



# Pulp & Paper

English

Surface solutions by **STI Group**



# Customized Surfaces



Successful companies from a wide range of industries all over the world rely on STI Group's superior technical competence and experience. The production of customized surfaces for paper industry applications has long been one of the core competences at STI | Hartchrom.

## Unique infrastructure

STI Group controls each individual process parameter and can thus achieve optimum quality and precision for rotationally symmetric and complex shaped components up to 6,000 mm diameter, 27,000 mm length and 64,000 kg.

## All processes from one supplier

STI Group offers a comprehensive service from one port of call, ranging from initial advice by our Technical Sales and exact specification of surface characteristics by our R&D, through professional mechanical processing and surface treatment of your components up to final quality control and logistics support.

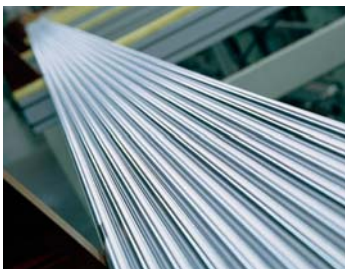
## High-end solution for screen baskets

The STI Group screen basket production plant combines high-end electro polishing and chrome plating procedures and was designed to meet the highest functional and economic demands. STI Group's coated in and outflow screen baskets and screen trays exhibit maximum resistance to wear and impact, precisely defined slot widths or holes and impeccable sorting characteristics, all manufactured in reproducible quality and in strict compliance with the set minimum coating thicknesses and individually specified tolerances. STI Group also offers an "STI Express Service" on request.

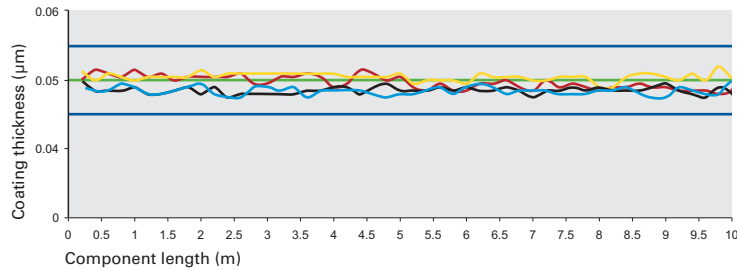
## Continuous chrome plating extends life time of metering rods

STI Group employs an innovative continuous process to make rod shafts into precision instruments with long service lives. In our computer-controlled chrome plating plant, we coat profiled and smooth metering rods up to 12 m length in one operation using individually controlled parameters. High layer thicknesses and a significantly increased hardness result in

PULP & PAPER SOLUTIONS



## Coating thickness distribution metering rods



Computerized continuous chrome plating allows precise control of all the physical parameters. The result is reproducible, extremely consistent surfaces, in compliance with the specified shape requirements. Very tight tolerances considerably increase the functionality of the metering rod and quality of the end product.

maximum wear resistance, long service life and very little downtime. STI Group's computer-controlled continuous chrome plating technology is standard for all metering rods of Horst Sprenger GmbH, market leader in metering systems for the paper industry.

### Precision and high resistance through hard chrome and thermally sprayed coatings

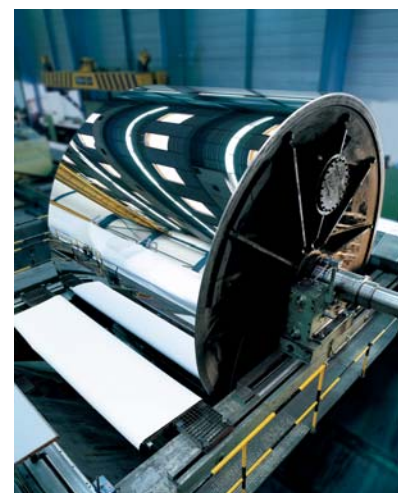
STI Group's coated [drying cylinders](#) are noted for their excellent temperature, corrosion and wear resistance. High precision geometry as well as an even and retaining surface structure are essential for [calendar rolls](#). For the use of [turning and lead rolls](#) economic solutions with a defined roughness grade, good corrosion and wear resistance as well as good anti-adhesion characteristics are required. Hard chrome and thermally sprayed coated surfaces of STI Group meet these demands perfectly

### Mechanical precision processing for cast coater

High gloss paper production requires contour ground, mirror finished surfaces with a surface quality of  $R_{max} < 0.1 \mu m$ , is one of STI Group's core competences. The mirror finish surfaces of STI Group combine good release behavior with excellent temperature and wear resistance.

### Functional surfaces for pulp and paper industry

Choosing from a wide range of technologies, STI Group offers surface solutions, specifically designed to meet the requirements of the diverse pulp and paper application areas.



#### Low lifecycle costs in the paper manufacturing process

##### Stock preparation

screen basket, stator and rotor

##### Paper manufacture, sheet formation

###### wet end

suction roll  
lead roll

###### dry end

drying cylinder  
calender roll

##### Paper finishing

metering rod, transfer roll, coating roll, damping roll, cast coater

Hard chrome and thermally sprayed coatings by STI Group ensure excellent corrosion resistance, outstanding anti-adhesion characteristics as well as enhanced resistance to the effects of temperature and mechanical wear.

**STI Group** Surface solutions worldwide.

## Surface Technologies for pulp and paper industry

Treatments	Wear protection	Corrosion protection	Other advantages	Application Examples
Hard chrome	++ to +++	+ to +++	very economical, thickness up to 1 mm, free from pores	drying cylinders, calender rolls turning and lead rolls
Matt hard chrome	++	++	customized, reproducible texture, anti-adhesive	cooling rolls for converting processes
Hydrophilic hard-chrome	++	+++	adjustable surface properties for defined fluids transport	coating rolls for producing special papers
Galvanic nickel	+	++++	excellent mechanical wear characteristics, layers up to 1 mm	spare and replacement parts

### Combined layers

Galvanic nickel / hard chrome	+++	++++	galvanic nickel layers up to 1 mm	re-coating and repair of cast iron rolls
Hartchrom/PTFE	+++	+++	high anti-adhesion effect, low coefficient of friction	drying cylinders
Nanochrom	+	+++	high anti-adhesion effect, very good cleaning properties	lead rolls

### Thermal spray coatings (selection)

WC-Co-Cr HVOF process	++++	+	erosion and abrasion protection, especially in aqueous solutions, good adhesive strength	calenders, drying cylinders, turning and lead rolls
Cr2O3 (chromoxide) plasma spray process	++++	++++ (with sealing)	highly chemically resistant to all pH values, high electrical resistance	press rolls
Molybdenum, wire flame spray process	++	+	high adhesive strength, excellent sliding friction properties	spare and replacement parts

### Capacity

**Plating** up to Ø 4,500 mm, length up to 12,000 mm, weight up to 64,000 kg; **Thermal Spraying** up to Ø 4,500 mm, length up to 8,000 mm, weight up to 15,000 kg; **Grinding** up to Ø 6,000 mm, length up to 27,000 mm, weight up to 64,000 kg  
Further treatments and component dimensions on request or [www.sti-surface.com](http://www.sti-surface.com)

0 = adequate + = satisfactory ++ = good +++ = very good ++++ excellent

# STI Group Factors of Success

Individual Solutions	STI Group offers you individual overall solutions – from comprehensive analyses and consulting, development and innovation to the actual treatment process, mechanical processing, the final quality check and transport.
Industrial Areas	Automotive, Aviation, Defense Technology, Film, Foil, Food, General Industries, Hydraulics, Marine & Powertrain, Paper, Power Generation, Print, Textile, Tools etc.
Range of technologies	Hard chrome (including Triplex, structural chrome and Nanochrom), electroless nickel, galvanic nickel, hybrid layers, dispersion layers, thermal spraying (HVOF, plasma, wire flame spraying), Dry Coating (plasma nitriding, PVD, PACVD), painting, grinding, polishing, milling, turning, boring. Various special processes are available on request.
Quality and Precision	STI Group surface treatments stand for precision, functionality and quality. STI Group guarantees the required process safety to achieve the narrowest tolerance ranges and create tailor-made, reproducible surfaces.
S to XXL Components	STI Group develops innovative, tailor-made surface solutions for components up to 6,000 mm in diameter, 27,000 mm in length and 64 tons weight.
Complex Geometries	One of the core competencies of STI Group is the coating of components with complex geometries. STI freeform surfaces are renowned for their optimized characteristics, the highest level of quality and reproducibility.
Single Parts and Series	STI Group is your specialist for custom-designed surfaces, both for individual parts and series. Know-how, experience and modern infrastructure guarantee optimum results.
Research & Development	STI Group carries out systematic application-oriented and pure research and development. Our focus is on high-performance, individually optimized surface solutions for you and your success.

[www.sti-surface.com](http://www.sti-surface.com)



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