

TEXTILE

KEEP PROFITS ROLLING WITH CALENDERS

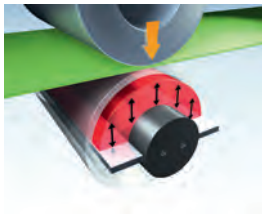
FOR YEARS TO COME

ANDRITZ

ENGINEERED SUCCESS

Range of textile calenders

At a glance: Depending on your final product and its requirements, such as soft handle, gloss, or air permeability, our textile calender portfolio ranges from two-roll calenders to three-roll calenders to special configurations designed precisely to meet your needs.

teXcal s-roll calender

The all-rounder in textile calendering

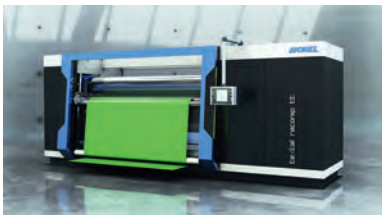
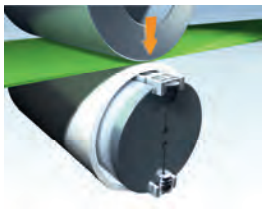
Line force: up to 400 N/mm
Roll width: up to 3,600 mm*




teXcal Raconip L calender

The expert in clothing and home textiles

Line force: up to 300 N/mm
Roll width: up to 3,600 mm*

teXcal Raconip TT calender

Designed for technical textiles

Line force: up to 400 N/mm
Roll width: up to 3,600 mm*




teXcal trike calender

Designed for special textiles

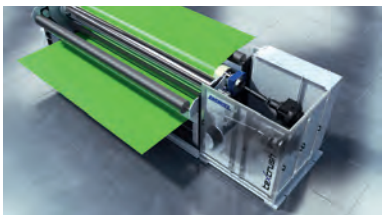
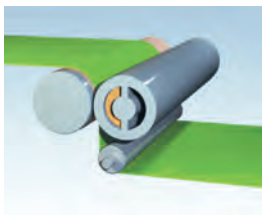
Line force: up to 400 N/mm
Roll width: up to 3,600 mm*




teXcal simili calender

Specialist for african damask

Line force: up to 400 N/mm
Roll width: up to 2,000 mm*

teXcrush finishing system

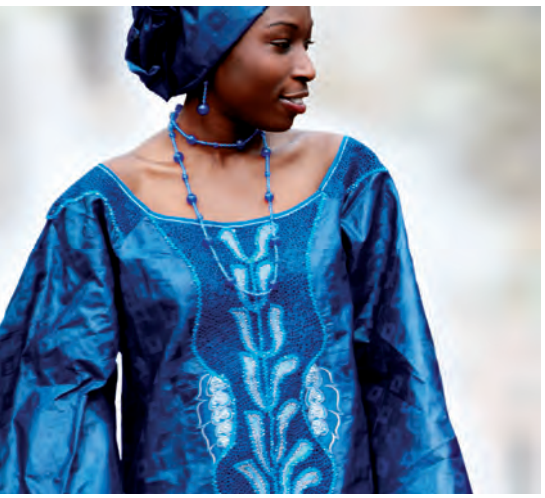
Master of textile crushing

Line force: up to 110 N/mm
Roll width: up to 5,600 mm*

*larger widths on request







VARIOUS APPLICATIONS

You can use ANDRITZ textile calenders in a large number of markets, such as:

- Home textiles
- Clothing
- Technical textiles
- Denim
- African damask ...









“Today, textile machinery engineering is one of the important branches of engineering and plant construction in Germany. With an export rate of 95 percent, the industry is one of the strongest engineering branches in terms of exports.”

VDMA (Verband deutscher Maschinen- und Anlagenbauer)

Range of textile calenders →

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Experience and competence

Textile calendering is part of our DNA: Be it home textiles, technical textiles or traditional textiles, we offer exactly the right textile calender solution targeting your needs in an ever more demanding market. With more than 150 years of experience in textile calendering, it is not just our daily business. It is our passion – and part of our DNA.

Take advantage of an all-embracing, first-class product and service portfolio in the textile calender market. With our prestigious teXcal calender range, we have made our way to the top of this market. It offers you highest quality standards, top performance, reliability, flexibility, and state-of-the-art deflection-controlled rolls for any textile application.

LONG-STANDING EXPERIENCE

1949 R&D location for textile machinery

1953 Company established by Eduard Küsters

1956 First Küsters patent: Swimming Roll, first deflection controlled roll in the world

2002 Takeover of textile and nonwoven business of KKA Kleinewefers GmbH, founded in 1862

2003 Manufacturing of the first piston-controlled roll

2006 Acquisition by ANDRITZ GROUP: ANDRITZ Küsters GmbH

2011 Manufacturing of the first single piston-controlled roll

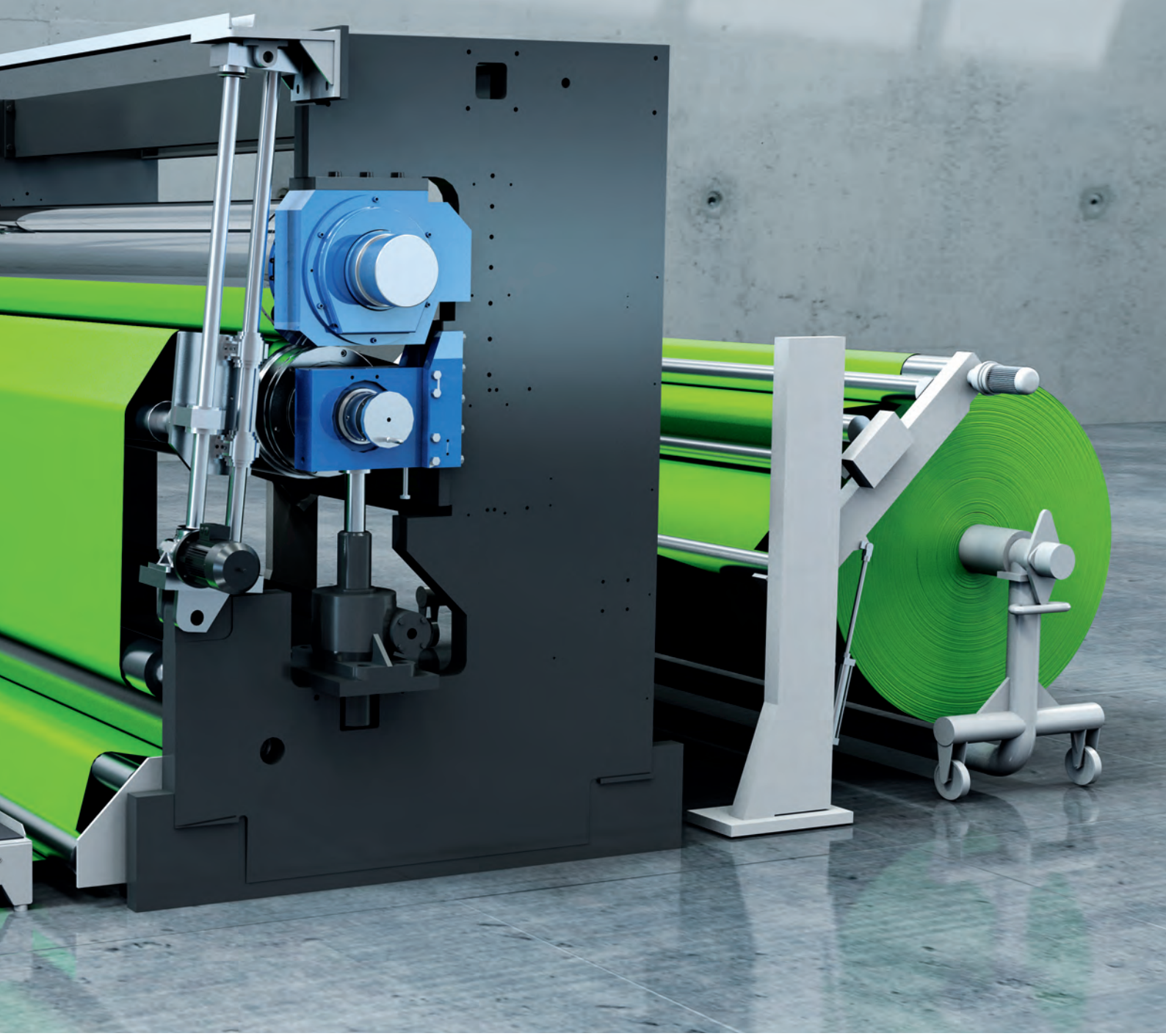
2019 Manufacturing of the first teXcal Raconip TT calender



Textile finishing system solution



One source, one partner: With ANDRITZ, you can always rely on a smooth process with our textile finishing system solution. Ensure your production operations are in perfect and continuous harmony, from unwinding to rewinding. All necessary and optional peripheral equipment is available to you – from one single source.



INLET
This can encompass a fabric infeed frame, traction device, seam and metal detectors, humidifying device, web guiding, and an expander system.

CALENDERS
You benefit from a wide range of textile calenders that are perfectly suited to your needs and your product demands. From two-roll to three-roll calenders (in special cases even more) with state-of-the-art, deflection-controlled roll technologies, you can trust in our many years of experience and know-how.

OUTLET
Our outlet equipment can include cooling rolls, a peripheral winder, an ascending roll winder, a combination of winder and plaiter, center drives for delicate fabrics, an antistatic device, and inline gauges to measure thickness, air permeability, and so on.

LINE CONTROL
Continuous process control ensures you have high quality and maximized uptimes. A touch panel with recipe management simplifies checks, and a closed-loop operation control system could also be included in your process.

YOUR BENEFITS

- One source
- Process guarantee
- Feasibility check possible in our technical center

Peak your production performance

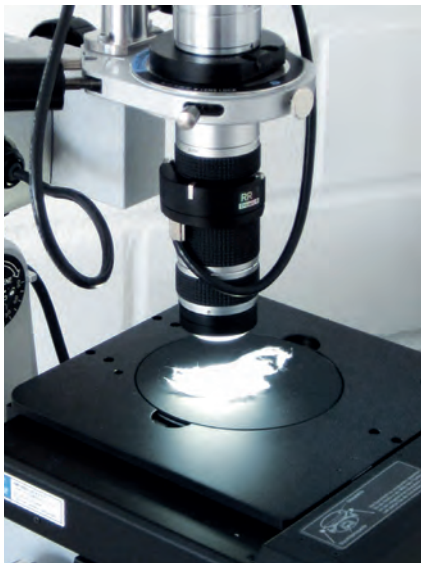
Spot-on development and service: Continuous research and development targeting your needs in an ever more demanding market. Ensure a fast, profitable, and sustained ROI with our highly skilled service engineers. You can trust in more than 150 years' experience and expertise, profiling over the entire fabric width.

RESEARCH AND DEVELOPMENT

Ongoing R&D can come up with multiple solutions to leverage textile finishing technologies. Being dedicated to high quality and innovative production technologies propels us to seek ideal solutions. Let our combined forces achieve maximum results. Highly skilled staff provide you with the best and unique know-how based on our installed base and continuous R&D.

TECHNICAL CENTER

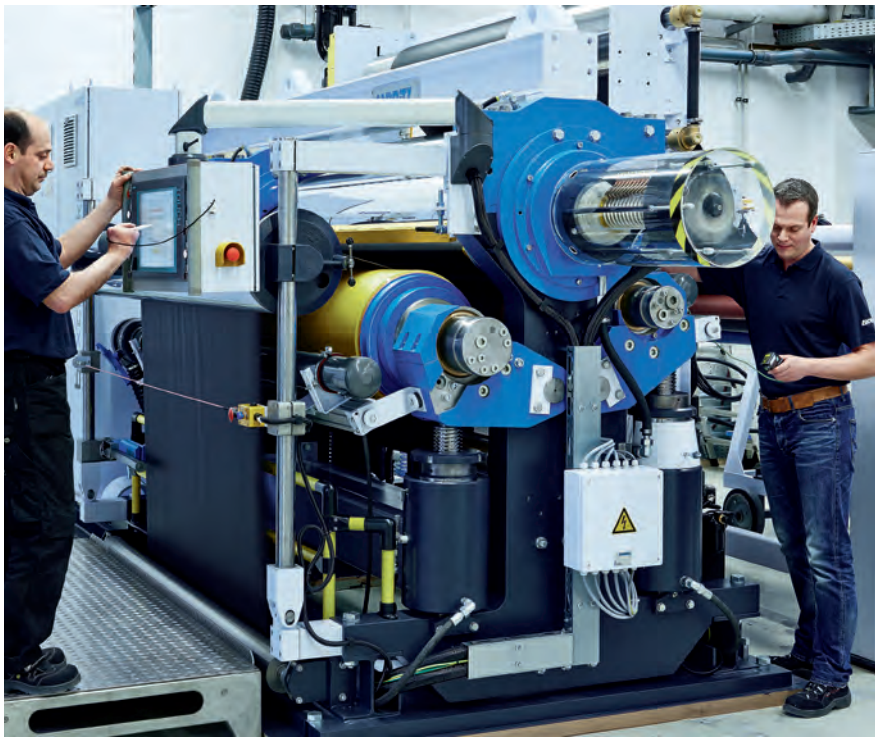
The state-of-the-art installations at our technical center in Krefeld, Germany and expert process engineers work with you to develop and ensure reliable technologies and process optimization. Evaluating new processes and defining parameters for product guarantees are yet another main focus.



3D microscope



Air-permeability measurement system



Technical center for calendering in Krefeld, Germany

WATCH OUR WEBSITE
with the service contacts

WATCH OUR VIDEO
of the machine documentation

24/7 hotline





RESPONSIVE, RELIABLE SERVICE

You can rely on top performance and a sophisticated service level being available nearby. Highly trained field and service engineers, worldwide service centers, and a 24/7 hotline guarantee you have the best, most reliable and fastest support. With ANDRITZ as your partner, the value of your process remains secure long after the warranty period has expired.

SPARE PARTS

To ensure the longevity and performance of your equipment, we recommend using only original spare parts from ANDRITZ. A sales team for spare parts is at your disposal at ANDRITZ to help you make your choice.

EASY DOCUMENTATION

Take advantage of our operator-friendly machine documentation. It's available on an interactive tablet computer located exactly where you need it most. Find information quickly by using the full text search option. Our multimedia operating manual with pictures and videos helps you understand complex processes. An integrated spare parts catalog simplifies inquiries and the ordering process for any parts required.

Foresee digitally with Metris

Industrial Internet of Things (IoT) Industry 4.0, digitalization - current buzzwords that industries use when seeking to improve their performance and equip themselves for the future of industry.



ANDRITZ DIGITAL SOLUTIONS

As a technology leader with extensive and long-term experience in supplying industrial measurement, control, and optimization solutions for various industries, ANDRITZ is combining process and equipment expertise with the latest enhancements in the digital era. The result of this powerful combination is Metris: a portfolio of ANDRITZ Digital Solutions.

METRIS OPP

One of the flagship capabilities of the Metris assortment is its ability to optimize industrial processes with Metris OPP. It has been developed over the past decade within the pulp and paper sector and has recently been introduced to the nonwovens industry. It combines powerful analytical and data mining software with the knowledge of the world's top process experts to deliver a smart service initiative for customers.







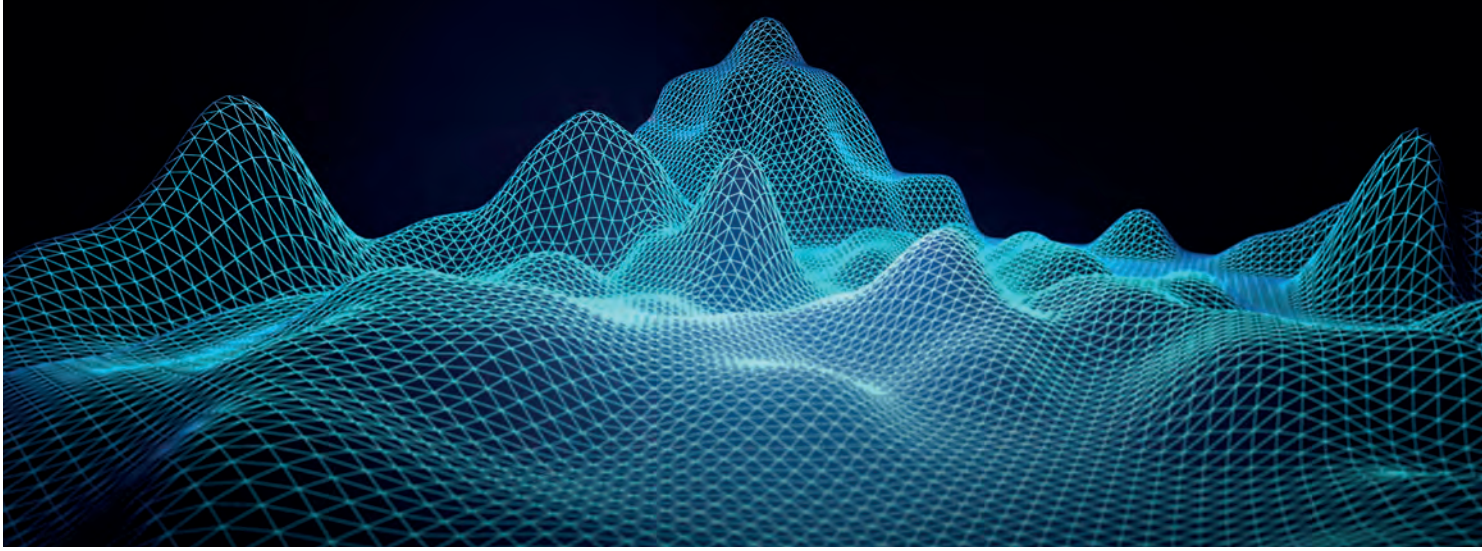
A CONSTANTLY GROWING PORTFOLIO

The depth and effectiveness of the Metris portfolio continues to improve thanks to ongoing R&D, collaboration with key customers and institutions, and venture activities. Portfolio options all rely on the three strategic focus areas of the Metris brand: Industrial IoT technologies, Smart Service concepts, and Venture activities. The main technological advancements integrated into individual Metris products are derived from big data analytics, smart sensor technologies, and augmented reality solutions. The Metris UX platform providing full support throughout the entire lifecycle of a plant is the most recent of our IoT developments. With Metris solutions, customers foresee digitally due to the continuously improved portfolio and its performance – and thanks to ANDRITZ providing tailored and fully integrated digital solutions from a single source.

Benefits

Metris - ANDRITZ Digital Solutions

- **IIoT solutions across business segments**
- **Combined know-how from ten years' experience with Metris OPP**
- **Using the latest smart sensor technologies**
- **Big data analysis with tried-and-tested models for deviation analysis**
- **Providing information locally with augmented reality**
- **Extensive solution and process engineering knowledge**
- **Cyber security solution to safeguard data on the network**



teXcal s-roll calender

The all-rounder in textile calendering: Most of your applications can be finished with the ANDRITZ teXcal s-roll calender. Ranging from traditional textiles, such as home textiles and clothing, to technical textiles, such as air-bag fabrics, the teXcal s-roll applies one effect to give you the best possible results.

With a maximum line force of 400 N/mm, the teXcal s-roll is a benchmark, offering you multiple opportunities for various uses. Combined with a thermo-elastic, homogeneous polyamide FlexRoll Sleeve, the teXcal s-roll creates first-class effects.

PLUG AND PLAY

Thanks to its compact design, the teXcal s-roll takes up very little space. This means it saves you time and effort because it can be shipped by container to the point of assembly without having to be dismantled beforehand. As it is fully pre-assembled, wired and functionally tested, the calender can be commissioned almost immediately (plug and play).

SOME FINAL PRODUCT APPLICATIONS

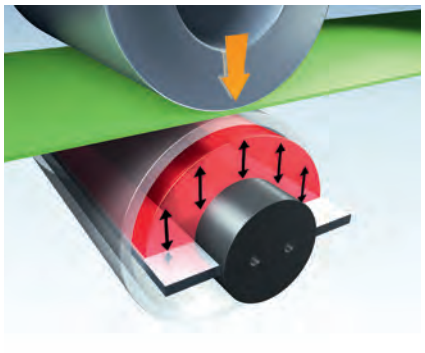
- Home textiles
- Clothing
- Denim
- Upholstery material
- Sun protection fabrics
- Filter fabrics
- Air-bag fabrics
- Wall coverings



teXcal s-roll calender

FEATURES

- Infinitely adjustable line force 30 – 400 N/mm
- Standard roll surface width from 1,800 – 3,600 mm (larger width possible for special applications)
- Adjustable pressing width to suit change in fabric web width
- Multicovering technology available
- Plug and play



S-Roll principle



teXcal s-roll detail insight

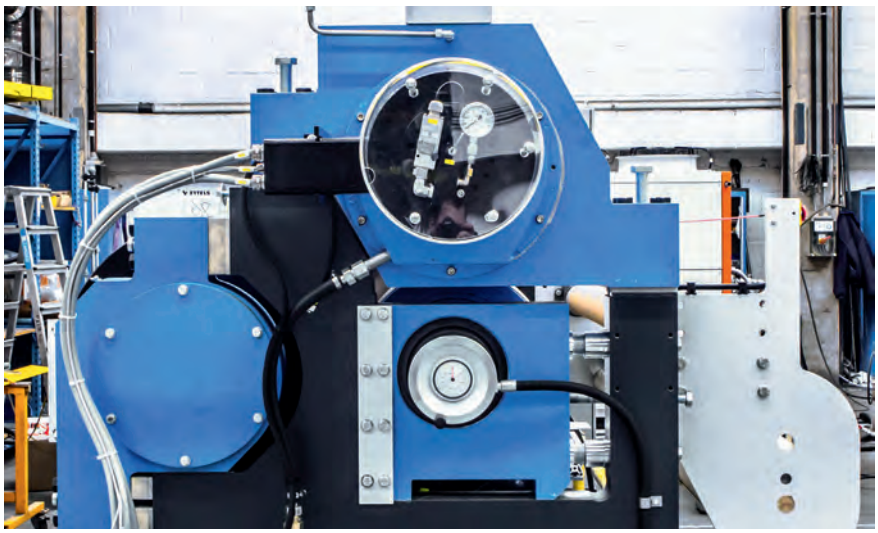
WATCH OUR VIDEO
of the teXcal
s-roll calender



teXcal Raconip L calender

The expert in clothing and home textiles: Double your benefit in a single cycle. Two effects, such as gloss and soft handle, which are especially suited for clothing and home textiles, can be achieved in one fabric passage.

Soft handle and gloss are effects often desired in clothing and home textiles. The teXcal Raconip L calender provides this specific soft-handle effect along with a multitude of others, including smoothness and density. It works with an L-shaped roll arrangement and individually adjustable line forces in the top and rear nips.



Side view of teXcal Raconip L



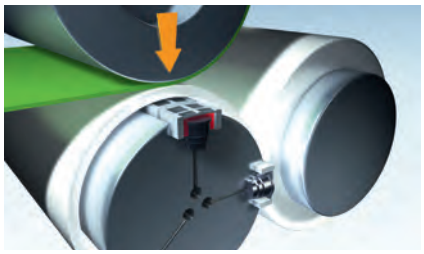
teXcal Raconip L calender

FEATURES

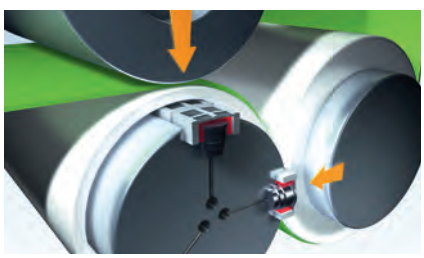
- Line force of 50–300 N/mm (can be adjusted individually in each nip without stopping production)
- Roll surface width of 1,800–3,600 mm (larger width possible for special applications)
- Adjustable pressing width to suit change in web width
- Thermal relief of the FlexRoll Sleeve alongside the web by means of retraction elements
- Plug and play

SOME FINAL PRODUCT APPLICATIONS

- Home textiles
- Shirting
- Knitted goods
- Linings







teXcal Raconip L principle



teXcal Raconip TT calender

The revolution in technical textiles: The teXcal Raconip TT provides you with state-of-the-art technology and the highest standards for technical textiles. Take advantage of Industrial Internet of Things (IIoT) solutions to optimize your production.

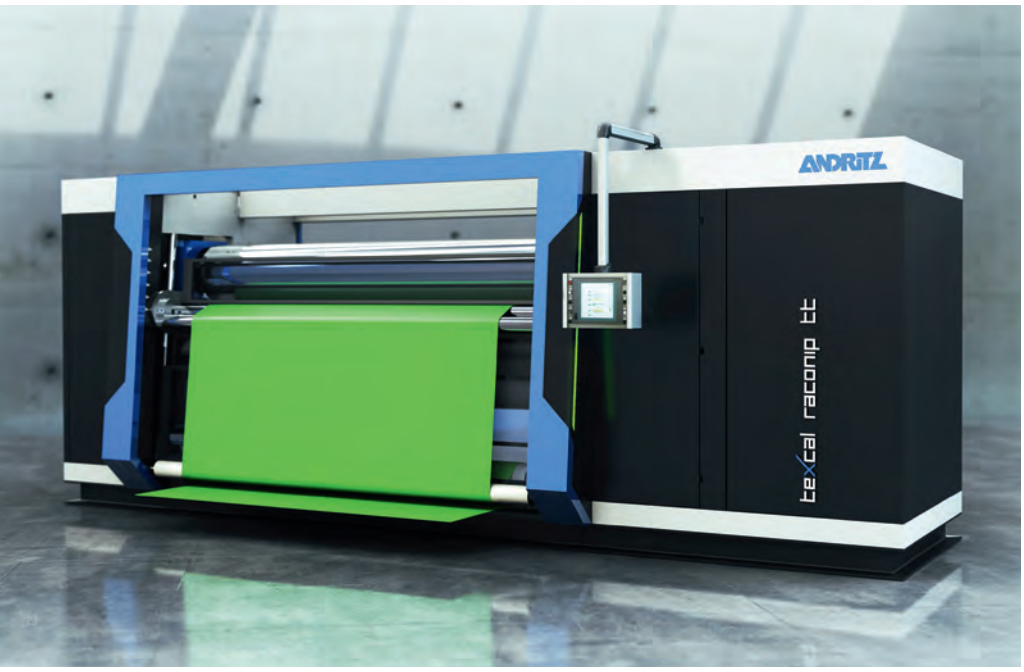
In a cutting-edge textile production plant you need versatility and operator-friendly handling along with excellent product quality and process stability. The ANDRITZ calendering concept meets your market demands perfectly.

To bring you one step further, we have developed a top-notch textile calender, which sets you apart in the race for smart production and excellent product quality.

Highest flexibility is achieved with the proven Raconip roll technology, providing unrestricted profiling over the entire fabric width by hydrostatic pistons. This ensures absolute flatness, highest quality, and spot-on air permeability.

YOUR BENEFITS

- Infinitely adjustable line force – ultimate profiling
- Operator-friendly handling of machinery during assembly and production
- All data at a glance with big data management
- Improved and transparent production process
- Less maintenance



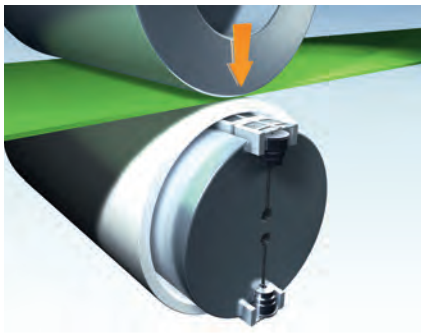
teXcal Raconip TT calender

FEATURES

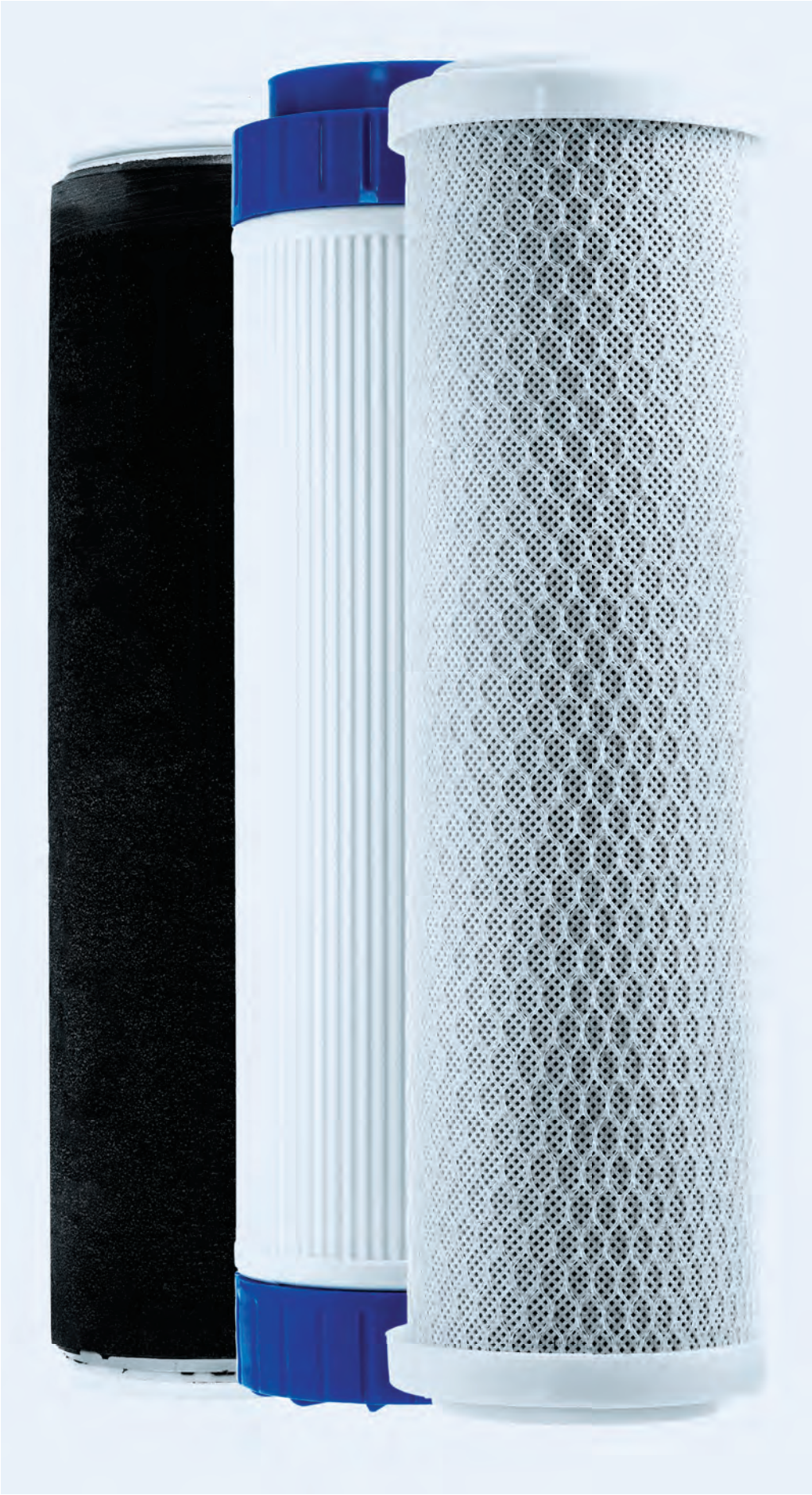
- Infinitely adjustable line force of 30 – 400 N/mm
- Standard roll surface width: Up to 3,600 mm (larger width possible for special applications)
- Adjustable pressing width to suit change in web width
- New C-frame with optimized web infeed
- Innovative Raconip deflection-controlled roll
- Contactless temperature measurement of steel roll
- Roll shell surface hardness: approx. 92 Shore D
- Web tension controll for a better and even structure

SOME FINAL PRODUCT APPLICATIONS

- Parachute fabrics
- Sailcloth
- Down-proof textiles
- Filtration
- Personal protection wear



teXcal Raconip TT principle



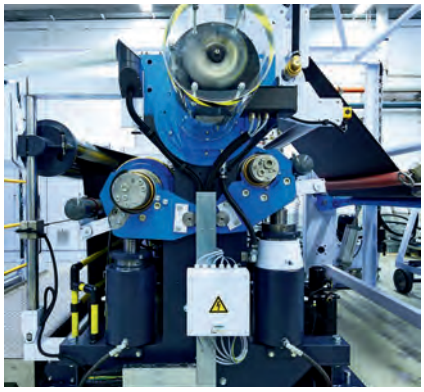
teXcal trike calender

A step ahead in textile calendering: This calender gives you an advantage by maximizing flexibility with two independent nips. Fabric losses at the seam passage are minimized, providing you with a substantial economic benefit for your operations. Be it parachute fabrics, sailcloth, sportswear, or down-proof textiles, the ANDRITZ teXcal trike calender meets all your application demands perfectly.

Besides being operator-friendly, you need calenders that provide a high degree of flexibility, reproducibility, and process control. The innovative teXcal - trike meets these requirements and sets new standards for your sophisticated technical textiles.

WHAT IS THE SECRET?

The innovative teXcal trike is a three-roll calender with a triangular roll arrangement. A heated top steel roll and two identical or different deflection-controlled system rolls allow you to make individual pressure adjustments. Depending on the product, the fabric can be fed through the front nip, the rear nip, or both, giving you the utmost flexibility.



Side view of teXcal trike



teXcal trike calender

FEATURES

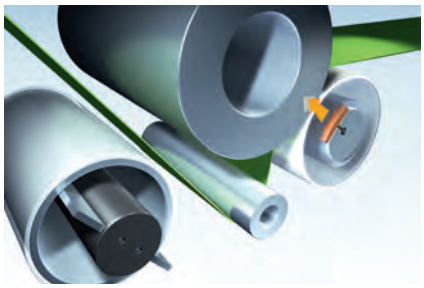
- Line force of 30 – 400 N/mm (can be adjusted individually in each nip without stopping production)
- Minimum fabric loss at seams
- Standard roll surface width of 1,800 – 3,600 mm (larger width possible for special applications)
- Multicovering technology possible
- Plug and play

SOME FINAL PRODUCT APPLICATIONS

- Parachute fabrics
- Sports- and outdoor fabrics
- Packaging material
- Down-proof textiles

WATCH OUR VIDEO
of the teXcal trike







teXcal trike principle



Special applications

Fulfill your specific needs: Benefit from solutions for special applications and niche markets to generate highly sophisticated results. Specific needs require special solutions, so you have the perfect technology to maintain your competitive edge.

SPECIALIST IN AFRICAN DAMASK

One of the special applications in textile finishing is simili-mercerisation, which achieves a special wash and dye-permanent gloss on high quality damasks (e.g. African damask) and poplin material of pure cotton, at the same time retaining smoothness and density.

The teXcal simili four-roll calender hosts two steel rolls and two special rolls with a cover made of cotton blend, a special fiber blend, or a homogeneous composite material.



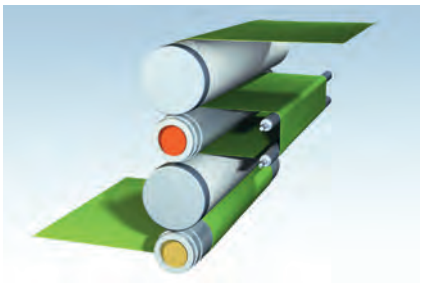
The special fiber blend cover ensures excellent product parameters and can withstand very high surface temperatures.

SOME FINAL PRODUCT APPLICATIONS

- African damask
- Poplin material



teXcal simili calender



teXcal simili principle

FEATURES

- Common line force 400 N/mm
- Standard roll surface width 2,000 mm
- High temperature application

MASTER OF TEXTILE CRUSHING

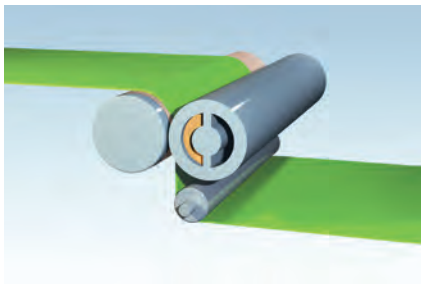
The unique teXcrush finishing system frequently follows a stentering frame for breaking the finished web. The horizontally arranged rolls offer you the best results for foam-treated blackout curtains, for example. The system's compact design and optimal material feed allows for easy integration into any finishing line.



Vertical blinds

SOME FINAL PRODUCT APPLICATIONS

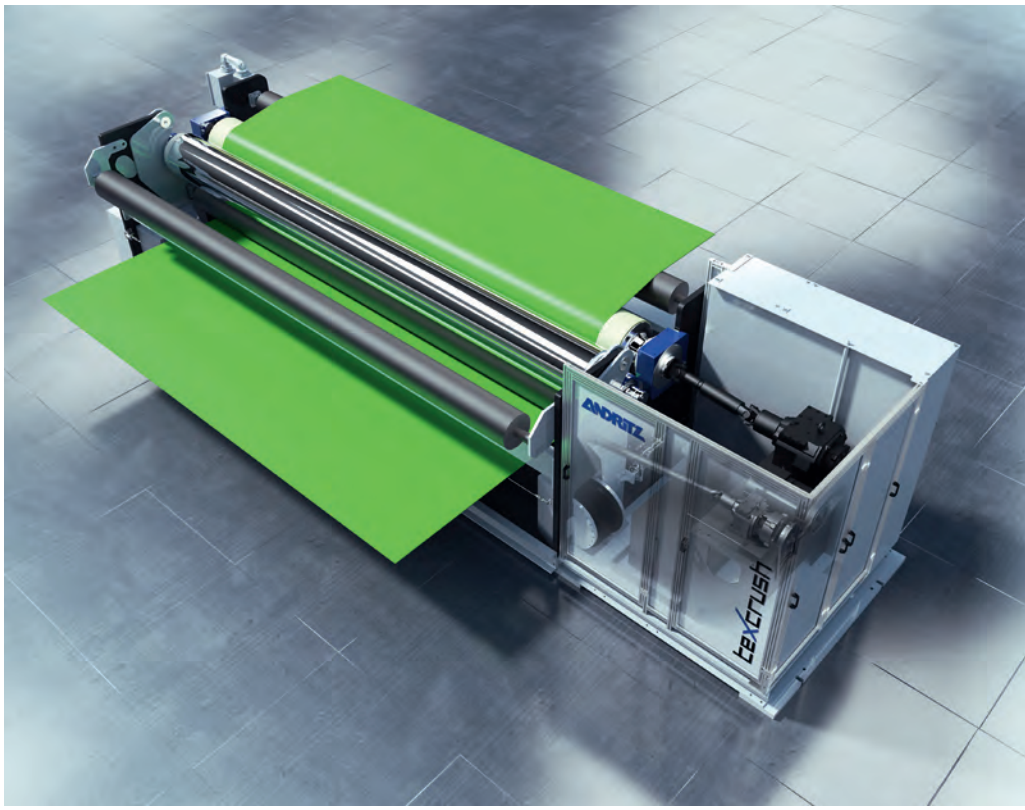
- Blackout curtains
- Non-transparent curtains
- Truck tarpaulins
- Advertising posters



teXcrush principle

FEATURES

- Infinitely adjustable line force 30 – 110 N/mm
- Standard roll surface width 1,800 – 5,600 mm
- Adjustable pressing width to allow for changes in fabric width
- For cold and heated applications available



teXcrush finishing system

Swimming Roll (S-Roll)

Long-standing expertise in roll technology: Trust in the inventors of the deflection-controlled roll to ensure best results. The S-Roll has revolutionized calendering technology worldwide and is designed for a wide range of applications to ensure best results.

You can finish an almost unlimited number of applications with the S-Roll. From ANDRITZ you can always expect maximum flexibility and highest quality. This is ensured by continuous R&D that adapts and optimizes the S-Roll to meet all of your demands in the textile markets.

COVERS AND SLEEVES

For this type of roll, a wide variety of covers and surface hardness can also be applied directly to a steel shell. A very soft rubber cover may also be used, depending on the application.

TAKE A PEEK BEHIND THE SCENES

The roll is designed to follow the bending of the counter-roll and achieve maximum flexibility in your production operations. This allows rolls to be completely cylindrical and prevents friction. The roll has a fixed axle with a tube rotating around it. The inner part is divided into two different chambers, allowing the roll shell to bend towards the counter-roll. The line pressure can be adjusted individually.

WATCH OUR VIDEO
of the S-Roll

FEATURES

- Hydraulic pressure chamber
- Variable adjustment of fabric width
- Variable line force
- Correction: left – center – right
- Line force: 30 – 400 N/mm
- Quick and easy sleeve change
- Multicovering technology possible



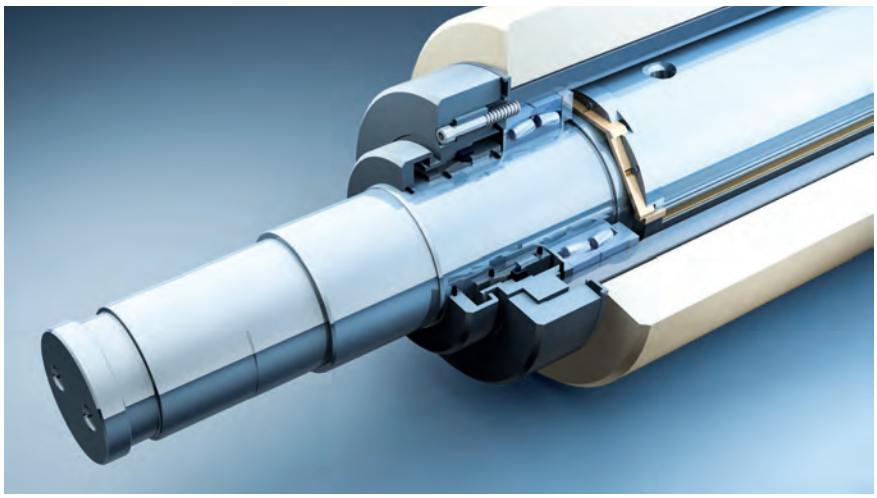
Increased line force in center



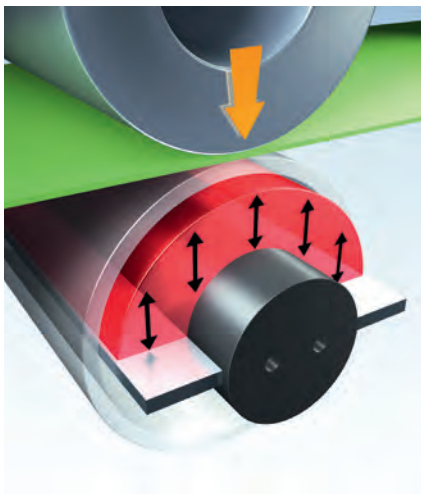
Even line force at full fabric width



Increased line force at the edges



Inside view of S-Roll



S-Roll principle

Raconip L roll

Hydrostatic deflection control: In comparison to the Swimming Roll, the Raconip roll technology offers you hydrostatic pistons for deflection control. The Raconip L roll has hydrostatic pistons arranged in an L-shape.

Giving you yet another benefit while increasing flexibility in production, the roll controls the line pressure in both nips independently. ANDRITZ manufactures rolls and sleeves in-house, which always ensures you the highest quality control.

COVERS AND SLEEVES

A wide variety of covers and surface hardnesses can be used for this type of roll as well. For soft handle the perfect combination is a polyamide and cotton sleeve.

UNCOVER THE SECRET

The rotating polyamide Racolan Sleeve of the deflection-controlled roll is supported on hydrostatic elements (pistons). A uniform, infinitely adjustable line force is transmitted to the Racolan Sleeve via an oil film. You can adjust the pressure width by switching the supported elements on and off symmetrically.

FEATURES

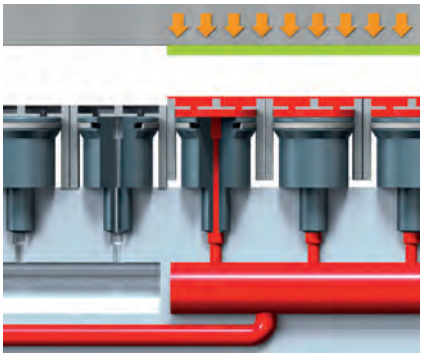
- Piston control
- Variable adjustment of fabric width
- Variable line force
- Two independently adjustable effect nips
- Retraction of piston for edge relief
- Line force: 50 – 300 N/mm



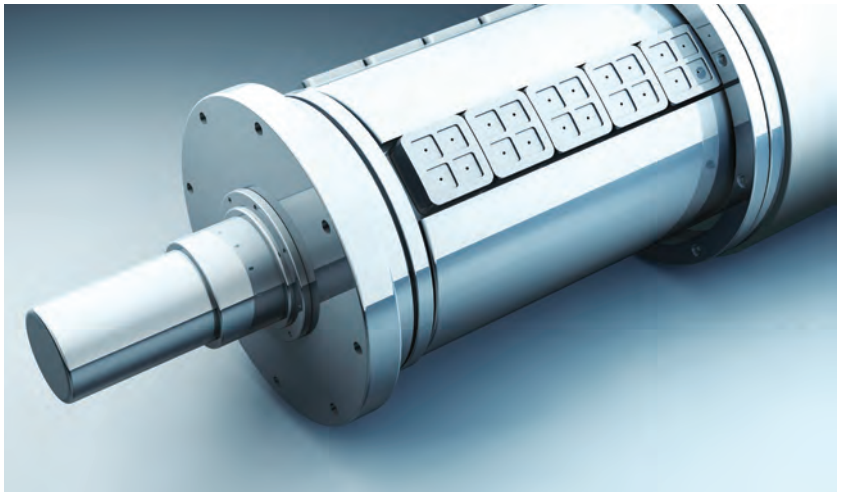
Roll retraction at full fabric width



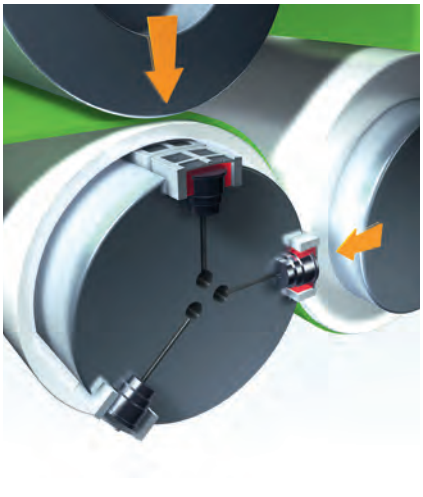
Roll retraction at narrow fabric width



Schematic of support elements (pistons)



Inside view of Raconip L roll



teXcal Raconip L principle

Raconip roll

Highest profile control: Ensure absolute flatness, highest quality, and spot-on air permeability with this innovative roll concept.

The Raconip roll provides you with unrestricted profiling over the entire fabric width by hydrostatic pistons.

You can vary the line force in several zones via individual elements. This provides flexible fabric adjustment and precise profile control to achieve absolute flatness.

COVERS AND SLEEVES

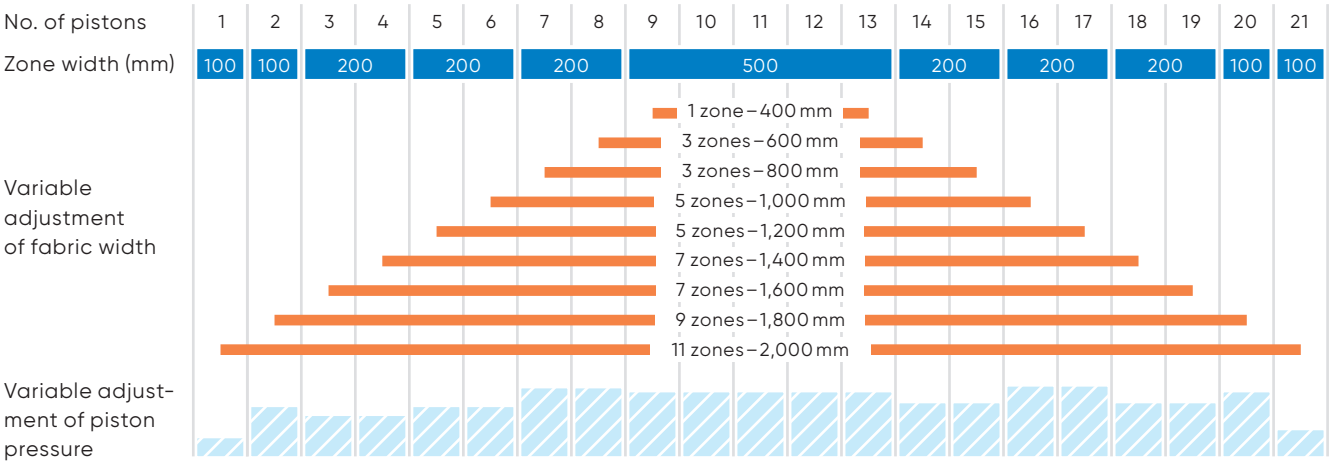
For this type of roll, you can use a wide variety of covers and sleeves.

- Polyamide sleeve: Racolan
- Glass-fiber reinforced plastic shell with cover: Racoflex
- Homogeneous composite sleeve: Racoflex plus

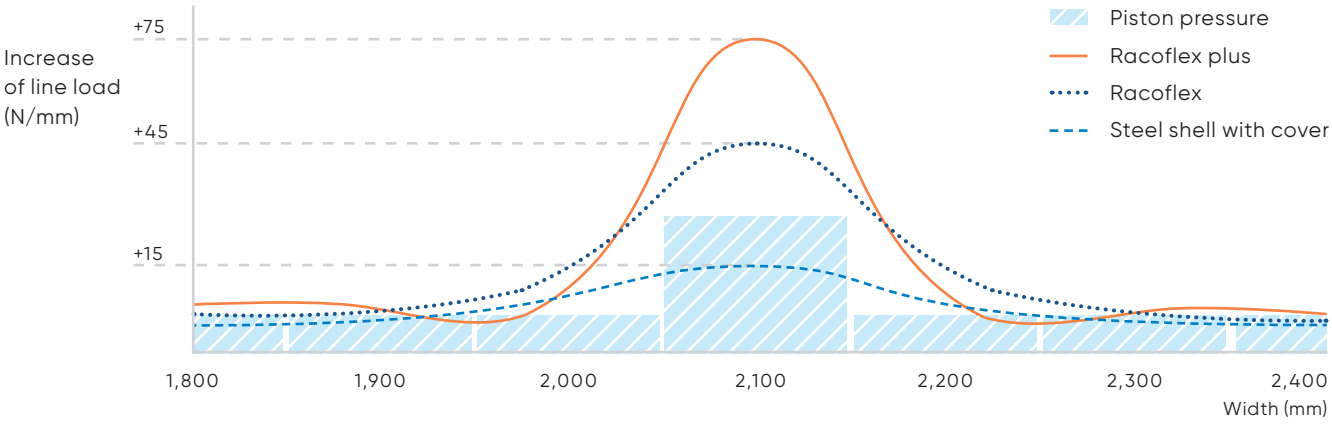
Variable adjustment of pressure zones according to fabric width is ensured with all sleeve types.

FEATURES

- **Unlimited piston control within several zones**
- **Zone width distribution according to customer demands**
- **Variable adjustment of fabric width**
- **Variable line force**
- **Line pressure: 30 – 400 N/mm**



Example for an asymmetric zone control with 11 zones



Comparison of different sleeves elasticities (90-92 Shore D): The Racoflex plus sleeve is the most flexible sleeve on the market.

Sleeves

The perfect sleeve for your purposes: Whether it is a sleeve or shell cover made of polyamide, composite, cotton, rubber, steel or any other special material, we select the ideal solution for your textile production.



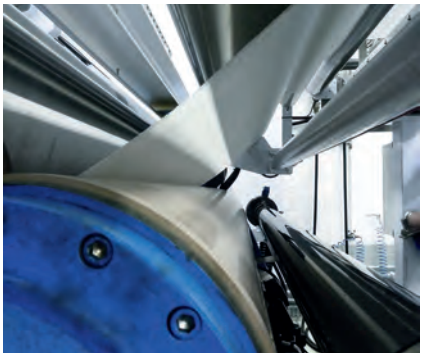
POLYAMIDE SLEEVE

A polyamide sleeve features high elasticity and high resilience. It is largely resistent to indentations by seams, textile web edges and individual threads. Quick and easy maintenance and disassembly of the sleeve are assured by using special devices.



COTTON SLEEVE

The elastic roll is very smooth and has a coating made of polished cotton. In combination with the polyamide sleeve, it is able to finish the textile web with a soft-handle effect at defined pressure and speed. Small marks or scratches on the roll surface affecting seams and so on can be washed and ironed out easily.



COMPOSITE SLEEVE

A composite sleeve is a cover held on a glass-fiber reinforced plastic or steel shell. The sleeve is characterized by its adaptability to pressure relief and retraction forces in the edge area. It can be used to hold a wide range of different covers and surface hardnesses. In addition, a very soft rubber cover can be used.



HOMOGENEOUS COMPOSITE SLEEVE

This special composite sleeve is made of a homogeneous composite material that provides excellent flexibility and bending. A very smooth surface ensures high compression and gloss development in the fabric web. The shell hardness is in the range of 90 – 94 Shore D, combined with high temperature resistance. This sleeve is available exclusively from ANDRITZ.

Multicovering technology for S-Rolls

Quick and easy sleeve change: Add value to your production operations with our multicovering technology and achieve a multitude of calender effects with quick and easy sleeve changes. As ANDRITZ is the only manufacturer delivering this outstanding technology, you profit from maximized flexibility and production time.

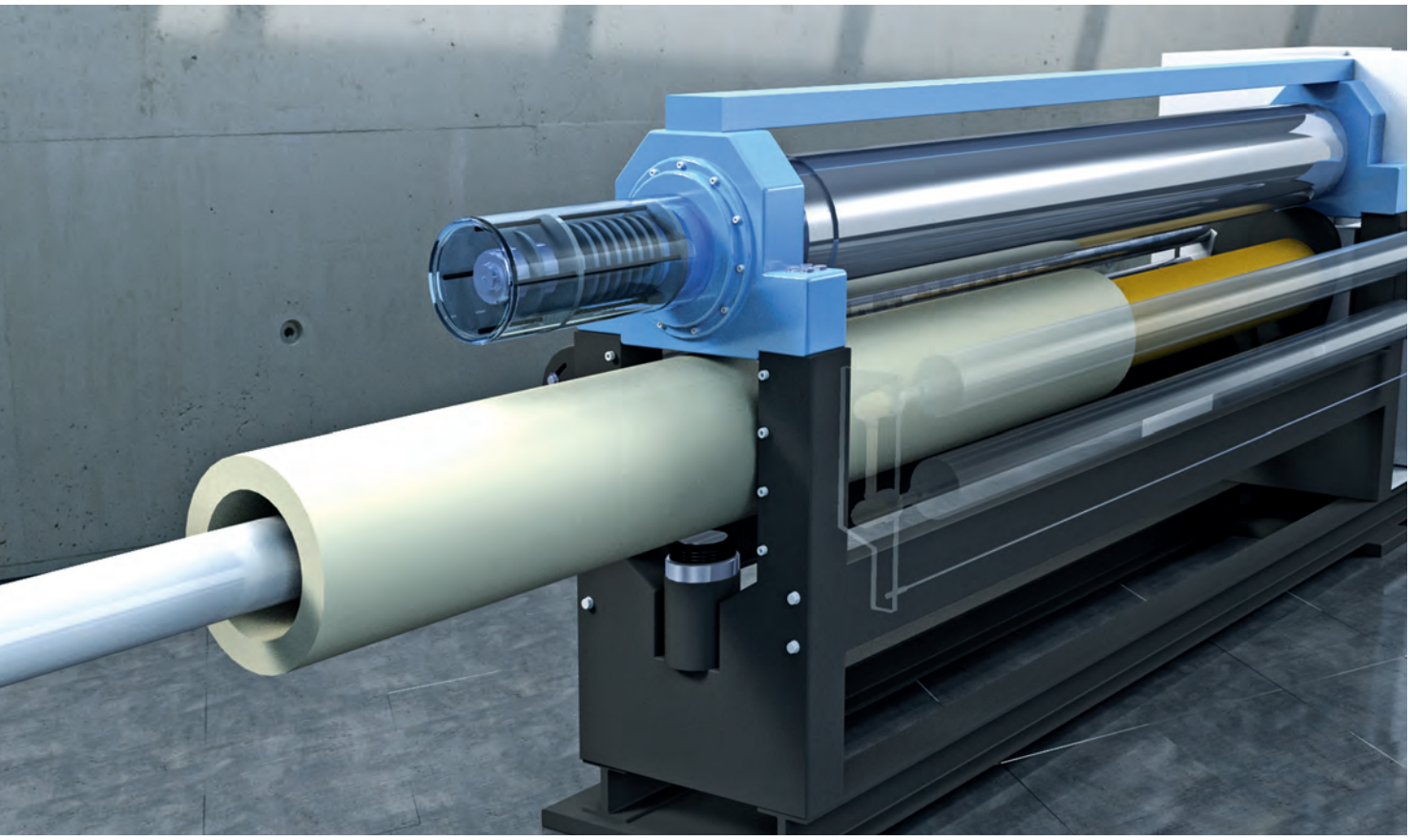
This pioneering invention allows sleeve changes without removing the roll or opening the hydraulic system. The steel tube is covered with a basic coating and a FlexRoll polyamide sleeve. Depending on the desired calender effect, production can continue with the basic coating or the sleeve.

The FlexRoll sleeve is extremely robust and resistant to indentations such as seams, weaving faults, and folds.

WATCH OUR VIDEO
of the multicovering technology for S-Rolls

YOUR BENEFITS

- Quick and easy sleeve change
- Various calendering effects
- Hardness level approx. 90 Shore D
- Maximized uptime



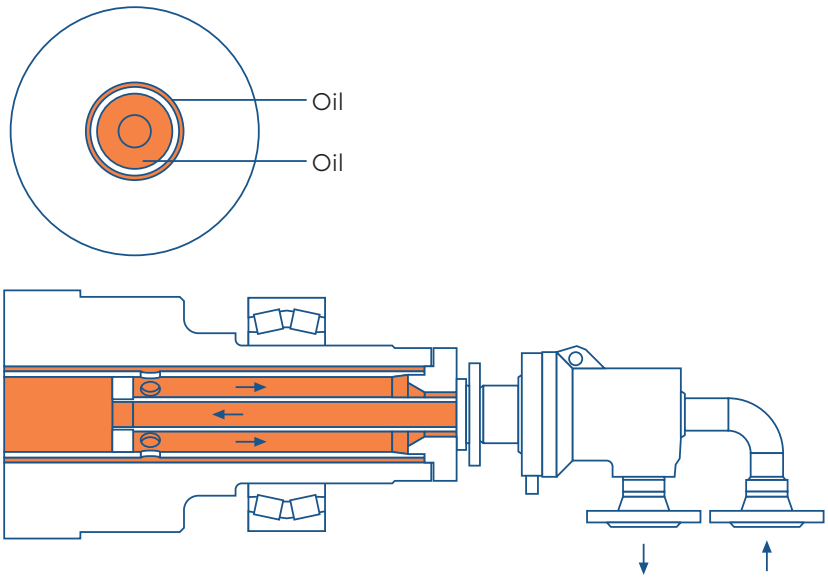
FlexRoll sleeve change

Heating systems

Two options for your calender: Depending on your regional conditions and demands, you can heat the steel roll in two different ways – with thermal oil or electrically generated steam. This ensures that you have the most advantageous option to reduce your energy costs.

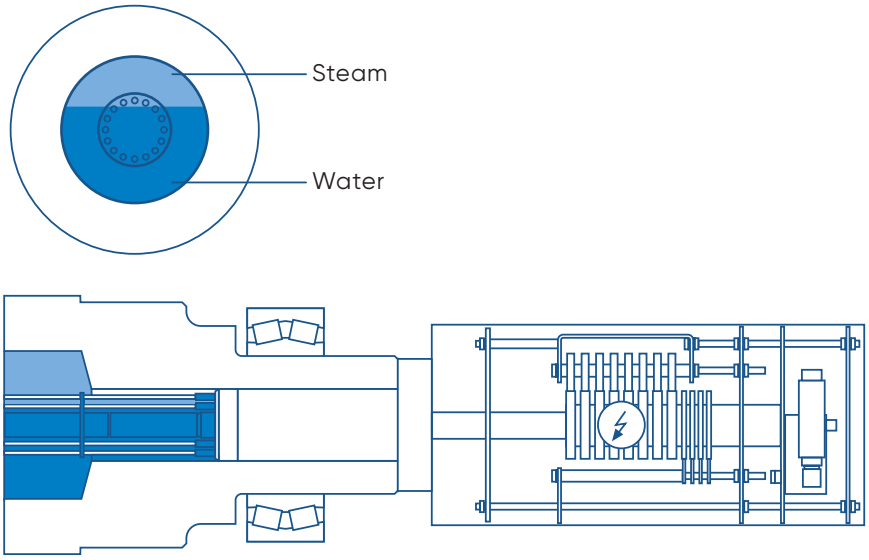
THERMAL OIL HEATING

- Counter-flow principle for optimum temperature distribution
- Max. roll surface temperature: 250 °C, for special applications even higher
- Temperature accuracy: ±1.5 °C over the entire fabric width
- Quick cooling time due to heat exchanger in the secondary circuit
- Variable primary energy: electricity, gas, oil



ELECTRIC STEAM HEATING

- Large steam chamber for excellent temperature uniformity
- Highest energetic efficiency due to optimal roll wall thickness and large internal bore
- Max. roll surface temperature: 230 °C
- Temperature accuracy: ±1.5 °C over the entire fabric width
- Short heating up time due to lowest heat loss
- Compact design and no need for peripheral components
- Plug and play



GET THE MOST OUT OF YOUR INVESTMENT

At ANDRITZ Nonwoven and Textile we know that your business depends on satisfied customers and efficient processes. That's why we support you in every aspect of your nonwoven and textile production. Take advantage of technology that lets you produce consistent quality for decades to come. Profit from the highly efficient use of energy and raw materials that our production provides. You can rely on our responsive service teams who will protect your investment and optimize your processes. Experience how innovative approaches and digital services give you more control than ever before. With ANDRITZ, the leading supplier for the nonwoven and textile market, you get the most out of your investment.

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