

WORLD FOOTWEAR

JANUARY/FEBRUARY 2014 • VOLUME 28 No.1

THE MAGAZINE FOR THE GLOBAL SHOE INDUSTRY



The wonder of wedding shoes
Domestic troubles for Italian firms
Where we are with PU today
A fresh look at membranes

COPYRIGHT © WORLD TRADES PUBLISHING LTD



Contents

Head Office

36 Crosby Road North, Liverpool L22 4QQ, UK
 Telephone: +44 151-928 9288
 Facsimile: +44 151-928 4190
 E-mail: wl@worldtrades.co.uk

Editor

Deputy Editor
 Consultant Editor
 Technical Editor
 Contributors

Stephen Tierney**Clare Grainger****David Buirski****Philip Lattaway****Penny Leese****Sergio Dulio****Steve Lee****Shari Shallard****Tim Button****Vicky Owens****Sue Cassidy****Heather Maher****Pauline Kelly****Karen Brown****Simon Yarwood****Design Team****Accounts****Administration****Subscriptions****Publisher & CEO****Front Cover**

Our cover picture for this first issue of 2014 shows that designers and manufacturers of bridal shoes have something very special to contribute to a bride's big day.

Image: Love Art Wear Art

2. World News

Some recent highlights from around the world of footwear. For news on footwear matters every day go to footwearbiz.com, the best news website in the business.

p12

**4. People**

People making their footprints felt in the industry: politicians, industry leaders and designers.

6. Products and Services

Details of innovations from across the industry.

8. Backtrack

Headline highlights from footwearbiz.com.

10. Sourced in the USA

Retail group Wal-Mart will spend an additional \$50 billion over the next 10 years on US-made products, including shoes.



p10

World Trades Publishing 2014.

Contributions: The editor welcomes news items, articles and photographs for consideration and possible publication but no responsibility can be accepted for the loss or non-publication of such material. Opinions expressed by individual contributors do not necessarily reflect the view of the editor or publisher.

Whilst every effort is made to ensure accuracy in reproduction, no responsibility can be accepted for the technical content or for claims made by manufacturers for product performance that are published. Publication in World Footwear cannot be construed as an endorsement for a claim or product by the publisher.

World Footwear is published 6 times per year by World Trades Publishing, 36 Crosby Road North, Liverpool L22 4QQ, England. Price UK £75 & ROW £130 per year (six issues). Credit cards will be charged in GB Pounds converted at the daily bank rate. Your credit card company may charge you for this service. Graphic origination by WTP. Printed by Bishops Printers, Walton Road, Portsmouth, Hampshire PO6 1TR, England. All rights reserved. ISSN 0894-3079.

World Trades Publishing 2014.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means mechanical, electronic, recording, photocopying or otherwise, without the written permission of the publisher.

12. Domestic doom in Italy

Italy's footwear manufacturers reported some much-needed good news on exports at the start of 2014, but declines in the domestic market are weighing heavily on the industry.

16. Old shoes, old memories

Shoes feature in the burgeoning vintage industry, but not as much as clothes. Ellen Sampson has some interesting ideas about why this is so.

p16



18. Has complexity put us off PU?

Part of the great soling materials revolution of the last 40 years, PU has made less impact on the footwear industry than many imagined. Steve Lee offers an explanation.

22. Make it efficiently

Labour costs may still be lower in Asia, but there are still many common-sense steps footwear firms must take to keep production efficiency at a maximum.

26. Leather for the future

As the upper material of choice for so many shoes around the world, a sustainable supply chain for leather is of great importance to the footwear industry.

32. Light and flexible membranes appeal

Non-woven membranes could have a promising future as materials that can keep shoes and feet dry while adding very little weight.



p34

34. Heart and sole

Why elegance, timelessness and beauty matter more than fashion when it comes to bridal shoes.

38. Quality required

Shoe designer Louise Shill decided that the best way to provide her child with shoes of sufficient quality was to launch her own brand.



p18



p22

40. Essential reading

IBC. Advertiser/Reader Enquiry Service



p38



Footprints

PIETRO TORIELLI DIES

Footwear machinery manufacturer Torielli has announced the death of its president, Pietro Torielli. A well known figure in the international footwear industry, Mr Torielli died in his home city, Vigevano in northern Italy, on December 6 after a short illness. He was 75.

Pietro Torielli had worked at the machinery firm, which was founded by his father, since 1957. He was credited with bringing high levels of modernisation to Torielli technology after taking special courses in footwear production in Italy and in England. This helped shape the company's product range, which today includes technology that helps companies make lasts, design shoes, prepare, cut and close uppers, as well as soles, insoles, toe-puffs and counters.

After a number of years of success, Pietro Torielli was kidnapped and held hostage for 52 days between December 18, 1972 and February 7, 1973. His kidnappers released him on receipt of a large ransom. He said later that this experience made him think of moving away from Vigevano but that he had decided to stay because Vigevano was his home and he felt "a deep love" for it. His funeral took place in the city's cathedral on December 9.

Current Torielli chief executive, Ian Paris, told *footwearbiz* that Mr Torielli's death had come as a shock to the company. "Pietro has been our leader and guide and he has taught us by example in both his work and his personal life," Mr Paris said. "He was a real pioneer in the shoe industry, a true family man and a much respected and important person in the local community and in the church in Vigevano."

He continued: "Although our hearts are full of pain, we know that he would want us to move forward and use the positive legacy that he has left to us. This is exactly what we will do, using the same enthusiasm that he had. I am personally very proud to have known and been able to work so closely with Pietro. His professional achievements are very easy to see, but he also showed me that you can work and live with honesty and integrity."

CLIA PRESIDENT POINTS TO INDUSTRY 'HURDLES'

The president of the China Leather Industry Association, Su Chaoying, has said the footwear industry today faces "formidable hurdles" in the short and medium term.

Speaking at the eighteenth UITIC Congress, which the International Union of Shoe Industry Technicians organised in Guangzhou, Mr Su said amazing changes had taken place in the global footwear industry in the last 25 years.

He said the industry's centre of gravity had moved in that time from more traditional centres of production and export to "huge shoe-producing clusters" in Vietnam, Indonesia, Thailand, and China, altering the footwear landscape "in fundamental ways".

He added: "Along the way, the new players have seen challenges emerge on costs, labour supply, social responsibility, environment, and other issues, all of which mean the shoe sector today is facing formidable hurdles in the short and medium term."

Mr Su said he hoped the Guangzhou event would give footwear industry professionals from all over the world a chance to address "the challenges that will define our future".

FOOTWEAR: THE NEXT CHINA IS CHINA

Footwear industry consultant Peter Mangione has said that, even after ten years of sourcing experts searching for a shoe manufacturing location that can compete with China, no real alternative has emerged.

In recent comments quoted by the China Leather Industry Association, Mr Mangione said: "The short answer is that the next China is China." Nevertheless, he said the "scramble to find suitable alternative sourcing options" has produced a good pool of substitutes in some important niches, with costs, worker availability and investment in shoe making infrastructure still the biggest issues.

He estimated China's shoe production now to be around 13.5 billion pairs per year, with nearly 10.1 billion pairs exported.

APICCAPS RE-ELECTS PRESIDENT AND PROMISES NEW 10-YEAR PLAN

Portuguese footwear industry association APICCAPS has announced that Fortunato Frederico will continue as its president.

He said he was committed to making it a priority during the next term of his leadership of the organisation to make Portuguese footwear "a reference point internationally".

Details of a new strategic plan for the Portuguese footwear sector over the next decade will be published soon, APICCAPS said.

Mr Frederico is the founder of the Fly London footwear brand.

NEW PRESIDENT NAMED AT STUART WEITZMAN

Footwear brand Stuart Weitzman Holdings has hired the former CEO of Prada and Miu Miu US as global president, a new role which will encompass both the global retail and wholesale businesses.

François Kress will report directly to CEO Wayne Kulkin, and will be based in New York.

Owned by the Jones Group, Stuart Weitzman operates 45 US stores, has 59 international stores and is sold in more than 80 countries.

Meanwhile, footwear designer Stuart Weitzman himself won the prize for best accessories designer in the 2013 Prix Marie Claire in Spain. Mr Weitzman was presented with the award at a gala event at the French embassy in Madrid in November.

Originally from New York, Stuart Weitzman has made his shoes in Spain for more than 20 years.

CROCS CHIEF EXECUTIVE TO STEP DOWN

John McCarvel has announced his intention to retire as chief executive of Crocs. He will step down "on or about April 30, 2014", according to a statement from the footwear brand.

"It has been an honour to be part of the Crocs global team for the past decade and to lead it since 2010," Mr McCarvel said. "We've made

tremendous progress as a company over these past 10 years, from a one-season, one-shoe, and one-country brand to a diversified, four-season global footwear leader that is on solid financial footing."

Crocs chairman, Thomas Smach, said on announcing the news that John McCarvel had led a turnaround of Crocs and established it as a profitable, diversified company with more than \$1 billion in annual revenue and 4,500 employees.

KEVIN BURKE TO LEAVE AAFA IN JANUARY

The American Apparel & Footwear Association (AAFA) has announced that Kevin Burke will step down as president and chief executive this January. He has led the organisation, which aims to be the political voice of the footwear and apparel industry in the US, for 12 years. The AAFA board of directors has said it will begin the process of finding a replacement for Mr Burke "as quickly as possible".

AAFA chairman Philip Williamson, chief executive of workwear company Williamson-Dickie, said Kevin Burke had brought "a much-needed global vision to AAFA". He went on to say: "With so many pressing policy issues facing the industry, including the near conclusion of the Trans-Pacific Partnership negotiations, time is of the essence. We will act quickly to ensure seamless continuity in both leadership and AAFA's mission of standing at the forefront as a leader of positive change for the apparel and footwear industry."

CLARKS ANNOUNCES NEW CHAIRMAN

Footwear group Clarks has announced Thomas O'Neill as its new chairman with effect from December 6. Mr O'Neill, who previously served as a non-executive member of the board, will replace Peter Davies in the role.

Mr O'Neill was previously chief executive of jewellery retailer Harry Winston in New York, and president of the Harry Winston Diamond Corporation from 2004 to 2010. Prior to this he held the position of worldwide president for luxury brand Burberry between 2001 and 2004. He has also held senior roles at LVMH, Marc Jacobs and Tiffany & Co.

Clarks chief executive, Melissa Potter,

said at the time of the announcement: "We are delighted to appoint Thomas to the role of chairman. His extensive experience working with global retail brands in the US, Europe and Asia combined with his in-depth knowledge of the Clarks business make him a natural choice."

ORTHOLITE HIRE TO ADVISE ON NEW ASIAN LOCATIONS

Insole supplier OrthoLite has appointed Denny Cowger as chief administrative officer and general counsel to help the company as it looks for new manufacturing locations.

Glenn Barrett, OrthoLite CEO, said: "In-house counsel is critical to help us

navigate the local regulations and take advantage of the best opportunities. Denny has been our corporate attorney in Vietnam for the last three years, making him a natural fit for our team."

Mr Cowger was most recently a special counsel for a large US law firm. While managing the firm's Ho Chi Minh City office, Mr Cowger advised on various corporate, commercial and banking agreements with a primary focus on cross-border deals in southeast Asia for international companies.

US-headquartered Ortholite supplies open-cell foam to brands including Clarks, New Balance, Merrell, Nike, Vans and Timberland. 



**NO MATTER WHAT COLOR
FOOTWEAR YOU MAKE,
MAKE SURE THE THREAD
IS GREEN.**

We provide the planet with the finest, most durable threads available in a range of fibers and a rainbow of colors. More importantly, each is produced with a commitment to environmental care and sustainability. Unlike inferior versions. Because it's the right thing to do.

Learn more about our long-standing Eco-Driven® Program at amefird.com and download our "Ten Threads of Sustainability" brochure. Clearly, if you're ready to step up to protect the earth and your brand, we've got the threads for you.




Products & Services

FAYTEX EXPANDS IN CHINA

Innovative fabrics producer Faytex, maker of Dri-Lex moisture management products, has added new footwear fabrics to its range and altered the way it will merchandise its product line by offering 'good, better and best' linings, upper fabrics and packages at 'good, better and best' prices.

Company president, Cindy Stangl, said on announcing the development that the move was consumer- and retailer-friendly. She explained: "Our customers are already responding positively to the flexibility in price and product selection we are now able to offer. It allows line builders to present a consistent Dri-Lex comfort story from opening to top price-points."

Faytex said it will now be able to deliver, at lower price points, products that offer footwear brands similar comfort, performance and durability to those of its best-seller, Dri-Lex Ultimate Suede. This product is often used in high-end boots and shoes, but it will now be easier for brands to use a lower-cost version of the technology in other shoes in their ranges, the company said.

In addition, Faytex has also recently moved to a new, larger headquarters in Guangdong, China, to accommodate growth in Asia, adding eight new members of staff in sales, product development, customer service and management roles. It has described this expansion as "necessary and logical".

"These moves are reflective of our continuing commitment to the Asian side of our business," Cindy Stangl said, "and will help us accelerate expansion plans there."

ZDHC ISSUES FRAMEWORK FOR CHEMICALS

The Zero Discharge of Hazardous Chemicals (ZDHC) Group has announced a framework for prioritising the phase-out of hazardous chemical substances used in the footwear and apparel supply chain.

"This framework is a critical step in achieving our vision of zero discharge of hazardous chemicals across supply chains and product lifecycles by 2020,"



NEW ADIZERO GOLF SHOE IS 10% LIGHTER

Sports brand adidas has launched a new version of its adizero golf shoe, the adizero one.

Golf designers at the German brand set out to develop lighter golf footwear than previous versions, and the new shoe achieves that, with a 10% weight saving compared to earlier adizero golf shoes; each shoe weighs less than 300 grammes.

It has a one-piece fused upper that bonds together five layers of material to give what the company calls "a consistent glove-like fit on the foot". It also has a lighter and thinner outsole with seven cleats in place of the ten that previous adizero golf shoes had.

The new shoe will become available on general release on January 23.

said the group, which includes Nike, New Balance, Puma and adidas.

In 2012, ZDHC published a database of thousands of chemicals (at the CAS number level) used in the footwear industry. A pared-down list of restricted chemicals was identified as a starting-point. The list was a subset of chemicals appearing on restricted or watch-lists, such as the bluesign system substance list, brands' restricted substance lists and the Substitute it Now (SIN) list.

PENTLAND SETS UP RESEARCH CENTRE

Pentland Group has joined forces with the UK's Lancaster University to create a 'research centre of excellence'.

The facility will be a place "where the latest global views from across many academic disciplines are merged with business and economic perspectives to develop opportunities, understand risks and challenge the status quo", according to Pentland.

Stephen Rubin, chairman of Pentland, said: "We are excited by this opportunity to facilitate academic research through a commercial lens and have high hopes that this centre will emerge as a thought-leader in this fascinating and

important field."

Pentland Group, established in 1932, is one of the largest private businesses in the UK and owns brands including KangaROOs, Hunter, Ted Baker Footwear and Kickers.

FOOTWEAR CENTRES PART OF NEW PROGRAMME

The Indian government has approved a new leather development programme (ILDIP) for the country. The programme will run until 2017 and will attract funding of around \$160 million. In a statement, the government said its aim was to encourage the overall development of the leather sector.

"Sub-schemes" that will make up the programme will include the setting up of two new branches of India's Footwear Design and Development Institute.

FOOTWEAR ADDED TO REVAMPED HIGG INDEX

The Sustainable Apparel Coalition (SAC), a trade association representing more than a third of the global apparel and footwear market, has unveiled an updated version of the Higg Index, adding a footwear brand module for the first time.

This latest iteration of the sustainability measurement tool, which was 18 months in development, brings the index to an online platform developed by Schneider Electric, adding the ability to share users' sustainability data, increase accuracy and adding measurability for new materials and processes. This ability to share information between the entire supply chain marks a first for sustainability measurement, according to SAC.

The index now has modules to assess social and labour impacts for manufacturers and has improved on its environmental content by updating brand and facility assessments and considering chemical impacts.

SATRA OFFERS RAPID 3D PROTOTYPING

Leather and footwear testing group SATRA is offering clients the services of a Stratasys 3D printer to build models and functional prototypes in ABS production-grade thermoplastic.

The 3D unit uses fused deposition modelling (FDM) which is a Stratasys-patented additive manufacturing method.

SATRA's head of research, Tom Bayes, said: "The unit is a natural complement to the organisation's existing 3D scanning and modelling capabilities, and will allow us to provide additional services for SATRA members and customers, including rapid prototyping. It has also been used to make production parts for some of SATRA's own UK-manufactured test machines."

Shapes can be printed either as a hollow shell – suiting design concept models that economise on print material – or as solid blocks which can be machined, drilled and sanded as desired.

Pieces can be printed in just a few hours that would otherwise take days to tool and mould. This will allow for the rapid modelling of design concepts, the construction of parts for unique test machines and the shaping of bespoke foot forms for whole shoe test work.

SYMPATEX TECHNOLOGY 'WILL INSPIRE OTHERS'

Sympatex has been awarded the Performance Award at sportswear fair Performance Days for its Moisture-tech Volterra.

A jury selected the four-layer footwear laminate, a mixture of polyester and polyamide, from more than 600 submissions.

Moisture is transferred from the foot to the lining and through an intermediate layer to the waterproof, windproof and breathable membrane. The moisture activates the hydrophilic membrane which speeds up the transmission of water vapour.

VORALAST SOLING SYSTEM FOR CHIRUCA BOOTS

La Rioja-based Calzados FAL has chosen the Voralast soling system from Dow for its Chiruca trekking boots.

Carlos Abad, the footwear brand's general manager, said of the development: "The new soles provide hikers with increased slip and water resistance, and are lighter for better comfort."

The soling technology features a direct-injection polyether system in the midsole combined with "soft-touch" technology in the outsole. It is designed for all types of terrain, including rivers and mountains. The textured sole helps grip even mossy rocks or snow covered trails. "A lightweight polyurethane blend ensures hikers won't tire from the extra weight on their feet and provides support for the feet and back," Dow said. 🧠



"Your next project" made easy

For over 25 years Emtexglobal has been a leader in the development and manufacture of laminated fabric packages for applications in

- Footwear
- Sporting Goods
- Medical Braces
- Backpack & Outdoor Products
- Portable Electronics and Camera cases



Our Custom product development program is a free service of Emtexglobal – from prototypes to finished deliverables.

We can help address issues including weight, water repellency, moisture wicking, durability, adhesive compatibility, stitch-ability, fire retardancy and subsequent manufacturing compatibility.

Available in Asia, United States & Europe



For an outstanding selection of interior and exterior materials visit www.emtexglobal.com



Backtrack

World Footwear's publishing cycle and limitations on space make it impossible for us to run more than a carefully selected sample of news from across the industry. However, we publish hundreds more stories on **www.footwearbiz.com**. The site is updated every day with news from every continent and every part of the industry, making footwearbiz.com one of the most

comprehensive archives of news anywhere on the web for the global footwear industry.

We list below just a few of the headlines that have appeared on the site in recent weeks — **www.footwearbiz.com** allows you to read those you have missed.

14.01.14

Asics teams up with Ortholite for Natural33 range

10.01.14

Brussels training day for 'green product' pilot project

09.01.14

Assocal bemoans Italy's domestic 'collapse in consumption' of shoes

08.01.14

SATRA launches footwear website
Record for Vietnam's footwear exports in 2013
Footwear firms at top of 2013 Lucca insolvency list

07.01.14

US footwear manufacturing up 12% in 2012

02.01.14

Couromoda ready for high visitor numbers

19.12.13

Fourth standalone store for Cheaney

18.12.13

China could relax customs controls for 'good' companies

17.12.13

Pavers offers lifeline to Barratts
ISPO organisers to launch summer show in China

16.12.13

Two Ten Footwear Foundation raises \$2.3 million
UK fashion footwear retailer to expand in 2014

12.12.13

Zanotti could be exploring sale options

11.12.13

A challenging year for footwear manufacturers in Jalisco
Moretti gets private equity backing

10.12.13

Double-digit growth for footwear in the Philippines in October

09.12.13

Italian footwear industry reaches new pay agreement
Nigerian Leather Institute trains orphans in footwear production

06.12.13

Saudi Arabia: 'Made in Italy' shoe and leathers goods factory closed

05.12.13

New Balance boosts UK workforce as it announces Olympic sponsorship

04.12.13

Adidas pins hopes on running shoes and football
IAF and AAFA to educate on EU trade
Designer launches own shoe brand because of lack of quality in the market
Brown Shoe reports Q3 results

03.12.13

Spalding adds footwear division to basketball offering
Mizuno brings soccer boots to US

02.12.13

DuPont wants 'drop-in' content to make the change to bio-based easy
Finance deal will help Italian shoe firms

29.11.13

Vietnam: Footwear firm to buy tannery after substandard delivery

28.11.13

Footwear firm may receive tax concession to move production to Indiana
Turkey a new target for Zara's footwear buyers

27.11.13

DSW sales up 7% in third quarter
Geox outlines turnaround plan
UK takes bigger share of Vietnamese shoes

26.11.13

FDRA says support is growing for footwear to have no special TPP treatment
New format for GDS's Global Shoes

25.11.13

Crocs mulls sale
Fitwell provides footwear for canyoning

22.11.13

AAFA updates restricted substances list again

21.11.13

End of the road for adidas SLVR range

20.11.13

New shoe stores prove popular in Greece
Shoe retail website is a Google pioneer

19.11.13

UITIC Congress correct to focus on social responsibility
Timberland wants at least 60 new stores per year in China

18.11.13

CLIA president points to footwear industry 'hurdles'
China and US growth compensate for domestic decline at Tod's



New for Spring/Summer 2014



New look website coming soon

footwearbiz™.com

Contact sy@worldtrades.co.uk for more information



Footwear firm Elan Polo is one of the beneficiaries of a commitment from Wal-Mart to invest an additional \$50 billion in sourcing US-made goods for its stores. CREDIT: WAL-MART

Wal-Mart to source more footwear in US

Retail group Wal-Mart is to include footwear in its plan to spend an additional \$50 billion on US-made products over the next 10 years, and footwear manufacturer Elan Polo is one of three suppliers to have already made new manufacturing commitments in the US on the strength of the Wal-Mart pledge.

A supplier of footwear to Wal-Mart for the last 35 years, Elan Polo will open a new production plant for injection-moulded footwear in Hazelhurst, Georgia, in March. The new facility will produce 20,000 pairs of shoes per day and will create 250 new jobs.

Shorter lead-times

The footwear company's chief executive, Joe Russell, said at the time of the announcement that the project was made possible thanks to Wal-Mart's commitment, but that there

A new footwear factory at Hazelhurst, Georgia, will commence production this year in response to a commitment from retail group Wal-Mart that it wants to source more shoes on home soil.

Footwear firm Elan Polo will run the site.

were also good sourcing and supply chain reasons for setting up the new Georgia facility. "We will see genuine economic value added through shorter lead-times, more efficient purchasing and savings on shipping and oversight expenses," Mr Russell says.



Wal-Mart chief executive, Bill Simon, wants to encourage US companies to "re-shore" some of their manufacturing.

CREDIT: WAL-MART



US Commerce Secretary, Penny Pritzker, speaking to Wal-Mart suppliers in 2013.

CREDIT: US GOVERNMENT

Wal-Mart made an announcement about the \$50 billion-commitment in the autumn of 2013 at a US manufacturing summit it held for its suppliers in Orlando, Florida. More than 500 suppliers representing 34 states took part. The retail group's chief executive, Bill Simon, has used the phrase "re-shoring" to describe what is going on, insisting that good opportunities exist for manufacturers to invest in the US by bringing back production that they had taken offshore or by expanding existing manufacturing operations there.

US Commerce Secretary, Penny Pritzker, also spoke at the event, telling the audience: "We're entering a new era of opportunity to boost US manufacturing. Our educated and productive workforce is highly attractive. Wages in countries like China have increased more than 10% each year for the past decade, reducing the labour-cost advantages they once had. Meanwhile, the output of American workers is about 9% higher than it was before the recession. Manufacturers have come through some tough years, but today they're poised to compete, to drive innovation, and to create good jobs once again."

Almost all shoes sold in the US are imported

Specific to footwear, the American Apparel & Footwear Association (AAFA) has reported 2013 consumption in the US as 2.3 billion pairs, 99% of which are imported, many of them from China, Vietnam and other Asian countries. To take the example of China, it was the source of 83.7% of US shoe imports in the first quarter of 2013, with almost 570 million pairs coming into the US from China over the three-month period. China is certainly still the most important source of shoes brought into the US these days, with that astounding share of more than 80%.

Vietnam, in second place, has a share of 8.7% of the total, but the US market is growing in importance as a destination of Vietnamese-made shoes, with an estimated 30% of the total (256.1 million pairs in all for 2013). Indonesia comes third, with a share of 3.6%, followed by Mexico, Italy, India, and Brazil. By the time you get down to Taiwan in tenth position, the exporting country's share of US imports of shoes is 0.2%, with 1.2 million shoes in the first quarter of last year.

Taking over from Taiwan

Founded in 1976, Elan Polo has spent most of its 38 years of existence sourcing shoes from outsource manufacturing partners in most of these countries, concentrating, for its part, on designing and delivering its shoes (for the men's, women's, and children's markets). It makes around 45 million pairs a year and distributes them to retailers around the world. It makes private-label products, as well as shoes for a number of international brands, such as sports brands Easton and Mitre, outdoor brand Woolrich and slipper specialist LB Evans.

In spite of Penny Pritzker's remarks, it's hard to imagine anyone making an impact on China's domination of the US market, but if all the shoes Elan Polo makes at its new Hazelhurst factory are sold in Wal-Mart stores in the US, that one factory will have a bigger share of the domestic market than Taiwan. This seems a strange statement to make given the fundamental importance of Taiwanese companies in running footwear factories in China, Vietnam, Indonesia and other parts of Asia, but the 1.2 million pairs for the first quarter of 2013 refer only to shoes made on Taiwanese soil, and, with that caveat, it looks as though Hazelhurst, Georgia, is poised to overtake it. 📌

Assocal plays its part in keeping consumers interested in high-end Italian shoes with its Micam Point shopping event in the heart of Milan.

ALL CREDITS: MICAM



Figures for the first nine months of 2013 showed some export growth for the Italian shoe industry, but on home soil, several years of gloom in the country's domestic economy are now taking their toll.

Italy: domestic doom and gloom darkens the footwear landscape

Italy's footwear industry association Assocalzaturifici (Assocal) has reported growth of 1.4% in the volume of shoes manufacturers exported in the first nine months of last year, compared to the same period in 2012, but in its first report of 2014, it has bemoaned a worrying "collapse in consumption" in the domestic market that is affecting the whole Italian footwear supply chain.

The total volume of shoes shipped to customers outside Italy over the nine-month period was just short of 173.5 million pairs. In terms of value, these exports brought in more than €6.3 billion, which represents growth of 4.4% compared to the previous year's performance.

Within these figures, shoes with leather uppers accounted for 60% of the volume and 83% of the value. Exports of leather shoes showed a small decline in volume, 0.2%, but an increase of 4.5% in value. There was particularly heartening growth in exports to countries outside the European Union, including the US, with growth of 4.2% in value, Canada with 13% growth, Russia with 10.5%, China by 25.2% and South Korea with 12%.

France and Germany are still the two biggest markets for Italian shoes, with French customers taking 33.2 million pairs over the nine months and German customers 25.4 million. The value of exports to France over the period was more than €1 billion, compared to €692.9 million in revenues from Germany. These numbers represent growth of 8.6% in value and 7.7% in volume for France, but of only 0.2% in value for Germany and a decline of 1.5% in volume there.

Assocal said it was pleased with these results but warned that, even if they are confirmed in the figures for the final quarter of 2013, they represent, at best, only a partial recovery. In part, this is because the figures for 2012 were very poor; in 2012, Italy produced nine million fewer pairs of shoes than in 2011.

Collapse in consumption

Of greater concern is what the association has referred to as "a veritable collapse in consumption" in the domestic market. Consumption of footwear in Italy over the first nine months of 2013 fell by 4.8% in volume and by 7.1% in value. And these figures, too, need to be measured against poor results in 2012. A closer look at men's shoes, specifically, helps demonstrate



Assocal president, Cleto Sagripanti.

what is going on in the towns and cities of Italy.

Still looking at the first nine months only, the volume of men's shoes purchased in Italy in 2011 was 11.5 million pairs. In 2012, the figure fell to 11.2 million, a decline of 2.6%. The corresponding figure for last year was 10.7 million, which represents a year-on-year reduction of 4.5%. It's true that these numbers include shoes that were made by manufacturers outside Italy, although imports are declining in line with the overall market.

Inevitably, this slow-down in sales is having a notable impact on footwear retailers in Italy, and, as a result, on the whole footwear supply chain. Big global brands have been affected: Bata, for example, reported to be the biggest footwear franchising firm in Italy, has been closing stores. Its store on the central shopping street of Pescara, the Corso Vittorio Emanuele, closed its doors for the last time at the turn of the year. Once a prestigious commercial address, the Corso Vittorio Emanuele paints a sorry picture today. "If large, prestigious companies such as Bata decide to leave," said the president of a local commerce association, Ezio Ardizzi, on hearing the news, "it means our town no longer holds any appeal in the eyes of international investors. It's another sign of how bad things are, within a disastrous overall context."

Knock-on effects

In addressing the challenges of the domestic market, Assocal president, Cleto Sagripanti, says: "Traditional retailers are among the elements of the distribution chain most affected by the crisis, with shoe shops registering a double-digit decline. As if that wasn't enough, discounted prices account for more than 50% of total sales, with promotions throughout the year rather than just at the traditional times in each season. This is a cause of great concern for us. Italian specialised distribution channels represent an important link in our supply chain and are an important target for many of our [manufacturing] member companies."

In addition, he points out that difficulties in the retail sector often result in late payments and loan defaults that end up undermining the entire supply chain and hurting suppliers. Perhaps the effects of this can be seen in the unhappy news that footwear manufacturing was the sector with most insolvencies in the Tuscan province of Lucca in 2013. Across all sectors, figures from the provincial authorities show that 132 Luccan companies collapsed last year. Ten of these were involved in footwear production; no industry sector registered more. Footwear's corresponding figure for 2012 was four. Of the ten footwear firms that collapsed in 2013, the best known was probably Orlando Chelini, from the town of



Some relief from the gloom. Exports increased by 1.4% in volume in the first nine months of 2013, and by 4.4% in value, bringing a much needed €6.3 billion into the Italian economy.

Segromigno in Monte, which went by the wayside in August 2013. Across Italy, the industry lost 1,455 jobs between January and September 2013 and suffered 142 factory closures. Cleto Sagripanti says only a significant pick-up in the domestic market and changes in employment laws to offer employers greater flexibility will lead to an increase in jobs in the footwear sector in the foreseeable future. 



In the first nine months of 2013, Italian consumers bought 10.7 million pairs of men's shoes, a decline of 4.5% on the previous year.



FAYTEX_{CORP} FIRSTS OVER THE PAST 35 YEARS:

Revolutionized non-woven footwear fabrics in the U.S. market;
Developed Dri-Lex® moisture management fabrics;
Created patented Aero-Spacer® liners and uppers;
Integrated sustainable DuPont™ Sorona® yarns into footwear fabrics.

**GET READY FOR
THE NEXT STEP.**

SEND FOR OUR NEW CATALOG.

DRI-LEX®
BY FAYTEX CORP.



Vintage clothing is more popular than ever, with high-class stores opening in cities all over the world selling second-hand goods that are high quality to stylish people with an eye for a bargain. The trend extends to shoes, but not to the same extent. Footwear designer and expert on anthropology Ellen Sampson has interesting views on why this is so.

Walk in someone else's shoes

Perhaps vintage clothing and shoes are popular because recent fashion trends have mirrored styles from the 1950s, 1960s and 1970s and enough of the genuine articles have survived in wardrobes and attics to fill the shelves of trendy second-hand stores the world over. Or perhaps it's the other way round and recent catwalk trends are redolent of decades gone by because stylish people, especially young people, in Shanghai, New York City, Vancouver, Melbourne, Buenos Aires, Barcelona, Bangkok, Tokyo, Manchester, Marseilles and most places in between have flocked to vintage stores to pick up beautiful clothes by big-name designers at bargain prices.

These shops often stock shoes, but usually to nowhere near the same extent. Dresses, skirts, coats, trousers, jackets, ties, even nightshirts are very common. Why should it be that the knowledgeable shoppers who visit vintage stores enquire less about previously owned shoes? Ellen Sampson, a shoemaker and artist based in London, recently took a career-break to complete a Master's Degree at the famous Cordwainers College in London. She has developed an interest in this subject because, she explains, her first degree (and still one of her keenest interests) is in anthropology. She believes there is a stronger link for most

Shoe designer Ellen Sampson believes our shoes contain "a trace of memory" of the experiences we have while wearing them. CREDIT: JENN HULS / SHUTTERSTOCK



of us between our shoes, our memories and our bodies than with anything else we wear. Footwear is different, and this, she says, is the reason vintage store owners may find shoes hard to source. "The body imprints its form on a shoe, and vice-versa," she explains. "The shoe shapes the foot and the foot shapes the shoe. Our footwear becomes a holder of our body's memories and our shoes become incorporated into our body's schema and, as a result, old shoes resonate in a way that new ones do not."

In shoes that once belonged to someone else, this resonance will be of that person's body and that person's memories and what Ms Sampson calls "a trace of memory" resides in the shoe. She is fascinated by this. Other people may find it slightly creepy, but that is not to say it is untrue.

Superstition

Founder of Gadabout, a highly sought-after vintage store in Toronto, Victoria Dinnick, says that in her experience there is a practical reason why some customers buy fewer shoes than clothes: vintage footwear is often too narrow for many of today's consumers. "It seems that women these days, and men, have wider feet and therefore these shoes do not fit," she explains.

Gadabout does stock shoes (handsome Gatsby-esque spats are a specialty), but Ms Dinnick believes many customers tend to be "superstitious about wearing someone's old shoes". The shoes may have very little wear and will be beautifully presented, but she acknowledges there can be a reluctance for new owners to buy them and wear them and give them a home. "There is a very strong superstition that you can never wear anything other than new shoes," she explains.

This may have something to do with a suspicion that family members made the shoes available to Gadabout or any vintage retailer after the previous owner died or it may just be that consumers want to be the first to wear a pair of shoes so that it's their feet the shoes take the shape of. She is unsure exactly what, but insists something holds many of her customers back.

Switched on to recycling

She's on the other side of the world, but Mel Westwood, retail manager of Dear Gladys, a popular vintage shop in the Melbourne suburb of Northcote, has had a similar experience with regard to selling shoes, at least as far as the general shopping public is concerned. "After many years working in vintage, retail and wholesale, I would say that the reaction [to previously owned shoes] is very mixed at best," she says. Dear Gladys is for the discerning vintage enthusiast, though. In stock at the moment is, for example, a pair of elegant, pointed snakeskin heels from Saldaña, a manufacturer in the Philippines that has been specialising in reptile leather shoes since the 1950s. Ms Westwood says: "Most of our customers have no problem at all purchasing the quality, cleaned and refreshed second-hand vintage footwear we sell. But I think there is a reluctance among people who do not fully embrace the concept of recycling."



In stock at Dear Gladys in Melbourne, a pair of 1950s snakeskin heels. CREDIT: DEAR GLADYS

The appeal of relics

Cradle To Cradle guru Michael Braungart came up with an idea a few years ago that combines this idea of recycling shoes with something of the mystique Ellen Sampson finds so appealing. Dr Braungart suggested that sports shoe manufacturers should take used running shoes, football boots, golf shoes and so on back from their sponsored athletes at the end of each season, chop the old shoes into pieces and insert the pieces into the material mix for making new footwear for the public to buy.

Michael Braungart has described today's sports stars as modern-day saints and believes that shoes containing a little bit of a star's magic would be as popular as holy relics were in the Middle Ages. For example, young footballers would pay handsomely to wear footwear with a fragment of a boot once worn by Lionel Messi when they take the field themselves.

Ellen Sampson likes Dr Braungart's idea, but she still believes strongly that the impossibility, usually, of knowing anything about the previous owner whose feet shaped vintage shoes can actually serve to increase their enchantment. "We cannot untangle the experiences or unravel the memories contained in those shoes," she says, and she likes that. 



Where is PU as a soling material?

STEVE LEE, STEVE LEE ASSOCIATES

Polyurethane has now been available as a soling material for over 40 years, having first been introduced in the early 1970s. This was in fact a decade when three important new soling materials first appeared on the market; polyurethane (PU), thermoplastic rubber (TPR) and thermoplastic rubber (TPU). So how have these performed over the intervening years? Which are the winners, which the losers and why?

The world has changed dramatically in those 40 years, most noticeably in terms of population which has almost doubled from 3.8 to 7.1 billion. As the overwhelming majority of people wear shoes, it is no surprise that the production and consumption of footwear has also grown substantially. What is more surprising is that it had gone from 5.8 to 21.9 billion pairs or

Figure 1 – Introduction of different soling materials.

1930	1940	1950	1960	1970	1980	1990	2000	2010
L	L	L	L	L	L	L	L	L
NR	NR	NR	NR	NR	NR	NR	NR	NR
	VR	VR	VR	VR	VR	VR	VR	VR
		RR	RR	RR	RR	RR	RR	RR
			PVC	PVC	PVC	PVC	PVC	PVC
				PU	PU	PU	PU	PU
				TPR	TPR	TPR	TPR	TPR
				TPU	TPU	TPU	TPU	TPU
					EVA	EVA	EVA	EVA
						LR	LR	LR
							POE	POE

Key:
L – leather, NR – natural rubber, VR – vulcanised rubber, RR – resin rubber,
PVC – polyvinyl chloride, PU – polyurethane, TPR – thermoplastic rubber,
TPU – thermoplastic polyurethane, EVA – ethylene vinyl acetate, LR – latex rubber,
POE – polyolefin elastomer.

Figure 2 – Soling materials defined by processing.

Processing	Products	KTonnes	%
Thermoplastic	PVC, TPR, TPU, EVA, POE, other	4,818	45.5
Sheet	EVA, VR, RR, other	2,064	19.7
Preforms	VR, NR, LR	2,398	22.8
Skins	L	644	6.0
Liquid 2-Component	PU	634	6.0
Total		10,558	100.0

close to a fourfold increase, a growth in consumption per capita of over 101% from 1.53 to 3.08 pairs by 2012.

A WIDE CHOICE

What is the range of materials that can be used for soling footwear and how have they changed over the years? There are in fact still only 11 different key soling materials and these have been brought into use over a considerable period of time (*Figure 1*). However, as well as being used as single soling materials, they can also be used in a wide range of combinations such as VR/EVA, VR/PU, TPU/PU, PU/PU and TPR/TPR. Taking all these combinations, plus other more minor products into account, there are in fact well over 30 different soling combinations to choose from.

It is interesting to note that five of the primary materials form a related family in that they are all rubber-based; NR, VR, RR, TPR and LR. They nevertheless all have very different processing and performance characteristics, so where does PU fit in? One way of defining its position is to look at how these materials are fundamentally split by processing methods. When the market for total soling materials is broken down in this way (*Figure 2*), it is clear that PU stands out on its own as does leather.

The fundamental difference with PU however is that, unlike all the other soling materials, the final product is only formed when two or more components are combined in a special mixing machine and either poured or injected into a sole mould. With all the others, the finished product is already prepared and only shaped in the final process to create a sole.

The thermoplastic materials PVC, TPR, TPU, EVA and POE, plus others such as PEBAX and Nylon, dominate the soling market due to their ease of processing and the fact that most of them can be used on a variety of injection moulding equipment with no special machinery being necessary.

The next easiest materials to use are those that come in sheet form such as EVA, VR and RR which only need cutting and trimming to provide the finished sole. Typical products here are blocker units made from VR or simple EVA outsoles for flip-flops.

Then there are the pre-forms VR, NR and LR, where a portion of partially cured material is introduced to a mould and then shaped and cured by heat and pressure to produce the required sole unit. Everyone is aware that leather comes in the form of skins and hides, and needs shaping and trimming in a similar fashion to the sheet materials. Therefore it is quite clear that PU does indeed stand out from all the other soling materials used for footwear.

MARKET PENETRATION

Has this uniqueness affected PU's penetration of the soling market since its introduction in the 1970s and, if so, how and why? The data in *Figure 3* shows that despite PU, TPU and TPR all being introduced at the same time, they now occupy significantly different positions in the soling market. TPU only has a relatively minor position at 174 Ktonnes and, whilst PU is better at 634 Ktonnes, it is nevertheless not even up to the level of leather at 644 Ktonnes. TPR on the other hand at 1,509 Ktonnes, has nearly two and half times the volume of PU.

Even if PU and TPU are combined they still only reach a total of 808 Ktonnes or about half TPR and less than EVA, a material that did not appear until the 1980s. More relevant still is the fact that PVC, introduced in the 1960s, is the dominant individual soling material with 2,839 Ktonnes and has overtaken VR at 2,443 Ktonnes. If the different rubber-based materials VR, RR and LR are combined, rubber and its derivatives taken as a whole still remain the major material source of soling material at 3,219 Ktonnes. So, despite being excellent soling materials, why have PU, TPU and TPR not performed better?

Figure 4 shows that all three materials have seen a steady growth in volume as might be expected with the ever increasing demand for footwear as the world's population has risen. The variations form a smooth curve and are to varying degrees the result of economic problems that have occurred during the past 20 years.

Logically, all three should also enjoy an increase in market share; only PU does. *Figure 5* shows that PU has increased its market share from some 4% in the early 1990s to around 6% by 2012, with half of that occurring in the last decade. TPU, despite doubling from 88 to 174 Ktonnes in the same period has shown no increase and has stayed constant at around 1.5%. The biggest surprise, however, is that TPR has actually lost market share, dropping from 15.2% in 1993 to a low of 14.1% in 2005 before recovering slightly to 14.3% by 2012 (*Figure 6*).

PROBLEMS FOR PU & TPU

We must therefore return to the question of why PU and TPU, despite a great deal of effort, have not made more impact on the soling market. The answer for TPU is fairly straightforward in that although it has the best overall properties of any of the soling materials and comes out highest in any perception analysis, it is also with the exception of some other 'specialist' products the highest cost material. It is only in the last 10 or so years that it has been possible

Figure 3 – Soling materials consumption for 2012 (Ktonnes).

L	NR	VR	RR	PVC	PU	TPR	TPU	EVA	LR	POE	OTH	TOTAL
644	444	2,443	410	2,837	634	1,509	174	912	366	46	138	10,558

Figure 4 – Growth of TPR, PU and TPU 1993 to 2012.

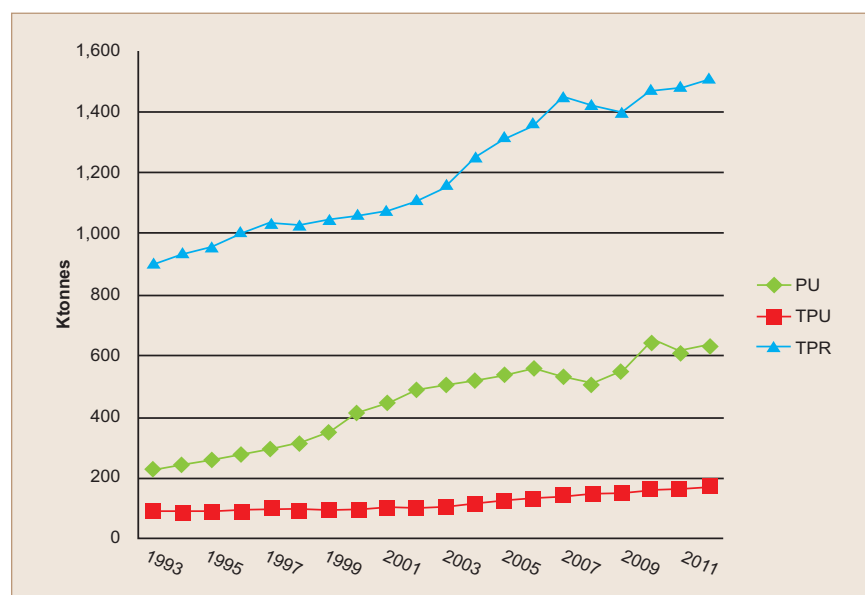


Figure 5 – Percentage share of the PU and TPU soling market.

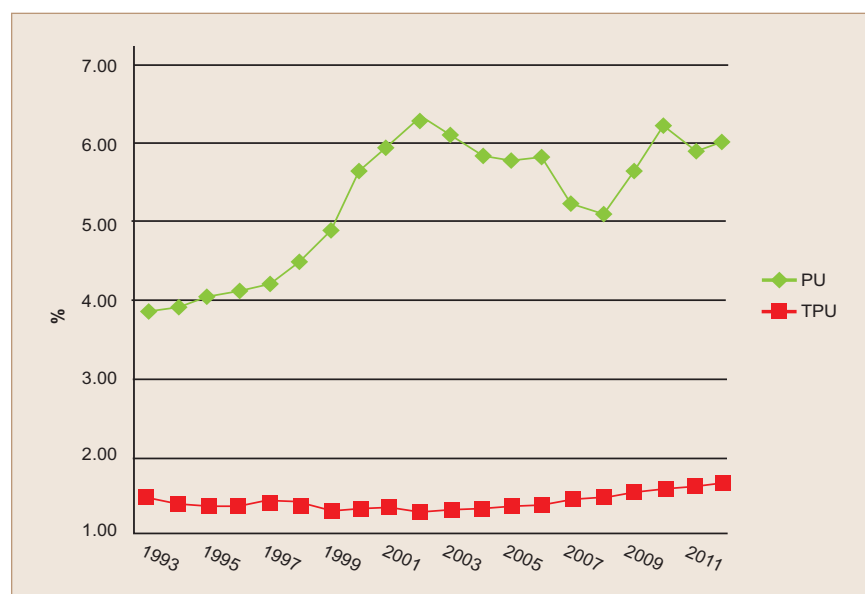
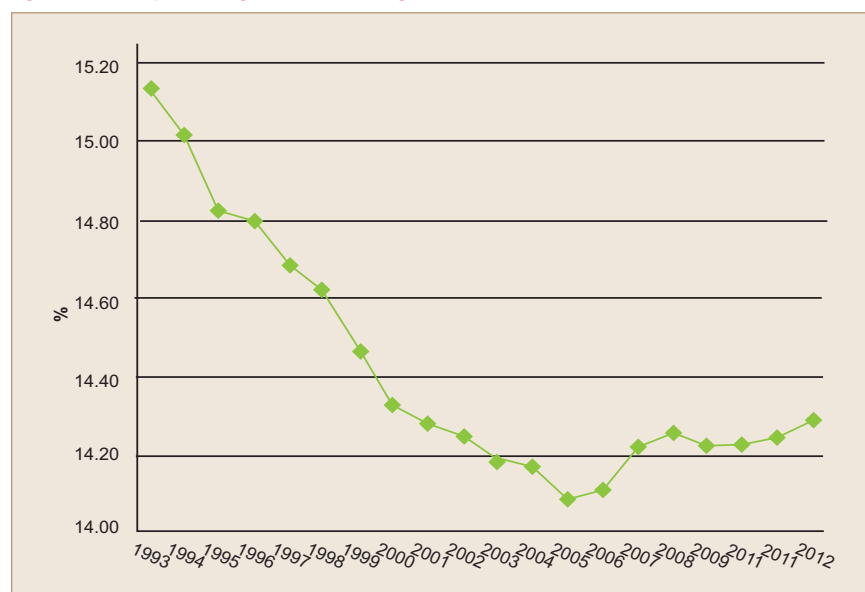


Figure 6 – TPR percentage share of soling market.



to produce soft grades of TPU that can be blown consistently to a low enough density to even compete with PU let alone the other soling materials. So, for most soling applications, TPU is simply too expensive.

Although demand for it is growing, it is only for specialist niche applications. To make TPU a main stream soling material, radically new approaches need to be taken in order to reduce the cost whilst still maintaining the physical performance and, especially, the excellent processing characteristics. Of all the thermoplastics TPU provides the best surface definition and can mimic all sorts of surface finish from a mould, whether it be a matt or gloss finish, or fine detail definition.

The answer for PU is more difficult since it again provides soling materials with excellent performance properties. As the finished sole is produced in a mould using a reaction moulding machine then soles with a virtually infinite variety of density, hardness, colour, surface finish, physical properties, etc., can be produced by changing the formulation used. This makes PU the most versatile of all the soling materials and is why it can be found in all manufacturing segments other than ladies court shoes and certain types of sports footwear. So, once again, why has PU not been more successful as a soling material?

The complexity of the PU process is undoubtedly a major factor as also is the price of the raw materials used to produce the PU systems themselves. PU and TPU footwear products are based on three major raw materials, MDI (methy-lene di-phenyl di-isocyanate), a polyol and a chain extender. In the case of TPUs, these are mixed in a reaction extruder, usually with stabilisers and, if being blown, a blowing agent. The resulting compound is then extruded as clear pellets which can be sold to processors to create shoe soles with colour being added during the actual injection moulding stage. With PU, it is normal practice to produce two components, a prepolymer consisting of all the MDI and part of the polyol, and a resin containing the remainder of the polyol, the chain extender, catalysts, blowing agents (usually water) and cell stabilisers, plus any other specialist additives.

Over 80% of both PU and TPU

production is based on polyester polyols, with the remainder being polyether. Until now, polyester polyols have been predominantly based on adipic acid and a mix of diols, butane diol, ethylene glycol or di-ethylene glycol, often with a small amount of trimethyl-propane to introduce cross linking. Similarly, the chain extenders are common and normally either butane diol or ethylene glycol.

In theory it is perfectly feasible to simply switch the type of soling material used for a particular type of footwear depending on price, style, availability, etc. In practice, this does not occur as readily as might be supposed. Most designers and brand owners tend to favour particular soling materials and to stick with them. It is only at the lower cost end of the market that choice is predominantly driven by the price of the soling material.

SO, WHERE IS PU NOW?

Physically there has been a dramatic change over the past 20 years in where PU shoe soling is manufactured that has essentially followed the shift in

Figure 7 – Major users of PU soling (Ktonnes)

Country	1993	2012
China	13	302
Brazil	22	30
India	1	29
Italy	45	26
Turkey	5	24
Vietnam	0	20
S. Korea	20	14
Other	125	189
Total	231	634

footwear production from Europe and the Americas to being predominantly in Asia. *Figure 7* clearly demonstrates this fact and shows that China now enjoys a very dominant position. So whatever happens in China will effectively determine the future of the PU soling market. If Chinese sole producers adopt new ideas, PU's share of the soling material market will grow; if they fail to do so, it will not.

One possible influence could be that of sustainability in the manufacture of

PU polymers which was discussed in depth in *World Footwear* May/June 2013. Polyester polyol comprises up to around 60% of a PU or TPU formulation so if modifications can be made here, the effects could be far reaching. Various approaches have been explored including the use of waste CO₂ to reduce weight, carbon footprint and cost compared to existing oil-based polyols. An alternative approach is to adopt a bio-based route to producing a succinic acid which can then be converted into a polyester polyol using a mix of bio-based diols.

It is still early days but, nevertheless, it will be interesting to see just what opportunities may appear as systems developers learn how to incorporate these new renewable polyester polyols into their PU and TPU formulations. They have the potential to cause a major shift in the way PUF soling systems are produced if they led to lower-cost, improved processing and enhanced performance in wear. If this proves to be the case, PU could have a new lease of life and attain the global market share many think it deserves. 



Genuine Rawhide Lace™
"Not an accessory or an afterthought, but rather a value-added component to the shoe design."
 - Lisa Howlett, President

The Road to TRUE COLOR

Since our inception in 1863, Auburn has developed leather one way...the right way. The same holds true for the leather colors we create. Traditional drum-dyed leather delivers true, rich color while retaining the natural characteristics of the leather. At Auburn, we treat each new color like it was our first.

125 Caldwell St Auburn, KY 270.542.4116 auburnleather.com

AUBURN LEATHER
 Celebrating 150 years in leather



CREDIT: SATRA

Effective footwear manufacture

STUART IRONS, SATRA TECHNOLOGY CENTRE

A World Footwear Markets survey published by SATRA reported 18.3 billion pairs of shoes manufactured globally in 2011 with 11.1 billion in China alone. More than 75% of the world's footwear production is now in Asia, a large proportion of which is exported for distribution in North America and Europe. Every day, millions of pairs of shoes are moved around the global supply chain. All of today's manufacturers regardless of location are however faced with rising material and labour costs and a shortage of skilled personnel. So how can production become more effective and efficient in order to minimise the impact of time and cost?

A term often used to describe being more effective and efficient is 'lean

manufacture', a method of giving staff at all levels of an organisation the skills and shared means of thinking to systematically drive out waste by designing better ways of working. The aim is to eliminate waste in all areas of production including product design and factory management. Lean manufacturing seeks to incorporate less human effort, less inventory, less time to develop products and less space. In this way manufacturers become highly responsive to customer demand while producing top quality products in the most efficient and economical way.

The main focus is on eliminating non-value added activities while streamlining value-added ones. Any activity that does not add form or function to the product and for which the customer is willing to pay, is a non-

value added activity or 'waste'. Interestingly, many manufacturers consider such waste an inescapable part of the process. Non-value added work is something that generates a zero or negative return on the investment of resources and can usually be eliminated without impairing a given process.

FIRST THINGS FIRST

When analysing any task the first things to ask are: does it need to be done and, if so, can it be combined with another task, and is the best method being used? By improving the method through lean principles and becoming more effective, a manufacturer can reduce time, materials and labour. Once a best method is implemented, this is the time to train the operative to perform efficiently. It is worth

remembering the highly influential Austrian/American management consultant Peter Drucker's comment that "There is nothing so useless, as doing efficiently that which should not be done at all".

In the footwear industry, the traditional perception that labour and materials, the two major cost items in footwear manufacturing, accounted for 80% of the ex-factory price was based on the US/EU model where labour is expensive. Since over 80% of the world's footwear is now manufactured in countries with significantly lower labour costs, this perception has since been reviewed.

Many Western companies moved their manufacturing to Asia some years ago to take advantage of lower labour costs. Although wages are now rising in Asia, the cost of labour in China, for example, is still significantly less than a comparable wage in Europe or the United States. While it is therefore certainly possible to produce or source footwear at a significant cost advantage, there are other factors however which must be considered when we add up the cost items that make up the selling price of a pair of shoes.

The time taken to transport and distribute footwear can be much greater, resulting in a higher level of inventory of finished goods to ensure the same level of customer service. For example, the cost of transportation and storage, as well as marketing and retailing activities, usually represent in total over 50% of the final retail price. This is especially true where the shoes are made in one of the low labour cost countries that now dominate the manufacturing sector of the footwear industry. Elsewhere, some sourcing companies have had to reduce their range of styles in order to meet the demand from Asian sub-contractors for much higher volumes of footwear.

If Asia is the manufacturing location of choice and despite lower labour costs, it is still essential for manufacturers to understand and control their production costs. This is important in order to not only offer customers value for money, but to also ensure they produce footwear as efficiently as possible to meet the budgeted figures agreed with the sourcing company or brand that will distribute the finished products.

A NEW SYSTEM

For many years SATRA has worked with companies throughout the world to devise and develop systems to help manufacture become more effective and efficient. Its SATRASumm reduces materials cost by minimising waste in production while VisionStitch improves sewing efficiency and quality. Now, TimeLine helps to price and control labour in advance and balance production lines to make best use of time. In the short period since its release in 2013, SATRA Timeline systems have been installed in factories run by both international brands and smaller local operations.

Footwear manufacture remains a complex and labour intensive assembly process. Indeed, moving production to lower labour cost countries has enabled some manufacturers to expand the division of labour even further and add to the levels of work content. Such expansion can lead to long throughput times which, in turn, can create excessive work in progress.

The use of lean manufacturing methods and production improvement systems can, however, redress throughput problems and often reduce them from days to a matter of hours or, in exceptional circumstances, minutes. Introducing such lean manufacturing principles requires physical changes to the production environment as well as some re-engineering of the product and the processes required to manufacture it. As well as helping the manufacturer to meet customer requirements more quickly, working this way also creates the best environment for improving product quality.

CHANGES IN WORKING PRACTICE

The introduction of lean manufacturing techniques and efficiency systems should be seen as an opportunity to review each individual operation and consider the introduction of potential changes in working practice.

- Removing excessive or unnecessary work handling
- Reducing the movement of work between operations
- Eliminating wrapping and unwrapping of work bundles
- Use of work aids (location jigs for cementing operations, adhesive

guns, etc.)

- Sharing operations (operators moving between work stations)
- Matrix skiving (to reduce machine adjustment)

Changes in working methods can of course unbalance an existing production sequence, cause unexpected delays and may call for additional equipment and operator training. Therefore, before making such changes, their potential effect should be fully evaluated.

As the actual work content for each operation is reduced, the overall throughput time should also fall as previously mentioned. It is in fact possible to produce some types of footwear in less than one hour so that lasts can be turned around as many as ten times per working day.

MONITORING QUALITY

We have said that a lean manufacturing approach is conducive to improving product quality. However, without robust control and management, making footwear in such a short time can lead to serious quality problems. For example, preparing and bonding the sole to the upper is dependent on a precise set of process control conditions. If these are not met, then the bond strength will not be adequate. Equally, shape retention after the last is slipped can be affected if attention is not paid to the setting conditions achieved.

Most production lasts are made of polypropylene which will gradually heat up during the day. Temperatures as high as 55°C have been recorded over an eight-hour period on a last surface. This can produce two effects: heat setting begins almost as soon as the upper is on the last and efficiency of the chilling operation diminishes throughout the day. SATRA has previously developed a data logger to record temperature and humidity and, by using its Sensor to monitor the actual process, conditions can be precisely measured and the necessary corrective action taken.

As process times are reduced, so the need to balance the production team increases. Operations that require a small amount of time may need to be combined in order to match the longer process times of more complex tasks. There will always be one operation time which cannot be reduced and this is the

bottleneck that realistically sets the pace for the whole team. Therefore, introducing some flexibility into the operation engineering as well as the application is essential to avoid unbalanced and potentially wasteful and inefficient production teams.

REALISTIC TIME STANDARDS

The ideal 'lean' company will have a flat management structure, unlike the traditional pyramid arrangement. This means a much reduced resource for those aspects that traditionally support the actual production, planning, training and quality control. Most of these functions are devolved to the production operatives themselves, whilst other aspects are reduced or eliminated entirely. It is therefore essential to have sufficient technical knowledge within the team to manage the many day-to-day problems that will inevitably occur, such as changes to machine settings, variations in work content and material characteristics, quality problems and absenteeism.

In order to monitor the effectiveness of production labour and so control the direct cost it represents, it is essential that the time needed for an operation is calculated before any financial value can be established. These time standards can be used for both building up the overall labour costs and also for any subsequent line balancing. They also create a useful measure of the work content or complexity of each style and are measures of the indirect resources likely to be needed.

In order to ensure the expected standards for a new style are accurate, the appropriate personnel must have a sound knowledge of the shoemaking processes likely to be used, as well as a system of creating time standards for each individual operation. Some, such as sole attaching, will occur regularly across the range of products and it is therefore possible to establish a time for them which can be reused for new styles. Other operations, mostly in the upper assembly, will vary with each style and in the time calculated for the procedure.

Having calculated a realistic time standard for each operation, the footwear engineer can examine these to identify the ratio of added- to non-added-value. All shoemaking



The SATRA Temperature Sensor.
CREDIT: SATRA

operations contain some element of non-added-value such as handling, moving work and loading into a machine, much of which is inevitable. As the size of the production batch increases, so the non-added-value time is likely to reflect this as the operative will need to separate individual shoes from each bundle before carrying out his or her task. Similarly, after completion, they may have to re-bundle the shoes before passing them on.

The experience of companies that have reduced production batch size as part of their lean manufacturing approach has indicated a significant reduction in the level of non-added-value time and a consequent reduction in direct labour costs. While the actual result achieved will depend on many factors, experience has shown that it can be as much as 85% in extreme cases. Not only is there a saving in

direct labour, the much-decreased throughput time results in a reduction in indirect and other expenses assigned to the manufacturing cost of the shoe. Reducing the size of the production batch, however, does require investment in more machinery, operative training to ensure versatility, changes to the physical environment and greater care when engineering the product at the development stage.

BOTTLENECKS

Whatever the type of production organisation used by a company, one feature which always occurs is that of a bottleneck operation. There will always be one operation which restricts the capacity of overall productivity either due to a lack of equipment or skill or because its complexity means it takes significantly longer than any other operation. If it is not possible to add capacity or re-engineer the operation into several shorter tasks then, in order to balance the production line, it is necessary to ensure that all operations preceding the bottleneck are carried out efficiently. Any disruption of the supply of work to it will cause lost production which cannot by definition be recovered. Ideally, the operation immediately prior to it could be an inspection point, thus eliminating any faulty work being passed on. Because of the restricted capacity of a bottleneck, any work processed there should be of acceptable quality.

Shoemaking has always been, and continues to be, a labour intensive process. The complex shapes of components and assembly operations challenge the ability of personnel involved to maintain high levels of material and labour utilisation. These two factors require thought and attention if footwear is to be produced without excess costs against the calculated selling price.

Each step from the design process through the manufacturing phase and, finally, delivery of the finished shoe to the customer represents an opportunity to look for small organisational or process improvements that can minimise non-added-value and save materials. Inevitably, as has been the case throughout the history of shoemaking, this ultimately depends on the quality and commitment of all the individuals involved. 🍷

SPEED AND DETERMINATION

HELP THE BIG ONES GAIN GROUND

Thanks to a maximum degree of market adaptability, Rhenoflex supplies shoe components to the most important manufacturers in the world. Specialization is one of our secrets: At our in-house laboratories, research professionals untiringly develop new technologies, sustainable materials and energy efficient production methods. Being part of a global holding, we are also backed by a most powerful body. These qualities allow us to provide solutions customized to the times and, first of all, to your demands.

Do not hesitate to leap for the phone now!



Partner for innovative footwear production

BK Giulini GmbH · BL Rhenoflex
Giulinistr. 2 · 67065 Ludwigshafen · Germany
Phone +49 621 57 09 - 03 · Fax +49 621 57 09 - 6321
info@rhenoflex.com · www.rhenoflex.com

www.agentur-barth.de



a member of
SATRA
TECHNOLOGY
CENTRE



The future for leather supply

Leather remains the upper material of choice for the vast majority of shoes produced in the world today. But, with all the pressures resulting from concerns over climate change, long term availability, tanning methods and environmental concerns, just how sustainable is the supply chain of the footwear industry's favourite material and what might affect it in the future?

Climate change is one of the most critical issues we face today. It would appear to be accelerating to possibly dangerous levels, yet our response is divided to say the least. On one extreme it is claimed we have delayed too long and all fossil-based fuels should be replaced by renewable sources of energy as quickly as possible. The other says it is simply not practical in the short term and therein lies the problem; creating a realistically achievable long term solution that will not bankrupt the global economy in the meantime.

The World Meteorological Office says greenhouse gases increased the overall

warming effect by 30% between 1990 and 2011, with CO₂ accounting for around four-fifths. Some sources suggest we could be heading for a 4-6°C increase in global temperature by the end of the century, marked by extremes in weather resulting in declining food stocks and loss of ecosystems and biodiversity. Needless to say, this would have a devastating impact on raw materials for the leather industry. This, however, is still a long way off and there are other things of more immediate concern.

ADVERSE FACTORS

Energy prices are increasing rapidly in countries where governments are pursuing renewable sources that are proving to be more expensive and, in some instances, less efficient than the fossil fuels they replace. Elsewhere, coal-fired power plants are still being planned simply because open cast coal remains a far cheaper option. Shale gas has had a major impact on energy prices in the US but may not produce quite the

same effect when found elsewhere.

Besides the cost of energy, chemicals, salt, water and waste will all be increasingly critical factors for tanners. The Leather Working Group (LWG) has achieved considerable improvements in tannery environmental performance through its Audit Protocol. Protocol 6 due to be in force this year, will be particularly tough in regard to salt and energy usage. Where it may have been less successful is in developing a single scientifically-based restricted substances list or answers to these difficult issues that the industry could follow.

Some major users of leather are hoping to achieve a zero discharge of hazardous chemicals for all products in their supply chains by 2020. This is possibly a reaction to the Greenpeace campaign in Argentina for tanneries to adopt production methods that will eliminate all chromium in effluents and waste. This is neither practical nor necessary and is based more on pre-conceived notions than scientific fact. Indeed, this attitude unfortunately



CREDIT: BMJ / SHUTTERSTOCK

affects many environmental campaigns from GM crops through to shale gas. Decisions with the potential to affect the future of the planet should be based on more than un-proven theories.

CARBON FOOTPRINTS

Carbon footprints (CFs) and life cycle analyses (LCAs) are being introduced for leather and footwear but they can be both misleading and misused. For example, sports brand Puma has sought to promote a new line of cotton/canvas shoe by claiming it produced less carbon emissions than the suede shoe it replaced. Our sister publication *World Leather* (August/September and December 2012) found a number of significant flaws in Puma's analysis which invalidated the results.

The company had also failed to take into account the difference in durability between suede leather and cotton/canvas when durability should in fact form an essential part of any footwear LCA. Leather shoes are also comfortable and can frequently be worn for many years. Economic constraints are beginning to make us less of a throw away consumer society and one where comfort and durability becomes more important than fashion; factors that favour leather.

A technical study by UNIDO in 2012 opened the way for the development of practical guidelines in obtaining reliable leather product carbon footprint (PCF) data. It proposed a convergence and harmonisation of the most important elements related to finished leather LCA and PCF studies, making it necessary to determine the system boundaries involved.

As hides and skins are by-products of the meat industry, LCAs and PCFs must therefore begin in the slaughterhouse and end when the finished leather leaves the tannery. Transportation forms part of the process and must be included in any PCF, so there would be major energy savings and CF advantages in tanning hides near their source.

MEAT PRODUCTION

As with climate change and sustainability, there is a dispute as to whether we will eat more or less meat in the future. While some people in western countries may indeed begin to eat less for perceived health benefits, those in the developing world will eat



Figure 1 – The 10 acre area immediately after planting with various tree species.



Figure 2 – Four years later and the growth rate of the trees has been impressive.



Figure 3 – In addition to the trees and hedges there are also flourishing flower gardens.

more and more. For animals to produce meat they must be fed and those fed on grass have the lowest carbon footprint. Modest levels of grazing also cause less ecological damage than growing crops and have been shown to be a more

sensible use of land where soil quality is too poor for crops than simply abandoning it.

Properly managed grazing promotes land restoration through intensive grazing of seasonal rainfall grasslands



In Australia, crops have been irrigated with tannery effluent for many years.

with a high stock density for short periods followed by a long rest. The physical impact of cattle trampling, dunging and urinating on the land for a few days is interspersed with resting for several months to allow plant and soil-life to recover. Healthy plant growth is encouraged, the water table raised, carbon content increased and up to four times the number of cattle can be kept. There is plenty of scope for this to take place across the world.

TANNAGES

Misconceptions concerning the properties of chrome III (Cr III) and chrome IV (Cr VI) continue despite all the evidence to the contrary. Put quite simply, chrome tanning is not harmful if carried out properly or it would not have been used to produce shoe upper leather for the past 100 years. Unfortunately, the proposed ECHA (European Chemicals Agency) 2012 restrictions on leather containing Cr VI take a different view, with suggestions of a restriction on leather articles containing over 3mg/kg of Cr VI which come into contact with the skin.

The proposal is seriously flawed and an opposing document, Consequences of Banning Chromium VI in Leather Articles 5, was submitted to the ECHA later that year. It concluded that the proposed restriction on Cr VI should not be introduced and that better management of chrome allergies to leather items should be investigated

instead. It has also been said that obtaining accurate data at 3mg/kg levels or below is extremely difficult.

In addition, while it was already known that in some cases both Cr III and Cr VI were capable of causing dermatitis at low concentrations, it had not been demonstrated that the proposed restriction would in any way reduce chromium sensitivity to leather items. An important study had in fact found that 30% of chrome-allergic patients tested, reacted to leathers which actually contained less than 3mg Cr VI/kg.

The truth is that as things stand, there is no viable substitute for the use of chrome in shoe leather. In spite of this, the ECHA Committee for Socio-economic Analysis (SEAC) has decided the proposed restriction would be the most appropriate EU-wide measure to address risks of chrome VI in leather articles. It could come into force during the first part of 2015 and should be vigorously contested by IULTCS, REACH and COTANCE.

Any chrome tanned product, whether produced in Europe or elsewhere, could generate Cr VI during storage and wear, even after antioxidant treatment. Leather and shoes imported into Europe will need to contain < 3mg Cr VI/kg, even after manufacture, storage and display. Ageing tests are available but do not simulate real ageing of leather over months rather than days. This ill advised proposal by the ECHA

constitutes a serious threat to all sections of the leather industry and its supply chain.

Vegetable/syntan, aldehyde and other white tannages are being widely promoted but cannot realistically replace much chrome leather. Nor is there any sound environmental need for them to do so. Indeed, many of the syntans used originate in fossil fuels and more chemical is required than in chrome tanning. While some of the new tannages claim to need no pickle salt, total effluent salt remains a critical issue.

Some also include aluminium which can be toxic to fish and plants. In countries such as Australia where the aluminium content in irrigation water is required to be < 5mg/L its use could also present even more problems as chrome liquors are recycled and excess chrome precipitated for reuse. Tannery effluent can therefore be irrigated with little treatment while aluminium waste would need to be fully recyclable.

SALT AND THE ENVIRONMENT

For many tanneries, salinity (total dissolved solids or TDS) and the build up of salt in soil and water is in fact a greater environmental problem than chromium. It also occurs at locations where hides and skins are salted. In Africa for example, the salting of hides to preserve them in transit is leading to land degradation.

Excess salinity in water causes high



etc.® KEEPS THE WORLD'S STRONGEST AND FASTEST
ATHLETES DRIER AND MORE COMFORTABLE.

THE PERFORMANCE POSSIBILITIES
ARE ENDLESS.

WHAT WILL etc.® DO FOR YOU?



International Event Rider Colleen Rutledge with Shiraz
Representing the U.S. at the Burghley Horse Trials CC14****
Stamford, Lincolnshire, England
September 2011

Sheehan Associates



a leader in performance textile solutions

Contact us to discuss **etc.® and the endless performance possibilities** for your products.

our telephone. 978-887-8600

our email. sheehansales@sheehansales.com

find us online. www.sheehansales.com

BIFF&BIL 2014 IN BANGKOK

Bangkok International Fashion Fair and
Bangkok International Leather Fair 2014

ASEAN INTEGRATION

Textiles Apparel Leather

- Bags & Footwear
- Brand Preference
- Fashion Accessories
- OEM/ODM
- Pick and Pay
- Raw Material & Tannery
- Textiles
- Thai Exotics

STYLE + DESIGN
ASEAN

Your fashion network in ASEAN!

BIFF & BIL 2014 is the most outstanding showcase in Textiles, Apparel and Leather industry. The only once-a-year opportunity for sourcing comprehensive supplier from upstream materials to new inspiring downstream finished products.

Trade :
12-14 March 2014
10:00 - 18:00 hrs.

Public :
15-16 March 2014
10:00 - 21:00 hrs.

Venue :
Challenger 1-2 IMPACT
Muang Thong Thani

Organized by

DITP
Department of International Trade Promotion
Ministry of Commerce, THAILAND

osmotic pressure which reduces the amount of water available to plants and retards the growth of crops which are not salt tolerant. In addition, high concentrations of sodium ions in water can adversely affect soil structure by causing dispersion of clay. On the other hand, the presence of calcium and magnesium ions in tannery effluent helps to stabilise the soil. It is generally accepted however, that the use of salt must be reduced or eliminated wherever possible.

Preservation salt forms 60-70% of the total salt content of tannery wastewater. Ocean discharge is an environmentally sustainable disposal method for such tannery effluent but is often not an option. Furthermore, with water shortages and droughts, some authorities are replacing ocean discharge with reuse and land irrigation, so salinity becomes a major concern. To give some idea of the size of the problem, about 56.8 million bovine hides were salted in China and about 43.2 million in India during 2007, resulting in over 400,000 tonnes of residual salt entering the environment. In addition to this, there is the enormous amount of salt generated from local and imported hides and skins.

By comparison, Brazil produced about 37.6 million bovine hides and USA 34.4 million with both processing large proportions of green rather than salted hides. By processing fresh/green, unsalted hides and skins, the cost of salting is eliminated and effluent salinity is greatly reduced. Even so, tanneries processing green hides must seek to minimise other salt inputs to allow safe irrigation of effluent. Eliminating this salinity is a major problem which remains on-going.

SOLUTIONS

Salinity has long been a major problem for tanneries in the Indian state of Tamil Nadu. To meet TDS discharge limits, tannery effluents must now undergo costly and energy-demanding treatments including reverse osmosis (RO) and multi effect evaporation to achieve zero liquid discharge (ZLD). The system does generate clean water but the massive energy use (65% for evaporation) plus the enormous quantities of unwanted mixed salts being generated and recovered as dry solids suggests that it might not be

sustainable in the long term.

For example, the common effluent treatment plant (CETP) at Ranipet includes a disposal unit with capacity to store salt generated for two years (*World Footwear May/June 2013*). It is hoped that a use for the mixed salt can be found but, so far, this has not been achieved. For years, solar evaporated, tannery mixed salt has been collected in India and it usually ends up back in the environment during the monsoon rains. Could these dry salts perhaps be recycled back to the abattoir?

On the plus side, a project by VIT University, Vellore in Tamil Nadu, has shown that after conventional treatment, tannery effluent can be successfully used for the irrigation of a variety of tree species. Extensive pilot studies showed no residual environmental damage in terms of soil quality or ground water and the trees actually grew faster than would be expected under normal conditions. Following this, approximately 10 acres of degraded land adjacent to the Ranipet CEPT was turned into a mini forest using treated water from the plant. The results (*Figures 1, 2 & 3*) clearly show how effluent discharge can be effectively minimised and wastewater converted into a valuable resource.

China is making a number of changes aimed at reducing pollution from tanneries. These include reducing the effluent producing beamhouse stage and relocating coastal tanneries inland. The latter would however be likely to create salinity problems due to the discharge of salt effluent into inland rather than coastal waters unless beamhouse operations were indeed totally eliminated.

New discharge standards of water pollutants for tanneries have also been proposed with a limit for chloride of 3000 mg/L for surface discharge and 4000 mg/L for sewer discharge. Chloride would not be restricted if the treated water was discharged directly into the sea directly. Unfortunately, it would be difficult for tanneries using salted hides to meet these limits. Their only options would be a change to green processing and the importation of wet blue.

GREEN PROCESSING

Australia offers a good example of what this involves. Australian wet blue

tanneries process green, full-thickness hides. Chilling or chemical short term preservation, usually using low levels of sodium chlorite, is also used to facilitate green processing. Well fleshed and trimmed green hides are loaded into a large recycling drum in which all processes from unhairing to tanning are carried out. Water consumption is very low at less than 10 kL per tonne of hides processed. These tanneries use cleaner, low salt, low sodium tannery processes which enable all wastewater to be used in irrigation. In addition, high quality tallow and gelatine are produced from fleshings and trimmings.

These tanneries are able to sustainably use the effluent for irrigation even though the TDS can be over 10,000 mg/L because water usage is so very low. On the other hand, it is said that chloride content can be as low as 200 ppm and sodium 1,200 ppm. Many components of tannery effluent are also to be found in fertilisers including ammonium sulphate, lime, gypsum (calcium sulphate), magnesium, manganese and slow-release high organic nitrogen products (hair). Calcium and magnesium ions in tannery effluent also reduce the adverse effect of sodium ions on soil structure. Irrigation using effluent from these tanneries is therefore highly beneficial environmentally provided application rates are carefully monitored.

It is therefore not all bad news and provided threats such as the one posed by the ECHA can be overcome and common sense is allowed to prevail in future, there should be no shortage of leather for the footwear industry going forward. Some things will change however but they are by and large all for the best.

Meat from grass-fed cattle can become a major source of food and a sustainable supply of hides and skins. Tanners become more sustainable using LWG audits to assist them. Increased green hide processing reduces water, chemical and energy use, while its effluent is used to irrigate land to grow crops. It will also take place closer to the source of the hides. Countries with salt problems import wet blue rather than salted hides. 🌱

This article is based on material recently published in World Leather Magazine.

Nano-membranes

Lighter and finer than conventional extruded films, non-woven membranes, made using a manufacturing technique called electrospinning, may be the next big thing in water resistant clothing and footwear. Being fabrics rather than films, their open pore structure allows them to breathe whilst also preventing external moisture penetration in much the same way as the PTFE and PU membranes that are in current widespread use. But, at down to only 3 nanometres thick and weighing a

mere 5 g/m², electrospun non-woven membranes could well be setting new standards for membranes in the future.

In the electrospinning process, a polymer is mixed with a solvent to make it liquid and forced through a nozzle or syringe into an electrical field. The resulting yarns are whipped or spun and fall onto a moving carrier as a tangled array of nano-filaments to produce a non-woven fabric. The actual yarns themselves measure only in the order of a hundred nanometres and so the resulting non-woven is

both ultra light and extremely fine.

Electrospinning is not a new technology. The process was in fact patented by JF Cooley and WJ Morton in the early 1900s. Its further development however, owes much to Anton Formhals, a German textile engineer who believed it could be used as a method of producing synthetic fibres and subsequently filed some 22 patents during the 1930s and 1940s. It has now been used in industrial applications for fifteen or so years, mostly for filtration purposes but also for breathable waterproof membranes.



CREDIT: D RAVANEL

BEGINNING IN SPORTSWEAR

2010 saw the first use of an electrospun membrane in performance sportswear when Polartec launched a triple-layer fabric called PowerShield Pro. At 5,000mm water penetration resistance and 2cfm (cubic feet per minute) air permeability, its performance was considered ideal for water resistant clothing. The following year, it introduced NeoShell, with water resistance penetration at 10,000mm and air permeability down to 0.5cfm based on an improved version of the non-woven the company describes as a 'discontinuous polyurethane membrane'. The minimal amount of air passing through the fabric means it is more windproof and therefore more comfortable in adverse conditions with zero cfm the absolute ideal. However, while that might not be so important for footwear, what it does show is that such a thin membrane can be produced with a range of highly effective and useful properties.

The membrane used in the NeoShell range is produced by Finetex, a Korean company that holds the patent for what it calls Technoweb Pro nanofibre technology and licenses the product exclusively to Polartec. Based in Seoul and founded in 2004, Finetex has been working on electrospinning since the 1990s and is one of the few companies producing the material on an industrial scale. The membrane is said to be predominantly made of polyurethane, although it would seem that the manufacturing process can accommodate combinations of multiple polymers in different layers so that a measure of non-hydrophobic polymer for instance could be included to round out the membrane's overall performance.

3D NANOWEB

A considerable number of research laboratories are now working on electrospinning and some European companies such as El Marco in the Czech Republic are producing machines. South Korean companies have nevertheless made remarkable progress and are considered front runners in the field. Bristex for instance, the maker of Sealon tapes, has been working on electrospinning for the past two to three years. The firm has patented the concept as an Electro-Nano Membrane and currently

sells it to Korean companies only. "It is essentially a nano-sized version of an interlining," says managing director Keun-Hun Chang.

The technology used is known as melt electrospinning. Chips of polymer material are melted and nano-sized fibres produced by extruding the melted polymer through nozzles after which they are subjected to high voltage and air that spins and scrambles them as they fall onto a slow moving carrier as described earlier. The speed of the carrier determines the thickness of the non-woven in exactly the same way as spun-bonded non-wovens such as Typar that are used for shoe upper reinforcement.

The resulting non-woven web is made of fibres measuring between 5 and 500 nanometres in a 3D open-pore structure with an average of 25 billion microscopic pores per centimetre. Although on its own, it weighs only 7 g/m², the company says it can in fact go down to 5 g/m². The polymer used is PVDF (polyvinylidene difluoride), a fluoropolymer with some very interesting properties. This means for example, that it is hydrophobic as opposed to PU (polyurethane) the dominant polymer used by Finetex, which is hydrophilic. PVDF also has a much lower elongation point than PU, although Bristex says that it is also working on a PU version.

Once laminated, the Bristex membrane is said to offer an initial waterproof barrier of 5,000 mm, water vapour permeability from 9,000 to 10,000 using a 'dynamic' test and 30,000 to 40,000 g/m²/24 hours with a 'static' test, and air permeability of 1cfm. In other words, it would appear to have a good all-round performance in terms of comfort. The company has high hopes of its new nano-membrane and Keun-Hun Chang says that work is also under way to develop a version for use in footwear, in particular for water-resistant running shoes where lightweight and flexibility are so important.

GREAT POTENTIAL

Prof. Paul Kiekens's team of researchers in the Textile Department at the University of Ghent in Belgium has been working on electrospinning for the past ten years and is installing a machine they have designed and built

themselves. "Our machine is quite flexible, we have tested many different types of polymers including the usual textile ones such as polyester, polyamide, polypropylene, etc.," says Prof Kiekens, who sees great potential in the technology: "The nanoweb has an enormous surface area. It is rather easy to add other components or active ingredients during the manufacturing process and these will have higher efficiency due to the material's high surface area."

Compared to conventional porous or non-porous films, the non-woven structure of electrospun fabrics means they generally have a fairly low mechanical resistance. While Prof. Kiekens sees their inherent fragility as a weakness, he nevertheless believes this problem should be resolved within the next few years. He says the real difficulty with this lies in identifying "the optimal resin and in the right concentrations" to laminate the fine membrane. This he believes will also be worked out by the end of the decade.

A remaining hurdle for electrospun membranes is addressing the risk factor of working with nano-materials. "Once stabilised in the non-woven, the nano-fibres do not pose a problem," says Prof Kiekens. "But you cannot exclude the element of risk during the manufacturing process because this is when the fibres can be volatile. There are concerns, which the European Union considers real, conducting numerous studies." Proper measures are recommended during production to ensure worker safety.

The Professor and his team have also carried out a considerable amount of research into electrospinning and have investigated its potential application to footwear. As a result, he strongly believes that the industry could benefit from the technology and in fact submitted a footwear-based project to the EC in 2012. For some reasons, it was rejected with the result that a wealth of technical knowledge and expertise, although potentially available, is not to be fully commercially exploited in Europe in the years to come. In the meantime, South Korea is pressing ahead and Europe may miss the chance to be world leader in what might well prove to be an extremely important new technology for both clothing and footwear. 

'Timeless and elegant' bridal shoes

CREDIT: LOVE ART WEAR ART



Heart and sole

Although fairly niche, the bridal shoe market is lucrative – while the volumes are smaller than other sectors the prices tend to be above average. Brides-to-be often seek a ‘special’ shoe; perhaps handmade, traditional, luxury or decorative. “The devil is in the detail,” says Nicole Le Grange, founder of UK-based shoe brand Love Art Wear Art. “I love adding decorative elements and special, unexpected details to my shoes.”

The average US wedding in 2012 cost more than \$28,000 with Manhattan couples spending \$68,000, according to theknot.com’s annual survey of 18,000 brides. The budget for the dress and shoes was \$1,400, although there were significant regional variations: in Manhattan for higher-end weddings, brides spent \$2,900 while those on tighter budgets in Idaho spent \$880. The two need to be catered for no matter where in the world the bride.

Large retail chains such as DSW in the US and Debenhams in the UK offer bridal collections at relatively inexpensive prices, but at the top end costs can run into the thousands. Christian

The wedding shoe market might lack the volumes of other market segments, but those involved in the design and manufacture say there is something special about contributing to the big day.

Louboutin custom-made a pair at short notice after hearing the fiancé plucked up the courage to approach the bride after using her red soles as a conversation starter. His Daffodile 160-crystal-embellished suede pumps will set customers back £6,250. For those in an entirely different wealth bracket, Stuart Weismann has created diamond-encrusted pairs that cost more than \$1 million.

For most, the priority is finding shoes that are “perfect in their own right but at the same time complement the dress

and the bride" says Ms Le Grange, a graduate of Cordwainers footwear school in London. She was designing for another company when the manufacturer offered to make a pair to her own design for her upcoming wedding. "It was a lovely gesture and I remember how excited I was about wearing my own creations on my special day," she says. "That was where the idea of designing my own collection and starting my own label was born."

After launching a ready-to-wear-collection, a stockist questioned why there was no bridal range. "I thought about this and realised that the feminine and classic handwriting of the brand would lend itself to bridal shoes so I decided to put the first capsule collection in production."

A former colleague introduced Ms Le Grange to a small, family-run manufacturer in the shoemaking town of Elda, Spain, which she describes as "worth its weight in gold". "It's the most important relationship any designer can have. It's great to get to know the whole family and all the people involved in the process. I especially appreciate their attention to detail, the quality of production and their passion for beautiful shoes."

Love Art Wear Art shoes are leather lined and have an embossed leather outsole. Each pair is individually numbered with a tiny metal banner on the breast of the sole to highlight that they are limited edition. As well as leather, the company adds texture and shine through the use of satin, shimmering suedes, glitter and metallic.

"I get my inspiration from glamorous eras gone by," she says, travelling to vintage markets and antique stores and exploring retro fashion. "I like to delve into my imagination and come up with unique and pretty pieces that make people happy. I still get a thrill every time someone buys a pair of our shoes. It's a compliment and a nod to our shared taste and appreciation."

Around the world

Bridal shoes are an important part of tradition in many cultures. In Portugal, an ancient tradition of passing the shoe around and filling it with money is still maintained. Male guests might also put money in the bride's shoe for the privilege of a dance with her. In Sweden, the bride's parents present coins for her to place in each shoe – the mother a silver coin and the father a gold one – symbolising that she will never go without.

It is the colour and the embroidery work that are important in some parts of China: red cloth shoes might be made by the bride or another family member and symbolise happiness and the longevity of the marriage. In Armenia, the bride is presented with her shoes by the groom's family the night before the wedding, while in India it is the groom's shoes that play a part: the bride's sister and cousins 'steal' his before or during the ceremony, demanding a 'ransom' for their return.

Tradition is a key element of designs all over the world. "Bridal shoes are less fashion driven and more considered," says Ms Le Grange. "For ready-to-wear collections you have a lot of obvious seasonal trends and themes that get echoed through various designers and stores. In my opinion, bridal shoes needs to be elegant, timeless and beautiful. Sometimes understated, sometimes very decorative."

A trend for a classic satin shoe with a 'twist' was popular in 2012. "An oversized gem, jewelled brooch accent, ruffled



There is a trend away from traditional colours

CREDIT: SHOES OF PREY

fabric or large flower trim," she says. "Shoes with added interest such as texture, jewels & feathers. The all-over lace shoes has been very popular over the past few seasons, as well as vintage styled shoes."

There has been increased demand for glitter as a way of adding interest and in 2013, bolder designs began to be popular. "We see statement pieces such as contrast colour shoes, printed fabric uppers or heel detail, or for instance embossed & laser cut uppers."

Jodie Fox, co-founder of Australian brand Shoe of Prey, also notes the move towards more daring designs: "There is a real trend away from the traditional colours of white and ivory."

Shoes of Prey enables customers to create bespoke designs using an online 3D tool, which are translated into patterns and hand made in China. They choose from 12 core styles with varying heel heights, and can specify colour and accessories and from 170 materials.

"I could never find exactly what I wanted: either the heel was too low, there was a bow on it that I didn't like or it wasn't quite the right colour," said Ms Fox on the inspiration for setting up the brand. Since its launch in 2009, it has added sites in Japan and the UK to its Sydney base, employs 50 staff and hit the multi-million dollar revenue mark in under two years.

It has recently opened its first store in Sydney, where customers are able to look through the swatches – touch the leathers, try some of the shoes on and speak to advisers. "We were seeking to provide an answer to our most commonly asked question: What do the shoes look like in real life?" explains Ms Fox. "We have more than 196,000 trillion possible designs so we can't make them all, but we can help to hone the customer's vision for their design by providing them with all the components and advice in an offline environment."

Embellishments

Some of the more exotic materials such as python and fish skin are sourced from China, with others shipped from Spain, but brides tend to stick with the recommended material ranges: Italian silk, shiny calfskin leathers including pink, purple, silver and gold, as well as gold and silver sequins. Embellishments such as silk rosettes, diamantes and bows are also popular.

"It's really such a gorgeous feeling to be a part of someone's big day," says Ms Fox. "We especially love making all the special little touches happen – helping out with 'something blue' by lining the shoes in a powder-soft blue leather, or by embossing the date of the wedding and name inside the shoes."

The company has an unusual returns policy: the shoes can be sent back (unworn) within 365 days for a full refund, or the design can be altered and the shoes remade free of charge. The policy is partly driven by problems with sizing, particularly as the shoes are shipped globally; standards differ from country to country, as do feet dimensions. Ms Fox estimates they get it right 70% of the time: "In the same way that each clothing brand has a different fit model, each shoe company has a different foot fit model. The difference between half a size is 3mm and a full size is 6mm, so the margin for error is tricky."

This means the company advises brides to order 11 weeks in advance of the big day rather than the average four to five weeks, giving enough time for the shoes to be remade and reshipped in the event that they don't fit.

While brides and bridesmaids make up a significant proportion of customers, shoes can also play a part in more creative ways. "A man called Daniel wanted to propose to his shoe-loving girlfriend with a pair of shoes, so we embossed his proposal inside the shoe for him," says Ms Fox. "Of course... she said yes." 🍷

*Love Art Wear Art sources
silk and satins from Italy.*

CREDIT: LOVE ART WEAR ART



THE APPAREL AND FOOTWEAR MATERIALS SHOW

DANVERS, MASS. - MARCH 4TH AND 5TH

PORTLAND, OREGON - MARCH 12TH AND 13TH

**SOURCING
MADE
EASY**



AMERICANEVENTS.COM



What she describes as a dearth of high quality, stylish shoes for children has inspired UK-based designer Louise Shill to launch her own luxury children's footwear brand, Young Soles London.

Quality demands drive designer to do her own thing

Louise Shill is not the only parent to have become concerned about improving the quality of shoes available to her own children, but she is one of a select band in recent times to have done something concrete about it, setting up her own footwear brand, Young Soles London.

Northampton-based Teresa O'Driscoll did something similar in 2011 when she launched Premier Shoes For Girls; she had a health issue to address because her teenage daughter was suffering back problems and did not like any of the podiatrist-recommended support shoes enough to be willing to wear them. Louise Shill has followed suit, but for quality rather than health reasons: her view is that the shoes available for her to buy in UK shops until now for her own two-year-old child lacked the quality she demanded and represented poor value for money.

A background in the industry

She was in a position to do something about this because she had spent the previous 15 years in design and development roles in the footwear industry. After completing undergraduate and post-graduate degrees at the hotbed of footwear design that is DeMontfort University in Leicester, Ms Shill worked inhouse and on a freelance basis for a number of retailers and brands, including Kickers, Ellesse, Merrell and Lee Cooper.

She believes Young Soles London has a chance to succeed because of her conviction that luxury, well made, attractive shoes for children represent a "desperately under-served" market in the UK. "The UK market is saturated with supermarket and own-brand children's shoes," she continues, "in a mish-mash of vibrant colours, with patterns and glitter,

often all on one shoe at the same time." Young Soles is aiming for a much more classic look, which the founder believes will be popular with purchasing adults and with stylish young wearers alike. "I'm looking to create a nostalgic, lasting quality product that won't harm a child's foot growth," she explains, "a product that the child will grow out of, instead of the footwear falling apart first, a shoe the child will cherish as much as the purchaser."

Exceptions to the rule

Although she paints a poor picture of the UK marketplace, there are certainly exceptions, with Start-rite the name Ms Shill comes up with first, pointing particularly to its Classics range. "But brands such as this are few and far between," she insists, "unlike our European neighbours in countries such as France, Spain and Denmark which offer a variety of children's brands offering simple classic designs." She says Young Soles will offer a fresh approach to classic designs for children, taking inspiration from established brands such as Goodyear-welted men's shoe specialist Grenson, handmade shoe and boot maker for men and women Trickers and the newer (and less high-end) brand Hudson in the adult footwear market.

Partners in Portugal

So, Young Soles London is launching with "re-invented" versions of well loved styles such as T-bar and Mary Jane shoes for girls, and brogues, creepers and monkey boots for boys. Made from supple, full-grain leathers, suede and patents, using traditional methods and tooling, the first Young Soles London range have recently become available wholesale. The classic styles Ms Shill has chosen owe much to the traditions of English

shoe-making, but, for reasons of capacity and availability, she has had to look further afield to find manufacturing partners for her inaugural range, in this case choosing outsource footwear producers in Portugal whom she knew from earlier in her career and whom she knew she could trust for quality and reliability.

She also worked with producers in neighbouring Spain, as well as further afield in Asia, principally in India and China. "I felt Europe would be most fitting for the brand," she says. "Short lead times, the European heritage in shoe-making and an ability to interpret the Young Soles vision were all considerations in this decision. I also felt it was important to support the European footwear industry which has had a particularly hard time in recent years with many brands and retailers opting to place production in Asia instead."

She even sourced the leathers herself from a variety of European tanneries, basing her selection on softness, colour and texture to achieve "the perfect balance of comfort and style". Lasts follow the shape of the foot, with a wide toe and narrow heel, and the shoes have a lightweight, flexible outsole that the designer believes will suit growing feet and first steps.

The inaugural Young Soles London range is for autumn-winter 2014-2015, with styles and sizes for toddlers up to children aged ten. Initial reaction from a number of boutiques across the UK has been very positive. 📍

From toddlers to ten-year-olds, Young Soles London believes it can inject a little luxury and quality into the "desperately under-served" children's footwear market in the UK.

CREDITS: YOUNG SOLES LONDON / FLANNERY O'KAFKA.



MAGAZINES



World Footwear
All you need to know to assist you in the global footwear market.
(6 issues per year)
UK: £75.00
Airmail: £130



World Leather
The world's leading magazine for the leather industry.
(6 issues per year)
UK: £75.00
Airmail: £130



WSA
The international technical trade magazine for performance and sports materials.
(6 issues per year)
UK: £75.00
Airmail: £130

BOOKS



The Framework for Leather Manufacture (In English): £49.00
The first practical academic book dedicated to tanning for over 40 years.
This new book draws on and further develops work done for our previous Back to Basics series of publications. Leather making is more than a formulation which is why this book is entitled 'The framework for leather manufacture'; this work is being published to further enhance the transition of leather manufacture of earlier times to that of an efficient, advanced and ecologically sound sector of the global economy. It will be seen as essential reading for anyone in the leather supply chain, from the provider of the raw material through to the end user of the finished product.



Tannery of the Year, The Awards Book 2013 (In English): £30, €35, \$50
Percentage Pattern Cutting (In English): £40 UK, £45 Non UK

ORDER FORM

Please complete and scan/photocopy/email back to karen@worldtrades.co.uk or fax to +44 151 928 4190

NAME:		POSITION:	
COMPANY:		NATURE OF BUSINESS:	
ADDRESS:			
TEL:			
E-MAIL:		FAX:	
PLEASE BEGIN MY SUBSCRIPTION TO:		PLEASE SEND ME _____ COPIES OF:	
MASTERCARD ☐ VISA ☐ AMERICAN EXPRESS ☐ DINERS CLUB ☐		EXPIRY DATE: /	
CARD NO.:		SIGNATURE:	

Credit cards will be charged in GB Pounds. Your credit card company may charge you for this service. World Footwear January/February 2014

ELECTRONIC



Leatherbiz Weekly
A weekly round up of all the news relevant to people in the leather industry including exclusive market intelligence for purchasers of finished leather. Delivered as an online ezine by e-mail 50 times a year.
\$250 per annum

Websites
Designed to provide up-to-the-minute news and market intelligence.



PAGE NUMBER	COMPANY NAME	CIRCLE NUMBER
5	American & Efid	1
37	American Classic Events	2
21	Auburn Leather	3
30	BIFF & BIL	4
7	Emtex Global	5
15	Faytex	6
Cover 4	Le Cuir a Paris	7
25	Rhenoflex	8
29	Sheehan	9

For more information on the products advertised in this issue, simply circle the appropriate number above and fax this page back to us on **fax: +44 151 928 4190**

Worldwide Sales Offices

China/Hong Kong/Taiwan: Ringier Trade Publishing Ltd.

1001 Tower 3, Donghai Plaza, 1486 Nanjing Road West, Shanghai 200040 China
Tel: +86-21 6289-5533

For China: Marco Chang, General Manager, marco@ringiertrade.com
For Taiwan: Kelly Wong, Taiwan manager, kwong@ringier.com.hk

France, Italy & Belgium: Jenny Pickman 54, Rue Compans, 75019 Paris, France
Tel & Fax: (+33) 1 42 41 01 69 E-mail: jenny.pickman@neuf.fr

Germany/Switzerland/Austria: Friedemann Stehr

Con'Media GmbH, Homberger Str. 116A, D 36251 Bad Hersfeld, Germany
Tel: +49 6621 968293 0 Fax: +49 6621 968293 3
E-mail: fs@friedemann-stehr.de

India: S Sankaran 106 Vepery High Road, Periamet, Chennai 600 003
Tel: 25386566 Fax: 91-44-24612685 E-mail: indianleather@vsnl.net

Indonesia: Niran Rapih BSc. Gedung Cahaya Palmerah 3rd fl, #307
Jl. Palmerah Utara III No.9 Jakarta Barat 11480 Indonesia
Tel: +62 021 5329343 / 5329014 Fax: +62 021 5329344
E-mail: esdekatraco@centrin.net.id

WORLD FOOTWEAR

Head Office

36 Crosby Road North, Liverpool L22 4QQ, UK

Telephone: +44 151-928 9288 Facsimile: +44 151-928 4190

E-mail: wl@worldtrades.co.uk

Editor	Stephen Tierney
Deputy Editor	Clare Grainger
Consultant Editor	David Buirski
Technical Editor	Philip Lattaway
Contributors	Penny Leese
	Sergio Dulio
	Steve Lee
	Shari Shallard
Design Team	Tim Button
	Vicky Owens
Accounts	Sue Cassidy
	Heather Maher
Administration	Pauline Kelly
Subscriptions	Karen Brown
Publisher & CEO	Simon Yarwood

Iran: Roobik Khodabakhshian World Future Trade Co. Ltd,
No. 41 (Ex. 85) Karimkhan Zand Ave., Tehran 15858 Iran P.O. Box 15855-189
Tel: +98-21-88835389/88839860 Fax: +98-21-88827892
E-mail: wftco@yahoo.com
Iran Mobile: +98-912 1011834 Italy Mobile: +39 333 6854685

Korea: Jo Jong-kook

Korea Leather Industry Information Centre, PO Box Yoido 968, Seoul, Korea
Tel: +82 2783 1598 Fax: +82 2782 1494
Mobile: +82 19 379 3915 E-mail: koleather@netsgo.com

Mexico: Mr. Gennaro de la Garza

Calle Schubert 520, Col. Leon Moderno, Leon, GTO. C.P. 37480
Tel: +52-477-715-6170 Fax: +52-477-770-0958 E-mail: lyontech@prodigy.net.mx
or lyontech@hotmail.com.mx

Pakistan: Abdul Rab Siddiqi

Altat Hussain Road, PO Box 9969, Karachi 74000, Pakistan
Tel: 92-21-2634838 Fax: 92-21-2635007 Mobile: 92-333-2323166
E-mail: arsididqi@fascom.com

United States & Canada: Jim Haggerty

Tel: +1 (727) 415 7582 E-mail: jimhggerty@yahoo.com

URGENT FAX BACK Reader Enquiry Form *(please photocopy)*

Name: _____

Tel: _____

Position: _____

Fax: _____

Company: _____

E-mail: _____

Address: _____

Nature of business: _____

SS / 15

18 20



CUIR À PARIS
LEATHER & FUR EVENT

FEB

PARC DES EXPOSITIONS — HALL 3
PARIS NORD VILLEPINTE

WWW.CUIRAPARIS.COM

2014

design graphique : les Graphiquants

LEATHER • FUR • TEXTILE FOR ACCESSORIES • COMPONENT



This document has been established with the financial assistance of CTC, Tax and Subsidies Department.

PREMIÈRE VISION
PLURIEL

COPYRIGHT © WORLD TRADES PUBLISHING LTD