



# **SEPARATION TECHNOLOGY FOR LIMED FLESHINGS AND TANNERY EFFLUENT**

Recover valuable raw materials, reduce wastewater costs



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# INCREASE YIELD, REDUCE ENERGY AND OPERATING COSTS

The tannery industry is an important economic sector in many countries, but it is associated with significant environmental impacts. The biggest challenges for tanneries are the high amounts of water consumed and the contamination of wastewater with chemicals, heavy metals, and organic substances.

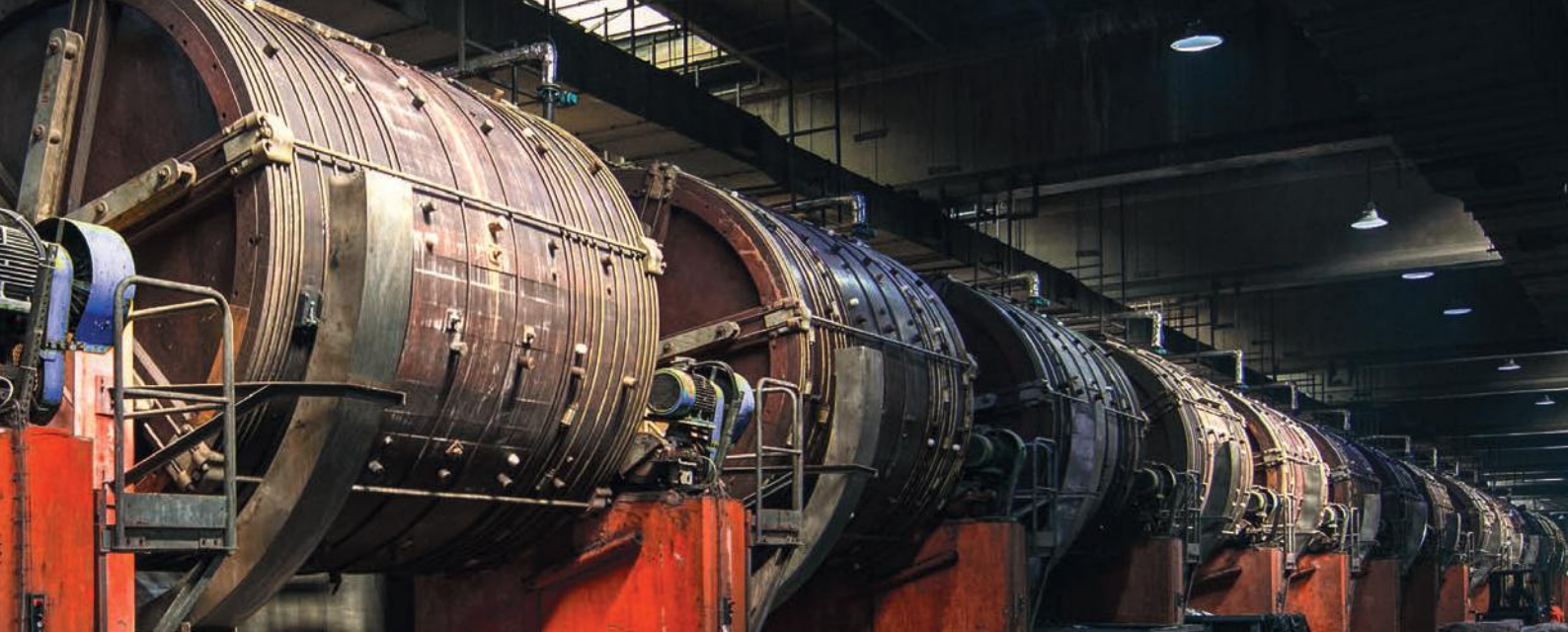
Industrial centrifuges play an important role in optimizing tannery processes. They make it possible to generate additional profit from process side streams. At the same time, they reduce the direct and indirect costs of the industrial tannery through efficient wastewater treatment.

## **Flottweg Tricanter® and decanter**

Decanter centrifuges such as the Tricanter® from Flottweg extract valuable raw materials, such as fats or proteins, from the limed fleshings. These can be sold profitably. Moreover, due to its purity, the recovered fat can also be used as fuel and thus reduce the tannery's energy requirements.

Flottweg decanter centrifuges also support tannery wastewater treatment: Solids and heavy metals as well as organic residues are reliably removed. The wastewater is optimally prepared for biological secondary settling and can be partly reused as process water. This reduces the operating costs of wastewater treatment, reduces fresh water consumption, and improves wastewater quality.

**Flottweg Tricanter® and decanter centrifuges help tanneries reduce operating costs: They exploit the economic potential of process side streams and reduce the impact on the environment.**



## Flottweg supports you in optimizing industrial leather production with the following services, among others:

- Separation of valuable raw materials in limed fleshings with the Flottweg Tricanter®
- Separation of these raw materials into protein and fat for reuse or resale
- Reduction of non-recyclable residues to approx. 10% of the original quantity
- Fully automated centrifuge technology as a contribution to sustainable tannery

Flottweg is certified to DIN EN ISO 9001:2015 and manufactures its products in compliance with the latest technical standards.

## Your advantages with Flottweg separation technology for tanneries:

- Significantly reduced water pollution from chemicals, heavy metals, and organic substances
- Lower costs for conventional disposal (e.g. landfill) of limed fleshings
- Profitable use of the extracted fats and protein components – for example, as a basic material for animal feed
- Increasing the competitiveness of a tannery in dynamic global markets

We invite you to learn about our applications for processing and adding value to process side streams in the tannery industry: Learn what 'Engineered for Your Success' can mean for you and for your company!

Tricanter® complete system with heating for processing limed fleshings



Recyclable material! Fat recovered after the separation process

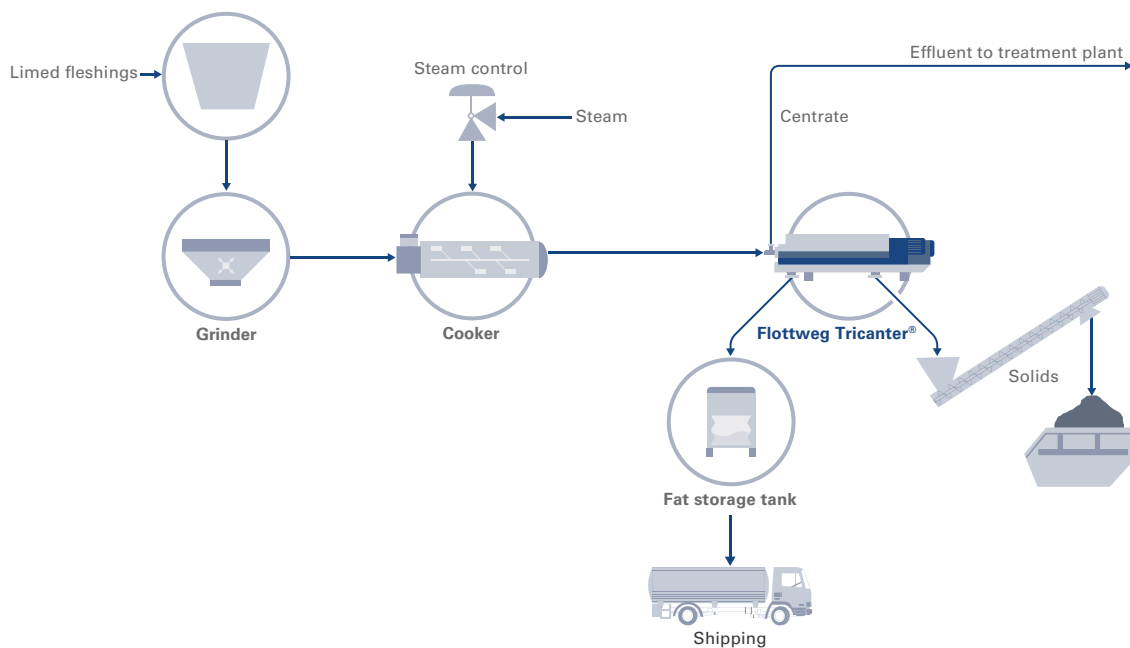




# SUCCESS IS INCREASED YIELD THROUGH PROCESSING OF LIMED FLESHINGS

The Flottweg Tricanter® complete system for tanneries shreds and heats the limed fleshings before separating them into water, fat, and solids.

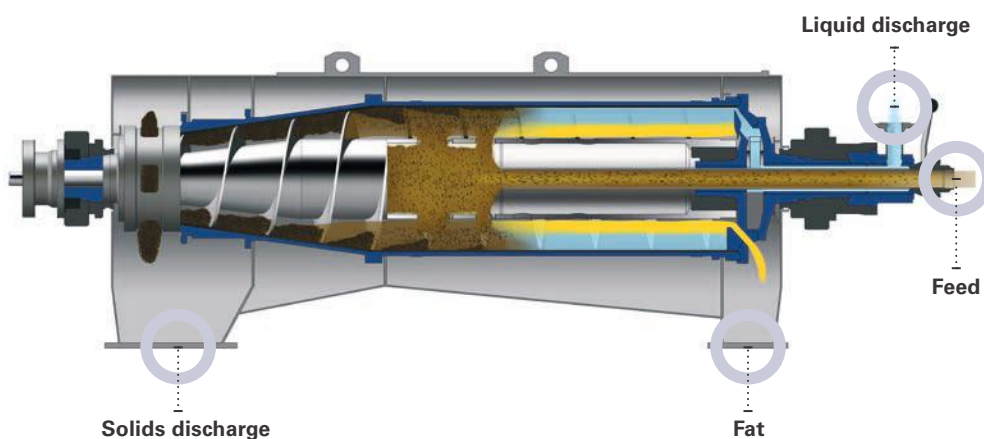
- Efficient separation leaves only 10% organic material for disposal
- The recovery of valuable fat creates an efficient overall process
- The simple (optionally, fully automatic) process requires no additional chemicals and takes place in a safe, closed system
- Various plant sizes, integration into existing processes, and even complete process lines are possible





## Special features of the Flottweg Tricanter®

Flottweg Tricanter® are used for the simultaneous separation of liquid, fat and solids (3-phase process). Due to the special design of the impeller and the rotor, the re-mixing of water and fat phase after separation (e.g. due to swirling) is practically excluded. As a result, the Tricanter® achieves a very high purity in the separated fat phase. Often, the Tricanter® is preferred in 3-phase processes because the investment and operating costs are significantly lower than in comparable processes with decanter and separator.



## Performance data of the Flottweg Tricanter® in the processing of limed fleshings\*

<b>FEED</b>	
Capacity / machine sizes	2 to 9 t/h
Feed	7 – 15% fat 8 – 15% solids 75 – 85% water
<b>FAT / SOLIDS DISCHARGE</b>	
Fat	> 98% fat Less than 2% residual moisture and contamination
Solids discharge	35 – 45% DS in solids

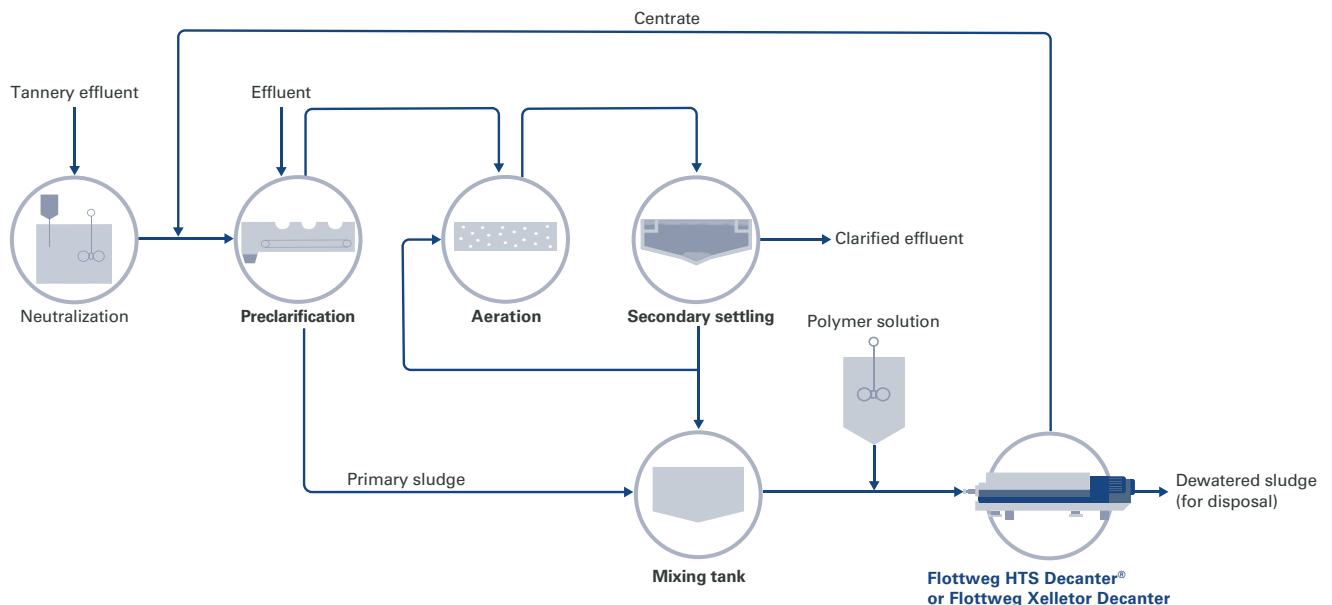
\*The values serve as guidelines and may vary depending on process and raw goods.



# SUCCESS IS PROTECTING THE ENVIRONMENT, REDUCING WASTE- WATER COSTS

The Flottweg decanter for tanneries pretreats the contaminated wastewater for the subsequent treatment stages. This reduces the overall effort and increases the capacity of these cleaning stages, after which the wastewater can be discharged to wastewater treatment plants or reused as process water.

- The wastewater is pretreated by removing organic solids (residual tissue, fur, etc.)
- Sludges from upstream conditioning stages (biological and surplus sludges) are thickened (reduced)
- The chemicals bound in the solids (e.g. sulfites, chromium, tannins, heavy metals) are removed from the water
- The volume of residual materials that must be disposed of is reduced. In turn, disposal costs are reduced



## Special features of the Flottweg decanter

The “Big Five” – this is what matters in wastewater treatment:

- Dry matter content
- Throughput
- Polymer requirement
- Energy consumption
- Reverse contamination in the centrate (separation efficiency)

Flottweg decanters are used in wastewater treatment to separate liquids from (contaminated) solids (2-phase process). In the Flottweg decanter, a high dry matter content is achieved for these separated solids, together with a high throughflow. Mechanical separation requires less energy than thermal separation and decreases the use of polymers. The amount of residual solids to be disposed of is significantly reduced.



### Safe processes

- Closed design
- Good shielding against odor nuisance and aerosols



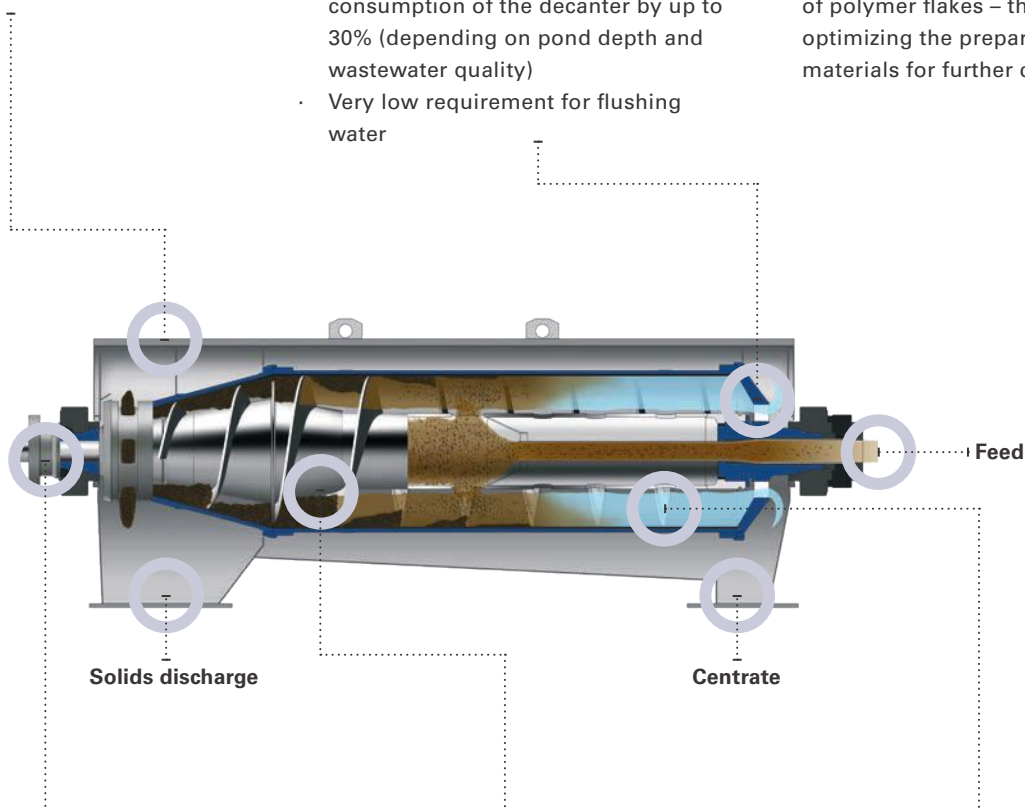
### Increased efficiency

- Extra energy recovery with the Flottweg Recuvane® system, which additionally reduces the energy consumption of the decanter by up to 30% (depending on pond depth and wastewater quality)
- Very low requirement for flushing water



### Polymer flocculants

- Flottweg decanters are designed for low polymer requirements
- Special mixing pipe for efficient dosing of polymer flakes – thus automatically optimizing the preparation of residual materials for further cleaning



### Flottweg Simp Drive®

- Control of the differential speed depending on the scroll torque
- Automatic adjustment to varying load conditions and dewatering to maximum total dry solids content
- Lowest energy requirements due to high efficiency
- No oversizing of drive motors



### Reduced quantity of residual matter

- Scroll body with double cone and baffle plate – resulting in higher dry solids values in the discharged solids



### Wear protection and material

- Comprehensive abrasion protection package
- Tungsten carbide armoring of the scroll helix
- All components in contact with the product made of duplex stainless steels and other high-quality corrosion- and acid-resistant steels



# FLOTTWEG QUALITY AND SERVICE



## Guaranteed Flottweg quality

Made in Germany: We have a clear vision of quality and make no compromises. In the tannery industry, our products must withstand chemicals and heavy metals. For this reason, components of Flottweg centrifuges that come into direct contact with the medium that will be processed (including the bowl, scroll, and inlet), are exclusively made from high-quality, corrosion- and acid-resistant steel. This means higher strength and improved resistance. Our machines are well-equipped and can meet your requirements in the long term – in extreme cases, that can mean 24 hours a day, 7 days a week.

Additionally, our strict quality controls (DIN ISO 9001:2015) and the traceability of all critical components ensure product safety.



## Our service—we are always there for you!

Our 1,100 employees around the world and a network of more than 60 sales and service centers are here to serve you. We are not only striving to provide first-class advice about selecting and designing our systems. We are available for you whenever you need us—in more than 100 countries around the world, 24 hours a day, 7 days a week.



## You can plan success. In just three steps.

Are you planning your own success story for your products?

Then get in touch with Flottweg and benefit from our 3-step roadmap:

# 01

We will talk to you about protein separation and the business objectives you are looking to achieve.

# 02

In pre-engineering, we examine your raw materials in our laboratory and carry out customer-specific tests in the Flottweg technical center or on your premises. In this context, existing product samples can already be made available.

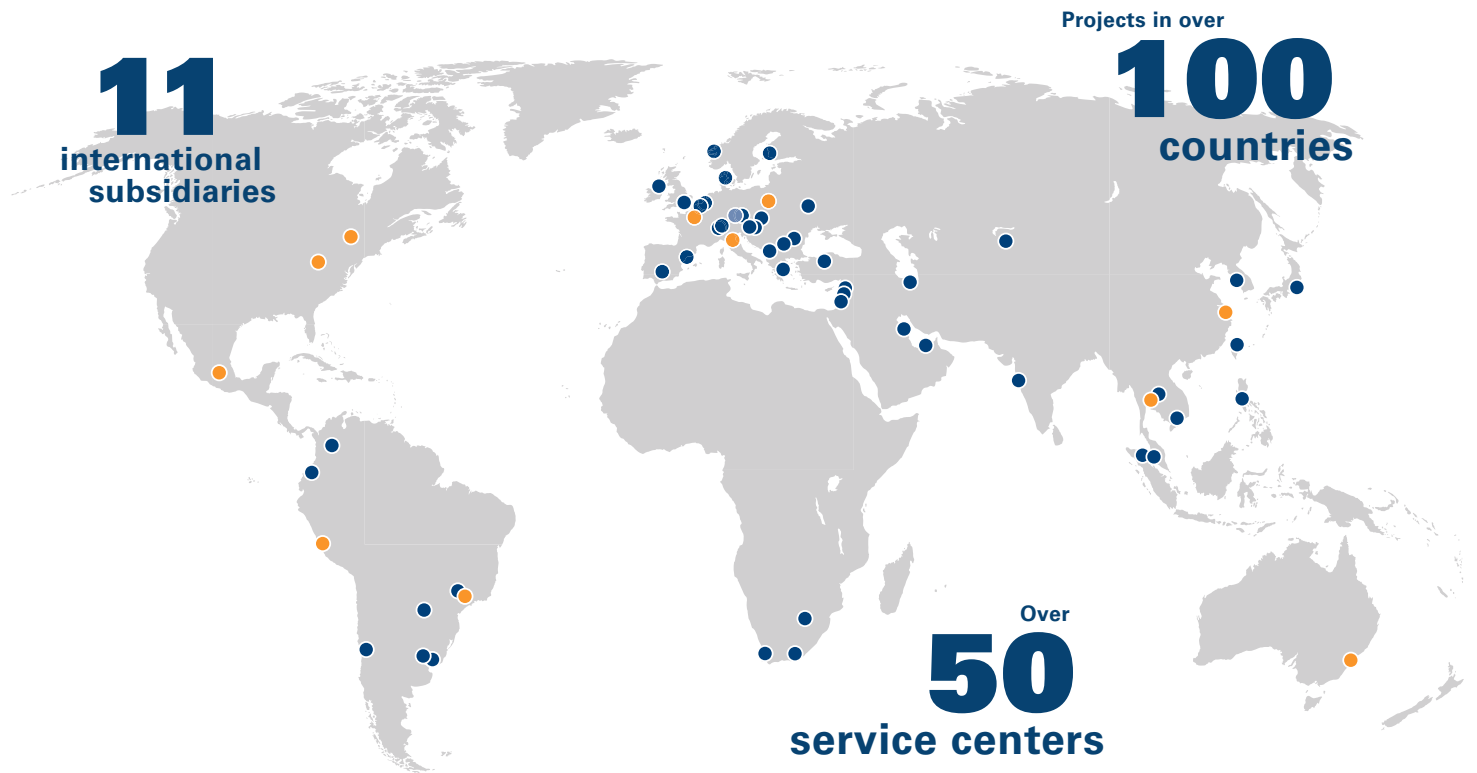
# 03

After design and detailed development, you will receive a concrete offer including all relevant key performance indicators for the realization of your individual Flottweg application.

**Make Flottweg the key player in your success:**  
Our sales partners are looking forward to hearing about your ideas and challenges!

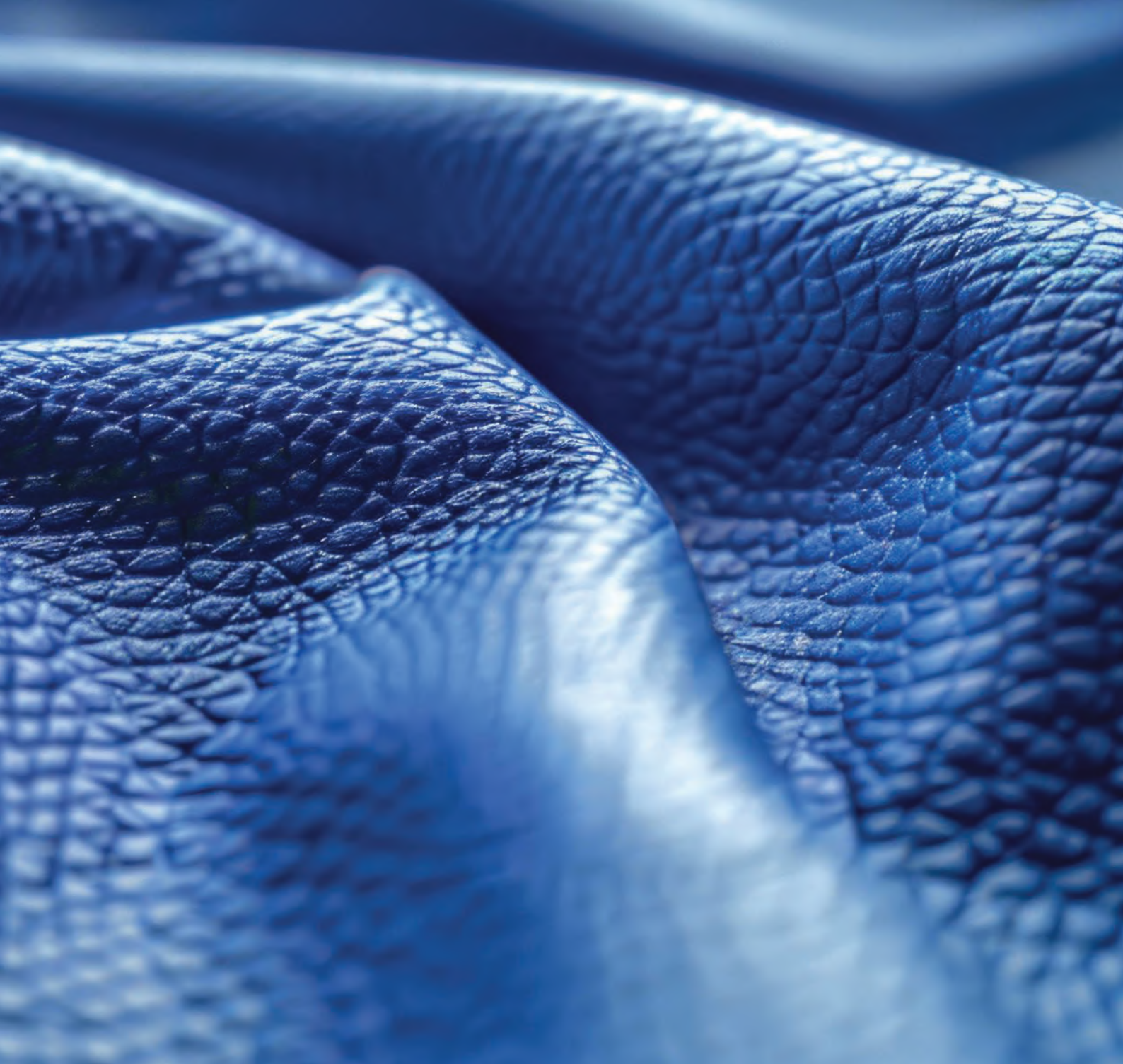


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