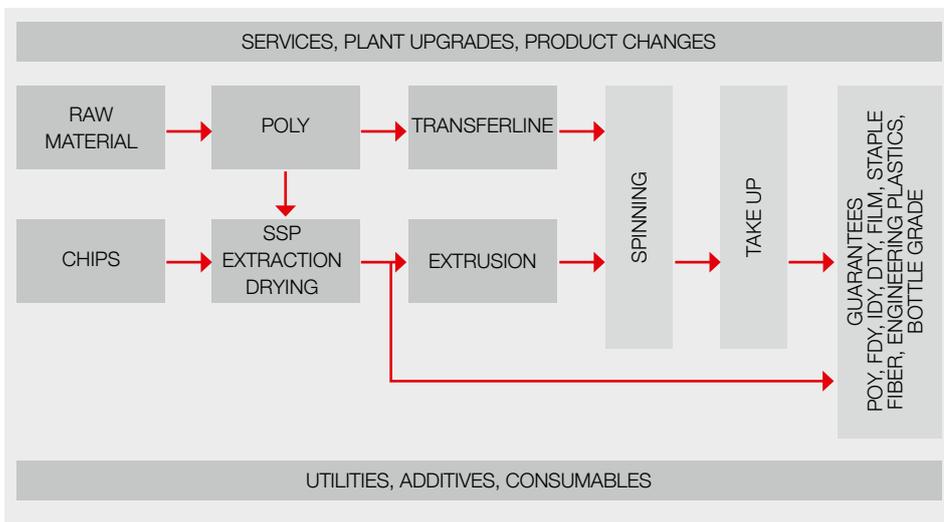
The joint venture guarantees the systems operator comprehensive project management, project support and liaison as well as carefully-coordinated services.

The new enterprise will be called Oerlikon Barmag Huitong Engineering and will in future offer systems customers a completely integrated process from a single source – starting with the production of the process-appropriate melt all the way through to textured yarn, flat yarn and processing of staple fibers for various industrial and textile polyester and polyamide applications. The highly-efficient manufacture of polyester for the packaging industry and polyester bottle granulate will round off the program.

“With this expansion of the portfolio, we will now be supplying our customers from a single source – hence allowing us to supply our clientèle with guarantees for the end products. Furthermore, we can offer our customers a much more comprehensive all-round service offering for the entire lifespan of their systems”, states Paul-Gerhard Vöpel, responsible for the Engineering division within the Manmade Fibers segment. The systems builder now supplies the entire process chain and supports this during its entire lifecycle: from production development, manu-

facture all the way through to service – including free maintenance packages.

“For our customers, this means that they now have just one contact partner and no longer have to communicate with different suppliers. This is particularly relevant both for reacting to market trends in a timely manner and to be able to carry out necessary technology optimizations and adjustments triggered by trend-related product changes. In addition to this, we are now considerably faster at implementing projects and potential adjustments, resulting in significant cost reductions. And because we are able to supply the entire system – from the melt production equipment through to the systems required to produce the textured yarn package – we are able to offer optimum services within the context of the respective project”, explains Paul-Gerhard Vöpel, talking about the benefits for his customers. With this, the Oerlikon Manmade Fibers segment supplies its customers with a unique offering, both in the preliminary and project implementation phases and throughout the lifecycle of the overall investment.



‘Setting trends and changing markets’

For the fourth time since 1995, the ITMA Europe returns to Milan. The proud city in northern Italy, its residents and, above all, the well in excess of 1,600 international exhibitors will give it their all to ensure that the trade fair on more than 100,000 m² fulfills every expectation of each and every visitor. Between November 12 and 19, 2015, the entire textile machine industry will convene at one of the world’s largest trade fair locations, the Fiera Milano Rho.

The Manmade Fibers segment of the Swiss Oerlikon Group will be represented in Hall 4, Stand A 105, with its two Oerlikon Barmag and Oerlikon Neumag competence brands. “In a market that is proving to be increasingly difficult, we will set new trends with our innovations and once again change the markets”, promises André Wissenberg, Head of Marketing, Corporate Communications and Public Affairs.



Just as on last year’s ITMA Asia, Oerlikon’s Manmade Fibers segment will present a choice of innovations in Milan.



Total solutions provider

Here, Oerlikon is latching onto the successful product developments of the past few years. In addition to unveiling the strategic expansion within the polycondensation business by means of the joint venture with Chinese partner Huitong, the segment is above all focusing on offering its customers total manmade fiber spinning systems solutions. “From Melt to Yarn, Fibers and Nonwovens’ is our maxim”, continues Wissenberg. “Currently, we are the world’s only manufacturer that has the know-how and the capacities to offer complex manmade fiber spinning systems for polyester, nylon and polypropylene from a single source”. Something that all visitors to the 650-m² trade fair stand will be able to convince themselves of.

Furthermore, Oerlikon Barmag will be showcasing ground-breaking innovations in the areas of POY and FDY filament spinning and the manufacture of monofilaments. Here, the focus is on further new product developments and optimizations in line with the Oerlikon e-save philosophy, which promotes

the manufacture of products oriented on sustainability. Oerlikon Neumag will concentrate on its BCF, staple fiber and nonwovens core competencies and present all interested visitors with the latest product developments by means of its virtual reality technology in 3D showrooms.

Attractive accompanying program

In addition to the actual eight-day exhibition, the trade fair will once again also offer an attractive accompanying program, with active Oerlikon involvement.

Sponsor of the World Textile Summit

After the ITMA Barcelona 2011, Oerlikon is once again sponsoring the World Textile Summit in Milan. The first speakers have been already announced. In line with the key themes of ITMA 2015, the Summit’s program is being developed to explore a series of topics that link decisions on sustainability to profitability and corporate success. Date: Friday, November 13, 2015. For more information, please visit www.worldtextilesummit.com.

Nonwovens: a world of growth and opportunities

On Monday, November 16, 2015, EDANA and ITMA 2015 organizer MP Expositions will jointly host a Nonwovens Forum. The program will feature topics relating to global industry trends, opportunities and challenges, as well as production technologies and management. Oerlikon Neumag will talk about its innovations in ‘Spunbond Lines for Technical Applications’. Martin Rademacher, Sales Manager, and Dr. Ingo Maehlmann, Senior Manager Product Management Nonwoven, will talk about the polymer and technology trends as well as growth expectations for technical applications. They will also present their case study: “Bitumen roofing substrate and geotextiles meeting market requirements”. (Ika)



ITMA 2015
www.itma.com

More information: www.itma.com/conferences/nonwovens-forum-at-itma

Customer proximity showcased

As the global market leader for spinning systems and equipment for manmade fibers, Oerlikon Barmag is providing gear metering pumps for a wide range of textile and non-textile applications. Oerlikon Barmag wants to strengthen its position within the area of gear metering pumps in textile and non-textile applications in North America.

Fibers and Filaments' had the opportunity to speak with Udo Maus, Head of Gear Pump Division (picture left), and Andreas Heitzer, Sales Director Gear Pump Division (picture right), about the potential of the US-America market.

» Mr Maus, Mr Heitzer: How do you assess the current situation within the US-American gear metering pump market? How do you see the future development here?



Despite the textile sector currently planning only a few new investments for systems and equipment, there is a considerable demand for gear metering pumps. This is fundamentally the result of systems modernizations aimed at increasing equipment efficiency and specialization on niche products. Here, we are a competent and reliable partner to our customers in all matters concerning optimum pump design. In the case of non-textile applications – such as film extrusion, polyurethane, lacquer or adhesive application, for example – we see rising demand for special customer-specific solutions resulting from ever more challenging processes. These are developed by our experts on-site and at HQ in collaboration with the users.

» Where do you believe the technological challenges facing the 'gear pump of the future' lie?

Wherever the focus is on high-precision metering tasks for their media, manufacturers choose Oerlikon Barmag gear metering pumps. The requirements of a highly-accurate metering gear pump are precision, robustness, durability and cost efficiency. This is true today and will continue to be so in the future. And we are superbly equipped for this.

We achieve precision by selecting the suitable construction with gap dimensions adjusted to the respective customer application. Determining these influencing variables accurately requires the profound knowledge of our pump professionals. In production, it is the adherence to the very smallest tolerances that – interacting with the various



Udo Maus, Head of Gear Pump Division (left), and Sales Director Andreas Heitzer see rising demand for special customer-specific solutions especially in the case of non-textile applications

components – determines the overall performance of the pump. Our comprehensive experience and expertise acquired over 90 years of manufacturing pumps is also eminently important for the absolutely essential robustness of the pump. We secure success for our customers with custom adjustments and modifications to the requirements of the respective process. The selection of the appropriate materials is decisive for the durability of the products. Here, using high-end steels and the deployment of special heat treatment and coating processes and procedures that are adjusted to the respective application cases of the customers are absolutely paramount. Many work steps are required to manufacture the components with the level of precision required. Quality has its price, something that does, however, pay dividends in the long term. In our state-of-the-art production facilities in Germany, we are constantly investing in new machines and equipment to be able to offer market-appropriate prices within a fiercely-competitive market.

» Mr Heitzer: you would like to strengthen the presence of Oerlikon Barmag's pumps within the US-American market. Which measures are you focusing on and where do you see customer service within this context?

We are currently considerably expanding the gear pump competencies at the Oerlikon Textile Inc. subsidiary in Charlotte. To this end, our customers will find specialized contact partners for application questions, sales and distribution topics along with close-by service here. Customer-oriented



solutions, short reaction times, fast assistance in the event of emergencies – all for the added benefit of our customers. Of course, we must increase the availability of pumps and parts that are in high demand; in other words, 'hands-on' and 'on hand'.

Thank you for speaking to us. (wa)

Manufacturers of spun-dyed yarns profit from innovative micro-components

The trend towards spun-dyed yarns continued unabated. The reasons for this are superior color-fastness, cost advantages and, above all, tighter environmental rules and regulations for dyeing works within the Chinese market. One logical consequence is that this trend is also having an influence on the development of micro-components and original parts. As a technology company, the Oerlikon Manmade Fibers segment focuses on solutions for customer-specific requirements.

To this end, the After Sales Services division has developed a new sensor that identifies yarn breaks in particularly critical yarns such as extra-fine or spun-dyed yarns. Conventional optical sensors frequently do not register extremely fine or colored yarns and therefore signal a yarn break which results in a direct interruption to the spinning process. And the black yarns so common in the automobile industry are a particularly serious challenge for sensor technology.

With a second 'eye', the new dual sensor of the Manmade Fibers segment can prevent this misdetection, reliably identifying yarn breaks.

New material for yarn guides extends running times considerably

And spun-dyed yarns are a huge challenge for small components used in texturing as well. To this end, spun-dyed yarns result in considerably faster wear to the coatings of yarn guides. And black yarns in particular have a very aggressive impact on yarn guides as a result of their high carbon content. With increasing market shares for black yarns, this is a considerable cost factor for texturing companies.

In trials, the development of a new material for coating the yarn guides has produced outstanding results. Whereas conventional yarn guides used when processing black yarns can in extreme cases be damaged in just two days of operation, the deployment periods have been considerably extended in the case of the new coating. "One of our customers has been running the new yarn guides without any noticeable wear and with outstanding yarn parameters for six months now", reports After Sales Manager Achim Beul, talking about the new coating in practice.

Due to the extreme loads within the texturing machine, the friction unit inlet guides in the friction units were initially coated with the new material; further yarn guides are currently in preparation. (bey)

The friction unit inlet guides are especially worn when texturing spun-dyed yarns.



In the heartland of the carpet industry

The regional and content expansion of the service offerings is part of the declared growth strategy for the customer service division of Oerlikon Manmade Fibers. To this end, the opening on August 13, 2015 of a further Service Center in Dalton, GA – at the center of the US-American carpet industry – was a logical step towards even greater, more efficient customer proximity. In the presence of the Mayor of Dalton Dennis Mock and more than 100 visitors, Chip Hartzog, President Oerlikon Textile Inc., cut the red ribbon, officially opening the new site for business. “We want to accompany our customers quickly and competently with all our experience and expertise with the aim of increasing their competitiveness”, explained Chip Hartzog.

The new Service Center offers comprehensive services for all Oerlikon Barmag and Oerlikon Neumag customers. The Oerlikon experts will be supporting customers specifically in all matters relating to BCF carpet yarn systems, but also with technology solutions for filament spinning plants, texturing and high-precision metering pumps. Customers will benefit from fast and easy



provision of original parts, but also from repairs to components with state-of-the-art machines and from competent, on-site customer support (wa).



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