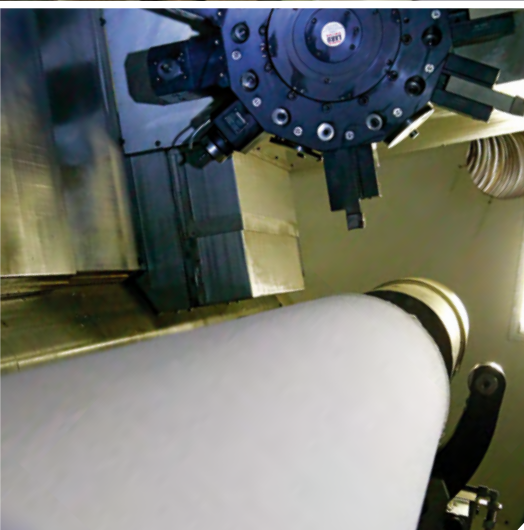
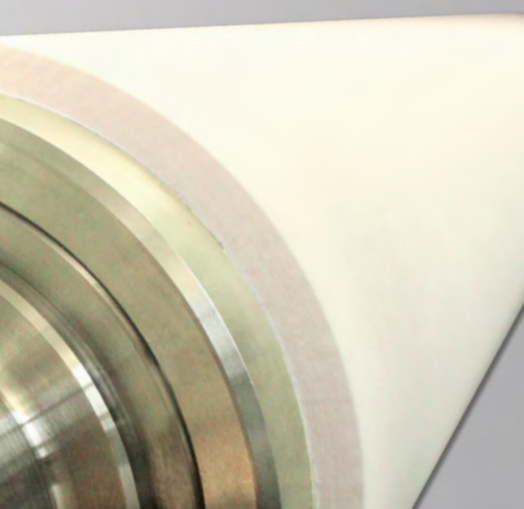
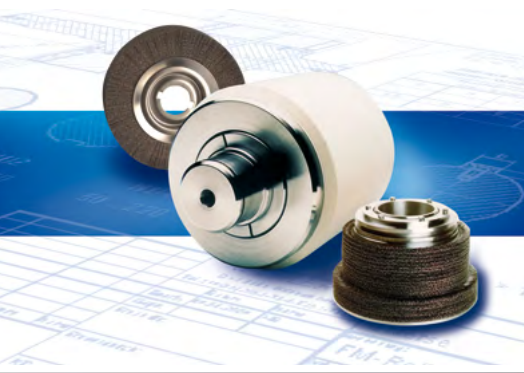


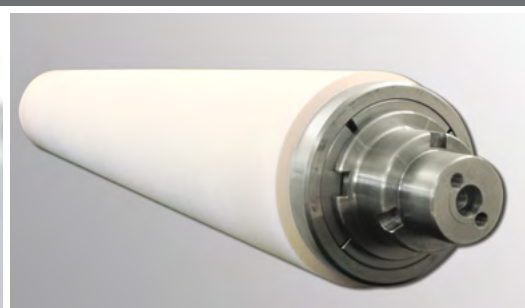
WÖHLER

Technische Bürsten GmbH



FM[®]-Rolls

Leading solutions for the steel and automotive industry



Wöhler Technische Bürsten



Experience and inventiveness...



...meet skills and drive...



... the key to our success!



Our team is always at your service for individual consultation

Welcome to Wöhler!

Innovation has been the driving force behind the success story of the Wöhler company group from the very outset. Our products, processes and services are constantly being optimised with the focus set on both customers and markets. This ensures our customers a reliable business partnership offering a technological advantage today and the promise of new solutions for tomorrow.

The core competence of Wöhler Technische Bürsten GmbH is seated in the development, production and distribution of premium customised products for surface treatment and finishing.

Our services offered are targeted on:

- maximal customer satisfaction
- perfect and comprehensive service and maintenance
- technical consultation and constructive cooperation
- engineering expertise and great personal commitment

Quality assurance is a matter of course.



More than just a certification:
Our quality pledge!

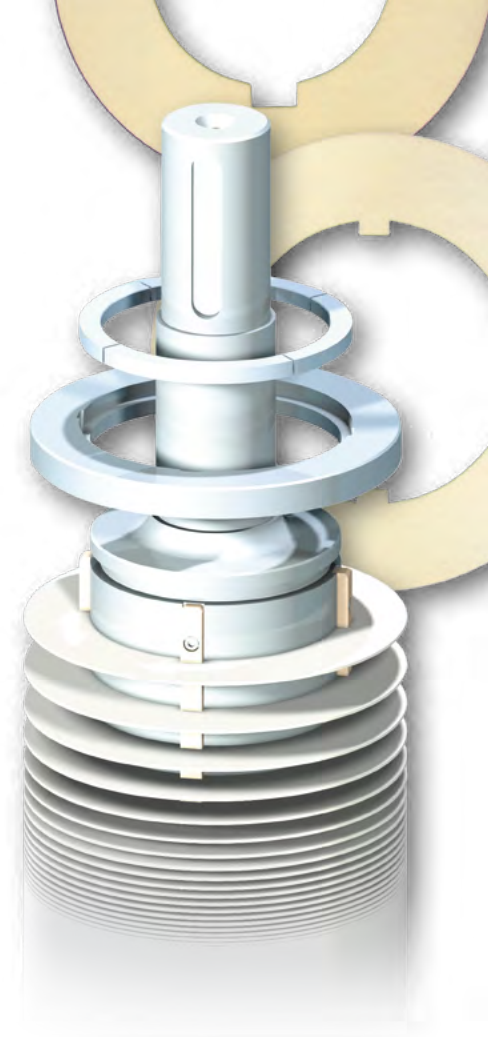
Quality

FM[®] is a registered trademark of Wöhler and stands for highly resistant roll covering materials and rolls. Special properties allow diverse applications in the steel and automotive industry.

The nonwoven materials with their porous fibre structure consist of specially finished synthetic filaments. Continuous product development and enhancement optimises our service portfolio.

The roll covering is made of customised single rings, pressed directly on the core.

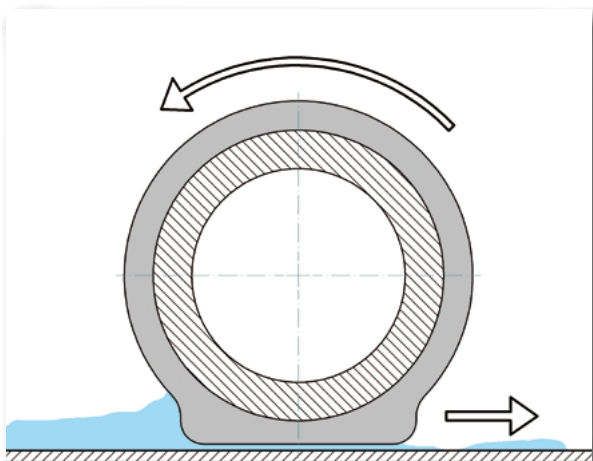
Our FM[®]-rolls unite all the universally known properties and advantages of the nonwoven roll technology in a single product.



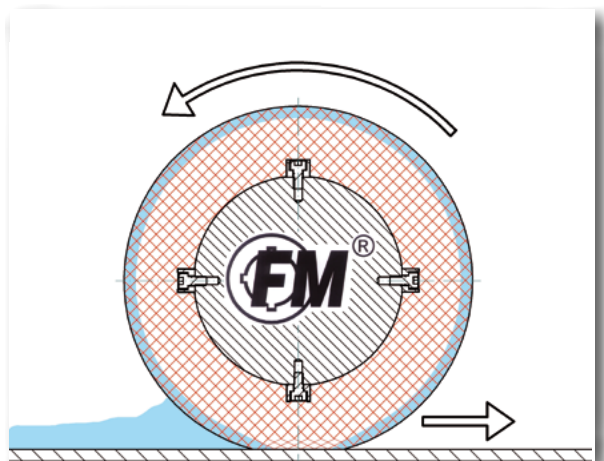
The advantages of FM[®]-rolls

Discover the unbeatable advantages over conventional rubber, PU or steel rolls.

- best wringing and squeezing results through sponge effect
- individual residual moisture levels
- excellent grip on dry, wet and oily strip surfaces
- consistently high friction coefficient over the complete service life
- no hydroplaning
- elastic and gentle covering surface
- internal oiling or rinsing possible
- extremely durable porous fibre structure
- individual replacement of damaged sections

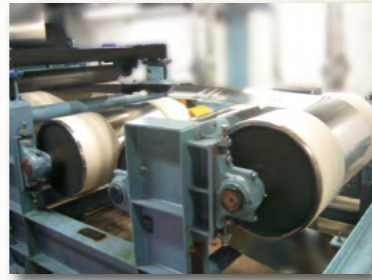


A rubber roll absorbs no fluids



The sponge effect of a nonwoven roll

Applications



STRIP PROCESSING LINES

- annealing/pickling lines
- galvanising lines
- coating lines
- oiling
- driving/feeding
- wringing/squeezing of:
 - water
 - alkalines
 - acids

Leading solutions for the steel and automotive industry



- ## AUTOMOTIVE INDUSTRY
- blank/coil washing machines
 - cleaning
 - oiling



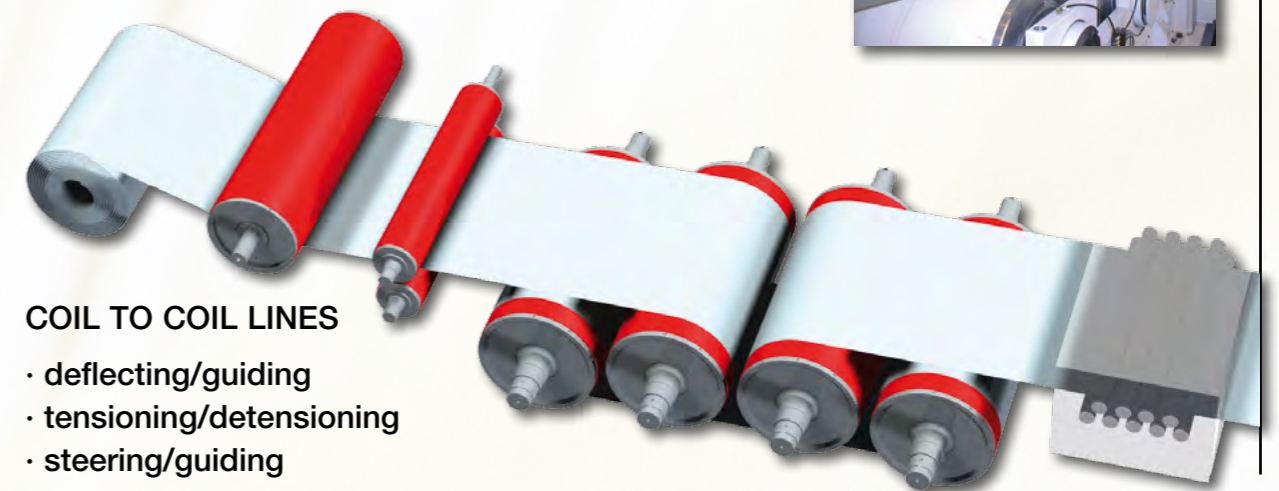
SLITTER AND CUTTING LINES

- braking
- driving/feeding
- oiling



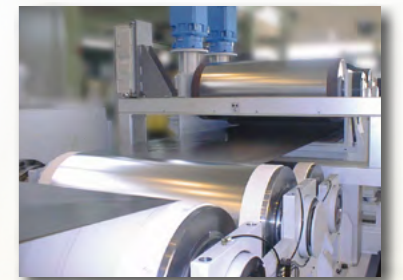
COLD ROLLING MILLS

- wringer rolls (rolling oil/emulsion)
- driving/feeding
- S-rolls
- wringing/squeezing of oil/emulsion



COIL TO COIL LINES

- deflecting/guiding
- tensioning/detensioning
- steering/guiding



Technical data

Qualities with years of practical experience

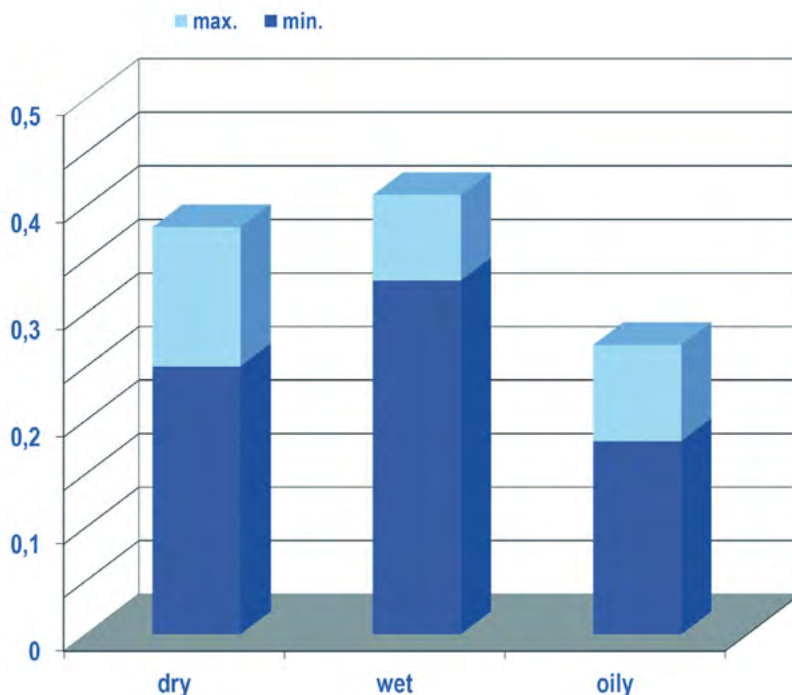
Our FM® nonwoven material was specially developed by us to offer industrial users outstanding properties in critical applications.

All our experience made over the years in the demands set on nonwoven rolls has been effectively fed back into the continuous development and enhancement of our FM® nonwoven material.

Further to the standard qualities listed below there are also special qualities available for specialised applications.

	FM® 691	FM® 695	FM® 898
applications	<ul style="list-style-type: none"> - wet/dry - normal to lightly alkaline · water · rolling oil/emulsion · alkaline cleaning agents 	<ul style="list-style-type: none"> - wet/dry - diluted acids · sulphuric acid · nitric acid · mixed acid 	<ul style="list-style-type: none"> - high temperature - normal to strongly alkaline · various acids (incl. hydrochloric acid)
working temperature max. (°C)	100	100	180
chemical resistance (pH)	4 - 12	0 - 10	0 - 14
outer diameter	max. 1,524 mm		
covering length	max. 5,500 mm		
covering thickness	12 - 150 mm		
hardness	55 A - 65 D (Shore DIN 53505)		
core geometry	metric, inch sizes, customer specific		

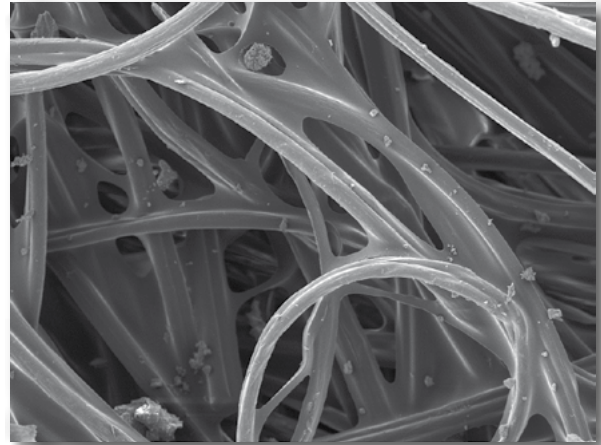
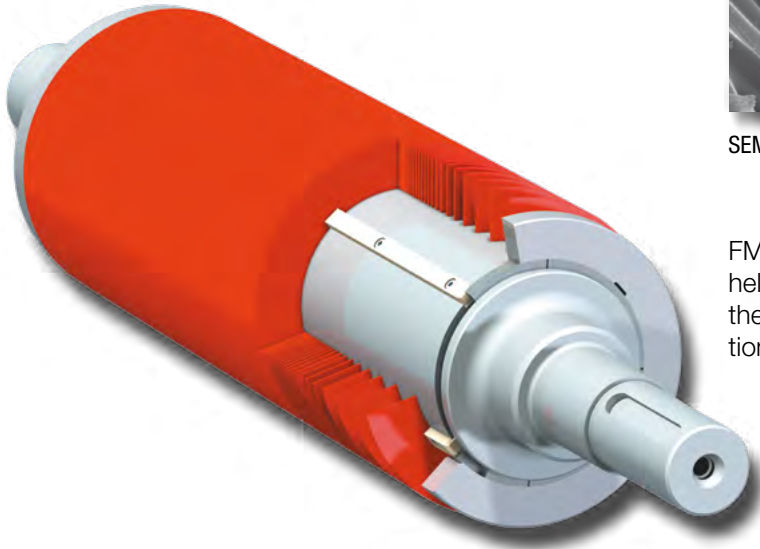
Outstanding friction coefficient



Your advantage

... compared to conventional rolls:

- quality improvement due to excellent wringing properties
- process reliability and higher productivity
- consistently high friction coefficient
- high resistance against cuts
- increased service life

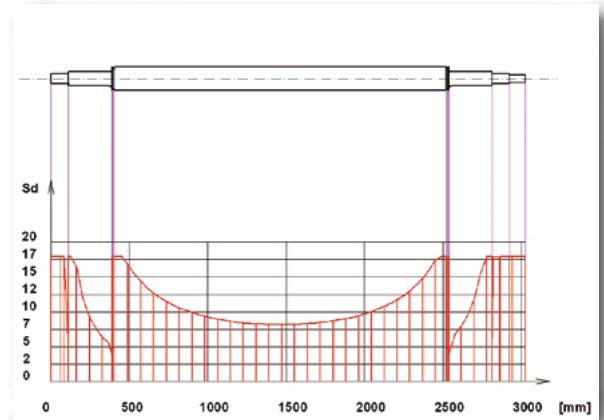


SEM image of FM®-nonwoven

FM®-rolls are calculated and designed with the help of state-of-the-art computer programs using the Finite Element Method (FEM) under consideration of the customer specific operating conditions.

Strength verification in accordance with DIN 743, taking account of:

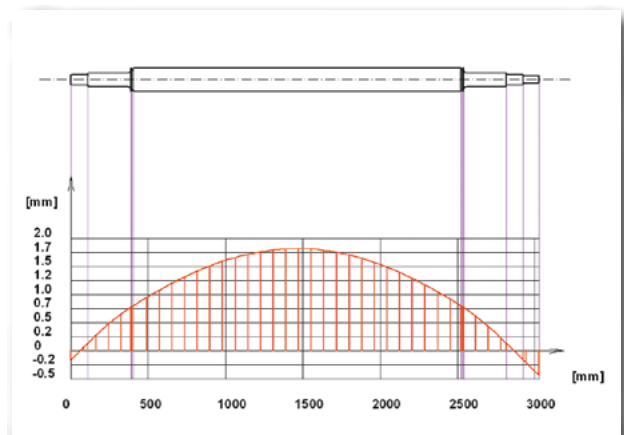
- all known forces and applied loads
- the core geometry with all form and surface influences
- the material properties



Safety factor against fatigue failure

Calculation of the required crowning of the covering for compensating roll deflection in operation and ensuring a consistent line pressure, considering:

- radial forces and line load
- net weight of the roll
- bearing stiffness
- additional impact forces



Calculation of the shaft deflection for the design of the crowning (circular arc) of the roller cover

Wöhler Technische Bürsten



This is where we develop and produce our products



Exceptional ideas result from teamwork.



No challenge is too great!



Wöhler - Trust in our expertise!



The Wöhler company name stands for over 80 years for inventiveness and quality in the fields of technical brushes and special (nonwoven) rolls, machine construction and measuring and cleaning instruments.

We produce technical brushes and nonwoven rolls (FM[®] rolls) for industrial applications as part of the internationally orientated company group.

Our products are manufactured to customer specific requirements in a great diversity of sizes, brush body and fill materials.

Our wealth of experience allows us to develop reliable solutions and optimally meet our customers' requirements on an on-going basis. New areas of application are a challenge and never a problem.

Our team of skilled and motivated employees ensures a consistently high product quality, essential for achieving our main goal of customer satisfaction.

Our expertise in nonwoven rolls allows us to offer you full service from consultation, design and development, through the production of the roll core, covering and finishing the FM[®] nonwoven material, right up to the recovering of existing rolls and the repair of cores.

One-stop solutions - Made in Germany!

Our partner for the Asian market:

Union FM-Rolls Co. LTD

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TAINAN CITY 702 TAIWAN

Tel: +886-6-2655111 #96 | Fax: +886-6-2639199

E-mail: union-fm@umail.hinet.net

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