

## Media Release

Voith GmbH & Co. KGaA  
Center of Competence  
Market Communication EMEA  
St. Poeltener Strasse 43  
89522 Heidenheim, Germany  
Phone +49 7321 37 2487  
Fax 49 7321 37 7000  
www.voith.com

### **At the PKV paper and board mill, Papermaking 4.0 technologies are increasing overall production and reducing energy costs**

2019-08-15

- IIoT platform OnCumulus the basis for fast, reliable and secure access to all machine and production data.
- OnEfficiency.Dewatering module and Tandem NipcoFlex press increase dry content by 1 percent
- 15 percent increase in total output planned

**HEIDENHEIM/VAREL.** The ongoing development of its products is just as much an integral part of the corporate philosophy of paper and board manufacturer Papier- und Kartonfabrik Varel (PKV) as the constant improvement of production efficiency. To achieve these goals the company, which was established in 1938, has been working with Voith for many years. For its current rebuild of the PM 4, PKV is also relying on the expertise of the technology group from Heidenheim.

On the PM 4, PKV produces packaging papers with a wide range of basis weights from 120 to 280 grams per square meter. Previously, the web width on the pope roller was 5,250 mm. As part of the rebuild, the width will be increased to 5,450 mm. The new width necessitates various adjustments to upstream components. Voith team will increase the widths of the first dryer group, the existing headboxes, the wire and press sections and the Fourdrinier wire.

The key items on PKV's agenda were increasing the total output by 15 percent, improving runability and reducing specific energy costs. In addition, optimizing the dewatering capacity is intended to raise the dry content downstream of the Tandem NipcoFlex press by at least one percent.

#### **IIoT platform OnCumulus: pivotal to digitalization**

An essential prerequisite to achieving the desired effects was the integration of the latest Papermaking 4.0 technologies. In this context, the

IIoT platform OnCumulus is absolute crucial, as it enables fast, reliable and secure access to data from local machines and systems in the cloud and makes them available for efficient use. Other modules from the Voith OnEfficiency product family like OnEfficiency.Strength or OnEfficiency.Dewatering are used to monitor paper production at PKV. All modules and components are networked with one another. The PKV team also has transparent access to all relevant data at any time.

Fehler! Verweisquelle konnte nicht gefunden werden. Voith GmbH & Co. KGaA  
Center of Competence Market Communication EMEA  
St. Poeltener Strasse 43  
89522 Heidenheim, Germany  
Phone +49 7321 37 2487  
Fax +49 7321 37 7000

Page 2 of 5

### **Fewer strength fluctuations**

OnEfficiency.Strength uses statistical models and virtual sensors to reduce strength fluctuations in machine direction. As a result fiber use and starch use are optimized. Continuous measurements and automatic adjustments to parameters ensure fewer fluctuations, which in turn minimizes broke, reduces deviations in production output and improves paper quality during grade changes.

### **Stable dry content**

By means of systematic regulation of the former vacuum the OnEfficiency.Dewatering module stabilizes the dry content upstream of the press. This helps to save energy, while the Papermaking 4.0 technology ensures consistently high ply bond strength.

To ensure the requested one percent improvement in dry content, Voith installed a Tandem NipcoFlex system designed in this case for web widths of up to 5,700 mm. Its innovative design allows optimum dewatering for the entire basis weight range of the PM 4. As a result, PKV can further improve the strength and surface quality of its corrugated baseboard made from secondary and virgin fibers. A closed web run in combination with separation suction boxes allows production speeds of up to 1,200 m/minute and is therefore the main basis for the substantial increase in production capacity requested by customer.

### **Initial clothing of PM 4 by Voith**

To achieve the required dry contents, it is important that the clothing is perfectly matched over the entire paper machine. From the outset, the PM 4 will be fitted with I-Series forming wires, Infinity press felts and MultiTech dryer fabrics.

### **More uniform CD profile**

In addition, the existing ModuleJet II headbox system in the backliner headbox will be extended by adding an OnQ Profilmatic CD profile control. OnQ Profilmatic can determine the proportion of random noise in the measurements. Its continuous dynamic profile mapping allows exact local assignment of the actuator control zones to the measured values. This

results in more uniform CD profiles and therefore improved paper quality. On the Fourdrinier wire, the extensively proven HiVac high vacuum suction box will replace the previously used couch roll. The vacuum system helps reduce the paper machine's energy consumption and increases the dry content of the paper web.

### **Saving resources in the white top and achieving optimum paper edge**

EdgeExpert returns the white paper fibers to the appropriate system, ensuring that these fibers are preserved for use in the white top. EdgeDeckle S is the latest tool for controlling the edge in the wire section. It ensures a good paper edge with optimum profile quality.

### **Efficient cleaning systems for greater runability**

The installation of cutting-edge cleaning systems like CleanLine Excell or ProLub improves runability and increases the total output of the PM 4. The permeability of the Voith clothing is maintained for longer, which results in a more homogeneous paper web. In addition, CleanLine Excell needs much less water than high-pressure showers and cleans so effectively that the use of chemical cleaners is much reduced or dispensed with altogether.

### **Safer reel change**

The EcoChange W reel changing system, which works with traversing high-pressure water jet nozzles, is another component which has enabled Voith to achieve PKV's specified goals like an increase in total output and improvement in the runability of the PM 4. The system enables efficient changing of the paper rolls and will be integrated as part of the adjustment of the Pope roller's web width, resulting in minimal broke during reel changes.

In addition, Voith's scope of supply also includes upgrading the air systems, adapting the dryer hood and drive technology, and automating the paper machine. In this context, the Voith team was also able to contribute its expertise in detail engineering and is supporting PKV with the approval of the plant in accordance with the German Federal Immission Control Act.

Fehler! Verweisquelle konnte nicht gefunden werden. Voith GmbH & Co. KGaA  
Center of Competence Market Communication EMEA  
St. Poeltener Strasse 43  
89522 Heidenheim, Germany  
Phone +49 7321 37 2487  
Fax +49 7321 37 7000



Caption 1: Varel paper mill



Caption 2: Voith PM 4 Varel

**Fehler! Verweisquelle konnte nicht gefunden werden.** Voith GmbH & Co.

KGaA

Center of Competence Market

Communication EMEA

St. Poeltener Strasse 43

89522 Heidenheim, Germany

Phone +49 7321 37 2487

Fax +49 7321 37 7000

Page 4 of 5

## About the Voith Group

The Voith Group is a global technology company. With its broad portfolio of systems, products, services and digital applications, Voith sets standards in the markets of energy, oil & gas, paper, raw materials and transport & automotive. Founded in 1867, the company today has more than 19,000 employees, sales of € 4.2 billion and locations in over 60 countries worldwide and is thus one of the larger family-owned companies in Europe.

The Group Division Voith Paper is part of the Voith Group. As the full-line supplier to the paper industry, it provides the largest range of technologies, services, components and products on the market and offers paper manufacturers solutions from one single source. The company's continuous stream of innovations takes papermaking to the next level and

facilitates resource-conserving production. With its Servolution concept, Voith offers its customers tailored service solutions for all sections of the production process. Voith Papermaking 4.0 ensures that equipment is optimally connected, while the secure use of generated data enables paper manufacturers to improve plant availability and efficiency.

**Fehler! Verweisquelle konnte nicht gefunden werden.** Voith GmbH & Co. KGaA  
Center of Competence Market Communication EMEA  
St. Poeltener Strasse 43  
89522 Heidenheim, Germany  
Phone +49 7321 37 2487  
Fax +49 7321 37 7000

Page 5 of 5

## Contact

Oliver Berger  
Market Communication EMEA, Key Contact Voith Paper  
Voith GmbH & Co. KGaA  
Tel. +49 7321 37-2487  
[Oliver.Berger@Voith.com](mailto:Oliver.Berger@Voith.com)

### Twitter

<https://twitter.com/voithgroup>  
[https://twitter.com/voith\\_hydro](https://twitter.com/voith_hydro)  
[https://twitter.com/voith\\_paper](https://twitter.com/voith_paper)  
[https://twitter.com/voith\\_turbo](https://twitter.com/voith_turbo)  
[https://twitter.com/Voith\\_Digital](https://twitter.com/Voith_Digital)  
[https://twitter.com/Voith\\_Career](https://twitter.com/Voith_Career)

### LinkedIn

<https://www.linkedin.com/company/voithgroup>  
<https://www.linkedin.com/company/voith-hydro>  
<https://www.linkedin.com/company/voith-turbo>  
<https://www.linkedin.com/company/voith-paper>  
<https://www.linkedin.com/company/voith-digital>  
<https://www.linkedin.com/company/voith-robotics>

### YouTube

<https://www.youtube.com/VoithGroup>

### Instagram

<https://www.instagram.com/voithgroup/>