

## NanoGloss

The calender cover for  
brilliant gloss





- 1 Good calendering demands the finest roll covers
- 2 NanoGloss is perfect for all papers that require shiny smoothness and gloss

# NanoGloss

## Rise and shine!

### Gloss matters

Calender covers have a huge influence on the quality, gloss and smoothness of the paper since they are in direct contact with the paper surface.

Traditionally, the main focus of composite calender optimization was mechanical strength, not gloss and smoothness. However, an improvement of the surface properties is a significant factor for the paper quality. On the one hand this is important for all producers of high-end graphical paper. On the other hand the cover needs to resist the harsh environment in calender nips.

NanoGloss is the first calender cover to provide it all: a high degree of gloss and smoothness as well as mechanical strength and impact resistance.

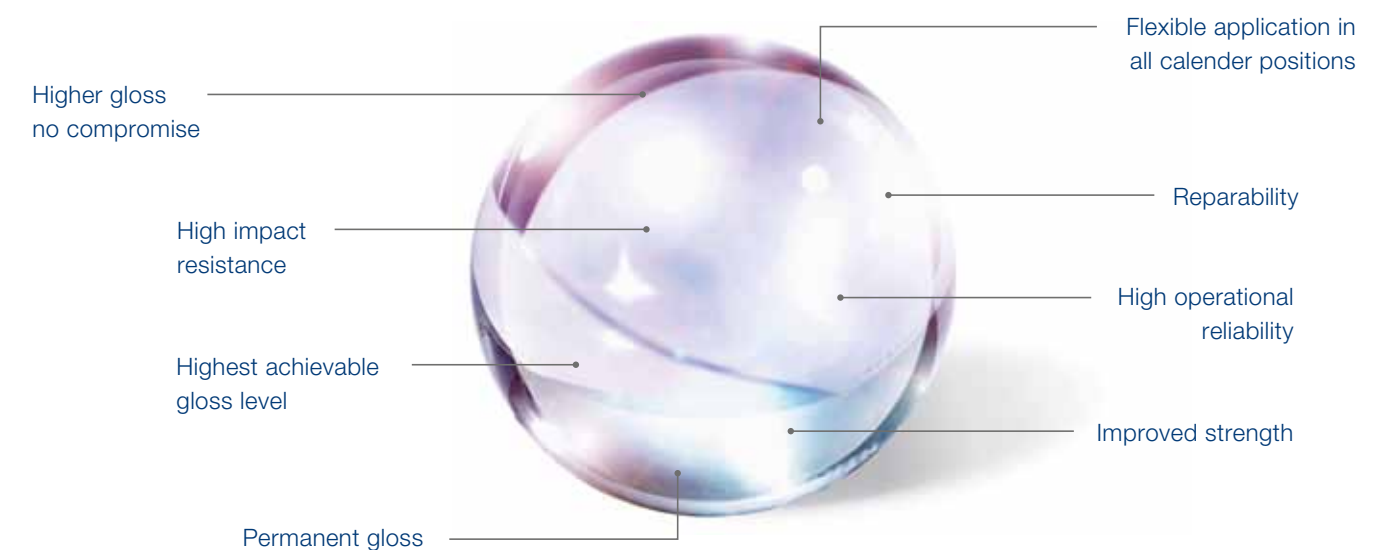
### A dream of gloss and smoothness

Voith engineers have combined their knowledge and experience across the paper industry to develop this solution. The outcome of their thorough research is a product that offers a smart combination of highest gloss levels and mechanical stability.

NanoGloss produces paper with a wonderful glow and smoothness. It also includes a clever fiber reinforcement material matrix that improves the cover's strength. Unlike other covers, it maintains the shiny surface properties completely over its entire lifespan.

On top of that, the NanoGloss roll cover has the potential to allow for significant coating cost savings due to its excellent material properties.

### Your benefits with NanoGloss







3



4

- 3 A smooth and strong calender roll cover like no other
- 4 Excellent paper gloss for your customer

## Your customers will see and feel the difference

### A complex process requires full performance

Good calendering is a challenging task as it consists of two stages impacting each other. At first, one paper side faces a series of thermo rolls to create perfect smoothness and gloss. In the next step, the paper faces composite rolls.

Any surface roughness and topographical structure of their covers will leave an imprint in the paper just like a fingerprint. Only NanoGloss with its smooth and even surface maintains all the beautiful calendering effects over the entire runtime.

The NanoGloss roll cover has the greatest impact in the last roll positions, but can be installed in any other calender position. With NanoGloss, neither wear nor damage nor inflexibility poses a problem as it combines smooth calendering and impressive strength.

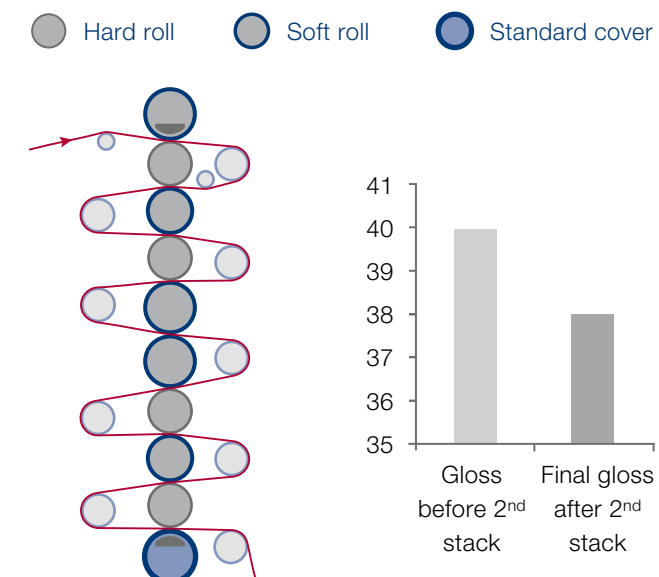
### Satisfied paper producers

NanoGloss has already brought solid results to several leading paper mills. A CBP paper producer in Asia was very satisfied with the excellent mechanical properties compared to the former cast cover. The achieved gloss remained stable over the full run time.

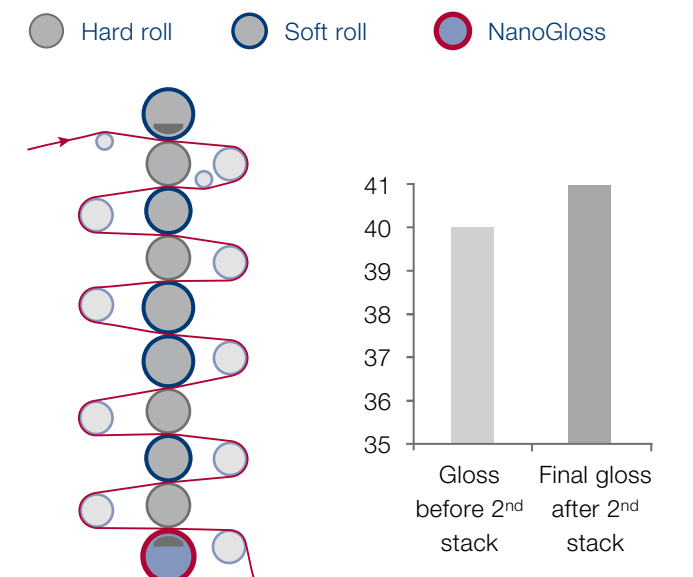
Furthermore, an LWC producer with a MultiNip calender installed NanoGloss covers in the first and second stack. The entire team was impressed by the mechanical resistance combined with an increased gloss level.

With NanoGloss, it is possible to increase the level of calcium carbonate in the coating formula and still meet the gloss specifications. Hence, an increase in gloss can be translated into a potential annual coating cost reduction of € 1.3 MM.

### Standard cover in 2<sup>nd</sup> stack gloss values



### NanoGloss in 2<sup>nd</sup> stack gloss values





5



6

- 5 The unique NanoGloss cover comprises all the features for excellent paper production with durable gloss
- 6 Voith engineers are constantly working to perfect the gloss formula

# It is all about the surface quality

## Cutting-edge composite material

The benefit of standard composite covers also represents their biggest weakness: The material consists of a matrix with fillers and fibers adding strength, but it also tends to become more rugged over time. This has a negative impact on the already calendered paper side and leaves an imprint in the paper.

Until now this threat could only be overcome with cast calender roll covers made of simple epoxy resin. Unfortunately, those do not offer any strength or support against external forces. Consequently, these covers are more susceptible to damage and impose a significant operational threat. Also, their reparability is limited. Not so with wound calender roll covers like NanoGloss, which can be band patched or restored locally on site.

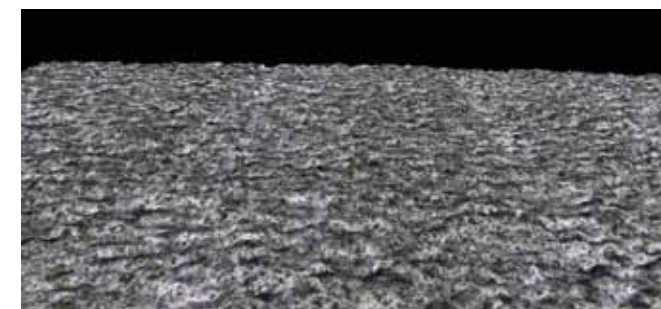
## One cover combines it all

To overcome the negative characteristics mentioned before, the goal of the NanoGloss project was to develop a cover that combines superior surface smoothness with extraordinary strength.

The NanoGloss roll cover provides the finest surface for all calenders: brilliant gloss and durability even under demanding wear conditions.

During their exhaustive research for the perfect cover material, Voith engineers combined their extensive knowledge of nature and industry. The result of this process is an extremely smooth matrix with outstanding mechanical strength values. NanoGloss represents the most advanced calender cover in terms of gloss and strength.

## Standard cover surface topography



## NanoGloss surface topography



## Headquarters

Voith Paper Holding GmbH & Co. KG  
St. Poeltener Str. 43  
89522 Heidenheim, Germany

## Further Information



[paper@voith.com](mailto:paper@voith.com)  
[www.voith.com/paper](http://www.voith.com/paper)

## Regional Contacts

### Asia

Voith Paper in Kunshan, China  
Tel: +86 512 5799 3600

### Europe

Voith Paper in Heidenheim, Germany  
Tel: +49 7321 37 6499

### North America

Voith Paper in Wilson (NC), USA  
Tel: +1 252 265 4405

### South America

Voith Paper in São Paulo, Brazil  
Tel: +55 11 3944 4966

**VOITH**  
Engineered Reliability