

WORLD FOOTWEAR®

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FOR THE GLOBAL SHOE INDUSTRY

Developments in PU

Hidden factors with hides

LCA advance for shoe brand

Recycling revolution





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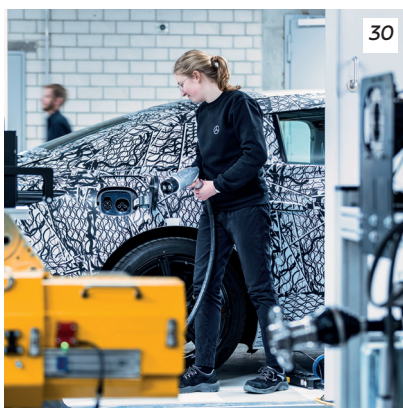
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Global news

France In advance of the 2023 Rugby World Cup, which kicks off in France on September 8, adidas has launched a new lightweight rugby boot, the adizero RS15. Its category director for field sports, Matt Fielding, said the company had worked on a lightweight boot because feedback it had received from players showed that speed across all positions was what today's rugby players wanted.

UK Pentland Brands, the parent group of Speedo, Berghaus, Mitre, Kickers and Canterbury is aiming to form a new youth advisory board, on which people under the age of 30 will help the business "tackle key business challenges". Pentland said it had been motivated by recent research that found that, while more than 50% of the global population is under 30, the average age of company directors is nearly 60. "We are looking for young people who are passionate about sharing their views and shaping the future of business," the group said.

Spain Footwear brand Veja has opened a new shop in Madrid, making the Spanish capital the fifth city to host an own-brand store. There are other Veja stores in Berlin, New York and Bordeaux, as well as two in Paris where the brand has its headquarters. Co-founder Sébastien Kopp told Spanish media that Veja had been urged to open a store in London or in a major Chinese city next, but he said the company had chosen Madrid instead because he and co-founder François-Ghislain Morillion like Madrid better. Mr Kopp said the strategy was to open stores in cities that the Veja team likes to travel to.

Switzerland Swiss brand On has reported its sixth consecutive record quarter, with net sales of CHF 444.3 million (£400 million) in the second quarter of the year, a growth rate of 53%. Profits were also up 60%, partly reflecting the discontinuation of air freight usage, which had weighed on profitability during the first half of 2022. On is raising its outlook for net sales to reach at least CHF 1.76 billion in fiscal year 2023, an increase of 44%.



Italy Shoe and leathersgoods brand Salvatore Ferragamo said it is confident its "creative transition" to attract a younger customer will pay off, despite first half revenues of €600 million, 5% lower than the first half last year. CEO Marco Gobetti said: "We kept the focus on the operating improvements and brand initiatives to support a new offering that is relevant for our customer aspirations, while continuing the optimisation of our retail and wholesale networks."

South Africa Footwear manufacturers in South Africa exported shoes with a combined value of around \$115 million in the first seven months of 2023. This represents an increase of 13% compared to the same months in 2022. Between January and July this year, South Africa imported footwear with a total value of \$545 million, an increase of 6.4% year on year.

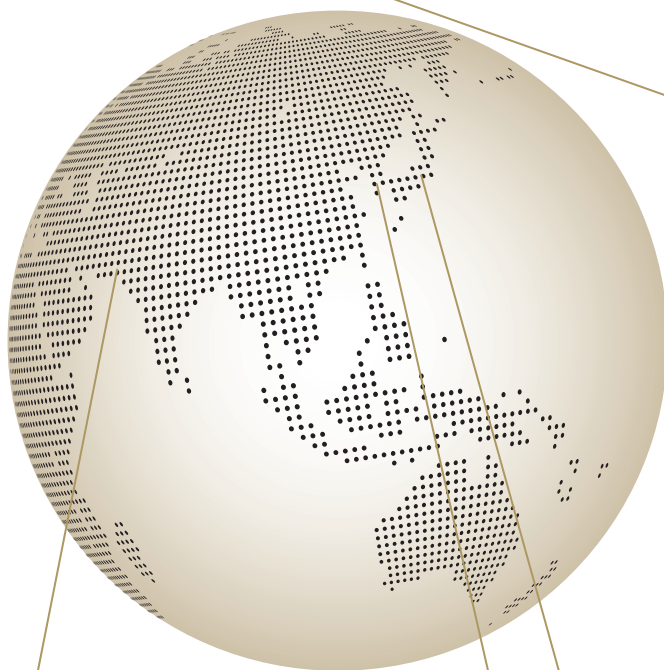


Ethiopia Sports group Puma has announced a new footwear and athletic clothing collection with Lemlem, a brand launched by Ethiopian model and designer Liya Kebede. Ms Kebede's brand specialises in products made in Africa. Of the new joint venture with Puma, she said she hoped "to inspire women across the globe". The Puma-Lemlem collection comprises a running shoe, the PWR XX Nitro, a sports bra, running tights and an anorak.

Mexico The government has announced that tariff reductions on imported shoes will end next year and that, from October 1, 2024, companies importing footwear from countries with which Mexico has no free-trade agreement will face tariffs of 20% on each pair. This news has come following complaints of falling revenues and job losses among footwear manufacturers in Mexico. The main footwear industry body in the state of Guanajuato, CICEG, has said its member companies had to shed 2,100 jobs between November 2022 and May this year.

Canada Toronto-based outdoor brand Canada Goose has debuted its very first, seasonless athletic shoe, the Glacier Trail trainer. Key features include breathable waterproofing technology from HDry, durable rubber soles and protective wrapping made from rubberised leather. The premium-priced trail shoes "deliver peak performance, engineered with innovative, waterproof and breathable materials", Canada Goose said. The company registered year-on-year revenue growth of 31% for 2022.

US Financial authorities in the US have approved the sale of footwear brand Rockport to Authentic Brands Group. Rockport filed for bankruptcy protection from the courts in mid-June. On July 26, Authentic Brands Group announced that it had bid successfully to acquire Rockport, which it described as "a trusted brand, committed to comfort and technical product innovation".



Pakistan Footwear group Bata Pakistan has reported revenues of around \$32.75 million for the first six months of 2023, an increase of 19.4% year on year. Its profits increased, too, but by the lower figure of 6.7%. Bata said profits had been affected by a higher cost of doing business in 2023 compared to 2022. Specifically, it incurred higher distribution costs and an increase in administrative expenses compared to last year.

Brazil The country's tanning industry body, CICB, has said the country's Leather Law, in place since 1965, is still helping it protect consumers from "companies that try to piggyback on the attributes of leather while using synthetic materials in the composition of their products". CICB monitors social media to make sure terms that refer to leather are being used correctly. It has said that in recent years it has had to notify the authorities of more than 80,000 infractions.

South Korea A recent study in the country has suggested that manufacturing industries in the Asian country, including footwear, face a threat from having a rapidly ageing workforce. The report was part of the work of a wider programme called the Sustainable Growth Initiative (SGI), which the Korea Chamber of Commerce and Industry is running. Its authors found that the average age of workers in the country in 2022 was 46.8 years, but they found that a number of prominent manufacturing sectors already have high numbers of workers who are over the age of 50. These included footwear, an industry that has 59% of employees over 50 at the moment.

Japan Japanese brand Mizuno has said a new version of its Wave Neo footwear collection will be carbon-neutral. The new collection will feature black versions of the Wave Neo Wind and Wave Neo Ultra running shoes. Mizuno said it had chosen recycled polyester and plant-derived materials for the construction of the shoes to keep carbon emissions low during production. In addition, Mizuno has partnered with the US National Forest Foundation to plant approximately 50,000 trees in Boise National Forest in Idaho. The brand anticipates making 20,000 pairs of the shoes in an initial production run and has calculated the carbon emissions that this will generate.



Footprints

Acquisition turns Tapestry into a \$12 billion group

Tapestry, the parent group of Coach, Stuart Weitzman and Kate Spade, is to acquire Capri Holdings, whose brands are Versace, Michael Kors and Jimmy Choo, for \$8.5 billion. The two New York-based groups made the announcement on August 10.

On making the announcement, Tapestry said all six brands had global reach and complemented each other well.

The new, expanded Tapestry group will have annual sales in excess of \$12 billion. Chief executive, **Joanne Crevoiserat** (pictured), said: "We are ready to leverage our competitive advantages across a broader portfolio of brands. The combination creates a new, powerful, global luxury house, unlocking a unique opportunity to drive enhanced value for our consumers, employees, communities, and shareholders around the world."

Her counterpart, **John Idol**, said he hoped the tie-up would provide new opportunities for Capri employees as part of a larger, more diversified company. "By joining with Tapestry, we will have greater resources and capabilities to accelerate the expansion of our global reach while preserving the DNA of our brands," he said.



CREDIT: TAPESTRY

Choose real leather for shoes

German fabrics trade fair Performance Days has defended real leather over 'vegan' alternatives for outdoor and sports shoes, saying the natural material has been "proven to offer numerous benefits".

A consultant, **Nina Conrad**, who is working with and advising the Performance Days organisers, has said most synthetic alternatives contain a significant amount of petroleum-based components, the production of which has far-reaching negative environmental impacts. This includes the potential creation of microplastics, which are harmful to humans, the environment and animals.

She said: "Leather is made from the hides of farm animals raised for meat and milk production. Whether you agree or disagree with raising animals for human consumption, it makes sense to use these hides rather than discard them."

"Another consideration is the performance of the materials. Studies have shown that synthetic materials perform much worse than leather in terms of tear resistance, breathability or durability. This underlines the need to consider not only ethical and environmental concerns, but also the functionality and quality of products."

Nina Conrad works with farmers and regional slaughterhouses in Germany and Switzerland as part of her work as a sustainability consultant in the textile and leather industry. Her aim is to make the leather industry more sustainable and transparent, while raising consumer awareness of the responsible manufacture of leather products.

Performance Days, which is a show aimed at the sports and outdoorwear sector, takes place in Munich on October 4 and 5.

Hiking footwear brand celebrates

German outdoor footwear brand Lowa is celebrating its hundredth birthday; the Bavaria-based brand launched in 1923.

It is widely known that brothers **Adi** and **Rudi Dassler** were the founders of well known, Bavaria-based footwear brands adidas and Puma. It is less well known that Lowa shares a similar connection to another hiking footwear brand, Hanwag.

In 1921, **Hans Wagner** set up Hanwag and opened his mountain boot workshop in Vierkirchen, north of Munich. Two years later, in 1923, his brother, **Lorenz Wagner**, founded Lowa in Jetzendorf, 12 kilometres away.

ADC start-ups have staying power

Incubator body for leather-sector start-ups in France Au Delà du Cuir (ADC) celebrates its tenth anniversary this year.

Marking the milestone, chief executive, **Virginie Trento**, has said 83% of the start-ups that ADC has helped to launch in the last ten years are still in business. In total, she said 76 of the companies ADC has helped are active today.

In this group, there are more than 40 footwear companies, with the rest devoting themselves to creating leathergoods. Ms Trento said they employ directly a combined total of 400 people and achieved combined revenues of €46 million in 2022.

Veteran moves

Outdoor footwear brand Zamberlan has appointed industry veteran **Chris Rischke** as the new director of operations for its US business. Mr Rischke previously held the same role at Oboz and then became the vice-president of operations and wholesale business at Erem. **Bob Whip**, who took over as general manager of Zamberlan USA in June, said having Chris Rischke in the role of director of operations would help build "additional infrastructure and foundational strength".

General manager for Europe named by Puma

Sports company Puma has appointed **Javier Ortega** as its new general manager for Europe. He succeeds **Richard Teyssier**, who became Puma's global brand and marketing director in July.

Mr Ortega has worked at Puma since 2009 and, for the last nine years, has been the company's general manager for southern Europe. In his new role, he will work to strengthen Puma's position with retailers across Europe.

A former senior finance executive for Puma in Spain, **Esteve Planas**, will take up the role of general manager in southern Europe.

Dr Martens and Central Saint Martins collaborate

Footwear brand Dr Martens has announced another collaboration with London fashion school Central Saint Martins.

Selected by a panel of judges led by MA Fashion Course Leader, **Fabio Piras**, and Dr Martens global creative director, **Darren McKoy**, the 2023 design programme will give nine competing fashion MA students the opportunity to "reimagine" Dr Martens iconic 1460 boot.

Four winners will receive a £5,000 bursary towards their final year studies and see their design concepts manufactured in a limited edition run of prototype boots, at the Dr Martens factory in Northamptonshire. The boots will be featured in the students own graduate shows along with an installation showcase at London Fashion Week.

The nine finalists are; **Atli Alfredsson**, **Joyce Bao**, **Dhruv Bandil**, **Yanya Cheng (Alice)**, **Álvaro Martínez**, **Valeria Pulici**, **Maximillian Raynor**, **Traiceline Pratt** and **Finlay Vincent Roberts**. The four winners will be announced in February 2024.

Cross-party group will defend footwear

The footwear, footwear components and leather sectors in Brazil will now have a stronger voice in the country's federal government.

On August 15, a support group comprising members of parliament from different states and different political parties, relaunched in Brasilia. The group, the Parliamentary Front for the Defence of Leather and Footwear, has the support of industry bodies CICB (for leather), Abicalçados (for footwear) and Assintecal (for footwear components).

Members of parliament involved include **Lucas Redecker** from Rio Grande do Sul, who will be the group's president, **Otto Filho** from Bahia, who will be vice-president, and **Newton Cardoso** from Minas Gerais, who will be secretary general.

In a statement, the three industry bodies pointed out that footwear, footwear components and leather production in Brazil contribute a combined total of around \$9.75 billion to the country's economy and, directly and indirectly, support more than 1.2 million jobs there. They described the new parliamentary group as an important milestone that will help these industries make an even greater contribution to Brazil in the future, producing more for the domestic and export markets.

Executive president of Abicalçados, **Haroldo Ferreira**, highlighted the importance of an increase in competitiveness. He expressed confidence that the new group would help shape policies that would, in turn, set up "better conditions for competitiveness".

Examples he mentioned were policies that would make it easier for manufacturers to have access to credit. He also said he was hoping for policies that would regulate the impact on the Brazilian footwear market of big international e-commerce players. He added: "It will be fundamental in helping our appeals reach the right political ears."

Assintecal's **Silvana Dilly** said she was equally sure footwear components manufacturers and their colleagues in shoe and leather production would benefit from the development. ■

VF chooses Gap veteran as chief people officer

Outdoor group VF Corporation, the owner of Timberland, Vans and Altra, has appointed **Brent Hyder** as chief people officer.

He joins after nearly four years as chief people officer at Salesforce.

Under his leadership, the company earned top spots on best workplace lists, including Great Place to Work, Fortune, People, Glassdoor and LinkedIn.

Before joining Salesforce, Hyder spent almost 30 years in retail, including 15 years at Gap.

CEO, **Bracken Darrell** said: "His proven success in building top-rated employee experiences and high-performance inclusive cultures, combined with his strong global retail management experience, make Brent the ideal people leader for VF."

OrthoLite Cirql gets new general manager

Developer of foam technologies for footwear applications OrthoLite Cirql has appointed **Matt Thwaites** vice-president and general manager, based at the company's headquarters in Ho Chi Minh City.

Mr Thwaites has two decades' sales and operational experience, including at Coats, American & Efird, Bontex, Texon and Amann.

"OrthoLite Cirql is the future of footwear, and I could not be more excited to help bring this innovation to OrthoLite's footwear brand partners," he commented. "This is a career highlight and I feel honoured to be a part of a team that will forever change how we make shoes."

Richemont moves

Luxury group Richemont has acquired a controlling stake in Italian footwear brand Gianvito Rossi. It described the acquisition as a private transaction. The shoe brand's founder, **Gianvito Rossi**, will retain a stake in the company and will continue to develop the business in partnership with Richemont. ■



Industry & Innovation



Cashmere for footwear

Mongolian brand Gobi has used its five decades' experience using the locally sourced cashmere to create its first unisex trainer collection.

The trainers feature a 100% cashmere outer in grey, navy and sand while the inside is lined with wool.

The sole is made using 20% sugarcane with Green EVA, a soft and light rubber-like material, as well as 15% algae sourced from lakes.

Amarsaikhan Baatarsaikhan, managing director at Gobi Cashmere, said: "We brought together the comfort and versatility of trainers with the luxurious touch of cashmere for all to enjoy. With meticulous craftsmanship and commitment to quality, we are proud to present Gobi Cashmere trainers that are as stylish as they are comfortable."

Gobi partners herders who have been living on the vast Mongolian steppes for thousands of years. They use ancient traditions to comb cashmere fibres carefully from goats.

Wool's sports-shoe pull

Outdoor brand Salomon is the latest to work with the Woolmark Company to create high-performing shoes with uppers made from merino wool.

The brand has produced a new version of its Pulsar shoe, the PRG Knit, in which merino wool makes up 30% of the knitted yarn content in the upper of the shoe, from the toe to the base of the ankle.

Salomon said it had chosen to use merino wool for comfort, durability, moisture management, breathability and temperature management.

According to the Woolmark Company, using merino yarn in knitted uppers also provides sports shoe brands with an opportunity to reduce their reliance on synthetic materials.

Spain expansion lets OrthoLite quadruple capacity

Footwear-focused open-cell foam technology developer OrthoLite has quadrupled its production capacity in the European Union (EU) by moving to a new facility in Almansa, Spain.

OrthoLite was already making materials for the European market in Almansa, a footwear-manufacturing town in the province of Albacete. But it recently completed a move from a 750 square-metre site to a new facility covering 3,000 square-metres.

Store closure

Japanese bespoke shoe repair atelier Recouture, which specialises in sole-swapped athletic footwear and made-to-order casual styles, has taken the decision to close its Shibuya store. The shop originally opened in 2019, after it was relocated from Kokubunji, Tokyo.

Technology on show

Digital cutting and automation machinery developer Elitron will show its latest conveyor and fixed-table cutting systems at Simac in Milan in September. It will present its energy-reducing EPMS or Elitron power management system, standard in all its machines as of this year, but it will also have its new Spark F compact cutting system on show.

Insole innovation

Performance foam developer Dahsheng Chemical (DSC) presented its Durapontex N-Series insole products at the recent North East Materials Show in Boston and North West Materials Show in Portland. DSC claims to be the first brand to use supercritical foaming technology at scale in the development of insole materials. "This requires consistent high temperature and pressure control," said DSC chief executive, Johnson Chang. "The result is an athlete's dream: unmatched rebound, resilience, and guaranteed high energy-return."

Compostable and biodegradable

Israel-based material science company Balena has teamed up with designer Kitty Shukman to create a 3D-printed concept slide from a compostable and biodegradable elastomer it calls BioCir. Products made of BioCir can undergo full biodegradation in an industrial compost facility. David Roubach, founder and CEO of Balena, said: "Our combined creative vision has taken the dream of sustainable, scalable 3D-printing another step forward."

The company said this would help it provide more, and more specialised, insole products to European partners. It employs 40 people in Almansa.

"Our Spain factory is a crucial European hub for our EU-based partners," said chief sales officer, CB Tuite. "As production demand continues to grow in Europe, we can maintain exceptional levels of customer service, advancing technologies, and responsiveness."

Products it makes in Almansa include OrthoLite O-Therm aerogel-infused open-cell foam insole technology that creates a thermal barrier underfoot, blocking cold and heat to deliver comfort in all weather conditions. According to OrthoLite, third-party testing has shown its O-Therm product to be more than 50% more effective than other thermal insoles at blocking cold.

In addition, the company makes its OrthoLite ESD Shield mechanically-bonded electrostatic discharge protection insole technology in Almansa. This product delivers full heel-to-toe protection from electrostatic discharge.

It presents this technology as being ideal for work and safety footwear. It uses patented proprietary technology called Fiber-Fusion, which uses conductive copper fibres mechanically bonded (without glue) to its X35 foam for a high level of comfort as well as performance.

Partners demonstrate coatings' potential

Textiles technology group Huafeng has created what it calls "more sustainably made athletic shoes and shorts" for a team competing in the Bridgestone World Solar Challenge in October, using a partly bio-based polyurethane (PU) dispersion from Covestro and Huafeng's Haptic textile coating system.

Fabrics for the garments and shoes are made by Huafeng based on Cyclone recycled polyethylene terephthalate (rPET) yarns derived from post-consumer plastic bottles.

The shoe upper material is made of 100% Cyclone rPET, while the shorts consist of 86% Cyclone rPET and 14% spandex for a comfortable fit.

Huafeng claims the Haptic Art textile coating system used for the shoes improves mechanical performance and reduces production-related emissions. With its high solids content and thixotropic properties, the system allows manufacturers to achieve a high coating thickness, making it suitable for coatings with detailed images and 3D effects on both clothing and footwear.

In recognition of its mechanical properties, Huafeng's ink coating system recently received the ISPO Best Product Award.

Dr Thomas Schmidt, director of innovation and creation at Huafeng, said: "Haptic Art ink represents an important expansion of our aesthetic coating capabilities, offering exceptional design versatility along with substantial environmental benefits. For example, the new Team Sonnenwagen shoes deliver savings of 260g CO₂e per pair compared to conventionally manufactured sports shoes. We look forward to developing even more sustainable solutions that help drive the future of textile coating."

'Urgent meeting' over rPET supply

Korea Recycled Fibre Association (Korfa) has held "an urgent meeting", its third in recent months, to lament the lack of progress with importing recycled polyethylene terephthalate (rPET) fibre for textiles, including fabric shoe uppers and other components, local media have reported.

According to Korfa, its members are disappointed by what was described as "authorities' complacency", despite the group's petitions to the country's environment ministry.

Representatives, including those directly engaged in raw material imports, are keen to receive an explanation as to the perceived delay to increasing import volumes, as well as news on top-down strategies to boost domestic rPET supply, reports went on to say. ■

Lightweight for long excursions

Outdoor footwear brand Keen has produced its lightest ever hiking shoe, the Zionic. The shoe's upper is constructed from high-performance, rip-stop recycled mesh material, with thermoplastic polyurethane overlays to provide what the brand has called "extra durability and protection in exposed areas". It also has a waterproof, breathable membrane, an air-injected midsole with stability shank to deliver lightweight, underfoot cushioning and support, and a removable polyurethane insole with arch support "for long-lasting comfort and reduced foot fatigue on long excursions".

Other features include anti-odour functionality and a heel 'crash pad', where the outsole is wrapped around the heel to help absorb impact.

In favour of foam

Nike has created a footwear foam it claims equips runners with higher energy return while offering a lower carbon footprint than Nike React foam. By using an injection process, rather than through compression moulding, the new foam reduces the carbon footprint in a pair of midsoles by at least 43% due to reduced energy in the manufacturing process and was developed over five years to find a middle ground between performance and environmental impact, Nike stated.

Adidas counts the cost

Adidas has said the discontinuation of its Yeezy business represented "a drag of around €400 million" on its results for the first half of this year.

In 2016, adidas announced that it was cementing an existing relationship with rap artist Kanye West (also known as Ye), turning it into "the most significant partnership ever between an athletic brand and a non-athlete" under the brand name Yeezy.

However, in 2022, adidas announced it was terminating the relationship. It said antisemitic comments Ye had made had been "unacceptable, hateful and dangerous". It said these comments violated the company's values. ■



Backtrack

04.09.23

Autumn Oslo gathering for Scandinavian Outdoor Group
Major brand buys US part of Wolverine Leathers

01.09.23

Anta up 14% in second half
H1 results prompt optimism for Lanvin Group

25.08.23

Revenues at Footlocker show double-digit drop

23.08.23

China growth boosts Descente results
Grants among OR incentives to attract buyers back
Job losses at Dick's Sporting Goods following flat sales

22.08.23

UK fashion shows join forces

18.08.23

Red Dragonfly sees 78% net profit increase

17.08.23

Soft demand hurts Yue Yuen

16.08.23

Record quarter for Mizuno
Kolon Sport on track to do \$600m in China and Korea

15.08.23

Fall of 10% for Wolverine in H1
Grants for UK footwear sector

14.08.23

Li-Ning up 13% in the first half

10.08.23

Nike Air Alpha Force 88s harness algae inks
Q1 fall for Under Armour in spite of footwear growth

09.08.23

Fortune 500 status for footwear brand
Brazilian shoemakers warn tax rule puts 30,000 jobs at risk

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.

07.08.23

Non-US results boost Columbia

04.08.23

VF declines by 8% overall, but Vans down 22%

Puma's podcast puts LWG and partners in front of Gen Z

03.08.23

First-half figures fall at BASF

02.08.23

ISA seeks footwear brands to develop 'mushroom' material

First-half figures fall at BASF

Vivobarefoot reluctant to pass price increases onto consumers

31.07.23

Tod's profits boost confidence

28.07.23

Adidas keeps its Yeezy stocks moving forward

27.07.23

Adidas tailors X Crazyfast boot to China's astroturf

26.07.23

Birkenstock sets the example

25.07.23

Aokang debuts new 'sporty leather shoes' category

24.07.23

Apple sneakers up for auction

21.07.23

In spite of fears, French footwear fights on

20.07.23

Nike files lawsuit against counterfeiters

19.07.23

Hotter shoes survives through pre-pack deal

18.07.23

Support from Aku for emerging sport
Dr Martens launches share buyback programme

17.07.23

Luxury and high-end focus boosts Stella International

14.07.23

Vivobarefoot onboards 200 Vivobiome shoe testers
Major change at Tod's

13.07.23

Toray to expand carbon fibre plant's capacity by 3,300 tons
Recycling is not destruction, FESI insists

12.07.23

Under Armour launches its first women's football boots
New shoe will meet the needs of trail-runners, Nike says
Growth for footwear and leather output in Argentina
Italy: New president for young shoemakers association



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Reconciling conflicting concepts

Richard Daniels

Even within the leather making sector, the preference for hide purchases based on area instead of weight have been the subject of both debate and investigation. However, neither measurement by weight nor area provides a truly accurate yardstick for predicting either yields or costings. So why weight?

Practicalities of hide collection

Where the meat-processing sector is rationalised, then hides, although a waste within a well-managed food processing organisation, can be readily categorised. In this situation, an area assessment of each hide could be made, although they do not lie flat, before proceeding with preservation or passing rapidly into leather manufacture. However, in practice it is easier to weigh a flayed hide, than to open out, feed onto a conveyor for area measurement on an expensive machine and then unload. The measurement option is thus slower, more expensive and requires a greater working area.

In the global hide market, the choice between area and weight determinations is not realistic. At the smaller end of the chain, animal slaughter is local, with hide collection through well-established networks of dealers and traders. Area measurement is too difficult to manage through each transaction, and weight is the long established norm.

However, the information provided by this measurement is far from perfect from the purchaser's points of view. The goods may be categorised, and the weight of each hide identified. But what does this really mean?



In the global hide market, weight is the long established method of measuring raw hides.

CREDIT CONSORZIO VERA PELLE ITALIANA CONCIATE AT VEGETALE

Variations in moisture content

Normally, when a commodity is purchased by weight the moisture content becomes a prime factor in assessing true value. Measurement is easy, with composite samples available for analysis. However, this does not occur in the sale of hides and skins.

Although the moisture content may be relatively uniform when the hide is removed from the animal, this changes. Hides are often washed to reduce the skin temperature or to remove blood, and the hide holds much of this water. However, if the hides are preserved by salting, then this is accompanied by a dewatering.



CREDIT: ROSESHUTTERSTOCK25

Often the brine runs away from the hide, but if the piles are high, then hides at the bottom of the pile will retain more moisture.

Examples can even be found where high moisture retention is encouraged, with a maximising of preserved weight. On the other hand, if air movement is high in curing or storage, then extra dewatering can take place. Taking matters a stage further, in hot climates hides are often dried out after salting to reduce the weight and thus the costs of transport, and to provide extra security against putrefaction. In other words the moisture content changes: the weight at slaughter cannot be verified and practices within preservation throw up different values.

Effects of hide and leather characteristics on yields

Yield is a factor that is not fully addressed by either hide weight or area measurement. For example, if an ox hide is compared to a cowhide of the same weight, then the potential yields are very different. The ox hide is comparatively thicker in the parts carrying most muscle and requiring most protection, whereas the cowhide is thinner and more extended in the belly areas.

This means that the potential area of a grain leather is less from an ox hide than a cowhide of the same weight. If the thickness of the final upper leathers were based on the lower substance potential of the cowhide, then the area obtained from the ox hide would be less, but the substance and area of the (lower value) flesh split would be greater.

However, when hides are sorted, the selection takes both quality and potential substance into account. Ox hides go for higher substance leathers, requiring a greater

selling price because of the extra weight of hide per unit of area, whereas cowhides are designated for lower substance leathers of greater area, being theoretically of lesser unit value.

The hide area also affects yield. In practice, splitting and shaving causes damage to the shanks and other peripheral areas, with a greater percentage loss with pieces of smaller area. Similarly, pleating associated with vacuum drying or toggling is proportionately greater with smaller pieces. This is trimmed away to minimise subsequent machine damage, and as part of acceptable customer presentation.

The yield also varies according to customer needs and the processing used by the tanners. As a general rule, softer leathers, because of the relaxation within the leather structure, do not produce such high area yields as an extended, firmer leather.

Hidden factors

Other factors that are not first apparent can also affect the prediction of values based on either hide weight or area assessment. This includes the effects of infestations, poor animal husbandry, pre-slaughter practices and low level putrefaction, as these affect the grain quality. These potential losses in terms of area and value cannot be fully revealed until the hair is removed.

Moreover, defects due to poor flaying practices, such as flay cuts or gouges, might not be apparent initially, but limits splitting and shaving to low substances. This is to avoid these defects remaining in the flesh side of the grain leather and to provide acceptable cutting coefficients in clicking. Nevertheless, these practices are coupled with a loss in substance potential, hence value. Over and above these issues, the reduced value of the flesh splits need taking into account. They now carry the flesh cuts that have become holes, and gouges identified as areas of low substance.

In addition, fringe grain damage may not be apparent until the wet blue stage, and even not revealed until the dry pre-finished state. In the worst situations, the leathers might be fully finished before the damage is clear, with subsequent rejection or downgrading.

Clearly, the arena of hide classification and quantification, area yield, substance potential and ultimate value are largely determined before commencing leather manufacture, with little chance of verification. However, where linkages have been formed between meat processors, hide merchants and wet blue units, rationalisation is possible. This is particularly so where close attention is given to the value-added chain with integrated responsibilities and incentives.

In this event matters can be better controlled and the hide is no longer 'unknown'. With wet blue purchases the grain can be seen, quality reasonably assessed, potential substance evaluated and measurement by area readily managed for the first time.

Security from known values

Where the value of raw hides is traditionally based on weight, with purchases from known and trusted sources, the experienced tanner has long converted



Defects in a hide can often remain hidden until later in the tanning process.

CREDIT CICB

weight and category into yield and sales value for a known type of leather. Moreover, understanding the market and predicting shifts rather than just following the classic value adding exercise has often generated good profits.

On the other hand, many tanneries have vanished through poor judgement and bad purchases rather than lack of in-house technique or management abilities. Perhaps the stability offered by the more transparent wet blue state is of longer term benefit to both leather manufacturers and their customers.

Tanners: commodity or niche manufacturers?

The value of raw hides is subject to the pressures of supply and demand. In this event, when demand exceeds supply, the rising values are often coupled with a marked decrease in quality. Nevertheless, much of the value of a raw hide lies in the fact that it offers considerable flexibility to the tanner which is essential when meeting specific customer demands.

However, as the leather industry has evolved, the development of specific leather properties has largely moved from pre-tannage and tannage to dyeing, retanning, softening and mechanical and drying areas. Where chrome

tannage prevails, specialised wet blue properties are no longer required. The wet blue simply needs to be versatile and consistent.

Tanners processing from the raw to finished state have therefore acquired two conflicting in-house objectives:

1. *The demands of commodity manufacture.* Wet blue is available as a commodity in the external market. Success is therefore based on uniformity of supply and flexibility of use,

coupled with high volume throughput to minimise manufacturing costs. Furthermore, the value of a manufactured commodity can only progress from this stage if linked within a genuine adding value structure. This means meat processing/wet blue linkages with associated advantages and incentives.

2. *The demands of niche manufacture.* Typically, the niche market means highly focused production with fine attention to detail. This is especially so when serving the fashion sector, where textures and colour requirements are subject to rapid change, and production runs are relatively small. In this event margins can be high, but these are only effective if the potential of the raw material is as required and fully utilised. Variable raw hides do not fit easily into this equation; the need is for a closely defined wet blue.

Neither the philosophies of manufacture, nor the optimum plant size, suits these two different objectives and it is very difficult to see how they can fit together in a single production plant. Perhaps this is another reason for a lack of profitability and closures in the raw to finished sector of the tanning industry in the past, especially when supplying the footwear sector. ■



It can be difficult for tanners to decide whether they are commodity or niche manufacturers.

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Driving digital transformation

Maria José Ferreira and Green Shoes 4.0 Consortium

In an era where digital transformation and collaboration is essential for business success, the Greenshoes 4.0 consortium contributes to driving technological evolution in the footwear sector by developing easy to use digital tools. With the active collaboration of industry leaders and research institutions, this Portugal 2020 R&D collaborative project is promoted by 15 companies covering the whole footwear value chain and 8 R&D bodies with complementary capabilities.

It is shaping the future of fashion through the application of ecodesign, new materials and products, life cycle evaluation as well as statistics, machine learning techniques and advanced computer vision. As explained by Maria José Ferreira, Director at CTCP (Centro Tecnológico do Calçado de Portugal) and Green Shoes 4.0 coordinator, the consortium has been working to drive the development of innovative services and applications to optimise digital activities and business models in footwear production, supply chain, retail and online sales.

Footwear traceability

A simple footwear traceability tool has also been developed. This should be understood as being a first step to integrate traceability in the mindset and communication practices of producers and customers. The tool developed by CTCP with the support of the footwear and leather goods companies participating in the consortium helps companies provide customers with information such as the type and origin of materials, percentage of recycled content, materials and product manufacturing locations and certifications.

The tool data system allows easy updating of this information by the company that is responsible for how the data will be collected, its accuracy and authenticity, and linking to each shoe's unique identifier. An appellative user-friendly interface allows customers to access traceability information easily through QR (quick response) codes or a search function on a website. Further research and complete and robust tools and methodologies are required to ensure validation of data and transparency in footwear traceability.

Forecasting sales

Forecasting sales of products is important for effective financial management, supply chain optimisation, production planning, marketing strategies, new product introductions, risk management and minimising waste from unsold products. Accurate sales forecasts enable businesses to make informed decisions, optimise resources and respond proactively to market dynamics, leading to improved efficiency, profitability and competitiveness.

In this regard, a demand forecasting system has been developed to respond to two distinct needs of the footwear sector. On the one hand, to forecast sales of products already on the market, using existing sales history to train the forecasting algorithm and anticipate market behaviour. On the other hand, to forecast sales of new products that are going to be introduced to the market for the first time without any previous history. In this case, the forecast is based on identifying a set of similar items with a known sales history and exploring their behaviour through trend and seasonality analysis.



The demand forecasting system supports production and planning by providing strategies to estimate, with a certain degree of accuracy, the demand values for a given period in the future. The system was developed by INESTEC, ISEP, AMF, OFICINAWARE and CTCP based on a set of statistical techniques and machine learning algorithms that allow it to effectively model trends, seasonality and events with their impact on time series data. The system has been tested and validated at an industrial level to help regulate the quantity and scheduling of materials purchasing and reduce overproduction that could result in unsold products and the resulting environmental and economic impacts.

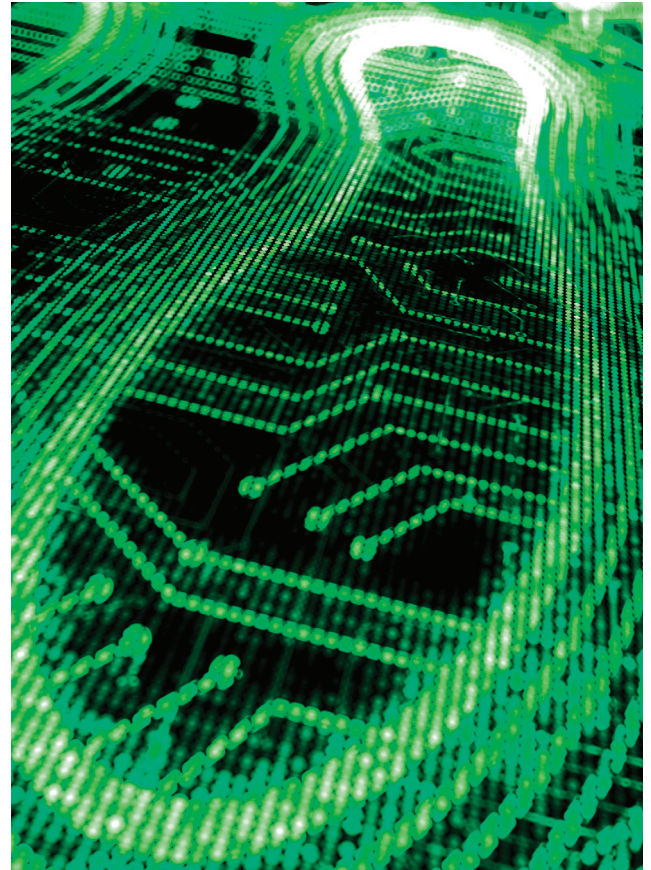
Injection system tool

The footwear industry extensively uses the injection moulding process for attaching polyurethane (PU) soles directly to the shoe upper. This method offers several advantages, namely enhanced bonding between the sole and upper, and improved water resistance. Correct planning is important for maximising production efficiency while also maintaining quality, increasing output and meeting customer expectations. It also helps to optimise workflow, utilisation of equipment and moulds, material consumption, allocation of human resources, lead times and scalability, thus contributing to faster and more productive operations.

Injection moulding is also one of the most critical processes in footwear production due to the complexity associated with the injection machine itself and its operational constraints. These include availability of moulds by sizes, possible colour changes, stabilisation times after injection, among others. In this sense, the production planning tool has been developed by the aforementioned organisations with two levels of decision making in mind. Firstly, a more strategic-tactical level of lot-sizing and workload distribution over time and, secondly, a more operational level of production sequencing by machine position.

The first level consists of determining a macro production plan with a time horizon of 6-10 weeks with the main objective of distributing the workload for each period (week), identifying the products and quantities to be produced, stock levels and resources required to minimise production and stock costs and delays. Specifically, this strategic planning tool has been developed using integer programming mathematical models, with the proposition that only 80% of machine capacity should be used from the second week onwards to ensure flexibility to integrate new orders into the plan.

The second level consists of defining a weekly production plan, determining the allocation of production orders and their quantities to the various positions of the injection machine, bearing in mind the associated restrictions (possible colour changes, mould changes, etc.). In this instance, the main objective is to maximise machine occupancy rate and minimise processing time. The sequencing tool is based on a constructive heuristic, integrating randomisation components to ensure a more efficient exploration of the various possible solutions.



The concept behind the GREEN SHOES 4.0 project is to link digital programs with footwear and its footprint. ALL CREDITS CTCP

Visual search tool

One of the solutions implemented was a visual search service designed to allow customers to find footwear products based on images. Neural networks specialised in classifying colour, gender, shoe type and heel size were configured and trained for this purpose. This function provides a convenient and efficient way to find specific products according to the user's preferences. In this project, CCG, KYAIA, KSI, Overcube and CTCP have also sought to mitigate the need for a human operator to use technical image editing tools to remove the backgrounds in photos of shoes that are produced for a catalogue, as well as the time associated with this manual process.

To this end, a shoe segmentation service has been developed for semi-automatic catalogue creation. On the one hand, a segmentation neural network called U2-Net has been implemented, which builds a saliency map of the image, highlighting in a rigorous way the object in the foreground (e.g. shoe), which favours the possibility of achieving a smooth and precise separation between the footwear and the background (or second-plane). In addition, the previous service (Visual Search Tool) is used to extract the characteristics of the shoe to be catalogued (gender, colour, heel and type) and to fill in a shoe registration form with proposals automatically that the user can modify if they wish. With this tool, the process of creating catalogues has been simplified and significantly streamlined. ■



Reform 2.0 is a new and improved version of Texon's original heel counter that is suitable for all types of footwear applications.
ALL CREDITS COATS GROUP

Coats takes next natural step

Earlier this year, Coats Group Plc, considered the world's leading industrial thread manufacturer, announced it had created a new footwear division. The update followed the acquisition of Texon and Rhenoflex in 2022 and a period of strategic integration. In the summer of 2022, Coats made two announcements in quick succession, confirming the purchase of key businesses in the footwear industry. In early July, the Group signed a definitive agreement to acquire 100% of Texon International, a leading footwear solutions provider. Just four weeks later, news followed that it had also bought Rhenoflex GmbH, a business operating in the same arena. While the news came as a surprise to many in the sector, you only need to scratch the surface of Coats' history to see that these purchases were a natural next step for a business with a long track record of mergers and acquisitions.

History of acquisitions

Throughout its 260-year history, Coats has grown organically. However, a large part of its expansion can also be attributed to buying up businesses. In fact, the first merger involving the company dates back as far as 1896. At the turn of the last century, Coats and Clarks, two family companies which founded the weaving and textile industries in Paisley, Scotland, joined forces to form J&P Coats Ltd. Over the intervening years, subsequent deals have added to Coats' capabilities. Well-known businesses that have been bought and integrated into the Group include Vantona Viyell, Tootal Thread, Fast React Systems, Gotex, Patrick Yarn Mill, ThreadSol and Pharr High Performance Yarns.

So, what, in the run-up to 2022, piqued its interest in Texon and Rhenoflex? Frederic Verague, CEO of Coats Footwear Division, explains more, "Coats has a history



Coats has been traditionally known for sewing threads and yarns.

of identifying companies with unique capabilities, technologies, innovations, and IP that can be scaled to deliver value for our customers and shareholders. Those attributes were clearly apparent in Texon and Rhenoflex. Already established leaders in the development of sustainable and innovative performance materials for footwear and accessories applications, there were many parallels across these two businesses, and with our existing operations. Put simply, there was a clear opportunity to combine our capabilities and know-how and create a really exciting proposition; a global materials supplier, of the size and scale not seen before in the footwear sector, with the critical mass and the footprint needed to partner with the most famous brands in the business."

Complementary capabilities

Previously, Coats specialised in the development of industrial threads and high-performance technical yarns, fabrics and composites for apparel, footwear, accessories, personal protection, telecoms, energy,

transportation, household and recreation applications. In recent years the business has also built a strong digital arm, providing business-critical garment software solutions that can transform how fashion companies design, develop, cost, plan and manufacture their products.

For Texon, the focus was always on manufacturing high-quality, sustainable structural components such as heel counters, toe puffs and insoles for the highly attractive premium athleisure footwear market. The business also had a line of innovative cellulose materials that provide a versatile alternative to leather. The launch of ProWeave in 2021, a jacquard weaving technology, was the one diversion from these two areas which strayed into Coats territory. Rhenoflex was a complementary addition to Texon, enhancing Coats' portfolio and strengthening its proposition. Supplying high-quality, high-performance reinforcement components to the premium global footwear market, Rhenoflex also produced interlinings and eyelets alongside reinforcement material solutions for the luxury goods industry.

Continuing, Frederic says, "Obviously, part of the attraction of Texon and Rhenoflex was the calibre of their respective product portfolios and their fit with our existing capabilities. Both businesses had multiple solutions in their toolkits that were trailblazing when they were first developed. Many of these products continue to lead the way today as they are re-engineered to contain bio-based and recycled ingredients. Putting these products alongside our own has created a range of technologies that gives you almost everything you need to produce a pair of shoes. There were, of course, other deciding factors, not least the expertise of the people working for Texon and Rhenoflex. Separately, the knowledge of the associates working across the three businesses is incredibly impressive. Put together, it becomes even more powerful.

The combined geographical footprint of the three companies was also influential in our decision-making, putting us closer to customers and the world's major manufacturing hubs for footwear and luxury fashion accessories. Last but certainly not least, there was also a clear shared focus on sustainability and innovation. Independently, all three companies were committed to a defined sustainability journey and delivering products that maximise sustainability, without compromising quality."

Three become one

Twelve months on from its acquisitions, Coats now boasts a global workforce of more than 17,000 employees, spanning more than 50 countries worldwide. It has a customer base of more than 34,000 companies. Together, these employees are now manufacturing and marketing more than 450 products, spanning almost every aspect of footwear design.

Frank Boettcher, MD, Structural Components says, "The past twelve months have been about bringing all the different component parts of the three businesses together: connecting our people and looking at the



An evolution of Rhenoflex's innovative Rhenoprint process, Multizone enables the hardness zones of a cap to be determined individually.

performance and comfort that our collective product portfolio can deliver. We've also been joining the dots across a much bigger global production footprint, including planning new sites in Indonesia and India, which are in the pipeline and will support the needs of our customers. This has been no small task. Bringing three organisations together was always going to present challenges, but I'm exceptionally proud of the way we navigated this period and the professionalism shown by every member of the team. Where once we were competitors, vying for market share, now we are colleagues, pulling in the same direction. The scale of the opportunities this presents us with cannot be underestimated."

From a product perspective, the offering now provided by Coats Footwear is certainly as broad as they come. Designers and manufacturers can choose from structural components and upper materials, insoles and threads, zips and even cutting-edge composite technologies that can be used to create game-changing footplates. Well-known products include:

Nylbond – a bonded nylon thread, made from pre-stabilised, continuous filament nylon 6.6 that offers world class quality and superior abrasion resistance. Using a unique bond chemistry and proprietary coating technology, it is a strong, supple thread with no ply untwisting, no flaking and no 'sewn in' colour change.

CoatsKnit EcoVerde – a drawn texturised yarn with a circular cross-sectional filament, this product can be used to create footwear uppers. Knitted into different styles of fabric, it provides a soft hand feel and voluminous appearance. As well as being 100% recycled, it is also 100% GRS certified.

Reform 2.0 – a new and improved version of Texon's original heel counter, it is suitable for all kinds of footwear applications. It is 100% recyclable and now contains up to 66% sustainably sourced material.

Ecostrobe – an innovative insole made with 100% recycled content, it is produced using recycled PET and a special fusion-bonding technology that completely removes the need for chemicals or water. It offers game-changing possibilities for footwear designers who want to integrate sustainability into strobels applications, without compromising strength and performance.

Rhenoprint – the unique zero-waste production process for counter and toe puff materials, developed by Rhenoflex. This technology enables Coats to respond to customer-specific requirements and manufacture tailor-made products regardless of the shape, thickness or degree of hardness required. In addition, it is helpful in reducing CO₂ by as much as 50%.

Multizone – the next generation of reinforcement solutions, it is an evolution of Rhenoflex's innovative Rhenoprint process that enables the hardness zones of a cap to be determined individually.

In parallel, the team continues to innovate, re-engineering products from its vast archive while, at the same time, developing cutting-edge new products. One of the most recent developments is Lattice Lite Eco, a revolutionary fibre-laying technology that uses eco-friendly raw materials like recycled carbon, basalt fibre or thermoplastics such as PA11 or recycled PA6 to create preforms, without cutting or chopping fibres. The technology allows users to specify the exact position and direction of fibres for their application to satisfy their design requirements. Applications include footplates, torsion bars and bindings across all types of footwear, but particularly in the active and safety arena.

The Coats Footwear team is also actively exploring the potential to use existing technologies in new application areas where there are clear opportunities to add value in terms of innovation and sustainability. Marco de Gier, Global Accounts Director, says that, "Coats has always been an innovative pioneer. We've taken significant strides in integrating new technologies into our portfolio and invested in world-class research and development expertise to accelerate innovation. Leveraging our team's experience and our product portfolio, will enable Coats Footwear to push on with its growth plans – breaking into new areas while continuing to lead the way, sustainably. Currently we are assessing new prospects and opportunities for our Rhenoprint 2.0 and Multizone. We are also doing the same with ProWeave, a patented jacquard weaving technology and Cyclea, a leather waste recycling solution."

Coats Footwear has further sustainable innovations on the horizon in line with customers' needs and their environmental, sustainability and governance (ESG) goals. The business has also set itself some ambitious targets for its own operations and supply chain. Short-term, the business is focused on 2026 and hitting a number of targets it has set itself, including:

- A 22% reduction in Scope 1 & 2 emissions
- 60% transition to sustainable raw materials
- A 33% increase in water recycling by 2026 – based on the 2022 baseline
- Zero waste to landfill



Lattice Lite Eco is a revolutionary fibre-laying technology that uses eco-friendly raw materials to create preforms without cutting or chopping fibres.

- 88% employees in units with the Great Place to Work certification

These goals step up a gear in 2030 creating a pathway towards the ultimate ambition of net zero emissions in its value chain by 2050.

Dr. Gunter Scharfenberger, Director of Innovation and Sustainability adds, "Sustainability is now a basic pre-requisite for engaging in the footwear industry, but also in business generally and globally. With eco-friendliness driving customer choice, all companies must play their part; not just because it is a good thing to do, but because it is the right thing to do. At Coats we've always had a sustainable mindset. It's embedded in our culture, and we are committed to being a best-in-class supplier and front runner in this regard. In the footwear sector, key brands are challenging themselves to make products that meet high product performance while providing a better sustainability footprint. To achieve that, they expect dedication and material know-how from their supply partners – including the provision of transparent life cycle analyses. That's what we offer at Coats Footwear."

As a newly formed business, it would seem that it is ideally positioned to meet these growing needs. Frederic Verague, Footwear Division CEO concludes by saying, "This is an exciting time for both the Coats Footwear team and our customers. Our new structural components segment and our thread segment have a long history of customer-centric innovation activities and both parts of the business have pivoted in recent years to meet growing sustainability demands. Bringing these two elements together means we can offer brands an alignment of sustainability focus that is tailored to their needs and can help them bring new lines to market, faster, and with a smaller carbon footprint. With three world-class businesses now working seamlessly together, we are stepping up our offer, giving our customers an unequalled combination of expertise, innovation and product choice." ■



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Sustainable TPU for footwear

Wilson Chan and Ryan Lin,
Covestro

In shoe manufacturing, the focus is increasingly on sustainable plastics for the circular economy. However, their use by no means forces compromises in material performance. This is underlined by current applications of recycled, bio-based and mass-balanced TPU (thermoplastic polyurethane) materials whether they be in the outsole, in foamed midsoles or in textile fibres for shoe uppers.

Comfort and performance have long been defining development trends in the footwear industry. Leading brand manufacturers spare no investment in technology and materials to make shoes more comfortable. This has led to shoes being designed and constructed more and more specifically according to

their intended use. This is particularly true of sports shoes, which are worn for jogging, basketball or mountain hiking among other uses. The aim is to support the athlete in his or her movements so that, for example, they can run faster and more easily, jump higher or move in a sprightlier manner.

In addition to comfort and performance, sustainability has recently become an overriding development trend. This is because climate change and finite resources are forcing a rethink in the use of footwear materials, which is also being demanded and supported by consumers. The main aim here is to reduce the CO₂ footprint of shoes and to build up material cycles. Shoe manufacturers are therefore



TPU is a widely used construction material, especially for sports shoes.
CREDIT: COVESTRO

trying, for example, to reduce the number of manufacturing steps employed, limit the variety of materials, reduce energy consumption or use 'green' energy, such as wind power.

Aiming for climate neutrality

Another focus is the use of sustainable footwear materials. This is precisely where Covestro supports shoe manufacturers with customised materials based on TPU among others. The Leverkusen-based manufacturer is one of the world's leading suppliers of this class of plastics and has been a development partner to the international footwear industry for decades. It is committed to the UN sustainability goals and the European 'Green Deal' and is gradually converting its production

to alternative raw material sources, including renewable energies such as solar power. The company aims to become independent of fossil raw material and energy sources in the long term and to be operationally climate-neutral by 2035. This globally launched programme also envisages driving the transition to a circular economy among its international customers.

The use of sustainable materials in footwear manufacturing is met with scepticism in many places. It is often claimed that they force compromises in terms of performance regarding mechanical properties or design freedom for example. This prejudice is not justified, as witnessed by sustainable TPU materials from Covestro's Desmopan CQ product range. The abbreviation 'CQ' stands for Circular Intelligence and is an expression of innovative material solutions that are very well suited to building up material cycles. The CQ range comprises TPU compounds that are either derived from mechanical recyclates or whose monomer components are bio-based. It also includes TPU materials that are produced from mass-balanced alternative raw materials such as biowaste and residues, and can be used as drop-in solutions to directly substitute fossil-based materials.

Proven sustainable

The mechanical recyclates of the CQ series contain between 30% and 100% recyclate industrial waste. They are produced according to the Global Recycled Standard (GRS), which is one of the most respected sustainability certifications in the shoe industry. The proportion of biomass in the bio-based CQ products is up to 80%. The sustainable origin of the organic raw materials for the mass-balanced drop-in products of the CQ series is ISCC PLUS (International Sustainability and Carbon Certification) certified.

The raw materials are chemically converted into TPU starting materials that are chemically and physically identical to the purely fossil starting materials used up until now. This results in TPU compounds that have



With products like Desmopan CQ, Covestro wants to accelerate the transition to the circular economy and help customers to achieve climate and sustainability goals. CREDIT: COVESTRO

the same material and processing properties as their fossil-based counterparts. They meet the same technical specifications and can be processed on the same equipment without changing processes or workflows. A mass balance is linked to the ISCC PLUS certificate. This makes it possible to mix fossil and alternative raw materials in production, but to also separate them for accounting purposes (chain of custody method). This allows the proportion of sustainable material in the TPU end product to be precisely determined, even in multi-stage production processes, and documented transparently and precisely to the user.

Aliphatic TPU for foam midsoles

The midsole has a significant impact on the performance of athletic shoes. This is especially true for all types of running shoe. It must have a low density for the shoe to be light, which is why it is usually foamed. In addition, it must also have a high level of elasticity and resilience so that the shoe quickly returns to its original shape after each step. The runner recovers the energy used which, in turn, propels them forward. Furthermore, the level of mechanical



properties of the midsole must not decrease over time. On the one hand, the shoe must have a long service life, but above all must give the runner a firm footing and support them with good cushioning which, among other things, reduces the risk of injuries.

With various aliphatic TPU variants, Covestro offers a new material class for foamed midsoles. They result in foams that are significantly lighter than in the case of aromatic TPU and have a resilience of more than 70%. Furthermore, these materials have a low compression set, so that the high level of damping is maintained. Among the TPUs on offer there are also bio-based variants with the same property profile.

TPU for outsoles

In the manufacture of outsoles, TPU is increasingly developing into a material alternative to previously dominant rubber. The reasons for this include the fact that TPU is recyclable, with higher productivity in manufacturing and providing more appearance options in terms of colour. For this application, Covestro offers very soft TPU types with a hardness down to 60 Shore A, which are characterised by good wet and dry adhesion. For example, Desmopan 1065AU achieves a dry grip of 1.0 and a wet grip of 0.5 according to SATRA TM144, a standard test method for slip resistance of soles. It plays in the same league as rubber.

Although they are not chemically crosslinked as thermoplastic materials, unlike rubber, the soft TPUs from Covestro show good abrasion resistance even at higher temperatures. In standard tests, the abrasion loss of Desmopan 1065AU is less than 25 millimeters at room temperature, less than 60 millimeters at 60°C and less than 120 millimeters at 100°C. The material is therefore also suitable for soles of different shoe categories such as running and basketball. Covestro has several soft TPU types for outsoles in its range, including sustainable Desmopan CQ variants.

TPU fibres for shoe uppers

In recent years, TPU fibres have become increasingly popular for shoe uppers. In contrast to polyester fibres, they can be made highly transparent, which increases freedom in shoe design. In addition, they are very

An example for a modular shoe concept based on TPU as the only material used. The entire shoe or just parts of it can be easily recycled. CREDIT: RESLIDES / BENNO REICHARD

abrasion-resistant and can be pressed together at low temperatures. This improves durability and other properties of the upper construction. TPU fibres are also suitable for various knitting and weaving processes and can be processed alone or in combination with fibres made from other materials. For this still 'young' TPU application, Covestro offers mechanically recycled, bio-based and mass-balanced materials as for example mass-balanced Desmopan CQ 3764DU MBB200, which is derived from 28% bio attributed raw materials.

Mono material solutions

More sustainability can also be achieved in shoe manufacture by designing shoes to be recycling-friendly from the outset (design for sustainability, circular fashion). For example, several well-known producers have presented mono-material concepts for shoes. Instead of being made from such different materials as leather, rubber, TPU or polyester, they are made from just one material class. This greatly simplifies the separation and sorting at the end of a shoe's life and the creation of material cycles. TPU meets this trend with its versatility because it can be used solid, foamed, as a fibre or as an artificial leather surface.

To make it easier for customers to implement mono-material solutions, Covestro has tailored a toolbox with suitable materials. An example of a shoe designed for a complete recycling are the modular sandals produced by Reslides. The buyer can give them an individual design by freely choosing the strap. When a strap wears out, it can be sent for recycling and replaced with a new one, giving the sandals a longer lifespan. The company also takes back used examples for recycling. The sandals are made with a TPU from the Desmopan 6 series. The material is characterised, among other things, by low FOG and VOC values, high flexibility and good tensile strength. The latter ensures a high stability of the connection between strap and sole. In addition, the TPU is easily mechanically recyclable. ■

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Vibram continues to take the road less travelled in its pursuit of both performance and sustainability.

ALL CREDITS: VIBRAM

Not a small feat

In August, outsole manufacturer Vibram officially announced it had become the first footwear brand and sole supplier to join Swiss testing body Bluesign's 800-strong network of system partners. Bluesign, founded in the 2000, specialised in textile chemicals prior to expanding into newer categories, including denim, more recently. It first began collaborating with Vibram, one of the world's biggest producers of high-performance rubber outsoles, back in 2019.

This initial pair-up was motivated by the need to assemble "a new, rigorous method of analysis and certification [for verifying] the sustainability level of footwear", the shoe company's global sustainability director, Marco Guazzoni, tells *World Footwear*. It is hoped that their work together could one day lead to the formulation of industry-applicable guidelines, methodologies and standard, the partners shared.

Performance review

Since joining hands, Vibram-controlled input streams from raw materials to components, chemistry and production processes have all been assessed against Bluesign criteria, Mr Guazzoni continues. Of course, "improvements can never be enough", he emphasises, citing the manufacturer's own materials-first approach

Performance soling supplier Vibram has secured new status as the first-ever shoe brand and the first outsole manufacturer to become a Bluesign system partner.

to sourcing "more natural, more recyclable" options. Working with the certification body therefore represents its commitment to stepping things up even further. "Bluesign's methodology is among the most demanding in sustainability for textiles."

Talking to its director of brand services and partnerships for Europe and the US, Kutay Saritosun, however, it would appear that Bluesign expects the minimum threshold for footwear approval to be much higher than that required of finished garments, at least at this early stage, now roughly two years into its initial footwear market explorations.

Articles of outdoor and winter apparel, like ski jackets, for example, must typically incorporate at least 90% Bluesign-approved fabrics to secure Bluesign-approved status. The minimum percentage

“What goes into a sneaker? Where should our starting point be?”

KUTAY SARITOSUN, BLUESIGN

requirements for footwear components such as midsoles, outsoles, and near-skin materials in products such like standard white training shoes will be “similarly stringent”, Mr Saritosun says.

What sets Bluesign apart is its in-depth examination of system partners’ chemical inventory lists. Each requires on-site assessment, followed up by action plans, secondary visits and detailed recommendations. There are currently more than 21,000 Bluesign-approved open-access dyeing, finishing, printing and coating chemicals for clothing, for instance. Out of the close to 800 existing system partners, all of whom hail from the textiles world, the list covers more than 200 chemicals suppliers, over 450 textile producers and in excess of 100 brands.

Footwear, though, remains relatively uncharted territory for the organisation. The sector is a completely different beast to textiles, as the Switzerland-based director puts it. Besides its work alongside Vibram, Bluesign also has several different pilot projects already under way with other shoe businesses, but these remain confidential for now. The intention is to integrate ever more key industry players into its system, to ultimately widen the available pool of Bluesign-

aligned chemicals, components and raw material supply partners, without which there could never be a finished footwear product that meets its standards. Essential questions for Bluesign right now, Mr Saritosun says, include: “What goes into a sneaker? Where should our starting point be? Which components should we focus on, in regard to chemistry? Where can we have the biggest impact in footwear?”

Stepping up to the mark

Ideally, the short-to-medium-term horizons for Bluesign’s new shoe division will involve finished-product certification for at least one prominent brand partner, most likely an athletic or outdoor footwear brand, within the next two years, according to Mr Saritosun. The footwear supply chain is a fairly new domain for Bluesign, whose expertise has always been in the textile and apparel supply chain. Footwear component manufacturers first need to become system partners, implement the Bluesign system and use approved chemistry to manufacture their components before certifying finished products becomes possible. However, Bluesign is optimistic about convincing the majority of component manufacturers to join and begin manufacturing approved components within the next two years.

Meanwhile, work to analyse and certify Vibram’s sustainability-minded component kit has been painted as something of a flagship project, but research and development progress is still at an early stage. Bluesign’s initial footwear foray as a whole is due to conclude by 2026. ■

Bluesign systems partner status is granted only to chemicals, materials and components suppliers who can show compliance at every tier when it comes to chemistry.





Ground up thinking

A Dutch scheme to recycle shoes has received fresh backing from big brands but some question whether incoming EU regulation that bans the destruction of unsold goods will curtail the supply stream.

The European Commission is forging ahead with its circular and green ambitions, underpinned by the European Green Deal and the Circular Economy Action Plan, and the fashion industry-focused Strategy for Sustainable and Circular Textiles, all of which aim to restructure approaches to and create practical solutions for recycling. Earlier this year, the EU executive published its Proposal for Ecodesign for Sustainable Products Regulation, in which it states products should last longer and be easier to repair, upgrade, recycle; and products in the EU should be more environmentally friendly, circular and energy efficient throughout their lifecycle.

As part of this, the destruction of unsold textiles, footwear and electronic appliances will be banned. MEPs want the Commission to make garments and footwear a priority and among the first sectors to be covered by the ban. Fashion brands came under fire a few years ago when it came to light that potentially billions of pounds worth of stock was being destroyed annually, rather than being sold at a discount. Burberry's 2018 annual report revealed it had destroyed £28.6 million worth of goods that year; the resulting furore led to it committing to stop the practice.

The Ecodesign proposal says, "The destruction of unsold consumer products, such as textiles and footwear, is becoming a widespread environmental problem across the Union, in particular due to the rapid growth of online sales. It is therefore necessary that this regulation establishes a framework to prevent the destruction of unsold products primarily intended for consumers, including products that have been returned by a consumer. This will reduce the environmental impact of those products by reducing the generation of waste and by disincentivising overproduction of products."

FastFeetGrinded's shoe recycling machine has a unique circular process. Each company gets a certificate with "achieved" CO₂ reduction that can be used for their sustainability report.

CREDIT: FASTFEETGRINDED



“*Recycling is not destruction. If remanufacturing or preparation for reuse is not possible, recycling should not be excluded as an option*”

DOLLY VELLANKI, FASHION FOR GOOD

Deep concerns

While many welcome the new rules, not all are convinced by the wording. The Brussels-based Federation of European Sporting Goods Industry (FESI), which represents more than 1,800 sports brands, manufacturers and retailers, has expressed “deep concerns”. Overall, it commends the proposal, particularly the need to make goods placed on the EU market more sustainable, but it points out that if we want to scale up the amount of recycled and recyclable materials in the EU, then recycling should not be considered as destruction.

“We welcome the Parliament’s work on providing clarification linked to the ban on unsold goods, in particular, regarding the reporting obligations and the list of exemptions, with the inclusion of counterfeit products,” says FESI secretary general Jérôme Pero. “However, we regret that products not allowed to be placed on the market due to contractual obligations were not included.”

Around Europe, there are multiple schemes being established and money pouring into partnerships that are setting up waste collection systems, as well as the shredding and repurposing systems that are a vital part of the chain. The new regulations could affect partnerships such as the one sports brand Asics set up with Dutch footwear recycler FastFeetGrinded in 2020, through which its defective items and returned shoes have been recycled rather than incinerated. This type of shoes makes up a key waste stream for FastFeetGrinded.

Large-scale problem

The scale of the problem of footwear waste is huge, and growing, with 24 billion shoes added to the market each year and 90% of shoes either landfilled or incinerated, according to market estimates. However, recycling footwear is challenging because of material complexity and the lack of widespread footwear recycling solutions and infrastructure.

A new partnership coordinated by sustainability hub Fashion for Good is touted as a significant milestone. Adidas, Inditex, Target and Zalando will work with FastFeetGrinded to supply waste footwear and test separated materials. The big brands bring both kudos and volume to the project, according to Fashion for Good.

FastFeetGrinded was set up in 2016 by Danny Pormes and Erna Pormes-Redecker, owners of retailer Runnersworld Hoorn. As a supplier to the Dutch Ministry of Defence, they were expected to incorporate recycling into their business, but they found no simple solution for

shoes. The pair worked with engineering group Heilig to create complementary machines: one that grinds and the other that separates the materials, and which can process 2,400 shoes per hour. The leftovers are ground down to produce granules of rubber, foam, fluff, textiles and leather. “The resources are so pure, we have been able to make all the components for a complete circular shoe,” said the company. The components can also be reused in products such as outsoles, midsoles, flip-flops and playground flooring.

“It is crucial for industry leaders like adidas, Inditex, Target and Zalando to have come on board because it demonstrates their commitment to driving environmental impact within the industry and setting an example for other industry players to follow,” Dolly Vellanki, innovation associate at Fashion for Good, tells *World Footwear*. “They also have strong market influence on consumer trends and preferences, so leading initiatives and efforts in circularity through recycling can support in creating more market demand for recycled footwear products.”

These brands possess the scale and reach to test the recycling process at a larger scale, and their input will provide valuable insights into the challenges and opportunities of implementing processes across supply chains. They also represent market reality of the different footwear inputs of post-consumer waste streams.

Flexibility needed

However, Ms Vellanki concedes there is a problem with the EU regulation. “There should be flexibility to choose alternatives to energy recovery and landfilling, and recycling as an option is in line with the EU waste hierarchy,” she says. “Recycling is not destruction. If remanufacturing or preparation for reuse is not possible, recycling should not be excluded as an option to treat unsold goods as recycling is also a recovery operation, unlike incineration and landfilling, which are both disposal operations.”

There are several unintended consequences that can arise from including recycling operations in the ban, she adds. “Export of textiles unsuitable for reuse could create incentives to categorise textiles as ‘fit for reuse’ even when there is no viable reuse market outside the EU. This approach can lead to increased landfilling or destruction risks in export countries and restrict availability of crucial inputs for the secondary raw material market. There is also a need to further scale the recycling infrastructure and technology in Europe, so including the recycling operations under the ban could potentially risk and disincentivise the needed investments into technology and infrastructure.”

The regulation is still at proposal stage, and has time to be changed if challenged sufficiently. While it could disincentivise overproduction, there will inevitably be some overstock, samples, defective items and returns that need to be disposed of. In the meantime, the results of projects like Fashion for Good and FastFeetGrinded could spur the industry towards a more circular way of working and attract more brands and investment in the technology. ■



New slip resistance tests offer a fairer reflection of most people's working conditions.

CREDIT: SHUTTERSTOCK

Standard practice

Since the end of March this year, many shoes and boots for work have come to market with a new set of standards markings, giving retailers and footwear brands new symbols to check for and to explain to customers.

The previous standard for safety footwear, EN ISO 20345: 2011, underwent an update in 2022 and the standard in force now is EN ISO 20345: 2022. Safety footwear placed on the market from the second quarter of 2023 onwards could already be certified in accordance with the new version of the standard. This means brands and retailers are likely to be seeing a number of differences in product descriptions and markings that they need to recognise and understand.

Important changes include the elimination of SRA, SRB & SRC markings on safety shoes to indicate slip-resistance. These markings will no longer feature because, under EN ISO 20345: 2022, slip resistance is a requirement that any and all shoes have to comply with if they are to meet the standard. Slip resistance no longer needs spelling out; if a shoe meets EN ISO 20345: 2022, it has slip resistance built in.

Markings that will feature now also include PL and PS, both of which indicate that a product makes the grade on penetration-resistant midsoles with non-metal inserts. As before, a marking with P is the way of showing the midsole insert is made of metal, but shoes and boots with metal inserts are unaffected by the changes to the standard.



A key standard for work and safety footwear has undergone a series of updates. This article highlights the most important changes.

The difference between the PL and PS markings is that the first has passed resistance tests with 1,100 newtons of pressure and nails 4.5 millimetres in diameter, while the second has passed similar tests with nails of 3 millimetres in diameter. These tests involve removing the upper before applying pressure to try to push the nails through all the components of the sole.

In a white paper it has published to help colleagues and customers take the changes on board, Devon-based workwear company Protective Wear Supplies (PWS) describes the slip resistance and perforation resistance changes as the only major differences that the new version of the standard will make.

No slip-ups

It explains that the work on developing the new standard involved establishing a new system for testing slip resistance. According to PWS, the new tests will offer a more accurate definition of what slip resistance really means in the workplace. For example, tests will now take place on ceramic tiles rather than



on steel plates. Passing tests on tiles with soapy water is enough to meet the standard and all conventionally soled footwear will have to meet this basic requirement. There is no specific marking for showing a shoe passes this soap test. However, footwear manufacturers also have the option of carrying out tests on the same surface with glycerol lubricants, too, to replicate oil-like substances. This one does have its own marking; shoes that pass this additional test can carry the marking SR.

Sharp observations

On the subject of perforation resistance, the second of the major changes, the focus is on footwear with non-metallic inserts in the midsole. PWS has said the different diameters of the nails in the tests represent important differences in environmental conditions. It also makes the point that the test with nails of 4.5 millimetres in diameter is the same as the test that has been in place since 2011. Under the new standard, a PL marking means the footwear product in question is suitable for use in an environment in which there is a low or moderate chance of a worker standing on nails.

Shoes or boots with a PS marking will have been tested on nails with a diameter of 3 millimetres. According to the white paper, a PS marking will give an indication of “more specialist footwear”, which is to say shoes and boots that workers can use in an environment where there is a higher likelihood of standing on nails, or where the nails present may be more dangerous.

Its recommendation is that in environments in which

sharp objects with a diameter of less than 3 millimetres are likely, workers should stick with footwear with a metal insert in the midsoles.

Transition period

Beyond these major changes, the 2022 standard brings additional minor amendments. There is, for example, a new, optional, test for assessing the durability of the scuff cap protecting the toecap on a shoe or boot. The scuff cap must endure 1,000 abrasion cycles before it can be marked with the symbol SC. Another new, optional requirement in the standard is one for indicating the suitability of safety footwear for use on ladders. This assesses design, cleat height and heel dimensions.

As usual when standards change, there is a transition period of 18 months and the EN 2011 and 2022 standards are both acceptable for new certifications up until November 2024. No new footwear can be produced to the old standard beyond this date, but the 2011 standards will remain valid for existing footwear designs until their designated expiry date (a maximum of five years after certification).

Therefore, for some time, brands, retailers and customers will see both new and old standards used to certify products that come to market. Once the transition period is complete and the expiry period of the 2011 standards has passed, it will no longer be possible to buy footwear certified to the old standard. It is vital for everyone involved in safety footwear to understand the changes well. ■



Mercedes-Benz has set up what it calls the blueprint for the assembly plants of the future at Sindelfingen in Germany, but, with a workforce of 35,000, people are very much still at the heart of what happens there.

CREDIT: MERCEDES-BENZ

New life for safety shoes

Earlier this year, an electric sedan vehicle rolled off the production line at the Mercedes-Benz assembly plant at Sindelfingen, near Stuttgart. It was one of the automotive company's EQS 580 4MATIC models in metallic hyacinth red. It made the news because it took the total number of vehicles Mercedes-Benz had constructed in the course of its history to 22 million.

The group acquired its first piece of land in Sindelfingen in 1915 and production of cars began within a few years. It took until 1962 for the company to register the milestone of 1 million vehicles (it counted from 1946, when the plant reopened following World War II). Production capacity increased steadily, reaching 200,000 vehicles per year in the mid-1960s, and 430,000 per year by the mid-1980s. Car number 20 million was completed in 2015. Advanced automation technology is in use at the site. Mercedes-Benz has set up a project there that it calls Factory 56, presenting it as a blueprint for the automotive assembly line of the future. Production is fast moving and data-driven and there is connectivity with the entire value chain. Nevertheless, the company insists that "the focus is always on people"; around 35,000 employees work at the Sindelfingen site.

Chief executive, Ola Källenius, has said he wants the Sindelfingen community, and everyone at Mercedes-Benz, to build "the world's most desirable cars". But he adds that there can be "no luxury without

Workers at one of the most advanced automotive production facilities in the world are now choosing to recycle safety shoes at end of life rather than throw them away.

sustainability" and that environmental, social, and corporate governance (ESG) is the key to long-term valuation creation. Wherever possible, this includes seizing opportunities to make the entire business more sustainable, Mr Källenius insists.

Sustainable business opportunities

Shoes may seem peripheral to this, but, naturally, the specialist equipment that the 35,000 people working at the Sindelfingen site need to do their jobs safely includes specialist footwear. Here, too, an opportunity to promote sustainable business has emerged.

Following a trial in May, Mercedes-Benz has decided to move forward with a footwear recycling project with Soex, a specialist service provider in the collection, sorting, reuse and recycling of used footwear. Soex's assessment of the situation at Sindelfingen was that, until this new partnership came about, the only thing Mercedes-Benz felt it was able to do with used safety



A century of car-making. Workers at Sindelfingen with vehicle number 22 million, an EQS 580 4MATIC in metallic hyacinth red, placed beside a Mercedes 15/70/100 hp Open Touring Car from 1924.

CREDIT: MERCEDES-BENZ

shoes was to send them for disposal. The partners calculated that thousands of pairs were going for incineration each year, amounting to around 25 tonnes of waste.

The right choice

For the pilot project, Soex set up six specialist collection containers at the Sindelfingen site and encouraged workers to deposit any safety shoes that needed replacing. It put up signs that read: "Make the right choice. Give your old safety footwear the chance to be made into new products." From the car assembly plant, the recycling specialist transported the discarded shoes to its own site in Bitterfeld-Wolfen, just to the north of Leipzig.

Soex describes this facility as the first footwear recycling plant of its kind anywhere in the world and "one that is still unrivalled in the industry". It is a kind of Factory 56 for footwear recycling. It developed the Bitterfeld-Wolfen facility after six years' work with partners in France and the UK. Footwear materials separation technology specialist In-Cycle, a start-up with roots in the Centre of Sustainable Manufacturing And Recycling Technologies (SMART) at the University of Loughborough, was one of the partners. Paris-based non-profit Eco TLC was another.

Its set-up works because it can do the difficult part of the job: mechanically disassembling used shoes into their component parts, from which it collects "usable secondary raw materials", including leather, rubber, metal, foam, zips and fabric. It describes these secondary raw materials as "valuable resources" that it is keen to rescue and reuse.

Safety footwear advantage

Everyone has competitors, but Soex's view is that many circular economy service providers still regard shoe recycling as almost impossible because some products can have 40 different materials, all glued together, in their composition. According to its calculations, not even 5% of shoes of any kind are being collected and recycled at the moment, worldwide.

Recycling safety footwear, such as the shoes and boots the Mercedes-Benz employees at Sindelfingen wear, has its advantages though. These products typically only have four components and separating them is relatively straightforward for a specialist operator such as Soex.

The 25,000 pairs of safety shoes it will save each year with the help of Mercedes-Benz and its workers will make little impression on those statistics, but it is a start. And perhaps a prestigious name like that of the automotive group will encourage other manufacturing companies to follow suit. Other Mercedes-Benz factories may be among the first to follow the good example their colleagues at Sindelfingen are setting.

Heart and soul

At the time of the 22 million-vehicle milestone, the head of production at the Sindelfingen plant, Michael Bauer, said the workforce there had much to be proud of. He said: "Our highly qualified colleagues work here day after day with great commitment, with heart and soul." Thanks to the partnership with Soex, they are now able to apply these qualities to safety footwear recycling. ■



One of the containers that Soex has set up to collect used safety shoes from Mercedes-Benz workers.

CREDIT: SOEX



Over the last 20 years, China has become the second-largest trading partner of Latin America & the Caribbean (LAC). Between 2000 and 2020, China-LAC trade grew 26-fold from \$12 billion to \$310 billion.

CREDIT: WSR, ABICALÇADOS.

Shoemakers battle 'unfair competition'

'Unfair competition' was one of the main topics highlighted at the recent Latin American Footwear Forum in Colombia, where associations discussed the mutual challenges manufacturers and brands face. Latin American shoemakers produced more than 1.5 billion pairs in 2022, 7% of global production, according to Brazilian footwear association Abicalçados, but there have been mixed results as manufacturers emerged from covid lockdowns only to battle rising costs and growing competition from Asia.

Each country has its own specialities and issues, as well as legislation and trade deals that aid – or harm – the industry. Brazil, Argentina and Peru have imposed anti-dumping rules against shoe imports from China, with extra duties added. Dumping occurs when manufacturers export a product at a price below its usual price, but this can be difficult to prove, and in some cases can go against World Trade Organisation obligations and potentially harm trade.

Brazil

Brazil is the largest footwear producing country on the continent, producing 849 million pairs last year, of which 143 million were exported, according to Abicalçados. As covid lockdowns lifted, the country benefited from China's stricter rules and factory closures coupled with exceptionally high international freight costs that led brands in the Americas sourcing closer to home. Figures for the first ten months of 2022 show manufacturers exported 20% more with a 55% higher value compared with the same period in 2021. The numbers were also 25% more in volume and 35% more in value compared with the same period in 2019.

However, as China again becomes increasingly active and freight prices drop, Brazilian orders have stagnated or declined. Haroldo Ferreira, CEO of Abicalçados, noted shipping costs at the start of 2023 were almost 80% less than a year before. He has called on the government for more help.

“We are forming a Latin American footwear bloc, which will accelerate the development of our industries.”

MAURICIO BATTAGLIA, CICEG

In 2009, 70% of shoes imported into Brazil were from China and the Brazilian market was worth \$200 million per year to Chinese shoe companies. “Brazil was being inundated with shoes from China with which our manufacturers could not compete,” said former Abicalçados president Heitor Klein in 2019. “Chinese products were coming in at highly subsidised prices that were below manufacturing costs.” Abicalçados campaigned to lower the limit at which extra tariffs kick in from \$13.85 per pair to \$10.22. As a result, in 2010, Brazil imported only \$50 million worth of footwear from China. “It was a lengthy and costly process for Abicalçados,” he said, “but it saved thousands of jobs in the Brazilian shoe sector.”

Fast forward 13 years, and the association is still battling on the same topic. It has warned of a new tax framework that came into force in August that exempts importers from paying tariffs on products that have a value below \$50. Abicalçados claims this puts 30,000 jobs in the domestic footwear industry at risk. “We have warned the government about the impacts of this measure, which exempts large international companies from paying taxes for the entry of products into Brazil, up to \$50, which directly affects footwear produced in the country,” he says. “How are we going to industrialise the country with unfair competition? The national industry will continue paying taxes such as PIS, Cofins and IPI, while foreign footwear will enter without any taxation. It is a measure that will cause companies to go bankrupt and needs to be revoked.”

A survey by Abicalçados looked at the impacts of the two largest international e-commerce platforms operating in the country, representing almost 20% of online footwear retailing. It suggested that for every BRL 1 billion (£160 million) that the footwear sector misses out on due to “tax inequality”, 16,500 jobs are directly or indirectly missed out on.

Argentina

Argentina also has antidumping policies, which were brought in against Chinese footwear imports in 2010. These measures stayed in place for an initial five years, but were renewed in 2015 and 2020. At the times of review, shoe companies across the country provided data to allow Argentina’s Chamber of Footwear Industry (CIC) to present the case for renewal of the measures. They have the effect of forcing up the price of any shoes shipped from China to Argentina to a minimum of \$13.38 per pair.

With an estimated production of 130 million pairs in 2022, 22% higher than in 2021, Argentina is the third-largest footwear industry in Latin America. “We have been fighting China since 2010 and we have been



BrazilianFootwear.com project represents 200 brands and is part of the Brazilian Footwear programme, promoted by Abicalçados in partnership with the Brazilian Agency for the Promotion of Exports and Investments.

CREDIT: APEX-BRAZIL

successful,” says Horacio Moschetto, executive secretary of CIC. Despite the prices of shoes rising about 10% in 2022 due to inflation, CIC insists the domestic footwear manufacturing sector is in good shape, that demand is strong and that factories are operating at full capacity.

Mexico

Mexico is also suffering from what it calls “unfair competition”. In 2019, it imported 102 million pairs of lower-priced shoes, with 50% coming from China. In 2022, it imported a record 127 million pairs from China.

In 2010, footwear’s share in the industry GDP was almost 0.7%, and today it is just over 0.4%. “Unfair competition, which puts shoes on the market below the cost of manufacture, has been harming the sector a lot,” says Mauricio Battaglia, president of the Chamber of Footwear Industries of the State of Guanajuato (CICEG) and Mexico’s National Chamber of Footwear Industry (CANAIICAL). “2021 was a year of recovery and in 2022, despite the challenges, we had growth. Even so, we are still 17% below 2019 levels.” CICEG said its member companies had to shed 2,100 jobs between November 2022 and this May.

However, the pressure the footwear sector has put on the government has now been heeded: at the end of August, Mexico’s government announced that tariff reductions on imported shoes will end next year and that, from October 1, 2024, companies importing footwear from countries with which Mexico has no free-trade agreement will face tariffs of 20% on each pair.

Footwear Latin America - millions of pairs

Country	2019	2020	2021	2022	Participation (2022)
Brazil	898	746	819	849	55.9%
Mexico	273	226	249	261	17.2%
Argentina	76	56	107	125	8.2%
Colombia	93	65	73	80	5.3%
Peru	57	46	51	52	3.4%
Ecuador	22	18	19	20	1.3%
Guatemala	14	11	13	15	1.0%
Chile	14	12	14	14	0.9%
El Salvador	8	6	8	9	0.6%
Nicaragua	7	7	7	7	0.5%
Paraguay	6	5	5	5	0.3%
Uruguay	1	1	1	2	0.1%
ACCAL	1,475	1,203	1,368	1,443	95.1%
Cuba	25	21	23	25	1.6%
Dominican Republic	16	13	14	15	1.0%
Bolivia	14	11	12	13	0.9%
Costa Rica	8	7	8	8	0.5%
Honduras	6	4	4	6	0.4%
Panama	5	3	4	5	0.3%
Haiti	4	2	2	3	0.2%
Latin America Total	1,552	1,264	1,435	1,518	100%

CREDIT: WSR, ABICALÇADOS.

Colombia

Colombia has the fourth-largest footwear industry in Latin America, with an estimated production of 54 million pairs. Its government recently extended for three years the tariffs on imports of footwear. It stands at 35% and has been in place since 2019.

Wiliam Parrado, vice-president of the Colombian Association of Footwear, Leather and Manufacturing Industrialists (Acicam), said his country's shoe sector is affected by smuggling and "underbilled imports". "We need to strengthen communication between our customs and jointly adopt strategies to curb informality and unfair competition in our countries," he says. "We have to foster local industries, reducing dependence on the Asian market."

Besides the challenges of inflation and the rising cost of raw materials, one of the other problems confronting Colombia's footwear industry is the shortage of qualified personnel. According to Mr Parrado,

manufacturing jobs are unattractive to younger people. He said the footwear industry - which employs around 83,000 - was working with national training institute Sena to try

to bring new workers into the sector. In December, the Colombian government decreed an increase of 16% in the national minimum wage, taking it to around \$240 per month.

Joined-up thinking

On the final day of the forum, participants signed an Agreement Document, through which they pledged to share more data between countries and work together on common problems. Daniel Risafi, coordinator of the Association of Footwear Chambers of Latin America (Accal), reiterated that competition from Asia was the most pressing topic. "It is not only the local industry that is at risk when undervalued shoes enter, but the consumers themselves, as they are products without quality and that do not respect the environment," he says.

Mexico's Mauricio Battaglia confirms a joint approach: "It was very important to meet all the presidents of the footwear chambers of Latin America and know that everyone is fighting illegality in their countries. We are forming a Latin American footwear bloc, which will accelerate the development of our industries."

The next Latin American Footwear Forum will be held in May 2024, in São Paulo, Brazil. ■

Brazilian footwear makers excel at ESG

Brazil-based certification the Sustainable Origin, which certifies practices aligned with ESG (environmental, social and governance) metrics in the footwear production chain, has grown by 75% in the past year, now reaching 100 footwear makers and their suppliers. These companies, according to a survey by Abicalçados, account for 45% of national footwear production, or 848 million pairs last year.

Haroldo Ferreira, CEO of Abicalçados, says Brazilian companies are increasingly looking for internationally recognised certifications, and footwear makers in the country are among the world's most sustainable. A survey revealed 95% already minimise waste by recycling or even transforming leftover materials into fertilisers or construction material. Almost two thirds use 100% renewable electricity, while 74% map and reduce greenhouse gas emissions.

Silvana Dilly, from Brazil's association for footwear components manufacturers, Assintecal, added: "The ESG movement is an international reality and is increasingly present in the footwear production chain. Companies that do not adapt to these new times will find it difficult to survive. Sustainability is not a differential, it is an essential condition for competitiveness."



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CO₂ milestone for footwear brand

Swedish footwear brand Icebug has achieved a substantial reduction in the carbon emissions it calculates for the nubuck leather it uses in products in its autumn-winter 2023-2024 collection. Its work with hide supplier Spoor and with tanning partner Ecco Leather has allowed it to cut those carbon emissions in half.

A specialist in creating shoes and boots for use in wintry conditions, Icebug insists it has had sustainability and eco-consciousness at the heart of its strategy since its launch in 2001. In 2018, it signed up for a United Nations initiative called Climate Neutral Now. This commitment involved three steps: embracing the need to measure greenhouse gas emissions, reducing those emissions as much as possible and, lastly, participating in carbon offsetting to compensate for emissions that it could not avoid. This encouraged the footwear company to speed up initiatives it already had in place to improve environmental performance. By February 2019, it was able to announce that it had become not just climate-neutral, but climate-positive.

Appetite for innovation

It has continued to look for further improvements, including in its material choices and it was this quest that brought Icebug into partnership with Ecco Leather and Spoor. Ecco Leather had already been its supplier of nubuck for footwear uppers for years and Icebug was a vocal supporter of innovations that the leather manufacturer brought into its production set-up, including DriTan.

Last year, the chief executive of the Ecco group, and former chief executive of its leather division, Panos Mytaros, told our sister title *World Leather* that he feared the company's DriTan innovation had received less attention than it deserved. Ecco Leather launched this new tanning technology in 2018, saying it would allow it to save 250 million litres of water per year at its tannery in the Netherlands. DriTan makes this possible by using all of the available moisture already present in hides to lower water consumption.

If the reaction to this advancement in some quarters has disappointed Mr Mytaros, he can level no complaint at Icebug; the Swedish footwear brand took the DriTan message on board from the outset and has shared it enthusiastically with consumers. This message now includes a claim from a lifecycle assessment (LCA) exercise that Ecco Leather has carried out that DriTan leather's CO₂ emissions are 34% lower than those of chrome-tanned leather.

A decision to use leather made from traceable hides has allowed Icebug to cut in half the carbon emissions it attributes to the leather in its products.

Traceable hides

Icebug has now taken this further, reaching more deeply into the supply chain, by announcing that, from its autumn-winter 2023-2024 collection onwards, the nubuck that Ecco Tan produces for its footwear will be processed not only using breakthrough technology such as DriTan, but from traceable hides as well. These will be supplied by Spoor.

Based in Denmark, Spoor's specialism is supplying semi-processed, totally traceable hides. Spoor launched in September 2020, using a laser technology-based system for marking and identifying hides. This has allowed its partners in the finished leather manufacturer community, including Ecco Leather, and finished product brand customers, now including Icebug, to pinpoint exactly where the leather in a specific item comes from. Footwear brand Roccamore, also from Denmark, is among the companies that quickly picked up on the benefits of using the material that Spoor markets as Nordic Traceable Leather.

Markings remain

Semi-finished leather producer Scan-Hide is the organisation behind Spoor. It is almost four years now since Scan-Hide chief executive, Michael Sondergaard, spoke at a workshop on traceability at the Lineapelle exhibition in Milan and said its work on developing a laser technology-based system for marking and identifying hides was almost complete. Spoor has proved that the system works; the laser markings on semi-finished leather leaving Denmark remain intact throughout the retanning and finishing processes. With careful data collection and record-keeping of what happens when the finished leather moves to customers' manufacturing facilities for cutting and for use in products, brands can connect the upstream supply chain data to the boots, shoes, bags and sofas they want to bring to market.

On the day of his presentation of the idea at Lineapelle, Michael Sondergaard emphasised that he

The leather in Icebug's new autumn-winter collection is Nordic Traceable Leather, made from hides from Spoor, with traceability going back beyond the farm gate to the individual animal. ALL CREDITS: ICEBUG

“We hold primary data; thanks to this, we know what the emissions are for each hide,”

BIRGITTE LANGER, SPOOR

was convinced consumers, especially younger consumers, wanted to know more about the products they buy. He said Scan-Hide's traceability system would "add to the story". Since August this year, Spoor has been adding even more to the story by making detailed information about the carbon footprint of the leather it supplies available to customers.

Back to a single animal

Just as Spoor is part of Scan-Hide, in turn Scan-Hide is 98% owned by Danish Crown, a supplier of beef and pork to many markets around the world under the control of around 5,600 farmers. Danish Crown says sustainability is "the foundation of our new business strategy", which has the end objective of offering customers sustainably produced, high-quality meat. It has said it wants to be a leader when it comes to transparency and that, to this end, it is continuously working to strengthen its collection and analysis of data. "Through our unique set-up at farm level, we retrieve specific data points that help us in our work on sustainability each day, at the farms, in production, as people and employees, and in the final product on the consumer's plate," the meat production group says. Its efforts have allowed it to compile LCA data for each farm, taking into account scope-one (direct greenhouse gas emissions), scope-two (emissions from the energy required to run the farm's operations) and scope-three (indirect emissions that occur in the value chain).

Because Spoor also has access to this group information, it has now been able to work out the carbon footprint of its leather and make the details available for brands to use in their own product footprint calculations and customer communications. "We hold primary data," business development director, Birgitte Langer, explains. "We have access to the climate data the farmers collect and the system Scan-Hide developed for Spoor means we have traceability back not just to the farm but to a single animal. Thanks to this, we know what the emissions are for each hide."

Before and after

Icebug is one of the first finished product brands to take this new information and weave it into its narrative for consumers. It had calculated carbon emissions for the leather it used before this, but the footwear company's sustainability manager, Maria Munther, explains that it had to do so without any specific data from suppliers. Instead, it had to use available global average values from the Higg Materials Sustainability Index (MSI). Supplier-specific data makes the calculations much



The leather in Icebug's new autumn-winter collection is Nordic Traceable Leather, made from hides from Spoor, with traceability going back beyond the farm gate to the individual animal.

better, she says. As a result, Icebug can now compare before-and-after figures for the carbon footprint of the leather in its footwear. Its calculation for the leather it was using before was an average of 36.4 kilos of carbon dioxide equivalent (CO₂e) per kilo of finished leather. The leather it is using in its new autumn-winter collection, the Nordic Traceable Leather made from hides from Spoor, gives an average figure of 17.9 kilos of CO₂e. This means the decision to use traceable hides from Spoor has allowed Icebug to halve the carbon emissions it attributes to the leather in its products.

These figures are third-party verified (by an independent environmental consultancy in Denmark) and are compliant with the Product Environmental Footprint (PEF) methodology that the European Commission has proposed as a way of measuring environmental performance. Customers will be able to use the figures in their own LCA calculations. Spoor is also working with Worldly, the new name for the platform that hosts the Higg Index, to have the figures for Nordic Traceable Leather added to its database.

For Ms Langer, all of this points to important, real-world progress; it gives a starting point for calculating the carbon emissions attributable to Nordic Traceable Leather and the figures will, she insists, continue to come down because the Danish Crown farmers are working all the time to lower emissions further. Across Denmark, intense research is going on in laboratories and pilot exercises are taking place on farms, all with the aim of bringing down the carbon footprint of the entire Danish agricultural sector. This "responsible, ambitious farming" offers benefits to the leather industry in the shape of the lower carbon footprint figures Spoor and customers such as Icebug are now able to shout about, Ms Langer concludes. ■

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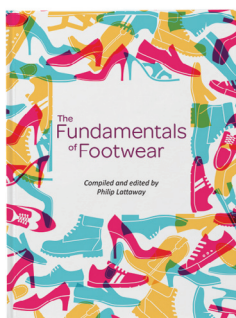


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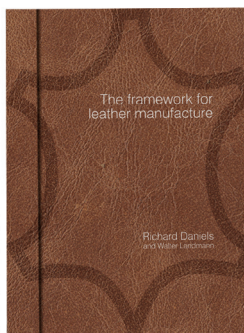
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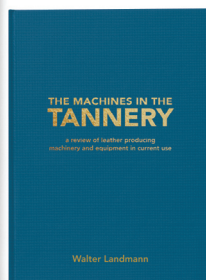
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