



Amperit 619

Tungsten carbide with Iron-based matrix for superior sustainability and coating performance

Landing gear components and industrial equipment, such as food processing machinery and paper calender rollers, require coatings with exceptional wear and corrosion resistance. These coatings enhance durability, extend service life, and reduce the need for frequent maintenance and repairs.

Traditionally, hard chrome plating (HCP) and thermal spraying with tungsten carbide in a CoCr matrix (e.g., WC 10Co 4Cr) have been standard solutions. However, these methods face increasing challenges, including stricter government regulations aimed at phasing out HCP and concerns about cobalt-containing materials. These factors are driving demand for safer, more sustainable alternatives that maintain or exceed current performance.

Amperit 619 was specifically developed to tackle these challenges. It's an innovative, sustainable tungsten carbide powder with an iron-based binder designed for thermal spraying. The alloy's composition and production route were crafted using Höganäs' Integrated Computational

Materials Engineering (ICME) approach to achieve the desired hardness, wear resistance, and corrosion protection.

Amperit 619 is a superior alternative to cobalt-containing carbides, offering comparable hardness, mechanical properties, and wear resistance to conventional WC 10Co 4Cr. Additionally, **Amperit 619** delivers enhanced corrosion resistance and is completely cobalt-free.

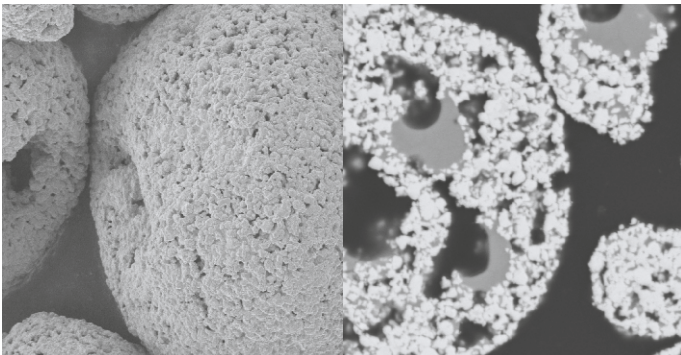
When compared to HCP, **Amperit 619** coatings demonstrate higher hardness, improved corrosion and fatigue resistance, and are more sustainable. It also offers cost efficiency due to fewer processing steps and better machinability.

Amperit 619 can be sprayed using High Velocity Oxygen Fuel (HVOF), delivering consistent properties. It also enables the application of both conventional and thin coatings, resulting in a dense, high-performance finished layer. The productivity and efficiency of HVOF spraying with Amperit 619 are comparable to those of WC 10Co 4Cr.

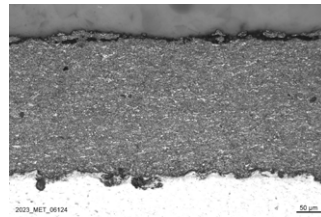
Main Product Features:

- » Reach compliant and sustainability-focused
- » Good sprayability and consistent coating properties in a wide process window
- » Dense coating with strong mechanical properties
- » Hardness level of ~1200–1400 HV
- » Homogeneous microstructure
- » Superior corrosion resistance in Neutral Salt Spray (NSS)
- » High deposition efficiency independent of the spraying method
- » High wear resistance

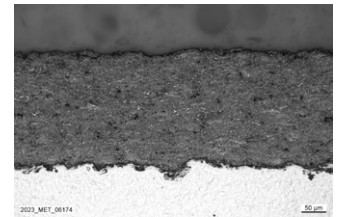
Typical Chemical Composition (wt%)					
W	C	Cr	Ni	Fe	Others
Bal.	5.5	4.0	2.5	7.0	<1.0



Cross section of agglomerated & sintered Amperit 619 powder

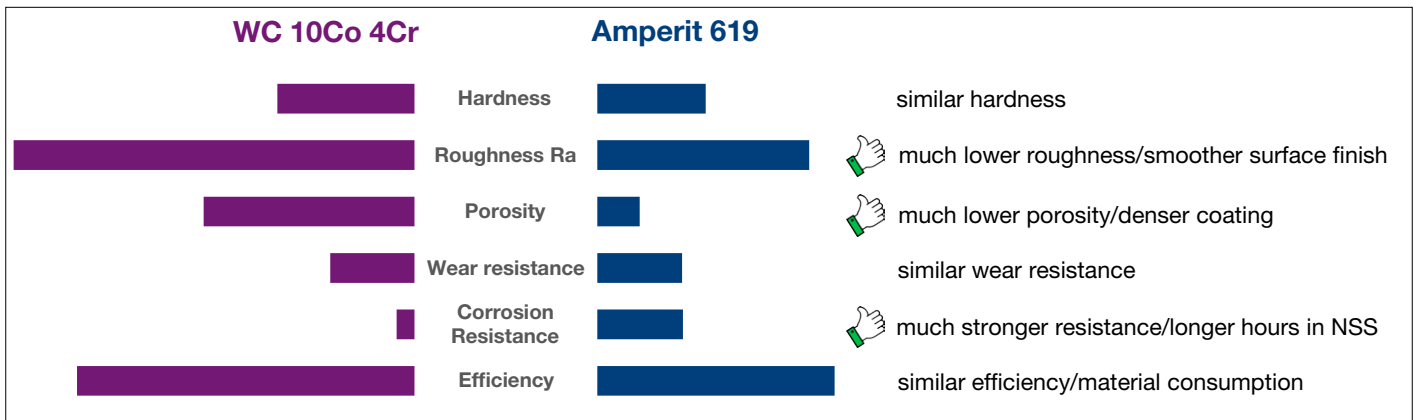


Microstructure of Amperit 619 liquid-fueled HVOF coatings (45/15 μm)



Microstructure of Amperit 619 gas-fueled HVOF coatings (45/15 μm)

Comparison of HVOF Coating Process and Properties



Rockit 485 was tempered at 500°C for 24h in air. The temperature was selected to represent the surface conditions of the caster rolls at steady state.

For more information on Amperit 619 and other Höganäs products, please contact your local sales representative or scan/click the QR code to fill out a contact form.



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