InForce
Extending the limits of polyurethane roll covers!

As solid as Steel, as smooth as Polyurethane!
Polyurethane roll covers are often the choice for felted press roll positions. Some applications benefit further from an additional nip intensity and a higher cover stability than previous generations of polyurethane could provide. The only alternative was a move to ultra-hard covers (e.g. stainless steel) and accept the compromises that they come along with.

This often means to accept a reduced lifecycle of press fabrics and paper quality issues due to the very harsh nip. Fabric fibers can be damaged under such inflexible forces and penetrate the paper web resulting in problems especially during the printing process. Furthermore, stainless steel rolls lead to unwanted vibration and have a limited void volume capacity as well as surface design. The narrow grooves entail high adhesion forces making it impossible to empty the grooves and resulting in reduced void volumes.

Voith engineers want you to get the full deal without having to choose from the various downsides that come along with common polyurethane or stainless steel rolls: The result of their intensive research is InForce.

Polyurethane roll cover with the highest stability

Value passed on from generation to generation
If you thought that no other roll cover could ever surpass G2000, buckle up and experience Voith's most recent addition to the cover product line: InForce, the polyurethane roll cover with the highest stability available in the market!

InForce is a further development based on the proven G2000 roll cover and is available in two hardness levels. With InForce the Young's modulus, a material's resistance to deformation, is raised to a new level. As compared to other polyurethane press roll covers in the market, InForce has shown an increase in modulus of up to 40 % or more.

This is possible through a balanced combination of base layer, the WebNet bonding system and the new polyurethane functional layer.

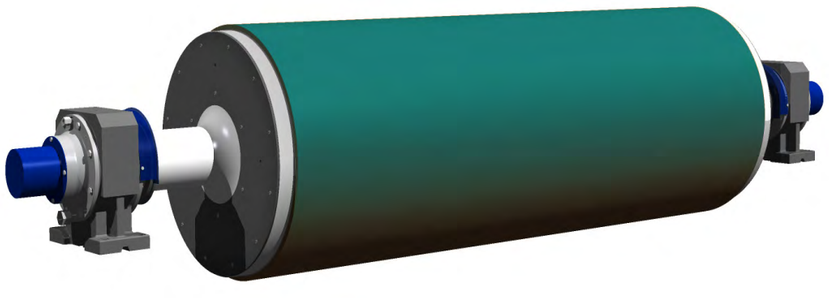
The result is a cover structure with the ultimate strength, wear resistance and stability in the hot, wet environment of the press section.

The InForce cover design allows the Voith application engineers to incorporate the latest most aggressive surface designs for the highest levels of dewatering.

InForce the benefits at a glance

+ Optimized void volume
+ Excellent hydrolytic stability
+ Superior wear resistance
+ Highest peak pressure
+ Maximized and stable dewatering

InForce the most stable roll cover available



Don't give in
The high modulus of InForce provides superior resistance to groove closure under extreme nip conditions. This unique ability to sustain void volume maximizes dewatering throughout the life of the cover.

Keep on dewatering
The adhesive forces of narrow deep grooves, often found in stainless steel covers, can inhibit the release of water from the cover after the press nip. This reduces the effective void volume for new water from sheet and fabrics. With InForce, a variety of groove designs can be applied to ensure the appropriate amount of void volume is available for the application.

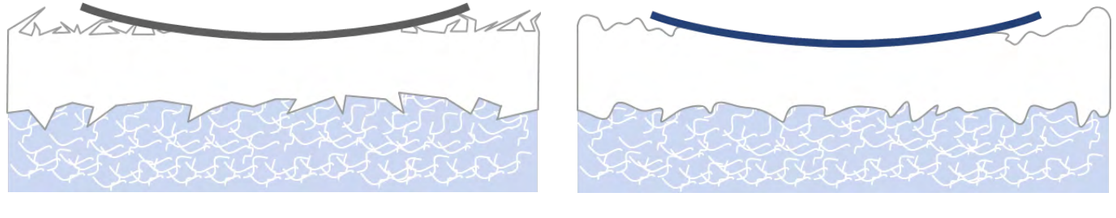
InForce also allows maximized surface designs for those applications requiring the highest levels of void volume. This void volume stability helps to achieve longer periods of steady state press nip conditions. The result is exceptional dewatering behavior with increased sheet dryness providing savings for the customer.

Be gentle
InForce has a very high modulus but is not as inelastic as steel. InForce has the ability to prolong the fabric durability, reduce its compaction from exceeding pressure and keep its strength over a longer period.

Get rid of shakes
The unique structure of the InForce cover system provides excellent dampening characteristics efficiently lowering the vibration that is common with regular stainless steel or other hard covered rolls.

Longer press fabric life Comparison of conventional steel roll cover and InForce

Press fabric caliper and surface after 35 days

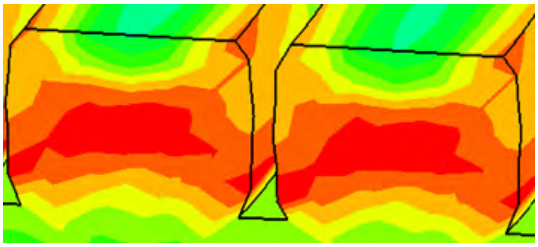


The Young's modulus is a measurement of a materials resistance to deformation. The higher the modulus, the lower the material deformation for a given magnitude of applied stress. With this unmatched level of stability, InForce is able to keep grooves open under extreme loading conditions. This is one of many improvements over the G2000.

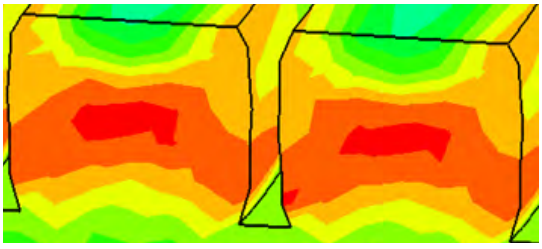
Perfect match for optimum dewatering and stability
Due to Voith's extensive know-how as a system provider, its products are perfectly coordinated with one another. InForce works particularly well in combination with the large variety of Voith press fabrics.

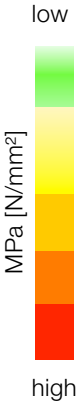
The quality of the roll covers and fabrics used in the press section is the most important factor to ensure great dewatering potential. For that reason, Voith relies on a combination of high-performance felts and the especially efficient InForce. In addition, press fabrics from Voith can effectively bridge the roll cover grooves of InForce. High stability is guaranteed thanks to the felt's optimized structure on the roll side.

Lower modules Gap becomes narrow



Higher modules Gap remains more stable





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