

NEW
TISSUE
FORM
ING
FAB
RICS

Increased quality and better running times.

With the acquisition of Xerium by ANDRITZ, a new division in the ANDRITZ Pulp and Paper Service group named

ANDRITZ Fabrics and Rolls has been formed, including former ANDRITZ Kufferath. Accordingly, ANDRITZ Fabrics and Rolls has

always been the technology leader in tissue grade forming fabrics and is constantly investigating tissue market requirements. Quick draining,

less water carrying forming fabrics are today the preferred products on modern tissue machines.

Therefore, ANDRITZ Fabrics and Rolls has developed a new forming fabric portfolio with plain weave paper side structure and improved dimensional stability with the lowest caliper in the tissue market. With anticipation, the latest technology called QSB (Quattro Support Binder) can now be applied to this new tissue product line. The patented QSB forming fabric design allows producers to improve tissue product quality and machine performance. It has already been tested successfully at the new ANDRITZ Tissue Innovation and Application Center (TIAC) in Graz, Austria.

UP TO 15% BETTER RUNNING TIMES ON THE MACHINE

The patented new tissue design, with its increased number of binding points, offers improved cross-dimensional fabric stability compared to conventional forming fabric designs. The result is reduced internal fabric wear and allows up to 15% longer running times on the machine. The improved co-planarity and fabric stability lead to a significantly improved resistance to high pressure shower damage. New monofilament material compositions and the re-engineered top fabric design reduce fabric wear and enhance energy-saving potentials.

Meanwhile, ANDRITZ QSB designs are operating successfully in the graphic and packaging paper industries, with numerous installations providing added value to different customer processes. With the new plain weave structure,

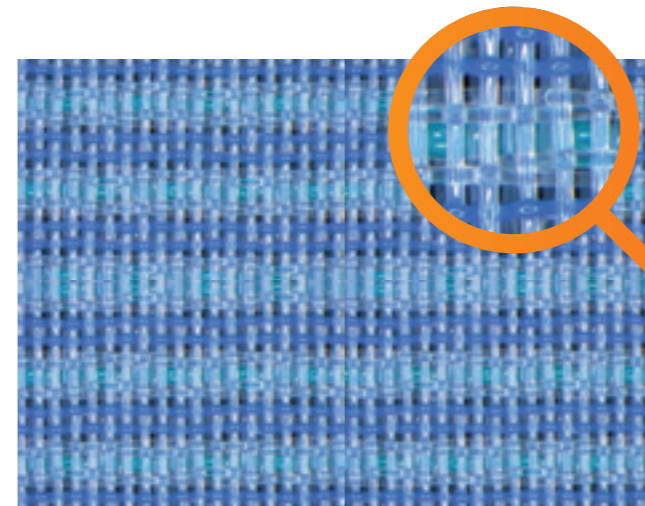
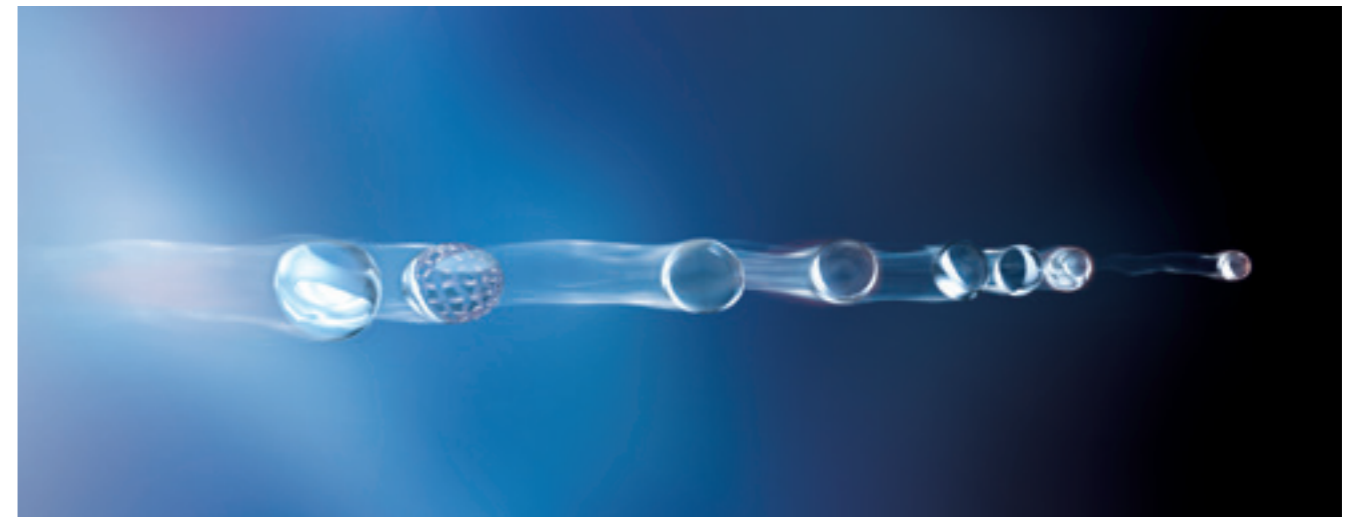


Fig. 1: Surface of plain weave 4-shaft ANDRITZ QSB design

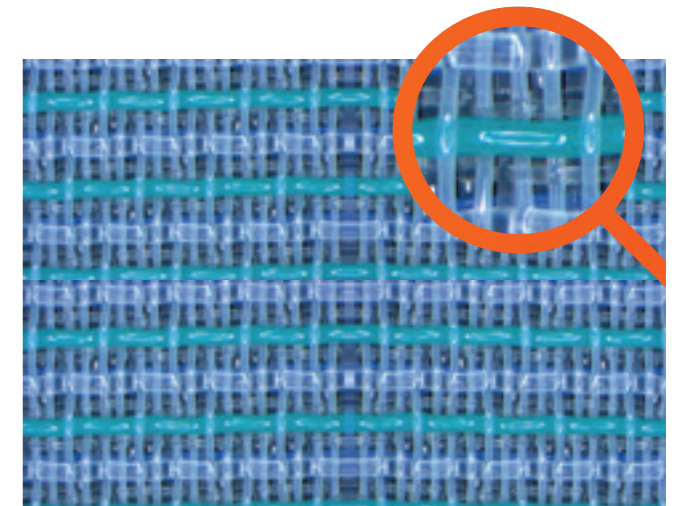


Fig. 2: Underside of the patented 4-shaft ANDRITZ QSB design

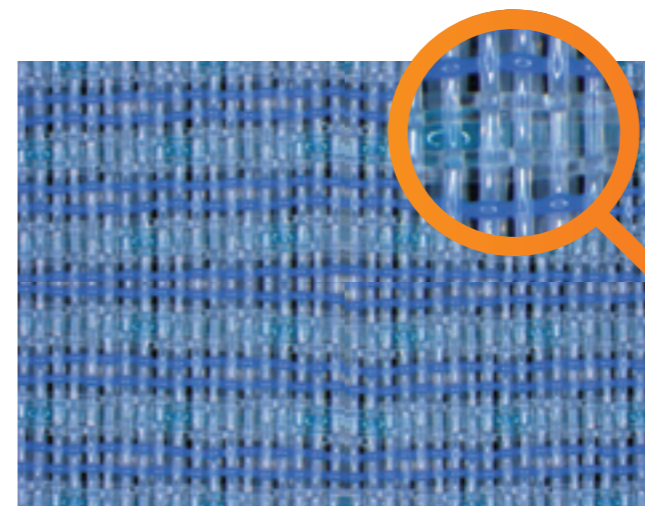


Fig. 3: Surface of plain weave 8-shaft QSB design

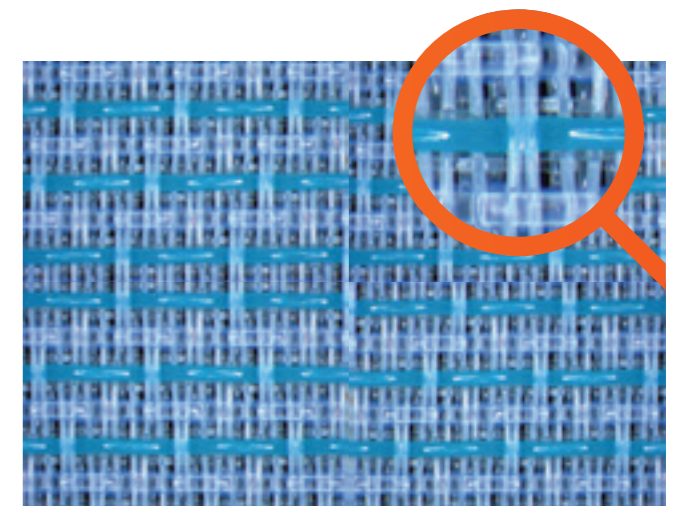


Fig. 4: Underside of the patented ANDRITZ 8-shaft QSB design



ANDRITZ Fabrics and Rolls has now complemented its market leading product series for tissue machine applications.

Fabric calipers between 0.55 mm and 0.69 mm enable enhanced fabric surface characteristics with defined dewatering channels for better formation and an effective dewatering process during operation. Machine cleanliness is greatly improved with the application of thinner fabric calipers.

ANDRITZ Fabrics and Rolls tissue product line including the patented QSB technology is available in 2:1 and 3:2 weft ratios for all tissue products and former designs.

ANDRITZ QSB DESIGN – CASE STUDY

The following case study uses the example of a Crescent Former machine design, as shown in Fig. 5. Operating at 1,750 m/min, the machine has a design speed of up to 2,000 m/min.

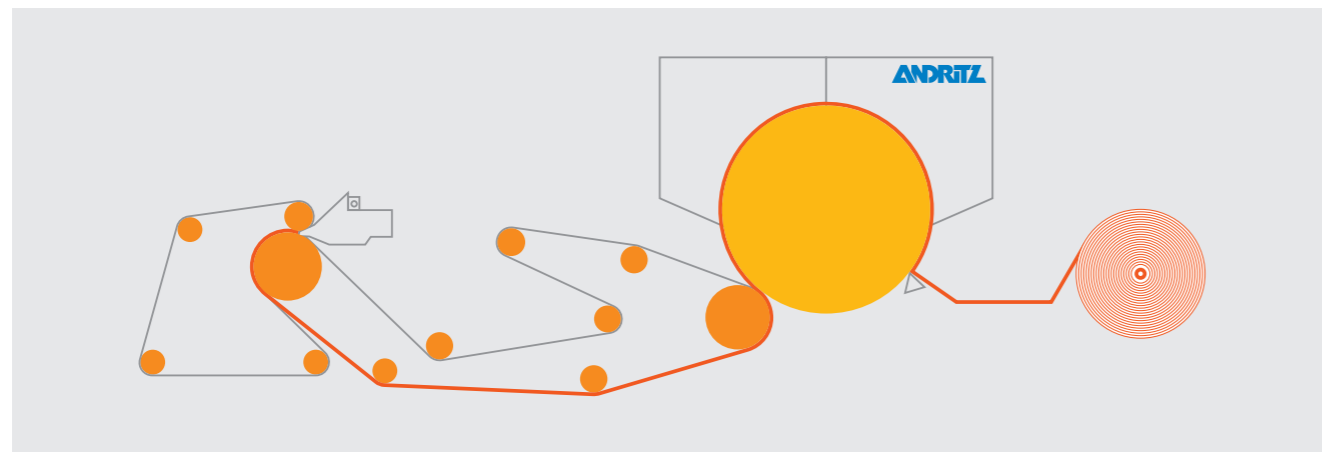


Fig. 5: Crescent Former machine design

First results of the ANDRITZ 4-shaft QSB design in comparison with conventional SSB fabric designs used by a customer in the tissue market.

MACHINE DATA AND FORMER DESIGN:

Former: Crescent Former
 Design speed: 2,000 m/min
 Product: Toilet tissue and other tissue grades
 Grammage: 15–22 g/m²
 Raw material: 100% virgin fiber pulp and mixed pulp+DIP

Forming fabrics:

- Conventional fabric designs
- ANDRITZ 4-shaft QSB design

Improvement targets:

1. Machine hygiene and performance
2. Tissue formation and quality

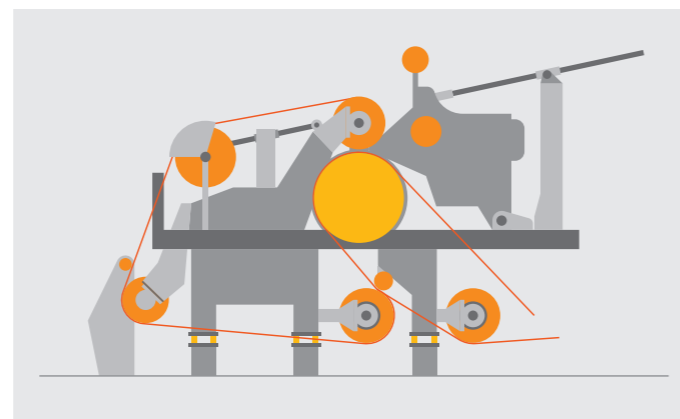


Fig. 6: Crescent Former



Fig. 7: Conventional fabric design
 Sample: 15 g/m² tissue (pulp + DIP). Speed: 1,750 m/min

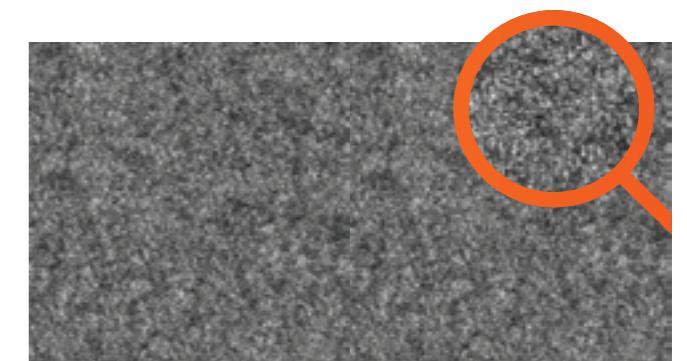


Fig. 8: Conventional fabric design
 Sample: 15.4 g/m² toilet tissue (virgin fiber pulp)

The paper tissue sample in the left-hand picture shows pin holes and strong marking. The toilet tissue sample on the right shows cloudy formation and diagonal markings.

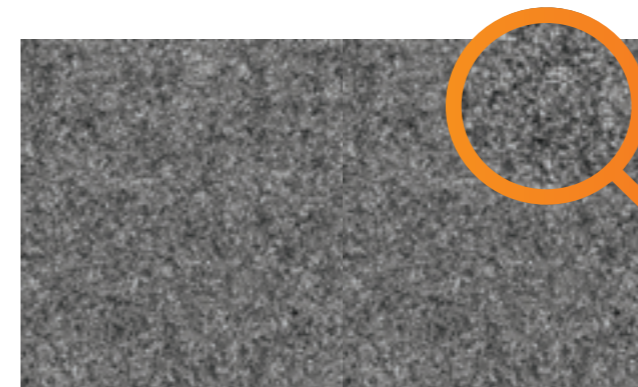


Fig. 9: ANDRITZ 4-shaft design
 Sample: 15.4 g/m² toilet tissue (100% virgin fiber pulp). Speed: 1,750 m/min

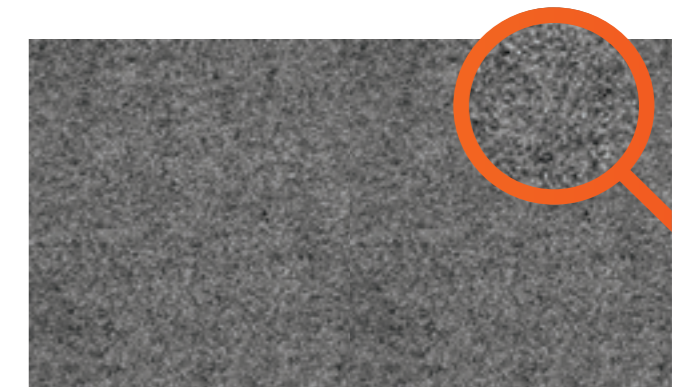


Fig. 10: ANDRITZ 4-shaft design
 Sample: 16.4 g/m² toilet tissue (100% virgin fiber pulp). Speed 1,900 m/min

Formation improved significantly with the new ANDRITZ tissue forming fabric design. There is no marking visible on the tissue product with the new QSB design. The excellent fabric dewatering capabilities resulted in improved tissue product characteristics. This enabled stable production conditions at high machine speeds.

SUMMARY:

With the patented ANDRITZ QSB forming fabric design, both the tissue product quality and the machine performance can be improved.

Proven features:

- High dewatering capabilities (air permeability and low fabric calipers)
- Improved tissue quality (FSI >165)
- Clean run and no water spray at high tissue machine speeds
- Improved cross-dimensional fabric stability for consistent machine operating conditions during the entire running cycle (6 months)

ANDRITZ TISSUE FORMING FABRIC PARAMETERS

QSB 4-SHAFT DESIGN

| | |
|---------------------------------|---------------|
| Machine-side weft diameter [mm] | 0.25 |
| Air permeability [CFM] | 520 – 560 |
| Calipers [mm] | 0.60 |
| Fiber support index | 173 – 168 |
| Support points/cm ² | 1,229 – 1,170 |

CONTACT

Robert Marchhart
 robert.marchhart@andritz.com