Thin, dense, chromium coating technology

The properties of the ATC coating

ATC coatings consist of chromium with a purity of more than 98%. It is an extremely hard, crack-free, nodular, precise, ultrathin and highly pure chromium coating that may be engineered by a high-energy process to all metals, including, with certain restrictions, aluminum, but not to magnesium and titanium. Due to the low process temperature of less than 80°C, the structure of the base material is not changed. This fundamental advantage of this method ensures a stable form and hardness. ATC coatings generally have the look of satinated platinum. If agreed with ATC, the surface can be polished to become glossy as needed.

Surface hardness and application temperature

The ATC deposit thickness is in between 75-78 HRc (1200-1300 HV) with a neutral behavior in the temperature range between approx. -230°C and +800°C without any fundamental changes in adhesion and structure.

Deposit thickness and precision

The optimum deposit thickness is in between 2 and 12 µm and depends on the requirements of the parts that are subject to corrosive or abrasive stress. The dimensional tolerance on the surfaces and edges is in the range of ± 1 to 2 µm, depending on the material, surface quality and geometry of the part. Due to the minimal deposit thickness and tolerance, edge build-up is practically not an issue.

Surface quality and coefficient of friction

The ATC process may achieve a slight improvement in the surface friction, depending on the previously measured roughness value. The intrinsic friction of the coating is approx. Ra 0.25 µm. The excellent sliding properties of the ATC coat become manifest in a considerable reduction of friction. The coefficient of friction between two ATC chromium surfaces is up to 60% lower than for the pair steel/steel. The coefficient of friction for ATC/ATC is approx. 0.12-0.14.

Permanent resistance to wear and corrosion

Metals that have received a higher-quality surface by the ATC coating are protected against cold welding, corrosion and wear. Their resistance to oxidation reaches up to as much as 800°C.

Easier removal from molds

Especially when plastic and rubber molds are used, the ATC coating facilitates removal from the mold with the aim to extend the cleaning intervals. Likewise, cleaning the molds becomes easier and faster.

Efficiency

The ATC coating solves many problems efficiently. In many cases, the ATC coating may be used instead of expensive special materials. The fact that surfaces can be protected against external influences by applying an ATC coat, thus extending the use of components and the life of machines, results in considerable technical progress and efficient material and energy savings. Finishing works are not necessary for the vast majority of applications.

Manifold application areas …

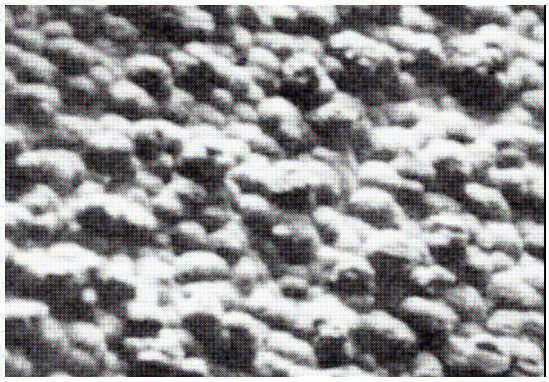
- Machinery construction - medical technology - machine tools - robot technology - automation - automotive industry - roller bearings of any kind - linear guides - drive technology - clamping elements - toothed wheels and gears - cylinders, pistons - shafts and rollers - worms - injection and plastic molds - food industry (FDA/USDA approval) - space and aviation industry (compliant to all MIL specifications, including AMS-2438 A, AMS QQ-C-320, AMS-2406 G)

ATC ARMOLOY TECHNOLOGY COATINGS GMBH & CO. KG

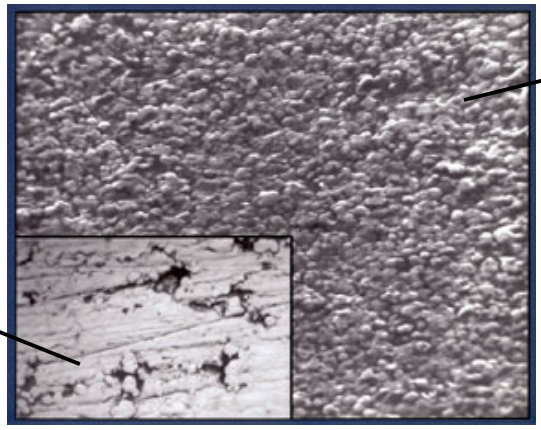
Administration and sales:
Industriegebiet Oberbiel
D – 35606 SOLMS-OBERBIEL
Tel: 06441-5023320
Fax: 06441-50233220
www.ATC-Armoloy.de

Factory:
Alte Neckarelzer Str. 24
D – 74821 MOSBACH
Tel: 06261-93010
Fax: 06261-930118
e-Mail: ATC@ATC-Armoloy.de

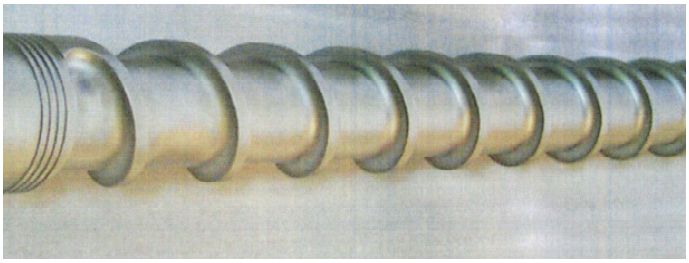
Deposition of the ATC Chrome coating



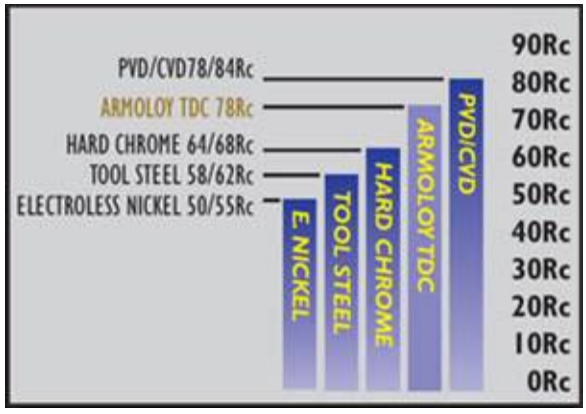
General structure of the Armoloy Chrome Coating.



Coating Properties:

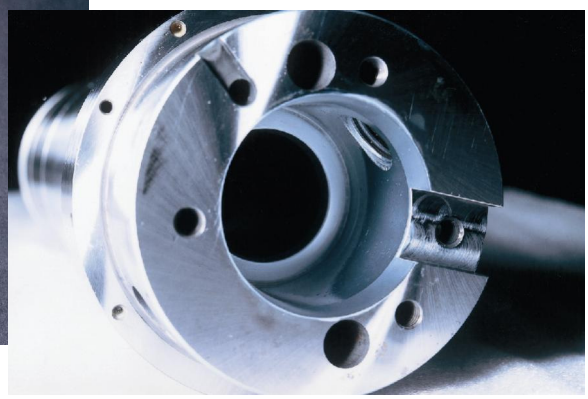


Appearance



Hardness

Applications in manyfold areas:



Machinery construction

Food industry

Gear parts

Roller bearings