Ceramic coatings
on metal surfaces

Product Info

- Excellent electrical and thermal insulation
- High thermal and corrosion stability
- Wear-resistant

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Benefits and properties

- Excellent electrical and thermal insulation
- High thermal and corrosion stability
- Wear-resistant
- Coating with electrical / thermal conductivity possible
- Application on virtually all metal surfaces

Field of application

- Insulation of roller bearings
- Wear components for textile and wire machinery
- Electrical insulation of heating conductors

Ceramic coatings
wear-resistant and reliable

Process

Ceramic layers are applied on pre-treated metal surfaces by a thermal spraying process and surface qualities tailored to application requirements.
Thick-walled metal parts do not heat up above 200 °C thus ensuring that no structural changes occur. A big advantage is the free choice of metallic base material.

Applications

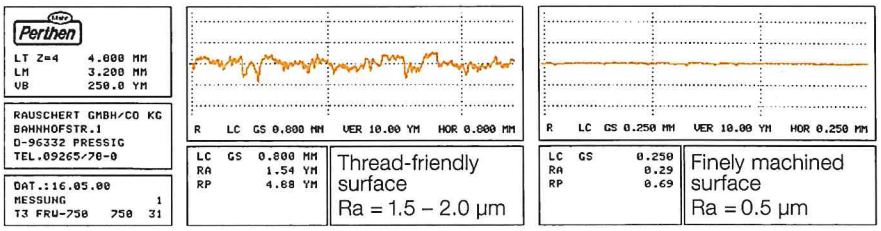
Ceramic coatings show higher hardness and wear resistance than hard chrome alternatives. Successful areas of application include wear components for textile and wire machinery, welding devices, electrical insulation of heating conductors, current-insulation of rolling bearings.

Corrosion resistant substrate materials such as stainless steel 1.4301 and aluminium are recommended in humid or corrosive environments due to the process-related porosity. Pores are additionally sealed with nanocomposites.

Physical properties

layer material	Nr.		colour	wear resistance	electrical insulation	thermal insulation
Al_2O_3 / TiO_2	(97/3)	R103	grey	●	●	○
Al_2O_3 / TiO_2	(87/13)	R113	anthracite	●	○	○
Al_2O_3 / TiO_2	(60/40)	R140	black	●	○	○
Al_2O_3	(99	R100	white	●	●	○
ZrO_2 / CaO	(95/5)	R295	ivory	○	○	●
ZrO_2 / Y_2O_3	(92/8	R292	ivory	◐	○	●
Cr_2O_3	(99)	R399	grey green	●	○	○
Cr_2O_3 / TiO_2	(60/40)	R360	anthracite	●	○	○

● very well suitable ◐ conditionally suitable ○ not suitable



Layer thickness	100 – 150 µm *
Hardness HV	700 – 1800 **
Porosity	2.0 – 5.0 %
Dielectric strength	< 1000 V at 150 µm ***
Surface properties	upon customer request (Ra 0.2 – 7.0 possible)

* other layer thicknesses upon request
** depending on the layer material
*** depending on component geometry

v-card

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