



PULP & PAPER

**LOCAL SERVICE
CENTERS FOR YOUR
FUNCTIONAL ROLLS**

ANDRITZ WORKSHOPS IN ASIA

ANDRITZ

ENGINEERED SUCCESS

ANDRITZ workshops in Asia

High-performance roll service for all functional rolls

The highest availability and performance of production equipment are a must for today's papermakers. In paper, board, tissue, and pulp machines, functional rolls at various stages in the production line are essential for ensuring excellent sheet quality at the highest specific production rates.

Keeping everything rolling is one of the most critical challenges in a paper mill. With tight budgets and increasing demands, mills are focusing on the runnability and performance of existing equipment.

ANDRITZ has extensive roll service expertise and specializes in the repair, reconditioning, and upgrading of all types of functional rolls, no matter what brand or manufacturer. Thanks to extensive investments and professional cooperation, ANDRITZ has three workshop facilities in Asia equipped with state-of-the-art machines and tools and can also provide experienced technicians for each roll processing and machining step.

ANDRITZ AIM WORKSHOP IN FOSHAN, CHINA

The heart of ANDRITZ's roll workshop network is the newly-established ANDRITZ Intelligent Manufacturing AIM Roll Workshop. It was opened in 2023 and encompasses a total area of about 8,700 sq. m. As one of the most modern roll overhaul workshops worldwide, it has capabilities for roll maintenance services (one-stop shop), grinding, all kinds of soft covers, and shoe press belts.



ANDRITZ AIM Workshop in Foshan, China



Your benefits

SHORT DISTANCES FOR QUICK RESPONSE:

The close proximity of the service workshops in Asia ensures a quick response to functional roll services or upgrade requirements, minimizing downtime and production shutdowns.

REDUCED TRANSPORTATION COSTS:

The presence of the service workshop significantly reduces transportation costs for equipment and parts, resulting in cost savings for your operation.

CUSTOMIZED SOLUTIONS:

The local workshop can be used to create tailored solutions specific to your functional rolls and operational requirements.

UPGRADE & IMPROVEMENT:

ANDRITZ is offering upgrades and exchanges of old outdated roll designs to latest state-of-the-art solutions to increase the lifetime, reliability, and future spare part costs.

COST-EFFECTIVE MAINTENANCE:

Timely maintenance, refurbishment, and upgrades from the local service workshop help extend the life of your equipment, providing a cost-effective alternative to replacing entire rolls.

LOCAL KNOWLEDGE:

The Asian service centers understand the regional challenges and specific industry requirements and can therefore provide services suited to local conditions.

A worker in a blue uniform and white hard hat is working on a large roll of paper in a factory. The worker is wearing safety glasses and orange gloves, and is using a tool to work on the roll. The background shows other rolls of paper and industrial equipment.

"Rolls are among the most important components in paper production. ANDRITZ has been manufacturing and overhauling rolls for decades."

XU CHANGJIANG,
Senior Product Manager,
Paper Machine Service

Our offering at the workshops

ANDRITZ professionals are experts in manufacturing, repairing, and reconditioning your rolls

Every roll that comes into our workshop is run through a sophisticated and standardized overhaul process, which ensures the fastest delivery times and best-quality refurbishment.

In addition to the roll itself, we can also provide inspection and refurbishment of various roll drive systems, including belt drive, slip-on gear units, planetary gears, and triple race bearings.



Test stand capabilities

Extensive testing of each roll upon arrival and before delivery

- Functional rolls and specifically suction and crown-controlled rolls are sophisticated engineered parts with complex internal mechanisms and very small tolerances. Although every roll in our workshops is overhauled by our most experienced technicians, using the highest quality spare parts and refurbishment procedures, only with extensive testing can maximum functionality be ensured.
- Therefore, every roll that involves a certain level of complexity is stringently and extensively tested on our state-of-the-art test stand. This includes moni-

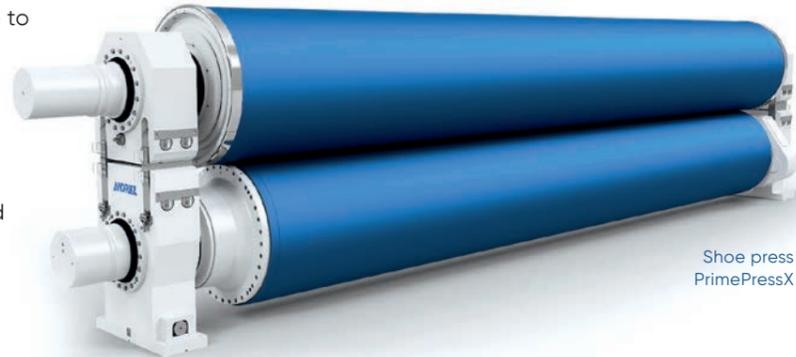
tored trials with the roll's original drive unit under real hydraulic operation pressures (bar) and at normal paper speeds (m/min). No highly complex rolls leave our workshop if they do not comply with our test criteria and meet the highest quality standard.

- In case of major technical issues reported by our customers, rolls will be tested upon arrival and before disassembly to evaluate and analyze the roll condition. This procedure ensures fast troubleshooting and proactive refurbishment planning.



On-site service

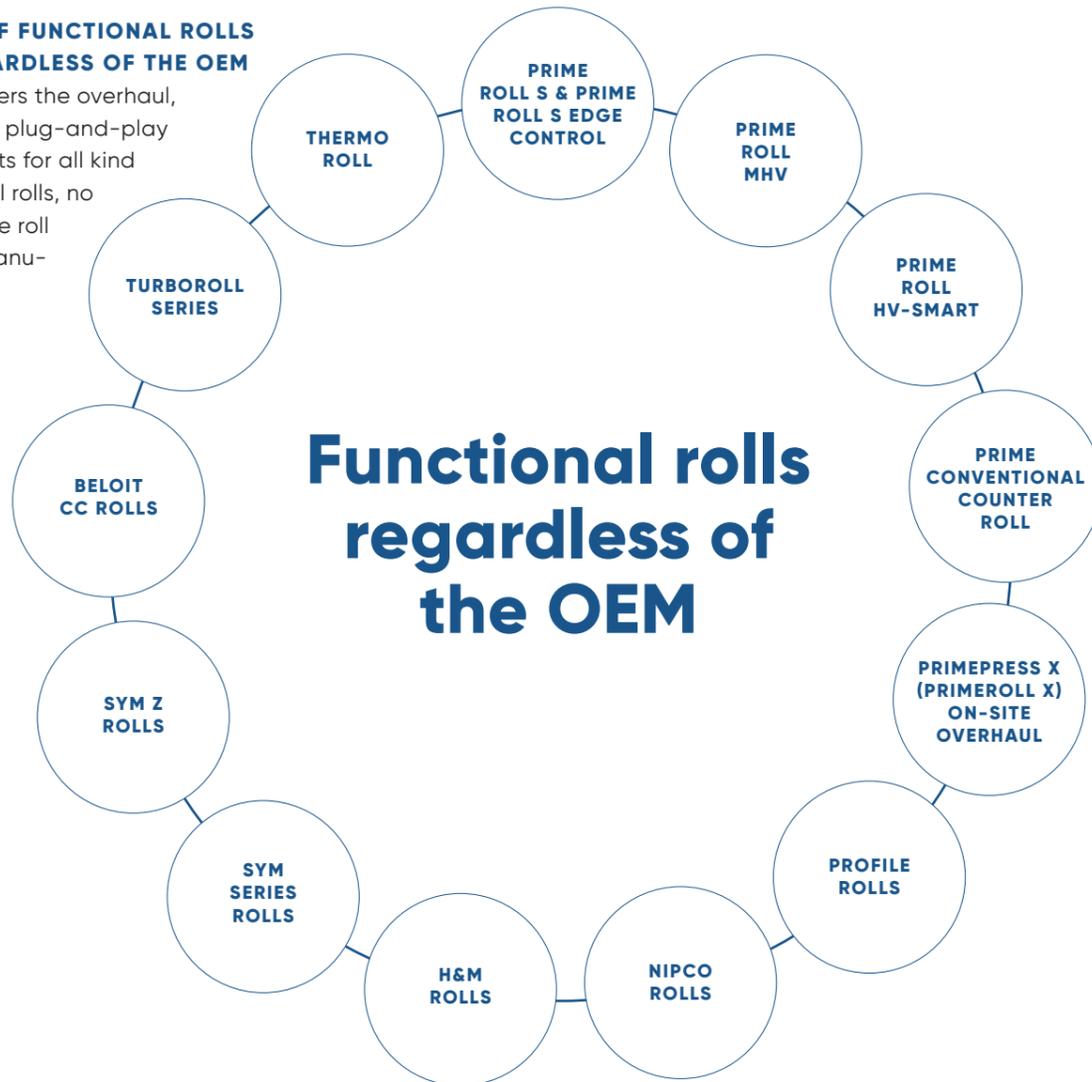
ANDRITZ has extensive process expertise to provide you with the best service for your needs. In addition to the services in our workshops, ANDRITZ also offers an on-site service and troubleshooting, especially for shoe presses and calenders. Our local service team, equipped with the right tools, is ready whenever you have scheduled your shutdown.



Shoe press
PrimePressX

SERVICE OF FUNCTIONAL ROLLS WITH REGARDLESS OF THE OEM

ANDRITZ offers the overhaul, service, and plug-and-play replacements for all kind of functional rolls, no matter of the roll type and manufacturer.



Paper Technology Center in Krefeld, Germany

Rise to new levels of papermaking



Pilot machinery at the ANDRITZ Paper Technology Center in Krefeld, Germany

Nowadays, the words "change," "challenge," and "improvement" are often heard in the paper industry. The extensive paper and board market demands a high degree of awareness in addition to flexibility and development. It is often necessary to develop new processes or to upgrade an existing standard, but development involves time, know-how, and resources. In addition to the recently commissioned *PrimeLineTIAC* tissue pilot plant in Graz, customers can also run stock preparation trials and test all calendering processes required on the market.

ideas and technical inventions will create benefits for you. Tests and monitoring can be conducted on our machines, accompanied by technological experts in a safe and risk-free environment, generating reliable results. You can run trials with your own products under actual operating conditions. By using computational modeling tools, operating conditions at production speeds and scale can be duplicated. Our in-house paper lab is also available to customers for testing paper characteristics.

PILOT FACILITIES AT ANDRITZ KÜSTERS

Our customers have the opportunity to rise to new levels of papermaking with the maximum support they require.

The pilot machinery at the ANDRITZ Paper Technology Center in Krefeld is available for customer trials. ANDRITZ's technological experts provide modern and flexible state-of-the-art pilot facilities to deliver optimal quality for your development projects.

Seeing a result directly in front of you has a massive impact in creating new concepts. The pilot facilities in Krefeld give you an immediate impression of how new

Krefeld, Germany

Raising standards with our pilot facilities

Combining our machines with your ideas

With ANDRITZ Küsters pilot machines, you can expect to have a wide range of machine combinations at your disposal.

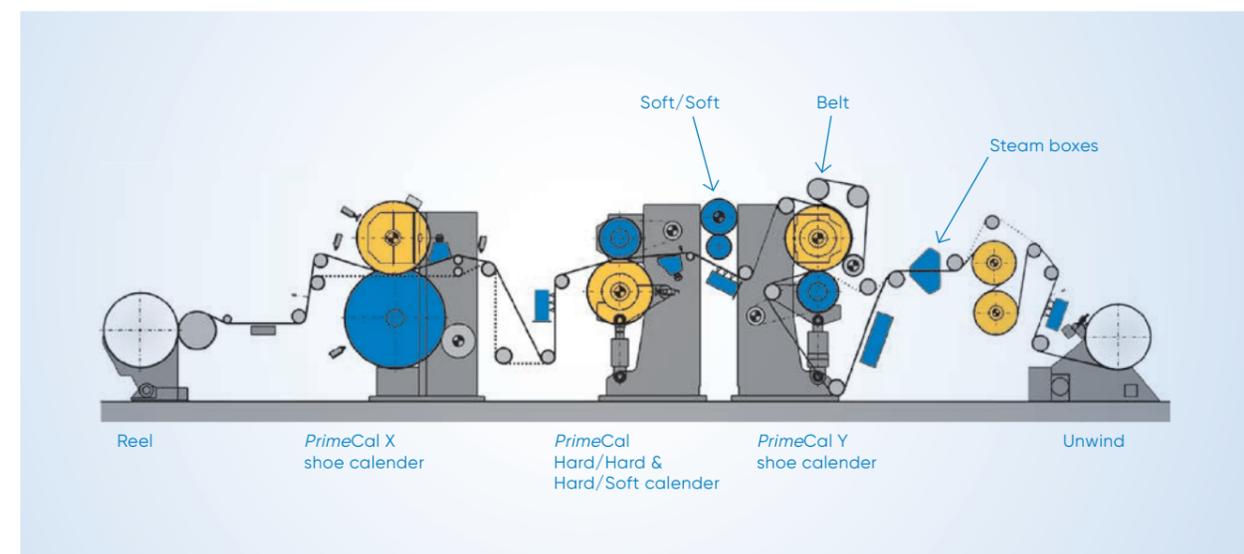
If you want to test paper that has to be highly calendered, the *PrimeCal ProSoft* calender is the perfect choice. You can combine 8+5 rolls and test on a maximum of 4+6 nips at up to 180 °C on a web width of 800 mm. For more flexible options, our *PrimeCal* pilot calender will bring you closer to your goals in improving the results obtained in production of writing and printing papers, cartonboard, or packaging paper with 2×2 rolls and a maximum speed of 1,400 m/min at a surface temperature of up to 220 °C. You can decide between our *PrimeCal Hard/Soft* calender, *PrimeCal X* shoe calender, and *PrimeCal Y* belt calender, which can be equipped in many ways to take papermaking to a new level. In a nutshell, we are able to support your trials with all common calendering technologies. Our experts will plan your order so that you can tune and change the technical parameters during a test, and we are always ready to run a trial or to produce small batches of paper for your company.

PrimeCal Hard/Soft, X, Y

| | |
|--------------------------|---------------------------------|
| Rolls | 2×2 |
| Roll configuration | Hard/Soft, Hard/Hard, Soft/Soft |
| Covers | up to 92 ShD |
| Line load | 10–370 kN/m |
| Speed | 1,400 m/min |
| Roll surface temperature | up to 220 °C |
| Steam boxes | 4 |

PrimeCal ProSoft

| | |
|--------------------------|---------------|
| Rolls | 8+5 |
| MultiNip | max. 4+6 |
| Web width | 800 mm |
| Line load | 10–400 kN/m |
| Speed | 1,500 m/min |
| Roll surface temperature | up to 180 °C |
| Core diameter | 76–150 mm |
| Reel diameter | max. 1,450 mm |
| Steam boxes | 4 |



Machine layout: Pilot line with *PrimeCal X* shoe calender *PrimeCal Hard/Soft*, and *PrimeCal Y* belt calender

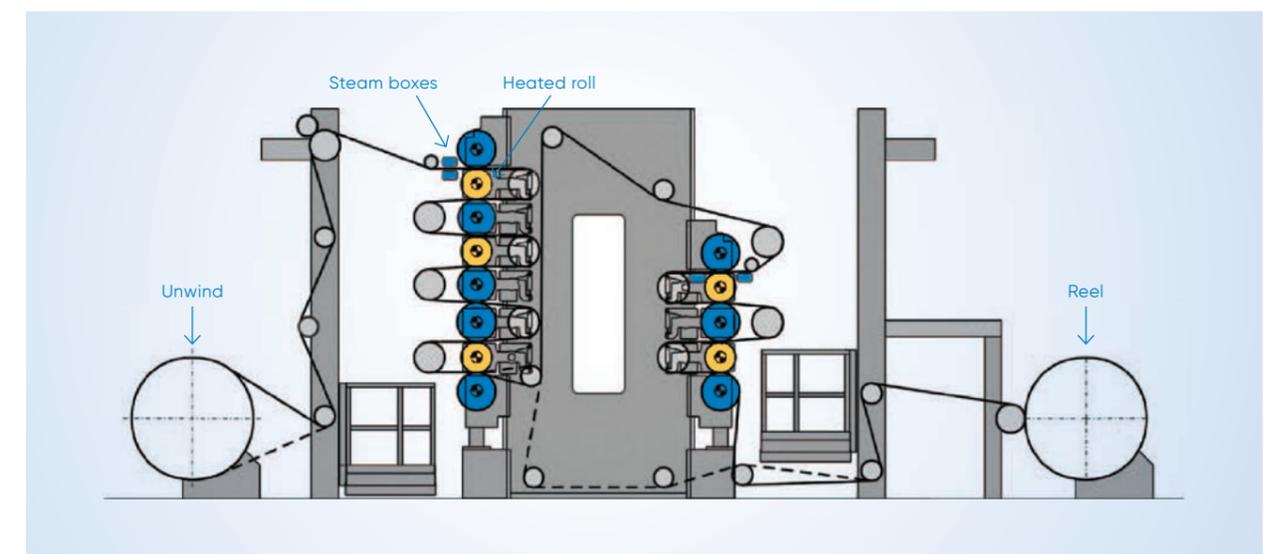
Paper laboratory and testing facility

Maximizing the result

To maximize your results and assist you with state-of-the-art expertise, you will have access to the laboratory and testing facility. In this special compound, our qualified employees and experts will measure different parameters to define how the test run on our machines has changed the outcome of the product. Of course our experts will also provide samples, data, and additional advice relating to the trials.

LABORATORY TESTING CAPABILITIES

- Caliper and bulk
- Moisture
- Gloss (Lehman, Gardner)
- Smoothness (Bekk)
- Porosity (Bendtsen, Gurley)
- Optical properties
- Roughness (PPS, Bendtsen, Sheffield)
- Bending stiffness
- Blackening index
- Imaging analysis
- Ash content



Machine layout: *PrimeCal ProSoft* calender



PrimeService FOR TISSUE, PAPER, AND BOARD: IMPROVE YOUR MACHINE PERFORMANCE

ANDRITZ supplies spare parts and engineered wear products and provides customer-specific maintenance and upgrade services for your paper mill from stock preparation to the reel, including automation solutions and pumps. Our service specialists are skilled and experienced at raising the production efficiency of a machine, process step, or production line. Their knowledge helps protect and extend the life of your equipment and lower your overall operating costs. The huge variety of ANDRITZ upgrade products provides performance improvements, energy, and cost savings, as well as return on investment (ROI) within the shortest time. We work closely with you to monitor, maintain, repair, and upgrade your assets. We provide you with complete technical, mechanical, and personnel support regardless of who originally manufactured your equipment.

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