

Improving energy and paper machine efficiency by using Wefapress expert knowledge and spare parts

Achim Kneifel, Sales and Service Manager for Paper Industry, Wefapress Beck + Co. GmbH

INTRODUCTION:

Papermakers have different reasons to change paper machine spare parts. Next to wear and poor performance it might be better dewatering and energy efficiency with new design, noise reduction, simplified maintenance or increased working safety. With more than 125 years of experience, Wefapress supports pulp and paper mills all around the world to solve individual challenges.

Case:1

Increased production output cause in many cases headbox overloading with higher flow rates or stock consistency than originally designed. Combined with low microturbulences in the forming section this will lead to poor paper sheet formation and fiber agglomeration will create wet paper areas which limits the paper machine speed due to fixed drying capacity. With new dewatering elements it is possible to increase microturbulences in stock suspension and to equalize the paper sheet on the forming fabric. The fresh dewatering elements ensure an even dewatering about the entire machine width and enable like this a higher production speed. To increase the dry content at the end of the wire section results also in huge energy and cost savings in the drying section.

As a plastics specialist and long-time partner to the paper industry, Wefapress developed the hybrid material CeramX, which is a UHMW-PE with ceramic additive. This hybrid material is extremely wear resistant and satisfies also the most ambitious customers as it combines the advantages of ceramic and plastic drainage elements like

- Extremely Low Friction
- Easy Handling
- Short Delivery Times
- Low Investment Costs
- At Least Doubled Live Time

CeramX allows service lives that are significantly longer than possible with normal UHMW-PE while the costs and simple handling of flexible parts match those for other plastic parts. It can be used for forming boards, foils and suction box covers in the wire section at machine speeds up to 1200 m/min and in the press section even up to 2000 m/min for uhle box covers.

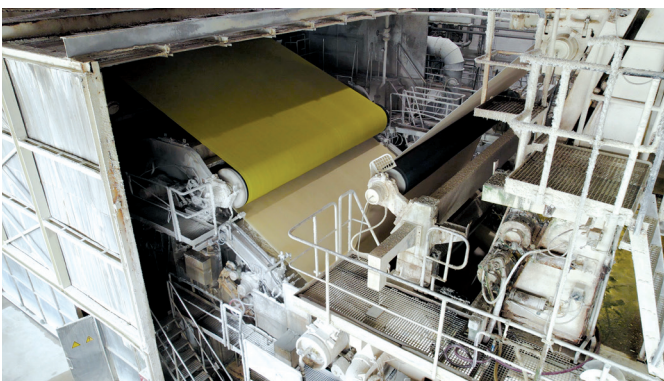


Figure 2: Forming and press section with Wefapress dewatering elements

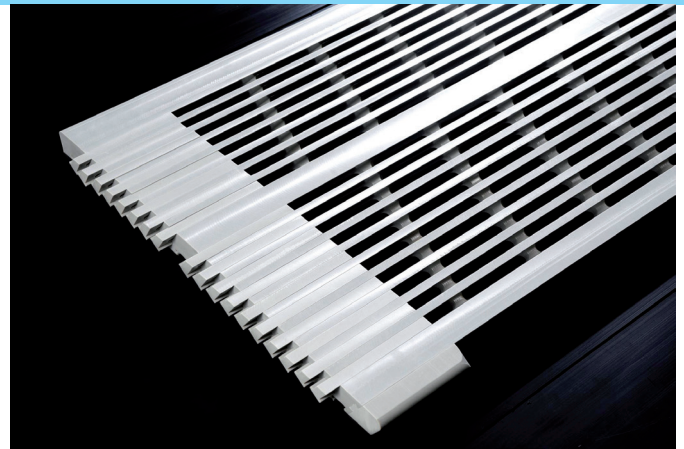


Figure 1: Suction box cover in CeramX material.

Case:2

Slotted uhle box covers are not so efficient in dewatering the press felt and especially for seamed felts it makes sense to change to drilled cover perforation in order to support the felt and to avoid that it get sucked into the slot over the complete machine width. This gentle dewatering protects the felt seam and results in longer felt life times. For the premium tissue manufacturer Hakle GmbH, which produces high quality products at 1750 m/min, Wefapress replaced ceramic uhle box blades with a drilled uhle box cover in CeramX material. Mr. Faltin, the technical director at Hakle GmbH confirms that it is very easy to install, saves drive power consumption and further advantages of drilled uhle box covers in combination with seamed felts are

- the down time for felt installation gets reduced dramatically
- no complicated cantilevering is needed
- work safety is increased as no papermaker need to climp on rolls or framing



Figure 3: Chris Faltin, Technical Director at Hakle GmbH

Case:3

Steady production increases at many paper machines often force gear drives made up of cast iron wheels to reach their capacity limits. Vibrations and high noise are the result.

Replacing cast iron wheels with pinions and gear wheels that have gear rings in plastic eliminates vibrations, ensures significantly improved smooth running, and often eliminates the need for expensive lubrication. Another major advantage is that gear wheels no longer have to be completely dismantled for maintenance – it is only necessary to loosen a few screws in order to replace individual segments while the metal rim stays installed in position. This reduces the conventional downtime of several hours to just a few minutes and consequently increase the system availability. Nylatec 360 gear wheels are hydrolysis resistant and get used successfully in many paper and cardboard mills. Even at the high temperatures and air humidity found in closed drying hoods, the material remains stable and doesn't become brittle. It can absorb high mechanical forces still after many years of application and that ensures long service lives.

To support paper mill maintenance Wefapress offers also the gear wheel mounting service on site.

Figure 4: Nylatec360 gear wheel for drying cylinder drives.



Case:4

Tambour coupling stars in metal are very expensive, heavy and difficult to install. Normally there are at least two fitters needed for installation and in some positions even a working platform so that it is not possible for a single shift fitter to change it alone. Wefapress replaced the coupling stars for different rewinder and offline coater with flying splice system and biggest demands due to heavy tambour weights around 25.000 kg and highspeed production.

The customers profit from

- low weight and costs
- easy handling
- reduced noise
- improved work safety

Especially due to the reduced weight and the easy handling, fitters don't want to install coupling stars in metal anymore.



Figure 5: Gear wheel mounting service at paper mill.

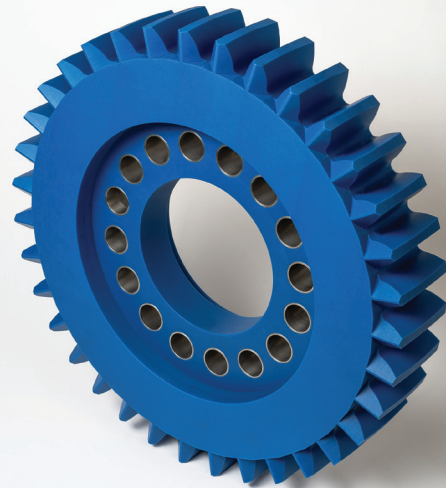


Figure 6: Coupling star for Tambour Drive

Talk to the experts

At Wefapress, we understand the challenges and consequences in papermaking process. Since 1895 we serve our customer needs and our service engineers are always happy to support with their huge experience of thousands of applications. Talk to the Wefapress experts in order to improve your spare part handling, energy efficiency, product quality and machine runability.

Our knowledge and huge application experience allows us to work with our customers and to help them get the most from their systems, while ensuring they achieve both, their operational and process goals.