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Vol.57

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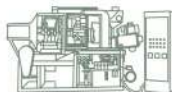
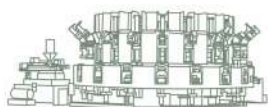
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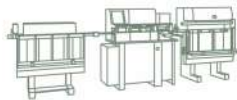
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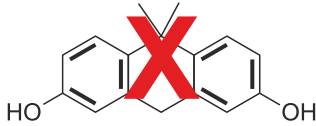
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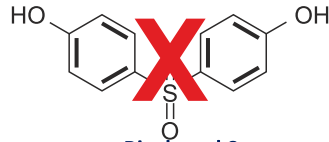


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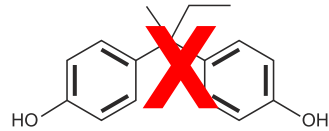
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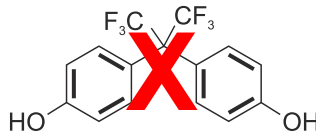
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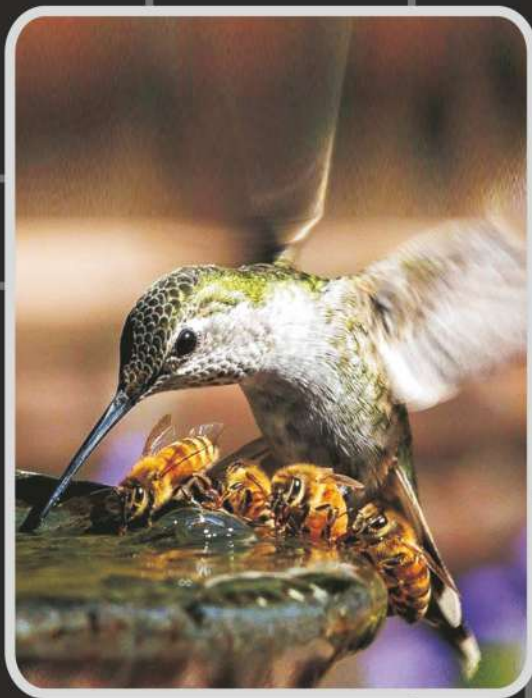
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**Footwear Industry**

The recently concluded two footwear industry events, World Footwear Congress 2023 and the Meet at Agra-the Leather, Footwear Components and Technology Fair conveyed the following message. "The footwear industry shows resilience despite the aftermath of COVID 19 pandemic, the war in Ukraine, geopolitical instability, the rise in costs, high inflation etc.

The footwear sector should learn more on the adaptation of business strategies with the current demands, led by a more conscious consumer, and the adoption of new technologies, methods and tools. Digitalisation is the key of success, allowing for example the analysis of big data for the identification of the target consumer, the development of customised products and services, the improvement of customer services in e-commerce, and the optimisation of the production process

An upgraded footwear industry is possible through a synergy between innovation and sustainability, thanks to the fundamental contribution of digitalisation, but without neglecting the crucial role of human capital in the upcoming industry 5.0. However, when everything is categorised as sustainable without a methodology, the use of the term sustainability is becoming "unsustainable." The industry has the duty to define a joint definition of sustainability that goes beyond the environmental dimension and communicate it to the consumers, the real enablers of change.

The footwear sector must project itself towards a human-centric approach, and only the co-operation among all the actors of the footwear community worldwide will allow its envisaged development. The footwear industry is steadily growing through technological shifts and material innovation to evolving customer interest in design styles and sustainability."

Back home, footwear industry in India, when compared with other countries will grow up to 8 times at the expected compounded growth rate of 13% by 2030. The current compounded growth rate of global footwear industry is said to be 2.8% , but in India the impressive growth rate is 9.8%



## **15<sup>TH</sup> MEET AT AGRA**

**27 - 29 October 2023,  
Agra Trade Centre,  
Singhna Village, NH-19, Agra.**

### **15th MEET AT AGRA Closed With Positive Results.**

*The historic city of Agra is the biggest Footwear cluster of India. Agra is known for footwear manufacturing since the 15th Century. Agra has about 250 mechanized / semi mechanized units and 5000 cottage industries accounting for manufacturing capacity of 3 to 5 lakh pairs per day. Agra meets 65% - 70% of domestic requirements and has 28% share in the total footwear exports from the country. It provides about 4 lakh jobs in the cluster. Leather footwear exports from Agra is about Rs.4 thousand crore and leather and non-leather domestic turnover is Rs.20 thousand crore.*

The 15th edition of Meet at Agra - the Leather, Footwear Components & Technology Fair was organized by the Agra Footwear Manufacturers & Exporters Chamber (AFMEC) from 27th to 29th October 2023 at the Agra Trade Centre, Singhna Village, NH-19, Agra.

The fair was held in 6000 sq.mtrs exhibition space Area & participated by around 157 Companies in Two Halls having 230 Stands. About 30 Overseas Companies from various countries participated through their Agents in India.

Shri S P Singh Baghel, Hon'ble MOS, Health & Family Welfare, Govt. of India. Inaugurated the event. The dignitaries present in the Inaugural Function were Smt. Anupam Kulshrestha (ADG, Agra), Shri Pankaj Sinha (FDDI Secretary), Padamshree Dr. Rajneekant Diwedi (GI Expert), Shri P R Aqeel Ahmed (LSSC Chairman), Shri Sanjay Gupta (President, IFCOMA), Shri Moti Lal Seth (Regional Chairman –North, CLE), Shri Neeraj Garg (Co-Founder & Director, Rymbal), Shri Puran Dawar (President, AFMEC), Shri Gopal Gupta (Fair Committee Chairman & Vice President, AFMEC).





An award for **“Excellence in Footwear Exports 2022-23”** was given to following Companies:-

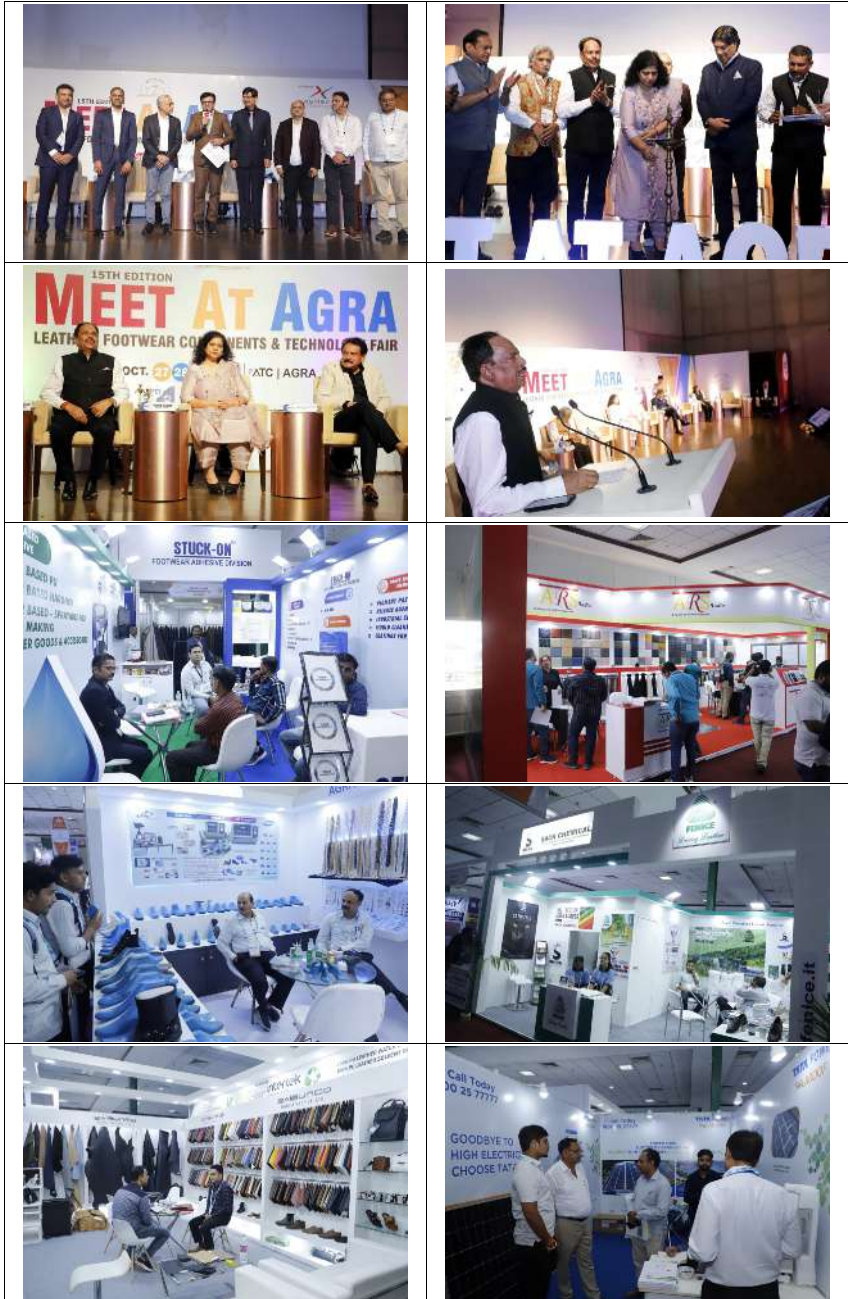
1. **Gupta HC Overseas (I) Pvt. Ltd.**
2. **Leiner Shoes Pvt. Ltd.**
3. **Roger Industries Ltd.**

**DSM Sole Products Pvt. Ltd.** was presented with **“Excellence in Footwear Component”** award.

**Laughter Runway (Kavi Sammelan) & Gala Dinner** was organized at **KNCC, Fatehabad Road, Agra.**

**On 28th Oct. Technical Session & Panel discussion were held.**  
**The Topic of Panel discussion was:-**

1. **“Sustainable Manufacturing & Way Forward”**. This was moderated by Zee Business & was also aired by them. Panel Members- Shri R Selvam, IAS (ED, CLE), Shri Manoj Singh, IAS (ACS, EF&CCD), Shri Sanjay Gupta (President, IFCOMA), Shri Santosh Pargal (Tannery Expert), Shri Neeraj Garg (Co-Founder & Director, Rymbal), Shri Gagan Chabbra (MD, Concept Conceivers & Executors), Shri N. Shafeeq Ahmed (Partner, Shafeeq Shameel & Co.).
2. **“Smart Footwear, Use of AI & Digital Marketing”**. This was moderated by Zee Business & was also be aired by them. Panel Members- Dr. Pankaj Sharma (Director, Eshan College), Shri Chetan Gupta (Gupta H.C. Overseas (I) Pvt. Ltd.), Shri Kuldeep Singh Kohli (President, FAFM), Shri Nakul Manchanda (S. Lamos Shoes), Dr. Rahul Kataria (DTU), Shri Rajeev Wasan (General Secretary, AFMEC).





**“Bank Funding Vs Venture Capital & Infra Solutions”** it was moderated by Zee Business & was also aired by them. Panel Members- Shri Puran Dawar (President, AFMEC), Shri R K Jalan (Vice Chairman, CLE), Shri Tapan Sharma (DGM, SBI), Shri Kamal Singh (DGM Business, ICICI Bank), Shri Manoj Chaturvedi (Vice President & Zonal Head, HDFC Bank), Dr. Ashok Mondal (Project Head, NID Ahmedabad), CA Devesh Agarwal, Shri Ashish Verma (ECGC Branch Head, Agra).

The session was attended by Exhibitors, AFMEC Members, Press/Media & 300 Students from Leather Training Institutes.

On the concluding day of the fair the following awards were given. The Fair Concluding Session was held on 29<sup>th</sup> Oct. 2023.

- 1. Best Component Stall – M. R. Leather / Shailly Traders**
- 2. Best Machinery Stall – Sangeetha Enterprises**
- 3. Best Innovative Product – Stuck On Chemical**
- 4. Best Innovative Product – Silver Rose**

Shri Chandra Shekhar, coordinator AFMEC was also felicitated for his dedicated efforts in making 15<sup>th</sup> edition of “Meet at Agra” a great Success.

There was a total footfall of Approx. 11,000 Business visitors from Chennai, Kanpur, Noida, Delhi, Jalandhar, Bahadurgarh, Gurgaon & Agra. The location of Agra Trade Centre (25 Km from the City) did not have any effect on the footfall in the Fair.

The fair offered good business opportunity and was successful in identifying the huge potentials existing in Agra.

## CLE'S LEATHER MELA - 2023 ATTRACTS HUGE NUMBER OF VISITORS

The Council for Leather Exports (CLE) had organised an event called “Leather MELA-2023” on 8-10 November 2023, at the Moti Jheel Ground 1, Kanpur. Shri Amit Kumar Gupta, Commissioner of Kanpur, inaugurated the event in the august presence of Shri Raju Jalan, Shri Javed Iqbal, Regional Chairman (Central) CLE and other dignitaries.



There were around 44 stalls displaying all types of genuine leather goods, which were also available for sale at moderate prices.



The main aim of this mela was to create awareness on the usage of genuine leather products and their advantages. The mela was thronged by a huge number of visitors on all the 3 days. They were extremely satisfied with the quality and affordable cost of the products. The participants who include small scale

manufacturers and entrepreneurs were immensely happy over their exposure at the mela and were very much satisfied with the sales of their products.

**Shri Baikunth Verma, Arctic International,** commented that the Mela in all respects was a very successful one and achieved the goal.



# **EXPERIENCES OF LARGE SOLAR THERMAL AIR AND WATER SYSTEM FOR INDUSTRIAL AND AGRO APPLICATIONS WITH CASE STUDIES**

**Dr. C. Palaniappan, Ph.D.,**  
**sales@sunbest.in | Mobile : +91 99944 92211**

## **01. INTRODUCTION**

Solar thermal could play a vital role as clean energy development as well as reduction in the production cost in industrial process heat especially solar air and water heater for temperature ranges of 60 to 80°C applications. The emerging solar air heating technology indicates a potential of 0.92 million m<sup>2</sup> collectors and this is equivalent to savings in 3.52 Mtoe/y (million ton oil equivalent/year) in Indian industries and agro processing sectors like leather, pharmaceutical, chemical industry, salt production, processed foods, fruits & vegetables processing, textiles, ceramics, paint-shops, automobile components manufacturing units, hand-made paper products, spices, fish & marine products processing, pulses mill, latex rubber, etc. To illustrate the potentials of solar thermal in leather sector both air and water, a few case studies have been presented here. The author is engaged in the last thirty-five years on the design and development of roof mounted solar air heaters & solar water heaters to provide large volume of hot air & hot water for leather processing mostly by retrofitting with the conventional heating unit, a prerequisite for industries. **The present article highlight the success of making leather industry boiler free by adopting solar thermal technologies.**

## **02. BASICS OF SOLAR AIR HEATERS:**

Solar air heater is similar to solar flat plate water heater, which uses the green house concept to heat air or water through the

accumulated heat in the absorber. Unlike solar water heater where all 2m<sup>2</sup> panels are connected external, the solar air heater modules are fitted together internally to facilitate air to pass through a long path to reach the desired temperature by creating good heat transfer mechanism within the collector.

In solar water heater, water is recirculating so that at the end of a whole day the given volume is heated from ambient temperature to say 60- 80°C. But in air heater, the ambient air by passing through the collector should reach 60-80°C in matter of seconds. Using the green house basic concept, solar air heaters are installed with integrating multiple modular systems which handles cold air and heats it to 60-80°C. This articles deals with success stories for solar leather auto spray dryer and solar hot water for drums,

### **Solar auto-spray dryer - Calico Leather:**

Among many process machineries in a leather factory, auto sprayer dryers consume a large quantity of fossil fuel either in the form of steam or thermal oil. UNIDO, Vienna under a project for clean leather processing in Kanpur, has selected one air heating project for Calico Leather Company Kanpur as a model project with partial fund support to reduce coal consumption. An auto sprayer has two sections with a conveyer. In the first section paint is sprayed on the leather placed on a conveyer. The second section has five compartment dryers. Each compartment has steam coils on both sides and on its top side is fitted with one axial fan which blows air over the steam coil creating hot air to pass over the leather, moving in the conveyer leading to drying of paint.

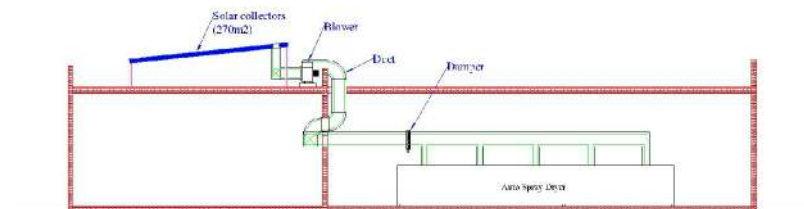
A detailed energy audit was done to assess the energy flow with steam consumption in each compartment and total demand. Basing on the total demand, a solar air collector of area 270m<sup>2</sup> which could give an average energy delivery of 100-120kWh is designed.



Shadow free area for 270m<sup>2</sup> was available on the factory terrace roof and a mild steel support stand for the solar collector was fabricated and fitted in the roof. The 270m<sup>2</sup> collector, consisting of 72 numbers of 3.75m<sup>2</sup> collectors was installed on the support stand and it heats the ambient air to hot air. The solar hot air outlet is connected to an inlet of a 3.75kW centrifugal blower, through an insulated metal duct. The blower outlet duct passes hot air to the auto sprayer with multiple branches to each compartment (Fig 1).

The unit is fitted with an energy meter which measures solar energy in kWh basing on the air mass flow and temperature difference. Another control regulates the steam flow and also measures the steam consumption. The project was commissioned in Jan 2017. On a sunny day it saves around 1500 to 1600kg of steam (or) 300kg of coal. The estimated ROI for the project is 2.5 years, taking into account depreciation benefits and fuel savings only.

Solar Air Heater with Auto Spray Dryer



**Solar ETC Collector at Avanti Leather**

## Project Overview

- M/s. Avanti Leather, Tada processes finished leather. The company uses hot water generated in an insulated storage tank of capacity 25 KL using steam mixing.
- A 5 ton thermax boiler is used to produce steam using firewood at the rate of 250 – 280 kg/hr. A solenoid valve system fitted with steam is used to control the water temperature to 65 Deg C in the 25 KL tank.
- As the site receives solar radiations for more than 300 days/year, SUN BEST had installed a roof mounted ETC system of capacity 50,000 – 60000 LPD solar water heaters to reduce firewood consumption in the boiler as well as to promote clean energy in leather processing.
- **Sun Best Solution**



- 196 ETC collectors are divided into four groups and fitted on the roof of the factory.

- Each 49 x 2 Nos ETCs are connected in a primary loop with expansion tank, pump, auto refilling water and a plate heat exchanger.
- The secondary loop consisted of cold storage water and pump coupled to the plate heat exchanger. The primary loop works at a temperature of 75-80<sup>0</sup>C.
- The cold water passes through the PHE and get heated up to a temperature of 65 Deg C and it is taken to the process.

### The Benefits

- The system saves 375 tonnes/year of firewood with a emission reduction of 10089 tonnes of CO<sub>2</sub> in 15 years and thereafter it is equivalent to 23507 acres of forest saving.

### LIST OF SUCCESSFUL LEATHER DRYING PROJECTS

**The author is instrumental in** commissioning Solar Heating Systems to reduce the steam/electrical/solid fuels requirements in the auto sprayers of the following leading leather industries.

Company	Area of collector	Year of installation	Status
MAKH	668 m <sup>2</sup>	2000	Working
Calico Impex	270 m <sup>2</sup>	2016	Working
Ram Leather	270 m <sup>2</sup>	2019	Working
Overseas Leather – Unit 1	270 m <sup>2</sup>	2022	Working
Prara Leather	540 m <sup>2</sup>	2023	Working
Prime Leather	690 m <sup>2</sup>	2023	Work underway

Overseas Leather – Unit 2	<b>315 m<sup>2</sup></b>	<b>2023</b>	<b>Work underway</b>
MAKH	25000 Litre/day	2013	Working
Kmail Leather	<b>5000 Litre/day</b>	<b>2016</b>	<b>Working</b>
Super tannery	<b>7000 Litre/day</b>	<b>2019</b>	<b>Working</b>
Avanti Leather	<b>30000 Litre/day</b>	<b>2018</b>	<b>Working</b>
Ram Leather	<b>10000 Litre/day</b>	<b>2020</b>	<b>Working</b>
Bharath Enterprises	<b>10000 Litre/day</b>	<b>2020</b>	<b>Working</b>
Overseas Leather	<b>15000 Litre/day</b>	<b>2023</b>	<b>Working</b>
Prara Leather	<b>30000 Litre/day</b>	<b>2023</b>	<b>Working</b>
Prime Leather	<b>15000 Litre/day</b>	<b>2023</b>	<b>Working</b>



**Solar air heating project at Overseas Leather, Ranipet**





### **Solar Air Heating project at Prara Leather, Ranipet**

**Boiler free leather factories :**

The author is instrumental in making Overseas Leather, Prara Leather and in the final stage at Prime International leather factories to move away from the usage of firewood/briquettes boiler.

Overseas Leather earlier using 3 ton thermic fluid boiler to meets its thermal energy for 4 auto sprayer, drums and vaccum

dryer. A 270 sq.m solar air heater with 15 kl solar water heater makes overseas leather to go BOILER FREE.

Similarly Prara Leather uses 4 ton + 2 ton steam boiler to meets hermal energy for 6 auto sprayer, drums and vaccum dryer. A 540 sq.m solar air heater with 30 kl solar water heater makes Prara leather to go BOILER FREE.

The following is the outcome of the Overseas Project:

Renewable energy projects at Overseas Leather		
Project One		
Technology	Solar air heater	
System capacity	270 sq.m	
Application	Autosprayer	
Energy produced from solar heating	464400	kcal
Energy Saved from solar heating /day	540	KW
Energy Saved from solar heating /year	162000	KW
Co2 emission reduction /year	138	tCO2e
Forest saved./year	55	acres
Project Two		
Technology	Solar water heater	
System capacity	15000 Litre/day	
Application	Drums & vaccum dryer	
Energy produced from solar heating	450000	kcal
Energy Saved from solar heating /day	523	KW
Energy Saved from solar heating /year	156900	KW
Co2 emission reduction /year	133	tCO2e
Forest saved./year	53	acres
Project Three (Under installation)		
Technology	Solar air heater	
System capacity	315 sq.m	
Application	Autosprayer	
Energy produced from solar heating	541800	kcal
Energy Saved from solar heating /day	630	KW
Energy Saved from solar heating /year	189000	KW
Co2 emission reduction /year	161	tCO2e
Forest saved./year	64	acres

# Seize the opportunities of renewable chemistry



Today's leather tanneries not only have to deliver high-quality durable products – they must also deliver them with minimal environmental impact and without compromising on the health and safety of people. At Stahl, we see this as an opportunity to support our customers and the wider leather industry in driving responsible products and sustainable living. In close

cooperation with our partners, we recently launched Stahl Ympact®, a family of leather chemical solutions made with renewable feedstocks. Stahl Ympact® will help tanneries to reduce their environmental footprint without compromising on the quality and performance of their products since these ZDHC-compliant solutions deliver the same or improved

function performance to conventional alternatives. After the introduction of 7 product solutions of renewable carbon polyurethanes for base- and topcoats in leather finishing, we've now also introduced 15 specific solutions of renewable carbon wet-end products for leather processing.

If you would like more information about Stahl Ympact® or how we can support you to embrace the opportunities of an evolving leather industry, visit [stahl.com](http://stahl.com) or get in touch with us at [communications@stahl.com](mailto:communications@stahl.com).

If it can be imagined, it can be created.



[stahl.com](http://stahl.com)

# YEARBOOK

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# 2023

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FOOTWEAR INDUSTRY INTERNATIONAL TRADE  
COUNTRY PROFILES

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# 2023-2024 SHOWS CALENDAR



**HANOI  
VIETNAM**

**13-15 DEC**

International Center  
For Exhibition



**GUANGZHOU  
CHINA**

**3-5 JUN**

Canton Fair Complex  
Area D



**HCMC  
VIETNAM**

**10-12 JUL**

Saigon Exhibition and  
Convention Center

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ARAVIND  
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**1 acre of Forests**  
will absorb  
**2500 kg of CO<sub>2</sub>/Yr**

**7 kl  
SWH**

**2 kW  
SPV**

**7m<sup>2</sup>  
SAH**

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CO<sub>2</sub> emitted during  
production of **1 kWh**  
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this CO<sub>2</sub>

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**WORKS OFFICE :**

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### **Co-designing the manufacturing of the future. Technologies for new supply chains**

The annual Assomac Assembly was held on 10th November 2023 in the iconic column hall of the “Leonardo da Vinci” Museum of Science and Technology in Milan.



**“Co-designing the manufacturing of the future. Technologies for new supply chains”** is the title chosen for the 2023 General Assembly. The objective is to underline the importance of consolidating the implementation of innovative technologies in production chains, starting with the fashion sector. Co-designing the manufacturing of the future means doing our part in an even more collaborative way in the supply chains, proposing advanced

integrations into production processes. “For us at Assomac, the importance of co-planning can no longer be postponed” declared **Maria Vittoria Brustia** , President of Assomac, during her initial speech, recalling that in this year Assomac has started a process of valorisation and rapprochement with the leather supply chain , with a view to greater CO-PLANNING.



The assembly opened with institutional greetings from **Maurizio Forte** Central Director for the Export Sectors of ITA - Italian Trade Agency, **Bruno Bettelli** President of Federmacchine and the message from the Minister of Enterprise and Made in Italy **Adolfo Urso**.

By uniting the Italian tanning, leather goods, footwear and leather machinery industries, **The European House – Ambrosetti** has calculated a 2022 turnover of 30 billion euros, with an added value of six billion (3% of that generated from Italian manufacturing). Exports are worth 27 billion euros (+15% on 2021) and generate a trade balance close to 15 billion. The export champions are footwear (45%

of the total supply chain) and leather goods (40%). The employees of the four sectors reach 130 thousand (4% of Italian manufacturing). It is precisely on these numbers that the numerous reflections were born that led to the common thought of adopting a common supply chain strategy.

In deepening this concept, the theme of the assembly "Co-designing the manufacturing of the future" was introduced by **Flavio Sciuccati**, Senior Partner of The European House - Ambrosetti with whom Assomac has undertaken a work path that has developed during the year and which involved members in working groups.

The Assembly's work continued with the round table, moderated by **Simone Cerroni**, journalist of **Class CNBC - Italia 4.0**, in which **Chiara Mastrotto**, President and CEO of the **Mastrotto Group** and **Attila Kiss**, CEO of the **Florence Group**, took part.

The assembly was an opportunity to discuss with the invited speakers, benefiting from their different perspectives and sectors of belonging, a series of topics starting from the technological and production theme, to the focal theme of the supply chain, sustainability and finally the fundamental aspect of human skills.

During the round table discussion, two surveys were launched in which the assembly participants were able to download the questions via a QR code and answer them and then view the results during the morning.

The event concluded with a second panel composed of President **Maria Vittoria Brustia**, Vice President **Mauro Bergozza** and Vice President **Cristiano Paccagnella** who drew the conclusions of the day.

During the final greetings, the President wanted to thank the General Director of Assomac **Roberto Vago** who will end his working relationship with Assomac at the end of the year. In his place, **Agostino Apolito** will take the reins of the association and the international Simac Tanning Tech fair starting next January 2024.

## **Brazilian footwear exports reach US\$ 1 Billion**

According to the data released by the Brazilian Association of Footwear Industries (Abicalçados), the sector's exports, in the month of October, totaled **11.8 million pairs**, which generated **US\$ 100 million, a result 5.2% higher in pairs and 12. 3% lower in revenue compared to the same month last year.** In the ten months of 2023, exports totaled 102.45 million pairs and US\$ 1 billion, lower results both in volume (-14%) and revenue (-8.8%) compared to the same period in 2022 Despite the drop in shipments, the sector continues to post positive results compared to pre-pandemic (6.2% in volume 23% in revenue).

The executive president of Abicalçados, Haroldo Ferreira, highlights that the numbers reflect a slowing global economy. “In October, the IMF reduced the growth of the world economy for 2024 by 0.1%. The world is growing below the historical average of the last three years”, he comments. According to him, in addition to the slowdown in the main economies, including the United States and European countries, which live with high interest rates and inflation, China's recovery in the footwear market is increasing. In the last month reported, in September, China exported 746.4 million pairs of shoes, 3% more than in the same month of the previous year. Year to date, Chinese exports have reached 6.8 billion pairs. “Of course, the increase in competition from China in the international environment has an impact on Brazilian shipments”, informs the director. Total footwear imports from the United States, the largest footwear importer in the world, fell 30.5% from January to September 2023, compared to the same period in the previous year.

Main destinations for Brazilian footwear exports, between January and October are: Argentina imported 12.9 million pairs for US\$ 202.9 million, followed by the USA with 8.62 million pairs valued US\$ 191.2 million and France imported 2.5 million green-yellow pairs worth US\$ 49 million..



## 7th Edition of World Footwear Congress



### **Reshaping the Future – Innovation and collaboration at the core of the 7<sup>th</sup> World Footwear Congress**

*The seventh edition of the World Footwear Congress, co-organised by the European Footwear Confederation (CEC) and the Footwear Industrialists Association of Türkiye (TASD) was organised on 8<sup>th</sup> & 9<sup>th</sup> November, 2023 in Istanbul, Turkey. There were over 300 participants from five continents. The Congress, an initiative of the CEC launched twenty years ago, was the occasion to gather worldwide public and private representatives of the footwear industry to identify solutions to Reshape the Future of the footwear sector.*



In the opening, CEC President Luis Onofre underlined the resilience of footwear industry despite the different sanitary, economic and geopolitical crisis of the recent years: *“My grandmother, who witnessed the funding of our family business in 1939, used to say*



*that the footwear industry has never had a peaceful moment. Only by joining efforts and working together we are able to respond to the challenges and grasp the opportunities the world is bringing to us and to ensure a smooth green, digital and just transition of our industry". His call for international collaboration was echoed in each panel of the Congress.*

The footwear sector must work on a new way to understand that a shoe not only has more than 8000 years of history, but it also represents our main mean of transportation, which stresses the complexity of the product in all aspects. Having this mission in mind, representatives of leading footwear companies and other experts presented their experiences on three main areas.



Firstly, the audience could learn more on the adaptation of business strategies with the current demands, led by a more conscious consumer, and the adoption of new technologies, methods, and tools. Digitalisation is the key of success, allowing for example the analysis of big data for the identification of the target consumer, the development of customised products and services, the improvement of customer services in e-commerce, and the optimisation of the production process.

Then, in line with our reality, sustainability played a major role in the Congress. Everybody is aware that there is not a Plan(et) B and, as inhabitant of the same planet, we must find joint mitigating solutions.

However, when everything is categorised as sustainable without a methodology, the use of the term sustainability is becoming “unsustainable”. The industry has the duty to define a joint definition of sustainability that goes beyond the environmental dimension and to communicate it to the consumers, the real enablers of change.



Finally, the last part of the Congress focused on the future of the workforce, the main asset of the industry, in a sector in the middle of the generational change. Companies demonstrated their new approach to positively engage and retain the young generations with a more flexible and community driven strategy. Calls for support from national authorities were stressed as essential to achieve this goal.

An upgraded footwear industry is possible through a synergy between innovation and sustainability thanks to the fundamental contribution of digitalisation, but without neglecting the crucial role of human capital in the upcoming industry 5.0. In other words, the footwear sector must project itself towards a human-centric

approach, and only the cooperation among all the actors of the footwear community worldwide will allow its envisaged development.

The participants shared full satisfaction with the discussions and outcomes of this World Footwear Congress edition. By embracing the words of President Onofre, the CEC is committed to maintaining its role as facilitator for a sustainable future of the sector.

Last but not least, the CEC would like to thank once more all the speakers and moderators who intervened in the Congress for their fruitful contribution, all participants for their support to the footwear sector and, last but not least, TASD President Berke İçten and the organisation team for making the event successfully happen.



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## **INTERNATIONAL LEATHER INDUSTRY ADOPTS “LEATHER MANIFESTO” FOR COP28 CLIMATE SUMMIT**

International Leather Industry calls on COP28 to recognise the positive role that natural materials such as leather, can have on people, lives, and livelihoods

COTANCE, along with 27 other international leather industry organizations, again called on the 2023 United Nations Climate Change Conference (COP28) to recognise the positive impact of natural materials such as leather on people, lives, and livelihoods and as a means of directly mitigating climate impact. Expanding on previous messages sent to COP meeting, The “**Leather Manifesto**,” highlights to the COP28 delegates capacity for leather and other natural materials, to make the best use of the resources available and to do so without diminishing them or causing harm to the environment.

“Leather manufacture can create opportunities for employment, wealth generation and security in deprived regions, both directly and in associated industries.” the Leather Manifesto states. “Greater use of natural materials would create jobs, reduce waste and could be a direct driver of more sustainable agricultural practice.”

The Manifesto further notes that leather is an ideal choice for a sustainable future, encouraging re-use and slow-fashion. The leather industry once again calls for appropriate measures of environmental impact such as LCA, taking full account of all aspects of the production of any material and the promotion of durable products, and items that can be used many times, repaired and refurbished.

“Leather is the best component for beautiful durable products to be used by more than one owner, that can be repaired or refurbished prolonging its service life and that biodegrades at its end of life.” says Gustavo Gonzalez-Quijano, Secretary General of COTANCE, the European leather industry body.



## **A Manifesto Leather on the occasion of COP28 People, lives and livelihoods – the role of leather**

On the occasion of the 28<sup>th</sup> edition of COP, the undersigned once again call for greater understanding and integration of natural materials, and in particular leather, in addressing the challenges of man-made climate change. We welcome the new policy and regulations in France and the Netherlands and proposed legislation in the European Union and United Kingdom, and the growing recognition that the action must be taken to reduce the impact of fashion and textiles. To achieve this goal, there will be ever greater emphasis and legal requirements for repairability, recovery and circularity in design in fashion and textiles.

These are all areas where natural fibres such as leather, excel. It is quite normal for products made from leather, wool, silk, etc. to be kept by consumers for long periods of time and passed on to subsequent owners. Products made from these materials are long-lived, eminently repairable and can be repurposed or readily composted at end of life. Recent research by Wiedemann *et al.*<sup>1</sup> found that, ‘the climate change impacts of all natural fibres were negative if the number of wears was increased by 50%: that is, greenhouse gas emissions would be avoided entirely primarily because emissions associated with the manufacture of a new petro-PET garment were averted’. Garments made from long-lived, natural materials can have an undeniably positive action in reducing the climate impact of fashion and textiles.

Leather offers an opportunity to make the best use of the resources available and to do so without diminishing them or causing harm to the environment. There are currently huge volumes of a natural,

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<sup>1</sup> Stephen G. Wiedemann et al, Resources, Conservation and Recycling (2023), Volume 198,



readily available versatile hides and skins going unused which could be transformed into sustainable leather, replacing fossil fuel-derived synthetic alternatives, with the additional emissions and impacts those entail. In the process, there would be the opportunity to put shoes on over 2.5 billion pairs of feet. That's 33% of the world's population that we could provide shoes for.

We also welcome, within the COP28 themes, a focus on people, lives, and livelihoods. Leather manufacture can create opportunities for employment, wealth generation and security in deprived regions, both directly and in associated industries. There is also a growing body of evidence showing that when the full life cycle is considered, these materials can be positive contributors to the climate and environment. It is essential then that appropriate metrics are used to assess the impact of these materials, assessing not just the narrow, attributional impact of their production but also the consequences of their use.

Natural materials, like leather, offer a viable alternative to the use of fossil fuel-derived synthetics for fashion and other applications. An alternative that meets the demands of emerging policy for circularity in the fashion and textile sector. Greater use of natural materials would create jobs, reduce waste and could be a direct driver of more sustainable agricultural practice. However, this will require a better understanding of the impacts of materials like leather, based on current science and sound data.

Therefore, we, the undersigned organisations, once again call on the COP forum to...

...Recognise the cyclical, climate efficient nature of natural fibres and their potential for a positive contribution to reducing the climate impacts of consumer products. In particular, recognition of the separate contributions of long-lived and short-lived, and fossil-derived and biogenic greenhouse gases.

...Wherever feasible to encourage the use of natural fibres like leather and reduce unnecessary reliance on fossil-fuel-based materials.

...Support LCA methodologies that accurately account for the environmental impact of all materials, including end of life properties and the consequences of use and substitution.

...Promote 'slow fashion', durable products, and items that can be used many times, repaired and refurbished, and last for years.

### **Signatories to the Leather Manifesto**

- Africa Leather and Leather Products Institute (ALLPI)
- Asociación Española del Curtido (ACEXPIEL – Spanish Tanners' Association)
- Associação Portuguesa dos Industriais de Curtumes (APIC – Portugal Tanners' Association)
- Australian Hide Skin and Leather Exporters' Association Inc. (AHSLEA)
- Centre for the Brazilian Tanning Industry (CICB)
- Centro Tecnológico das Indústrias do Couro (CTIC - Leather Center in Portugal)
- Chamber of the Argentine Tanning Industry (CICA)
- China Leather Industry Association (CLIA)
- Confederation of National Associations of Tanners and Dressers of the European Community (COTANCE)
- Conseil National du Cuir (CNC)
- International Council of Hides, Skins and Leather Traders Association (ICHSLTA)
- International Council of Tanners (ICT)
- International Union of Leather Technologists and Chemists Societies (IULTCS)

- Fédération Française des Cuirs et Peaux (FFCP - French Hides & Skins Association)
- Fédération Française Tannerie Megisserie (FFTM - French Tanners Association)
- Leather and Hide Council of America (LHCA)
- Leather Cluster Barcelona (LCB)
- Leather Naturally (LN)
- Leather UK (LUK)
- Leather Working Group (LWG)
- One 4 Leather (O4L)
- Society of Leather Technologists and Chemists (SLTC)
- Sustainable Leather Foundation (SLF)
- Swedish Tanners Association
- Turkish Leather Industrialists Association (TDSD)
- UNIC Conceria Italiana (Italian Tanneries Association)
- Verband der Deutschen Lederindustrie e.V. (VDL – German Leather Federation)
- Wirtschaftsverband Häute/Leder (WHL – German Hide and Leather Association)
- Zimbabwe Leather Development Council (ZLDC)

*(Source: Cotance)*

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## International Shoes & Leather Exhibition - Hanoi

Incorporating



## International Footwear & Leather Products Exhibition - Hanoi



# 13-15/12/2023

Hanoi International Center for Exhibition (I.C.E.)  
Cultural Palace, 91 Tran Hung Dao Street  
Hanoi, Vietnam

### Organizer



Vietnam Leather, Footwear and Handbag Association  
(LEFASO VIETNAM)



Top Repute Co. Ltd.



### Local Co-organizer

Hien Dat Exhibition & Trading Service Co., Ltd

### Supporter

Confederation of International Footwear Association  
Hanoi Leather and Footwear Association

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**Shoes & Leather Hanoi - 2023** the international Shoes & Leather Exhibition, incorporating IFLE Hanoi - the International Footwear Leather Products Exhibition, organised by Top Repute Co. Ltd., will be held on 13-15 December 2023 at the Hanoi International Center for Exhibition (ICE), Hanoi, Vietnam.

Vietnam Footwear & Leather Industry has been growing rapidly as Vietnam holds various number of international free trade agreements among the ASEAN.

The fair is being held in the Northern Regions of Vietnam (Hanoi) where large number of factories and expansions are taking place. This event provides suppliers and buyers very good opportunities to connect and enhance their network in Q4 2023. The new trade fair will showcase shoe machinery, leather & material, finished footwear, leather goods and many more. The fair is expected to attract international visitors, especially those from Europe, Mainland China, Taiwan, Hongkong, Korea, Japan, India and ASEAN region.

The concurrent event, IFLE Hanoi - the International Footwear and Leather Products Exhibition provides a comprehensive platform for presenting the leather footwear finished products, such as shoes, leather garments, bags suitcases, as well as accessories. Besides, building up the global networking, it is a pathway leading to business opportunities in the market in ASEAN.

Shoes and Leather Hanoi 2023 is organised in an area of 4500 sq.mtrs with 200 exhibitors from 15 countries and regions. Around 7500 business visitors from 20 countries and regions are expected to visit the event.

For details please contact:

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Website : [www.toprepute.com.hk](http://www.toprepute.com.hk)



## **APLF ASEAN 2023 elevated ASEAN to the international level**

- **Offered solid business opportunities in Southeast Asia and Beyond**
- **A valuable platform for young designers**

The APLF ASEAN 2023, the one and only leather exhibition in Thailand, has concluded with great success. The event held between 25 – 27 October 2023 at the Queen Sirikit National Convention Center in Bangkok, welcomed exhibitors and visitors from ASEAN region and around the world.

Under the slogan **“ASEAN in Action”**, the second edition of the event in Thailand builds on the success of the first edition. As a platform for professionals in the leather industry, APLF ASEAN gathered Thai and international suppliers of leather, chemicals, machineries and components, providing opportunities for regional and international buyers, designers and traders in the tanning and leather goods manufacturing sectors.



Thailand being the heart of the ten-member ASEAN region and known for its vibrant leather economy, proudly plays host to APLF ASEAN. The Thai Tanning Industry Association (TTIA) has brought to the event 30 of its members, who showcased their exceptional quality leather products and services. “TTIA has been at the forefront of promoting and advancing the leather industry. It is our honour to extend our support to APLF that propels our sector forward as the meeting point of knowledge exchange and market expansion,” said Suwatchai Wongcharoensin, President of TTIA.

Under M.E.E.T - Matching, Education, Experience and Tradeshow, APLF ASEAN is more than just a tradeshow because it combines organising an event, providing knowledge and providing a complete leather goods experience in one event to provide attendees with a complete experience.

An important part of the event was a showcase of the Autumn-Winter 2024/25 trends in colors and materials for leather by Olivier Guillemain, in collaboration with The Comite Français de la Couleur. It divided the latest trends into four themes: **Essential Impulse, Serene Impulse, Disruptive Impulse and Eclectic Impulse.**



Furthermore, the APLF ASEAN 2023 is a valuable platform for designers. Among the highlights of this event was the special seminar on “Top Leather Good Designers”. Five leading Thai designers were invited to display their signature bag collections, and share their stories about the brands and their advice to young designers.



Additionally, the event held a competition in order to discover talented designers. “The Next Thai Leather Goods Designer Competition” brings together undergraduate students from various universities to develop creative ideas and marketing plans for establishing their own brand.



One of the key workshops this year is the Let's Talk Leather Masterclass. The workshop featured two leading speakers, leather technical advisor Mr. Karl Flowers, and British designer Mr. Yusuf Osman. The masterclass provides an understanding of the origin of the finest natural raw materials that can be used for the design of pieces.

The APLF ASEAN has sparked a great deal of interest in leather products throughout the region. The economic recovery in ASEAN is expected to increase consumer demand for fashion products, garments, leather goods and footwear. This trend is going to have a positive impact on leather upholstery for furniture and automobile as well. Thailand is not only a key gateway for ASEAN countries to connect, but it is in addition home to more than 700 leather goods manufacturers and suppliers, and also one of the largest car production countries. There is no doubt that they play a significant role in advancing Thailand's industry to the level of global prominence.



APLF ASEAN 2024 is scheduled to be held between 6-8 November 2024 at the Queen Sirikit National Convention Center, Bangkok.



## **Stahl NuVera®: Accelerator of the transition to sustainable materials**

**Consumers increasingly expect products to be produced sustainably. One way for fashion, footwear and upholstery manufacturers to improve their environmental footprint is to replace fossil fuel-based chemistry with renewable carbon-based materials. Stahl NuVera®'s range of renewable carbon polyurethanes can help you do exactly that.**

Stahl's environmentally driven commitments and product solutions are a key part of our strategic focus, but also go back many decades, from Stahl's introduction of water-based Polyurethanes in the late 1970's to the more actual introduction of Stahl renewable carbon-based polyurethanes. Our commitment to minimizing the impact of our products on people and our planet has always driven innovations.

Our Stahl NuVera® product range can help manufacturers increase their sustainability without compromising on quality and performance. The introduction of this portfolio is in line with our Responsible Chemistry Initiative, with which we commit to speed up the transition from fossil carbon to renewable carbon for all organic chemicals and materials. Our efforts are focused on aligning our product portfolio to the future needs of our customers and the markets they serve while offering solutions that improve their environmental footprint. We do this by using low-impact manufacturing chemicals, contributing to a more circular economy and, in the case of Stahl NuVera®, by replacing petrochemicals with renewable resources.

### **Our Stahl NuVera® Range**

Stahl NuVera® "modern carbon" based products are derived from plant-based biomass (typically vegetable oils or sugars), alternatively

they can also be made from a third renewable raw material category which is “captured carbon”, where CO<sub>2</sub> released from industrial processes is captured and used as a feedstock for producing polymeric building blocks. The Stahl NuVera<sup>®</sup> range of sustainable polyurethanes have been tested and certified using the ASTM 6866 carbon isotope method for bio-based carbon content\*. The Stahl NuVera<sup>®</sup> D range of polyurethane dispersions consists of four products: RU-94-226, RU-94-227, RU-94-225 and RU-94-414. We are currently developing additional solutions as part of our commitment to responsible chemistry.

The first two solutions – Stahl NuVera<sup>®</sup> D RU-94-226 and RU-94-227 – are the two harder resins in the portfolio. They are ideal for use as pre-skin component in transfer coating processes or as a top-coat component in finishing or lacquering of flexible synthetic articles, which may be used in consumer articles such as shoes, garment or fashion bags & accessories.

Stahl NuVera<sup>®</sup> D RU-94-225 is a softer PUD which can be used as adhesive or alternatively as a mix component to make a chosen pre-skin formulation more flexible. It is a soft PUD that can also be used in a transfer-coating process as a skin layer or as a soft resin component in finishing or lacquering formulations that uses a combination of bio-based and captured carbon-based raw materials.

Stahl NuVera<sup>®</sup> D RU-94-414 is a soft polyester dispersion. It can be used in adhesive formulations or alternatively serve as a soft component in basecoat finishing or lacquering.

### **Introducing new Stahl NuVera<sup>®</sup> Q HS-94-490 high solids resin**

An important factor for creating high renewable carbon content in any synthetic article, will also depend on the availability of a flexible high solids resin which offers bio-based content. In many transfer coated articles the middle layer (skin) is the thickest layer, which typically determines mostly the handle and flexibility. In some cases this can



be selected from WB PUD offering, but in most synthetic articles it needs the use of a bigger quantity or thicker layer to be applied, due to boost performance. The use of a high solids resin is often bringing the solution. With the introduction of Stahl NuVera® Q HS-94-490, we can now offer a product that can be used for applying thick layers in one pass. HS-94-490 is available as an approximately 100% solids resin with very soft film characteristics, ideally suited for creating flexible articles like upholstery or shoe upper. This new Stahl NuVera® product addition is currently in the pre-industrialization phase, available for small scale prototyping. During 1Q 2021 we expect to launch this product to commercial status, making it available in larger quantities.

### **ZDHC MRSL Compliancy**

It goes without saying that all Stahl NuVera® renewable carbon-based products comply with the latest standards and regulations, including the Zero Discharge of Hazardous Chemicals (ZDHC) Version 2.0 Manufacturing Restricted Substances List (MRSL).

In addition to these 4 waterbased polyurethane dispersions, our R&D engineers are also looking at expanding our portfolio of products in other directions. We soon hope to announce the introduction of a 100% solids pre-polymer resin.

### **Webinar: How Renewable Carbon Content will Shape the Future of Polyurethanes**

The use of these new Stahl NuVera® products is very versatile, as also presented in a recent [Stahl webinar](#). Our Synthetic Market application engineers have demonstrated the creation of various shoe-upper, upholstery or fashion articles, using the above presented Stahl NuVera® products, which meet the typical technical performance targets for the markets that they serve, while reaching total renewable carbon content for some articles as high as 75%.

## **TRUMPLER PARTNERS WITH ARCHROMA TO LAUNCH REVOLUTIONARY TANNING PROCESS FOR LEATHER PRODUCTION**

Trumpler, a leader in leather chemicals since 1868 has teamed up with Archroma, a global leader in specialty chemicals with a focus on sustainable solutions, to offer a groundbreaking leather production process that can be used to produce high-performance leather in a more eco- friendly and cost-efficient way.

DyTan<sup>®</sup>, the new process combines innovations from Archroma and Trumpler to offer an alternative to existing metal-free and chrome-tanned leather. It enables the reliable production of leather with impeccable shavability, excellent color depth and outstanding migration and abrasion resistance. Free from metal salts and reactive aldehydes, DyTan<sup>®</sup> is suitable for a wide range of leather applications, from garment and footwear to automotive and furniture upholstery, for today's eco-conscious leather producers and consumers.

At the core of the DyTan<sup>®</sup> process is Archroma's patented revolutionary AVICUERO<sup>®</sup> System, which is based on novel molecules that enable more sustainable leather tanning and dyeing, developed by Archroma in cooperation with leather technology consultant Dr Leather. It enables collagen fibers in the leather to be covalently cross-linked through a simplified process at low temperatures. As a result, the system shows strong potential to save energy and water, while also reducing process time and CO<sub>2</sub> emissions by up to 23%.\*

The DyTan<sup>®</sup> process combines the AVICUERO<sup>®</sup> System with Trumpler's bio-based fatliquors and retanning agents based on functional biopolymers produced from hydrolyzed shavings – resource-saving technology that Trumpler has been refining for 15 years.

"Our collaboration with Archroma has made it possible to rethink traditional methods of leather production and to develop a pioneering alternative," explains Hein Vugs, Managing Director of the Trumpler Group. "Our vision is to lead the leather industry to a more consciously sustainable future without compromising on quality or efficiency. With DyTan<sup>®</sup> and AVICUERO<sup>®</sup>, we are proud not only to achieve our ecological goals, but also to enable our customers to realize noticeable cost savings."

"With the aim of bringing a new state-of-the-art solution to the leather industry, Archroma and Trumpler share a commitment to innovation, sustainability and customer satisfaction," Mark Garrett, Archroma Group CEO, says. "Leveraging the AVICUERO<sup>®</sup> System, the new DyTan<sup>®</sup> process represents a significant milestone in the history of leather production, bringing remarkable operational and end-use benefits to help uplift the industry as a whole."

As an exclusive global partner of Archroma, the Trumpler Group is responsible for the distribution of the AVICUERO<sup>®</sup> System worldwide. Delivering technical support and first-class customer care, Trumpler will help leather manufacturers and brands to implement sustainable tanning and draw on its comprehensive product portfolio and process knowledge of tanning, retanning and fatliquoring processes.

\* Estimations carried out with the Archroma ONE WAY Impact Calculator show energy savings of up to 25% and reduced process time leading to a reduction in CO<sub>2</sub> emissions of up to 23%, compared to traditional chrome tanning<sup>1</sup>. They also show significant water savings compared to other metal-free tanning systems<sup>1</sup>. With the ONE WAY Impact Calculator, customers will be offered personalized calculations for their specific processes.

Trumpler partners with Archroma to launch revolutionary tanning process for leather production. (Photo: Archroma)

AVICUERO<sup>®</sup> is a trademark of Archroma registered in many countries. DyTan<sup>®</sup> is a trademark of Trumpler registered in many countries.



## **Particle foam perfectly distributed thanks to simulation with Ultrasil<sup>®</sup>**

- **Ultrasil<sup>®</sup> simulation now available for manufacturing processes of particle foam components**
- **Application starts with expanded thermoplastic polyurethane (E-TPU) Infinergy<sup>®</sup>**
- **The new application expands BASF's proven simulation portfolio for innovations in plastics**

BASF is expanding its proven Ultrasil<sup>®</sup> simulation portfolio for plastics applications: From now on, the simulation competence will also cover the manufacturing process of components made of particle foam. Customers can use Ultrasil<sup>®</sup> to accelerate the development process for their components and save costs.

### **From bicycle tires to shoe soles: Simulation for components made of Infinergy<sup>®</sup>**

The new Ultrasil<sup>®</sup> solution was developed for Infinergy<sup>®</sup>, an expanded thermoplastic polyurethane (E-TPU), which is used in a wide range of applications. "Whether in bicycle tires or shoe soles, particle foams such as Infinergy<sup>®</sup> usually use pneumatic filling," says Achim Besser, Team Leader Ultrasil<sup>®</sup> Core. "This means that the particles are distributed in the mold with the help of compressed air. But how can potential problems in the manufacturing process already be identified in the development stage of the component? That's exactly where Ultrasil<sup>®</sup> will help from now on."

The new simulation competence covers the entire manufacturing process of components made of particle foam, as Moritz Höfert, Simulation Engineer, adds: “Which path does the air take into the mold and out again? Should the customer change the venting of the mold or the placement and number of fillers to avoid air pockets? Is gravity used optimally? How does closing the mold change the particle packing? And finally, how does the finished part perform under load?”

“If our customers know the answers to these questions, they can fully leverage the potential of particle foams,” Martin Vallo, Senior Manager Global Tech Development, affirms. “For example, in a shoe midsole, the filling affects the density and stiffness of the sole. Ultrasim<sup>®</sup> simulation can optimize these two parameters - and fully exploit the potential of Infinergy<sup>®</sup>.”

The new application was initially developed for the E-TPU Infinergy<sup>®</sup>. The simulation expertise can be transferred to other particle foams and thus enables an evaluation of which particle foam is best suited for the planned component.

For all information about BASF’s complete Ultrasim<sup>®</sup> portfolio, please visit: [www.ultrasim.basf.com](http://www.ultrasim.basf.com).

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***Please visit our website:***  
***[www.indianleathermagazine.com](http://www.indianleathermagazine.com)***



## **SGS opens new toy testing laboratory in Bengaluru, South India**

SGS, the world's leading testing, inspection and certification company, has announced the opening of a brand new toy testing laboratory in Bengaluru, Karnataka state of South India.

Approval from the National Accreditation Board for Testing and Calibration Laboratories (NABL) was granted on August 5, 2023. The 3500 sq. ft, state-of-the-art lab is now fully operational and providing a suite of local and international testing services to meet growing demand from southern India's toy manufacturing industry.

Located within SGS's established Softlines and Connectivity (electrical and electronic products) laboratory site in Bengaluru, this new facility complements the company's existing toy testing lab at Manesar in Gurgaon, North India. Both labs, in addition to NABL accreditation, have scope for ASTM F963 (USA); ISO 8124 (international markets); EN 71-standard (Europe) and IS 9873 (India).

Shashibhushan Jogani, Managing Director for SGS in India said: "We are delighted to open this strategically located new laboratory. This extends our ability to support toy manufacturers and retailers across South India to accelerate the pace of their business by reducing time to market for bringing safe and compliant toys to the customers."

"As part of a global network of toy testing laboratories, our team of experts in Bengaluru look forward to supporting clients to navigate the industry's stringent regulations and standards and bring new and safe products to market quickly and efficiently," said Shailesh Sharma, Director – Connectivity & Products, SGS in India.

The capabilities of the new laboratory include:

- Physical and mechanical testing
- Chemical testing
- Flammability testing
- Electrical safety testing
- Labeling review

The types of toys that are tested include:

- Dolls and plush toys
- Infant toys
- Ride-on and pull-along toys
- Magnetic and projectile toys
- Mouth actuated toys
- Games and figurines
- Construction toys
- Puzzles and creative art materials
- Electrical and battery-operated toys

### **SGS toy safety testing services**

SGS offers manufacturers, retailers and importers a one-stop solution to ensure their toy products comply with relevant regulations and quality standards. These include the EU toy directive and the US Consumer Product Safety Act (CPSIA) amongst others. SGS toy safety services aim to assure toy safety and offer a comprehensive program including:

- Support for new product development
- Update and interpretation of legal requirements
- Safety/risk assessment
- Product and materials testing
- Factory and social audits
- Inspections
- Training

For more information visit [www.sgs.com/toys](http://www.sgs.com/toys)



## Geoff Holmes elected as IULTCS Vice President

The IULTCS Executive Committee is pleased to announce that Geoffrey Holmes has been elected as the new Vice President; he will take up the position in January 2024.

Geoff has a long history in the leather industry, having studied Leather Technology at the Leather sellers College at the University of Northampton. Prior to this he graduated with a BSc (Hons) in Applied Science at Kingston University, London.



The IULTCS Executive Committee is very confident that Geoff will make an excellent Vice President and move on to be a successful President in 2026. We look forward to working closely with him in the months and years ahead.



*Digest of Leather News*

57<sup>th</sup> Year of Publication

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## **One in three checked biocidal products found to be non-compliant**

EU-wide enforcement project found about 60 active substances in biocidal products that are not allowed on the EU, EEA and Swiss markets. One in three of the checked products did not comply with at least one of the checked legal requirements.

**The national enforcement authorities in 29 countries checked over 3500 biocidal products. Overall, 37% of the checked biocides were non-compliant with at least one of the checked legal requirements.**

18% of checked products were non-compliant with fundamental requirements that affect their safe use. Most of them either lacked a product authorisation or included non-allowed active substances. Most biocides with such major non-compliance were disinfectants, insecticides, and repellents/attractants. Inspectors found about 60 active substances that are not allowed in these products. All products that lacked authorisation or contained non-allowed active substances were withdrawn from the market. In some cases, criminal complaints or fines were issued.

The remaining 19% non-compliant products were found to have minor deficiencies that did not affect safe use such as missing contact information of the supplier. In these cases the national enforcement authorities gave advice or administrative orders.

Much non-compliance was found in disinfectants sold to consumers. 265 disinfectants out of nearly 1900 that were checked (14 %) were found to be non-compliant. This included serious compliance deficiencies such as lacking authorisation or incorrect labelling that usually led to the withdrawal of the disinfectants from the market.

The inspectors focused on disinfectants because new manufacturers entered the market with biocidal products at the early stages of the COVID-19 pandemic. Many of those disinfectants were not fully compliant with the EU's Biocidal Products Regulation (BPR) and the related national transitional requirements for biocides.

## Background

This harmonised enforcement project on biocides checked how different types of biocidal products on the EU, EEA and Swiss markets comply with the Biocidal Products Regulation. The inspections focused on:

- non-allowed active substances in biocidal products
- approval of the active substance suppliers (Article 95)
- obligations related to labelling, packaging and advertising of biocidal products.

The national enforcement authorities carried out the inspections during 2022. Where needed, controls also involved chemical analysis of biocidal products.

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## ECHA identifies research needs for regulating hazardous chemicals

The European Chemicals Agency (ECHA) has published a new report on 'Key areas of regulatory challenge 2023' that identifies areas where research is needed to protect people and the environment from hazardous chemicals. It also highlights where new methods, that support the shift away from animal testing, are needed.

**Helsinki, 15 November 2023** - To further improve chemical safety in the EU, scientific research needs to deliver data that is relevant to regulating chemicals. In order to enhance the regulatory relevance of scientific data, ECHA has identified the following areas as priorities for research.

- Hazard identification for critical biological effects that currently lack specific and sensitive test methods: i.e. developmental and adult neurotoxicity, immunotoxicity and endocrine disruption
- Chemical pollution in the natural environment (bioaccumulation, impact on biodiversity, exposure assessment)



- Shift away from animal testing (read across under REACH, move away from fish testing, mechanistic support to toxicology studies e.g. carcinogenicity)
- New information on chemicals (polymers, nanomaterials, analytical methods in support of enforcement)

**Mike Rasenberg**, ECHA Director of Hazard Assessment says:

“ECHA believes that to achieve the ambitions of the European Green Deal and the EU’s Chemicals Strategy for Sustainability we need more scientific research with regulatory relevance.

“There is a growing need for new test methods that do not rely on animals, and a better understanding of the toxicological mode of action of certain hazardous chemicals. Generating the necessary data without animal testing while protecting health and the environment, cannot be achieved without scientific progress.

“We encourage the scientific community to take this opportunity and work with us to contribute to a safer Europe.”

## **Background**

The European Partnership for the Assessment of Risks from Chemicals (PARC), is a seven-year EU-wide research and innovation programme under Horizon Europe which aims to advance research, share knowledge and improve skills in chemical risk assessment.

ECHA’s role in PARC is to make sure that the funded scientific research addresses current challenges related to chemical risk assessment and adds value to the EU’s regulatory processes.

The key areas of regulatory challenge report can be seen as an evolving research and development agenda aiming to support and inspire the Partnership for the Assessment of Risks from Chemicals (PARC) and the wider research community. The list of research needs is not exhaustive. The next update to the report is expected in spring 2024.

# BOOKS FOR LEATHER

## Now available

1. Five Decades of Leather  
- S. Sankaran  
(only a few copies available)
2. Vegetable Tanning Materials of India  
- Dr. V Sundar Rao

## ILTA Publications

3. An Introduction to the Principles of Leather  
Manufacture - S.S. Dutta
4. Analytical Chemical of Leather Manufacture  
(For Beginners) - P.K. Sarkar
5. Treatise of Fatliquors and Fatliquoring of Leather  
- Dr. Samir Dasgupta
6. Synthetic Tanning Agents - Dr. Samir Dasgupta

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# **“Making Leather : An overview of Manufacture”**



**Mr Richard P Daniels**, one of the renowned leather technologists, has recently come out with a study **“Making Leather: an overview of manufacture”** intended for people entering the leather sector who aspire to become technicians. This study is based on his rich technical experience from training (basic to MSc level and counterpart both directly also distance learning modules that he has authored plus numerous profiles/reports and field works etc.etc).. This was released at the IULTCS Congress in Ethiopia and is recommended by UNIDO, IULTCS and SLTC (going on their websites).

It contains information for those who need more than the most basic understanding of commercial leather manufacture. It follows the processes and operations used, and their purposes for making leather from bovine hides, sheep and goat skins. This study is intended for self-training and distance learning within the global leather sector. This great work is divided into 10 parts comprising 30,000 words in a condensed format and 300 integrated technical images/diagrams. It is essentially a self learning package and designed for use by smart phone, tablet and computer. It suits display and use by suitably qualified staff within formal education for discussion and expansion.

The author has gracefully made this comprehensive study available to readers at free of cost in our website. It is about making leather!

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## Leather Innovations PART – II

### NSK SRINIVASAN<sup>1</sup> & HASMUKH SHAH<sup>2</sup>

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*(continued from Oct issue)*

#### 13. Innovation – Highlights – Leather Colourants

##### Innovation – Highlights – Leather Colourants

- Reactive Dyes for Drum Dyeing (Lugafast Black AN, BASF).
- Drum pigmentation (Pigment Dyeing in Drum Dyeing).
- Inkjet Printing on Leather (Agfa, TFL Developing Inkjet Solution for Leather).

#### 13.1 Eco-benign Management Options for Cleaner Chrome Tanning

It is recognized that one of the convincing solutions to the problems in chrome management rests in the reduction of discharge of chrome in the effluent through in-plant control measures and cleaner chrome Tanning practices. Some of the technological measures for the better management of Chromium include:

##### Better management of Chromium include Table – 13 A

- Chrome recycling methods. • Chrome recovery/re use methods.
- High exhaust chrome tanning methods. • Less chrome technologies.
- Chromeless technologies. • Avoiding chromium(VI) formation.
- Utilization of chrome shavings. • Utilization of chrome sludge.

Source : Table – 13 A. Eco-benign Management Options for Cleaner Chrome Tanning, JSIR 61(11) 912-926

#### 14. Vegetable Tanned Leather - 100% Vegetable Leather Table – 14 A

##### Vegetable Tanned Leather - 100% Vegetable Leather Chrome Free. Breathable. Antibacterial. Recyclable

##### ECO-FRIENDLY

Vegetable tanned leather is a sustainable product. The lack of heavy



**Vegetable Tanned Leather - 100% Vegetable Leather  
Chrome Free. Breathable. Antibacterial. Recyclable**

metals and usage of strictly vegetable extracts make it recyclable. This tanning method reduces the amount of water needed by 50% when comparing to chrome tanning. Moreover, this product is zero waste as its residues are reused to produce fertilizers and cosmetics

Vegetable leather takes longer to produce, lasts longer as a final product, is healthier for human use, better for nature and has better quality than regular leather overall.

When you sum up all these characteristics it is natural to assume that it is also pricier, but that is actually not true. Vegetable tanned leather is sometimes cheaper than common leather

**Age makes it better**

Vegetable leather tells a story throughout the years, the story of the one who owns it. Goods made from this leather do not get old they morph and blossom into something different. This leather will not tear or show signs of abrasion. You will see the colour changing slightly aside with the texture. This will turn the piece into something special and personal.

The process of aging explained above is the reason why people don't get tired of vegetable leather because years later the product is not like the one you bought anymore. As time passes the piece gains its own life and character it is 100% personal and personalized

**Environmentally-friendly Leather Production – BOXMARK**

BOXMARK sets standards in leather production worldwide, especially as far as ecology is concerned. For us, sustainable tanning means forcing the use of vegetable tanning agents. Due to the consistent development and research activities, it has been possible to replace the traditional chromium III tanning procedure with a vegetable synthetic production process.

BOXMARK has also succeeded in converting the leather dyeing

**Vegetable Tanned Leather - 100% Vegetable Leather  
Chrome Free. Breathable. Antibacterial. Recyclable**

process to using heavy-metal free pigments. The finishing of leather articles is done with solvent-free varnish. BOXMARK meets all EU requirements for end-of-life vehicles with all its products.

Source : Table – 14 A. Vegetable Tanning, Eco Friendly Leather, Bio Leather, [geral@bioleather.pt](mailto:geral@bioleather.pt)

And Environmentally-friendly Leather Production – BOXMARK.  
[www.boxmark.com](http://www.boxmark.com)

## **15. Customer Support & Application Research**

### **15.1. Quality Assurance and Customer Support**

- Quality Assurance and Customer Support are key functions of the organization in Colourant Industry. They have intense interactions with Manufacturing, Marketing, Commercial functions within organization, Customers as well as Industry Organizations, Sustainable Textile Standards and Organizations, Global Corporate Sustainability Organizations and Local Chapters.
- They play an important role in providing sustainable products meeting consumer expectations relating to quality- Characteristics, Performance & Fastness Properties, consistency, durability, sustainability and conformance to ecology norms.
- Quality control is a procedure/set of procedures carried out to ensure that a manufactured product/performed service adheres to a defined set of criteria/standard values, before, during and after manufacturing, to ensure customer satisfaction and conformance with statutory regulations. The raw materials, manufacturing process and finished products undergo stringent QC checks as per the standard protocols.<sup>31</sup>
- Quality is about meeting the needs and expectations of customers with respect to functionality, design, reliability, durability, & price of the product. An organization uses Quality Assurance to ensure that the product is designed and implemented with correct procedures. This helps reduce problems and errors, in the final product.

## 15.2 Key functions of Quality Assurance and Customer Support

- In most of the organizations in Colourant Industry have manufacturing & service centers in more than one location for meeting the Customer need, & completing the product range.
- Growing competition, Meeting the changing expectations, Environmental Challenges and Providing Solutions to User Industry have become key areas needing more focus for survival, growth and development.

Quality Assurance -Table 15 A
Quality control of inputs, in process controls and Finished Product Testing, Standard Maintenance, Complaint Handling.
Key Role in maintaining Quality Systems – Quality Management System, Environment Management System, Occupational Health & Safety Management System.
Sustainable Chemical Management System – ZDHC(MRSL), RSL, MSDS, Eco Booklet & others

Customer Support - Table 15B
· Trials & Demonstrations at Customer Place for Product performance and Product Differentiation, Technical Discussions for Product Selection and approvals. Organizing Seminar & Customer Awareness Meet.
· Generation of Technical Information. New Product screening and approval. Interactions with Educational Institutions, & Research Organizations.
· Application Research at Factory and at Customer centers with lab and pilot plant facilities for enhancing the Customer Base, product different ion, Dissemination of Technical Information leading to Retaining Customers, and Value Realization.
· In Leather Industry most of the Dyes Chemicals, Auxiliary & Colourant manufacturers have their own Service Centers in key locations of Tanning

Customer Support - Table 15B
Centers around the globe.
<ul style="list-style-type: none"> <li>• Their major activities are – Colour matching including Modeurope fashion shades; Imparting product knowledge; Offering tailor made solutions, leather testing and practical training on specific articles; organizing conference and seminar on various key challenges and industry and trade related requirements; Cleaner production, RSL (Restricted Substance List), MRSL (Material Restricted Substance Lists) and Environmental challenges and related activities.</li> </ul>

Source : Tables 15 A & 15 B. A presentation on QUALITY CONTROL IN THE PAINT INDUSTRY By Mrs. Adetoun Tijani Head, Quality Control Laboratory, Portland Paints & Products Nig. Plc.

16. Responsible Manufacturing

Responsible Manufacturing Table – 16 A
<ul style="list-style-type: none"> <li>• As with most global industries, leather manufacturers must contend with the potential impact of their production on the environment. Responsible manufacturing practices should aim to reduce the amount of energy, water and chemicals used during production, as well as reducing the amount of solid waste, wastewater, and air emissions.</li> <li>• Responsible leather manufacturers often turn to certifications such as the LWG Leather Manufacturer Audit Protocol (LMAP) to demonstrate their commitment to sustainable leather manufacturing to customers. LWG’s flagship certification has been assessing leather manufacturing facilities based on the environmental impact of their manufacturing processes for over 15 years.</li> </ul>
<ul style="list-style-type: none"> <li>• The LWG’s audit standard covers many elements of leather manufacturing, including water use, energy consumption, chemical management, disposal of solid waste, effluent treatment, and management of air and noise emissions. And the standard is continuously developing and evolving to become a holistic standard for assessing all elements of Environment, Social responsibility, and Governance (ESG). Most recently, the LWG introduced additional</li> </ul>

### **Responsible Manufacturing Table – 16 A**

requirements for traceability and social auditing with the launch of Protocol 7 in 2021, in response to growing demand for additional transparency within the supply chain.

- Whether using renewable energy, treating wastewater effectively, being socially responsible, or swapping to safer chemistry, there are many actions leather manufacturers can take to reduce their impact and demonstrate responsible, more sustainable leather manufacturing.

Reference : Table 16 A. Leather Working Group - What is Sustainable Leather [www.leatherworkinggroup.com](http://www.leatherworkinggroup.com)

## **17.Traceability**

### **17.1 Traceability**

#### **Traceability Table – 17 A**

- Consumers today want to know what they are buying, where it comes from and how it was made. Increasingly, brands and manufacturers are needing to put extra thought into the materials they're sourcing and where they're sourcing from - highlighting the importance of traceability throughout global supply chains no matter the industry.
- The Leather Working Group has been active in driving traceability within the leather sector since 2008, when concerns related to deforestation and cattle ranching were raised by several notable NGOs. At the time, many global brands were challenged to review their supply chain policies with a view to reducing the level of deforestation across the world.

### **17.2 Traceability in the LWG Audit Standards**

#### **Traceability in the LWG Audit Standards Table – 17 B**

The LWG Leather Manufacturer Audit Standard has been developed collaboratively over the years, aiming to drive positive change



### Traceability in the LWG Audit Standards Table – 17 B

incrementally, by the phasing out harmful practices and promoting progressive improvements within the leather value chain. Version 7.0 of the LWG Leather Manufacturer Audit Standard (P7) approaches traceability in three ways:

1. Firstly, through assessing material procurement to ensure upstream suppliers are also certified and are manufacturing in a responsible way.

2. Secondly, by assessing the incoming material traceability, including new levels to increase the ability of all actors to achieve additional levels of traceability.

3. Lastly, by assessing the traceability of the outgoing material, to incentivize the improvement of downstream traceability with a completely new section of the protocol.

For the first time, we have included incoming material traceability as a scored section in the audit, and plan to progressively increase these requirements in the next iteration of the LWG Audit Standard according to our roadmap.

This means that having limited traceability and exposure to deforestation will start to negatively impact medal ratings. This phased approach will ensure that all actors are fully engaged and that we will achieve our goal in a realistic and possible manner.

Source : Tables 17 A & 17 B . Auditing the Leather Supply Chain, Leather Working Group [info@leatherworkinggroup.com](mailto:info@leatherworkinggroup.com)

#### References :

1. Table – 1 C .WHAT IS THE FUTURE OF (CHROME) TANNING? LEATHER MANUFACTURE IN THE NEW MILLENNIUM MEET IN AFRICA Casablanca, Morocco 28 September, 2000. The framework for sustainable leather manufacture, Second edition. Jakov Buljan, Ivan Kraf. 2019 by the United Nations Industrial Development Organization. Leather Innovation Challenges 2025SSIP – Italian Leather Research Institute

2. Figure – 2 A. CIRCULAR ECONOMY — CHALLENGES FOR THE TEXTILE AND CLOTHING INDUSTRY Małgorzata Koszewska Lodz University of Technology, Faculty of Management and Production Engineering, Department of Production Management and Logistics, Wolczanska 215, 90-924 Lodz, Poland [malgorzata.koszewska@p.lodz.pl](mailto:malgorzata.koszewska@p.lodz.pl)

3. Figure - 3 A. Pigments Market by Type (Azo, Phthalocyanine, Quinacridone, Titanium dioxide, Iron Oxide, Cadmium, Carbon Black, Chromium Oxide, Complex Inorganic, Classic organic, Metallic, High Performance, Light Interference, Fluorescent, Luminescent, Thermo-chromic) - Global Opportunity Analysis and Industry Forecast, 2014 – 2022 Allied Market Research, 2020.[alliedmarketresearch.com](http://alliedmarketresearch.com)

4. 4. & Table – 4 A.COUNCIL FOR LEATHER EXPORTS (CLE), Highlights of Product Segments of Indian Leather and Footwear Industry <https://leatherindia.org/indian-leather-industry/>

5.Table – 5 A & Figures – 5 B & 5 C & 5 D.The framework for sustainable leather manufacture, Second edition. Jakov Buljan, Ivan Kraf. 2019 by the United Nations Industrial Development Organization.

6.6& Figure –6 A. Industrial Clusters in Tamil Nadu, August 2021. 6 B. Invest India. National Investment Promotion & Facility Agency.

7.Tables - 7 A & 7 B & 7 C & 7 D. The framework for sustainable leather manufacture, Second edition. Jakov Buljan, Ivan Kraf. 2019 by the United Nations Industrial Development Organization.

8.Table - 8 A .The framework for sustainable leather manufacture, Second edition. Jakov Buljan, Ivan Kraf. 2019 by the United Nations Industrial Development Organization.

9.Table - 9 A . Indian Leather Industry: perspective and strategies, EXPORT-IMPORT BANK OF INDIA, November 2015 WORKING PAPER NO. 46.

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Laboratory for Clean Technology of Leather Manufacture, Sichuan University, Chengdu 610065, P.R.China <sup>2</sup> Guangdong Shengfang Chemical Co., Ltd, Guangdong 529162, P.R.China.

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Figure -12 K . CLRI – Technology - Leather Processing, Leather Chemicals, Enzymatic Products, Environmental Technology, Health care products [ppbd@clri.res.in](mailto:ppbd@clri.res.in) [clriinfo@clri.res.in](mailto:clriinfo@clri.res.in)

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15. Tables 15 A & 15 B. A presentation on QUALITY CONTROL IN THE PAINT INDUSTRY By Mrs. Adetoun Tijani Head, Quality Control Laboratory, Portland Paints & Products Nig. Plc.

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# Leather InnovationsPART – III

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Leather Innovations Part - I, II & III	
PART – I	PART – II
Introduction, What is Innovation? Importance&Application of Different Types of Innovation, The Doblin Innovation Framework,	Reasons Why Innovation is Important, Challenges encountered by Leather Industry, Innovation Trends,
Innovation Management, Innovation cycle with activities at each stage, Factors influencing an organization's ability to manage innovation,	Innovations in Strategy, Innovative Action Plans for reversing the Declining Indian Exports, Changing Use of Leather, History Lessons, The Future of Leather,
Innovation funnel, Why innovation matters, The Innovation Matrix,	Cluster Development - Leather and Footwear Clusters in India, Product & Process Innovation,
Innovation Models   Innovation Process Models   Examples, Innovation in Manufacturing,	Cleaner Technologies at a Glance, Waste to Wealth, A Rationalized Leather Process for Wet-end,
Transforming India into a global manufacturing player, Key trends in Manufacturing Innovation, Innovation Activities in Manufacturing,	Green Technologies for the Leather Production, Eco-leather portfolio Current situation - Types of tanning,

<b>Leather Innovations Part - I, II &amp; III</b>	
<b>PART – I</b>	<b>PART – II</b>
The \$ 100 Trillion World Economy, India on course to become \$30 trillion economy in 30 years, The Emergence of China and India as new innovation power houses,	Innovation – Highlights – Leather Colourants Eco-benign Management Options for Cleaner Chrome Tanning
A World Class Indian Innovation Ecosystem, Categories of Winning Leap solutions, Innovation Council, GLOBAL INNOVATION INDEX, Few quotes which endorse spirit of innovation,	Vegetable Tanned Leather - 100% Vegetable Leather, Customer Support & Application Research,
What is a startup? A startup ecosystem, Jugaad Innovation, Do it yourself (DIY), References.	Responsible Manufacturing, Traceability, References.

<b>Leather Innovations PART – I, II &amp; III</b>
<b>PART – III</b>
What Will The Tannery in 2030 be like ?, The future imagined,
“What is the future of (chrome) tanning? Leather manufacture in the new millennium”, Negative Publicity About Leather, A particular contradiction (contradictio in adjecto) is the term “vegan leather”, Higgs Index & Leather Industry - Leather Industry Calls For Higg Index Review,
Responsible chemistry and Life Cycle Assessment, Cleaner production, Green Chemistry Principles,



<b>Leather Innovations PART – I, II &amp; III</b>
<b>PART – III</b>
<b>Best Available Techniques &amp; BAT reference documents (BREF), Leather- example of circular Economy,</b>
<b>Regenerated Leather (RGL) &amp; Regenerated Leather Composites (RLCs), Up cycling of Leather Waste to Create Up cycled Products and Accessories,</b>
<b>Recycled Leather and Leather Alternatives, Type of Waste and Reuse /Recycling/Recovery and Treatment, Bonded leather fibres material, Comparison of the recycled leather fibres materials producers,</b>
<b>Synthetic, Recycled and Bio Leathers, Additional Information for Harmonious Coexistence - Leather and Leather Alternatives,</b>
<b>A general consensus in the industry not to use the word ‘leather’ for synthetic, polyurethane or polyvinyl chloride sheets or any sheets not originating from animal skins or hides,</b>
<b>Leather &amp; Sustainability, Industry 4.0, Leather 4.0 and Industry 4.0 to 5.0 &amp; Industry 5.0, Going Forward, References</b>

## **1. WHAT WILL THE TANNERY IN 2030 BE LIKE? <sup>1</sup>**

International Leather Maker has published a personal view of Egbert Dijkers, Chair of Leather Naturally of what the leather supply chain could be like by 2030.

### **1.1.The future imagined**

- In 2030, leather will be a material that is very much appreciated and valued by consumers in the major consumer markets. Consumers prefer leather in their products, because it offers a nice look and feel, it can be applied to all kinds of day-to-day articles, offering high tech

characteristics. Leather stays nice over time, it brings joy and pride and can be repaired when necessary.

- Consumers will buy leather goods with an assurance stamp telling them that it is okay to use the material as it is approved by recognised and valued auditing schemes. These labels and auditing schemes are set up in close collaboration with critical NGO's and consumer groups. Transparency as such is truly visible and accountable, moving the value chain forwards while consumers are willing to pay a decent price for their leather goods.
- Fashion brands and their designers favour leather over other materials because of the product characteristics and the fact that it hardly leaves a footprint on our planet

## 1.2 Sustainability no longer a problem

### Sustainability no longer a problem Table -1 A

- We do not talk about sustainability as a problem any longer.
- Instead, it is appreciated by consumers that leather manufacturers use the by-product of the meat industry to turn it into a beautiful material. Imperfections are an added value and the leather industry stopped trying to make leather look like plastic.
- This is true sustainability! There are no concerns about the way the animal lived because the meat and dairy industry has taken further steps in reducing the CO2 footprint, and animals are being treated decently, with a full traceability throughout their lives.

## 1.3 Cleaner chemistry

### Cleaner chemistry Table -1 B

- Leather and leather goods are mainly produced by companies that use bio- based, renewable chemicals and renewable side products.

### Cleaner chemistry Table -1 B

- Emissions do not exist and the only chemicals that can be bought on the market are the ones that are safe and end up in the leather, adding value.
- Water being a scarce resource, is used in small quantities and used over and over again. Effluent treatment plants are well organised although their use will diminish through the years. Solar and wind renewable power are the major sources for energy. Chemical companies are responsible partners in the supply chain and catalyse this development in partnership.

### 1.4 Even safer places to work

#### Even safer places to work Table -1 C

- People working in the leather industry are proud members of the supply chain, they can work safely, earn a decent living and can develop themselves personally. In short, the value chain is fully optimised with limited transportation.
- Consumers do not worry about the end-of-life of their leather. Leather goods can be repaired easily and is, thus, creating new jobs, but it also has self-repairing characteristics.
- Used or worn-out leather goods can be brought back to specialised companies in the local vicinity, where you can choose and purchase a design to re-use your own leather for a second life as a newly designed article.
- In 2030, there is only room for responsible value chain members working on true cost value chain models, be it farmers, slaughterhouses, chemical companies, leather manufacturers, leather goods manufacturers or retailers.
- This ideal world can only exist when all parties in the leather value chain collaborate and look at the true cost of leather products manufacturing and jointly promote leather as a beautiful, versatile and sustainable material.”

Source : 1. &Tables – 1 A & 1B & 1 C .WHAT WILL THE TANNERY IN 2030 BE LIKE. Leather Naturally. [info@leathernaturally.org](mailto:info@leathernaturally.org)

2. By the turn of the century several eminent leather scientists offered their predictions about key issues and likely developments in the leather sector in the UNIDO paper titled “What is the future of (chrome) tanning? Leather manufacture in the new millennium”.

**Predictions about key issues and likely developments in the leather sector Table – 2 A**

It might be interesting to briefly recall some of the points made.

- Shorter delivery time will favour the trade between a tanner and product manufacturer in crust and product components, finishing may be carried out by the product manufacturer.
- Cost effective and clean recovery of proteoglycans and glyco- and lipo-proteins, amino acids from fleshings and hair as well as other proteins are likely to gain significance.
- While, strictly speaking, chromium is not a renewable resource, the commercially extractable reserves suffice for several centuries; Cr will remain the main tanning agent.
- Reversal to vegetable tanning for soft leather (even significantly improved), is unlikely. Vegetable tannins can be qualified as a renewable resource if obtained either within eco-compatible plantation programmes or as by-products from natural species (fruits, leaves).
- The likely directions for new, high stability organic tannages might be: i) natural polyphenol derivatives, with reagent-like specificity, crosslinkable in situ with oxazolidine type reagents and ii) synthetic polymers based on melamine and phenols, crosslinked with formaldehyde or other simple compounds, to produce specified low molecular weight resins, crosslinkable in situ with phosphonium salt or other aldehydic compounds.
- Spray finishing, roller or curtain coating equipment will be developed to automatically adjust the colour of the finish. Finishing equipment could use ink-jet technology.
- Finishing equipment will be designed to finish pre-cut pieces, panels and patterns of leather rather than whole hides or sides.

## Predictions about key issues and likely developments in the leather sector Table – 2 A

- New automated “instant” methods, including non-destructive physical property tests, to determine the quality of leather (such as the already existing mass-spectroscopy method to determine the amount of chrome in leather) will be developed.

- Splitting accuracy, and, in particular, uniformity will further improve; it is quite possible that splitting of raw hides will be introduced, ideally combined with shaving using a high-pressure water jet instead of a metal blade.
- A pH electrode and other sensors will also be developed that will be able to sense the uptake of chemicals; end-point of a process step is not time- but concentration-related.
  - Colour matching using a calibrated spectrophotometer assisted by a computer to accurately colour match leather will be introduced.
  - There is a good possibility of a mechanical assist to accelerate some processes; ultrasound had been shown to speed up the penetration of fatliquors and dyes.
  - Life cycle assessments (LCAs) are certainly going to be important. However, ultimately, an LCA is a subjective evaluation, as selection and weighing of the various parameters forming parts of a LCA are subjective, depending on the prevailing scientific opinions, a priori assumptions, practical circumstances, and “political correctness” at the time the LCA is carried out.
  - Sooner or later, at least before 2050, the leather industry will have to provide for removal of discarded leather.

Source : Table – 2 A. The framework for sustainable leather manufacture, Second edition. Jakov Buljan, Ivan Kralj. 2019 by the United Nations Industrial Development Organization.

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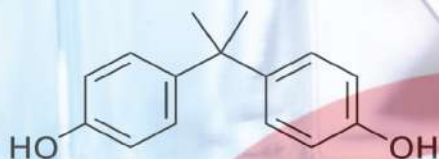
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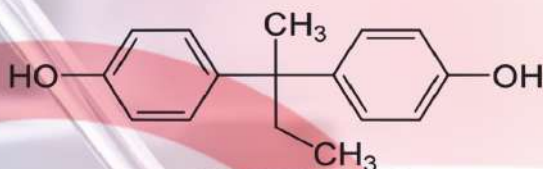




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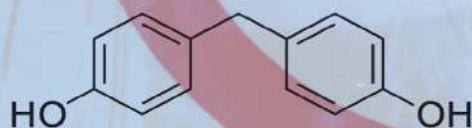
**BISPHENOL A**



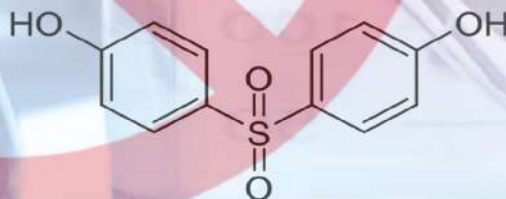
**BISPHENOL B**



**BISPHENOL AF**



**BISPHENOL F**



**BISPHENOL S**