AHC OBERFLÄCHENTECHNIK

BRIEF INFORMATION

DURALLOY®

Optimisation of Friction Processes through Specially Structured Metal Surfaces

Roller bearing, coated with DURALLOY®

- High wear resistance
- High surface hardness
- Reduction of friction coefficients
- Improved corrosion resistance
- Adjustable tribological properties
- High abrasion resistance

Innovative and highly functional surface designs

The gecko's skin has a micro nodular structure with smooth, uniform transitions and no sharp edges, just as the surface of our DURALLOY® coats. The gecko is also a symbol of excellent adhesive strength – something else it has in common with DURALLOY®.

DURALLOY®

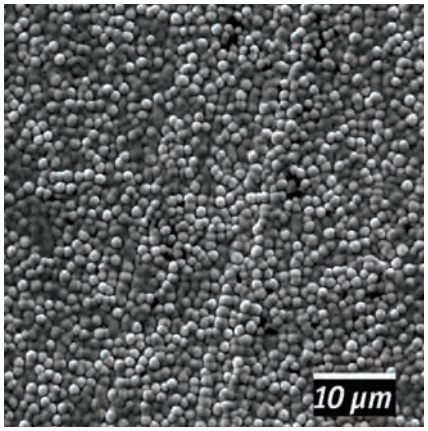
DURALLOY® is a special thin dense chrome coating with maximum 20 µm layer thickness. The specific structured surface of the DURALLOY® layer provides outstanding chemical resistance and material hardness for applications where conventional coating systems with comparable layer thicknesses are ineffective.

Due to its specific properties, in high friction applications the structured surface of the DURALLOY® layer significantly increases the wear and corrosion resistance of the coated material.

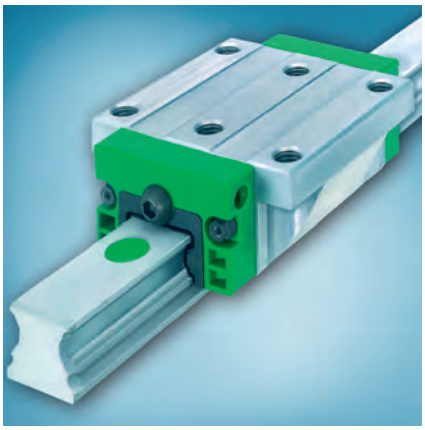
Properties

DURALLOY® is an extremely hard, crack-free, precise, very thin and ultrapure metallic chrome layer. By means of a high-energy process a nodular structured surface can be deposited on all types of metals, except for magnesium and titan. Applications for aluminium components are limited (please contact us for details).

Due to the low process temperature of under 70 °C no changes to the structure of the base material occur during plating.
This essential advantage of the process ensures shape and hardness stability for any manufactured components. DURALLOY® provides effective protection against friction and vibration corrosion and thus increases considerably the wear resistance of the material when used, for example, in gears or with shaft-hub-joints.



Micrograph of the DURALLOY® surface – a nodular structure like the skin of the gecko.



Linear guide with DURALLOY® layer

DURALLOY® facility in Villingen-Schwenningen

	TDC	TDC-Multilayer	TDC-LC	TDC-Ag
Layer material	Chrome	Chrome + Chrome +...	Chrome + LC	Chrome + Silver
Applications	in cases of load by friction and vibration corrosion and by wear	in cases of high corrosive load (offshore area, construction machines on ships)	in cases of pressure load (linear guides, ball bearings) or exposure to aggressive gases (roller mills, metallurgy, defense technology)	in cases of load by starved lubrication, dry lubrication (e.g. vacuum technology)
Suitable materials	The range of the materials that can be coated with DURALLOY® includes most of the widely used engineering metals: steels up to 62 HRc and with a chrome content of 15 %, stainless steels, grey cast iron, sintered metals and bronze. For surface treatment of each of the particular base materials specific DURALLOY® processes are available.			
Layer properties depending on process	• wear protection • corrosion protection • hardness • effective lubricant reservoir • dry-running characteristics • damping features • protection against vibration corrosion • non-magnetic, not magnetisable • outstanding adhesion			