



# Rolls

## TecnoClean Coatings

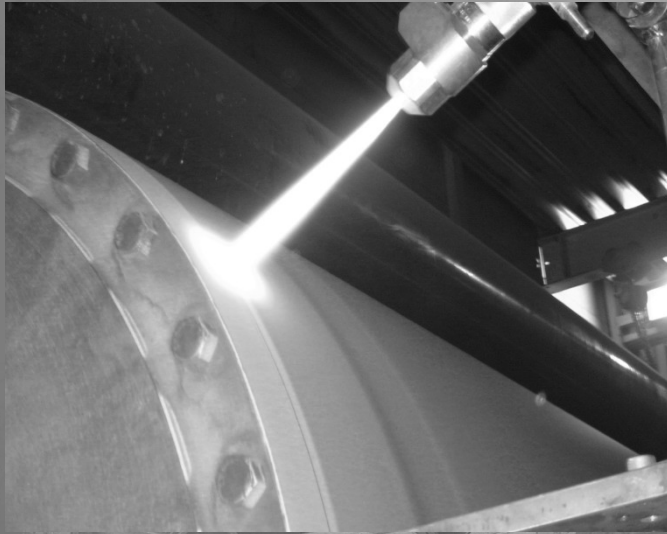
Non – Stick / Good Release Coatings

### Problems

- Sticking
- Release problem
- Dusts, dirt
- Marking
- Wear
- Picking
- Bad heat transfer
- Corrosion
- Doctoring problems

### Targets

- Dryers, usually made in the paper machine
- Dryer fabric rolls
- Paper guide (lead) rolls, usually made in work shop
- Cooling cylinders

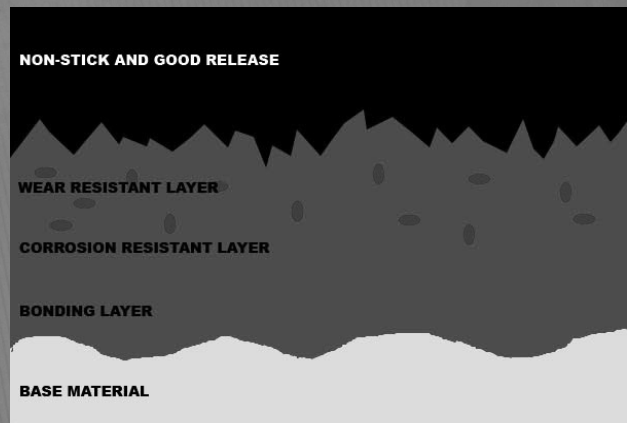


### Work description

- Grit blasting
- HVOF spraying
- Teflonizing
- Surface treatment

### Benefits

- Better paper quality
- Excellent non-stick
- Good release
- Excellent wear resistance
- Corrosion free
- Doctorable coating
- Life time up to 10 years
- Fewer breaks
- Longer service intervals
- Better runnability at high speed



### Technical details

- Hardness of ready made coating 1200 ±150 HV
- Roughness 1 – 3 Ra
- After grinding roughness 0.4-0.8 Ra
- Thickness 100 - 150 µm

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# Rolls

# TecnoGrip Coatings

Friction / Anti Slip Coatings

## Problems

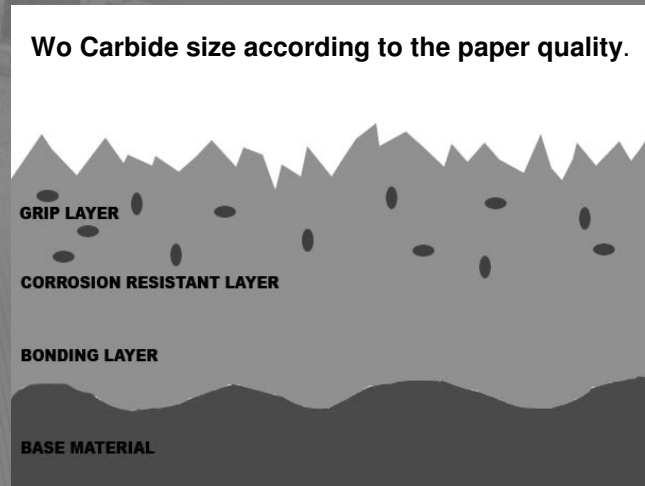
- Paper slipping
- Paper marking
- Evenness / uniformity and quality of paper reel

## Targets

- Pope drums
- Winder drums
- Winder carrier drums
- Winder section rolls
- Spreader rolls

## Benefits

- Excellent anti-slip properties
- Good wear resistance
- Corrosion free
- Re-roughenable
- Can be done in a short shutdown, working time < 12h



## Work description

- Grit blasting
- HVOF spraying
- Surface treatment

## Technical details

- Hardness of ready made coating 1200 ± 150 HV
- Roughness 4 – 16 Ra (tailorable by paper quality)
- Thickness 70 - 120 µm

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# TecnoDiamond Coatings

Hard and Mirror-Finished Surface Coatings

## Rolls

### Problems

- Grinding intervals
- Corrosion
- Wear of rolls and wire
- Life time of rolls
- Vibration insensitivity

### Targets

- Suction roll shells
- Pick-up rolls
- G-band rolls
- Chilled rolls
- Hard calander rolls
- Pope drums

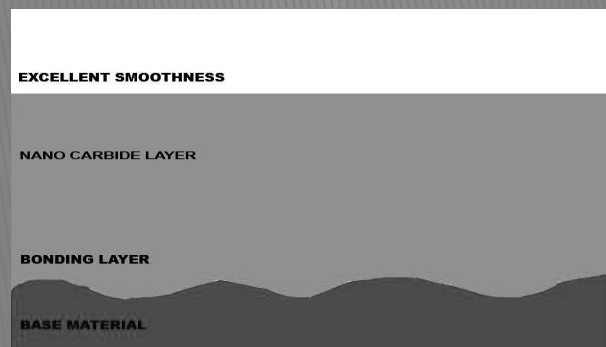
### Benefits

- Longer grinding period
- Excellent smoothness after grinding
- Corrosion free
- Good wear resistance
- Grindable and possible by customer
- Excellent solution / money saving
- Saving half of the coating price by grinding "self".
- Transport cost and risk of sending rolls out etc.



### Technical details

- Hardness of ready made coating  $1300 \pm 100$  HV
- Smoothness  $0.05 - 0.2$  Ra
- Thickness  $100 - 250$   $\mu\text{m}$



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# Rolls

# TecnoGuide Coatings

Corrosion, Wear and Chemical Resistant Coatings

## Problems

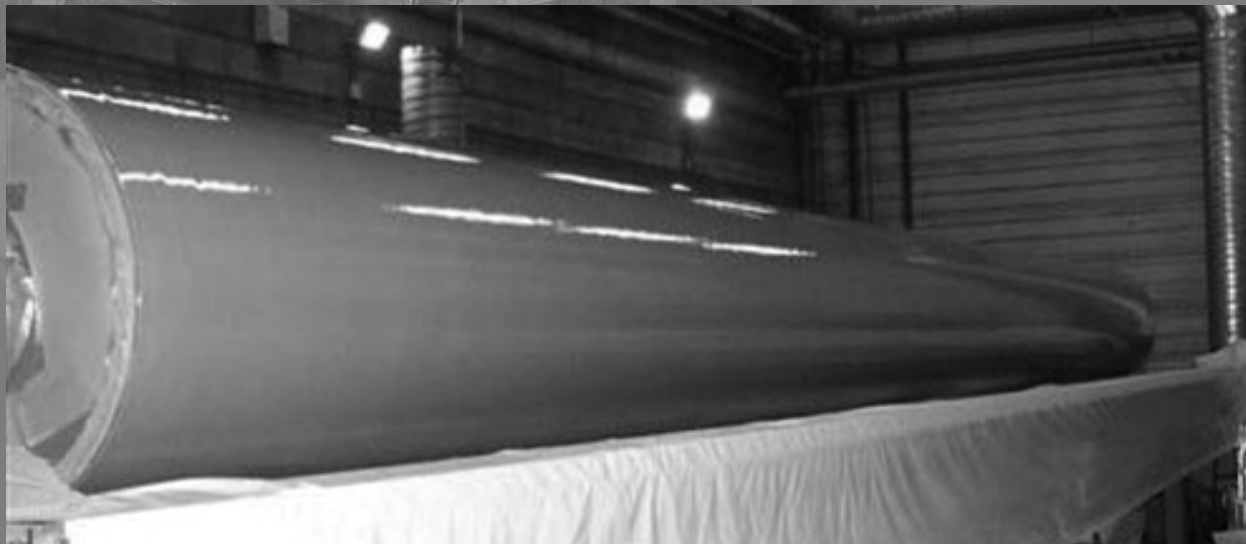
- Corrosion
- Wear
- High humidity
- High temperature
- Bonding
- Chemicals attack

## Benefits

- Excellent corrosion and wear resistance
- Excellent chemical resistance
- Excellent bonding
- Good friction
- Competitive price level against rubber

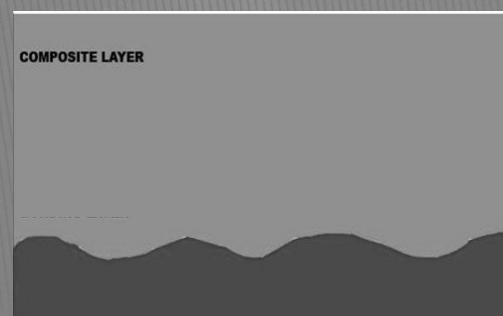
## Targets

- Wet wire guide rolls
- Press felt guide rolls
- Dryer fabric guide rolls
- Corrosion protection of PM frames, roll shafts and ends, pump wheels and housings
- Chimneys
- Tanks
- Corroded circumstances



## Technical details

- Thickness 300- 400 microns Ph range 3 -13
- Good non stick and release
- Good wear resistance
- Temperature range 20–100 C degrees
- Excellent corrosion resistance



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# Rolls

## Grindings

### Problem

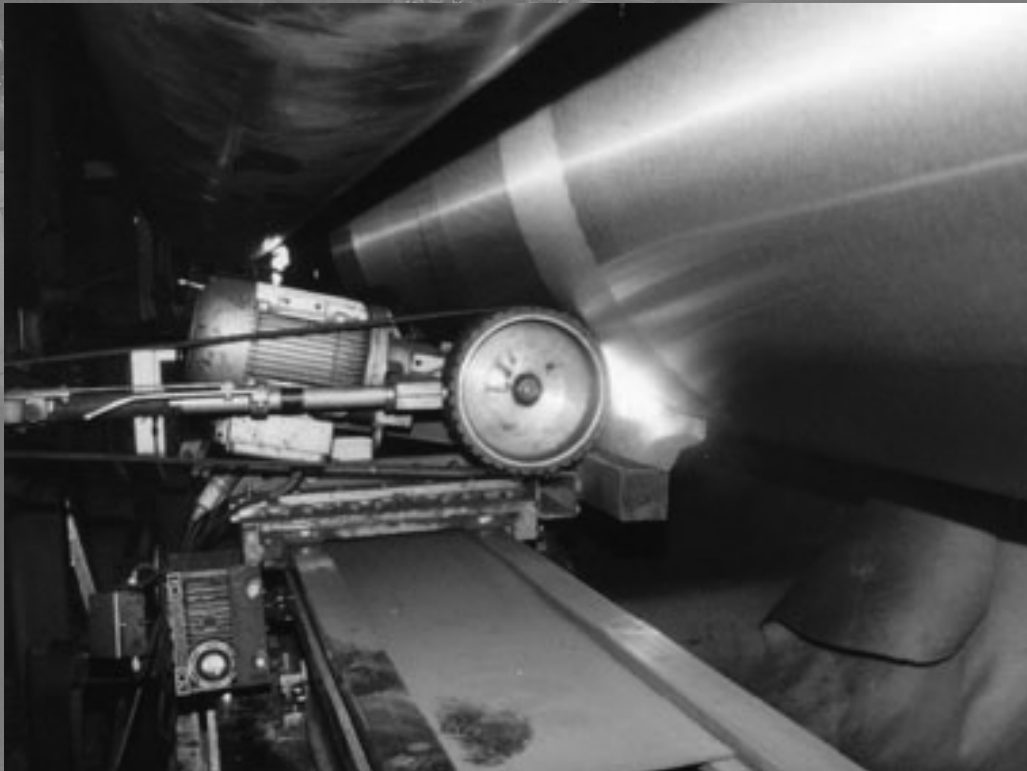
- Waving and grooving on the dryer surface
- Corrosion on the dryer surface
- Sludge and contamination on the dryer surface
- Geometrical variations

### Benefits

- Better drying capacity
- Less paper brakes
- Better CD-profile
- Longer fabric lives
- Improved doctoring
- Improved drying profiles

### Technical details

- Circumference tolerance  $\pm 0.10$  mm
- Roughness  $< 0.7$  Ra or better



### Solution

- On-site grinding in paper machine
- Capacity to grind many cylinders at the same time and in a short shutdown

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# Repairing of grooves and damages in dryers and rolls

## Rolls

### Problems

- Damages, crater or groove etc on the roll or dryer surface
- Corrosion problems



Brushplating of dryer

### Solution

- Cold spraying
- Electrical plating
- Thermal spraying
- Special welding
- Special polymers
- Final machining
- Pick up rolls
- G-band rolls
- Calender rolls
- Dryer cylinder
- Polymer rolls
- Rubber coated rolls

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# Rolls

## Dynamic Balancings

- of rolls and dryers can be performed at the customer's facilities, fast and accurately.

### Problems

- High vibration level
- Bearing damages

### Solution

- On-site dynamic balancing
- In machine or in workshop
- Middle balancing of guide rolls

### Dynamic balancing on

- Two planes
- Three planes with center weights
- Balancing Grade G1.0, G 1.6 or G 2.5
- Maximum paper machine speed



- Vibration measurement and balancing equipment
- CSI 2130 two channel vibration analyzer

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# Rolls

## Machining on-site

### Problems

- Worn out shaft
- Damaged shaft
- Corroded flench
- Corroded manhole

### Solution

- On-site Turning
- On-site Milling
- Drilling and grooving of cylinders
- Machining of manhole sealing surface
- Repair of DD-washers
- Machining an coating On-site screw, drums
- Drilling Vacrolls
- Repair of rope grooves
- Machining of cylinders shaft journals



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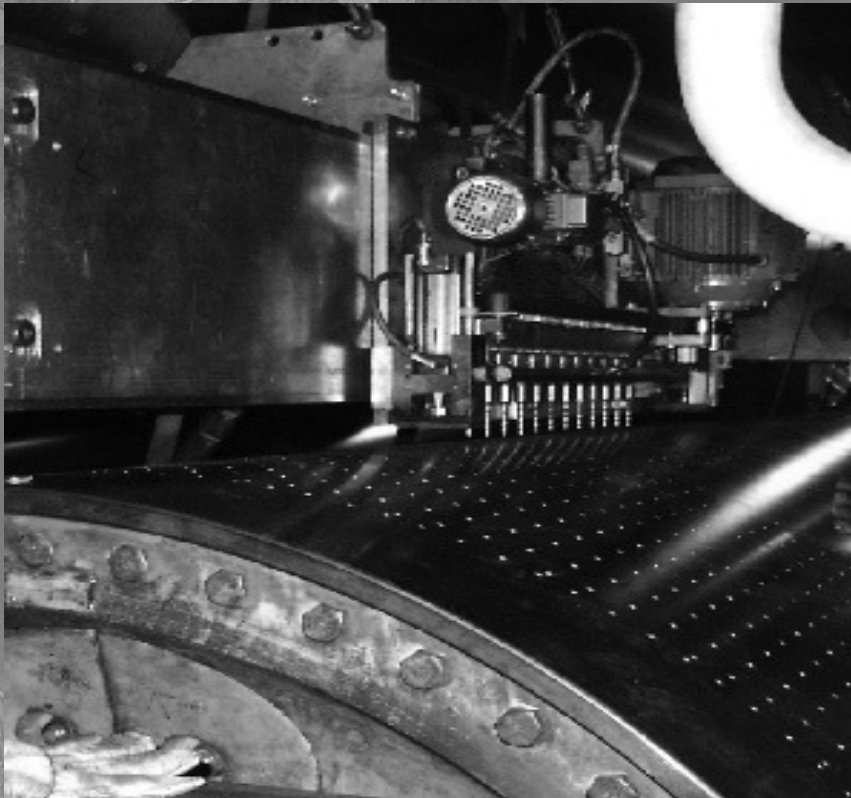
# Rolls

## Machining on-site

Runnability and production are enhanced by grinding, grooving, and drilling of drying cylinders, which can be done directly at customer's facilities – the time needed for maintenance can thus be shortened considerably.

### Benefits

- Better CD-profile
- No passing through the doctor blade
- Higher drying capacity
- Less slipping between paper web and dryer
- Less breaks
- Less dust in the dryer section
- Possibility to increase speed
- Higher-quality end product



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# Rolls

## Solutions

to your problems

PR Rolls has specialized in both on-site and in house services to improve the runnability, quality and production of paper machine by offering:

- Thermal Spray Coatings
- Machining
- Dynamic Balancing
- Repairing of grooves and damages
- Grinding
- Alignments
- Hard Face Welding

### Coatings

Due to the ability to provide the right selection of versatile composition coatings and methods coupled with the latest technology of spray coating equipments, we can improve the life-cycle and the performance of rolls and cylinders significantly.

Our products selection for coatings are:

- TecnoGrip – friction/anti slip coatings
- TecnoClean- Non-stick and good release coatings
- TecnoGuide – Corrosion resistance coatings
- TecnoDiamond – Hard and Mirror Finished Surface Coatings
- TecnoMicro – PTFE coating of Headboxes

### Machining

Runnability and production are enhanced by grinding, grooving, and drilling of drying cylinders, which can be done directly at customer's facilities – the time needed for maintenance can thus be shortened considerably.

### Dynamic Balancing

Dynamic balancing of rolls and dryers can be performed at the customer's facilities, fast and accurately.

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