

### Info: I-Series forming fabrics

---

I-Series forming fabrics were presented for the first time in twogether magazine in 2009 and were launched on the market as PrintForm IS and PrintForm IT. In 2010, issue 31 of the magazine then introduced MultiForm IC, the forming fabric for board and packaging papers.

The high-shaft weaving technology developed by Voith has so far been used exclusively in SSB standard fabrics with a 1:1 warp ratio, such as PrintForm HQ. The article “High-shaft technology – a weaving innovation breaks new ground in forming fabric design,” which appeared in twogether issue 21 in 2006, provided a detailed description of this technology.

## HIGH-SHAFT WEAVING TECHNOLOGY FOR I-SERIES FORMING FABRICS

# IDEAL SUPPORT

The new PrintForm IQ forming fabric combines two technologies – high-shaft weaving and a 3:2 warp ratio – to create a new member of the I-Series product family. High stability, fineness and dewatering performance are familiar requirements from previous forming fabric developments. The innovation in PrintForm IQ is that these features are now combined for the first time without having to make compromises. As a result, savings of more than 150,000 euros per year are possible.

The I-Series is based on the proven warp ratio of 3:2 (three top side to two bottom side). The ratio of warp thread diameters is therefore greater than in the usual 1:1 ratio. This makes the combination of an even finer paper side and a more stable wear side possible. The finer paper side helps to improve mechanical retention and sheet formation, while the stable wear side ensures better CD profiles. In addition, the high-shaft weaving technology used in PrintForm IQ offers a proliferation of binding options. With more than 50 shafts, it has more than double the number of shafts required to produce standard SSB fabrics. This allows for a binding system that can use discontinuous diagonal patterns, for example, which reduces the marking tendency of fabric designs.

Because PrintForm IQ uses the benefits of both technologies it offers much higher fiber support, leading to better mechanical retention and more uniform sheet formation. The main area of application for PrintForm IQ is in paper machines with very high quality requirements and/or high machine speeds. In a product comparison with standard fabrics, PrintForm IQ is considerably thinner and features 25% more fiber support points.

Results from paper machines show that PrintForm IQ has a higher initial dewatering capacity for wood-free paper grades. In several trials on the pilot machine with a TQv former, a PrintForm IQ was used that was denser than the reference fabric. The test program covered a wide operating window with basis weights of 40 g/m<sup>2</sup> to 110 g/m<sup>2</sup> in the mid- to high-speed range. Tests were conducted with extensive variations in former settings, ranging from headbox volume through various vacuum settings to different former strip pressures. This enabled dewatering behavior and thus the operating window of specific fabric pairs to be analyzed and defined.

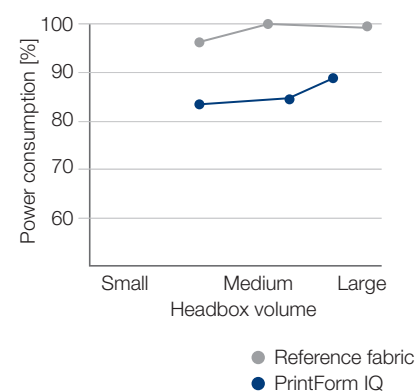
Thanks to its denser design, PrintForm IQ achieved a controlled dewatering. Apart from excellent paper quality parameters, such as formation, MD/CD tensile ratio and lower susceptibility to marking, the new fabric also allowed energy consumption to be reduced. At the same headbox volume setting, power consumption could be lowered by up to 15% using PrintForm IQ. In a modern production plant running at 1,600 m/min, this reduction represents savings of more than 150,000 euros per year. //

### Benefits at a glance

- + High fabric stability for good CD profiles
- + High level of fiber support
- + Very good dewatering performance
- + Less marking on paper
- + High mechanical retention
- + Improved sheet formation
- + Good MD/CD tensile ratio
- + Lower power consumption

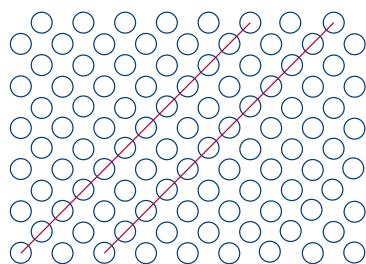
### 03 Power consumption of drives at various headbox volumes

Process parameters identical

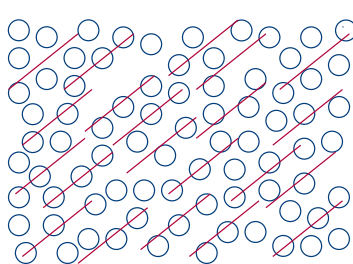


### 02 Discontinuous diagonals prevent marking in paper

Continuous weave pattern



Discontinuous weave pattern



### Contact



Matthias Höhsl  
matthias.hoehsl@voith.com



Elisabeth Oxandaboure  
elisabeth.oxandaboure@voith.com