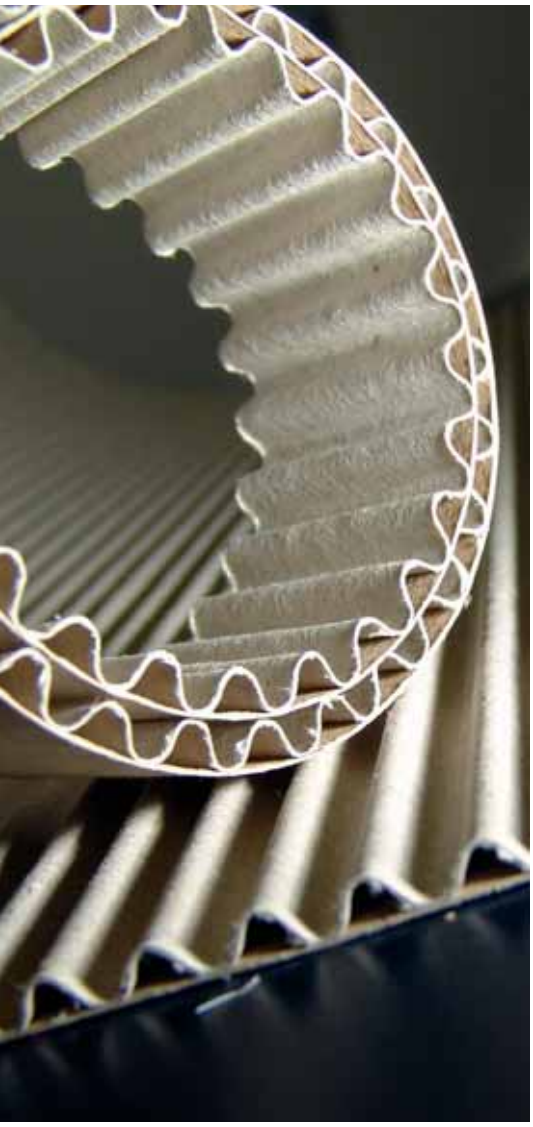


MultiForm IC – expansion of the I-series

New forming fabric design for board & packaging paper machines

In the wet end, forming fabrics such as the new MultiForm IC have a significant influence on the dewatering process and can thus help save raw materials, fibers and fillers. But efficient dewatering also means less energy is required for the drives of the fabrics.

After the successful introduction of the PrintForm IT and PrintForm IS products for graphic paper machines, this innovative product concept is now also being adopted for use with board and packaging paper machines in the MultiForm IC.
The development objectives for the new MultiForm IC can be summarized by the following three benefits:

- Improved mechanical fiber retention
- Improved paper profile quality
- Reduced energy costs due to lowered drive power

MultiForm IC is a new product in the I-Series that was introduced a year ago and was already successfully tested in production facilities. What MultiForm IC has in common with PrintForm IT & IS is the innovative warp concept in the fabric design.

At a ratio of 3:2, more warp yarns are used on the paper side than on the bottom side.

In comparison to modern SSBs there are several benefits, as shown in the table below.

Advantages of the innovative 3:2 warp ratio of the fabric design

	Changed fabric characteristics:	Advantages in paper manufacturing:
1.	Higher number of support points on the paper side	Higher mechanical retention, improvement of formation, reduced fiber carrying
2.	Reduction of yarn diameter on the paper side allows a smaller mesh thickness and thus less open volume in the fabric	Less water carrying
3.	Larger warp diameters on the bottom side, which allow the use of larger weft diameters	Higher fabric bending stiffness for higher stability and cross profile improvement of the paper
4.	Lower warp yarn density on the bottom side enlarges the open mesh surface on the bottom side	Less dewatering resistance of the fabric increases the dewatering capacity; vacuums of the dewatering elements can be reduced and can also decrease the drive power
5.	Offset of the paper-side and bottom-side warps to one another creates many small dewatering capillaries in the fabric	Reduction of hydraulic markings

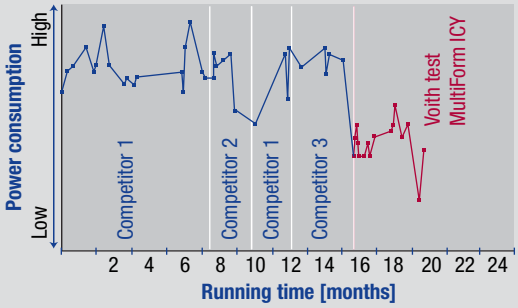


Fig. 1: Records of power consumption at suction couch roll.

MultiForm	ICY	ICW	IKY	IKW
Product	SSB	SSB	SSB	SSB
Type	Coarse	Coarse	Kraft	Kraft
Bonding	2/8 shaft	2/8 shaft	2/4 shaft	2/4 shaft
Weft ratio	2:1	3:2	2:1	2:1
Warp ratio	3:2	3:2	3:2	3:2

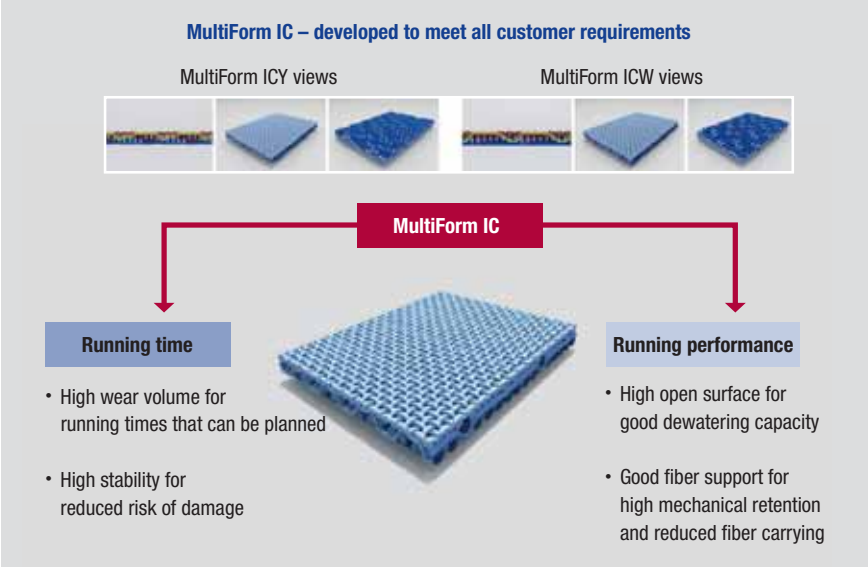
Fig. 2: Development planning of the I-series for board and packaging paper.

Large operating window and high retention

Before being used in a production facility, MultiForm ICY and MultiForm ICW forming fabrics were tested under various conditions on a pilot paper machine. In the process, various fabrics were used on the bottom wire position of a DuoFormer D. The aim of these tests was to check the functioning of the new fabric design depending on various operating parameters. The new fabric designs were compared with modern weft-bound SSB fabrics and warp-bound SSB fabrics. If a fabric design performs well with a certain machine setting and this performance also remains good if process parameters are changed, this is known as a wide operating window in which the fabric design can be used. Good results and large operating windows were achieved with MultiForm IC fabrics as became clear with the results of the SCT test (compression strength). At the same time, between 1.5 and 2.5% higher retention values were attained with MultiForm IC fabrics.

Energy saving with MultiForm IC

Production of high paper basis weights, in particular, requires a high expenditure of energy. The objective at a production facility for folding box board was to reduce the energy costs. With the MultiForm ICY, energy savings were achieved through lower power consumption at the suction couch roll. The high dewatering capacity of the MultiForm ICY allows an operating mode with reduced vacuums, which led to a reduction of power consumption at the suction couch roll of 22-27%. The comparison was done during production over 16 months with SSB fabrics from three competitors and the respective consideration of three different basis weights.



On Focus: MultiForm IC

ProEnvironment +++
ProRunability +++
ProQuality ++
ProSpeed ++

Section: Former

Paper grade: Board, packaging paper

Contact

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