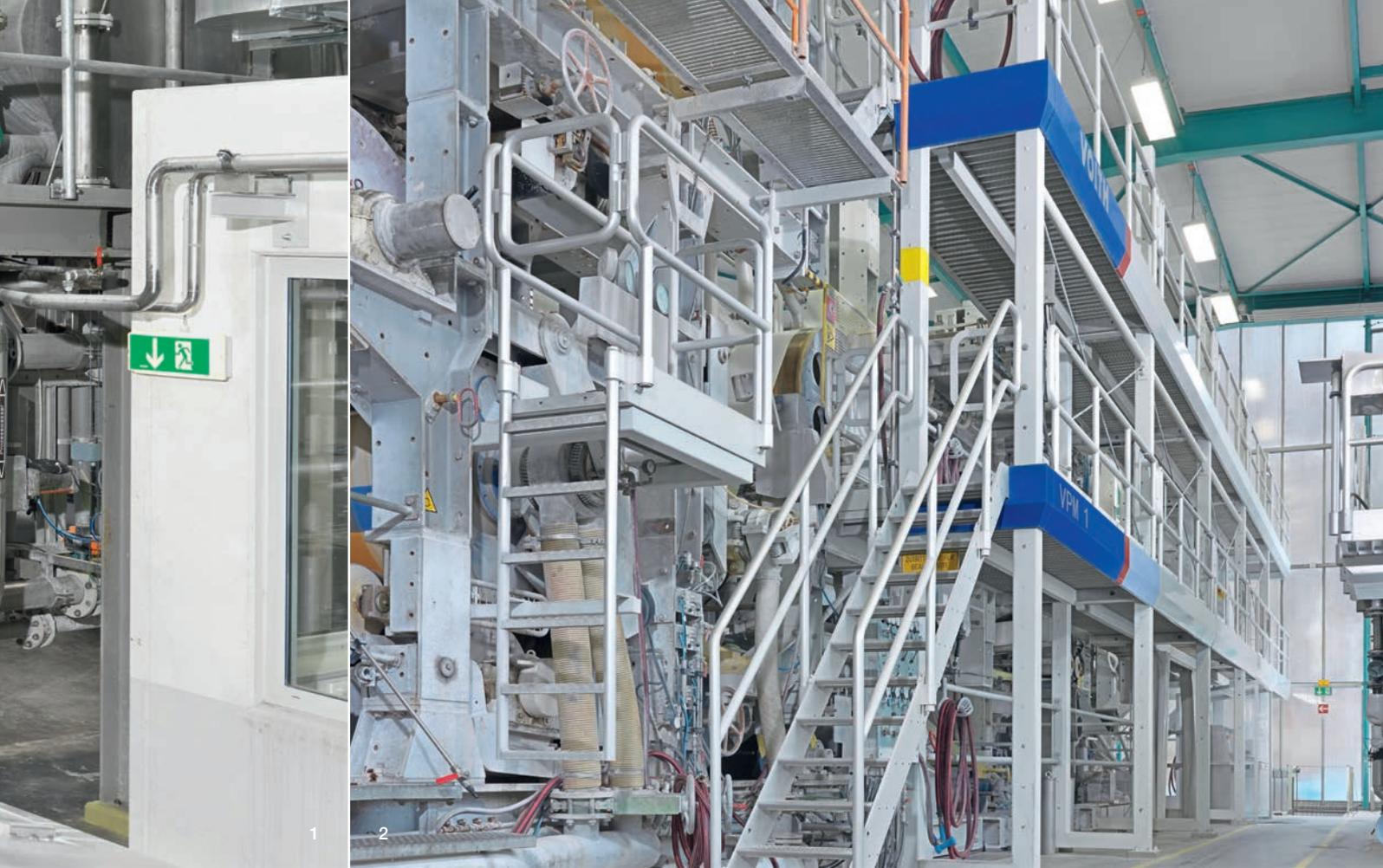


Push your projects forward Voith Paper Technology Center Heidenheim



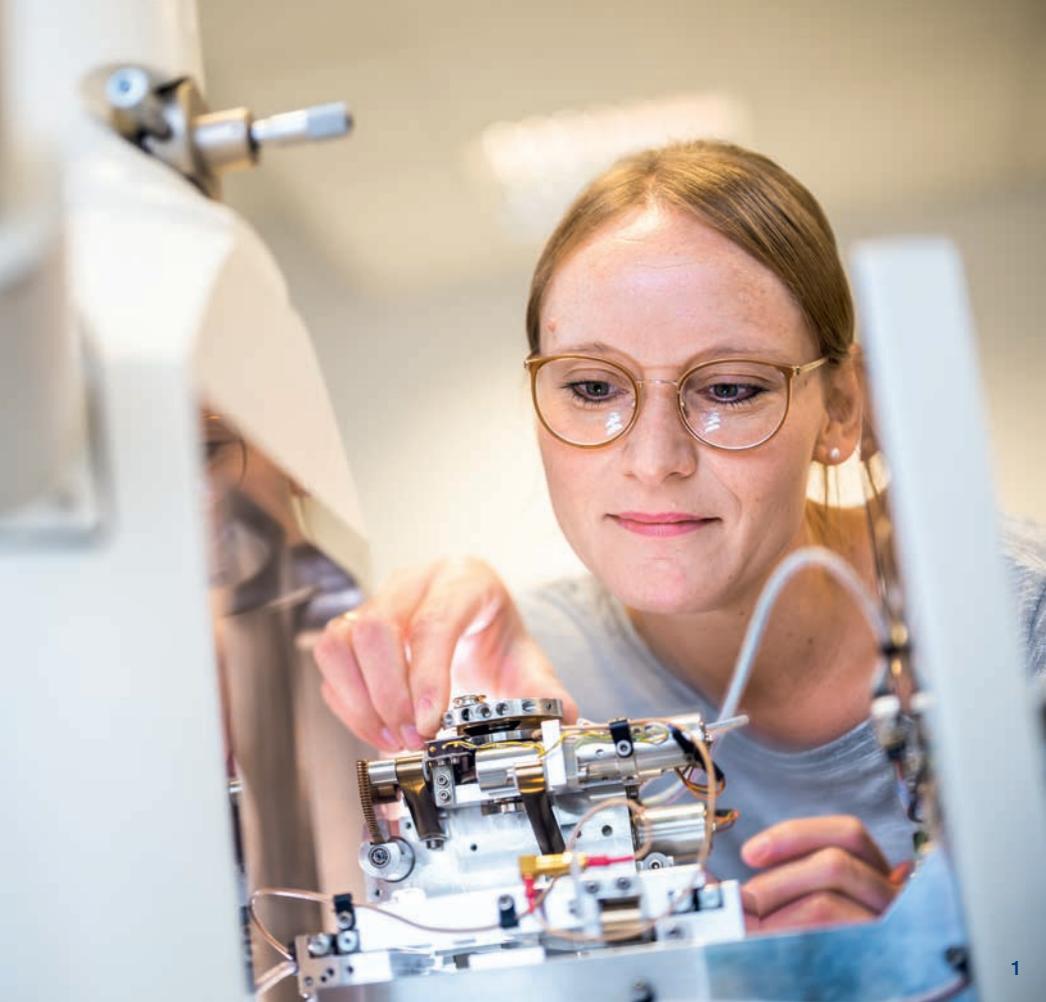


Voith Paper Technology Center in Heidenheim



1 Fiber Technology Center
2 Paper machine

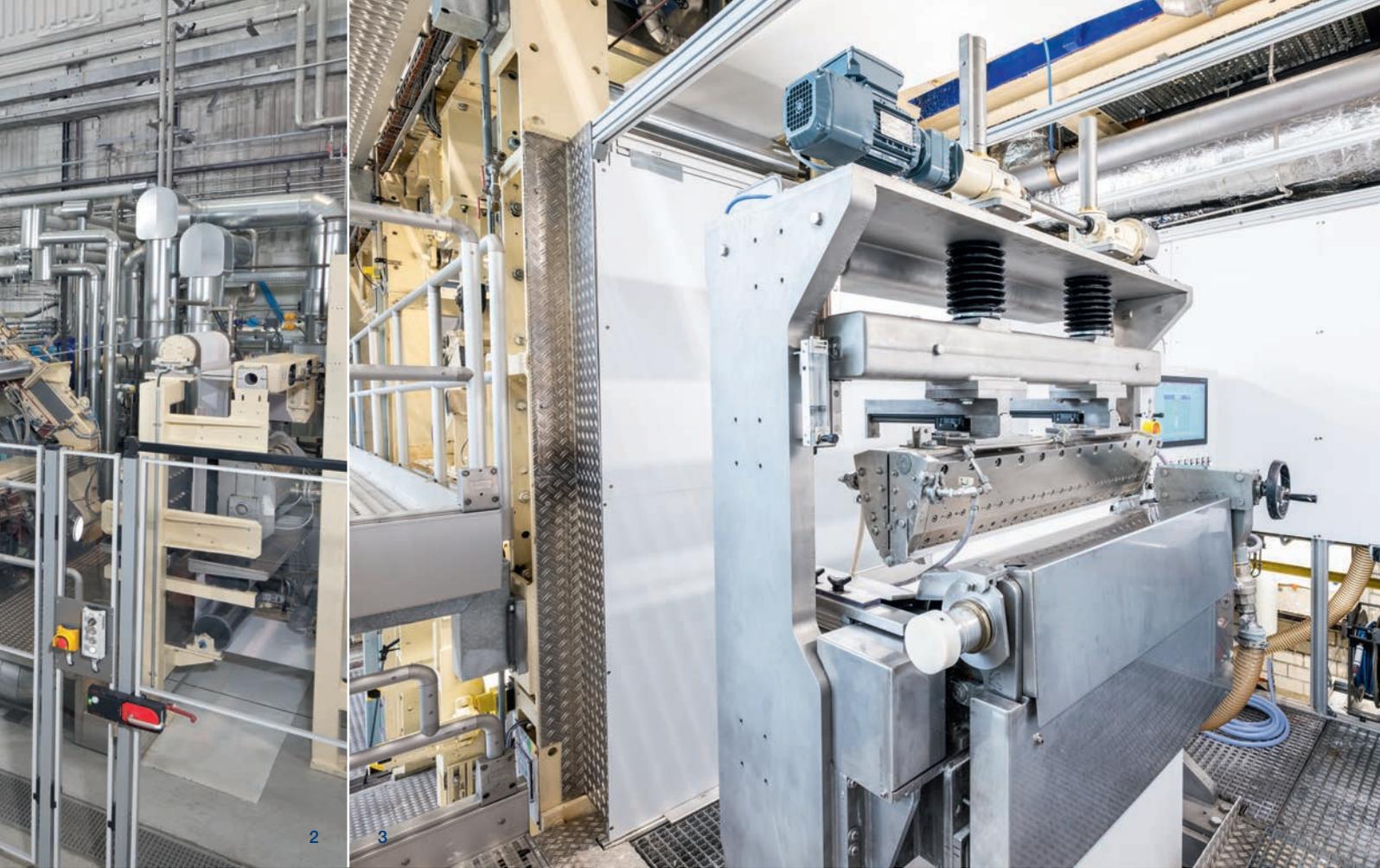
To minimize investment risks, we offer you the opportunity to assess the potential of a new machine or new technologies. Voith Technology Centers worldwide are available for customers to pre-test equipment prior to purchase and help Voith engineers to analyze the efficiency and potential of their R&D activities. The Technology Centers are constantly updated with the latest machinery and pioneering production processes for the pulp and paper industry. From stock preparation, different paper machine configurations, coating units and calenders to the reel, new configurations can be tested.



The main focus besides troubleshooting is the exploration of new furnish types, savings in furnish and energy usage, optimization of new processes, assistance in new product development, minimizing risks involved with rebuilds, and the comparison of different machine process concepts. The use of modern simulation techniques complements the trials and helps minimize and optimize the trial work.

Your benefits of the Voith test facilities

- + Testing and comparing of process conditions and machine concepts
 - + Optimization of raw materials and their treatments for different paper grades
 - + Determination of operating parameters for start-up preparation
 - + Minimization of investment risk with process test under realistic conditions
 - + Employee training
 - + Development of new processes and products to generate unique selling points
 - + Troubleshooting of your process without affecting production
 - + Profit from our experts' knowledge
-

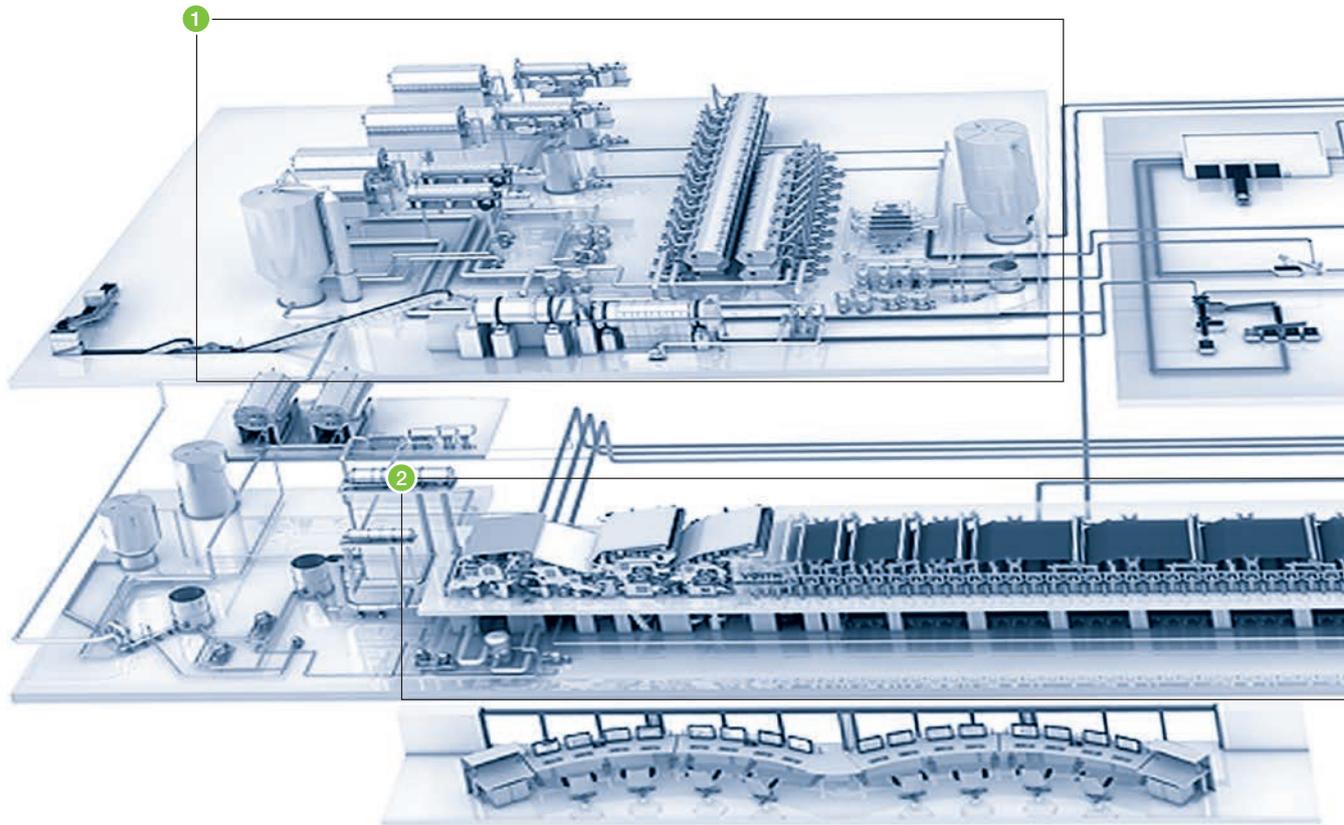


- 1 R&D laboratory
- 2 Pilot calender
- 3 Pilot coater

The following technology centers are located in Heidenheim:

- Fiber Technology Center
 - Paper and Board Technology Center
 - Coating Technology Center
 - Calendering Technology Center
 - Laboratory and Analysis Services, including:
 - Fiber lab
 - Paper lab
 - Coating Color lab
 - Research lab
-

Pilot machines



1 Stock preparation

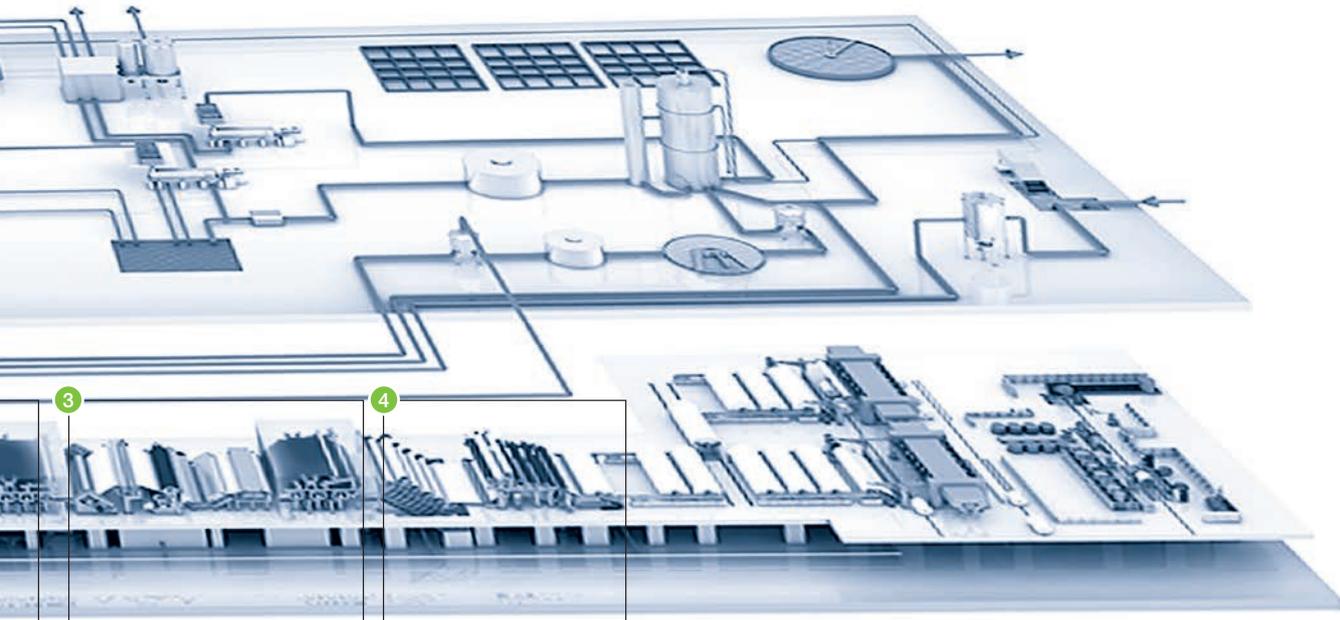


- All stock preparation processes
- Primary and secondary furnish
- Paper grades: board, packaging, speciality, graphic
- All machines in industrial scale
- Single machine tests and system trials

2 Pilot paper machine



- Test of different former types, former settings, fabrics, chemical dosing
- Shoe-blade former or roll-blade former
- Paper grades: packaging, speciality, graphic
- Speed range: 600–3,000 m/min
- Basis weights: 42–205 g/m²
- Wire width: 460 mm



3 Pilot coater



- All coating techniques: film press, size press, blade, single- and multi-layer curtain
- Paper grades: board, packaging, speciality, graphic
- Maximum speed: 2,500 m/min
- All basis weights
- Web width: 800 mm

4 Pilot calender



- Pre- and final calendering: soft nip/hard nip
- Splicing and trimming of rolls
- Web pre-conditioning
- Paper grades: board, packaging, speciality, graphic
- Maximum speed: 2,000 m/min
- All basis weights
- Web width: 300 and 800 mm

- 1 Disperger
- 2 Screening
- 3 Refiner
- 4 Chests
- 5 Pulping
- 6 Cleaner
- 7 Disc filter

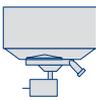
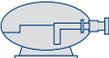
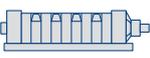
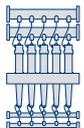
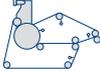
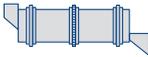
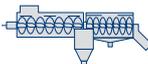
Stock preparation

In the new Fiber Technology Center, we run for our customers stock preparation trials on primary and secondary furnish under production conditions for all paper grades.

- Development of stock preparation machines
- Development of stock preparation concepts
- Process trials from pulping to papermaking on the pilot paper machine
- Basic studies (boost yield, fiber properties, cleanliness, energy savings, recyclability)
- Risk reduction prior to investment

Available process steps

- Pulping
- Refining
- Deflaking
- Screening and Fractionation
- Cleaning
- Flotating
- Thickening and Washing
- Dispersing
- Bleaching

Pulping	Cleaning	Screening	Cleaning	Flotation	Thickening/ Washing	Dewatering	Dispersing/ Bleaching	Fiber Treatment
 LC-Pulper	 High Density Cleaner	 Fibersorter	 Heavy Weight Cleaner IDC-4	 EcoCell	 Disc Filter	 Screw Press	 Disperger	 Deflaker
 HC-Pulper		 Screen	 Heavy Weight Cleaner IDC-5		 Drum Thickener	 Wire Press	 HC Bleaching Tower	 Refiner
 Drum Pulper		 Tailing screen	 Light Weight Cleaner LT3		 Washer			
 Green Pulping Concept								



- 1 Headbox test-rig
- 2 Headbox
- 3 Gap former
- 4 Chemical dosing
- 5 Pilot paper machine

Papermaking

Our pilot paper machine and headbox test-rig allow you to examine your process under real conditions. A vast range of different paper grades can be tested.

- Development of paper machine components
- Development of paper machine concepts
- Process trials from pulping to paper with stock preparation in Fiber Technology Center
- Basic studies (influence of machine parameters, fibers, chemicals and fabrics)

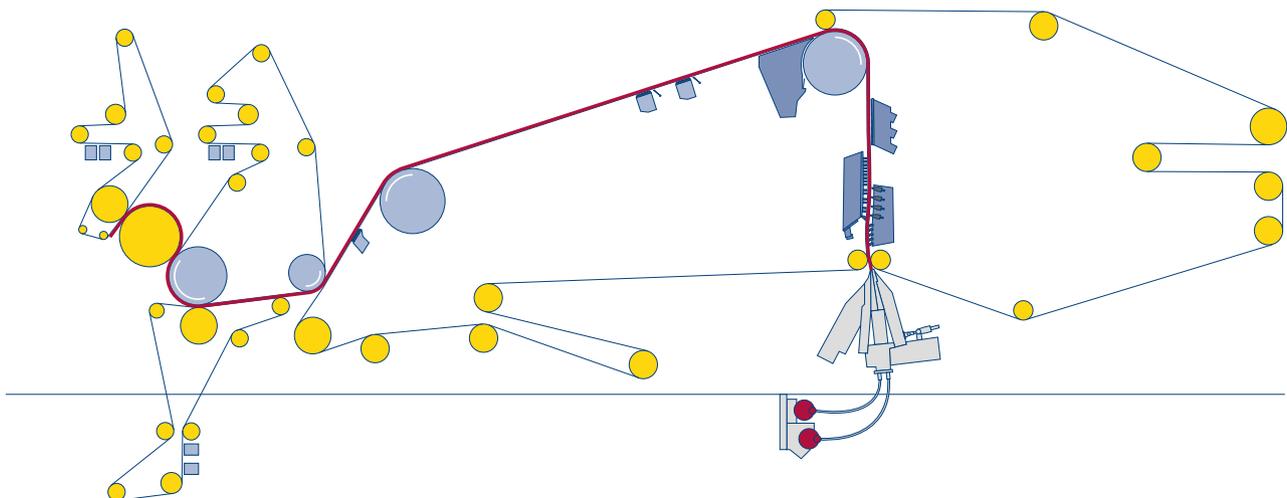
Technical data Pilot paper machine

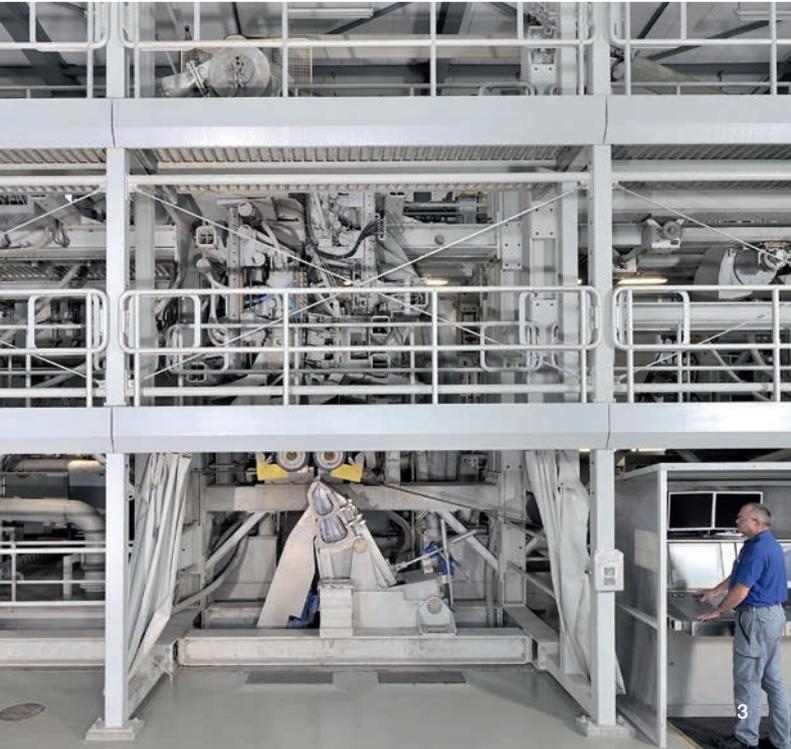
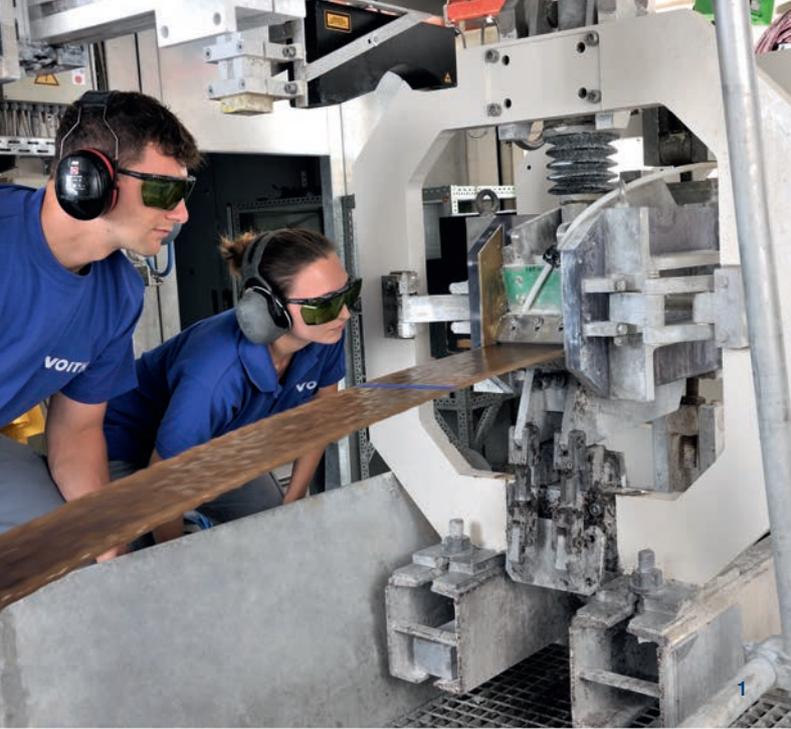
- Two approach flow systems for multi-layer trials
- Headbox: 3–7 lines
- Shoe-blade former or roll-blade former
- Basis weights: 42–205 g/m²
- Speed range: 600–3,000 m/min
- Pond width: 350 mm
- Wire width: 460 mm
- Samples for paper testing

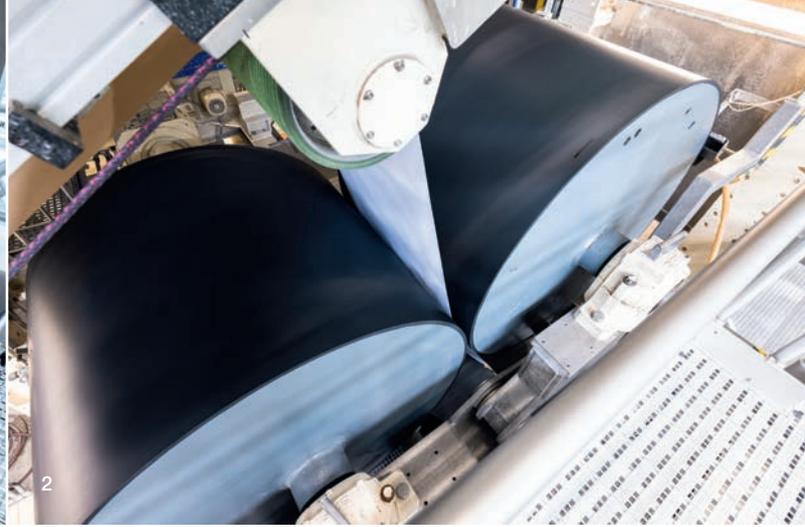
Technical data Headbox test-rig

- Web width: 182 mm
- Speed range: 50–2,500 m/min
- Maximum flow rate: 4,000 l/min

Pilot paper machine (vertical gap former configuration)







Coating

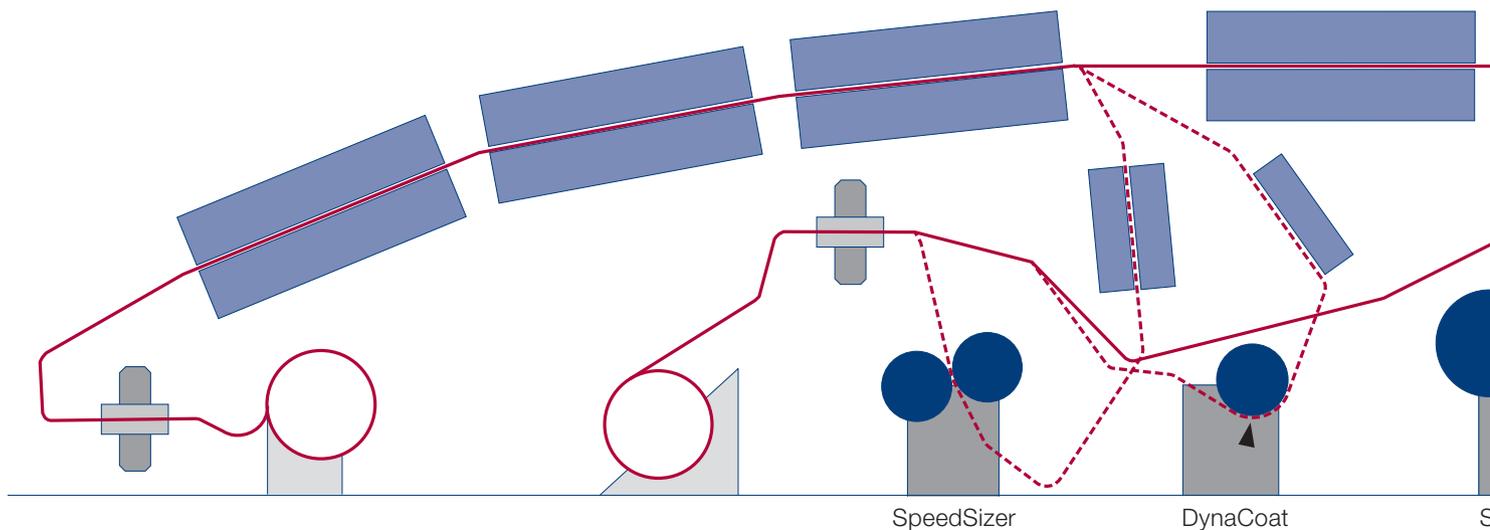
The pilot coater at our R&D center offers ideal conditions for studying the coating process under realistic conditions. The complete coating process for every grade from specialty to board can be examined with your base paper and coating color raw materials.

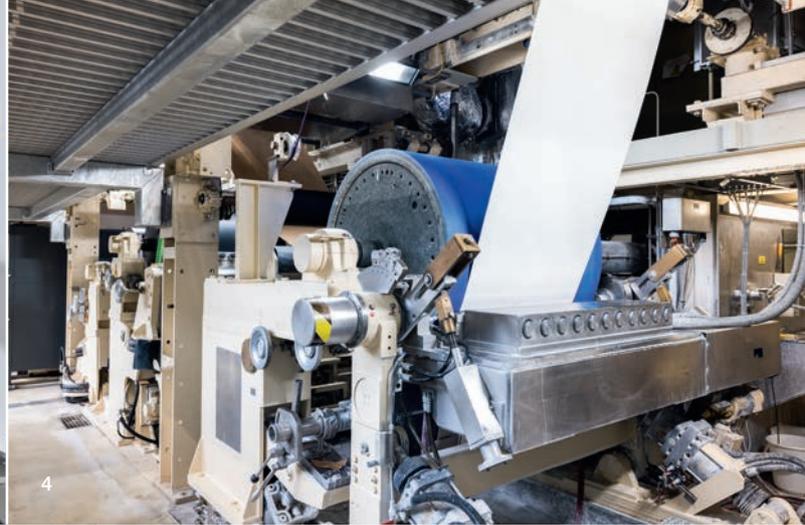
- Development of coaters and coating equipment
- Development of coating concepts
- Process trials from fiber to printing
- Basic studies (influence of machine parameters, coating color, base paper)
- Operator training
- Production of small lots for market test purposes

Technical data: Curtain test-rig

- Single sheet coating unit for small scale trials
- Curtain coater (DynaLayer)
- Maximum speed: 1,000 m/min
- Coated sheet size: 0.32 x 1 m or A3

Pilot coater

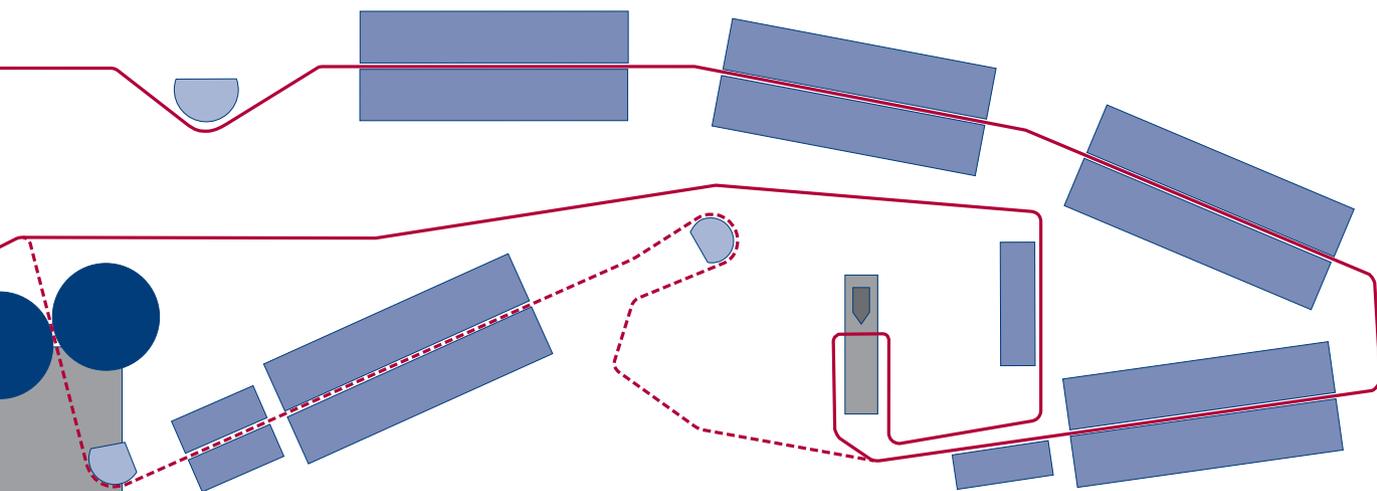




- 1 DynaLayer
- 2 SpeedSizer
- 3 Curtain test-rig
- 4 DynaCoat

Technical data: Pilot coater

- Single and multi-layer curtain coater (DynaLayer)
- Film coaters (SpeedSizer)
- Blade or rod coater (DynaCoat) with free jet applicator (JetFlowF)
- Size press
- Flexible units for coating color and starch preparation
- Deaeration for bubble-free coating application (AirEx, AirEx AT-V)
- Efficient drying with IR and air dryers
- Sensors for measuring drying-specific parameters
- Maximum speed: 2,500 m/min
- Maximum web width: 800 mm
- Maximum reel diameter: 1,500 mm
- Core size: 3", 4" or 6"
- Diameter of applicator/backing rolls: 1,000 and 1,500 mm
- Various roll covers (Rubber, Polyurethane, Chrome)
- Grooved and smooth rods
- Steel and ceramic blades for stiff and bent blade coating



SpeedSizer

DynaLayer
Single and multilayer curtain

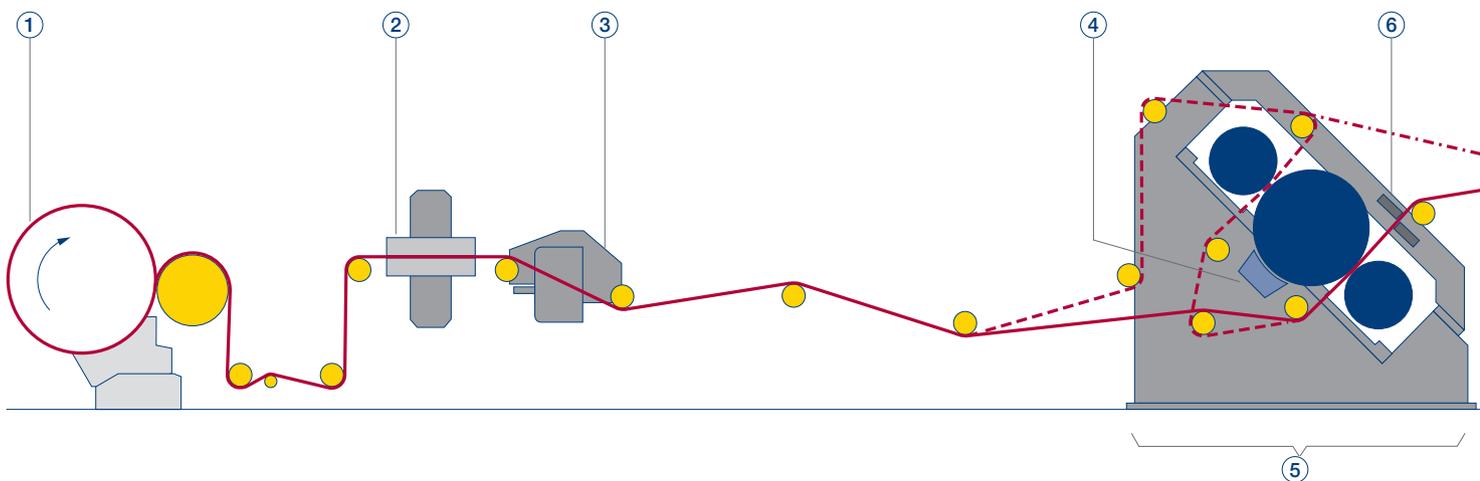


Calendering

With our pilot calenders, the best possible combination of nip pressure, temperature and roll surface for each grade can be determined for your products, whether they are board and packaging, specialty, or graphic papers.

- Development of calenders and calender equipment
- Development of calender concepts
- Process trials in combination with coating / sizing
- Basic studies (influence of machine parameters, base paper)
- Production of small lots for market test purposes

Pilot calender (1 x 3 configuration)





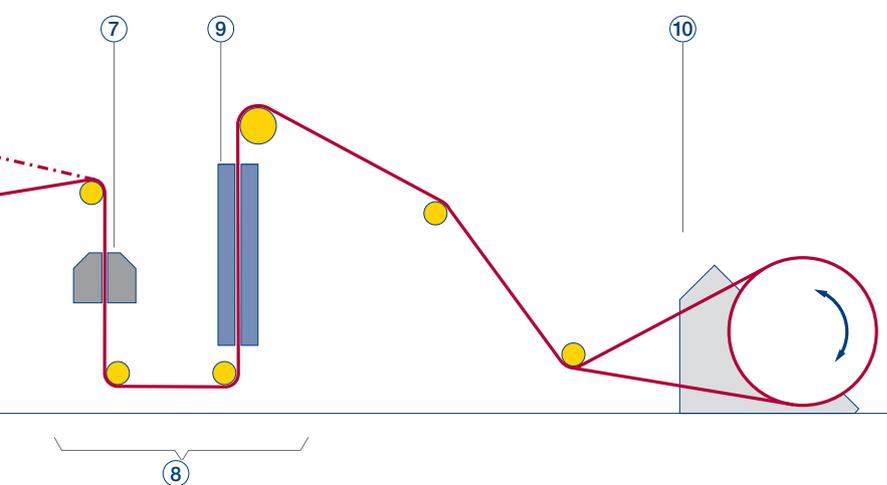
- 1 Pilot calender
- 2 Calender nip
- 3 Control panel
- 4 Calender test-rig

Technical data: Pilot calender

- Soft and hard nip calender (EcoCal Soft/Hard/Plus)
- Moisturizer and steam boxes
- Climate chamber
- IR-panel
- Maximum machine speed: 2,000 m/min
- Web width: 800 mm
- Maximum reel diameter: 1,500 mm
- Core size: 3" or 6"
- Diameter of heating roll: 1,270 mm
- Diameter of hard/soft roll: 710 mm
- Maximum line load: 500 kN/m
- Maximum oil temperature: 300 °C
- Maximum surface temperature: 280 °C

Technical data: Calender test-rig (ModuCal)

- Soft and hard nip calender (EcoCal Soft/Hard/Plus)
- Moisturizer
- Maximum machine speed: 1,000 m/min
- Web width: 300 mm
- Maximum reel diameter: 1,500 mm
- Core size: 3", 4" or 6"
- Diameter of heating roll: 500 mm
- Diameter of hard/soft roll: 360 mm
- Maximum line load: 1,000 kN/m
- Maximum oil temperature: 300 °C
- Maximum surface temperature: 260 °C



- 1 Winder
- 2 QCS frame
- 3 Edge trimmer
- 4 Induction heater
- 5 Nipco 1 x3 stack
Hardnip cover (HNC)
Softnip cover (SNC)
EcoCal Plus
- 6 Steam box
- 7 Moisturizer
- 8 Paper pre-conditioning
- 9 IR-heater
- 10 Unwinder

- 1 Rapid Köthen sheet forming
- 2 High shear and elongational viscosity measurement
- 3 Tapio Analyzer
- 4 Computer tomography
- 5 Microscopy
- 6 Paper testing devices

Laboratory

We provide the optimal analytical technology for fiber, paper and coating color. The samples taken from our pilot plant facilities are analyzed in the Voith laboratories using the latest techniques. This provides precise test data as a further basis for assessing the pilot plant results. For this reason, our laboratory staff works closely with our R&D experts. You, as our customer, therefore benefit from the scientific know-how of our laboratory specialists, as they can analyze samples from your own plants.

We also use the laboratory for complex measurements that solve relevant problems for you.

We offer rapid and precisely reproducible analysis of stock, water and paper characteristics, using more than 80 different laboratory methods according to DIN, ISO, TAPPI and SCAN. Moreover, we use a professional IT system for all sample management and logging of laboratory test data. As an example, with the brand new powerful μ -CT (computer tomography), even small, hidden defects in the paper, not visible with common methods, will be detected and analyzed. All these results provide you with a dependable and conclusive foundation for decision-making to support your process optimization investments.

In addition to the standard measurements we offer

Fiber

- Fiber morphologies
- Sticky and dirt speck analysis
- Pulper, refiner, flotation in laboratory scale

Paper

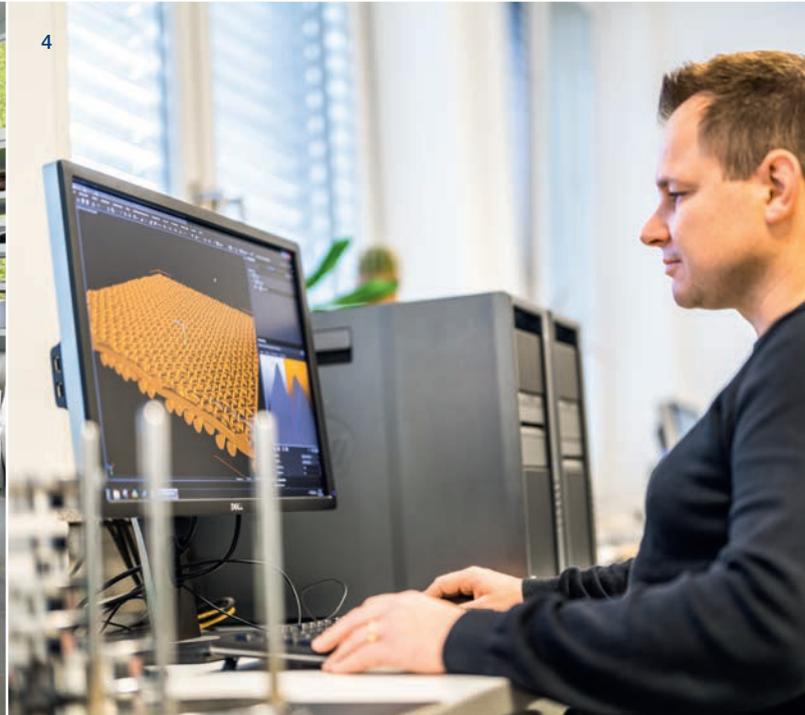
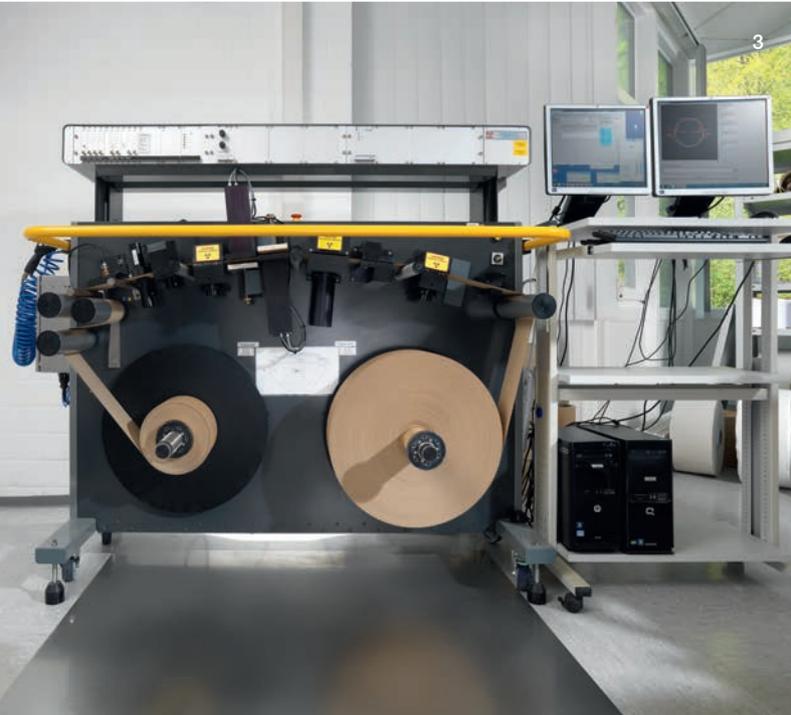
- Tapio Analyzer
- Contact angle, penetration
- Print tests (Prüfbau, IGT)
- Barrier analysis

Coating Color

- High shear viscosity
- Elongational viscosity (CaBER)
- Dynamic surface tension

Others

- Chemical analysis
 - Mechanical and thermo-mechanical analysis
 - Imaging analysis (μ CT, SEM with EDX)
 - Additive manufacturing (3D printing)
-



Get the full potential of your application!

Voith pilot operation facilities

Voith Paper Technology Centers provide the maximum flexibility. We help you to improve your products, develop new ones (R&D) that meet your requirements, and fulfill your customers' needs even further. We welcome you to check the potential of new machines, components or new technologies.



Düren, Germany
Wet-laid Nonwovens & Bank Notes





Motomiya, Japan
Coating,
Stock Preparation



Heidenheim, Germany
Board & Packaging, Specialty,
Graphic, Stock Preparation,
Paper Machine, Coating,
Calendering



How can we support you?
Just contact us via our
webform.



Voith Group
St. Poeltener Str. 43
89522 Heidenheim, Germany

Contact:
Phone +49 7321 37 0
trials@voith.com
www.voith.com/trials



VOITH