

NEW ROLL COATINGS FOR THE DRYER SECTION

# HARD AGAINST DIRT

Higher productivity and less downtime? New roll coatings from Voith move papermakers one step closer to this target. Newly developed coatings for cylinders, guide and vacuum rolls in the dryer group minimize dirt deposits, improve corrosion and wear resistance. In addition, these new coatings can be applied directly inside the paper machine.

Dirt, stickies, slime deposits and chemical fall out can have a negative effect on machine efficiency from within the dryer section. Contamination of rolls and dryer fabrics continually harm the roll surfaces during operation. Rising demands in productivity, higher machine speeds, a larger variety of chemical additives and lower quality of raw material require improved roll surfaces. Cleaning devices can also have a strong influence on the corrosion of rolls. The move towards shorter first dryer groups and the use of harder particles such as sand in the pulp necessitates the need for better wear resistance of the roll surface.

**Repellent and resistant.** The coating experts from Voith have developed a new generation of coatings for guide rolls and drying cylinders. Their work has focused on evaluating all the influencing variables to combine properties such as dirt repellence, wear resistance and corrosion protection into the correct ratio. Each coating characteristic has to be adapted to the respective requirements of the dryer fabrics and cleaning systems.

Together with external scientific support, Voith Paper has developed a method for investigating the interaction between roll surfaces and stickies, dirt, dust, glue and starch. In contrast to other materials and

methods, the new coatings can then be tailored to the special requirements of the paper industry.

On completion of the development stages, preliminary field trials were introduced on demanding applications with selected customers. The results achieved higher levels of coating performance than in laboratory tests.

The interaction between release forces and surface energy clearly shows that an

improved “anti-stick” performance can be achieved compared to existing products in the market. In addition, the successful trials demonstrated that a higher wear resistance could be realized with the unique Voith coating system.

**Roll coating inside the paper machine.** Another main target was to apply the coatings directly inside the paper machine – since the disassembly of dryer cylinders and the associated downtime normally incurs enormous costs and loss in



01 The new coatings stand for corrosion prevention and contamination resistance.

production. The new coatings can be applied on site by a skilled service team to significantly reduce the time needed for a machine shutdown ("Express" in product name). In order to achieve this goal, the method of application has upgraded to avoid a high temperature treatment in an expensive oven, so coatings can be applied at lower temperatures without affecting its performance (Figure 02). Those machines having temperature sensitive materials, such as carbon fiber reinforced roll bodies, can also benefit from this new method of coating.

The new roll coatings will be available in the beginning of 2012. //

### Info: The Terra coating family is now available for cylinders and rolls in the dryer group

In response to customer feedback, Voith Paper is introducing a generic name for all coatings in the dryer section of a paper machine. The established hard coatings in the press and calender sections (TerraSpeed and TerraGloss) form the basis of the new "Terra Family" for cylinder and rolls in the drying section incorporating the thermal spray coating processes. The Terra family name is also used for the demanding on-site coatings of Yankee and MG cylinders.

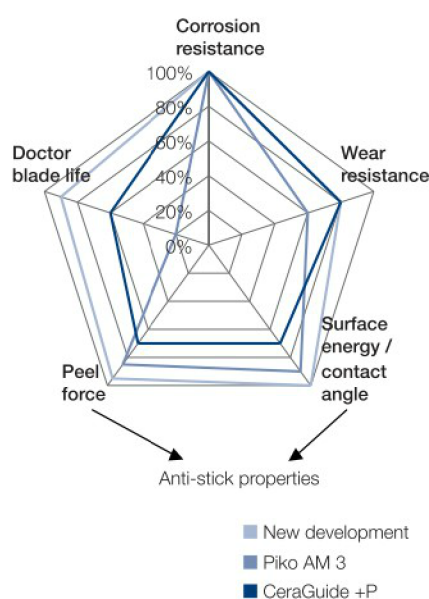
The product naming and description is included in Table 03. The new developments as described are part of the Terra range, which contain a thermal spray coating base, and according to the location and the respective position of installation, best fit to the existing requirement.

### Contact



Dr. Hasso Jungklaus  
hasso.jungklaus@voith.com

## 02 Comparison of the characteristics of the new roll coating with standard versions



## 03 New Terra coating family

Application	Coating property	New coating name
Fabric guide roll	Dirt repelling Exceptional dirt repellency	TerraDry G / TerraDry G Express TerraDry GR / TerraDry GR Express
Paper side stretch roll	Dirt collecting	TerraStick
Paper guide roll	Dirt repelling Exceptional dirt repellency	TerraDry PG / TerraDry PG Express TerraDry PR / TerraDry PR Express
Cylinder	Dirt repelling Exceptional dirt repellency and toughness	TerraDry C / TerraDry C Express TerraDry CT / TerraDry CT Express
Stabilizer rolls	Wear and corrosion resistance	TerraDry V / TerraDry V Express
Yankee	High wear resistance Improved wear resistance Improved wear resistance & thermal conductivity	TerraDry HC Express TerraDry HC+ Express TerraDry LL Express
MG cylinder	Improved glazing surface	TerraDry MG Express