

Ceramic Coatings  
from Rauschert  
for wear protection  
for electrical insulation  
for thermal insulation



TRADITION  
PROGRESS  
INNOVATION

# Ceramic coatings by Plasma spray

## We offer:

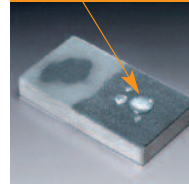
- Advice on problems of wear and insulation, also on the use of ceramic coatings and fully ceramic parts
- Fast manufacture of prototypes
- Coating of metal parts provided by the customer in quantities from 1 up to 10,000 pieces
- Repair of ceramic coatings
- Metal parts for coating can also be supplied
- Our own tool room
- Grinding and polishing on request

## Corrosion protection and high dielectric strength by nano-technology.

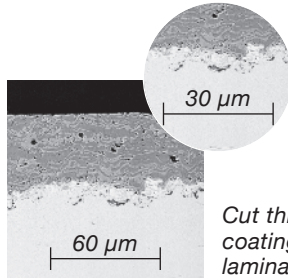
The pores will be closed by nano-technology. The nano-composites exist of molecules of  $\text{SiO}_2$ , surrounded by organic ligands and molecular structures.

By thermal treatment an embedded inorganic glass having a  $\text{SiO}_2$  basis will envelop.

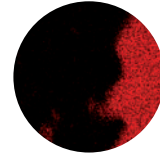
## Lotus-Effekt



Lotus-Effekt of Nanocomposites



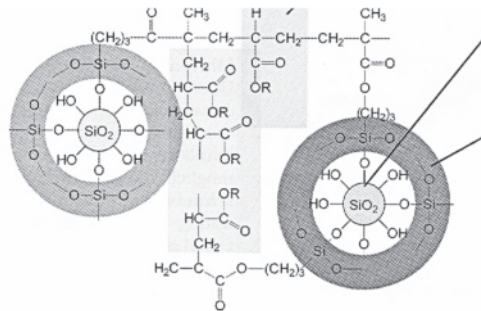
Cut through a sample having a coating of  $\text{Cr}_2\text{O}_3 / \text{TiO}_2$  – the porous laminar structure can clearly be seen.



Distribution of  $\text{SiO}_2$

## Process

The ceramic powder melts within 0,5 seconds in a plasma flame at temperatures between 10,000 °C and 20,000 °C. The molten material is deposited at supersonic speeds on to a metal surface that has been pre-prepared by sand blasting. For improved surface finishes the coatings can be machined with diamond tooling.



Nano-particle of Silicon dioxide

- mechanical properties
- visco-elastic properties

Shell of polysiloxan

- Hardenable by UV-
- "Solubility" in acrylates (up to 30%  $\text{SiO}_2$ - particles)

## Surface structure

The ceramic coating has a laminar, porous structure that gives good adhesive strength and impact resistance. It also readily allows for the difference in the thermal expansion between the metal and ceramic.

## Electrical Characteristics

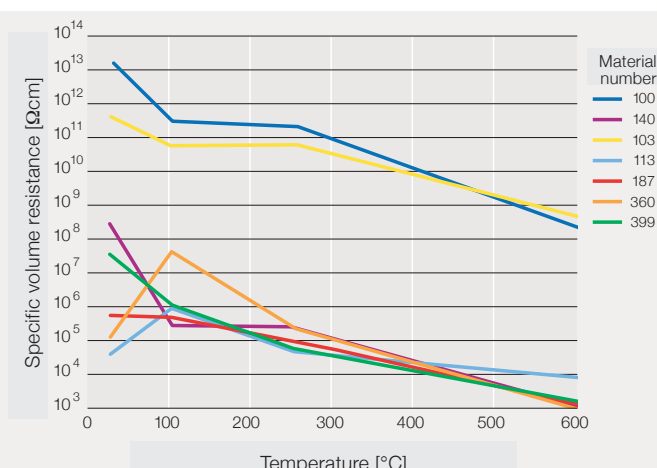
The choice of ceramic coating allows for varying levels of electrical insulation or it can even be semi-conductive. For example, the material R103 is used for the electrical insulation of roller bearing outer casings. With a layer thickness of 150 µm, a dielectric strength of 1000V is guaranteed.

## Our Intention:

To supply quality components to our customers specifications, and required delivery date.

## Physical Characteristics

Material No.	Colour	Adhesive layer	Abrasion protection	Electrical insulation	Thermal insulation
100	white		●	●	
103	grey		●	●	
113	anthrazit		●		
140	black		●		
187	black		●		
295	ivory				●
292	ivory				●
325	anthrazit		●	●	
399	greengreen		●		
360	anthrazit		●		
428	white				●
580	grey	●			
595	grey	●			



The type of ceramic material used gives either an insulating or semi-conductive layer.





wear protection

thermal insolation

electrical insolation



## Rauschert at a Glance



### Technical Ceramics



Electroceramics



Ceramics for lighting



Ceramic components for textile machines



Ceramics for mechanical engineering



High temperature ceramics



Infrared heater plates



Ceramic honeycombs



Welding back-ups



Porous wicks



Ignition components



Ceramic coating



Ceramic sealing and regulation discs



Ceramic parts for pumps



Ceramic components



### Plastic Injection Moulding



2-component-plastic-parts



System components



Assemblies (ceramics/metal/plastic)

# Rauschert Ceramic Coatings

Ceramic coatings are a core business of Rauschert.

It is our aim to offer an efficient and competent alternative. Our employees are totally committed to this.

Make use of Rauschert's expertise.

We look forward to receiving your enquiries.

## For your enquiries

Rauschert  
Heinersdorf-Pressig GmbH  
Bahnhofstraße 1  
D-96332 Pressig  
Phone +49 (0)9265-78-0  
Fax +49 (0)9265-78-10899  
eMail info@prg.rauschert.de

Mr. Dipl.-Ing. Friedrich Moeller  
Phone +49 (0)9265-78-342  
Fax +49 (0)9265-78-10842  
eMail f.moeller@prg.rauschert.de

Mr. Dietmar Neder  
Phone +49 (0)9265-78-344  
Fax +49 (0)9265-78-10823  
eMail d.neder@prg.rauschert.de



With more than 100 years experience in supplying industrial customers Rauschert can also be a reliable partner for you.

With 1200 employees in 12 manufacturing plants worldwide Rauschert is meeting today's international challenges.

Please request our literature or visit us on our website!

[www.rauschert.com](http://www.rauschert.com)

We are certified



*Experienced, Flexible, Reliable.*

**Rauschert**