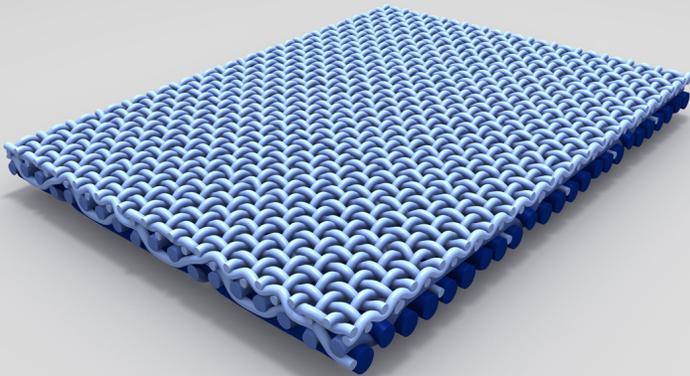


MultiForm I-Series Forming Fabrics

Extensive experience verifies improved performance on packaging grades



Summary

North American producers of containerboard and coated boxboard face many challenges in today's competitive and ever changing market, so there is constant pressure to improve and optimize. On the former, customers look for technical solutions to enhance sheet test properties, reduce fiber usage, increase production and maximize fabric life. Forming fabric design and performance play an important part of these optimization efforts.

Solution

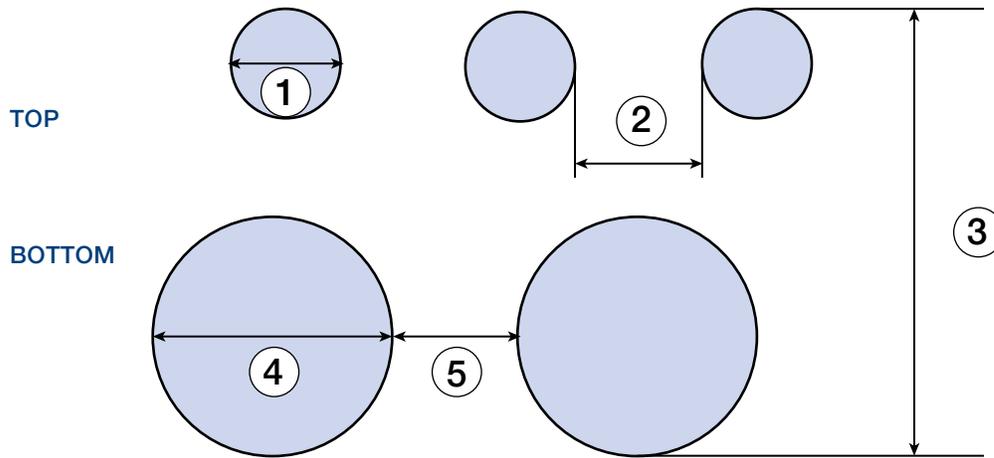
The Voith family of MultiForm I products was specifically developed to assist paper-makers in their optimization efforts across the full range of containerboard/boxboard grades, furnishes and former configurations. With thousands of installations globally, MultiForm I has established itself as superior to previous generations of triple layer forming concepts.

Benefits & advantages

MultiForm I products deliver superior performance, allowing for increased production, reduced fiber usage, reduced drive loads, and exceptional fabric life. These benefits are possible due to the following features:

- Increased drainage potential
- Finer top surface
- High wear volumes
- High stability

**MultiForm I –
Unique 3:2 machine
direction ratio**



Small diameter top (1)

- Elevated open area and fiber support (2)
- Increased drainage capacity
- Improved mechanical retention and sheet test property development

Compact caliper (3)

- Reduced rewet potential/increased drainage
- Cleaner wet end operation/reduced wet end breaks

Large diameter bottom (4)

- Excellent stability
- Increased wear volumes/fabric life

Reduced machine side yarn density (5)

- Open bottom structure assists both drainage and clean operation (reduced fiber carry)

About the MultiForm I family

MultiForm I products are built using industry-small diameter machine direction (MD) paper side filaments. These filaments enable elevated levels of both open area and fiber support in the same fabric. This positively impacts drainage/couch solids and allows for higher headbox flows where there are no fan pump/headbox limitations. As a result, papermakers have an extra tool for test property generation, control of the wet line with stock swings, reduction of retention chemicals and improved sheet release at the couch/reduced draws.

As long fabric life is always a critical expectation, MultiForm I fabrics combine this fine top surface with a robust and durable bottom surface. This stability and wear potential is achieved by incorporating large bottom MD yarns and an enhanced wear surface geometry, leading to industry-high wear volumes. With MultiForm I series forming fabrics in place, many customers covering the full range of grades, furnishes, and applications have set record fabric lives. The thousands of MultiForm I products running globally, including North America, provide proof.

Our unique 3:2 ratio of MD paper-side to machine-side diameters is the key to generating elevated levels of open area and fiber support within the fabrics paper-making surface, and combining this with excellent wear volume and stability within the bottom-surface. The result is an unmatched combination of overall fabric performance.

The MultiForm I product line consists of a coarse-, medium-, and fine-mesh product, to cover the full range of containerboard/boxboard production and all quality/life requirements.

Coarse	Medium	Fine
MultiForm ICW	MultiForm IRW	MultiForm ISW
+ Liner/medium	+ Cover ply	+ White top cover ply
+ Coated boxboard	+ LW liner	+ Gap former
	+ Open draw formers	

MultiForm I-Series Forming Fabrics

Case studies from Voith

Case study #1

- + Fourdrinier/mini top table
- + Liner (26-56#), 100% Recycled, +3,000fpm
- + MultiForm ICW on base table:
 - 0.5# reduction in BW, maintain test properties – significant fiber savings
 - Able to run higher flatbox vacuums – improved couch solids / WE breaks / production

Case study #2

- + MultiTable former
- + White top/Gypsum board (26-72#), 100% recycled
- + MultiForm IRW on base and top plies:
 - 0.15#/T reduction in retention aid usage. Improved appearance/formation of cover ply
 - 0.22# reduction in BW – maintain test properties
 - WE breaks reduced by 0.25/day

Case study #3

- + Fourdrinier/mini top table
- + Coated boxboard, Virgin Pulp
- + MultiForm ICW on base table:
 - 1.6% increase in production across all grade
 - Combination of speed and reduced wet end breaks (drainage / couch solids)

Case study #4

- + Fourdrinier/BelBond/second headbox
- + Liner (26-56#), Pulp + Recycled
- + MultiForm ICW on base and bel bond unit;
 - 3% increase in production
 - Combination of speed and reduced wet end breaks (drainage/couch solids)
 - Record life established both positions – 270 days on base (longest competitor 210 days)

Case study #5

- + Fourdrinier/mini top table
- + Liner (26 – 74#), 100% recycled
- + MultiForm ICW base, MultiForm IRW top:
 - 0.6# reduction in BW, maintain test properties – significant fiber savings
 - Able to run higher flatbox vacuums – couch solids/WE breaks/production

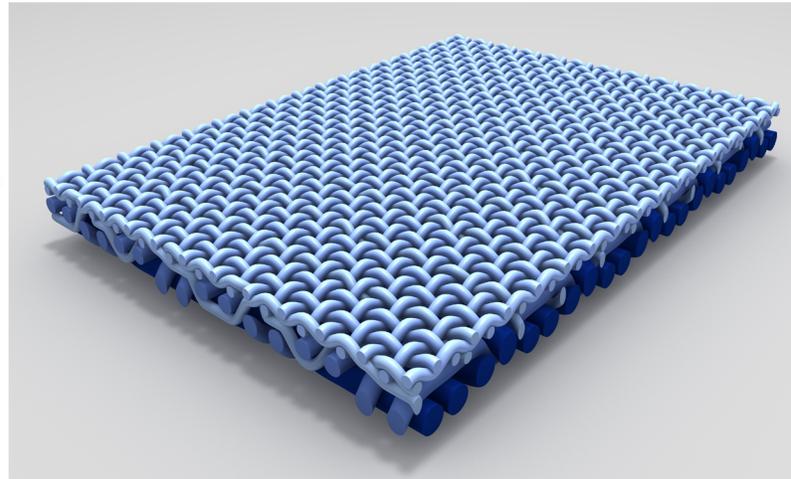
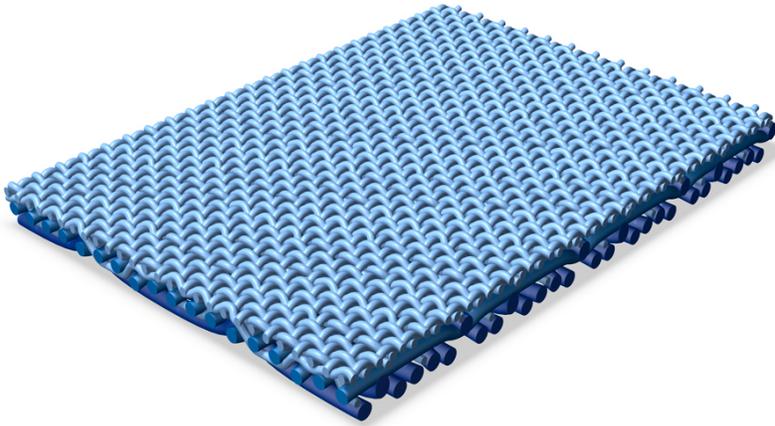
Case study #6

- + Fourdrinier/mini top table
- + Liner/white top (26-69#), Pulp
- + MultiForm ICW base, MultiForm IRW top:
 - Record lives of 340/311 days on Base, and 274 days on top
 - Improved cover ply formation/appearance with IRW

Case study #7

- + Fourdrinier
- + Medium (26 – 40#), SemiChemical + Recycled
- + MultiForm ICW:
 - +2% increase in production
 - Reduced wet end breaks (improved drainage of ICW better handles furnish swings)
 - Record life of 251 days (competition under 200 days)

MultiForm IRW, left, and Multiform ICW, right.



Why partner with Voith?

Voith is a full-line supplier to the global paper industry thanks to its world-class products, unparalleled service and knowledgeable experts. Backed by this level of know-how, mill operators can rely on Voith to deliver the solutions they need to improve their operational efficiency, boost their quality and improve the sustainability of the paper-making process.

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Inspiring Technology
for Generations