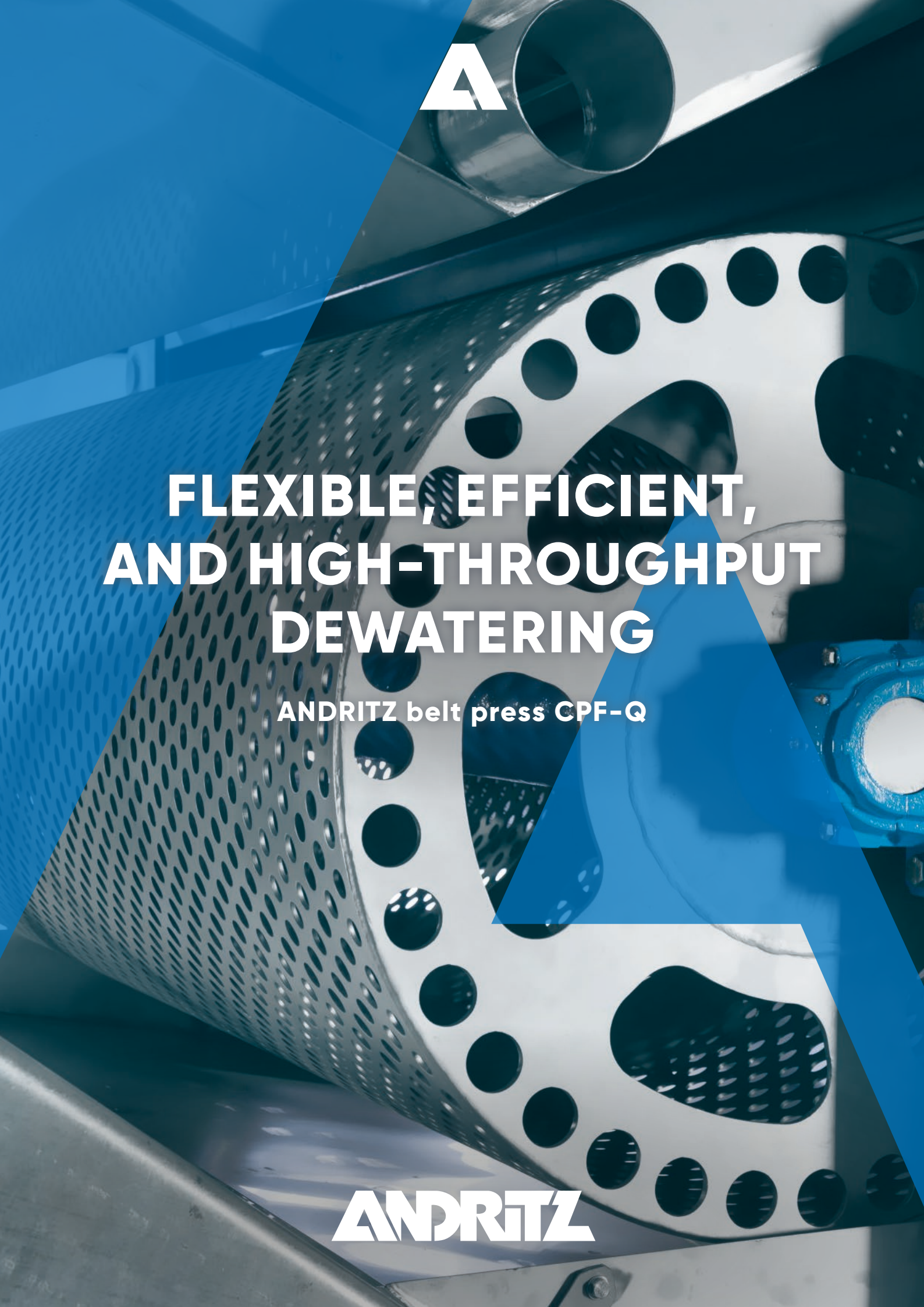


FLEXIBLE, EFFICIENT, AND HIGH-THROUGHPUT DEWATERING

ANDRITZ belt press CPF-Q

ANDRITZ

Higher performance, lower costs – the world's toughest belt press just got better

In the most challenging mining and minerals, chemical, and other applications, reliable dewatering is critical to maintaining continuous production and waste management. This is why we have put decades of expertise into our new CPF-Q (Quantum) heavy-duty belt press, once again surpassing our competitors to give you a solution with the highest throughput, lowest operating costs, and lowest required residual moisture available on the market today.

With an ANDRITZ group-wide installed base of more than 10,000 belt presses (around 1,000 of them in mineral and industrial applications), we have encountered some of the toughest dewatering challenges on the planet. In fact, ANDRITZ has been working closely with customers for more than 150 years to continuously improve the lifetime value of every machine. Our latest heavy-duty belt press is part of this evolution, setting a new standard in throughput, efficiency, and reliability.

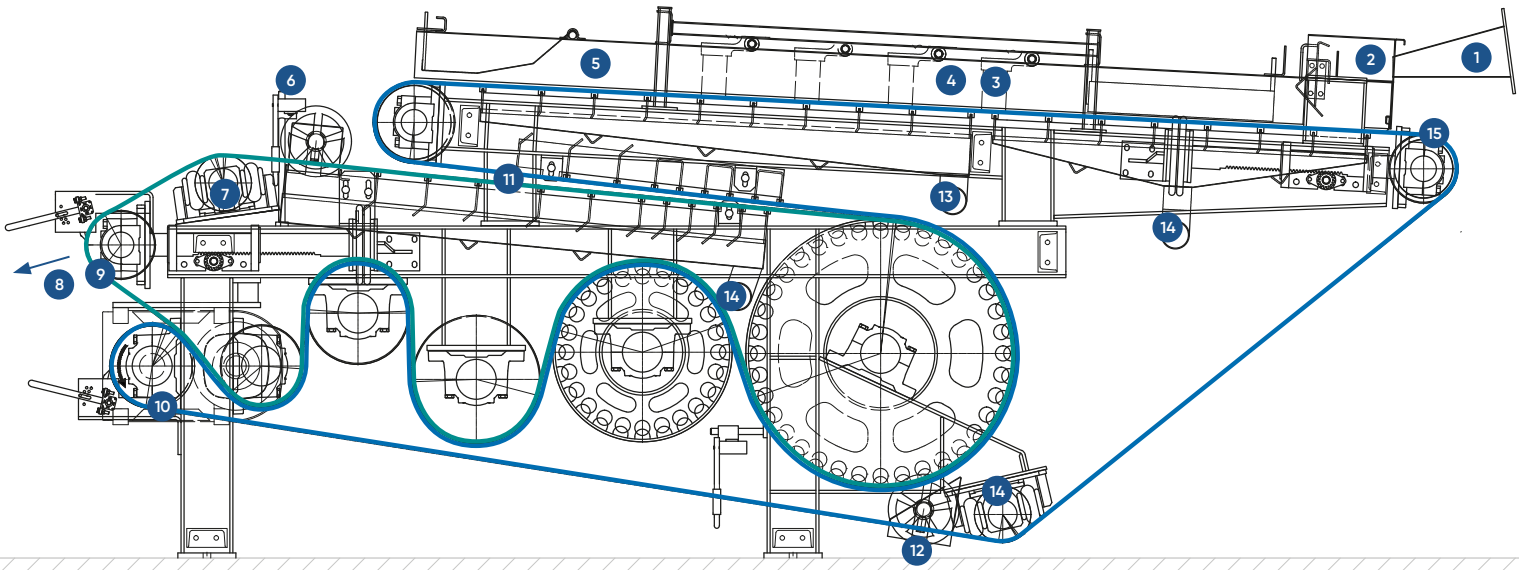
A NEW INDUSTRY LEADER

The CPF-Q has been developed in close cooperation with our customers in order to address the key challenges in modern dewatering and filtration. Despite its small footprint, the robust design contains an impressive array of features, including a reliable belt tension system and a flexible drive (hydraulic or electric). Compared with conventional belt presses, the cost of ownership is minimal, remote service is simple, and a greatly extended lifetime of high availability makes the machine reliable, simple, and cost efficient to operate.

PEAK PERFORMANCE

We have also managed to further enhance performance to deliver lower residual moisture, higher throughput, and more flexible to changing feed conditions than any other belt press on the market. To reduce the costs of consumables, flocculant consumption can be optimized via an intelligent flocculant dosing system (e.g. RheoScan) to consistently deliver a more homogeneous material feed. Whatever your process requirements, the CPF-Q can be adapted easily to give you better control and performance in your dewatering operations than ever before.

Proud as we are of our new CPF-Q heavy-duty belt press, nothing compares to the satisfaction of helping our customers achieve optimum performance throughout their dewatering and filtration processes. From initial consulting and optimized add-ons to full-service contracts and future upgrades, ANDRITZ is dedicated to providing comprehensive solutions to all of your solid/liquid separation challenges.



1 Feed slurry
2 Distribute slurry
3 Create dewatering channels
4 Pre-dewater slurry
5 Levelling slurry
6 Clean belt
7 Regulate belt
8 Cake discharge
9 Tension belt
10 Drive belt
11 Form cake
12 Clean belt
13 Regulate belt
14 Tension belt
15 Collect and discharge filtrate

YOUR BENEFITS

- Highest throughputs of up to 50% more than comparable competitor machines
- Lowest required residual moisture of final product
- Optimized flocculant consumption (e.g. with RheoScan system)
- Reliable non-stop operation and highest availability
- Flexible operating parameters (e.g. belt speed and belt tension as well as filtration pressures can be adjusted acc. to process requirements)
- Modular design, small footprint, and easy to access and maintain

Belt press CPF-Q 3000

Nominal feed capacity (m^3/h)	up to 70 (with add. pregravity zone up to 135
Dry solids throughput (t/h)	30-45 (max. hydraulic load of 90 m^3/h, respectively)
Length (mm), approx.	5,800
Width (mm), approx.	4,600
Height (mm), approx.	2,250
Weight (t), approx.	15
Motor (kW, for drive)	11
Average wash water supply for cloth (m^3/h)	29.5 pressure: 10 bar
Pressurized air	8 (at start 7 m^3/h at 7 bar, during operation 1 m^3/h)
Customized types (on request)	Individual requirements are met by using individual press nip, and by installing a supplementary gravity zone

Perfectly balanced stages for superior dewatering results

The CPF-Q heavy-duty belt press is the result of the comprehensive knowledge of hundreds of separation specialists. Each process step has been carefully harmonized, optimized, and tested to achieve the best results in every machine-related function. From the gravity zone to the wedge zone and press zone, we've applied our in-depth process know-how in achieving the optimum balance across the machine's various process zones.

Optimizing of separation zones makes a significant impact on performance, especially in continuously operating processes in extreme applications. For one coal mine in the Mongolian desert, for example, we collaborated to reduce annual downtime by 15% while achieving more than 3.1 million cubic meters per year in water savings. This and hundreds of other belt press installations have given us a wealth of insights that we've now applied in this latest innovation.

CONSISTENT SLURRY CONTROL

The CPF-Q is a continuously operating belt filter press manufactured in a modular design with unique flexibility. The sludge, which is fed in centrally at the suspension feed area, is optimized to deliver a consistently uniform slurry over the entire width of the belt. This guarantees smooth filtration, with a constant cake thickness throughout the entire process. The solid/liquid separation process then takes place in the three optimized separation zones: gravity, wedge, and press.

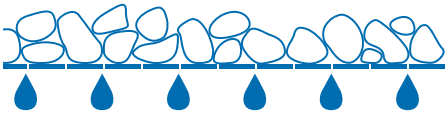
"To save and reuse as much water as possible, we needed both the right technology and a close collaboration partner. ANDRITZ gave us both, working as one team with our engineers to install a superior solution on time and on budget."

BAASANDORJ TSOGOO
Senior Vice President,
Energie Resources, Mongolia

Key feature

A key technological feature in the CPF-Q is its optimized roll geometry. This means that each roll's unique size and arrangement contributes maximum throughput and minimal residual moisture. The optimized roll geometry ensures a continuous pressure increase to achieve the perfect dewatering characteristics.

3 key separation zones

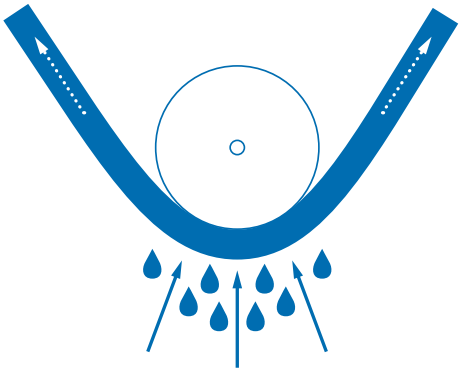


GRAVITY ZONE

In the gravity zone, the slurry is dewatered solely by a gravity-driven process in which interstitial water is drained off through the larger cavities. The stability of the filter cake is thus increased to such an extent that light pressure can be exerted in the subsequent zone without squeezing the slurry out at the sides of the belts. The first part of the gravity dewatering zone is the sludge feed section and ensures uniform sludge distribution over the entire working width of the belt.

WEDGE ZONE

Uniform, homogeneous transfer of the sludge from the gravity zone to the wedge zone is ensured by a unique machine design. Here, the belts converge to form a wedge, where pressure dewatering begins due to the resulting reduction in volume. This is the first pressure stage, formed by the converging inner and outer belts. As sludge volume is reduced, the pressure rises continuously as the sludge moves in the same direction as the belts, which press the filtrate out of the sludge cake.

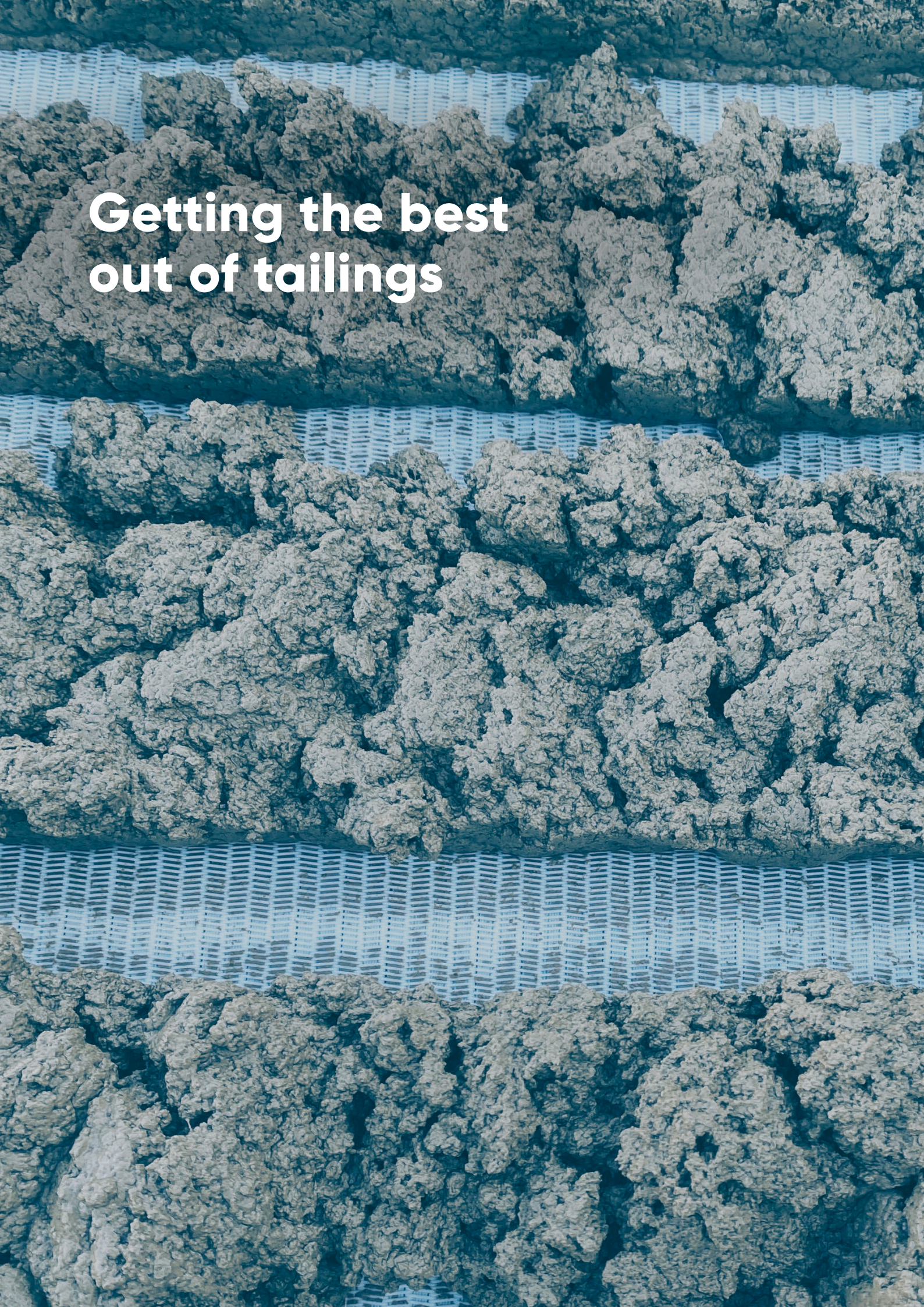


PRESS ZONE

In this zone, the highest possible pressure (depending on the rheological properties of the sludge being dewatered) is applied to the filter cake in order to obtain the highest possible final dry content. The first 2 rolls are perforated in order to double the dewatering area.

The machine features a system to increase the pressure in each press zone by utilizing an intelligent roll design. The mechanical configuration of the CPF-Q belt press features belts wrapped around rolls under tensile stress in the running direction of the machine.

By regulating the belt tension, the area pressure can be selected continuously for each material. The sturdy construction of the CPF-Q frame, rolls, and bearings makes it possible to obtain the highest area pressure.



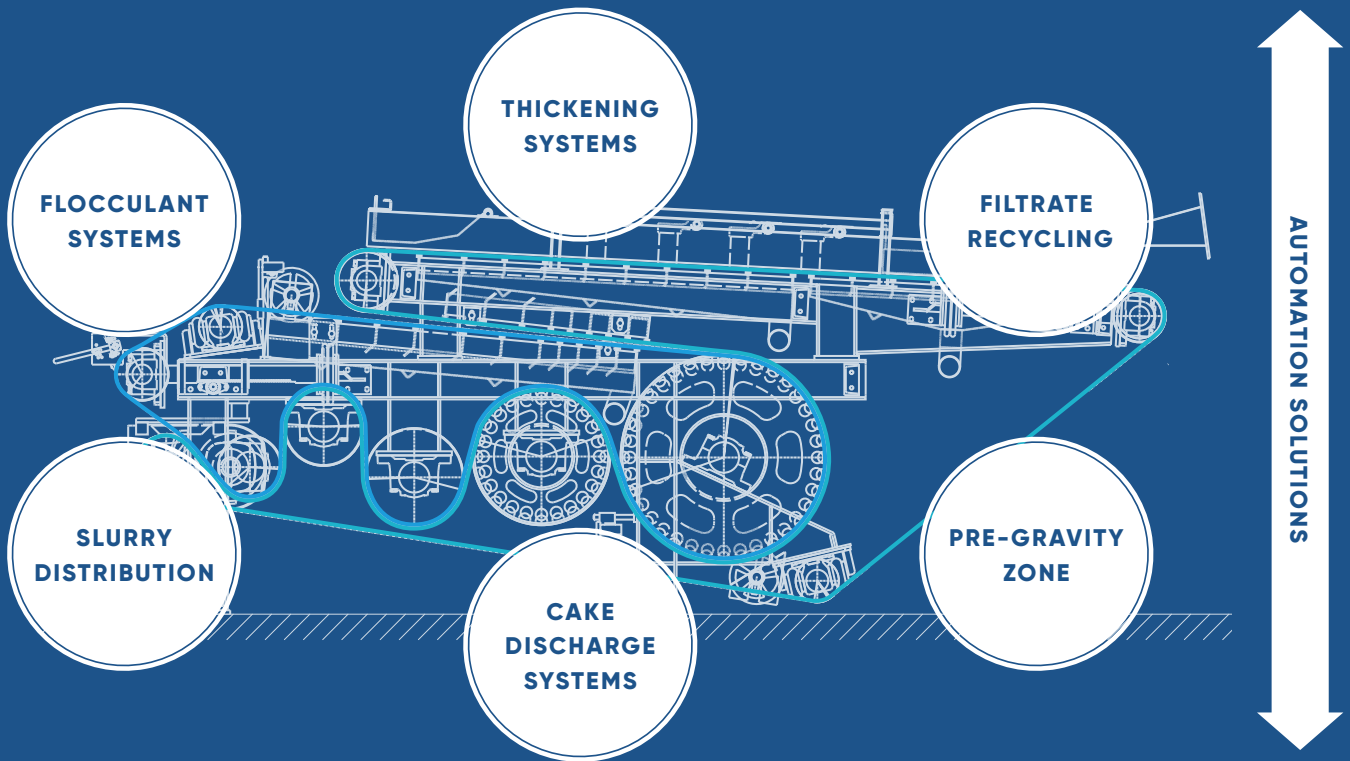
Getting the best out of tailings

With over 500 t/h sand capacity, Lang Lang Quarry in Victoria, Australia needed a solution for dry stacking, as tailings dams were no option. ANDRITZ proposed the heavy-duty belt press CPF-Q and invited Barro to a reference installation in Hamburg, where a similar belt press model was operating on harbour sludge, similar to sand dewatering.

ANDRITZ supplied three heavy-duty belt presses with three heavy-duty gravity tables and a high-rate thickener for the preceding thickening process. The results? A throughput of up to 16.5 tons per hour of dry solids per belt press and up to 2,880m^3 of process water recovered daily, ensuring efficient, environmentally friendly tailings treatment with reduced fresh water consumption

Get more from your machine with total optimization of the dewatering process

As the world's leading separation specialist, we understand that no challenge starts or ends with a single machine. By taking a closer look at your entire process, we can apply the knowledge of more than 2,000 separation specialists and the technical capabilities of one of the world's broadest technology portfolios. Whether it's upstream or downstream, add-ons or automation, we have in-depth process know-how and resources around the world to further optimize your entire dewatering process.



UPSTREAM
To save costs and improve efficiency, ANDRITZ can provide a range of complete thickening systems. In order to achieve the required dry solids content for your belt press, our specialists start by discussing your specific process needs and finish only when you have the optimum slurry consistency needed to guarantee significant savings over the lifetime of your investment.

DOWNSTREAM
Thanks to our in-depth process expertise we are also able to design, tailor, and configure exactly the right equipment for your product discharge needs.

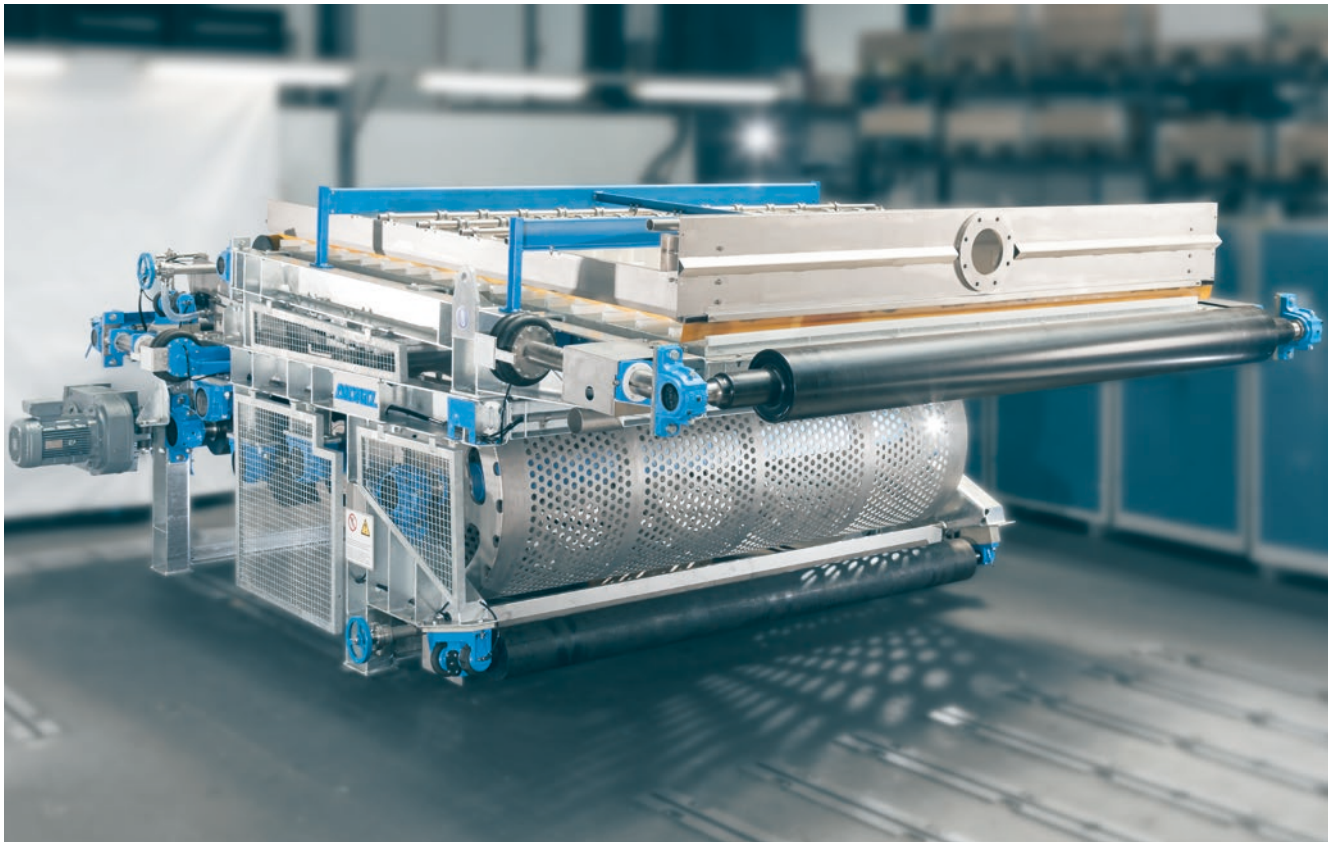
PRE-GRAVITY ZONE
If the inlet concentration of your slurry is too low, we can help you to choose and optimize the pre-gravity add-ons necessary to achieve maximum efficiency in your dewatering operations.

AUTOMATION SOLUTIONS
In addition to our standard machine automation (local control panel) offering, we can provide comprehensive integration services to ensure that your belt press is fully functional with existing control systems and plant-wide automation solutions.

FLOCCULANT SYSTEMS
To guarantee optimal slurry conditions and minimum flocculant consumption, ANDRITZ can tailor a wide range of flocculant optimization systems (dosing and mixing) with great precision.

SLURRY DISTRIBUTION
Due to the widely varying slurry conditions our customers encounter, we have developed a number of special slurry distribution features that can be applied to the gravity zone of your belt press. As dozens of previous installations have shown, an added focus on homogeneous slurry distribution can have a significant impact on the residual moisture and overall performance of the entire dewatering process.

FILTRATE RECYCLING
Some customers choose to reuse their filtrate as process water, which can significantly reduce operating costs through reduced water consumption. In these cases, we can provide clarifiers and other add-ons that help to increase the efficiency of your water recovery process.



ANDRITZ Belt press CPF-Q

RheoScan: Reduce your costs by up to 40%

The RheoScan is the first optical measurement system on the market that detects the actual sludge viscosity during thickening and dewatering processes. RheoScan then efficiently and accurately adjusts the needed polymer dose to match changing flow rates and sludge conditions.

Nowadays, the polymer dose is often left "as is" and not adjusted properly to the current sludge conditions. This may lead to a drop in cake dryness, blinded belts, and overdosing of polymer. All of this means higher costs to you for polymer use, trucking and disposal fees, drying, and labor. RheoScan helps you to control your adjustment of polymer in real time 24/7 and therefore reduces your polymer and sludge processing costs.

APPLICATION

RheoScan can be applied to belt filter presses and gravity belt tables of all manufacturers in all types of municipal and industrial sludge processing facilities.

YOUR BENEFITS

- Cost savings of up to 40% thanks to reduced polymer consumption
- Amortization period of only a few months
- Massive reduction of overspills
- Gas yield increase through optimized polymer dosage for digested sludge
- Increases plant reliability and stability of machine operation
- Operates without requiring supervision
- A patented technology which works with any manufacturers' automated polymer delivery system
- CE-certified and UL508A optional

RheoScan installed at a belt filter press

The right solution for any separation challenge

PEACE OF MIND, COST EFFICIENCY, AND SUSTAINABILITY – ALL FROM ONE TRUSTED PARTNER.

Regardless of your industry – whether environmental, chemicals, mining and minerals, or food and beverage – efficient separation processes are essential for high product quality, reduced waste, and the responsible use of valuable resources. With our advanced technologies, comprehensive services, and smart automation and digitalization solutions, we deliver peace of mind today and lasting success for tomorrow – efficiently, responsibly, and with measurable impact. What's more, with us you also gain access to one of the world's largest OEM manufacturers for solid/liquid separation for well-known brands such as 3Sys Technologies, Bird, Dedert, Delkor Capital Equipment (Pty) Ltd., Escher Wyss dryers, Guinard Centrifugation, KHD Humboldt Wedag, Krauss-Maffei centrifuges, dryers, and filters, LENSER Filtration, Netzsch Filtration, REINEVELD centrifuges, Rittershaus and Blecher, Royal GMF Gouda, Sprout Bauer, and Vandenbroek.

SEPARATION EQUIPMENT AND SYSTEMS

- Decanter and filter centrifuges
- Filter presses
- Dryers
- Presses and screens
- Extractors
- Thickeners
- Evaporators and crystallizers
- Disc and drum filters
- Screening and filtration components
- Specialized thermal systems

FULL-SERVICE OFFERING

- OEM spare and wear parts
- Maintenance and repairs
- Service agreements
- Automation and digitalization
- Machine and process optimization
- Second-hand and rentals

AUTOMATION AND DIGITALIZATION SOLUTIONS

Site assessment and integration • Advanced process control and artificial intelligence • Simulation and training • Digital twin technology • Data analytics and prediction • Electrification, instrumentation and controls

Enabling the green transition

As a technology leader in a changing world, we strive to make a positive impact on our environment. We believe that what we do today can make a difference tomorrow and in the future. We drive change and enable our customers to achieve their sustainability goals and make the world greener with our sustainable solutions in decarbonization, circular economy, renewable energy, and environmental technologies. It all starts with your specific process requirements and ends with a system that gives you the best results – day in and day out, for decades to come.

ANDRITZ. FOR GROWTH THAT MATTERS.

A WORLD OF SEPARATION SOLUTIONS

ANDRITZ provides mechanical and thermal solid/liquid separation technologies, complemented by comprehensive services, automation, and digitalization solutions for the chemicals, environment, food and beverage, as well as mining and minerals industries. Our customized, innovative solutions focus on minimizing resource consumption and maximizing process efficiency, thus making a substantial contribution towards sustainable environmental protection. With over 150 years of experience and more than 2,700 separation specialists around the globe, we are a driving force in the evolution of separation solutions – enabling industries to meet tomorrow's demands responsibly. **ANDRITZ. FOR GROWTH THAT MATTERS.**

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