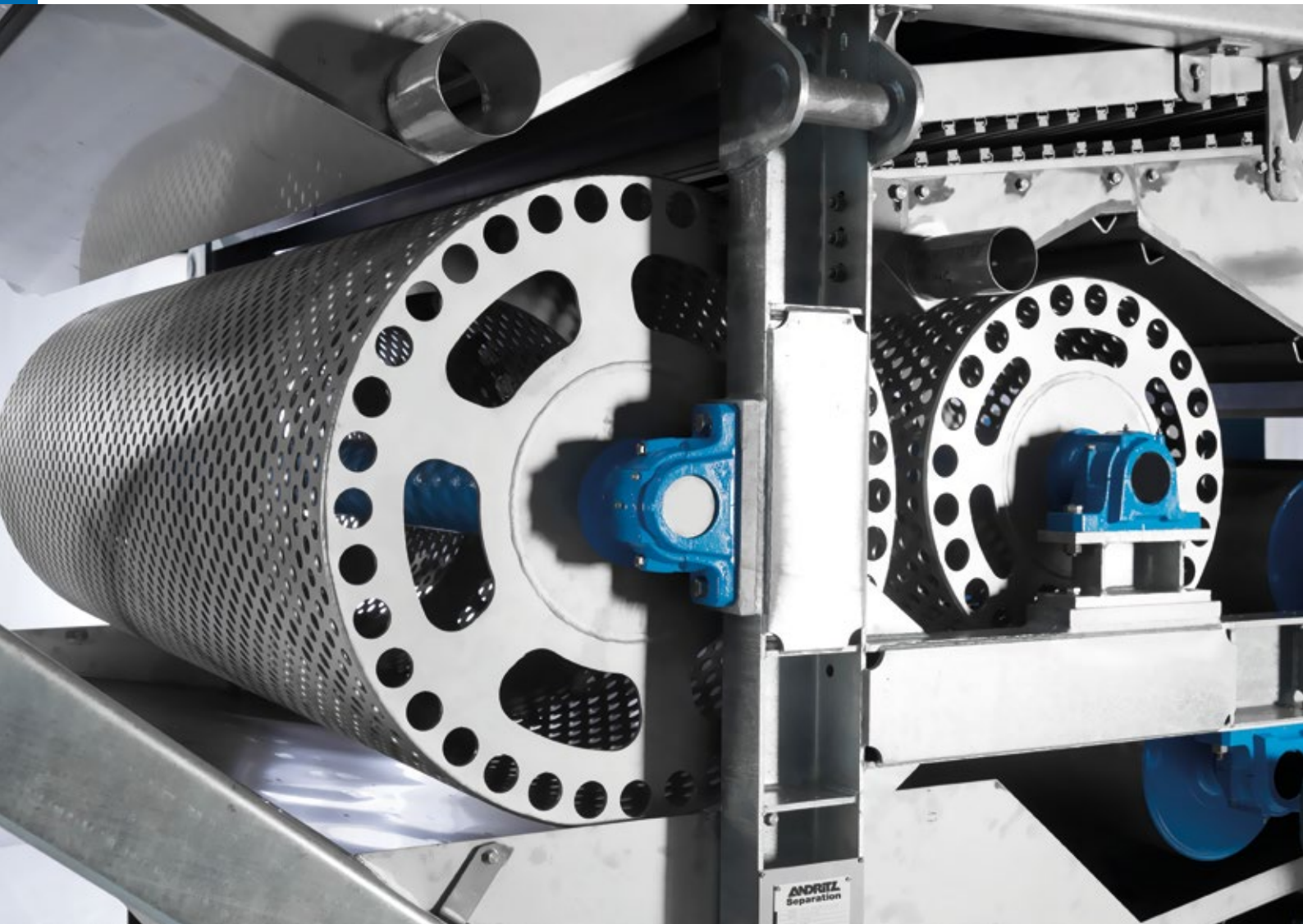


Heavy-duty belt press CPF SMX-Q

A new standard in flexible, efficient,
and high-throughput dewatering



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've put decades of expertise into our new CPF SMX-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 SEPARATION 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

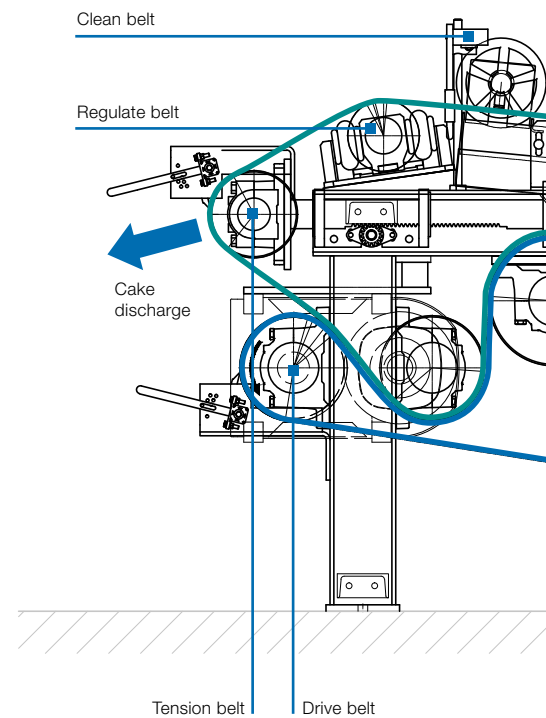
The CPF SMX-Q has been developed in close cooperation with our customers in order to address the key challenges in modern dewatering and filtration. Despite its small footprint, the robust design contains an impressive array of features, including a reliable belt tension system and a flexible drive (hydraulic 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 SMX-Q can be adapted easily to give you better control and performance in your dewatering operations than ever before.

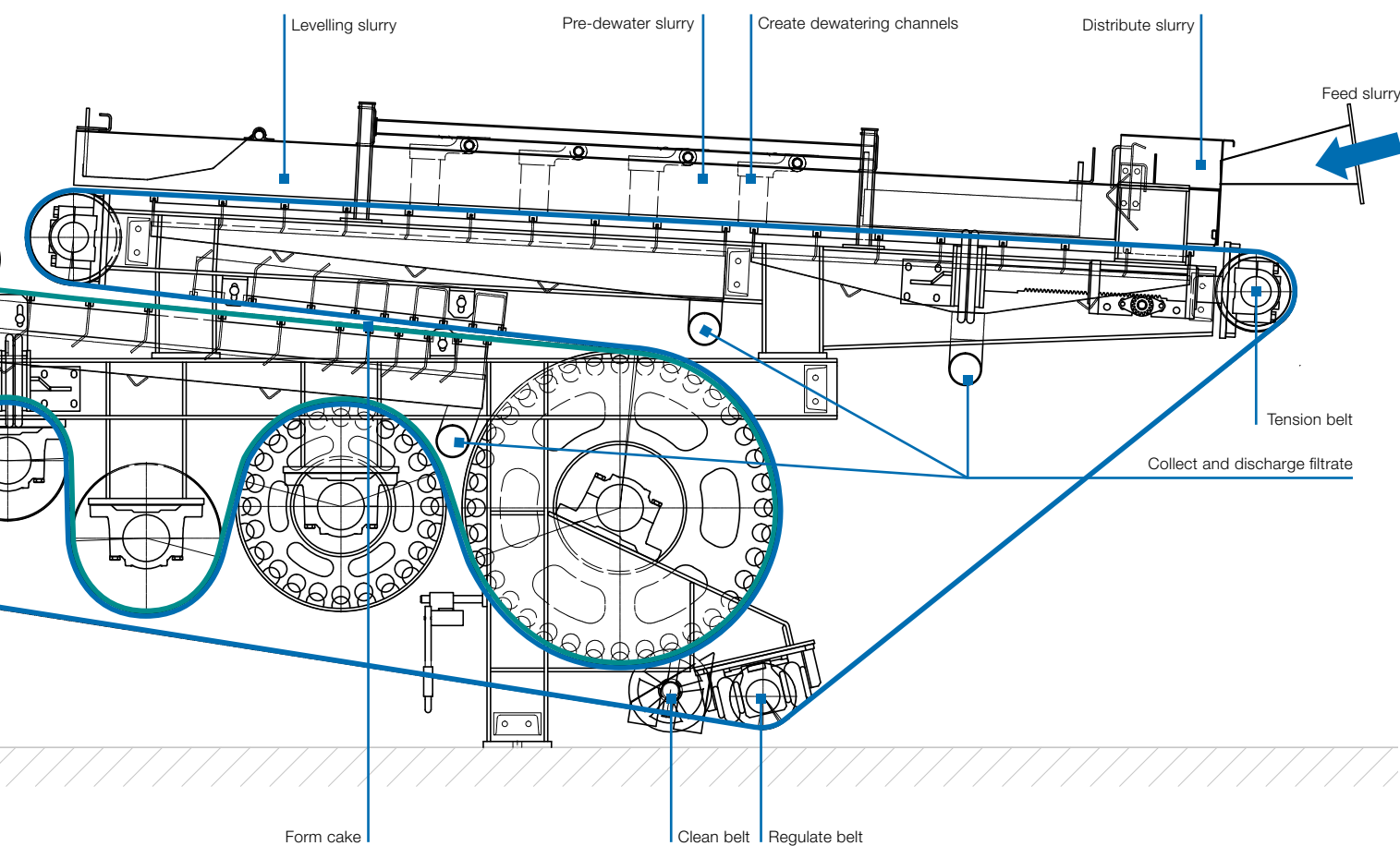
Applications

- Tailings from the mining and coal industries
- Contaminated soil
- Harbour sludge
- Dredgings
- Residue from quarries
- Oxalate in alumina refineries
- Various industrial sludges



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 3000 SMX-Q
Nominal feed capacity (m ³ /h)	85-90 (if a pre-gravity zone is available: 120 m ³ /h)
Dry solids throughput (t)	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.	16-17
Motor (kW, for drive)	7.5
Average wash water supply for cloth (m ³ /h)	20
Pressurized air	8 bar (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 nips, an ultra-high pressure zone, and by installing a supplementary gravity zone

Perfectly balanced stages for superior dewatering results

The CPF SMX-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 SMX-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.

Three 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.



▲ Gravity zone

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.



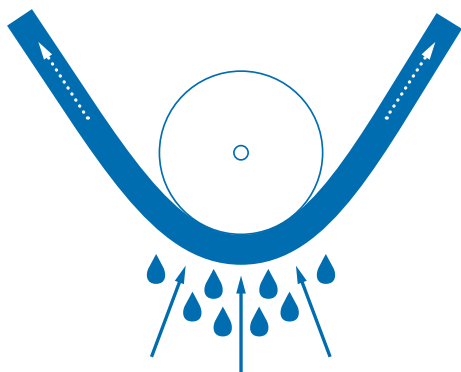
▲ Wedge zone

Key feature

A key technological feature in the CPF SMX-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.

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.



▲ Press zone

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 SMX-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 SMX-Q frame, rolls, and bearings makes it possible to obtain the highest area pressure.

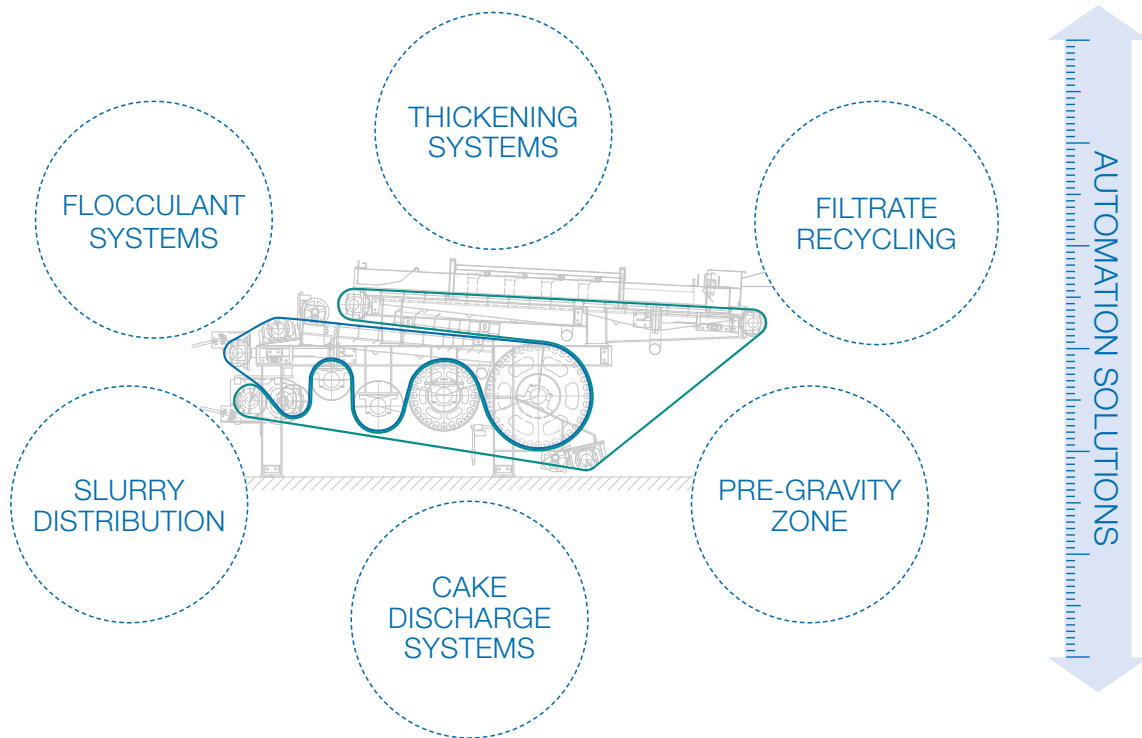
“To save and reuse as much water as possible, we needed both the right technology and a close collaboration partner. ANDRITZ SEPARATION gave us both, working as one team with our engineers to install a superior solution on time and on budget.”

BAASANDORJ TSOGOO
SENIOR VICE PRESIDENT,
ENERGY RESOURCES,
MONGOLIA

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.



Proud as we are of our new CPF SMX-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 SEPARATION is dedicated to providing comprehensive solutions to all of your solid/liquid separation challenges.

Upstream

To save costs and improve efficiency, ANDRITZ SEPARATION 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.

A world of service

Put our 150 years of OEM experience to work for you

With ANDRITZ SEPARATION, you gain access to one of the world's largest OEM manufacturers for solid/liquid separation systems, including such well-known names as Bird, KHD, Guinard and more. From initial consulting through to service agreements, plant optimization, automation, and training programs, we are always looking for ways to minimize downtime and increase predictability in operations while raising your overall production efficiency. Wherever you operate, our network of 550 service specialists and global service centers ensures that we are always there to support you for many life cycles to come. Let's sit down and see how we could take your operations to the next level.

Flocculant systems

To guarantee optimal slurry conditions and minimum flocculant consumption, ANDRITZ SEPARATION 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 dis-

tribution 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.



Local support

Responsive local service centers and field service technicians



OEM spare parts

Wear and spare parts from OEMs or in OEM quality in local inventories



Repairs & upgrades

Optimization of machine and process performance, repair work, retrofitting, and modernization



Service agreements

Preventive maintenance, from contracts for spare parts, maintenance, inspections, and repairs to upgrades and operation



Second-hand and rentals

Certified second-hand and rental machines




Process optimization

Automation tools and process expertise to boost your profit



Training


Operator training and tailored seminars for operating and maintenance personnel



Every imaginable separation solution on the planet

ANDRITZ SEPARATION is the world's leading separation specialist with the broadest technology portfolio and more than 2,000 specialists in 40 countries. For more than 150 years we have been a driving force in

the evolution of separation solutions and services for industries ranging from environment to food, chemicals, and mining and minerals.



As the OEM for many of the world's leading brands, we have the solutions and services to transform your business to meet tomorrow's changing demands – wherever you are and whatever your separation challenge.

Leading brands and products

- 3Sys Technologies
- Bird
- Escher Wyss
- Frautech
- Guinard Centrifugation
- KHD Humboldt Wedag
- Krauss-Maffei centrifuges, dryers, filters
- Lenser
- Netzsch Filtration
- Rittershaus & Blecher
- Royal GMF Gouda
- Sprout Bauer
- Vandenbroeck

Unmatched solid/liquid separation technologies

Mechanical

- Screens
- Filters
- Thickener
- Presses
- Centrifuges

Thermal

- Dryers
- Coolers

Industries



ENVIRONMENT



FOOD



CHEMICALS



MINING & MINERALS



ASK YOUR
SEPARATION
SPECIALIST

AFRICA

ANDRITZ Delkor (Pty.) Ltd.

Phone: +27 (11) 012 7300
separation.za@andritz.com

ASIA

ANDRITZ SEPARATION India Private Ltd.

Phone: +91 (44) 4399 1111
separation.in@andritz.com

AUSTRALIA

ANDRITZ Pty. Ltd.

Phone: +61 (3) 8773 4888
separation.au@andritz.com

CHINA

ANDRITZ (China) Ltd.

Phone: +86 (757) 6663 3419
separation.cn@andritz.com

NORTH AMERICA

ANDRITZ SEPARATION Inc.

Phone: +1 (817) 465 5611
separation.us@andritz.com

SOUTH AMERICA

ANDRITZ SEPARATION Ltda.

Phone: +55 (47) 3387 9110
separation.bra@andritz.com

PRODUCT HOME

ANDRITZ AG

Stattegger Strasse 18
8045 Graz, Austria
Phone: +43 (316) 6902 2634
separation@andritz.com

www.andritz.com/separation