

WORLD FOOTWEAR

ISSUE THREE 2022 - VOLUME 36

THE MAGAZINE FOR THE GLOBAL SHOE INDUSTRY



Dials at the double for Altra

New data on children's foot growth
Protective sole searching pays off
UITIC Congress on the move



Contents



Florian Grasel, an ultramarathon runner from Austria, tries out the new Altra Mont Blanc Boa shoe during a training session at Monte Grappa in northern Italy.

CREDIT: ALTRA/BOA

Editor

Stephen Tierney

Deputy editor

Clare Grainger

Consultant editor

David Buirski

Technical editor

Philip Lattaway

Assistant content developer

Charlotte Robson

Contributors

Penny Leese
Sergio Dulio
Stuart Cleaver

Design

Tim Button

Global sales manager

Jo Tait

Accounts

Lisa Fabian-Smith

Subscriptions manager

John Collins

Social media/digital marketing assistant

Valona Hamiti

Publisher & CEO

Simon Yarwood

02 Global News

Highlights from around the world of footwear. For news on shoes every day, go to footwearbiz.com, the best news website in the business.

04 Footprints

People making an impact on the industry: designers, industry leaders and famous footwear lovers.



MATERIALS, MANUFACTURING & INNOVATION

10 Metal-free moves

Leather chemicals developers have come up with a range of recent innovations to move tanning processes away from heavy metals.

14 Standard challenge

CTC sets the industry straight on the standards the authorities in China have in place for footwear and other products sold there.



20 Study charts changes in children's feet

Researchers at the University of Salford and footwear brand Clarks have combined to compile a new study that analyses how children's feet change.

24 Foam in focus

Bio-foam will work in midsoles and insoles, Toronto-based technology developer Evoco says.

06 Industry & Innovation

Details of innovations from suppliers and service providers across the globe.

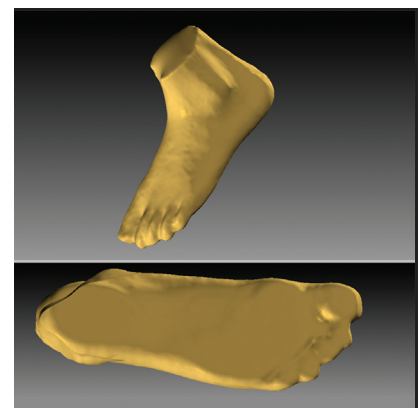
08 Backtrack

Headlines from footwearbiz.com, summing up the most recent developments in the global footwear sector.



18 Careful doses

Plastic-saving particle dosing technology can improve the sustainability of the soling process, Desma argues.



ATHLETIC & OUTDOOR

26 Healthy mind, healthy body, healthy planet

Athletic footwear brand ASICS now includes recycled materials in 90% of its running shoes.



31 Double discs for distance

Performance footwear brand Altra has incorporated two lacing system discs from Boa into each shoe for its new Mont Blanc long-distance running product.

SAFETY & WORK SHOES

34 Sharp move

Anti-puncture functionality is now part of Carbitex's AFX technology platform, allowing the composites developer to move into safety footwear.



BUSINESS OF FOOTWEAR



36 Celebratory mood

The return of in-person celebrations at its student awards competition helped the Worshipful Company of Cordwainers mark its 750th anniversary.

38 UITIC turns to Italy

Plans to hold the XXI International Footwear Technology Congress in China have been thwarted by covid-19 and the event will now take place in Italy in 2023.

40 Essential reading

ADVERTISER'S INDEX

AMERICAN EVENTS	30
DESMA	BC
FAYTEX	33
FOOTWEARBIZ.COM	09, IBC
MILSPEED	23
SILVATEAM	13
TEXON	29
STANBEE	17



@WTPworldfootwear



@WTPworldfootwear



linkedin.com/showcase/
wtpworldfootwear



@WTPworldfootwear

SALES OFFICES

Global sales: Jo Tait
World Trades Publishing
36 Crosby Road North,
Liverpool L22 4QQ, UK

T (+44) 741 598 9103
E jo@worldtrades.co.uk

India: S Sankaran
E indianleather@vsnl.net

Mexico: Gennaro de la Garza
E genarodelagarza@hotmail.com

Pakistan: Abdul Rab Siddiqi
E arsidqi@yahoo.com

World Trades Publishing 2022

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 4 times per year by World Trades Publishing, 36 Crosby Road North, Liverpool L22 4QQ, England. Price UK £80, ROW £135 per year (four 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. Print by Bishops Printers, Walton Road, Portsmouth, Hampshire PO6 1TR, England. All rights reserved. ISSN 0894-3079.

World Trades Publishing 2022

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.



Global news

UK Specialist antimicrobial ingredient firm Micro-Fresh has joined research and testing body SATRA. By becoming a SATRA member, Micro-Fresh will gain increased access to specialist technical training, plus “exclusive” test methodology, accreditation and consultancy services, the business said.

France Footwear brand Mephisto has completed an improvement project at its distribution centre in eastern France. The shoe company’s logistics director, Christian Kalch, said the facility had been in use for 30 years, but that the project had led to an increase in the useable area on the floor of the 18,000 square-metre site. It said it will now be able to dispatch 3,500 orders each day to stores all over the world. Mephisto has 900 own-brand stores worldwide and a further 18,000 retail partner outlets stocking its shoes.

Germany Chemicals group Lanxess and private equity firm Advent International have bought DSM Engineering Materials business (DEM) for €3.7 billion from Dutch group Royal DSM. DEM supplies high-performance specialty materials for the consumer goods sector and other industries. Its materials are used in athletic shoes’ midsoles, waterproof and breathable finishes, golf shoe soles and ice skate parts.

Austria Eleven designers came together in Austria recently to work for a weekend on new creations made from industrial residues and leather offcuts to give a second life to these scraps, with minimal use of additional materials. This was the focus of a project called DesignCamp that was conceived by Creative Industries Styria (CIS) and ZweckZwei (second use), an organisation that is committed to recycling and repurposing materials so as to use fewer natural resources.

Brazil Exports of footwear components from Brazil generated more than \$175 million in value between January and May this year, industry body Assintecal has revealed. This represents an increase of 17% compared to the same period in 2021. Assintecal said Brazilian suppliers had gained strength in the Chinese market in particular, but Argentina and Portugal were also important buyers of shoe components from its member companies.

Italy Italian national footwear industry association, Assocalzaturifici, has said the country’s footwear exports in the first quarter of 2022 brought in revenues of €3 billion, an increase in value of 21.4% year on year. In terms of volume, Italian footwear manufacturers shipped 58.7 million pairs to customers overseas, an increase of 11.7%. Nevertheless, Assocalzaturifici president, Siro Badon, warned that this recovery in the first quarter had been “overshadowed by clouds on the horizon” in the months that followed.

Turkey Industry observers in Turkey have said the price in the domestic market of finished leather for shoe uppers has increased by 40% in the last four months. They have pointed out that the effects of this are already noticeable in the prices Turkish consumers are having to pay for footwear and other finished products made from leather. Tanners have said higher prices for imported leather chemicals and for transportation are the main reasons, but have pointed out that devaluation of the local currency, the lira, against the dollar and the euro have made the situation even more challenging.

Macau Shoe upper leather manufacturer ISA TanTec has published a new corporate social responsibility report, covering its activity across two years, 2020 and 2021. In the report, the Macau-based group gives a breakdown on progress it made over this period at its production facilities in China, Vietnam and the US. It covers a range of subjects, including the group's systems and strategies for sustainable operational management, chemical management, employment and human rights, supply chain management and environmental protection.

Thailand Tanning group Sadesa is finalising the second phase of installing solar panels at its Kabinbury facility in Thailand. The Argentina-based group, which produces 17 million square-feet of leather per month, has an ongoing policy to reduce its environmental footprint and is continually looking for ways to reduce its use of water and energy. It completed a first phase of installing solar panels in Thailand last year. The second phase will bring the area covered by solar panels to more than 8,500 square-metres.

China The National Bureau of Statistics has released new figures that show a fall of 2.9% year on year in the country's industrial output for the month of April. It said retail sales in China were down by 11.1% compared to the same month last year. The unemployment rate in China in April reached 6.1%, with unemployment among 16-24 year-olds hitting 18.2%, a record for people in that age-group.



India India's Council for Leather Export (CLE) has reported export revenues for the industry of \$4.4 billion in the first 11 months of the 2021-2022 financial year. The 11-month period is from April 2021 to February 2022. This is one-third up on the figure for the same period a year earlier. Leather footwear contributed more than \$1.8 billion to the total.

Pakistan Pakistan's Footwear Manufacturers Association (PFMA) has welcomed a government ban on importing high-end goods, including footwear, into the country. The government announced the move at the end of May, saying it wanted to take urgent action to try to avoid running out of foreign reserves and control a hike in dollar prices against the rupee. PFMA chairman, Zahid Hussain, said the ban was a long-awaited and much-needed step.

US Footwear brand Rykă has unveiled its first athletic shoes designed for pregnant women. The XpectFit collection features a wider forefoot, for swollen feet, and a narrower heel for a more secure fit. An OrthoLite insole promotes circulation, and stretchy, breathable materials provide comfort. Each shoe features Rykă's proprietary Re-Zorb Lite insert for impact protection and shock absorption, an internal fused support sleeve promotes lateral stability, and a rubber outsole offers traction and durability.

Australia An organisation representing the commercial kangaroo products, the Kangaroo Industry Association of Australia (KIAA), has begun campaigns to promote kangaroo meat and leather in the US and Europe. Leather produced from kangaroo skins is one of the lightest, and strongest leathers tanners can produce. Its ultra-thin fibre structure is used extensively in the manufacture of premium soccer boots.

Bangladesh Footwear manufacturers, tanners and leathergoods producers in Bangladesh brought in export revenues of more than \$1 billion in the first ten months of the current financial year, the period from July 2021 to April 2022. Over the ten months, exports of leather footwear brought in more than \$600 million, growth of over 30%.



Footprints



CREDIT: MIKKEL BERG PEDERSEN, RITZAU SCANPIX

Royal visitor for Roccamore

During a royal tour of Aarhus in June, **Queen Margrethe II of Denmark** included a visit to the boutique of footwear and leathersgoods brand Roccamore.

Its founder, **Frederikke Antonie Schmidt**, was able to show the royal visitor some shoes from her current collection and share details with her of the Traceability collection that Roccamore developed last year in partnership with another Danish company, Spoor.

Launched in 2021, the Traceability collection used Danish hides supplied by Spoor, with each one laser-identified to capture details about its origin, all the way back to the farm. Each shoe in the collection had a quick-response code printed on the inside, making it possible for consumers to find out details of the individual animal from which the leather came. ■

Skills project concludes in Brussels

Skills4Smart TCLF, a four-and-a-half-year project that aims, with funding from Europe's Erasmus+ programme, to "upskill and reskill" people working in the textiles, clothing, leather, and footwear (TCLF) sectors in many European countries, has now concluded.

A final conference for the project took place in Brussels in mid-June to present the outcomes.

Twenty-two project partners conducted in-depth analysis of employment and skills in the TCLF sectors in the EU and have presented a framework for building "a solid sectoral skills strategy". They said the strategy is "grounded in facts and data". There is also a step-by-step guide on how to move from analysis to action.

Secretary general of the European Confederation of the Footwear Industry (CEC), **Carmen Arias Castellano**, said this project was essential for the development of "a collaborative network of stakeholders", together with the creation of initiatives, including a new network of vocational education and training (VET) providers. ■

Under Armour CEO to step down

The chief executive of Under Armour, **Patrik Frisk**, left the role in June.

Chief operating officer, **Colin Browne**, will take over on an interim basis while the Baltimore-based brand carries out a search for a permanent successor. The search will be internal and external. ■

Plea for help

The president of Italian footwear industry association Assocalzaturifici, **Siro Badon**, has renewed an appeal to the Italian government for a covid type bail-out for the country's footwear sector, which is being badly hit by the Russia-Ukraine conflict. Mr Badon said footwear manufacturers needed help in the face of sanctions imposed on Russia and because high levels of inventory have built up in their warehouses. ■

Additional role

The president of France's Conseil National du Cuir, **Frank Boehly**, has been chosen to lead a wider creative sector body, France Industries Créatives. He will take up this new role alongside his presidency of the leather industry body. France Industries Créatives seeks to represent the interests of a wide range of sectors, including wood, watch-making, garment making and leather, with a desire to preserve high levels of savoir-faire, something that they all have in common. ■

Retail knowledge

Specialist trail shoe brand inov-8 has announced a new chief executive.

Mike Snell, currently commercial director of supermarket group Asda, will move to the footwear brand in September. Founded in 2003, inov-8 has built a reputation for innovation in running shoe development, for example, in its use of graphene. It was acquired by Japanese group Descente in 2015, but founder, **Wayne Edy**, bought it back in 2020. Since then, Mr Edy has served as interim chief executive. ■

Boost for Italian brands in the US

Fondazione Altagamma, the trade association that promotes high-end leathergoods and other luxury brands from Italy, has announced the expansion of an international networking project with the opening of Altagamma Club New York.

This initiative will give Altagamma brands with representation in the US the chance to work together to promote Italian creativity, excellence, quality and lifestyle there. This follows similar local networking initiatives in the Netherlands and China.

Chief executive in North America of fashion group Ermenegildo Zegna, **Luca Lo Curzio**, will head up Altagamma Club New York, working closely with Bulgari's executive vice-president for sales and retail, **Lelio Gavazza**. Italy's diplomatic and consular network in the US will also play a key role.

It launched recently at a trends event at the Lamborghini Lounge in the Chelsea arts district.

At the event, Altagamma president, **Matteo Lunelli**, said: "The US is an increasingly crucial market for high-end companies. In 2021, it was the largest market for personal luxury goods, reaching a value of €89 billion, 31% of the global market. US consumers have always loved Italian style and the quality of our products: they are extremely knowledgeable consumers who have always stimulated our creativity." ■



'Japan's special demands suit Gucci'

The chief executive of Gucci, **Marco Bizzari**, has said during a visit to Japan that luxury products have built-in sustainability because they often last a long time and are passed from one generation to the next.

In an interview he gave to Forbes Japan, Mr Bizzari said there was something special about the Japanese market that makes Gucci particularly suited to it.

He expressed the view that Japanese consumers place a high level on high-quality, traditional products, but that younger consumers in particular want fashionable products. But he said he saw no conflict between these two requirements, legacy and fashionability.

He said that to have products that preserved traditional qualities and craftsmanship while still presenting a high level of fashionability was "exactly in line with current Gucci strategy". ■

UNIC's mission to Brussels

A delegation of senior representatives of Italy's national tanning industry association, UNIC, made a formal visit to the headquarters of the European Commission in Brussels on June 15.

UNIC president, **Fabrizio Nuti**, led the delegation, accompanied by vice-presidents **Rino Mastrotto** and **Piero Rosati**, board member **Roberto Lupi**, and by the current president of European leather industry body, COTANCE, **Manuel Ríos**.

An Italian member of the European Parliament, **Luisa Regimenti**, visited leather industry representatives in Santa Croce in Tuscany in May and invited industry leaders to travel to Brussels to repay the visit.

The high-level delegation presented the challenges facing tanners in Italy and throughout Europe, including the economic problems caused by rising costs. ■

SAC programme "paused"

The Sustainable Apparel Coalition (SAC) has announced that it is temporarily halting its use of data from its Higg Materials Sustainability Index (MSI) as a "consumer-facing transparency programme". Chief executive, **Amina Razvi**, made the announcement in a statement on June 27. She said it had come on the back of a demand from the Norwegian Consumer Authority. ■

Home focus

Sports product manufacturer and retailer Decathlon has named **Bastien Grandgeorge** as the new director general of the business in its home country, France. He succeeds **Arnaud Gauquelin** and **Fabrice Lisardi**, who had shared the role up until now. They will both have new roles in the company. Decathlon said Bastien Grandgeorge, a keen triathlete, had joined the company as an intern in 2002 and had worked in roles in France over the next ten years before becoming involved in the group's international expansion. ■

Technology talent

Bradford-based retailer of sports footwear, fitness apparel and outdoor gear SportsShoes.com has appointed **Jon Cleaver** as its new chief technology officer (CTO). Mr Cleaver most recently served as CTO at European sneaker and streetwear marketplace Klekt and previously held the same title at fast fashion e-tailer In The Style, furniture retailer Sofology and UK small business consultancy Peninsula. ■

Road to recovery

The 106th Argentine Footwear Exhibition (EFICA) took place in Buenos Aires in late June. Among those present was the minister of productive development, **Daniel Scioli**, who commented: "In 2015 the Argentinean industry produced 125 million pairs of shoes, while last year it managed to begin its recovery reaching 107 million. This year, with the purchase orders for next season that the factories already have, the sector expects to return to the levels of 2015." ■



Industry & Innovation



CREDIT: ADIDAS

New 3D-printed elastomer makes it mark with adidas

California-based 3D printing technology company Carbon has expanded its elastomer portfolio with a new product, EPU 44, which has already attracted the attention of sports group adidas.

In June, Carbon announced that adidas was already using EPU 44 in midsoles for athletic shoes.

The technology provider described EPU 44 as a resilient elastomer that is stiff, durable, and flexible. It "enables lighter lattices", Carbon said, and prints more quickly than earlier products, such as the company's EPU 41. It contains 40% bio-based materials.

Adidas has put EPU 44 into its 4DFWD and 4DFWD Pulse midsoles. ■

Chinese group acquires DuPont Biomaterials

Huaafon Group, a polymers producer based in Zhejiang province in China has completed the acquisition of the DuPont Biomaterials group and launched a newly named bio-based solutions group, Covation Biomaterials.

On announcing the launch at the start of June, Covation said it would run as an independent business, based in Delaware, combining science and engineering expertise with new investment and extensive manufacturing capabilities for products, including Sorona and Susterra.

It said its aim was to create sustainable building blocks for customers to make innovative and high-performance, bio-based products accessible globally.

Covation named Dr Michael Saltzberg as its chief executive. Dr Saltzberg had been the global business director of the DuPont Biomaterials group for more than six years and had worked at DuPont for almost 35 years.

He commented: "As a supplier of bio-based materials solutions, we are an important gateway into a more circular economy. Sustainable supply chains must begin with sustainable materials and our science allows our customers to end their overreliance on petroleum." ■

Coats acquires Texon

Industrial thread manufacturing group Coats has acquired specialist footwear materials developer Texon.

It said Texon, which supplies the global footwear market with high-performance heel counters, toe puffs, insoles and other materials, would be a complementary addition to its existing footwear business.

Chief executive of Coats, Rajiv Sharma, said: "We recognise and share Texon's focus on sustainability and innovation and believe that this acquisition strengthens our ability to fulfil these ambitions." ■

Six leathers for outdoor shoes added to PrimeAsia's Responsibly Raised

Leather manufacturing group PrimeAsia has launched a new collection for brands and manufacturers making outdoor footwear.

It has called the new collection Outdoor RR because the six performance leathers that are in it all comply with PrimeAsia's Responsibly Raised programme.

The group launched Responsibly Raised in 2019, with a view to building up collaboration with stakeholders in the supply chain, all the way to farm level, to promote the responsible use and conservation of natural resources, fair labour conditions and sound animal welfare. ■

Puma calls on Sympatex for function-first rPET line

A tie-up between German sportswear brand Puma and Sympatex, a developer of membrane materials and functional textiles based near Munich, will see both partners take on the challenge of making technically advanced outdoor textiles from recycled polyester, also known as recycled polyethylene terephthalate or rPET.

Together, they will assemble an autumn-winter 2022 collection inspired by both companies' individual sustainability strategies. ■

Fossil raw material breakthrough claim from research team

Researchers at Chalmers University of Technology in Sweden claim to have demonstrated how the carbon atoms in mixed waste can "replace all fossil raw materials in the production of new plastic".

A team of researchers at Gothenburg-based Chalmers has developed a recycling method inspired by the natural carbon cycle and has said in a study published in *The Journal of Cleaner Production* that this could eliminate the climate impact of plastic materials, or even clean the air of carbon dioxide.

"There are enough carbon atoms in waste to meet the needs of all global plastic production," the university's professor of energy technology, Henrik Thunman, one of the authors of the study, has said. "Using these atoms, we can decouple new plastic products from the supply of virgin fossil raw materials."

He added that if the process is powered by renewable energy, it would also be possible to obtain plastic products with a climate impact that would be 95% lower than we see with plastics produced today. Current plastic recycling methods are able to replace no more than 20% of the fossil raw material needed to meet society's demand for plastic, the Chalmers study has stated.

The advanced methods proposed by the researchers are based on thermochemical technologies and involve waste being heated to between 600° and 800°C. The waste then turns into a gas, which, after the addition of hydrogen, can replace the building blocks of plastics.

"The key to more extensive recycling is to look at residual waste in a whole new way: as a raw material full of useful carbon atoms. The waste then acquires value, and you can create economic structures to collect and use the material as a raw material worldwide," Professor Thunman said. ■

A second life for Clarks children's shoes

Footwear group Clarks has become a member of online marketplace Dotte.

This UK-based platform describes itself as a "resale collective" that allows parents to buy, sell, recycle or even donate children's shoes and clothes so that they do not end up in landfill. Dotte claims to be a "full-circle remedy to fast fashion and a force for good".

Chief marketing officer for Clarks, Tara McRae, noted that the collaboration with dotte will complement sustainability initiatives that the company already has under way. These include 'Every Move Matters', a platform launched by Clarks with a panel of experts on the environment who will help guide the company in its overall sustainability strategy.

"This is an exciting step towards our sustainability goals, closing the loop while offering the community an efficient, easy and environmentally friendly solution for outgrown shoes," she said. ■

EPFL team discovers 'much simpler' bioplastic

Research conducted by scientists at the Swiss Federeal Institute of Technology Lausanne, also known as the École Polytechnique Fédérale de Lausanne (EPFL), has resulted in a "new" plastic derived from non-edible plant material or lignocellulosic biomass.

The study was published in scientific journal *Nature Chemistry* in late June. Led by Professor Jeremy Luterbacher, the team found that the plastic's properties are "similar" to polyethylene terephthalate (PET).

With funding from the Swiss National Science Foundation, the European Research Council's Horizon 2020 programme and the Swiss Commission for Technology and Innovation, alongside additional EPFL financing, the study was inspired by an earlier discovery by Professor Luterbacher, published in the journal *Science* in 2016. ■

'Easier-to-assess' chemicals index on the way

Sustainable Chemistry for the Textile Industry (SCTI), a body lauched in 2020 by seven founding partner companies, has teamed up with bluesign to develop a new "sustainable chemistry index". They have said they hope the new index will provide "a standard communication guide for chemical suppliers, manufacturers, brands, and NGOs".

Bluesign and SCTI said they want to make it easier for stakeholders "to assess the sustainability of textile chemical products against the highest standards", while safeguarding the intellectual property (IP) of participating chemical companies. IP protection is critical to ensuring ongoing investment in sustainable solutions, they said. ■

TFL supports footwear training in Germany

Leather chemicals group TFL hosted a three-day training event in June for students at Germany's International Shoe Competence Centre (ISC), part of an ongoing programme of support for the work of the Pirmasens-based organisation.

TFL's training focused on helping ISC students better understand leather and its application in shoe manufacturing.

Participants included young professionals already working in the footwear industry at brands including adidas and Deichmann, who are engaged in professional development programmes at ISC. ■

Kelp help as yarn company raises millions

US biomaterials developer AlgiKnit, a specialist in renewable kelp-derived yarns, has raised \$13 million in a Series A funding round. This latest investment coincides with the opening of AlgiKnit's new manufacturing base in North Carolina's Research Triangle region, a facility which marks the next stage in the company's accelerated scaling efforts, involving increased production, expanded partnerships and team building. ■



Backtrack

06.07.22

PwC says 80% will pay more for locally made products

Off-the-pitch shoe for women footballers

CEC: green transition must take account of footwear complexity

04.07.22

Wolverine and HanesBrands reach agreement over Champion trademarks

30.06.22

Leather is no driver of deforestation, COTANCE insists

28.06.22

A first for Isa TanTec

China: Nike, Tread lead activewear over 618 shopping festival

24.06.22

Brazil: languishing leather and flourishing footwear

23.06.22

Real Leather, Stay Different heads to Scandinavia

Call for US to repeal China shoe tariffs

22.06.22

UITIC announcement expected in late June

20.06.22

US consumers care about plastic waste

16.06.22

Project under way to improve natural tannins

Recovery in evidence in Vietnam

15.06.22

Jacquemus teases twist on Nike's Humara

Outdoor industry shows 'underlying resilience', EOG says

Creative design project launched at Ecco Leather

Growth for China's leather industry in first four months

AAFA welcomes shipping reform bill

13.06.22

Hyosung, BlackYak and more inaugurate Zero Seoul

*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 the news items you may have missed.

10.06.22

Avoid microplastics, choose leather, VDL urges

09.06.22

The adidas running shoe for taking things slowly

Gucci unveils ESG initiatives in southern Italy

08.06.22

Double-digit growth in all markets for Jimmy Choo

Easing of restrictions in China take pressure off luxury brands

Change of ownership at PrimaLoft

06.06.22

Workers in Tuscany seal agreement with Gucci

Pro-leather arguments are stronger than ever

01.06.22

Textile Exchange: 'no perfect source' for biosynthetics

Vivobarefoot partners for rental service

31.05.22

China coaches industry in RCEP competitiveness

Further footwear acquisition for Arklyz

30.05.22

Leather link-up likely between Kyrgyzstan and Pakistan

LVMH highlights circular economy initiatives

27.05.22

LHCA announces judging panel for UK competition

ISA TanTec creates mushroom-based material

26.05.22

Children's shoe for easy recycling wins John Lewis grant

Mexico reduces its imports of European footwear

25.05.22

Caleres registers best-ever quarterly sales

Footwear is different, Argentina's CIC insists

Anta releases seventh ESG report

'Tough comparison' affects Footlocker's Q1 growth

DSW appoints president from Kohl's

24.05.22

Tea culture inspires new Anta range

Reebok refocuses on Classic Leather designs

31.05.22

A strong ten months for footwear in Pakistan

20.05.22

Shoes from Red Dragonfly go into museum's permanent collection

19.05.22

Footwear firms urged to build partnerships

Reformation becomes latest to test mycelium

31.05.22

Russell and Bromley ventures outside UK

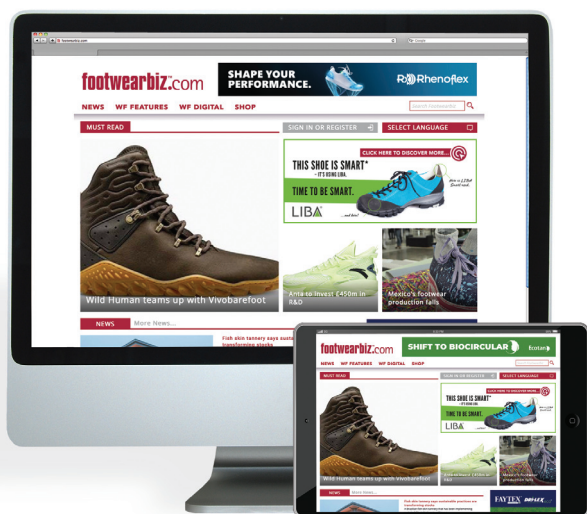
On's ascent led by North America

Arezzo reaches new heights

Reopened stores benefit Geox Q1 results



STAY A STEP AHEAD



footwearbiz.com

Subscribe **NOW** for free access to the latest news and innovations in the footwear industry from across the globe.

WORLD FOOTWEAR

A bimonthly magazine exploring the technical world of Footwear. For subscription enquiries please e-mail: jo@worldtrades.co.uk



*Chestnut forest in Sera Pamparato,
Cuneo, northern Italy.*

CREDIT: SILVATEAM

Sustainable tanning systems

Chrome tanning has been the accepted norm for shoe upper leather for the past 150 years but now, metal-free tannages are becoming more and more prevalent in a move towards what some brands and consumers perceive as being more sustainable tanning systems. One reason for this is that despite scientific studies, including REACH regulations, proving that the trivalent form of chromium (chrome III) when used in properly managed tanning systems presents no danger to the manufacturer or the end user, there has been growing demand for chrome-free alternatives. In reacting to this demand, wet white leathers made using glutaraldehyde have become popular.

Nevertheless, there is pressure for further change as, in most cases, whether the leather is wet blue (made using chrome) or wet white, it is public perception fed by false information on social media that is behind much of this. The public is being told that leather is 'bad' while synthetic 'vegan' materials are 'good' and, if it is a

celebrity or influencer saying this, then of course it must be true. Fortunately, the leather industry is fighting back against this nonsense and three suppliers of tanning agents have come up with revolutionary products that provide shoemakers with the means to produce quality footwear with matching environmental credentials.

Ecotan PAP

Ecotan PAP from Silvateam in Italy is a metal-free, aldehyde-free tanning product using a modified hybrid, extracted from gallnuts, chestnut and tara. Being members of the hydrolysable group of tannins, they exhibit good light-fastness properties with a pale colour that is essential for high-performance leathers. Originally launched in 2017, it was the covid lockdown of 2020 that led to a more involved project to look at ways in which this new system could be better implemented, such as adding synthetic polymers to the range of retanning additives. These non-toxic compounds are so safe that they do not need no

REACH registration. Leathers made with this system are also said to not only be fully functional but also beneficial to health.

Why is being metal-free so important? Any metal in the leather finishing process, be it with the dyes or pigments used, would give rise to issues with the breakdown of products in the waste treatment of the leather. In leather colouring, pre-metallised dyes, also known as metal-complex dyes, are commonly used. The metal content of the dye complex often consists of copper, cobalt, nickel or chromium. Providing metal-free alternatives enables a strategic breakthrough in the ability to create a complete metal-free offering with sustainability and circularity at its core.

Tanners signing up to use the Ecotan system must, however, comply with several aspects that will ultimately lead to their trimming and shaving waste being converted into fertiliser. In theory, recycling the leather will also be an option for the end consumer at the end of the product lifecycle. The facility for this to take place is currently unavailable but the technology allows the chain to be put in place in the future. Silvateam is keen to point out that this is not a biodegradability system but a recycling system in which the biocircular element can then be used in a cycle in which farmers can use the fertiliser on the grasses that feed the animals that will ultimately become meat and provide the hides.

While applicable to almost all leather types, shoe leather is ideally suited to the biocircular system, as shoes have a relatively short lifespan. Collectively, the tanneries that have signed up to Ecotan have already used it to make all leather types, even soling leather. The company says that leathers using its system work particularly well in shoes because they will promote foot health as studies examining the health benefits of leather containing these vegetable tannins show they have a strong antibacterial effect. This is apparently preserved in the finished leather, so it is not a case of killing bacteria but preserving the natural flora of the foot and not letting the bacteria that develop inside the shoe proliferate.

The company's efforts over the last decade have also focused on making sure its own processes are sustainable. It has, for example, taken steps to determine what volumes of its products deriving from chestnut, tara, quebracho and others it can supply sustainably. As a result, it says it now knows that, just working in the same regions where it does today, it can supply ten times as much of these vegetable extracts as it does at present and do so in a sustainable way. Where conventional tanning is about preventing hides from being biodegradable, a raw hide is actually highly biodegradable; it is the treatment it undergoes that makes it less biodegradable. Ecotan would appear to be one way to address the problem.

Zeology

This is a zeolite-based tanning system from Dutch company Royal Smit & Zoon. It is chrome-, heavy metal- and aldehyde-free and, the company states, offers the environmental benefits of a sustainable alternative to chrome and glutardialdehyde (GDA) tanning plus a



In Zeo White, Smit & Zoon believes it has a wet-white tannage that is safer and more sustainable.

CREDIT: SMIT & ZOON

reliable, consistent and superior quality in the tanned material. Its main benefits are said to be less pollution, less discharge of chemicals in waste and wastewater, no use of chromium or GDA and improved biodegradability of the tanned material. From a shoemaking standpoint, there is said to be no compromise in regard to grain tightness, physical leather properties, lightfastness, heat-resistance or colour brightness.

But what exactly is zeolite? Zeolites are a type of mineral composed of aluminium, silicon and oxygen. They can be found naturally and mined or manufactured synthetically. Their structure is unique and they are completely different to any other class of tanning chemical. A synthetic zeolite can be made to possess a completely unique structure not yet discovered in nature. It also means that a unique synthetic zeolite structure showing great potential as a leather chemical can be made in a factory in a renewable way. Its building blocks are silica and alumina, which can be recycled in a circular manner to create future materials. Zeolites can also absorb or release water depending on the temperature. Water absorption is an important part of leather comfort and a tannage that allows this without causing any swelling in the material is a desirable characteristic.

Zeology will appeal to tanners as it is reputed to be easy to use, with no need for extra equipment and the company says that it is a robust and predictable tanning system. It should appeal to shoemakers, too, as it is also said to be capable of turning lower-grade hides into high-quality leather which would help to control raw material costs. When asked about justification for such claims, the company says that, "The system produces a very flat leather with an extremely tight grain, so much so that looser belly areas are essentially reduced, giving more useable surface area. Whilst results will differ between tanneries and raw material types, there have been tangible results at all the partner tanneries involved."

The natural absorbance of zeolite allows for very high exhaustion rates in the retanning and dyeing stages,

meaning wastewaters are easier to process and, being chrome-, aldehyde- and heavy metal-free, the environmental impact of the system is greatly reduced. Added to this, the shavings from the tanned material biodegrade almost as quickly as raw hide, giving rise to the possibility of enhancing the value of waste material. Furthermore, composting could easily be achieved and the residual zeolite would add beneficial nutrient mineralisation, aeration and water-holding capacity.

Olivenleder

Olivenleder from German company Wet-green GmbH approaches things in a revolutionary manner as it uses olive leaves as the basis for its tanning system, hence the name. The leaves are a by-product from olive growing, so in using them to tan animal hides, which are themselves a by-product from the meat and dairy industry, the company is very much in tune with the Cradle to Cradle* concept. It has in fact been awarded a Cradle to Cradle 'Gold' award for the sustainability of its material flow. By doing this, it has also managed to avoid both mining for metals and using any fossil fuel-based synthetic tanning chemicals such as glutaraldehyde.

The company says that its wet-green OBE (olivenblatt-extrakt) is the only vegetable tanning agent in the world which has two natural binding mechanisms by combining the best of two worlds, phenols and a natural cross-linker. The tanning system and its residues are also highly biodegradable as shown by tests carried out by Innovhub SSCCP institute in Milan which showed $\leq 90\%$ biodegradation after three months. Availability is apparently also not a problem as using the leaves from the Mediterranean olive harvest alone would cover more than 40% of global leather production. It also says that by using other by-products such as the pomace (filter cake) and the olive mill wastewater (black water), there is the potential to convert global leather production to being tanned with by-products from olive growing for a real circular system.

An attractive feature of Olivenleder besides its environmental credentials is the variety of leathers it can



Kid's shoes made from Olivenleder are extremely flexible.
CREDIT: RICHARDSBOOTS.COM

produce. For example, whereas vegetable tanning normally results in a firm finished material, this olive-based system is able to produce a variety of textures and colours, something that an increasing number of brands are picking up on. A good example of this is in the natural coloured, non-dyed kids styles made for shoe brand Richard's in collaboration with German manufacturer and label Trippen. Both upper and lining are made from Olivenleder and are so supple they can even be worn barefoot for healthy small feet.

The company claims that virtually any type of footwear can be produced, including casual sneakers, work boots and dress shoes. The only limitation to date, as with any vegetable tanning or tanning with synthetic tanning agents, is the hydrophobing for military grade leathers used in hiking boots which can be subjected to hours of water contact. The tanning agents present are the same as those in some natural cosmetics and in extra virgin olive oil and are designed to be neither corrosive nor a hazardous substance. All in all, this certainly looks to be a novel alternative for companies wishing to move away from chrome tanned leathers.

Here we have three alternative tanning systems with three different approaches to the environmental question. Which one a shoe manufacturer might prefer for the leather they use will of course be up to them and the type of footwear they produce. The world is also changing and becoming less enamoured with synthetic alternatives. There is no shortage of the hides to turn into leather, which still remains the best material for shoemaking as it combines all the necessary properties as has been proven over the centuries. Now that there are ways of producing it that do not harm the environment, it will hopefully help it to fight back against the unfair and inaccurate criticism it receives. ■

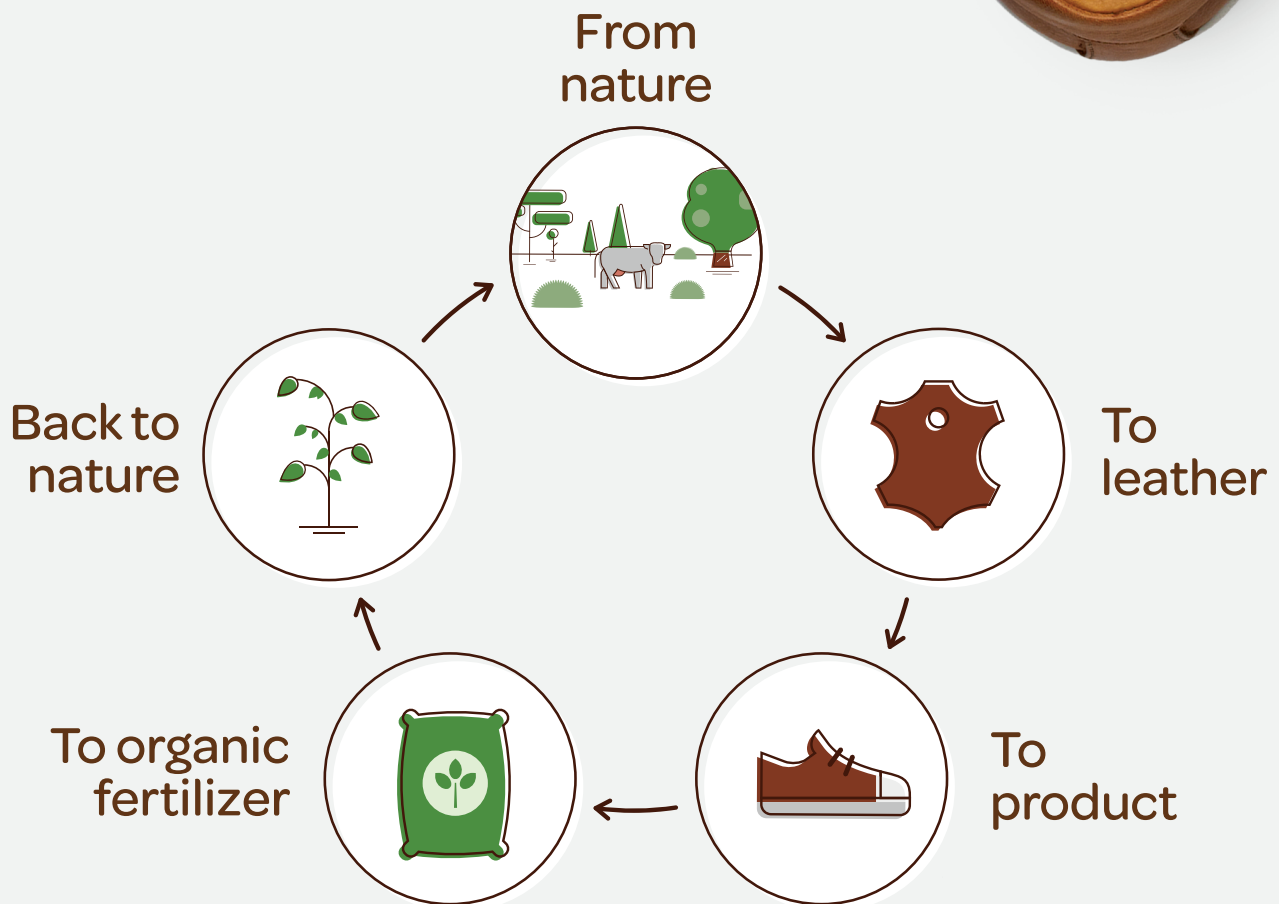
*Cradle to Cradle is a registered trademark of McDonough Braungart Design Chemistry, LLC (MBDC). Cradle to Cradle CertifiedCM is a certification mark licensed exclusively for the Cradle to Cradle Products Innovation Institute.

Puma puts Zeology to the test

Sportshoe brand Puma is putting the biodegradability of footwear made from leather using the Zeology tanning system to the test by distributing 500 pairs of its Suede shoe style to participants in Germany. They will wear them for six months before returning them to Puma, from where they will be sent to Dutch industrial composting experts Ortesa who will analyse how well they can biodegrade in a controlled environment. Puma's creative director, Heiko Desens says, "As part of the experiment, we will also gather feedback from participants about the comfort and durability of the sneakers, which will help us design future versions of the shoe, if the experiment is successful."



The first truly
bio-circular leather
with a proven path
back to nature



Ecotan leather is free from metals, glutaraldehyde and other hazardous substances. **At the end of its life, it can be recycled into a fertilizer for organic agriculture.**

This tanning technology uses patent pending tannin based products and has been developed thanks to a partnership between Silvateam, Biofin, Fertilizzanti Certaldo and some of the world's best tanneries.



Footwear standards for China

CTC France

China has become one of the largest markets in the world for the consumption of imported or domestic fashion and luxury goods. Huge business opportunities are attracting more and more international brands to enter the China market. One of the keys to success in this market is to ensure that products comply with the country's regulations and standards. China GB (Guo Biao) standards are Chinese national standards issued by the Standardisation Administration of China (SAC), the Chinese National Committee of the ISO and IEC. Chinese standards may be either mandatory or voluntary which can be identified by a prefix code (Figure 1).

“In China, all products being sold are required to fulfil Chinese quality requirements.”



CREDIT: SHUTTERSTOCK / KRAKENIMAGES.COM

Figure 1 – Standards prefixes

Scope	Mandatory standard	Voluntary standard
National standard	GB	GB/T
Industrial standard		QB/T, FZ/T, HG/T...
Province standard		DB/T
Enterprise standard		Q/XXXX
GB: National Mandatory Standards (Guo Biao) T: Recommended or Voluntary QB: Light industry (including footwear, leather goods...) FZ: Textile HG: Chemical industry		

■ National standard (GB and GB/T)

– these are formulated by the department of standardisation administration under the State Council for technical requirements that need to be unified nationwide as, for example, GB 30585 Safety Technical Specifications for Children's Footwear.

■ Industrial standards (QB/T, FZ/T and HG/T...) – in the absence of national standards, technical requirements for a certain industry need to be unified, industry standards QB/T and FZ/T may be formulated as for example QB/T 1277-2012 pH values for leather.

■ Province standard (DB/T) – in the absence of both national and industry standards, safety and sanitary requirements for industrial products need to be unified within a province or a city where local standards (DB) may be formulated as, for example, DB31/T 645-2012 which is Shanghai fruit grades for table grapes.

Note: Standards classified /T are voluntary Chinese national standards but may sometimes be considered mandatory during spot checks by the Chinese authorities.

Compliance with GB Standards

In China, all products being sold are required to fulfil Chinese quality requirements. Although there is no formal regulation requirement to test products, it is nevertheless mandatory to ensure their quality. Whether the products are sold in department stores such as Carrefour, Walmart etc. or online as for example JD, Taobao, Tmall or Amazon China, it will most probably

be necessary to provide a PASS testing report as department stores and online platforms will want to make sure the products meet the requirements of Chinese standards.

It should also be noted that over the past years e-commerce platforms such as Yihaodian, NetEase Kaola, Jindong, Dangdang and Tmall, as well as official brands' websites, have been increasingly targeted by the authorities for spot checks. Consequently, companies seeking to sell products in China need to understand and be aware of the complexities and necessary requirements imposed by the vast range of GB standards, as well as to ensure they can meet the requirements of GB China national standards before doing so. Failure to comply with GB Standards could result in the products or brand being banned or impounded and could lead to reputational damage and costly fines from the authorities.

Market surveillance in China

Market surveillance by the authorities in China follows a three stage format headed by either the State Administration of Market Supervision or the Local Market Supervision Administration. On January 29th, 2022, State Market Supervision Administration issued the results of random inspection on the quality supervision of leather shoes and sport shoes (Figure 2). Primary reasons for failure included colorfastness to rubbing, bond strength, shanks, abrasion resistance of outsole, pH value and formaldehyde content.

To ensure products comply with Chinese regulations, companies can get support on CNAS (China National Accreditation Service for Conformity Assessment) and CMA (China Metrology Accreditation) accredited laboratories such as CTC for inspection and conformity assessment. The reports issued by accredited organisations can be used to evaluate product quality and achievements with legal effect and will be recognised by the local authorities in case of dispute.

Safety standards

Standards that involve safeguarding national security, protecting the health and safety of people, protecting the life and health of animals or plants, preventing fraud, protecting the interests of consumers and safeguarding national economic order are mandatory standards. Safety standards focus primarily on

Figure 2 – Random footwear inspection results

Organisation	Type of product	Batches inspected	Batches failed	Failure rate
SAMR	Leather shoes	203	31	15.3%
SAMR	Sport shoes	214	15	7%

Figure 3 – Safety standards

GB Standard	English	Chinese
GB 25038-2010	Rubber shoes healthy and safe specification	胶鞋健康安全技术规范
GB 30585-2014	Safety Technical Specifications for Children's Footwear	儿童鞋健康安全技术规范

chemical safety requirements, but also include physical and mechanical safety performance requirements in the case of children's products (Figure 3).

Product standards

Product standards answer to a specific category of products and comprise some of the requirements or specifications which products must meet to ensure their suitability for use. Product standards often include technical requirements in regards to both mechanical and chemical aspects. They can also serve as a basis for production, inspection, acceptance, use, maintenance and trade negotiations. Because they come in as many categories of existing products available on the market, there are a massive number of product standards.

Practical help

Meeting complex Chinese standards for footwear can be a daunting prospect particularly for

companies seeking to enter the market for the first time. Fortunately, there are organisations including CTC which have the knowledge and experience of the Chinese market to smooth the path. Where there are so many potential pitfalls, having access to all the necessary information on local regulations plus the ability to carry out all necessary testing in laboratories that are accredited by

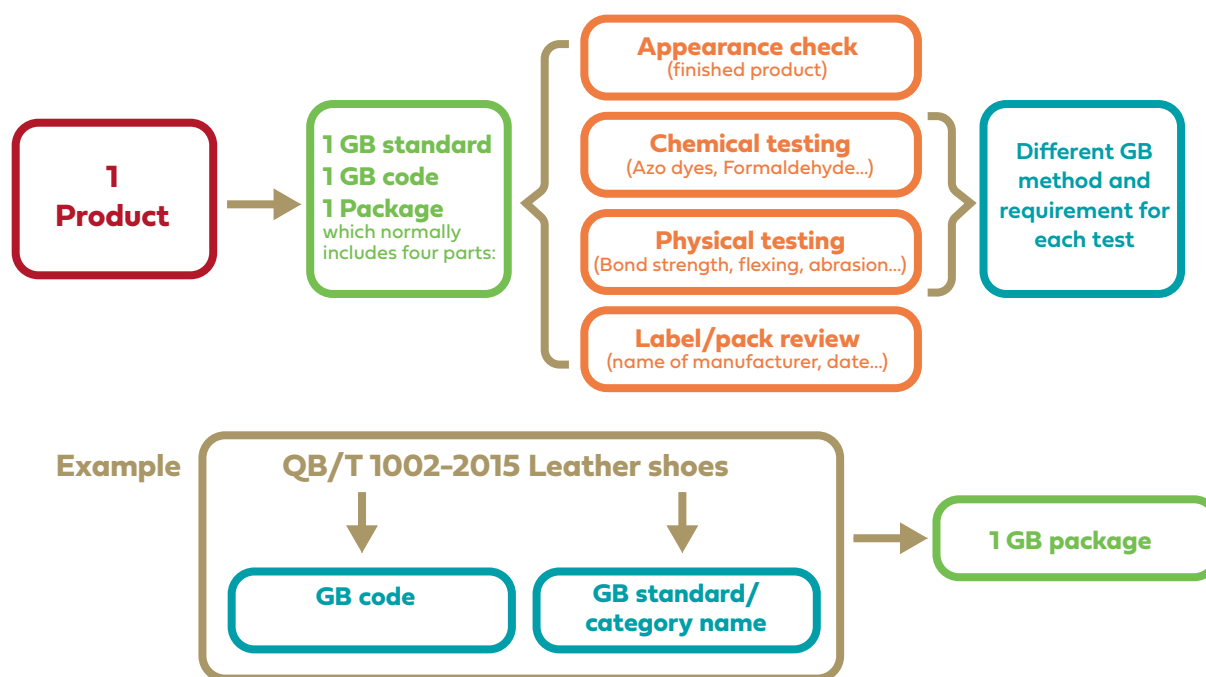
both the China National Accreditation Service for Conformity Assessment (CNAS) and the China Metrology Accreditation (CMA) for delivering assessment reports based on China authorities' requirements has to be a valuable asset.

To gain a clearer picture of how the system for footwear standards in China works, the following diagram will be of help (Figure 5). ■

Figure 4 – Most frequently used product standards

GB Standard	English	Chinese
GB/T 22756-2017	Leather sandals	皮凉鞋
QB/T 1002-2015	Leather shoes	皮鞋
QB/T 2955-2017	Casual shoes	休闲鞋
HG/T 2018-2014	Casual shoes	轻便胶鞋
QB/T 4552-2020	Slippers	拖鞋
GB/T 15107-2013	Athletic shoes	旅游鞋
QB/T 4331-2021	Children's athletic shoes	儿童旅游鞋
QB/T 2880-2016	Children's leather shoes	儿童皮鞋
QB/T 4546-2021	Children's leather sandals	儿童皮凉鞋

Figure 5 – Illustration of how Chinese standards for footwear work



YOU SEE A PLASTIC BOTTLE.
WE SEE HIGH-PERFORMANCE
COUNTERS AND BOX TOES.



**NITRO FORCE™ COMPONENTS ARE MADE FROM
AT LEAST 85% RECYCLED PLASTIC BOTTLES.**



Nitro Force™ components are the lightest, firmest, and most resilient in the industry. Even better, they bring sustainability to another level, because they're made almost entirely from recycled plastic bottles. Plus, they're fully recyclable through our digital cutting system—we reuse the cutting waste to make even more Nitro Force™. The manufacturing process is entirely waste-free.

Contact info@stanbee.com. It's the quickest way to join our mission of innovation, performance, and sustainability.

Another breakthrough from

STANBEE

A Step Ahead of Innovation



www.stanbee.com

**Visit us at booth
#615/617**
at the Northwest Materials
Show in Portland, OR!



CREDIT: DESMA

Reduce, recycle and rethink

Plastics are both a curse and a blessing of the modern age. According to reliable estimates, roughly 150 million tons of plastic are drifting around the oceans and the figure increases by up to nine million tons every year. Not even the remotest areas are safe and particles of microplastics have been found in both the Arctic and the deepest oceans. Research scientists predict that by the year 2050, the number of pieces of plastic in the world's oceans will be higher than the number of fish.

On the other hand, the modern world would be unthinkable without plastics. They are lightweight, heat-resistant, inexpensive, clean, flexible and have good insulation properties. They allow planes to fly with less fuel, houses to consume less energy and make medication more effective. So it goes without saying that the footwear industry also relies on plastics.

Plastics are a raw material that is used on a daily basis in footwear production. The use of plastics means more convenience and comfort, better durability and

performance. Breathable fibres improve temperature regulation in sports shoes, lightweight soles with good rebound make running easier, fibre-reinforced materials make skiing safer and non-slip soles do what the name says and prevent us from slipping. As the issue of sustainability increasingly impacts on the industry, the focus is now turning to the materials used in shoe production.

Aspects such as recyclability and lower material consumption, for instance, are becoming increasingly important in this context. Jörg Ertl, member of the Management Board of the German children's shoe label Ricosta, points out the numerous different materials that are used to produce a shoe. "Enormous effort is required to separate these materials in order to return them to the product cycle. In principle, our direct injection soles could be separated and granulated and these granules used for other purposes. We are investigating and working on various options."

Industrialisation

Even today, most of the work in footwear production is done by hand. It was not until the 1950s that fundamental changes began to take place. In those days, leather was the main material used for making shoe soles. However, because it was difficult to obtain and offered only a limited range of properties, shoe manufacturers began to opt for alternative materials such as rubber. The soles had to be cut out from sheet rubber, adjusted to fit the shoe and then edge trimmed to the finished shape. The development of new thermoplastic synthetics and plastic rubbers which could be processed economically, as the sole could be vulcanised and injected directly onto the upper in a process known as direct soling, finally enabled inexpensive mass production.

This revolutionised the entire industry and turned shoes into consumer goods that everyone could afford. The technique of direct soling was continually enhanced as the years went by. Specially designed machines now inject the sole material directly and attach it to the upper. This method not only ensures perfect bonding of the sole and upper, but also delivers first-class quality. The materials used for direct soling are normally synthetics such as polyurethane (PU) and thermoplastic polyurethane (TPU). In order to reduce the use of polyol and isocyanate in direct soling, German company Desma adapted and improved the direct soling process, something it continues to do to this day.

Reduce

For some time now, the company has offered the new technology of particle dosing in combination with direct injection (DIP), which means shoes can be produced more sustainably and without impairing product quality by reducing the consumption of raw materials. It is available for both moulding and injection processes and can be used with granulated production waste, recyclates or other sustainable fillers. A particle dosing unit can be retro-fitted which, together with modifications to the machine and visualisation software, enables these fillers to be used.

The dosing technology reduces the use of polyol and isocyanate in the direct soling process and thus significantly improves the sustainability footprint of direct soling. In addition to production waste such as PU, TPU and rubber that normally occurs, bought in granules such as cork can also be used. The granules, however, must not be larger than four millimetres in diameter. These granules and fillers can be used for up to 20 percent of the sole filling as part of the direct injection process.

Recycle

This new technique offers diverse benefits. Different fillers can produce soles with different degrees of hardness and in different colours. Other product parameters can also be achieved by opting for certain types of granule. Particle dosing reduces the amount of production waste, whilst simultaneously lowering the consumption of raw materials such as polyurethane. This

“ Particle dosing means shoes can be produced more sustainably and without impairing product quality by reducing the consumption of raw materials. ”

brings down costs, reduces the carbon footprint and improves the sustainability of footwear production.

Before deciding to use this new technology, manufacturers should however be aware that particle dosing is not an option for smart recycling of the entire production waste. Before upgrading their machinery, producers should first decide which shoe qualities they wish to produce, which materials they can use and which quality parameters their products ultimately have to satisfy. Different types of granule, for instance, have to be suitable for combination with one another and have to undergo treatment before they can be used in the production process. The Desma Innovation Centre (IC) can advise customers and offers a wide range of test methods and process to identify the parameters and fundamental conditions required to facilitate smooth production.

Rethink

Footwear production is certain to undergo comprehensive changes in the future, which can be summed up under the following headings: higher demands for sustainability, ecological production processes, the use of totally new materials, supply chain issues, short transport routes and fair working conditions. The trend is now for materials such as corn husks, cactus, pineapple leaves, mushrooms and organic cotton. Waiving the use of chemically tanned leather is also a key factor. Bamboo, cork and natural rubbers, as well as countless different kinds of recycled plastics, will all be used in future.

The pressure on shoe producers to rethink is steadily growing. 'Generation Z' in particular demands sustainable products. More than 90 percent of these 11 to 26 year olds are said to pay attention to sustainability when buying a product. A consumer survey has revealed that 57 percent of customers in Europe are already willing to pay more for sustainable products. Adidas CEO Kasper Rorsted has already announced that by 2025, 90 percent of products his company produces will be made of sustainable materials. Puma also intends to achieve that share. CEO Björn Gulden states, "I want to integrate ecological and social sustainability throughout our entire production system, from procurement of the raw materials right through to the manufacture of our products." ■



Designing for the developing foot

Michael Haley (Clarks and University of Salford),
Rosie McKissock (Clarks) and Carina Price (University of Salford)

Children's footwear is an emotive topic with first shoes being a milestone event for parents of new walkers, and shopping for school shoes being part of the preparation for the new school year. These significant milestones are reflected in the importance of footwear for a child's foot. A newly walking infant probably only has one pair of shoes and may wear them for eight hours a day at nursery. Likewise, children wear their school shoes for the whole school day, five days a week, to walk to school, during lessons and during play-breaks.

It is evident that children's footwear needs to support and accommodate a foot which is yet to reach skeletal maturity. Not only that, a foot that is constantly growing and changing shape and proportions. Despite this importance, comparatively little is understood about the developing foot throughout childhood and the influence of footwear properties on walking in children. A UK study was set up by Clarks Kids to enhance and update its internal knowledge base relating to these themes. It did so with the support of experts from the Human Movement and Rehabilitation Research Group at the University of Salford. Exploring how the foot grows, how children walk and how footwear properties can alter walking in children was the remit. From the outset, the collaborative project aimed to produce evidenced based, design principles that would underpin the company's footwear ranges.

Understanding children's movement

The joint project focused on understanding the influence of different footwear properties for children of different ages and exploring how modifying footwear properties within commercially relevant ranges affected how children moved. Clarks Kids was particularly interested in how shoe longitudinal flexibility, weight and heel height influenced children's walking.

The UK project spanned four years and overall, more than 100 children between the ages of 2 and 11 years took part in the research. We considered these children in separate groups based on their age and shoe size. Age groups were 2-4, 4-7 and 7-11 years of age. The children visited our purpose-designed laboratory that was built in the Clarks head office in Street, in the south-west of England. They took part in a range of different

The integration of footwear biomechanics research into the development of children's shoes.



CREDIT: SHUTTERSTOCK.COM

biomechanical tests. They walked in several footwear conditions, modified from the 'control shoe', which was a best-selling Clarks Kids market product. To modify flexibility, we developed the selected shoes with softer and harder densities of EVA or rubber. Weight was modified by adding 10 and 20% of the original shoe weight with small weights added to the shoe. Heel height was altered from the market product by adding 5mm and 10mm EVA wedges to the shoes. Modifications

of all shoes fell within realistic commercial ranges to ensure that research outcomes related to footwear which was commercially relevant and feasible to manufacture.

For testing, children were asked to walk along a 10-metre walkway between cameras to track their movement. They walked at whatever speed they chose in each shoe and we randomised the order of these so that the order did not influence our results. As the children walked, we collected the pressure under their feet using special purpose-built insoles (made by XSensor). These insoles were fitted in the shoes and are wireless so the children could walk around freely. The insoles measured the pressure (equal to force/area) that acted on the surface of the foot in each shoe. To analyse this data it is broken down into foot regions to see how pressures in the rear-, mid- and fore-foot were different in the different shoes.

As well as recording this pressure, we also recorded the motion of the children's joints using infra-red cameras and small markers. These let us define the lower limbs of the children so we could measure the angles of their joints as they walked. Alongside these measures we recorded how quickly they walked and how long and wide their steps were in the different shoes. These studies allowed us see how much they flexed their toes, how high they lifted their foot during swing, the degree of their ankle angle during stance and many more outcomes. Systematically changing the flexibility, weight and heel height of the footwear gave us maximum (and minimum) tolerances for these characteristics which did not alter the walking of the children. Capturing the same measures during barefoot walking let us also see how much shoes influence walking in children.

From the children who participated in our study we found that increasing heel height changed the joint angles of the lower limb, but differences were not always meaningful. We also found some differences between boys and girls. The largest ankle flexion angle was seen in the highest heel for girls. However, boys' ankle angle remained consistent between conditions. The



Clarks shoe with XSensor insole and screen shot of XSensor pressure software.

CREDIT: UNIVERSITY OF SALFORD/CLARKS

changes in heel height did not influence walking speed, step length, step width or peak in-shoe plantar pressure for boys or girls. This was contrary to what we were expecting but gave us the understanding that the heel heights (and block heights) we had chosen were not extreme enough to influence the gross measures of gait of the children or their in-shoe pressures.

Existing knowledge on the influence of longitudinal flexibility largely comes from athletic footwear, such as running spikes, and is about optimising performance of footwear and athletes. Based on this existing research, we expected flexibility to change plantar pressure, walking speed, step length and lower limb joint angles during stance.

Preliminary results investigating shoe flexibility indicate no difference in toe flexion between the most flexible product and the market product, despite a 20 Asker C difference in the hardness of the sole material. However, a significant reduction in toe flexion was seen in the least flexible product which has a 30 Asker C difference in hardness. This showed us that the shoe which was stiffest due to the hardest sole altered how the children pushed-off from the floor when wearing the shoes.

Weight is an important factor to consider in footwear and especially in smaller wearers with smaller body weights. Preliminary results from the children investigating shoe weight suggest increasing shoe weight by up to 20% from the market product

does not impact ankle movement during stance or swing. Further work will look to compare other measures relating to the length of their steps and how quickly they walked.

These biomechanical studies have facilitated Clarks Kids in understanding which aspects of gait are altered by changing different footwear characteristics. Because we used the same footwear style with modifications it helps us attribute the change we see in children's gait to that specific modification.

Understanding how children's feet grow

Current advice relating to children having their feet measured suggests that feet should be measured every six weeks. However, we know that children's feet do not grow consistently with age so it is likely that this advice should change for different ages. The advice should also change for different shoe styles and, potentially, gender, but it has never been systematically explored. The existing value of every six weeks was based on in-house data collected by Clarks using hand measurement of a range of children. It was identified that updating this database and exploring differences between age groups was an important step forward in the quality and applicability of this data. The use of 3D scanning was also recognised as an important advance in technology to accurately assess these small changes in different dimensions over time. This removes the variability of the individual undertaking the measure and has a high precision. By improving knowledge of foot size and

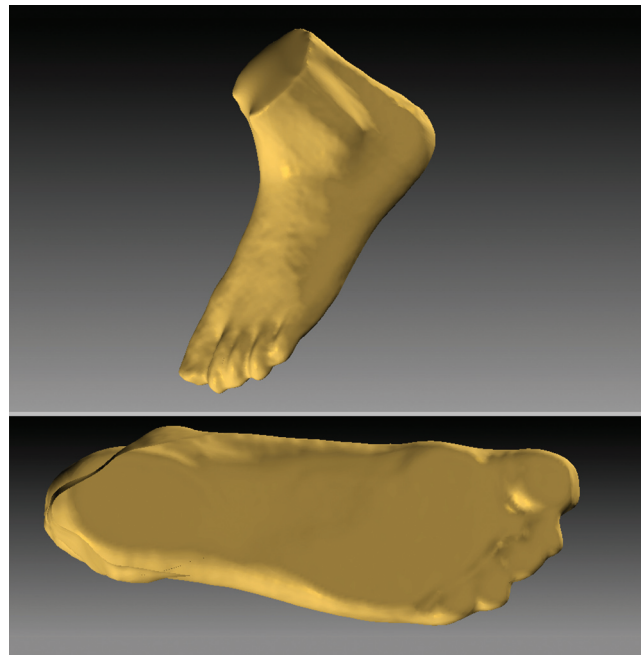
shape, both nationally and internationally, footwear brands can begin to tailor last shape and footwear size breaks. Utilising knowledge of wearers' feet allows for last modifications to better accommodate consumers' feet, and likely offers an improved fit. Managing size break based on foot size compared with age and stage ensures the correct product is stocked for all children. This is especially important when footwear products are designed for specific developmental stages, such as infants who have just started walking. Improving our understanding of fit has a multitude of benefits, from improving foot health, efficiency of stock distribution and reducing the expense and environmental impact of returns.

We engaged a local school and explored the changes of foot size and shape (length, width, circumferences) in 6-week windows for a 24-week period. This included measuring 300 children's feet in cycles, one class at a time. This research being conducted within a primary school meant that children were aged 4 to 11. Unfortunately, the data collection was disrupted by the school closures associated with the covid-19 pandemic, but nevertheless this work still provided a rich data set. The data has showed us how much children's feet grow in a 3D capacity. Furthermore, that the growth rates generally slow as children age, but that the rate of change of foot growth is not a consistent trajectory. This sort of growth, shape and proportion change cannot necessarily be captured by the typical 2D measures (length and width) that are often recorded in store. The 3D foot scans will help to inform shoe design by providing more robust and age-appropriate measures of growth in children. It has also led to improvements in advice provided to parents and store staff, specifically relating to how frequently children of different ages should be having their feet measured.

How the knowledge gained is being used

A key outcome of the partnership has been integrating the research outcomes with an internal stakeholder team into key aspects of the Clarks Kids business.

- **Product design** – The knowledge gained from the research has defined a set of brand principles which define criteria around which new children's products are designed and benchmarked. These, for example, define the longitudinal flexibility and weight of the footwear within boundaries which our testing showed do not negatively influence children's walking.
- **Product development** – The product development process now starts with a design being benchmarked against these brand principles for age-appropriate footwear. Throughout the process the guidelines are checked to ensure the footwear continues to match the criteria until it goes to market.
- **Training for in-store staff** – The knowledge gained has enabled the internal training offer to be increased with evidence-based material translated from research outcomes. This supports the thousands of store staff who work within Clarks stores and maintains their levels of continuing professional development. It also means these staff are better equipped to inform wearers and consumers to support parents purchasing footwear.



Children's 3D foot scan shown in iCadPie software by Red21.

CREDIT: UNIVERSITY OF SALFORD/CLARKS

- **Direct to consumer information** – The research outcomes have also facilitated the upgrade of website resources with a confident, accurate biomechanics-backed narrative and glossary. This has enabled the translation of the research outcomes direct to the consumer to enable informed purchasing decisions relating to their children's footwear. It has also enabled evidenced-based recommendations for foot measurement in children to be produced.

These aspects will be maintained as the research outcomes continue to be produced and translated and the impact within the business grows.

Children's footwear moving forward

This project embodies one of the largest data sets of children's foot shape and children's walking biomechanics ever collected. As well as contributing to Clarks Kid's understanding of children's feet and being directly integrated into products, the research will ultimately be peer reviewed and in the public domain. This will enhance the empirical data base to increase understanding of children's walking and the influence of footwear on their walking. This will help inform age-appropriate footwear design for children as well as recommendations for footwear fit assessment.

The research that Clarks has completed is not only novel, in a population where little is known, but it will also mark a significant change for the brand and the children's footwear sector. The research has brought Clarks to the forefront of innovation enabling them to create the best possible products for children of all ages. The business now has a foundation to continue research, test product and advise consumers. It could be anticipated, however, that variations might have to be considered for different markets and cultures. ■



Join our circle

With a 30 year head-start in environmentally responsible footwear component manufacture, our patented reprocessing of difficult to re-use materials turns waste, including ocean recovered plastic pollution, into resource. We transform that resource into low CO₂, closed loop, footwear materials to help us all leave a lighter footprint.

Join our circle

T: +44 (0)1451 820381

E: info@milspeed.com

www.milspeed.com

Materially Different
Milspeed
 FOOTWEAR COMPONENTS



Enhancing your footwear. Reducing your footprint.



Back to nature

According to the US Department of the Interior, every year in America some 300 million pairs of shoes are thrown away. At the same time, the Run Repeat sports shoe review website says that a typical pair of running shoes generates 13.5kg in carbon dioxide emissions during its manufacture. Everyday more than 1 million of cubic metres of polyurethane (PU) materials are made with only around 10% of it being recycled; the rest goes to landfill. *Recycling Magazine* reported in 2020 that the US alone produced around 1.3 million tons of PU foam waste. With statistics such as these, it is clear that we have a major environmental problem.

Modern sports shoes often contain large amounts of PU in their soles, midsoles and insoles, so one might think that they would be a prime candidate for recycling. It is, however, not quite as simple as it might appear. At its most basic construction, such as flip-flops, a shoe may consist of only two components, a sole and a strap. At the other extreme, it can be highly complex. Sports shoes generally have a subset of parts in common. These include upper materials, soling components (insoles, mid-soles and soles) and reinforcements (counters, toe puffs and torsion plates).

To recycle a product such as this calls for a process based on either shredding or granulation. This, however, still leaves the problem of separating the various materials. Separation machines that exploit differences in material properties, such as magnetic or electromagnetic properties, size and density, are generally able to do this. However, they have more difficulty coping with materials with similar properties such as the different types of polymers and rubbers found in footwear. Another solution is, of course, to try not to use these sorts of materials in the first place.

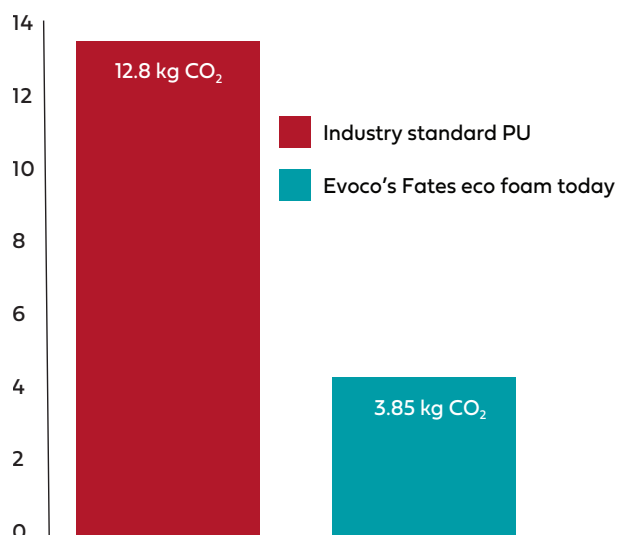
The fashion industry is a major polluter. It is estimated to be responsible for 20 percent of global wastewater and 10 percent of global carbon emissions, more than emissions from international flights and maritime shipping combined. Moreover, it consumes one-tenth of all of the water utilised industrially to run factories and clean products. In other words, fast fashion, both shoes and apparel, comes at an enormous environmental cost.

A Canadian material innovation company, founded in 2018, believes it has the answer to part of the problem. Evoco, based in Toronto, specialises in next generation materials and components for the footwear industry, and has developed and patented a bio-foam that can be used to produce midsoles and insoles for sports shoes. Trademarked and called Fates, it offers an alternative to traditional polyurethane (PU) that it



says delivers both environmental and performance benefits. "We are here to make sustainable change happen. It's the reason we're so passionate about what we do," is how Jason Robinson, founder and CEO of Evoco, explains it. What the company has done is to create a new, sustainably sourced material, which, by replacing the PU foams used to produce insoles, could reduce the amount of footwear waste generated. The bio-foam produces up to 70% less CO₂ emissions than standard PU foam. (Its manufacturing process does not add to the problem CO₂ emissions, either.)

Figure 1 – Comparative CO₂ Emissions



2021 screening LCA of Polyol and foam products: in accordance with ISO 14044:2006.

CREDIT: SHUTTERSTOCK.COM

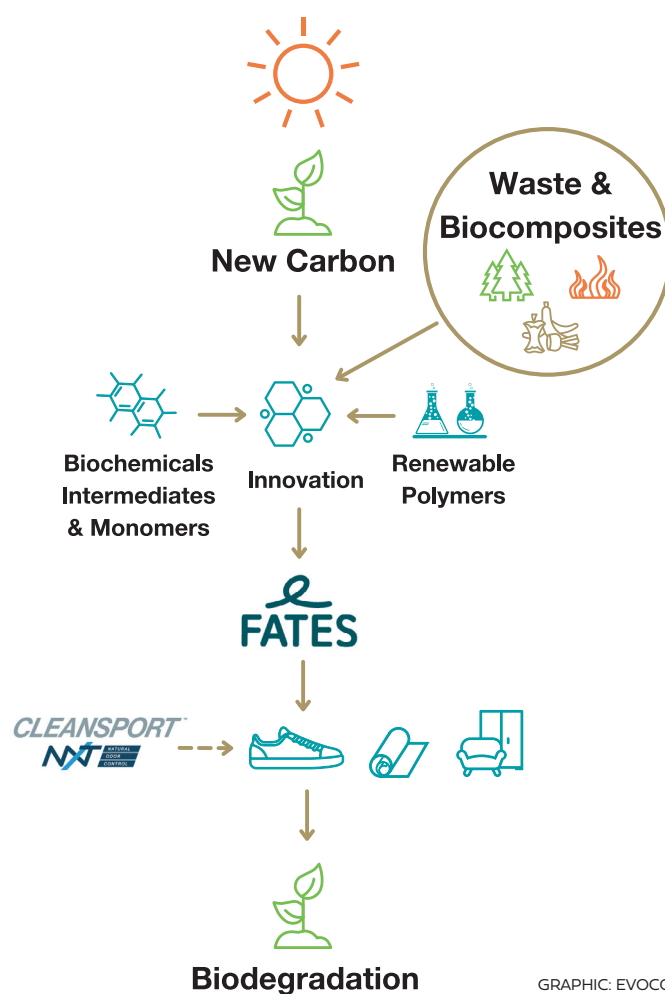
According to the company, its bio-foam does not only replace standard PU foam but also shows a significant improvement in strength and elongation, and, with less than 5% compression set, maintains comfort for wearer.

As yet, there is no perfect sustainability solution but the Fates product contains up to 80% renewal material, much higher than other competitors in the field and it has already been third-party certified at 72%, a figure the company hopes to get up to 95% by 2025. It has also been USDA certified under its Biopreferred Program and certified vegan by Eurofins. The key to this development is that it is made from 70–80% sustainably sourced plants and plant waste. Accepted industry figures indicate that a reduction from 12.8kg of emissions for standard PU to 3.85kg for Evoco's Fates has already been achieved.

Evoco has developed another product alongside Fates that it has branded Cleansport NXT, designed to work in the production of sports shoes. In this instance, it uses microorganisms, generally known as probiotics that have the ability to outcompete the bacteria that produce foot odour. It is an all-natural technology that is bonded to the surface of the fabric, and the microbes remain dormant until activated by sweat. Having eliminated the organic source, the sweat, the microbes go dormant. What differentiates Evoco's patented technology from the usual antimicrobials, which also target foot odour, is that it breaks down the organic material, rather than destroying both the good and bad microbes.

It would appear that its new developments are making an increasing impact on major footwear brands, and hopefully will help the industry become cleaner, more sustainable and environmentally friendly. ■

Figure 2 – Evoco innovation cycle.



GRAPHIC: EVOCO



“ *Quality products should only be discarded when they are no longer functional.* **”**

ASICS

Healthy planet

Athletic footwear brand ASICS has published a new sustainability report, covering its activities in 2021. The company's name comes from the Latin phrase 'anima sana in corpore sano', which means, 'a healthy soul through a healthy body', but usually translates into English as 'healthy mind, healthy body'. "To achieve a sound mind in a sound body," the company says in its sustainability report, "we need a sound earth. Climate change is a critical issue for wellbeing, because it threatens the ability of future generations to live healthily, both mentally and physically."

It points out that climate change is already affecting people's ability to take part in sports. Schools in Japan are now having to restrict the amount of time children spend outside playing in summer. At the Tokyo 2020 Olympics, which took place in 2021, the organisers had to make late changes to the programme to accommodate severe heat, including moving the marathon from Tokyo to Sapporo in northern Japan.

In response, the brand says it is aiming to move its business towards a circular model. The more traditional, linear manufacturing processes exacerbate resource scarcity and account for 45% of global greenhouse gas emissions, the company claims in the report. "We believe creating a circular business model is key to achieving net-zero emissions and supporting the global target of limiting temperature rises to 1.5°C above pre-industrial levels," it says. In a circular model, waste becomes a raw material. Therefore, the move

In its latest sustainability report, shoe brand ASICS has said that one of the reasons for urgency in addressing climate change is that higher temperatures are making it harder for people in some parts of the world to take part in sports.

towards circularity will drive it to use more recycled materials in its products.

Polyester progress

Highlights in the report include a 28% reduction in CO₂ emissions from the company's direct operations and a 19.7% reduction across its supply chain, compared with 2015 baseline levels. These improvements are being driven by an increase of up to 30% in its use of recycled polyester. "We are making progress towards switching 100% of the polyester we use from conventional to recycled," the company states, adding that it increased its use of recycled polyester in all product categories in 2021. Overall, 90% of new running shoes included some recycled material. Still, however, of all the polyester the company consumed in 2021, 70% of it was virgin fibre.



ASICS has said one of its concerns about climate change is that higher temperatures are making it harder for many people to take part in sports activity.

ALL CREDITS: ASICS





The Gel Nimbus 24 running shoe. ASICS says 90% of its new running shoes now include recycled material.

It aims to complete the switch to 100% recycled polyester by 2030. It has incorporated textile waste into some products too, including football boots and the Gel-Nimbus LITE 3 running shoes.

ASICS also included details in the report of a new green procurement policy, in which it will "prioritise procuring footwear products from sustainable suppliers". This will mean manufacturing partners will need to have in place "ambitious climate targets", with, for example, plans to source renewable energy. All of the company's own offices in Japan and its research centre are now powered by 100% renewable electricity and the company says it is making progress in its efforts to source renewable energy in Europe as well.

Procurement policy

In total, there are more than 150 tier-one suppliers making products in 20 different countries for the company, making it a complex task to bring all of these companies on board with the brand's plans and pledges, especially as normal supplier audits were almost impossible to carry out in 2021 owing to the covid-19 pandemic. Information from commissioned audits by third parties and by partner companies also feeds into its supplier rating system. Since 2020, this system has included a sustainability rating for all footwear factories in the supply chain and it has said it will enter into direct communication with factories twice per year to discuss the sustainability status of each.

In addition to tier-one suppliers, tier-two companies are also included in the audits in the footwear category. Typically, these are suppliers of materials such as rubber or plastics to the tier-ones.

Far from finished

As part of its push towards circularity, ASICS is also focusing on keeping to as low a level as possible the volume of its products that go to waste. "Quality products should only be discarded when they are no

longer functional," the report insists. It explains that its teams in Europe are taking a particular interest in products that customers return to the brand after purchase. They have found that most returns can go directly back onto the shelves, perhaps after a few small adjustments such as a new hangtag on the shoes, or a new shoebox, for example.

The company calculates that fewer than 10% of the items customers return are so defective that it cannot resell them. Even when this occurs, though, it passes the products to partners who are able to find uses for them. In the case of footwear products, defective shoes that customers in Europe return make their way to a partner in the Netherlands called FastFeetGrinded (FFG). FFG grinds the defective shoes up into their constituent materials so they can be made into new shoes. In 2021, FFG recycled almost 6,000 kilos of materials from these shoes, saving 24,551 kilos of CO₂-equivalent in emissions and proving that landfill or incineration are no solution at all. ■



All of the company's own offices in Japan are now powered by 100% renewable electricity.

Create + Sustain

At Texon we know that what we create with you today, must help sustain tomorrow. For 75 years we've been collaborating with our customers, developing innovative, high-performance materials for footwear, accessories and functional apparel that are better for people and the planet.

Join us on our journey

www.texon.com



75
Years
of Sustainable
Innovation

MATERIALS SHOW

Welcome Back



NW

August 10 & 11 - Portland, OR

NE

August 17 & 18 - Boston, MA

americanevents.com



Double discs

Boa-sponsored athlete Florian Grasel puts the new shoe through its paces while training at Monte Grappa in northern Italy.

CREDITS: BOA

Performance footwear brand Altra has launched a new trail running shoe, the Altra Mont Blanc Boa, that it claims will revolutionise long-distance running.

Altra worked on the shoe in close partnership with lacing system technology developer Boa and, as a result, each Mont Blanc shoe features not one but two Boa Fit System discs.

In 2001, Boa launched its system of allowing sports and outdoor enthusiasts to adjust the fit of their footwear by 'dialling into it'. It emerged in Colorado, where founder, Gary Hammerslag was living out his passion for snowboarding. He loved spending his spare time in the Rocky Mountains, but at the same time kept trying to think of ways to keep his boots tight on his feet. He used his experience in developing medical devices to come up with Boa, a system that uses an adjustable dial, strong but lightweight laces and low-friction lace guides to give footwear "precision fit" and fast release functionality.

Colorado was also the birthplace of Altra, which launched in 2011 and quickly became well known among runners for its foot 'from heel to-box' and its zero-drop platform. It was acquired by VF Corporation in 2018. In spite of their Rockies connection, the companies have taken inspiration from the highest mountain in the Alps for the new shoe. Inspiration also came from specialist mountain-trail runners, athletes who cover huge numbers of kilometres of mountain track.

Footwear brand Altra has partnered with lacing system specialist Boa to create its latest long-range trail-running shoe, the Mont Blanc. It uses not one but two Boa discs on each shoe.

To meet their demands, Altra has applied a system it calls Perform FitWrap to the vamp, with easy-to-adjust, but reliable fasteners across the top to reinforce stability and control. These are controlled by the first of the two Boa discs, positioned at the side of the shoe, just where the ankle meets the instep of the foot. The disc appears high up on the shoe, but is really only halfway between the top of the upper and the outer sole, which is from Vibram's Litebase range. The sole is thick, to provide comfort, grip and what Altra describes as unparalleled spring on all types of terrain.

Users push the button down to engage the mechanism, turn it to tighten the laces to the level they prefer, and pull the button up again at the end of the road for fast release. A second disc sits further along the upper, towards the centre on the vamp, flatter against the top of the foot. It works in the same

way as its partner, but controls a separate set of laces that tighten the shoe in the area around the base of the toes.

The shoe's upper is in a combination of white and burgundy. One Boa disc sits in each half, colour-coded to match the material. The discs are from the company's L6 range, with the L standing for lightweight and low-profile, according to the technology provider. There is proprietary Altra Ego Max gel in the midsole. All of these factors combine to give each shoe a weight of 318 grammes.

Altra has said it has constructed the Mont Blanc to be adaptable enough to fit any foot morphology and to suit the needs of any long-distance runner. Only essential components and materials have made it into the finished product to keep the shoe as light and as breathable as possible, specifically with long-distance runs on mountain terrain in mind.

With an August 2022 launch date, the new shoe will be released in time for the 2022 Ultra-Trail du Mont-Blanc. This ultramarathon has been running since 2003 (with an interruption in 2020 because of covid-19). It follows the route of the Tour du Mont Blanc hiking trail, which is a circular route around the mountain, running for 171.5 kilometres, starting and finishing in Chamonix in France, but with stretches in Italy and Switzerland as well.

This race has attracted as many as 2,500 competitors, with the fastest completing the course in a little over 20 hours, and others taking more than a day-and-a-half to reach the finish. An evening start, and with the race continuing through the night, the early finishers return to Chamonix towards the end of the afternoon on day two. Slower runners often have to run through a second night before reaching the finish (there are rest areas and places to eat a hot meal and receive medical attention along the way). Courage, strength, resilience, tenacity and skill are prerequisites for being able to take part in the event. Shoe comfort and performance are high-up on the list what's needed too. ■



Perform FitWrap lacing system

The Altra Mont Blanc uses two Boa dials on each shoe. These discs allow wearers to adjust the shoes easily and quickly. In the Boa system, the dial winds in the laces to help runners adjust the fit of their shoes.



CREDITS: ALTRA / BOA



As consumers become more eco-conscious, turn to Faytex Corp. to help your brand provide products that are committed to a low environmental impact

- Recycled yarns made from post-consumer plastic water bottles
- Sustainable yarns made from fibers that are fermented from plant sugars to utilize 37% non-petroleum derived chemicals
- Yarns made from fibers that are biodegradable
- Waterless Dyed fabrics
- Anti-odor protection from naturally occurring microbes found in the environment
- And other processes that reduce waste and utilize eco-friendly products

Please contact info@faytex.com for further information

www.faytex.com

FAYTEX[®]
CORP

DRI-LEX[®]
TECHNOLOGY *eco*

REPREVE[®]



DUPONT[™]
SORONA[™]

CLEANSPORT NT[™]



Anti-puncture functionality is a new addition to Carbitex's AFX technology.

ALL CREDITS: CARBITEX



Underfoot protection

Carbon fibre composites developer Carbitex has announced an anti-puncture innovation that it believes will work well in safety footwear, and another for athletic footwear. Both of the new ideas are part of the company's AFX technology platform, which uses carbon fibre composites to provide stiffness in one direction and flexibility in the other.

AFX anti-puncture (AP) material is what the Washington-based company has described as "a patented, multi-layer composite plate with anti-puncture protection and asymmetric flexibility". It said this provides "uncompromised comfort", while preventing the foot from over-flexing.

It says the new technology will expand footwear brands' options for making lighter weight work shoes because heavy, protective soling materials will no longer be required. It adds that AFX-AP passes global industry test standards (ASTM F2412-11, EN

12568:2010, CZA Z195-14) and is ideal for workers at risk of underfoot injury, including those in the construction and utility sectors.

Responsive landing

For the athletic performance footwear market, Carbitex AFX Formed expands upon the company's existing carbon-plate material with a preformed angle "to generate a responsive landing" while also

allowing for a more natural toe-off.

Vice-president of business development and customer product development at Carbitex, Clark Morgan, says: "Expanding the properties of our patented technology continues to bring new benefits to the footwear market, allowing for a transformational shift in thought on how performance and utility footwear can be constructed."

Injury record

What is clear is that protection in footwear in the workplace remains of huge importance. In the US, the Bureau of Labor Statistics (BLS) registered a lower figure for non-fatal workplace injuries in 2020 than in the previous year, but pointed out that for long periods of 2020, there were fewer people operating in the workplace owing to covid-19 restrictions.

The figure for the year was down by 5.6% year on year, but across the US there were still more than 2.6 million injuries of this kind in 2020. Clearly, not all of these involved foot injuries, but a whole series of occupations in which workers are at risk of stepping onto sharp objects (metal, glass, needles, tools, wood) feature prominently in the BLS statistics.

And if the covid-19 restrictions helped lower the statistics overall, they may also help explain why there was a huge increase in 2020 of non-fatal occupational injuries among healthcare and social assistance professionals compared to 2019. Cases among busy health workers increased by 40% and went above 800,000. Manufacturing, transportation and warehousing and construction all recorded six-figure numbers of cases, too. Again, these refer to all injuries, not just those affecting people's feet.

Weight advantage

As well as protection against puncture injuries, Carbitex has presented the possibility of reducing the weight of protective footwear as another of the benefits of its AFX anti-puncture material. The company's point is that safety footwear manufacturers can use the new material to provide the

“Expanding the properties of our technology continues to bring new benefits to the footwear market.”

CLARK MORGAN, CARBITEX



The material is stiff in one direction to provide underfoot protection, but high flexibility in the opposite direction.

protection workers need against sharp objects without requiring heavy soles. A reduction in the weight of a safety shoe will help workers combat fatigue, which in turn will help them increase effectiveness and alertness in the workplace. The material promises a reduction in weight without any compromise on protection.

It was to "eliminate compromise" that Carbitex launched its AFX technology in the first place. The term 'asymmetrically flexible' gives AFX its name. The material is stiff in one direction to provide underfoot protection and enhance stability, but high flexibility in the opposite direction means a layer of AFX-AP between the midsole and the outer sole will still flex with the wearer's natural gait. The technology provider argues that this, too, is a way of allowing workers to "maximise the efficiency of their movements" while at the same time minimising over-bending to reduce fatigue.

One of the difficulties the company has flagged up with

traditional carbon fibre material is that it tends to be more rigid. It is stiff in both directions, Carbitex argues, and can therefore cause instability in the wearer's gait.

Benefits unlocked

AFX is one of three patented technologies that Carbitex has developed; the others are called CX6 and DFX. They all use flexible carbon fibre composites, with each technology unlocking "unique characteristics" of the material. The company's founder, Junus Khan, began to use carbon fibre while working in the high-end automotive industry. He liked the material and decided to see if he could "harness its properties in a different way". The footwear industry was of interest to him from the outset.

Most applications of the technologies so far have been in running and hiking shoes, ski boots, football boots and cycling shoes. But the development of the new anti-puncture technology can now take Carbitex into the safety and work footwear market as well. ■



The Cordwainers Footwear Awards returned this year with a big crowd and joyful atmosphere at special ceremony in London in June. The event also marked a significant anniversary for the Worshipful Company of Cordwainers.

Happy anniversary

A footwear design student at De Montfort University in Leicester, Sam Lilley, has won first prize at the 2022 Cordwainers Footwear Awards. These awards, which are worth a collective total of £12,000 to students, are run by the Worshipful Company of Cordwainers, one of the City of London's ancient trade guilds and one of a number with ties to leather and footwear. Cordwainers are workers in fine leather and the company takes its name from 'cordwain', a traditional name for cordovan leather, originally produced in Córdoba in southern Spain.

The company works hard to preserve its links to footwear and leather education in UK universities, and to the footwear industry; the awards are an important component of that work. Covid-19 did not stop the awards competition, but it brought to a halt the public gatherings to celebrate the students' success. Until this year. It meant a great deal to the Worshipful Company of Cordwainers to be able to hold the awards again as a live event because the company is celebrating its 750th anniversary in 2022.

In person

Master of the Worshipful Company of Cordwainers, Peter Lamble, opened the 2022 award ceremony and expressed his delight at being able to welcome the finalists, representatives of the universities and a crowd of friends of the footwear industry back for the first physical event since 2019. He then handed over to the chair of the judging panel for 2022, the creative director of Pentland Brands, Katie Greenyer, to announce this year's winners. She said: "Being involved in the Cordwainers Footwear Awards is a rewarding, creative light and gives me hope that the future is in the hands of extraordinary talent." Footwear designers Charlotte Olympia Dellal and Scott Emerson, who gave a keynote speech at the event, then joined her on stage for the presentation.



Gynandro, designed by Sam Lilley.

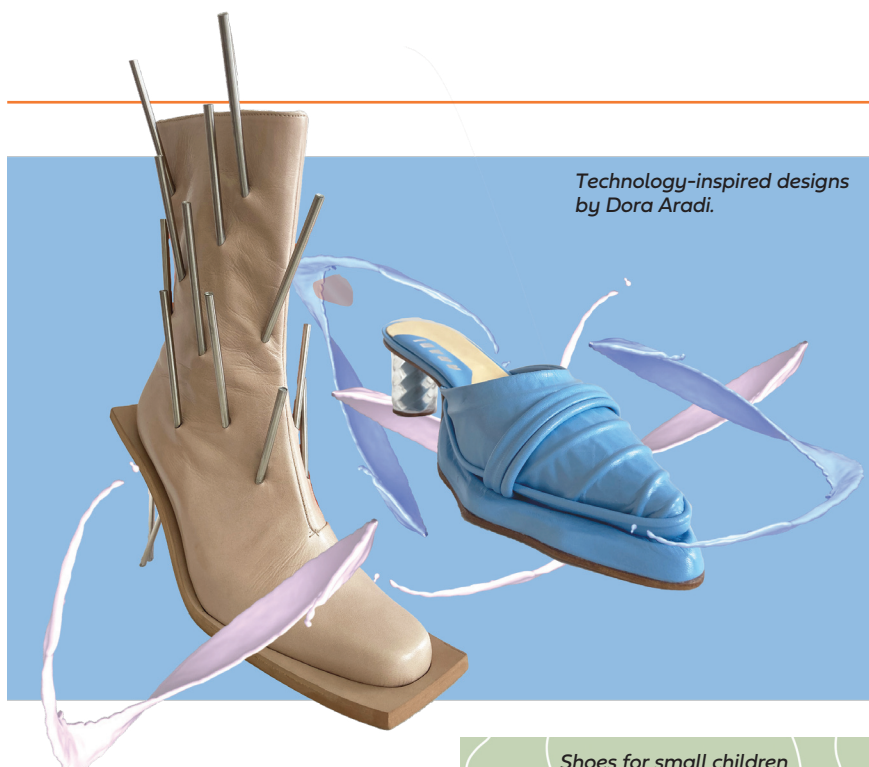
ALL CREDITS: CORDWAINERS FOOTWEAR AWARDS

On receiving his award, Sam Lilley said: "Winning the Cordwainers Footwear Awards is incredible. The prize money is phenomenal, and the exposure and association with Cordwainers is fantastic." Sam Lilley says he aims to bring a love of illustration and a fascination with graffiti into footwear designs such as one he presented for the competition, Gynandro. His love of design dates back to early childhood, when he developed what he calls a fascination with the appearance of the toys he played with and how they were constructed. He explains that he was later drawn to graffiti as an art form because "you can express your personality through lettering and style".

There were three finalists in total from De Montfort, two from the University of Northampton and ten from the London College of Fashion.

Fine tradition

In his keynote speech, Scott Emerson, head of footwear design at Alfred Dunhill Limited, shared details of his footwear career and encouraged all the students present to find their own path in the industry.



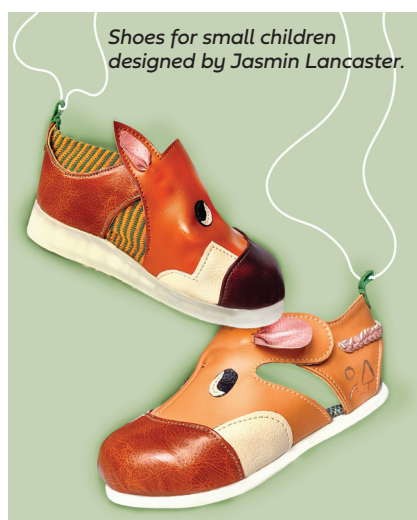
Technology-inspired designs by Dora Aradi.

He said: "We have such a fine tradition of producing world-class footwear here in the UK and it's up to you, to take this forward with the same skills, into the future." Another designer, Jimmy Choo, also addressed the students in a special video message.

Second prize on the night went to Dora Aradi, a student at the London College of Fashion, part of the University of the Arts in London. She worked with a range of leathers, including kid leather tanned using Olivenleder's system, which uses residues from the olive oil industry. She has already launched her own brand, Aradi, and has built into it from the outset the use of blockchain technology, "to enhance transparency", and an app "to visualise the supply chain".

The prize for sustainability went to fellow London College of Fashion student Jasmin Lancaster, who made her final collection, a range of shoes for small children, with materials including vegetable-tanned suede and merino wool. "It is especially important to me to promote sustainability in all aspects of my work," Ms Lancaster says, "and to use naturally derived materials to reduce our carbon footprint."

A third London College of Fashion student, Swann Phelippeau, won a commendation award for a collection of shoes and boots that she has called Imperfectly Perfect. Ms Phelippeau, who is originally from France, is an accomplished athlete



Shoes for small children designed by Jasmin Lancaster.

and won a full sports scholarship to study in the US. She moved to San Francisco and, away from the athletics track, devoted herself to studying fashion design at the Academy of Art there. "I found my passion in footwear design," she says, and moved to London next to pursue this passion.

Touch of glamour

In spite of her background in athletics, Swann Phelippeau says her design is more influenced by the culture, heritage and haute couture of her native France. This is evident in Imperfectly Perfect, and touches of glamour and elegance were more noticeable among the wider entries to the competition this year than in recent times. On this subject, Northampton-based men's footwear designer Guy West, who has been a judge at the awards in the past, but attended as an interested industry

A touch of haute couture from Swann Phelippeau's Imperfectly Perfect collection.



observer this time, agreed. He told *World Footwear* that he noticed a higher level of glamour in the displays that the 15 finalists had set up to showcase their work at the event, particularly in the collections that focused on women's shoes. "I think after two years of covid, we all want to have a bit of glamour in our lives," he said. ■



Sam Lilley from De Montfort University takes first prize at the 2022 Cordwainers Footwear Awards.



Items from the footwear museum in Vigevano, one of the host cities for the XXI International Footwear Technology Congress in 2023.

CREDIT: ANA DEL CASTILLO/SHUTTERSTOCK

UITIC turns to Assomac and Italy

The next UITIC International Footwear Technology Congress will take place in Italy in September 2023. Italy's footwear and tanning industry machinery manufacturers' association, Assomac, and UITIC, the International Union of Shoe Industry Technicians, announced the decision at a joint press conference at the end of June.

This, the twenty-first congress, had been due to take place in China in 2021. UITIC and host organisation the China Leather Industry Association (CLIA) said in February 2021, that, because of the covid pandemic, they had decided to postpone the event until this year.

Covid-19 restrictions have continued into 2022 making visits to China difficult and hosting international events there all-but impossible. "In our discussions with CLIA, we decided that we could not even be certain about holding the congress in China in 2023," UITIC president, Yves Morin, said at the press conference, in response to a question from *World Footwear*.

Instead, UITIC is now working in close partnership with Assomac to have the XXI International Footwear Technology Congress in Italy. The congress will run in parallel with next year's Simac-Tanning Tech exhibition in Milan and will take place in two host cities: Milan and Vigevano, a city with a long tradition of producing footwear, footwear components and footwear technology.

Yves Morin concluded by saying that UITIC had been unable to wait any longer for the situation in China to become clearer. The last congress took place in Oporto

Speculation that Assomac and UITIC were preparing to make a major announcement about the next International Footwear Technology Congress has proved to be correct.

in 2018, meaning five years will have passed before the next one. In addition, he pointed out that UITIC was founded in 1972 and, therefore, is celebrating its fiftieth anniversary. "We will celebrate it in Milan and Vigevano in 2023," he said. "Everyone is disappointed not to have been able to hold the congress in China as planned, but our colleagues in China only have to wait a little bit longer because it is our intention to hold our twenty-second congress in China in 2025 or 2026."

More important than ever

The programme for 2023 will include factory visits and a day at Simac-Tanning Tech, in addition to talks, presentations and keynote speeches. Assomac president, Maria Vittoria Brustia, says much more detailed information will be available about the congress at the 2022 edition of Simac-Tanning Tech, which taking place in Milan from September 20-22 this year. "I believe strongly in our relationship and

collaboration with UITIC," she adds. "Collaboration means cooperating with one another at all levels, nationally and internationally, vertically and horizontally."

As for relationships, she goes on to say that they are now more important than ever, following the covid-19 pandemic, international tensions and serious economic and social crises (she uses the plural). "We all feel the need to open up again," she insists, "and the need to meet up, bring ourselves up to date with what is going on and to work together again. Simac-Tanning Tech is the ideal place for this to happen."

But to make the event a place at which meaningful dialogue and high-level networking can flourish, Ms Brustia says Simac-Tanning Tech can no longer "just be a traditional trade fair" at which people offer products or view them. "It has to become a point of reference for the whole sector," she continues, "with active offshoots beyond the exhibition." She thinks that the XXI International Footwear Technology Congress will provide an especially good example of this next year.

Think-tank

For UITIC president, Yves Morin, next year cannot come soon enough. He says the organisation, which represents footwear technologists and scientists in 27 countries, deserves to celebrate reaching its fiftieth anniversary and the congress in Milan and Vigevano will provide a good platform for doing so. "The congress is the main tool we have," Mr Morin says. "It serves as a think-tank for the whole footwear industry."

He has no reservations about running the 2023 congress in parallel with a major international industry exhibition, pointing out that this worked successfully when the XIX congress took place in Chennai in 2016, running in parallel with the India International Leather Fair. He describes Italy as an excellent host country because it is a global leader in footwear technology and innovation. He, too, is looking forward to the chance to talk more about the Milan-Vigevano congress at this year's Simac-Tanning Tech.

Future vision

When the congress does come around, delegates can expect an exciting and action-packed few days, according to Sergio Dulio, a member of the UITIC executive committee and a regular contributor to *World Footwear*. He is "a proud citizen of Vigevano" and says he wants as many of his international colleagues as possible to visit a place that is "part of the history of the footwear industry around the world".

Much work lies ahead to make the final programme for the conference ready, of course, but there are details that Mr Dulio can share in advance.

He is convinced that spending one day at Simac-Tanning Tech 2023 will be of benefit to delegates and says this will provide them with exposure to the best new technologies available to shoe producers. Something else that is certain is that the programme will include factory visits and these, he insists, will provide good insight into "the best of the footwear pipeline in the northern part of Italy". He adds that being in this part of Italy will also provide an opportunity for UITIC congress delegates to visit centres of manufacturing or scientific research for industries other than footwear. "There are advanced technologies that have been adopted for use in sectors other than ours," Mr Dulio says, "and perhaps in the near future they can be used in shoe design and manufacturing processes too."

During the congress sessions, he says topics that are certain to come up include sustainability, digital transformation, standardisation and certification, as well as logistics and supply chain management. "We will also speak about the products and consumers of tomorrow," he adds, "and we will speak about our human capital because we think that human capital will be paramount in the future of our shoe manufacturing world."

In Oporto in 2018, there were 541 delegates at the congress. Mr Dulio says UITIC and Assomac are determined to exceed that number in 2023. ■



Assomac president, Maria Vittoria Brustia, at the press conference in June.

CREDIT: ASSOMAC



UITIC president, Yves Morin. "The congress is the main tool we have; it serves as a think-tank for the whole footwear industry."

CREDIT: CONSEIL NATIONAL DU CUIR

MAGAZINES



World Footwear
All you need to know to assist you in the global footwear market.
(4 issues per year)
UK: £80.00
Airmail: £135

FROM
£8
PER MONTH



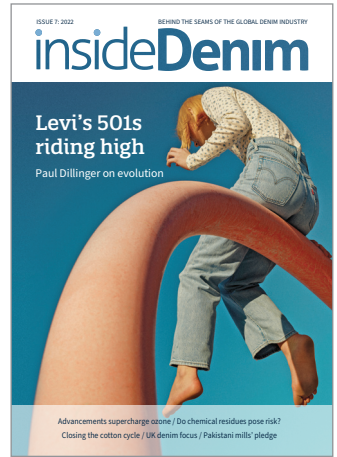
World Leather
The world's leading magazine for the leather industry.
(6 issues per year)
UK: £80.00
Airmail: £135

FROM
£8
PER MONTH



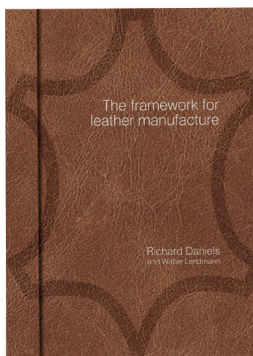
WSA
The international technical trade magazine for performance and sports materials.
(4 issues per year)
UK: £80.00
Airmail: £135

FROM
£8
PER MONTH



Inside Denim
Keep up to date with denim developments from raw material to finished product with in-depth coverage of advances at fibre and fabric level.
(3 issues per year)

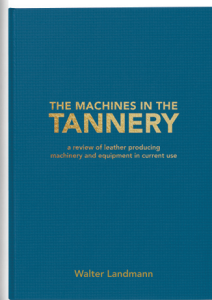
BOOKS



The Framework for Leather Manufacture:
£49.00



Tannery of the Year; The Awards Book 2018:
£30.00



The Machines in the Tannery:
£49.00



FROM
£15
PER MONTH

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.

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

leatherbiz.com
SPORTSTEXTILES.COM
footwearbiz.com
insideDenim.com

All books printed are in English. Prices are subject to 20% VAT where applicable.

ORDER FORM

Please complete and scan/photocopy/email back to john@worldtrades.co.uk

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.:		SECURITY CODE:	
SIGNATURE:		3 numbers on back of card — 4 on front of AMEX	

Credit cards will be charged in GB Pounds. Your credit card company may charge you for this service.

World Footwear Issue Three 2022



WORK RELAX PLAY

WORLD  FOOTWEAR

Advertise in *World Footwear* & *footwearbiz.com* to promote your products and innovations for all types of shoes to a readership of over 4,500 worldwide.

For more information: jo@worldtrades.co.uk

footwearbizTM.com

DESMA
automation

DESMA

THE FINEST IN SHOE PRODUCTION ENGINEERING



ROBOT APPLICATIONS

to optimise the use of materials and resources

PRECISION, REPRODUCIBILITY AND
SUSTAINABILITY

**TECHNOLOGY
MATTERS**



TECHNOLOGY MATTERS

DESMA HOUSE FAIR

26-27 Sept 2022 | Achim, Germany



Over 75 years of engineering and production experience with more than 1,500 robots sold to the footwear industry worldwide make us the first choice for your production optimization. Direct Soling with our most effective *amir*® system (automated material supply with integrated robots) ensures lower production costs, better quality and higher productivity.

DESMA automation: SMART – DIGITAL – SUSTAINABLE