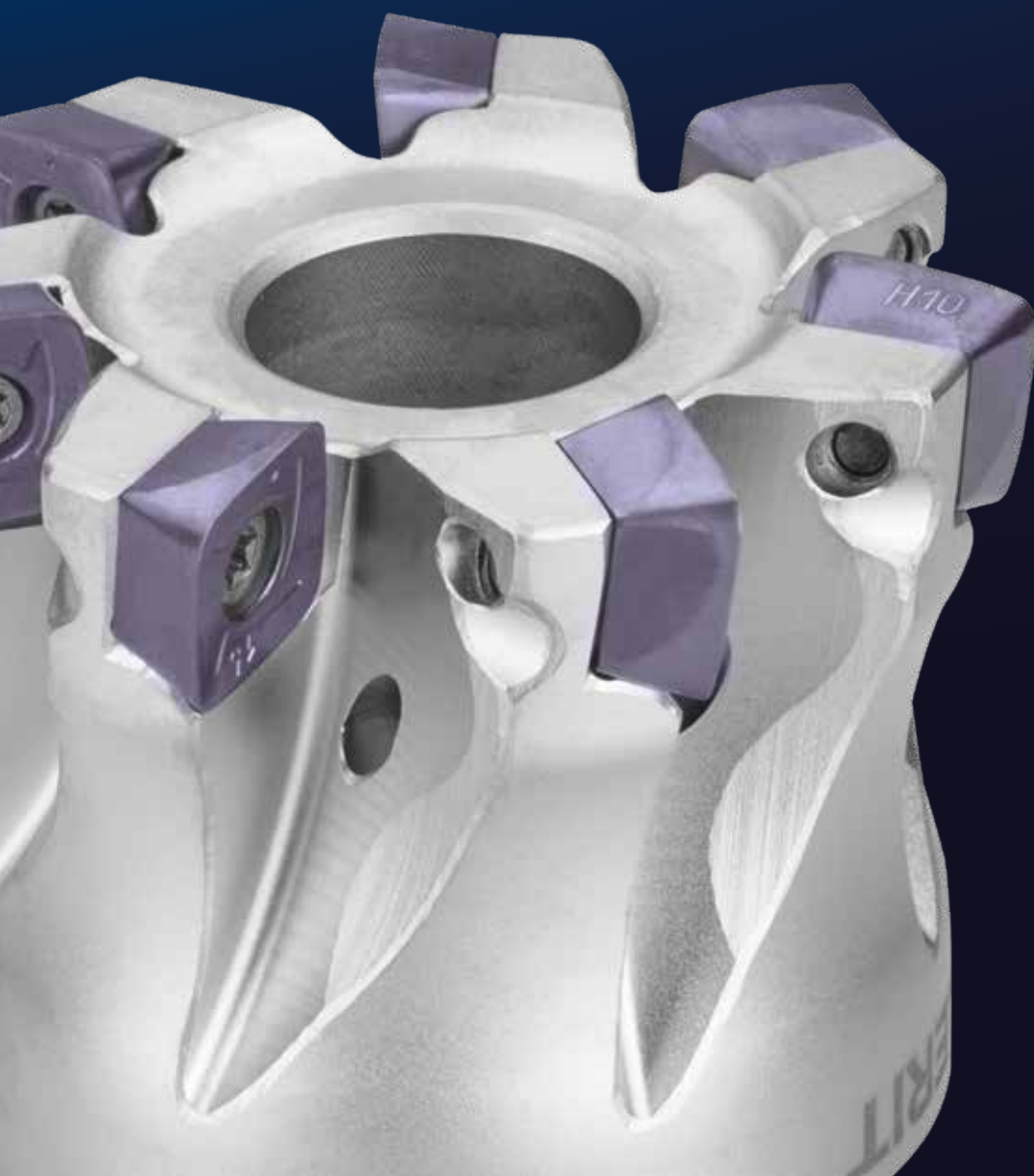


# 12 $\mu\text{m}$

## HiPIMS COATINGS



**GEMEGON**  
The Tool Coating

# World first: FerroCon®Quadro Ensures the Highest Wear Volumes

For a long time it was technically inconceivable, but CemeCon has now perfected very thick PVD coatings with FerroCon®Quadro. Coatings up to 12 µm can be realized with firm adhesion! Completely new options are opening up for the machining of steel and cast iron.

Wherever thick chips fall, during heavy roughing as well as during turning of certain materials, for example, protective coatings are vital for the tool and ensure high productivity. Very smooth and adhesive coatings are deposited using HiPIMS coating processes.

Many applications, however, require thicker coatings, which previously were only produced using the CVD method.

## FLEXIBLE AND FUTURE-PROOF

With HiPIMS, CemeCon now makes thick coatings possible using a technology that is environmentally friendly and does not use any toxic or explosive gases. The HiPIMS technology, which was developed into a marketable commodity by CemeCon, combines the advantages of all established coating processes.

“Our HiPIMS is capturing more and more fields and is competing in markets that previously had to be served in a highly differentiated manner. Our plant customers greatly appreciate this, since the flexibility and future reliability of HiPIMS not only make them feel good, but confirm their decision about having made the right investment,” explains Christoph Schiffers, Technology Product Manager at CemeCon.

# 12 µm Thick Coatings? No Problem with HiPIMS!

Today, a CC800® HiPIMS coating plant delivers everything for which previously two or even three different technologies were required. The field of application has now been expanded still further by coatings from 1 to 12 µm, from a high performance coating for micro tools to an extremely wear-resistant insert coating. This means that for the first time the coating service of cutting inserts is also relevant for specific tool manufacturers. “With FerroCon®Quadro, we can create thick, adhesive and yet smooth coatings, which make reworking the tools unnecessary.

Due to process temperatures below 500 °C during coating, we preserve the substrate and thereby prevent carbide embrittlement. And the fact that with HiPIMS, we can integrate almost every element of the periodic table into a coating opens up maximum leeway in the coating specifications for our customers.

I have to admit that we ourselves are pleasantly surprised again and again by how flexible HiPIMS is as a PVD process and how far we continue to move the boundaries. It is an incomparable technology!”, Inka Harrand, Product Manager Cutting Inserts at CemeCon, adds enthusiastically.

[cuttinginserts.cemecon.de](http://cuttinginserts.cemecon.de)

FURTHER INFORMATION ON FERROCON®QUADRO

## EXTRA HIGH WEAR VOLUME FOR ROUGHING OPERATIONS IN STEEL AND CAST IRON



## TECHNICAL DATA

Coating technology:  
**HiPIMS**

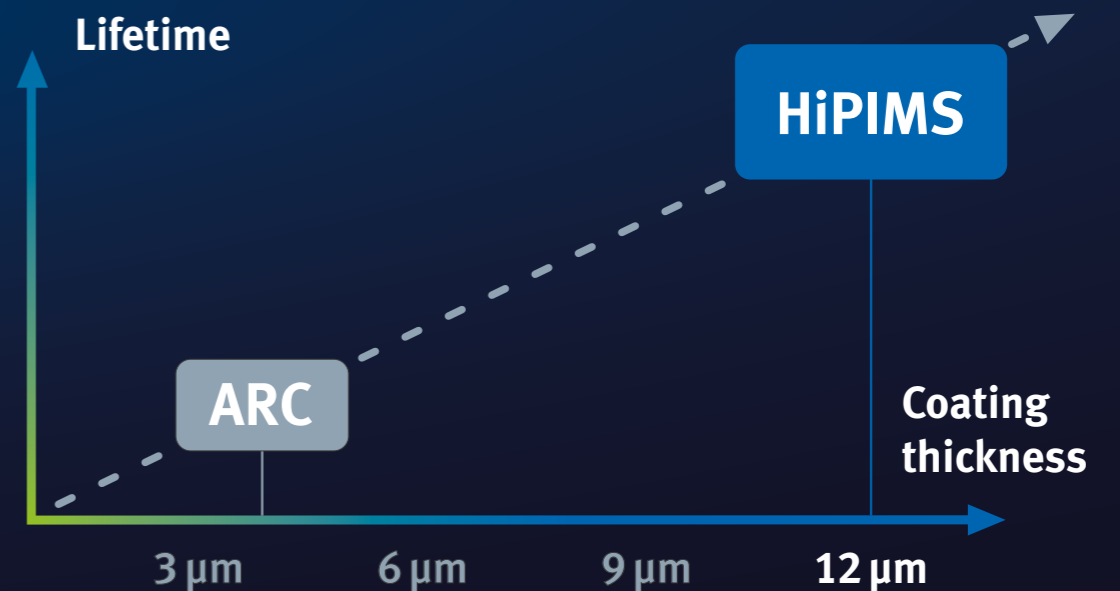
Layer material:  
**AlTiN-based**

Color:  
**Anthracite**

Max. operating temperature:  
**1,100 °C**

Layer thickness:  
**12 µm suitable for indexable inserts with at least 40 µm edge rounding**

## 12 µm COATING THICKNESS – A NEW HORIZON IN COATING TECHNOLOGY FOR CUTTING INSERTS



# Talk to an expert!

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[coatingtechnology@cemecon.de](mailto:coatingtechnology@cemecon.de)

	ARC	CVD	HiPIMS
Surface	<b>Droplets</b>	<b>Rough</b>	<b>Smooth</b>
Coating temperature	<b>500°C</b>	<b>1,000°C</b>	<b>500°C</b>
Max. coating thickness	<b>4 µm</b>	<b>10 – 15 µm</b>	<b>12 µm</b>
Residual stresses of the coating	<b>High compressive stresses</b>	<b>Tension</b>	<b>Residual stress management for low compressive stresses</b>
Toughness of the coating	<b>High</b>	<b>Low</b>	<b>Very high</b>
Easy production	<b>Yes</b>	<b>No (Precursor)</b>	<b>Yes</b>
Flexibility	<b>Low</b>	<b>None</b>	<b>High (all materials, all substrates)</b>
Mini tools	<b>No</b>	<b>No</b>	<b>Yes</b>