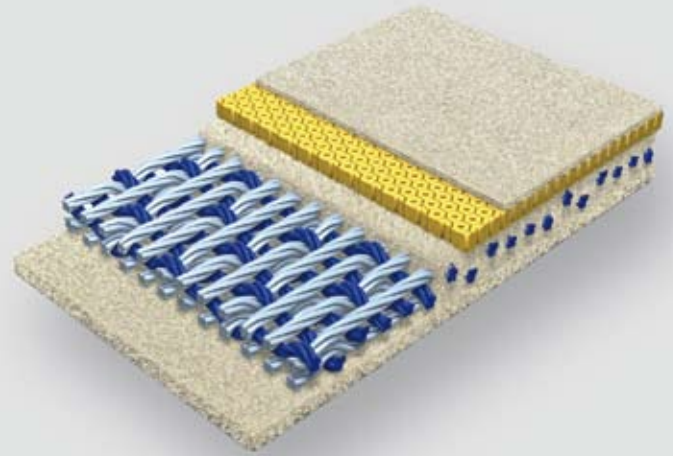




PrintFlex V3 Planar for critical pick-up positions.



E-Flex, optimally structured felt for maximum dry content.

Increase efficiency within the press section

It's not only the clothing that matters

If the dry content after the press can be increased by 1%, the steam consumption for drying the paper web is reduced by 4%. To achieve this target, every dewatering opportunity in the wet section must be exploited. Points of approach could be the clothing, the rolls and roll covers as well as the doctoring.

Provided the web leaves the forming section with maximum dry content, then the greatest possible dry content must be achieved in the press section. This can be achieved not only by optimizing the design of the clothing, but also by suitable roll covers and roll surfaces. The method of doctoring as well as the conditioning of rolls and felts must also be taken into account.

A press felt is expected, with consistent clothing characteristics, to deliver highest dry content with relevant paper quality. It is true that the dewatering performance was and still is seen not so much as an energy saver, but rather as a means of increasing the machine speed to its limit. The important parameter was seen as the increase

in tonnage, not so much the energy saved. But since the cost of energy is rather unpredictable, except for a constantly increasing trend, the energy consumption of all the potential consumers in the press section is increasingly scrutinized. Dry content and drive power are under constant observation. The values for vacuum-consuming units (suction rolls, suction boxes or guiding equipment for the web) and of course also the line loads are recorded.

Contribution of clothing

The objective of a modern press felt design is to meet the changing requirements. From the start, press felts should require the lowest possible mass per square meter

and allow only minimal deviations of the relevant operational parameters, such as the permeability or the active felt volume. All of this should preferably not require the use of suction box dewatering and conditioning. Every press makes its own demands. To meet these, Voith Paper places its bets on the advantages of modularly structured press felts. Using only a few components combined according to specification, optimal designs are created for every type of press position, based on woven and non-woven technology.

Non-woven technology

The latest press felt designs are based on non-woven technology,

i.e. fibers running lengthwise and across, with no interconnection within or between fibers. Non-woven structures hardly change their properties required for paper production. These felt designs therefore start up very quickly and offer excellent dewatering performance in the nip, over their entire lifespan.

To date, these advantages were of use only in the production of graphic paper. After targeted development work and thanks to a special manufacturing process, Voith Paper opened up the fast-moving packaging sector as well for the non-woven technology. To date, these applications were not amenable to the use of non-woven felts due to soiling and specific dewatering properties. Apart from producing a new design, the modularity of this technology also produced an entire product range, the Planar family. Planar designs can be applied with almost all paper types and press positions.

New technologies for press felts

Structurally optimized felts offer additional options for optimizing dewatering, paper web transfer and also paper and cardboard quality. The first possible option is the side of the press felt in contact with the paper. The intention is to maximize the contact area. The possibilities include modified batt fibers (bi-component fibers) on the one hand, and optimized steps in batt production and application (PrintFlex/ MultiFlex P and PRO) on the other.

Two further topics have recently appeared on the horizon: the elasticity of the substructure and the distribution and size of the felt pores. These two characteristics decisively determine the dewatering performance and preservation of the properties through the life of the felt. The desired characteristics can be controlled by the introduction of special polymer particles into the felt structure. Extremely smooth

felt surfaces and permanently elastic felt structures are revolutionizing press dewatering.

Roll covers

The support of the relevant roll cover in the press position is required in order to fully exploit the dewatering potential of a felt in the nip. The Solar family sets new standards for roll covers, especially for highly stressed positions. The open surface and especially the associated groove design provide clearly improved water drainage. This in turn forces dewatering of the felt in the nip.

This illustrates the interaction between felt and roll cover design. Voith Paper supports the optimization of the open surface of the press roll, especially of the grooves, by using suitably stable press clothing. This bridges the grooves and simultaneously maximizes the flow of water into the surface of the cover.

On Focus: Planar Family

ProEnvironment +++

ProRunnability +++

ProQuality +++

ProSpeed +++

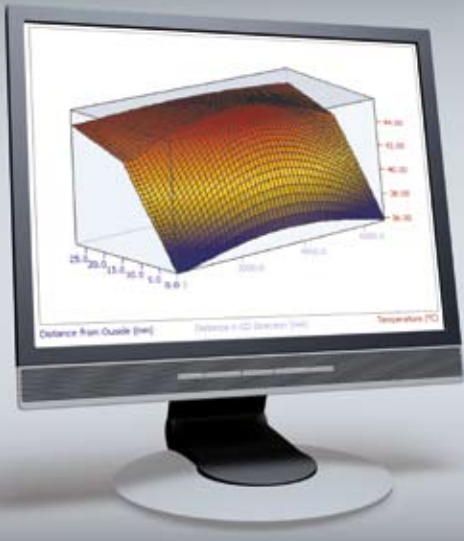
Section: press

Width: all

Paper grade: all graphic papers, all boards

Planar Family	
PrintFlex 02 Planar:	Extremely fast start-up, good dry content
PrintFlex 03 Planar:	High dry content, reduction of two-sidedness
PrintFlex V2 Planar:	High nip dewatering, long life
MultiFlex 03 Planar:	High dry content, fast start-up
MultiFlex V2 Planar:	Good cleansing properties, constant dewatering performance
MultiFlex V3 Planar:	High resistance to compaction, easy cleaning
MultiFlex S3 Planar:	Elasticity and uniform dewatering performance at high speeds

Overview of the Planar Family.



Nipmaster, analyses the interaction of roll cover and felt.



Press section of the Paper Technology Center in Heidenheim, Germany.

Analysis of the press nip

NipMaster is a software package that simulates the press gap considering the line load, roll cover, felt and paper quality. The program was developed to calculate the thermo-mechanical conditions under which a roll cover operates. Using NipSense, these theoretical results can be tested on site by measuring the actual conditions in the machine. The results of the measurement form the fundamental base for further nip calculations.

The parameters of the press clothing are continuously updated to ensure that they are as realistic as possible. The predictive power and insight of NipMaster is demonstrated by the results – up to 120 values per Nip calculation.

On-going supervision of the roll press clothing

A certain control of the press felts is provided by the service staff of the

press clothing manufacturers. In most cases, these are instantaneous recordings, with the commensurate difficulties of interpretation. For definite trends in support of decision making, reference is made to FeltView, installed for on-going monitoring of the felt. FeltView measures the moisture, permeability and temperature of the press felt during production. The data is always available and evaluation of long-term trends assists optimization with respect to energy savings, fresh water and roll clothing.

Voith Paper offers a total package focusing on efficiency improvements in existing press sections. This includes simulation of thermo-mechanical conditions in the press nip (NipMaster), steady state analysis of the press nip (NipSense), the selection of optimal roll covers and associated efficient doctoring, as well as the ideal clothing. The total package also includes the option of investing in FeltView for permanent press felt control. Overall, they

highlight potentials for saving and optimization.

Reducing the solid content after the press by 1% yields a 4% saving in steam. Therefore, the equation $+1 = -4$ is no arithmetic error – it highlights the hidden potential of the press.

On Focus: PrintFlex / MultiFlex PRO

ProEnvironment	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
ProRunnability	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
ProQuality	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
ProSpeed	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>

Section: press
 Width: all
 Paper grade: all graphic papers,
 all boards

Contact



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